



ameee 2020

THE VIRTUAL CONFERENCE

7-9 September 2020

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Abstract Book

#AMEE2020

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Invited Address - Teams, culture and the 'cool kids' - Is our vision for improving quality in healthcare really 20/20?

#IA1

Date: Monday 7 September

Time: 0730-0830 and 1415-1515 (UK Time)

Location: Stream 1

PRESENTER(S):

- Victoria Brazil, Bond University, Australia

BIOGRAPHY:

Victoria Brazil is an emergency physician and medical educator.

She is Professor of Emergency Medicine and Director of Simulation at the Gold Coast Health Service, and at Bond University medical program. Victoria's main interests are in connecting education with patient care - through healthcare simulation, team development, and listening at conferences. She also serves as a faculty member with the Harvard Macy Institute.

Victoria is an enthusiast in the social media and #FOAMed world (@SocraticEM), and she is co-producer of Simulcast (simulationpodcast.com)

ABSTRACT:

Summary: Healthcare in 2020 is complex, with teams and teamwork an important focus for health professional education. But are we really doing our work better, together?

Perhaps real improvement needs teams to learn together? Maybe we can make quality improvement something the 'cool kids' do in our health services? And perhaps our educational approaches influence this culture more than we think? Maybe technology, simulation and social media can help? Or not....

Invited Address: The Tyranny of Metrics: On the Use and Misuse of Metrics in Medicine and Education

#IA2

Date: Tuesday 8 September

Time: 1300-1400 and 1915-2015 (UK Time)

Location: Stream 1

PRESENTER(S):

- Jerry Muller, the Catholic University of America, USA

BIOGRAPHY:

*Dr. Jerry Z. Muller is Professor of History at The Catholic University of America, where he has taught since 1984. He earned his B.A. from Brandeis University and his M.A. and Ph.D. from Columbia University. He has been a fellow of the American Academy in Berlin; the Rockefeller Foundation Center in Bellagio, Italy; the Olin Foundation; the Bradley Foundation; and the American Council of Learned Societies. Dr. Muller wrote *The Mind and the Market: Capitalism in Modern European Thought*, which was cowinner of The Historical Society's Donald Kagan Best Book in European History Prize. He is also the author of *Adam Smith in His Time and Ours: Designing the Decent Society* and *The Other God That Failed: Hans Freyer and the Deradicalization of German Conservatism*. He is editor of *Conservatism: An Anthology of Social and Political Thought from David Hume to the Present*. His many articles and essays have appeared in scholarly journals as well as in *Foreign Affairs*, *The New Republic*, *The Times Literary Supplement*, *The Wall Street Journal*, and *The Wilson Quarterly*.*

ABSTRACT:

Summary: Organizations are increasingly dominated by “metric fixation”: the belief that standardized measurement can replace judgment based upon experience; that organizations become “accountable” by making those measurements public; and that organizational goals are best reached by attaching rewards and penalties to the metrics. Ratings and rankings based upon standardized metrics have become a driving force in education and health care. The reliance on measurement to incentivize behaviors often results in demoralization, and a corruption of the measures themselves. This talk explores the characteristic dysfunctions of metric fixation, how they can best be avoided, and metrics put to positive uses.

Invited Address: Hindsight is 2020 in 2020

#IA3

Date: Wednesday 9 September

Time: 11.45-12.45 and 19.45-20.45 (UK Time)

Location: Stream 1

PRESENTER(S):

- M. Brownell Anderson, National Board of Medical Examiners, USA

BIOGRAPHY:

M. Brownell Anderson is Vice President at the National Board of Medical Examiners, International Programs USA. She is responsible to enhance the alignment of medical education program outcomes and assessment of those outcomes with a goal to assure the quality of healthcare workforce globally. She was a Senior Director for educational affairs at the Association of American Medical Colleges (AAMC). She was a faculty member of FAIMER Institute, Philadelphia. She used to edit annual "Really Good Stuff" section of Medical Education journal – a peer-reviewed international collection of reports about innovations in medical education. She has compiled report on educational programs of 128 U.S. and Canadian medical schools. Her areas of specialization are program coordination & administration, medical school curriculum, clinical evaluation and international education.

ABSTRACT:

Summary: At the AMEE conference in 2000, I was asked to predict the state of medical education in 2020. With the benefit of hindsight, this talk will address what I got right, what I got wrong, and what surprised me most. Specifically, it will consider the major changes that have occurred over the past two decades, what factors have influenced the content, structure, delivery, assessment, and outcomes of medical education globally, and what we did right regardless of my expectations. Predictions for the next two decades will be offered, safe in the knowledge that hindsight will still be 2020 in 2040.

Invited Address: Reflections on predictions of the Medical Student in the year 2020 and beyond

#IA4

Date: Wednesday 9 September

Time: 11.45-12.45 and 19.45-20.45 (UK Time)

Location: Stream 1

PRESENTER(S):

- Sarah Rennie, University of Otago, New Zealand

BIOGRAPHY:

Sarah Rennie is an academic surgeon with a passion for medical education. She studied Medicine in the UK and completed a basic surgical training rotation, whilst researching academic misconduct amongst medical students. She developed and was the inaugural president for JASME (Junior Association for the Study of Medical Education). Sarah was awarded a Commonwealth Scholarship to complete a PhD in Surgical Education, looking at surgical decision making at Otago University. She then returned to Surgical "Training" in New Zealand. Sarah has maintained an interest in academic medical education and has been an education advisor for the Royal College of Surgeons (RACS) for some of its course, she has been a member of the RACS Academy of Surgical Educators for the last 10 years. Sarah is also a Mum to five fabulous children.

ABSTRACT:

Summary: AMEE in 2000 focused on change and the future. I predicted medical student's in 2020 would be predominantly white, mature females with a previous degree. I idealistically predicted a movement to flexible medical degrees, away from time-based requirements. Medical students would have a good grasp of computers and the internet and patients would be more informed about their health with their first contact conducted over the Internet with programmes to sift out those people who need to see a doctor face-to-face from those who need advice (Babylon Health!). What will the medical student look like in 2040?

Invited Address: Healing the Planet: Living into the Future of Health Professions Education

#IA5

Date: Wednesday 9 September

Time: 1300-1400 and 1830-1930 (UK Time)

Location: Stream 1

PRESENTER(S):

- Stewart Mennin, Human Systems Dynamics Institute,, USA / Mennin Consulting & Associates, Brazil
- Fernando Menezes, USA
- Vishna Nadarajah, International Medical University, Malaysia
- Vishnu Priya, India

ABSTRACT:

Summary: Uncertainty is the only certainty. How best to prepare health professionals for increasing uncertainty, mass migration, increased civil disruptions, wildfires, drought, famine, and diminishing resources for equity of access to health and health care. This plenary brings forth innovative, relevant and sustainable adaptive actions for medical educators everywhere.

Best Practice: Best Practice for an Educational Response to Covid-19

#BP1 (7342)

Date: Monday 7 September

Time: 0915-1015 and 1645-1745 (UK Time)

Location: Stream 1

PRESENTER(S):

- Trevor Gibbs, AMEE, UK (Moderator)
- Katie Petty-Saphon, Medical Schools Council, UK
- Richard Fuller, University of Liverpool, UK
- Jo Bishop, Bond University, Australia

ABSTRACT:

Summary: The Covid-19 pandemic has brought fracture and fear, stress and loss, and great uncertainty to all members of our global society. Its effect upon health professions education has caused major disruption at all levels. A positive effect however has been the need to reflect upon previous educational methods and adapt to the disruption caused through innovation and ingenuity. Our three speakers will present what best practice has evolved from educational change, addressing three specific areas that have appeared to cause most difficulty; teaching and learning techniques, assessment methods, including the area of unprofessional (cheating) behaviour and physical and psychological stress.

Best Practice: Serious Games: On design, implementation and research (TEL Committee session)

#BP2 (3662)

Date: Monday 7 September

Time: 0915-1015 and 1645-1745 (UK Time)

Location: Stream 2

PRESENTER(S):

- Mary Dankbaar, Erasmus Medical Center Rotterdam, the Netherlands (Moderator)
- Pamela Kato, Serious Games Designer, Social Entrepreneur Silicon Valley, Digital Health Scientist, USA
- Todd Chang, Childrens Hospital Los Angeles & Keck School of Medicine, University of Southern California, USA
- Tjitske Faber, Institute of Medical Education Research, Erasmus University Medical Center, the Netherlands
- Shoaleh Bigdeli, Center for Educational Research in Medical Sciences (CERMS), Department of Medical Education, Iran
- Joy Lee, Maastricht University, the Netherlands
- Jeroen van Merriënboer, School of Health Professions Education, Maastricht University, the Netherlands

ABSTRACT:

Summary: Serious games are increasingly being used in medical education and patient care, for knowledge and skills acquisition or behavior change. They potentially offer effective and engaged learning. What do we know about the impact of games for learning and the relevance of game characteristics? What are important stages in the process of designing and implementing a successful game? Implementation of games in a curriculum often is a challenge; quite often games ‘die off’ after a promising development phase. What are factors for successful implementation? We will end with a discussion on how research on instructional design may be used for improving game-based skills training.

Best Practice: Transition from Medical School to Surgery Residency Training (Surgery Track session)

#BP3 (3720)

Date: Monday 7 September

Time: 1145-1245 and 1800-1900 (UK Time)

Location: Stream 1

PRESENTER(S):

- Ajit Sachdeva, American College of Surgeons, USA (Moderator)
- Rowan Parks, NHS Education for Scotland, UK
- Julian Smith, Monash University, Australia
- James Garden, University of Edinburgh, UK (Discussant)

ABSTRACT:

Summary: Speakers from across the globe will share experiences from various countries and highlight the advances that have been made to address the challenges during the transition from medical school to surgery residency training.

Best Practice: Maintaining Adaptive Expertise in the time of the Algorithm: Lessons from Aviation

#BP4 (3657)

Date: Monday 7 September

Time: 1145-1245 and 1800-1900 (UK Time)

Location: Stream 2

PRESENTER(S):

- Martin Pusic, Harvard University, USA (Moderator)
- Captain Warren Feschuk, DAC Aviation, Canada
- Maria Mylopoulos, University of Toronto, Canada
- John Andrews, American Medical Association, USA

ABSTRACT:

Summary: The need to develop and maintain adaptive expertise for low frequency, high impact situations is shared by both aviation and the health professions. The recent failures of the 767Max aircraft may hold a new lesson in that one hypothesis as to why these two planes crashed is due to a failure of simulation education of the pilots. Did they have sufficient “airmanship” to overcome difficulties that arise when an airplane that normally can fly largely on algorithm requires in-the-moment situational judgement from humans? Using research from the adaptive expertise literature, we describe best practices for instructional design that takes this tension into account.

Best Practice: Evidence-Based Teaching is on today's agenda

#BP5 (3718)

Date: Monday 7 September

Time: 1300-1400 and 1915-2015 (UK Time)

Location: Stream 1

PRESENTER(S):

- Madalena Patricio, Lisbon School of Medicine, Universidade de Lisboa, Portugal (Moderator)
- Morris Gordon, UCLan, UK
- Michelle Daniel, University of Michigan Medical School, USA
- Erik Driessen, Maastricht University, the Netherlands

ABSTRACT:

Summary: Medical education is facing important challenges, including pressures for change as a result of globalisation, changing public expectations, the need for greater accountability, rapid advances in medicine and in healthcare delivery and the potential of new learning technologies. Evidence-based decision-making is implicit in the recognition of the need for professionalism and scholarship in the education of healthcare professions. This symposium will explore how we can move from education based on opinion to education based on evidence, including the different forms of evidence that can be used to support teachers' decisions and how these can be accessed and adopted by teachers in their day-to-day practice. A panel of contributors will each introduce aspects of the issue. This will be followed by an interactive discussion between panel members and conference participants over 45 minutes. The session will conclude with a summary of key take-home messages. We can promise an exciting discussion

Best Practice: Faculty Development Beyond 2020 – Agility, Connection, Impact, Sustainability (Faculty Development Committee session)

#BP6 (3665)

Date: Monday 7 September

Time: 1300-1400 and 1915-2015 (UK Time)

Location: Stream 2

PRESENTER(S):

- Yvonne Steinert, Institute of Health Sciences Education, McGill University, Canada (Moderator)
- Page Morahan, FAIMER, USA
- Teresa Chan, McMaster University, Canada
- Ugo Caramori, University of Campinas, Brazil
- Patricia O'Sullivan, University of California San Francisco (UCSF), USA

ABSTRACT:

Summary: Faculty development has taken on a prominent role in health sciences education over the last 20 years, offering formal and informal programs and activities to many stakeholders in multiple contexts. During this Best Practice Session, we will highlight four areas of faculty development that, we believe, will change significantly over the next decade: leadership development; online faculty development; research and scholarship; and the role of students and residents as future faculty members. These themes have also taken on new significance during the current coronavirus pandemic and we look forward to a timely discussion with participants.

Best Practice: Exploring sustainable health care education: An international endeavor - Moving from the what to the how (AMEE Sustainable Healthcare Working Group session)

#BP7 (3801)

Date: Tuesday 8 September

Time: 0800-0900 and 1415-1515 (UK Time)

Location: Stream 1

PRESENTER(S):

- Michelle McLean, Bond University, Australia (Moderator)
- Sarah C Walpole, Newcastle University, UK
- Nicole Redvers, University of North Dakota, USA
- SanYuMay Tan, Imperial College London, UK

ABSTRACT:

Summary: Our planet is under threat, largely as a result of our activities. Deforestation, pollution of land, waterways and air and rising temperatures impact on health and well-being. Since health care is resource-intensive and generates about 4.4% of the world's carbon emissions, health professional educators need to educate a workforce to tackle these challenges. This Best Practice session will address ways of championing environmental sustainability at institutions and healthcare facilities, explore the role of Indigenous knowledge systems, discuss curriculum frameworks (e.g. Sustainable Development Goals) and describe student contributions to faculty development for planetary health and sustainable healthcare education.

Best Practice: Empathy for Patient Care

#BP8 (7356)

Date: Tuesday 8 September

Time: 0800-0900 and 1415-1515 (UK Time)

Location: Stream 2

PRESENTER(S):

- Gerard Flaherty, National University of Ireland Galway, Ireland
- Chris Skinner, Notre Dame University Fremantle, Australia (Moderator)
- Gemma Cherry, University of Liverpool, UK
- Hilary Murphy, Ireland

ABSTRACT:

Summary: Empathy in healthcare is an essential ingredient in improving patient care. This Best Practice session provides three perspectives to help understand empathy and its importance to the doctor patient relationship and patient experience. Firstly Hilary Murphy will share her own lived patient experience from patient and carer's perspective. Secondly Gemma Cherry will review the underpinning and controversial aspects that surround our empathy understanding. Finally Chris Skinner will examine the challenges and opportunities for empathy development in medical and health care curricula. The session will conclude with a Q and A period facilitated by Gerard Flaherty and will summarize the importance of key and future empathy development.

Best Practice: Sustaining the move to online teaching and learning during and after the COVID-19 pandemic (TEL Committee session)

#BP9 (7343)

Date: Tuesday 8 September

Time: 0915-1015 and 1645-1745 (UK Time)

Location: Stream 1

PRESENTER(S):

- John Sandars, Edge Hill University Medical School, UK (Moderator)
- Monika Sobocan, Faculty of Medicine, University in Maribor, Slovenia
- Kalyani Premkumar, College of Medicine, University of Saskatchewan, Canada
- Poh Sun Goh, National University of Singapore, Singapore

ABSTRACT:

Summary: The COVID-19 pandemic has seen a huge global shift to online delivery of the curriculum, with many innovative approaches. Sustaining these changes to provide high quality teaching and learning using online approaches will require a transformational change in learners, educators and institutions. This change will be a challenge for all medical educators, in both high and low resource settings. An essential aspect of responding to this challenge will be a transformational change in the scholarship of medical education to ensure that rapid cycles of evaluation can inform best practice.

Best Practice: Peer review: keeping horses in the stable or encouraging them to bolt?

#BP10 (3802)

Date: Tuesday 8 September

Time: 0915-1015 and 1645-1745 (UK Time)

Location: Stream 2

PRESENTER(S):

- Tim Doman, Queen's University Belfast, UK (Moderator)
- Richard Hays, MedEdPublish, Australia
- Martin Delahunty, Inspiring STEM Consulting, UK
- Rebecca Lawrence, F1000, UK

ABSTRACT:

Summary: Pre-publication peer review is currently the 'gold standard' of academic rigour. It results, though, in good articles being rejected or altered beyond recognition. Peer review, though, has been authoritatively described as so unreliable that, if it were a drug, it would not be allowed on the market. This symposium will consider whether peer review is the best means of advancing the field or conserves the status quo. It will present post-publication peer review as an alternative, ask whether this could be a more democratic route to scholarly excellence, and whether wastage of good work and disillusionment of authors could become a thing of the past.

Best Practice: Scholarship is not just research: Nurturing scholarship in health professions education

#BP11 (3543)

Date: Tuesday 8 September

Time: 1145-1245 and 1800-1900 (UK Time)

Location: Stream 1

PRESENTER(S):

- Eeva Pyörälä, University of Helsinki, Centre for University Teaching and Learning; AMEE Fellowship Committee, Finland (Moderator)
- Subha Ramani, Harvard Medical School, Dept of Medicine, Brigham and Women's Hospital; AMEE Fellowship Committee, USA
- Rashmi Kusurkar, Amsterdam University Medical Centra – location VUmc; AMEE Fellowship Committee, the Netherlands

ABSTRACT:

Summary: In this session, a subgroup of the AMEE Fellowship Committee plans to explore educational scholarship and discuss strategies to advance from teaching to scholarly teaching and to scholarship in health professions education. Following the footsteps of experts (Boyer 1990, Shulman 1987, Glassick 1997, Kreber 2002), we unravel the theoretical foundations of the Scholarship of Teaching and Learning and emphasize key criteria for scholarship- work is public, shared and peer-reviewed. The session provides examples and suggestions to transform educational products into scholarship, through workshops, mentoring initiatives and networking. We encourage building interprofessional and interdisciplinary communities to nurture scholarship both nationally and internationally.

Best Practice: Involving Patients and Family in Achieving Meaningful Outcomes through Continuing Professional Development (CPD Committee session)

#BP12 (3666)

Date: Tuesday 8 September

Time: 1145-1245 and 1800-1900 (UK Time)

Location: Stream 2

PRESENTER(S):

- David Wiljer, University Health Network, Canada (Moderator)
- Samar Aboulsoud, Cairo University, Egypt
- Alvaro Margolis, Global Alliance for Medical Education, Uruguay
- Paula Rowland, Wilson Centre, University Health Network and University of Toronto, Canada
- Carolin Sehlbach, Maastricht University, the Netherlands
- Lisa Sullivan, Global Alliance for Medical Education, Australia

ABSTRACT:

Summary: This symposium will explore the involvement of patients, families, clients and service users in re-imagining the delivery of continuing education for healthcare professionals in diverse contexts to achieve better outcomes for a healthier world. The symposium will examine the origins and current state of patient involvement in continuing professional development (CPD) by presenting different models, theoretical perspectives, and practical approaches to involving patients. Using an interactive, experiential case-based approach, the symposium will reflect on how patients from different global contexts have been engaged and involved in the lifelong learning of health professionals with particular attention to issues of personal and professional identity, cultural context, concepts of power and power sharing, therapeutic relationships and best practices.

Best Practice: Best Success begins with Failure – Our True Stories

#BP13 (3618)

Date: Wednesday 9 September

Time: 0800-0900 and 1445-1545 (UK Time)

Location: Stream 1

PRESENTER(S):

- Shuh Shing Lee, National University of Singapore, Singapore (Moderator)
- Ardi Findyartini, Department of Medical Education Faculty of Medicine Universitas Indonesia, Indonesia
- Ikuo Shimizu, Shinshu University, Japan

ABSTRACT:

Summary: Most of the concepts or frameworks that we have employed in health professions education in Asia are mainly coming from the Western regions. Some are successful while some are not due to context, values and cultural differences. Values and culture have been embedded in the daily life of teachers, administrators, leaders, students and the organisation and need to be considered during attempts to implement best practices in medical and health professions education. When certain initiatives do not achieve the expected outcome, 'we' struggle, feeling frustrated, and sometimes helpless and guilty about the failure. Failing teaches us what went wrong, how to improve and what are the skills/competence lacking of to succeed. However, often we hesitate to disclose our failure. 'We' in this context could be (i) administrators who operationalise the initiatives/programmes; (ii) teachers who conduct the teaching; (iii) students who undergo the programme; (iv) faculty developers who train the health professions educators.

Best Practice: Digital assessment in the clinical workplace: design, implementation – opportunities, challenges

#BP14 (3623)

Date: Wednesday 9 September

Time: 0800-0900 and 1445-1545 (UK Time)

Location: Stream 2

PRESENTER(S):

- Silas Taylor, UNSW Medicine, Australia (Moderator)
- Karen Scott, University of Sydney, Australia
- Eeva Pyörälä, University of Helsinki, Finland
- Richard Cooke, University of the Witwatersrand, South Africa
- Jennifer Hallam, Leeds University, UK
- Colin Lumsden, University of Aberdeen, UK

ABSTRACT:

Summary: Authentic learning in clinical placements is an important attribute of health professional education. Authentic assessment in this dynamic learning environment gauge students' clinical, communication and professional skills. Given the nature of placements, mobile devices provide an ideal means for stakeholders to document student performance and activity in clinical workplaces, enabling formative, summative and programmatic assessment; facilitating timely feedback to promote discussion and student self-reflection, and assisting medical schools with quality assurance. Challenges include technology, security, sustainability and equity. Our experienced team of presenters will discuss and demonstrate successful approaches to date, as well as ways to navigate the challenges.

Best Practice: Is the role of the teacher mirrored in the role of the learner?

#BP15 (3552)

Date: Wednesday 9 September

Time: 0800-0900 and 1445-1545 (UK Time)

Location: Stream 3

PRESENTER(S):

- Joy Rudland, University of Otago, New Zealand (Moderator)
- Tim Wilkinson, University of Otago, New Zealand
- Evangelos Papageorgiou, European Junior Doctors Association, UK
- Philippa Lantwin, The European Medical Students' Association (EMSA), Germany

ABSTRACT:

Summary: Twenty years ago Professor Harden produced the AMEE guide 'The 12 roles of the teacher'. This was superseded by the 8 roles of the teacher in 2018. The information contained within these texts is invaluable for teachers considering and developing in their role. However, on reflection this is a teacher centred approach to a dynamic relationship between the teacher, learner and the environment. Learners do not always learn what teachers teach. A more learner centred approach and one that potentially could have greater sustainability is to focus on the 'roles of the learner'. Learner roles may mirror the roles of the teacher e.g. learners processing information as a mirror to the teacher role of information provider, but equally other roles may be unique to the learner. This session will explore the potential change in learners' roles over the last 20 years through the perspective of a undergraduate learner, a postgraduate trainee in clinical training and a senior consultant and will make proposals regarding how we envision the future roles of the learner and teacher and the relationship or partnership that should exist.

Best Practice: The Evidence Informed Train-Teach-Transfer- Integrated Bioethics for Health Sciences (3T-IBHSc) Faculty Development Course

#BP16 (3622)

Date: Wednesday 9 September

Time: 0915-1015 and 1600-1700 (UK Time)

Location: Stream 1

PRESENTER(S):

- Russell D'Souza, UNESCO Chair in Bioethics, Australia (Moderator)
- Mary Mathew, Manipal University, India
- Daniella Keidar, University of Haifa, Israel
- Madalena Patricio, University of Lisbon, Portugal

ABSTRACT:

Summary: This session will focus on 'How to teach Bioethics' and will convey evidence-based skills and didactic means through which the teaching of bioethics will be experiential, meaningful and will be absorbed by learners emotionally, cognitively and behaviorally. The participants will be exposed to practical and applicable tools for teaching / training of bioethics. They will experience special, fascinating, original processes and will receive high added value to their accumulated experience in teaching bioethics to their students. Osmosis learning will be discussed. This is the art of unconscious learning, where one stops studying materials and start absorbing them. It is an analogy for natural, and indirect way of learning. To learn through osmosis means a way of learning seamlessly. It is about listening, absorbing the use of role play, debates, cinema and street play. It is how you apply meaning to what you see and stimulates the innate talent of teachers and enhances the 'Craft of Teaching'. It stimulates the art for plucking meaning out of presentations. This is how 'Intuition' is developed, which is the pulling force that separates successful knowledge transfer from some of the conventional forms of teaching bioethics. The innovative reformed methodology has the ability in part of influencing the limbic system in the neurocognition of knowledge transfer.

Best Practice: Sharing of Learning Resources

#BP17

Date: Wednesday 9 September

Time: 1600-1700 (UK Time)

Location: Stream 2

PRESENTER(S):

- Dujeeva Samarasekera, National University of Singapore, Singapore (Moderator)
- Tao Le, ScholarRx, USA
- Stefan Wisbauer, Lecturio, Germany
- Erik Schmok, AMBOSS, Germany
- Rishi Desai, Osmosis
- Leslie Fall, Aquifer, USA

ABSTRACT:

Summary: The role of the teacher is rapidly changing from that of a provider of information to one of a curator, taking account of the wealth of resources now available digitally. A panel of resource developers will discuss current developments, followed by a discussion with the audience on the implications for training of both teachers and learners in the selection and use of such resources in the curriculum.

Best Practice: Embracing Postgraduate training diversity (Postgraduate Committee session)

#BP18 (3556)

Date: Wednesday 9 September

Time: 0915-1015 and 1600-1700 (UK Time)

Location: Stream 3

PRESENTER(S):

- Rille Pihlak, University of Manchester, UK (Moderator)
- Simon Gregory, Health Education England, UK
- Juliana Sá, University of Beira Interior, Portugal
- Gustavo Salata Romão, Febrasgo / University of Ribeirão Preto, Brazil
- Sheyla Ribeiro Rocha, Federal University of São Carlos, Brazil
- Fedde Scheele, the Netherlands

ABSTRACT:

Summary: Postgraduate training is critical to delivery of effective and high-quality care however, there are major differences in PGT around the world. Entrance exams, competences, assessments, length and setting of training, feedback and supervision, are only some of the disparities between specialty training programmes in different countries and continents. This best practise session will review the opportunities and challenges PGT faces around the world using the Ob-Gyn curricula as an example, with the hope of learning from the best examples and building a more unified training everywhere. The acquisition of appropriate clinical competencies can be attained by different ways and it brings up critical issues of PG curricular span and designs. A broader perspective on diversity of PG training programs around the world enable reflections to face the challenges. Recent decades have seen major changes in PGT that are usually more due to pressures of the healthcare systems rather than based on medical education evidence. The session will introduce attendees to the diversity of PGT around the globe and will outline initiatives and results from medical education research that aim to improve PGT in different settings.

Forum: Diversity, Equity, and Inclusion in Health Professions Education: Examples in Practice and an Interactive Dialogue

Sponsored by: Merck KGaA

#FO1

Date: Monday 7 September

Time: 1800-1900 (UK Time)

Location: Stream 8

PRESENTER(S):

- Lawrence Sherman, AMEE, USA (Moderator)
- Eileen Martin, Global Director of Inclusion, Merck KGaA, Germany
- Maria Beatriz Dias, Unicamp- University of Campinas, Brazil
- Petra Verdonk, Amsterdam UMC-VUmc, the Netherlands
- Nina Dutta, Imperial College, UK

ABSTRACT:

Summary: The need to promote diversity, equity, and inclusion in health professions education globally is an area of great interest amongst all stakeholders. Around the world, we are seeing health professions students, faculty, and institutions along with other stakeholder organizations working to effect change and increase diversity, equity, and inclusion in all aspects of healthcare.

This session will feature four presentations, three from health professions educators and students and one from a global pharmaceutical company, that will help to paint the picture of what is happening around the world and at different levels and environments. Educational perspectives from students and faculty in Brazil, Germany, the Netherlands, and the United Kingdom will be provided, with three examples of programs in place to increase access to careers in the health professions, to assist in the socialization of students from varying backgrounds, and to encourage dialogue amongst diverse students and practitioners. An example of how a global pharmaceutical company has developed a leading approach to promote diversity, equity, and inclusion in healthcare.

The presentations will be followed by a live, interactive panel discussion featuring questions from session participants.

Verdonk #SC4.1.7 (6360), Dutta #SC4.1.9 (7151) and Dias #SC4.1.3 (4614)

Forum: The AMEE Simulation Committee Journal Club

#FO2 (7364)

Date: Monday 7 September

Time: 1915-2015 (UK Time)

Location: Stream 6

PRESENTER(S):

- Leizl Joy Nayahangan, Copenhagen Academy for Medical Education and Simulation, Denmark (Moderator)
- Kristian Krogh, Aarhus University Hospital, Denmark
- Nancy McNaughton, University of Toronto, Wilson Centre for Research in Education, Canada

ABSTRACT:

Summary: The AMEE Simulation Journal Club which started in 2016 is now a highlight every year at the AMEE conference. Organized by the AMEE Simulation Committee, the Simulation Journal Club aims to provide conference participants an interactive platform to stay abreast on the latest scientific discoveries and advances regarding simulation-based education. The Simulation Journal Club provides a stage to recognize and honour scholars and scientists in healthcare simulation who embark on and pursue important work to advance the field.

Every year, the Simulation Committee nominate recently published scientific papers on healthcare simulation where a variety of four best papers are selected by a panel. The authors of the final four papers are invited to present at the conference and engage the audience in an interactive discussion. The Simulation Committee and the audience cast their votes for the Best Research Paper in Healthcare Simulation. The winner will be awarded with a certificate and 1000 Euros sponsored by the Copenhagen Academy for Medical Education and Simulation (CAMES).

This year's Journal Club will be special, in keeping with the AMEE virtual conference. This allows a great opportunity for colleagues around the world to attend and participate in appraising the presented papers and take part in the discussions.

The final four papers that will be presented at the AMEE Simulation Journal Club are:

1. Ajmi SC, Advani R, Fjetland L, et al. *Reducing door-to-needle times in stroke thrombolysis to 13 min through protocol revision and simulation training: a quality improvement project in a Norwegian stroke centre.* *BMJ Qual Saf.* 2019;28(11):939-948.
2. Begley JL, Lavery KE, Nickson CP, Brewster DJ. *The aerosol box for intubation in COVID-19 patients: an in-situ simulation crossover study.* *Anaesthesia.* 2020 May 12.
3. Johnston JL, Kearney GP, Gormley GJ, Reid H. *Into the uncanny valley: simulation versus simulacrum?.* *Medical Education.* 2020 Apr 20.
4. Barnum T, Tatebe LC, Halverson AL, Helenowski IB, Yang AD, Odell DD. *Outcomes Associated With Insertion of Indwelling Urinary Catheters by Medical Students in the Operating Room Following Implementation of a Simulation-Based Curriculum.* *Academic Medicine.* 2020 Mar 1;95(3):435-41.

Forum: Digital Professionalism and Culture - Impact on Medical Students' Mental Health and Wellbeing

#FO3 (3604)

Date: Tuesday 8 September

Time: 0800-0900 (UK Time)

Location: Stream 6

PRESENTER(S):

- Hiroshi Nishigori, Center for Medical Education, Nagoya University, Japan (Moderator)
- Ania Korszun, Queen Mary University of London, UK
- Young-Mee Lee, Department of Medical Education, Korea University College of Medicine, Korea
- Ali Ajaz, Queen Mary University of London, UK
- Mariko Morishita, Center for Medical Education, Kyoto University, Japan

ABSTRACT:

Summary: Although there is no doubt that our current technological advances have greatly enriched the field of education, there are also negative consequences for students of embracing digital technology devices. With the growing focus in medical professionalism curricula on supporting students' mental health and wellbeing, many students have cited problems related to internet use and a reliance on digital technology devices, such as smart phones and tablet computers, as being a cause of stress. Internet addiction among medical students has been reported to be 5 times higher than that of general population.

In this session, we will discuss the underlying neuroscience of behavioural addiction and how it can disrupt learning and cognition and affect wellbeing, the negative impact on mental health through factors such as cyber bullying and dysfunctional social comparison and the importance of teaching digital professionalism to our students and trainees; i.e. the professional attitudes and behaviours that are expected in online environments and how culture can influence these.

Forum: WHO Europe and AMEE- How under- and postgraduate health professions education and training can support the development and sustainability of the European Health Workforce and respond to changing population health needs: Part 1

#FO4 (7365)

Date: Tuesday 8 September

Time: 1145-1245 (UK Time)

Location: Stream 6

PRESENTER(S):

- Natasha Azzopardi Muscat, WHO Europe, Belgium
- Gabrielle Jacob, WHO Europe, Belgium
- Kristin Heggen, Centre for Sustainable Healthcare Education, Faculty of Medicine, University of Oslo, Norway
- Eivind Engebretsen, Centre for Sustainable Healthcare Education, Norway
- Janusz Janczukowicz, University of Lodz, Poland (Moderator)

ABSTRACT:

Summary: This is the first of two WHO Europe - AMEE sessions at this conference aimed at discussing how to build a sustainable health and care workforce for optimal, safe, patient-centred care in the complex era of changing population health needs, increased workforce mobility and the recent COVID-19 crisis. To respond properly to these challenges, health professions curricula should adapt much faster to constantly changing societal needs. While the second session (Wednesday, 9 September, 0915-1015 UK time) will be focused on establishing cooperation between the WHO Europe and the European health professions education organisations and schools, this Forum session is focused on presenting the European Programme of Work to be considered at the 70th session of the WHO Regional Committee of Europe including the major health needs of Member States in the Region and how a sustainable health and care workforce can be built to provide the care that's required. Moreover, the best practice example of developing the health professions curriculum on the foundation of UNs Sustainable Development Goals will be presented by the leaders of the newly established Norwegian Centre for Excellence in Education.

Forum: Pearls from the Surgery Track Sessions (Surgery Track Session)

#FO5

Date: Tuesday 8 September

Time: 1645-1745 (UK Time)

Location: Stream 6

PRESENTER(S):

- Ajit Sachdeva, American College of Surgeons, USA (Moderator)
- James Garden, University of Edinburgh, UK
- Julian Smith, Monash University, Australia
- Bonnie Miller, Vanderbilt University School of Medicine, USA
- Paul Lai, Chinese University of Hong Kong, Hong Kong
- Helen MacRae, University of Toronto, Canada

ABSTRACT:

Summary: Members of the Surgery Track Committee will report back on highlights of the Conference as they apply to surgery education.

Forum: New Directions in Health Sciences Education (IAMSE)

#FO6

Date: Tuesday 8 September

Time: 1645-1745 (UK Time)

Location: Stream 8

PRESENTER(S):

- Peter de Jong, Leiden University, the Netherlands (Moderator)
- Cortny Williams, University of Western States, USA
- Kelly Quesnelle, Western Michigan University Homer Stryker M.D. School of Medicine, USA
- Emily C Bird, Vanderbilt University Medical Center, USA

ABSTRACT:

Summary: The presenters will discuss: the use of short videos and short cases to support distance learners to capture the learning objectives in online courses; a hybrid learning environment to combine physical and remote presence of students; and the implementation of a Virtual Student Council to improve online learning. The session will end with a live, interactive discussion with the audience.

Cortny Williams

Microlectures are well-known for focus on a granular learning objective. However, these short videos are designed to be viewed alone and the focus on brevity often excludes the opportunity for application and evaluation. Case study evaluations offer an opportunity for students to collaboratively apply their knowledge and expand their point of view, but most cases studies require integration of information from multiple microlectures. In this presentation, learn how to create microlectures with a targeted and interactive clinical correlate that increases collaboration in online learning one granular learning objective at a time.

Kelly Quesnelle

In this presentation, we will discuss using a model of hybrid learning where learners have the flexibility to attend some events remotely while other events can be attended on campus by a small number of learners. We will discuss planning and implementation of this curriculum, as well as the software and logistical details.

Emily Bird

We created a virtual student council focused on the distance learning needs of our first year students to improve online learning. Through student leadership we identified and addressed concerns including Zoom familiarity, identification of a virtual white board/chalk board, virtual anatomy, professionalism, isolation, virtual group studying, and Zoom fatigue. It has been a valuable asset to our overall curriculum due to our driven students who were empowered through this platform to improve online learning. Our model is straightforward and we encourage others to reproduce it due to its success!

Forum: Teaching clinical skills online Part 1: Where to start and what to think about (TEL Committee session)

#FO7

Date: Tuesday 8 September

Time: 1800-1900 (UK Time)

Location: Stream 8

PRESENTER(S):

- Rakesh Patel, University of Nottingham, UK

ABSTRACT:

Summary: Clinical skills teaching has traditionally been taught in person on campus or clinical skills centres, and in the clinical workplace. The Covid-19 pandemic has challenged that convention and caused educators to re-think the delivery of clinical skills teaching using online technologies. This Round Table Discussion introduces some of theoretical perspectives relevant to clinical skills teaching, through to the pragmatics of delivering clinical skills teaching online to large groups of learners. The focus of the discussion will be around the design, development and delivery aspects of the online clinical skills teaching using technology using student voices to spark and stimulate reflection on the challenges as experienced from the learner perspective.

Forum: Share your Innovations with AMEE Show & TEL

#FO8

Date: Wednesday 9 September

Time: 0800-0900 (UK Time)

Location: Stream 6

PRESENTER(S):

- Daniel Salcedo, Director, Center for Clinical Medical Education, Taipei Municipal Wanfang Hospital -Taipei Medical University, Taiwan (Moderator)

ABSTRACT:

Summary: Have you ever developed an interesting project or innovation that was not suited for publication in an academic journal? Here at AMEE, we recognize that not everything we do is designed to be published, but there is no reason for it not to be shared with the Health Professions Education community. AMEE Show&TEL is an exciting new project developed by the Technology Enhanced Learning Committee that aims to provide a platform where innovators can share, comment, give feedback and ask questions.

Come along to the Show&TEL information session to learn more about this exciting new initiative and join a growing community of educational innovators in the Health Professions. This interactive session is open to everyone and will include a brief introduction followed by an open discussion. We are looking forward to your active participation.

Forum: Teaching clinical skills online - Part 2: Examples from practice (TEL Committee session)

#FO9

Date: Wednesday 9 September

Time: 0915-1015 (UK Time)

Location: Stream 2

PRESENTER(S):

- Rakesh Patel, University of Nottingham, UK (Moderator)
- Daniel Salcedo, Taipei Medical University, Taiwan
- Mike Botelho, University of Hong Kong, Hong Kong

ABSTRACT:

Summary: The use of technology-enhanced education for teaching clinical skills is associated with improved educational outcomes. Whilst, educators will be familiar with the use of technology for enhancing in-person teaching of clinical skills, some may be unfamiliar with using online technologies for the same purpose. This AMEE Technology-Enhanced Learning Committee supported Forum will present examples from across the globe with issues from pedagogy through to practicalities explored in depth, so participants are able to go away with a better sense of what best practice looks like, but also, how to go about delivering it in their local contexts.

Forum: WHO Europe and AMEE – How European medical schools and health professions education organisations can cooperate to support the development and sustainability of the European Health Workforce: Part 2

#FO10 (7366)

Date: Wednesday 9 September

Time: 0915-1015 (UK Time)

Location: Stream 6

PRESENTER(S):

- Janusz Janczukowicz, University of Lodz, Poland (Moderator)
- Natasha Azzopardi Muscat, WHO Europe, Belgium
- Gabrielle Jacob, WHO Europe, Belgium

ABSTRACT:

Summary: This is the second of two WHO Europe - AMEE sessions at this conference aimed at discussing how to build a sustainable health and care workforce for optimal, safe, patient-centred care in the complex era of changing population health needs, increased workforce mobility and the recent COVID-19 crisis. To respond properly to these challenges, health professions curricula should adapt much faster to constantly changing societal needs.

While first session (Tuesday, 8 September, 1145-1245 UK time) will be focused on discussing the ‘what’ of the health needs of the Region and the ‘how’ of building sustainable health workforces to address these needs, this Forum session is focused on establishing cooperation between the WHO Europe and the European health professions education organisations and schools, to provide them with the optimal communication and mutual understanding of the European societies health needs, to support the development and sustainability of the European Health Workforce through education, training and continuous professional development.

Forum: Lifestyle Medicine for Better Health and Wellbeing in the COVID-19 Era

#FO11 (7368)

Date: Wednesday 9 September

Time: 1445-1545 (UK Time)

Location: Stream 6

PRESENTER(S):

- Hassan Khan, Riphah International University, Pakistan (Moderator)
- Shagufta Feroz, Riphah Institute of Lifestyle Medicine, Riphah University, Pakistan
- Rob Lawson, European Lifestyle Medicine Council, UK
- Aviad Haramati, Georgetown University Medical Center, USA

ABSTRACT:

Summary: An online forum session on Lifestyle Medicine and wellbeing is organised during the AMEE 2020 virtual conference. The speakers will cover the importance of wellbeing and lifestyle medicine in today's challenging circumstances faced by health professionals due to COVID 19 pandemic. The session will include three pre-recorded presentations with 7-10 minutes duration each from international experts followed by 20-30 minutes of interactive discussion with the conference participants.

Forum: Cultivating Health Professions Learners' Moral Compass & Resilience Within Professional Identity Formation

#FO12 (3596)

Date: Wednesday 9 September

Time: 1715-1815 (UK Time)

Location: Stream 1

PRESENTER(S):

- Hedy Wald, Warren Alpert Medical School of Brown University, USA
- Diethard Tauschel, Integrated Curriculum for Anthroposophic Medicine; Witten/Herdecke University, Faculty of Health, Germany
- Settimio Monteverde, Bern University of Applied Sciences / Department of Health Professions, Switzerland
- Richard Horton, Editor, The Lancet, UK (Moderator)

ABSTRACT:

Summary: Within increasing complexities in medicine including technologic advances, economic pressures, and competing demands, challenges and what can be perceived as burden have risen for healthcare practitioners and trainees. Under these conditions, moral distress and values conflicts are common. Thus, cultivating both moral awareness and responsibility within reflective professional identity formation (PIF) and situational judgment is crucial within health professions education to secure patients' and practitioners' dignity. Given dehumanization in medicine (so-called "epidemic") as an ever-present threat to medicine's social goals, the time is now for sharpening academia's role in contributing both to ethically safe healthcare practices and the psychological wellbeing of professionals - How best to foster trainees,' faculty's, and practitioners' moral development and equip them with a moral compass? How support developing humanistic values INSIDE of each individual as foundational and complementing technical competencies?

Forum: 18th Ibero-American Session: Medical Education's Response to the COVID-19 Pandemic in the Americas and Spain

#FO13 (7355)

Date: Wednesday 9 September

Time: 1715-1815 (UK Time)

Location: Stream 2

PRESENTER(S):

- Ricardo Leon-Borquez, PAFAMS, Mexico (Moderator)
- Genevieve Moineau, AFMC, Canada
- William Duke, UNPHU, Dominican Republic
- Alberto Dougnac, Faculty of Medicine U. Finis Terrae, Chile
- Jordi Pales, University of Barcelona, Spain
- John Prescott, AAMC, USA

ABSTRACT:

Summary: As the impact of the COVID-19 pandemic was being felt around the world, medical educators were called on to make rapid decisions on a wide variety of critical issues. During this session, distinguished academic leaders from North America, Central America and the Caribbean, and South America will join their colleague from Spain to discuss the issues they faced and how they responded to the unprecedented challenges that affected students, faculty, their academic institutions, and most importantly their communities. Dealing with an evolving situation, a poorly understood and highly infectious disease, and varying degrees of support and resources, these academicians will describe their thought processes they engaged and the actions they took. Deans, faculty, students, and community leaders will all benefit from the insights provided during this session.

Forum: Moving from eminence-based to evidence-based accreditation: Defining the field of accreditation research and charting its course

#FO14 (3516)

Date: Wednesday 9 September

Time: 1715-1815 (UK Time)

Location: Stream 6

PRESENTER(S):

- Sean Tackett, Johns Hopkins Bayview Medical Center, USA (Moderator)
- David Rojas, University of Toronto Faculty of Medicine, Canada
- Ming-Jung Ho, Georgetown University Medical Center, USA
- Marta van Zanten, Foundation for Advancement of International Medical Education and Research, USA
- Cynthia Whitehead, University of Toronto Faculty of Medicine, Canada

ABSTRACT:

Summary: Accreditation standards and processes encompass every medical school function and therefore affect everyone in medical education and are powerful levers for change. Despite growing international momentum for accreditation, accreditation research is rare, and there remains little evidence that accreditation is worth the sizable investment it commands. Broadening the pool of accreditation researchers should lead to evidence generation that improves accreditation effectiveness and efficiency. The purpose of this session is to define the field of undergraduate medical education (UME) accreditation research and discuss how accreditation can become more evidence-based.

Forum: Competency Based Medical Education Track: Top papers

#FO15

Date: Wednesday 9 September

Time: 1715-1815 (UK Time)

Location: Stream 8

PRESENTER(S):

- Larry Gruppen, University of Michigan Medical School, USA (Moderator)
- Josh Kurtz, University of Michigan, USA
- Daniel J Schumacher, Cincinnati Children's Hospital, USA
- Jennifer Dare, Queen's University, Canada

ABSTRACT:

Summary: The three top-rated papers submitted for the International Competency Based Medical Education Summit will be presented. The remaining papers can be viewed in the on-demand sessions.

Forum: Reviewing for MedEdPublish – enhancing scholarship

#FO16 (7369)

Date: Monday 7 September

Time: 1645-1745 (UK Time)

Location: Stream 6

PRESENTER(S):

- Ken Masters, Sultan Qaboos University, Oman
- Barbara Jennings, University of East Anglia, Norwich Medical School, UK

ABSTRACT:

Summary: This will be an interactive session about peer reviewing for AMEE's online journal MedEdPublish. Two members of the journal's editorial team, Barbara Jennings and Ken Masters, will deliver short presentations about the principles and practicalities of post publication peer review. Each summary will be followed by opportunities for questions from the participants, and discussions to share our experiences of peer review. We will also start a review-wiki that the participants and editors can collaborate on after the session. The presenters will address how to submit a helpful review and explain why you should!

Masterclass: An Evaluation and Assessment System for CPD

#MC1 (3631)

Date: Monday 7 September

Time: 0915-1015 (UK Time)

Location: Stream 3

PRESENTER(S):

- Monica Ghidinelli, AO Foundation / Education institute, Switzerland
- Miriam Uhlmann, AO Foundation, Switzerland
- Jane Wiedler, AO Foundation, Switzerland
- Urs Rüetschi, AO Foundation, Switzerland

ABSTRACT:

Summary: Defining success and measuring the impact of your educational offerings is a challenge for any organization. A step-by-step approach to develop an evaluation and assessment system will be presented. A process for many of the key steps will be shown through illustrative examples. The key questions to guide the development of a system are: how do you define success and what data do you need?, how will you use the information?, what stakeholders are involved and what reports should each group receive?, how can you offer excellent reports, and how can the process be communicated and made efficient?

Masterclass: Student Engagement – A masterclass

#MC2 (3551)

Date: Monday 7 September

Time: 0915-1015 (UK Time)

Location: Stream 4

PRESENTER(S):

- Manuel João Costa, University of Minho, Portugal
- Flávia Freitas, University of Minho, Portugal
- Kathleen Leedham-Green, Imperial College London, UK
- Susan Smith, Imperial College, UK

ABSTRACT:

Summary: We will be discussing “what works in student engagement” based on an international research project of the ASPIRE Academy lead by the University of Minho, that characterizes the drivers, activities and outcomes for ASPIRE award-winning medical schools across 3 continents. We will highlight the key similarities amongst institutions that are beyond the ASPIRE criteria. Vignettes highlighting key learning points will be interspersed with interactive discussions. Participants will reflect on the current level of engagement in their own institution and consider ways in which these findings could be translated into their own contexts.

Masterclass: Supporting Junior Doctors' Help-seeking in the Hospital Training Environment

#MC3 (4900)

Date: Monday 7 September

Time: 0915-1015 (UK Time)

Location: Stream 5

PRESENTER(S):

- Nicole Jones de Rooy, Australian National University, Australia
- Imogen Mitchell, ANU, Australia
- Zsuzsoka Kecskes, ANU, Australia
- Gary Rogers, Griffith University, Australia

ABSTRACT:

Summary: Junior doctors' help-seeking is an important day-to-day occurrence in the hospital training environment and a skill that we want to cultivate in our junior doctors so they can both safely care for patients and progress their journey into independent practitioners. But when a junior doctor seeks help, what is vital to providing the support they need? Our research reveals that effective support for help-seeking involves far more planned support than simply telling junior doctors to 'call if they need help'. In fact, it includes several interdependent constituents that begin well before the call to the supervisor is received. Using a mix of short presentations and virtual discussion, the facilitators will explore what is essential to support junior doctors' help-seeking in the hospital training environment.

Masterclass: Teaching Sustainable Health Care through Quality Improvement

#MC4 (7359)

Date: Monday 7 September

Time: 1145-1245 (UK Time)

Location: Stream 3

PRESENTER(S):

- Frances Mortimer, Centre for Sustainable Healthcare, UK
- Stuart D'Arch Smith, Centre for Sustainable Healthcare, UK
- Siobhan Parslow-Williams, UK

ABSTRACT:

Summary: Quality improvement (QI) teaching offers an efficient way to introduce students to emerging practices in sustainable health care. For the past ten years, the Centre for Sustainable Healthcare has helped clinicians, educators and curriculum designers integrate sustainable health care knowledge, skills and values into the medical curriculum. Participants will consider the core principles of sustainable clinical practice and learn from the teaching and assessing experiences of universities that have already integrated sustainability into QI education. Access to teaching resources will be provided.

Masterclass: Living dangerously: Discovering possibilities and pitfalls of using technology to determine assessment and progression decisions

#MC5 (3576)

Date: Monday 7 September

Time: 1145-1245 (UK Time)

Location: Stream 4

PRESENTER(S):

- Richard Fuller, University of Liverpool, UK
- Vishna Devi Nadarajah, IMU, Malaysia
- Viktoria Joynes, University of Liverpool, UK

ABSTRACT:

Summary: The possibility of educational institutions, learners and faculty, all connected by mobile devices, presents exciting opportunities for educational innovation. New uses of technology mean previously unimaginable possibilities are now on the horizon for increased personalisation of learning experiences, assessment and even entire curricula. This Masterclass will explore the benefits of using technology-captured data to understand learners' academic progression, alongside the ethical and academic dilemmas and consequences of misapplication of analytics. With a strong focus on international and cultural perspectives, workshop participants will gain confidence in identifying learners needing extra support (e.g. around key transition points) across complex health care educational programmes.

Masterclass: Production and Implementation of educational videos in healthcare: take part in the future of education - Session 1 : theory and basics

#MC6 (3635)

Date: Monday 7 September

Time: 1145-1245 (UK Time)

Location: Stream 5

PRESENTER(S):

- Lukas Kandler, University Hospital Zurich, Switzerland
- Robin Lundén, Skåne University Hospital, Lund, Sweden, Sweden
- Daniel Salcedo, Taipei Medical University in Taiwan, Taiwan

ABSTRACT:

Summary: Learn how clear and strong scientific results promote the use of educational videos to bring your great content to your team. Learn about the legal aspects and with whom you may have to partner at your institution before you can start. What is the difference between conventional (2D) Films and 360° videos? Pros and cons about this techniques. Learn the cornerstones of high class educational films: - high level medical knowledge -> the perfect script; - basic knowledge about filmmaking (or better even some more skills) -> know how to make it; - sufficient technical equipment -> use the right stuff. Learn about the power of a quality script and why already the process of scriptwriting is so important for your final product. Not to forget, you will need some kind of platform to show the finished videos- what are your needs? Are there potential risks?

Masterclass: Curriculum mapping for meaningful interprofessional medical education

#MC7 (6912)

Date: Monday 7 September

Time: 1300-1400 (UK Time)

Location: Stream 3

PRESENTER(S):

- Olaf Ahlers, Charité - Universitätsmedizin Berlin, LOOOP-project, Germany
- Jacqueline Jennebach, Society of Medical Faculties in Germany, Germany
- Shirra Moch, University of the Witwatersrand, Centre for Health Science Education, South Africa
- Glenda Eoyang, Human Systems Dynamics Institute, USA

ABSTRACT:

Summary: Integration is the primary challenge to robust, sustainable interprofessional learning (IPL). An effective program must cross more than disciplinary lines. Coordinating schedules, aligning IP learning objectives across intended outcomes/ competencies, assessment, and courses makes the design and implementation of an IPL program complex. Curriculum mapping ensures this alignment and structures the vast amount of available information in a transparent way which is essential for all accreditation processes. This session gives an overview how curriculum mapping helps to design, plan, and implement integrated IPL programs. It also shares experiences within the international LOOOP network in which about 100 curricula are mapped.

Masterclass: New Insights in the Development and Implementation of Situational Judgement Test Approaches for Selection

#MC8 (3582)

Date: Monday 7 September

Time: 1300-1400 (UK Time)

Location: Stream 4

PRESENTER(S):

- Fiona Patterson, Work Psychology Group, UK
- Charlotte Flaxman, Work Psychology Group, UK
- Emma-Louise Rowe, Work Psychology Group, UK

ABSTRACT:

Summary: Situational Judgement Tests (SJTs) are a measurement methodology designed to assess non-academic attributes (e.g. empathy). Throughout this masterclass, we will share the latest insights in relation to ongoing debates within the SJT literature, including what an SJT measures, multi-media formats (e.g. video) versus traditional text-based scenarios and use of different types of response formats. Guidance will be provided on how an SJT could be implemented within a selection process, taking into account combining with different selection methods. The final part of the masterclass will provide an opportunity to discuss practical implications of using SJTs.

Masterclass: Production and Implementation of educational videos in healthcare: take part in the future of education - Session 2: Let`s get started with your film-production

#MC9 (7357)

Date: Monday 7 September

Time: 1300-1400 (UK Time)

Location: Stream 5

PRESENTER(S):

- Lukas Kandler, University Hospital Zurich, Switzerland
- Robin Lundén, Skåne University Hospital, Lund, Sweden, Sweden
- Daniel Salcedo, Taipei Medical University in Taiwan, Taiwan

ABSTRACT:

Summary: We will start with some information about the process of editing your footage in the post production and how you can make this part much more efficient if you always plan ahead. We will have a comprehensive look into needed basic equipment to start with. What do you really need and what is only nice to have? You will be surprised what really is important. We will demonstrate you life, how to use lights, camera and microphones for your production and we will perform life some easy and simple basic editing of the footage. Learn from our experience and which pitfalls can be avoided. Time to get ready for a successful implementation of your great content: after both sessions you will be able to optimize your film production and bring it to another level if you already have some experience or if you are novice you will be able to perform your first easy production without any troubles.

Masterclass: Engaging Early Learners in Patient Safety Event Analysis – A Primer

#MC10 (3602)

Date: Monday 7 September

Time: 1645-1745 (UK Time)

Location: Stream 3

PRESENTER(S):

- Robin Newton, ACGME, USA
- Trudie Roberts, Leeds Institute of Medical Education, UK
- Kevin Weiss, ACGME, USA
- Douglas Paull, ACGME, USA

ABSTRACT:

Summary: This Masterclass has been designed to help medical educators include medical students, residents, and fellows in real, interprofessional PSE analyses. The Masterclass will start with a brief review including the rationale for including early learners in a PSE analysis; the role of the Clinical Learning Environment (CLE); the elements of an effective PSE analysis; and assessing learning outcomes from PSE analyses. Participants will then enter one of three breakout rooms to discuss their experience or vision for medical student, resident, and fellow participation in patient safety event analysis. Upon returning to the main conference room, a representative will briefly report out themes from their respective breakout room, followed by questions and discussions among all attendees.

Masterclass: Getting More Bang for Your Buck in Medical Education: A Practical Approach to Assess Cost and Value of New Technologies, Curricula and Interventions

#MC11 (4467)

Date: Monday 7 September

Time: 1645-1745 (UK Time)

Location: Stream 4

PRESENTER(S):

- Carl Gustaf S Axelsson, Department of Surgery, Massachusetts General Hospital, Harvard Medical School, USA
- Michael G. Healy, Department of Surgery, Massachusetts General Hospital, USA
- Traci Wolbrink, Boston Children's Hospital, USA
- Roy Phitayakorn, Department of Surgery, Massachusetts General Hospital, USA

ABSTRACT:

Summary: In medical and surgical education, there has been a plethora of new educational technologies and interventions with unclear effectiveness and cost efficiency data. We developed a projected cost framework called REC (Roles, Equipment, Consumables) to allow educators to swiftly estimate and assess the resources needed when introducing new technologies in the classroom (Axelsson et al, 2020). This virtual workshop will walk participants through the components of the REC framework and allow them to estimate their projected costs.

CGS Axelsson et al (2020) Applying a novel cost-evaluation framework to assess video-based neurosurgery education, *The American Journal of Surgery*,
<https://doi.org/10.1016/j.amjsurg.2020.01.018>

Masterclass: Building a road-map for the development of video-based training for surgeons and nurses in robotic surgery

#MC12 (5456)

Date: Monday 7 September

Time: 1645-1745 (UK Time)

Location: Stream 5

PRESENTER(S):

- Helene Cristofari, University of Neuchâtel, Switzerland
- Laure Kloetzer, University of Neuchâtel, Switzerland

ABSTRACT:

Summary: This workshop aims at generating an overview of the uses of video in robotic surgery training for surgeons and nurses. We will first ask participants to share their experiences related to video in robotic surgery training. Based on our work in a Finnish and a Swiss hospital, we will then present the self-confrontation interview method, which uses videos to enhance learning through fostering reflexivity at the individual and collective levels. Finally, we will collectively discuss the potentials and limits of using video as part of a robotic curriculum, particularly as regards the development of interprofessional collaboration in the robotic team.

Masterclass: How to effectively respond to peer reviewers' comments

#MC13 (4622)

Date: Monday 7 September

Time: 1800-1900 (UK Time)

Location: Stream 3

PRESENTER(S):

- Lauren Maggio, Uniformed Services University, USA
- Anthony Artino, Uniformed Services University, USA
- Erik Driessen, Maastricht University, the Netherlands
- Sebastian Uijtdehaage, Uniformed Services University, USA

ABSTRACT:

Summary: The rise in manuscripts submitted to health professions education (HPE) journals has resulted in growing competition and rejection rates. This means every step of the publication process is critical, including the author's response to a revise and resubmit invitation. This hands-on workshop will provide authors with practical approaches for effectively revising their manuscripts. To meet this goal, the instructors, who have published widely in HPE and serve as editors on multiple journals, will draw on their rich experience as authors, peer reviewers, and editors to present real-life examples, share best practices, and provide practical feedback on participant's in-workshop efforts.

Masterclass: Residents and Postgraduate trainees as teachers (A Postgraduate Committee session)

#MC14

Date: Monday 7 September

Time: 1800-1900 (UK Time)

Location: Stream 4

PRESENTER(S):

- Rille Pihlak, UK
- Simon Gregory, UK
- Matthew Stull, USA
- Susannah Brockbank, UK
- Kevin Garrity, UK

ABSTRACT:

Summary: The word ‘doctor’ means physician, and is derived from the Latin ‘docere’, to teach. Since the second half of the Twentieth Century it has been recognised that teaching is a skill. There has been increasing scholarship around medical education and the development of faculty. In the twenty first century there is rightly increasing interest in doctors in training (residents) as teachers. There are now many examples of locally developed programmes of ‘Resident Faculty Development’ such as “Training Trainees to Teach – 4Ts’. This symposium is proposed as an opportunity to showcase these programmes from across the continents as identified by the members of the AMEE Postgraduate Committee and from these develop principles of good practice in Resident Faculty Development.

Masterclass: Hidden in Plain Sight? Addressing the Hidden Curriculum

#MC15 (6052)

Date: Monday 7 September

Time: 1915-2015 (UK Time)

Location: Stream 3

PRESENTER(S):

- Teresa Cavett, University of Manitoba, Canada
- Anita Ens, University of Manitoba, Canada
- Joanne Hamilton, University of Manitoba, Canada

ABSTRACT:

Summary: Increasing attention is being paid to challenges in the learning environment. These include mistreatment, burnout, and professional failures. One factor contributing to these challenges is the hidden curriculum. The messages of the formal curriculum are often undermined by values and norms communicated to our learners (Mahood, 2011). These often implicit and tacit norms, attitudes, and values embedded in our educational structures, practices and culture are referred to as the hidden curriculum (Hafferty et al., 2015). Participants will explore ways in which they may address the hidden curriculum and assist their learners in identifying and responding to the hidden curriculum.

Masterclass: Teaching of clinical reasoning in clinical contexts

#MC16 (3569)

Date: Tuesday 8 September

Time: 0800-0900 (UK Time)

Location: Stream 3

PRESENTER(S):

- Ralph Pinnock, Education Unit, Dunedin School of Medicine, University of Otago, New Zealand
- Louise Young, James Cook University, College of Medicine and Dentistry, Townsville, Australia
- Peter Radue, Dept of General Practice and Rural Health, Dunedin School of Medicine, New Zealand

ABSTRACT:

Summary: Clinical reasoning is context specific so there is no substitute for learning in the workplace. The use of specific and explicit clinical reasoning teaching approaches also benefits development of metacognitive skills with the potential to improve diagnostic accuracy. To demonstrate all aspects of the clinical reasoning process teachers, need to explicitly teach using techniques such as think aloud, explicit role modelling of automatic, subconscious thinking, multiple differential diagnoses, and use of mnemonics such as SNAPPS. The presenters will show how their research on the teaching of clinical reasoning guides their teaching in the workplace.

Masterclass: Developing Effective Checklists and Global Rating Scales for Objective Structured Clinical Examinations

#MC17 (6263)

Date: Tuesday 8 September

Time: 0800-0900 (UK Time)

Location: Stream 4

PRESENTER(S):

- Daniel Salcedo, Taipei Medical University, Taiwan
- Che-Wei Lin, Taipei Medical University, Taiwan
- Benjamin Berg, University of Hawaii, USA
- James Thomas, Keio University, Japan

ABSTRACT:

Summary: The use of Objective Structured Clinical Examinations (OSCE) has become a common practice for clinical skills assessment. Most educational institutions use this assessment modality to measure the clinical competency of learners in specific stations using checklists and global rating scales. To maintain an acceptable degree of validity and reliability, it is necessary to pay special care to the design and use of these assessment instruments. This Online Masterclass aims to discuss and apply the basic principles of assessment design to the development of effective checklists and global rating scales to measure examinee performance in OSCEs and avoid common errors.

Masterclass: Designing and implementing online assessment in the clinical workplace

#MC18 (3581)

Date: Tuesday 8 September

Time: 0915-1015 (UK Time)

Location: Stream 3

PRESENTER(S):

- Silas Taylor, UNSW Medicine, Australia
- Colin Lumsden, University of Aberdeen, UK
- Jennifer Hallam, University of Leeds, UK
- Karen Scott, University of Sydney, Australia
- Richard Cook, University of the Witwatersrand, South Africa
- Eeva Pyörälä, University of Helsinki, Finland

ABSTRACT:

Summary: Developing clinical and professional skills in an authentic context is critical for modern healthcare providers. Mobile device applications provide a means for delivering and compiling the versatile documentation associated with assessments of students' clinical and procedural performance, communication with patients and professional behaviour in healthcare encounters. The data collected are powerful tools for clinical teachers and supervisors to provide students with constructive feedback for learning and can assist medical schools with quality assurance regarding clinical placements. In addition, the ensuing student-teacher conversations can support self-reflection. Presenters come are ready to share their experiences of online assessment in the clinical workplace.

Masterclass: Let's Begin at the End: Outcome-based Curriculum Development

#MC19 (5619)

Date: Tuesday 8 September

Time: 0915-1015 (UK Time)

Location: Stream 4

PRESENTER(S):

- Amnuayporn Apiraksakorn, Khon Kaen Medical Education Centre, Thailand
- Stella Howden, Centre for Medical Education, School of Medicine, University of Dundee, UK

ABSTRACT:

Summary: Outcome-based education (OBE) focuses on the outcomes of teaching and learning experiences to inform design decisions. OBE starts with a clear specification of what the learner will be able to do after course/programme completion. Curriculum planning and evaluation in OBE are important to ensure the quality of the programme. This workshop will offer opportunities for learning and sharing experiences for all-level clinical teachers who are interested in developing outcome-based curriculum in their own context. The presenters will facilitate a discussion and provide interactive hands-on experience to develop an OBE curriculum using a staged approach, informed by the constructive alignment concept.

Masterclass: Engaging students in medical education - From A to Z

#MC20 (7170)

Date: Tuesday 8 September

Time: 0915-1015 (UK Time)

Location: Stream 5

PRESENTER(S):

- Ali Channawi, International Federation of Medical Students' Associations, Morocco
- Alaa Dafallah, IFMSA, Sudan
- Marouane Amzil, International Federation of Medical Students Associations, Maroc
- Catarina Pais Rodriguez, Faculdade de Medicina da Universidade de Coimbra, Portugal

ABSTRACT:

Summary: As medical education takes a paradigm shift, it is crucial to reinforce how greater student engagement can be achieved. Currently, there isn't any framework that provides guidance to medical students' on active participation and representation in their education. Educators also find themselves at a loss on how to meaningfully engage students in their educational systems. As such, IFMSA developed The Advocacy in Medical Curriculum Toolkit; a collection of recommendations and references adapted to a student's perspective to enable advocacy and representation for the development of medical education. In this masterclass, we will discuss student engagement in medical education and how to transition from tokenism to meaningful engagement. Together, we will reflect on different contexts to identify barriers and recommend positive actions to meaningful student engagement in your institutions- hear from the students themselves!

Masterclass: Applying self-regulated learning to simulation-based training

#MC21 (6362)

Date: Tuesday 8 September

Time: 1145-1245 (UK Time)

Location: Stream 3

PRESENTER(S):

- Sigurd Beier Sloth, Centre for Health Sciences Education, Aarhus University, Denmark
- Rune Dall Jensen, Corporate HR, MidtSim, Central Denmark Region, Denmark
- Kristian Krogh, Research Center for Emergency Medicine, Aarhus University, Denmark

ABSTRACT:

Summary: This masterclass will give an introduction to the concept of self-regulated learning (SRL) followed by examples of supports for SRL in simulation-based training (SBT). Furthermore, we will elaborate on how debriefing in SBT can promote future learning. Participants will be divided into groups collaborating on designing SBT programs that implement supports for SRL. The masterclass aims to inspire participants for ways to apply and support SRL in SBT. The masterclass is intended for developers, instructors, and clinicians involved in SBT. The masterclass will be given at an introductory level and requires no prior knowledge or experience.

Masterclass: Implementing digital health in the medical curriculum - a bottom-up approach

#MC22 (6806)

Date: Tuesday 8 September

Time: 1145-1245 (UK Time)

Location: Stream 4

PRESENTER(S):

- Felix Machleid, The European Medical Students' Association (EMSA), Germany
- Sophia Hodgkinson, The European Medical Students' Association (EMSA), Italy
- Maria Roque, The European Medical Students' Association (EMSA), Portugal
- Lina Mosch, The European Medical Students' Association (EMSA), Germany
- Philippa Lantwin, The European Medical Students' Association (EMSA), Germany

ABSTRACT:

Summary: The digital transformation of health care represents an immense challenge modern health care systems are facing. For a transition securing the highest standards of health care, the workforce needs to integrate the newest technologies and acquire new sets of skills. Addressing this issue, EMSA developed a toolkit to empower future healthcare professionals to implement digital health skills into medical education. In this masterclass we will discuss the importance of keeping the health professions curriculum up-to-date with emerging technologies, to pinpoint needs of future health professionals and reflect on the role of students and educators in transforming the medical curriculum.

Masterclass: OSCEs and Psychological Safety: A Crucial Factor for Standardized Patients, Faculty and Learners

#MC23 (3603)

Date: Tuesday 8 September

Time: 1145-1245 (UK Time)

Location: Stream 5

PRESENTER(S):

- Elizabeth Kachur, Medical Education Development, Global Consulting, USA
- Jenny Lee Yuen Wong, Yishun Health, Singapore
- Sheng-Po Kao, Hualien Tzu Chi General Hospital, Taiwan
- Chaoyan Dong, Sengkang General Hospital, Singapore

ABSTRACT:

Summary: Psychological safety refers to “showing one’s self without fear of negative consequences to self-image, status or career” (Kahn, 1990). It is critical for optimal performance by all involved in OSCEs. For example, learners cannot be too anxious to ask sensitive questions, simulated/standardized patients must not avoid portraying scripted emotions, and observing faculty cannot hesitate to evaluate accurately because of fear of being judged unfairly. Through several reflection exercises this interactive masterclass will analyze various threats to psychological safety in OSCEs, and participants will develop prevention and management strategies by sharing experiences and exploring new ideas.

Masterclass: Breaking the taboo: discussing spirituality and beliefs with your patients and your students

#MC24 (3533)

Date: Tuesday 8 September

Time: 1415-1535 (UK Time)

Location: Stream 3

PRESENTER(S):

- Veronica Selleger, Amsterdam UMC, Location VUmc, the Netherlands
- Zamzam I.A. Ali, Kismayo Medical Centre, Somalia
- Aviad Haramati, Georgetown University, USA
- Maaïke Matulewicz, Amsterdam UMC, the Netherlands
- Monica van de Ridder, Michigan State University College of Human Medicine, USA

ABSTRACT:

Summary: A crucial aspect of patient care is to inquire about beliefs, personal values or spirituality. If students are to be skilled in communicating these topics with patients, we need to teach and model a respectful, open-minded approach. In this masterclass, involving a diverse team, participants will reflect on challenges educators face in sharing beliefs and spirituality. Key goals are: (a) how to create a learning environment for safe and authentic sharing and (b) how to discuss these issues. The session offers the opportunity to explore beliefs of colleagues (presenters and participants), and its impact on their educational and clinical roles.

Masterclass: How motivated are my students? How could I increase my students' motivation and engagement?

#MC25 (7029)

Date: Tuesday 8 September

Time: 1415-1515 (UK Time)

Location: Stream 4

PRESENTER(S):

- Asta B Schram, Iceland
- Brett Jones, Virginia Tech, Educational Psychology, USA
- Abigail G. Snook, University of Iceland, School of Health Sciences, Iceland

ABSTRACT:

Summary: The purpose of this Masterclass session is to (a) present practical teaching strategies that instructors can use to motivate students and (b) explain how to use an inventory aligned with these strategies to assess students' motivation to engage in learning. These research-based strategies and inventory have been used successfully in other fields and evidence suggests that they can also be implemented in medical education. This session will be of interest to anyone (instructors, faculty developers, directors, administrators, and researchers) who wants to learn how to use motivation strategies or to assess student motivation in an activity or class.

Masterclass: Innovation in Surgical Education Technologies: COVID-19 and Beyond (Surgery Track session)

#MC26 (7361)

Date: Tuesday 8 September

Time: 1415-1515 (UK Time)

Location: Stream 5

PRESENTER(S):

- Helen Macrae, University of Toronto, Canada
- Mark Cohen, University of Michigan Hospital and Health Systems, USA
- Daniel A Hashimoto, Harvard Medical School, USA
- Bonnie Miller, Vanderbilt University Medical Center, USA

ABSTRACT:

Summary: The COVID-19 pandemic has necessitated the rapid uptake of innovative technology for clinical care and surgical education. For example, telemedicine has rapidly evolved into an essential component of clinical surgical care, with many institutions ramping up to 60-80% of their surgical clinic encounters as telemedicine visits. This dramatic digital evolution of surgical clinics has led to both opportunities and challenges in surgical education. The integration of learners successfully into this digital environment, ensuring meaningful educational experiences has been a key challenge. Artificial intelligence (AI) is also a burgeoning field. AI is loosely defined as the study of algorithms that give machines the ability to reason and perform complex tasks. There has been a growing interest in applying AI technologies to surgical practice and education. For example, there are current international efforts at applying this technology for both technical and nontechnical skills training. Again, how will educators adopt innovations using AI to enhance the learner experience.

Masterclass: Assessing Assessment. Best practice approaches in assessment from ASPIRE assessment award winners

#MC28 (4497)

Date: Tuesday 8 September

Time: 1645-1745 (UK Time)

Location: Stream 4

PRESENTER(S):

- Debra Klamen, Southern Illinois University School of Medicine, USA
- Anna Cianciolo, Southern Illinois University School of Medicine, USA
- Heeyoung Han, Southern Illinois University School of Medicine, USA

ABSTRACT:

Summary: Creating a comprehensive and excellent assessment program in medical education is a large and complicated task. Using the ASPIRE award criteria for excellence in assessment as a blueprint, the presenters will discuss how to create such a program at participant schools. The Southern Illinois University School of Medicine is one of a very few schools to have received the Excellence in Assessment ASPIRE award, and would like to help participants move toward that goal too. Through a combination of lecture, discussion, and work-booking, participants learn tools to improve their institution's assessment program, and if interested, apply for the ASPIRE award.

Masterclass: Creating a Faculty Development Program – Building on Opportunities and Overcoming Challenges (Faculty Development Committee session)

#MC29 (3583)

Date: Tuesday 8 September

Time: 1800-1900 (UK Time)

Location: Stream 3

PRESENTER(S):

- Yvonne Steinert, Institute of Health Sciences Education, McGill University, Canada
- Ivan Silver, University of Toronto, Canada

ABSTRACT:

Summary: Building a faculty development (FD) program can be a challenging yet exhilarating experience for health professions educators and administrators. A systematic approach that is based on theoretical assumptions, trends in health professions education, adult learning principles, clear goals and objectives, an explicit design strategy and programmatic evaluation, can help to overcome the many challenges inherent to implementing a FD program. The goal of this Masterclass is to provide participants with an opportunity to review the available evidence, discuss a suggested design framework, and exchange experiences in creating a FD program, using their own challenges and opportunities to guide the conversation.

Masterclass: Teachable Moments or Missed Opportunities? Applying Lessons Learned from Healthcare Simulation to Real-World Clinical Debriefing

#MC30 (3728)

Date: Tuesday 8 September

Time: 1800-1900 (UK Time)

Location: Stream 4

PRESENTER(S):

- Ross Scalese, University of Miami Gordon Center, USA

ABSTRACT:

Summary: Experiential learning theory underpins the way we learn. Feedback, especially with guided reflection, is an essential element in experiential learning and also plays a crucial role in the acquisition and maintenance of expert performance through deliberate practice. Debriefings are a form of feedback that occur after nearly every simulation training event, but surprisingly, are far less common in clinical teaching settings. Educators cite lack of time, appropriate (psychological and physical) space, and training for facilitators as barriers to debriefing in clinical contexts. This Masterclass aims to equip clinical educators with tools and strategies to create a culture that promotes routine debriefing practice to enhance learning and performance in the clinical environment.

Masterclass: Developing longitudinal integrated clerkships – managing change and building sustainability

#MC31 (7041)

Date: Wednesday 9 September

Time: 0800-0900 (UK Time)

Location: Stream 4

PRESENTER(S):

- Maggie Bartlett, University of Dundee School of Medicine, UK
- Ian Couper, Ukwanda Centre for Rural Health, Stellenbosch University, South Africa
- Ann Poncelet, University of California San Francisco, USA
- Paul Worley, Prideaux Centre for Research in Health Professions Education, Flinders University, Australia

ABSTRACT:

Summary: Developing longitudinal integrated clerkships – managing change and building sustainability
Longitudinal Integrated Clerkships (LICs) are increasingly employed by medical schools. Introducing a LIC is complex and involves multiple stakeholders. There is a need to maximize the sustainability of a new LIC program, but there is limited literature that considers what is needed for a LIC to be maintained over time, including issues of acceptability to students, achievement of curricular goals, impact on the health needs of the community, cost-effectiveness and influence of context. This Masterclass will use presentations and facilitated discussions to explore key factors in ensuring sustainability of LICs and identify areas for future research collaboration.

Masterclass: Global Health Classroom: A model for interinstitutional partnerships for collaborative global health learning using digital technology

#MC32 (4300)

Date: Wednesday 9 September

Time: 0800-0900 (UK Time)

Location: Stream 5

PRESENTER(S):

- Roshit Bothara, University of Otago, New Zealand
- Malama Tafunai, University of Otago, New Zealand
- César Lucio-Ramirez, Tecnológico de Monterrey, Mexico
- Andrew Miller, University of Otago, New Zealand

ABSTRACT:

Summary: Collaborative partnerships between institutions for global health learning should aim for reciprocity to provide mutual benefits. Global Health Classroom (GHC) is a case-based global health learning model involving medical students from different countries and health disciplines learning about each other's health systems, cultures, and determinants of health in a "virtual classroom" via videoconference. It has been developed and implemented at medical schools in New Zealand, Fiji, Samoa, and Mexico. GHC was awarded a Patil Innovation Award in AMEE 2019. The workshop will focus on how teachers and institutes can utilise the GHC for collaborative global health learning. We will also explore potential collaborations among the workshop participants.

Masterclass: How to create educational events fostering competency-based continuing professional development

#MC33 (4308)

Date: Wednesday 9 September

Time: 0915-1015 (UK Time)

Location: Stream 4

PRESENTER(S):

- Leila Niemi-Murola, University of Helsinki, Finland
- Lena Sjöberg, University of Helsinki, Finland
- Juha Pekka Turunen, Finnish Medical Doctors Society Duodecim, Finland

ABSTRACT:

Summary: The design of continuing professional development events is often very traditional, consisting of lectures and group work. Practical learning goals enforce learning and they should include multiple levels of Bloom's taxonomy. If the intended learning outcomes emphasize only the lower levels of Bloom's taxonomy, namely acquisition of knowledge, use of traditional methods might be appropriate. Designing educational events based on competencies starts by defining the intended learning outcomes and aligning the instructional methods and assessment accordingly. In this workshop, the emphasis will be on constructing educational events based on different competencies.

Masterclass: Entrustment-Based Discussions: A tool for front-line educators to support entrustment decisions for EPAs

#MC34 (3594)

Date: Wednesday 9 September

Time: 1445-1545 (UK Time)

Location: Stream 4

PRESENTER(S):

- Maryellen Gusic, University of Virginia School of Medicine, USA
- Carrie Chen, Georgetown University School of Medicine, USA
- Harm Peters, Charité - Universitätsmedizin, Germany
- Marrije Hennis, University Medical Center Utrecht, the Netherlands

ABSTRACT:

Summary: As medical schools and postgraduate programs around the world implement Entrustable professional activities (EPAs) to focus assessment, front line teachers need to be prepared to incorporate this assessment framework in their daily work with learners. As supervisors, clinical teachers are required to gather data about learners' abilities so that they can make well-informed decisions about the level of supervision their learners need to safely perform various clinical care tasks. This session will engage participants in an exploration of Entrustment-Based Discussion (EBD) as a tool for "data-gathering" and evaluation of potential risks related to decisions to grant learners more responsibility.

Masterclass: FACILITATE: A Theater-Based Acting Course to Develop the Communication and Interpersonal Skills of Healthcare Professionals

#MC35 (5956)

Date: Wednesday 9 September

Time: 1445-1545 (UK Time)

Location: Stream 5

PRESENTER(S):

- Alexis del Vecchio, University of South Carolina School of Medicine Greenville, USA
- Phillip Moschella, Prisma Health Upstate, USA

ABSTRACT:

Summary: In this hands-on, active, interactive, VIRTUAL workshop, healthcare professionals (attending physicians, physician assistants, nurse practitioners, residents, and all other healthcare workers) will interact with each other, entirely virtually, to participate in acting and theater exercises with the goal to improve their communication, interpersonal and workplace skills. Evidence-based, this course is an interactive, enjoyable means to exercise your hands-on skills of mindfulness, teamwork, and communication to ultimately improve your healthcare practice, resulting in increased patient satisfaction scores. Join us as we *play* together, find the child within ourselves, and develop skills crucial to the practice of modern medicine and healthcare practice.

Masterclass: How to Build a Lecture-Free Curriculum

#MC36 (3549)

Date: Wednesday 9 September

Time: 1600-1700 (UK Time)

Location: Stream 4

PRESENTER(S):

- Dean Parmelee, Wright State University Boonshoft School of Medicine, USA
- Brenda Roman, Wright State University Boonshoft School of Medicine, USA
- Maryam Alizadeh, Tehran University of Medical Sciences, Iran

ABSTRACT:

Summary: This Masterclass will describe why and how a medical school transitioned to a lecture-free curriculum. The presenters will update participants on the latest findings from cognitive neuroscience and psychology on how we learn best, with a focus on the learning of science. Next, they will demonstrate, with participant engagement, two evidence-based instructional strategies that were adopted and adapted to one school's context – making it possible to eliminate lectures. With participant engagement, the barriers and enablers inherent in a major curricular transformation will be addressed to empower participants to work for change at their home institutions.

Masterclass: Using coaching to learn from failure: Crafting a clinical skills remediation program that works for students at your institution

#MC37 (6792)

Date: Wednesday 9 September

Time: 1600-1700 (UK Time)

Location: Stream 5

PRESENTER(S):

- Jean Klig, Massachusetts General Hospital/Harvard Medical School, USA
- Felise Milan, Albert Einstein College of Medicine, USA
- Minal Singh, Faculty of Biology, Medicine and Health, The University of Manchester, UK
- Adina Kalet, Medical College of Wisconsin, USA

ABSTRACT:

Summary: Clinical skills development can vary widely between learners in undergraduate medical training, with some students falling behind their training cohort. Creating an impactful clinical skills remediation program to support struggling learners can be resource intensive and challenging. This masterclass will examine three programs at different institutions to discuss key issues in clinical skills remediation including: identification of the struggling learner, coaching to learn from failure, and video facilitated self-assessment. Brief presentations will be paired with interactive focused discussions. Participants will leave with ideas for how to create or improve the remediation programs and coaching practices at their own institutions.

Masterclass: Keeping your confidential data secure

#MC38 (7358)

Date: Wednesday 9 September

Time: 1715-1815 (UK Time)

Location: Stream 4

PRESENTER(S):

- Ken Masters, Sultan Qaboos University, Oman

ABSTRACT:

Summary: There has always been a need to keep confidential data secure. With COVID-19, many medical educators are now working mostly or exclusively from home, using their personal computers or tablets for work-related activities, and possibly even sharing those computers, tablets, flash drives, or disks with others. How safe is your data?

Masterclass: Escape room concepts for healthcare education - Set up, Conduct, and Debriefing

#MC39 (7367)

Date: Tuesday 8 September

Time: 1800-1900 (UK Time)

Location: Stream 5

PRESENTER(S):

- Peter Dieckmann, CAMES, Denmark
- Oscar Carl Moeller Rosenkrantz, Denmark

ABSTRACT:

Summary: In this highly interactive session, will we help participants understand the potentials and boundaries of escape rooms as teaching concept in healthcare education. We will discuss the practical side of setting up escape rooms, of conducting them for groups of learners, and how to debrief them to maximize the learning. We will also provide our theoretical reasoning behind the use of this innovative and interactive learning method. Participants will be introduced to our experience in Copenhagen and will be guided in the application of the concept in their own settings.

#SC1.1 - Short Communications: Assessment: Feedback

#SC1.1.1 (4559)

Expert and augmented feedback benefit acquisition and retention of complex medical skills

AUTHOR(S):

- *Dario Cecilio-Fernandes, University of Campinas, Brazil**
- Fokie Cnossen, University of Groningen, Países Baixos
- Jenifer Coster, University Medical Center Groningen, the Netherlands
- Debbie Jaarsma, University of Groningen, the Netherlands
- René Tio, Catharina Hospital, Netherlands

ABSTRACT:

Background: Although much is already known about feedback in relatively simple perceptual-motor skills, less is known about feedback in skills that are more complex and require a large amount of background knowledge. Many medical skills are an example of such complex skills, where declarative (biomedical) knowledge needs to be integrated with perceptual-motor skills. Feedback helps learners by guiding their actions and integrating learners' knowledge and skills, but it is unclear how to support the integration of declarative knowledge with skills. We therefore investigated the effect of expert and augmented feedback on acquisition and retention of a complex medical skill (acquiring a transthoracic echocardiogram TTE) in a simulation study.

Summary of Work: 36 medical students were randomly assigned to one of three groups: Expert (EF), Augmented visual feedback (simulator help screen) (HS), and Expert Feedback plus Help Screen (EF+HS). After watching a basic instruction video, participants practiced until proficiency. The outcome measures included a knowledge and practical test, quality of and time needed to obtain the images at acquisition. The tests were repeated after 11 days. The knowledge test was divided into three topics: names of the images, manipulation of the probe, and anatomy of the heart. The practical test consisted of obtaining the images, of which the quality was rated in a 5-point scale.

Summary of Results: Immediately after the training, the students in the EF group were faster than the two other groups. However, this difference was absent after 11 days. After 11 days, the EF+HS group scored significantly higher on image quality than the other groups. Finally, there was a moderate positive correlation between knowledge related to manipulation of the probe with the practical test.

Discussion and Conclusions: Our results demonstrate the superior effect of augmented feedback combined with expert feedback on retention of a complex medical task, corroborating previous literature. Experts seemed to be especially useful for learners because they reduce the cognitive load during practice and therefore help integrating declarative knowledge with the skills themselves.

Take-home Messages: Augmented feedback only improves skill acquisition and retention when combined with expert feedback, possibly because the expert adapts to learners' cognitive load during practice.

#SC1.1 - Short Communications: Assessment: Feedback

#SC1.1.2 (5166)

Providing Effective Feedback on Reflective Practice for Physician Associate Students

AUTHOR(S):

- **Ann Rigby-Jones, Peninsula Medical School, University of Plymouth, UK***
- Nick Cooper, Peninsula Medical School, University of Plymouth, UK
- James Edwards, Peninsula Medical School, University of Plymouth, UK
- Veronica Maynard, Peninsula Medical School, University of Plymouth, UK
- Paul Morgan, Peninsula Medical School, University of Plymouth, UK
- Adele Hill, Peninsula Medical School, University of Plymouth, UK

ABSTRACT:

Background: Reflection is crucial for the active process of learning to occur following an experience. University of Plymouth MSc Physician Associate students critically reflect on their professional development as part of their Professionalism module. Students in Years 1 and 2 submit an anonymously marked, summative 2000-2500 word reflective essay, biannually. Reflection can be challenging and effective feedback is essential to support development. We evaluated our current feedback provision and explored the role of different feedback styles in promoting learning. We particularly wanted to be explicit in our provision of 'feed forward' i.e. developmental comments about how to improve work.

Summary of Work: Tutors (n=6) provided feedback for the first reflective essay written by Year 1 and Year 2 Physician Associate students in 2019, in two ways: 1. Paragraphs: Feedback in our normal 'house style', with a study limit of 500 words. 2. Bullet points: Tutors provided two action points describing what the student has done well, and two action points suggesting areas to focus on for the next essay. The Professionalism lead reviewed all feedback. A week after receiving feedback, students were surveyed about their understanding of, and preference for, the different formats. A thematic analysis was conducted on free-text comments by 2 independent reviewers.

Summary of Results: 84% of students completed the survey. Students overwhelmingly agreed that both feedback types provided the same message. 82% of Year 2 students found bullet point feedback easier to understand while 60% of Year 1 students found their understanding was enhanced by paragraphs. The majority of students in both years, however, felt that the bullet point format would best help them prepare for their next essay. Bullet point feedback particularly supported students with dyslexia.

Discussion and Conclusions: Our study demonstrated value in both feedback formats and allowed us to define 'top tips' for effective feedback for reflective writing. We are reassured that anonymous marking need not disrupt the feedback loop. Paragraphs provide context and individualised feedback but students can struggle to find feed-forward points within free-text.

Take-home Messages: The addition of action points can help students to apply tutor advice to their future work and has minimal impact on assessor marking time.

#SC1.1 - Short Communications: Assessment: Feedback

#SC1.1.3 (5220)

Getting from “How am I doing?” to “How do I get to where I plan to go?” How students process and act on feedback

AUTHOR(S):

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ABSTRACT:

Background: Feedback is an essential component of student development. Studies have explored how students seek feedback during clinical rotations and made recommendations to supervisors on how to give feedback. However, less is known about how students process and act on the feedback they receive. This study explores how students respond to feedback and provides insight to help faculty give more effective feedback.

Summary of Work: We report qualitative data from focus groups conducted at a medium-size medical college in US. Students who completed their core clerkships participated, and data were recorded, transcribed and analyzed for emerging themes. Two co-investigators examined the data through a constant comparative approach to achieve consensus.

Summary of Results: Data were collected from three focus groups with a total of twelve students, 67% of whom were in their third (penultimate) year of medical school and the rest in their final year. Students describe how they process the feedback they receive in four steps: 1) Assess the quality of feedback; 2) Gauge the alignment of the feedback with their self-perception, and their rotation and future goals; 3) Accept/implement or reject/ignore based on the first two steps; and 4) Follow up after implementation. In addition to what is known about high quality feedback (timely, specific and observation-based), students consider meaningful relationships and alignment with self-perception, goals, and prior feedback as important factors when assessing feedback. Consequences such as grades and career impact also play a factor. Finally, students reported few opportunities for follow-up due to lack of feedback alignment, continuity, and time.

Discussion and Conclusions: Our data helps clarify how students process and act on feedback and highlights some ways that faculty members may be able partner with learners in the feedback process. Building a meaningful relationship with learners, eliciting prior feedback received, aligning feedback with their goals and having plans for follow-up may help supervisors deliver feedback more effectively.

Take-home Messages: Feedback should be learner-centered and viewed as an opportunity to partner with the learner to achieve a goal.

#SC1.1 - Short Communications: Assessment: Feedback

#SC1.1.4 (5709)

A systematic review: the impact of feedback on health professionals' task performance – what's the evidence?

AUTHOR(S):

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ABSTRACT:

Background: Verbal face-to-face feedback plays a central role in workplace based training for health professionals. Experts endorse the view that feedback enhances performance but the evidence is limited.

Summary of Work: We conducted a systematic review investigating the impact on health professionals of verbal face-to-face feedback on workplace task performance, compared to no feedback, following PRISMA guidelines (PROSPERO protocol registration ID CRD42017081796). We searched the full holdings of Ovid MEDLINE, CENTRAL, Embase, CINAHL and PsycINFO up to 1st February 2019 and reference lists of included studies. Studies were included if they were randomised controlled trials investigating the effect of verbal face-to-face feedback from a health professional on the objective performance of an observable workplace task by another health professional, compared to no feedback, and available as full text publications in English. Screening, data extraction and quality assessments were conducted by two authors independently. For included studies, Cochrane's risk of bias tool and GRADE criteria for the quality of evidence were used. Outcome data from included studies were pooled in meta-analysis using a random effects model.

Summary of Results: The literature search identified 1238 articles, from which 11 studies met inclusion criteria. Meta-analysis involved 10 comparisons from 8 studies, involving 392 health professionals and found a standardised mean difference (SMD) of 0.7 (95% CI 0.37-1.03; $P < 0.001$) in favour of feedback. The prediction interval was SMD -0.06 to 1.46. Although the quality of evidence was low, primarily due to risk of bias and publication bias, individual study effects consistently favoured feedback.

Discussion and Conclusions: The meta-analysis provides evidence that verbal face-to-face feedback in the health professions may result in a moderate to large improvement in workplace task performance, compared to no feedback. However, more research is needed as we found a lack of high-quality trials that clearly described constituents of feedback interventions, which were likely to influence performance.

Take-home Messages: This is the first systematic review and meta-analysis to provide evidence to support the beneficial impact of verbal face-to-face feedback on the performance of health professionals.

#SC1.1 - Short Communications: Assessment: Feedback

#SC1.1.5 (5854)

Self assessment using a rubric followed by feedback as an instructional method for pre-clinical dental tooth preparation

AUTHOR(S):

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ABSTRACT:

Background: Student self-assessment is often an overestimation of achievement, with some of the best work under-rated. Rubrics are a versatile tool and a plan was made to incorporate these to discover their potential in instruction and transparency of assessment. The objective of this study is to improve learning, practical skill and self-assessment ability by using a structured rubric for self-assessment followed by feedback.

Summary of Work: A rubric was formulated for the disto-occlusal cavity preparation with 4 steps divided into 19 items. The exercise was completed by the student and then self-assessed using the rubric, containing information on how to mark each step with cavity measurements and angulations. Feedback was provided at the end of the exercise. During the summative assessment at the end of the module, the students were asked to repeat the same, with marks being allocated to the accuracy of the self assessment in addition to the actual preparation.

Summary of Results: A paired samples t-test was carried out. The difference in instructor scores ($M=.37$ to 3.04 , $SD=.23$ to $.67$) and student scores ($M=.86$ to 3.4 , $SD=.34$ to $.86$); $t(75)=-.4$ to -8.24 , $p = .001$ to $.673$. The performance was significantly overestimated in 12 out of the same 19 items of the rubric. For the disto-occlusal cavity preparation, the students own marks correlated significantly on 8 items out of 19 with the instructors, $r(75) -.02$ to $.577$, p value = $.001$ to $.87$. Despite this, however, students reported an eagerness to follow the rubric and considered it useful for learning.

Discussion and Conclusions: Students continue to overestimate the marks they should receive. The exercises which the students perform better are more well correlated with instructor scores. Student self-evaluation should not be used as a reliable assessment method. Rather it can be used as an instructional method and a way to structure feedback to make it more comprehensive and targeted towards weak areas which need improvement and areas of strength.

Take-home Messages: Rubrics improved instruction and promoted communication at the same level by incorporating self-assessment and subsequent timely feedback. It also provides transparent and fair assessment. Rubrics cannot be a substitute for repetitive practice.

#SC1.1 - Short Communications: Assessment: Feedback

#SC1.1.6 (6281)

Building a rubric for peer guidance on feedback, debriefing and conflict management: Delphi method in an expert community of practice

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ABSTRACT:

Background: Feedback and debriefing benefit from sharing one's own perspective and goals, eliciting those of others to collaborate, and learn across differences. Evidence-based scripts build skills, but scarce expert time, ineffective peer feedback, and lack of precision on how to assess or improve "bite-sized" chunks of conversation inhibit rapid skill-building of these crucial skills. Breaking conversations down into blocks supports skill-building. We propose a multi-use conversational "Advocacy Inquiry Molecule" (AIM) and a rubric to assess it. Such a rubric can facilitate rigorous peer guidance for in-person or distributed on-line communities of practice. We drew on existing research to develop a AIM for conversations that benefit from explicit signposting of topics, sharing one's own perspective, learning other people's, and bridging those perspectives to support collaboration or learning.

Summary of Work: This Delphi method study built a consensus behaviorally anchored rating scale (BARS) based on the 5 elements of the AIM. Conducted in 4 anonymous survey rounds (R1-4) with research ethics approval, the study canvassed 39 international experts. They described "good" and "poor" behaviors for each element (R1); rated behaviors clumped into thematically alike descriptors according to importance (R2); selected the 6 most important (R3); classified them according to degree of difficulty to master (R4). Elements are rated with a seven-point scale: "Ineffective"(1) to "Extremely effective"(7).

Summary of Results: In R1, investigators coded 871 raw descriptors into 118 like terms to provide the first set of good and poor descriptors for the 5 elements. R2 ranked descriptors and R3 selected 6 descriptors for each element. Bottom ranked items were discarded. Agreement on kept descriptors was high (87 to 100% per descriptor), agreement on discarded ones was lower (56 to 91% per descriptor). In R4, descriptors described were categorized from beginner to advanced (higher score). Final descriptors and rank order were used to create BARS (element "Preview" in Table).

Discussion and Conclusions: The rubric built through 4 rounds of Delphi study could lower barriers to mastering key conversation skills. It can be used to spur peers to practice and provide each other feedback on defined "bite-sized" chunks of conversation.

Take-home Messages: Through rigorous investigation, a community of practice can surface mental models about feedback standards.

#SC1.1 - Short Communications: Assessment: Feedback

#SC1.1.7 (6325)

Timing of Feedback for Test-Enhanced Transfer of Learning

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ABSTRACT:

Background: Feedback is a key potentiator of Test Enhanced Learning (TEL). The timing of feedback delivery is also thought to be important. For example, feedback delivered immediately after an item may optimize error correction, while delayed feedback could promote retention. This study investigates the impact of timing of post-test feedback on transfer of medical knowledge within a test-enhanced learning framework.

Summary of Work: Second year students in a 4-year graduate entry medical program sat an initial 18-item MCQ test with feedback presented using two different timings – immediate, after each item in a block of 9 items and delayed, for all items after a block of 9 items. Feedback was focused on the conceptual underpinnings of the question and was designed to promote knowledge transfer. On the first test occasion, participants answered 18 parent items with feedback (immediate and delayed), and then attempted 36 additional items that were closely related (near transfer) and more distantly related (far transfer) to the parent items. In a repeat test after one week, participants answered 36 further items that were alternative near- and far-transfer versions of parent items. Feedback was only provided for the initial parent items so that we could evaluate the effects on short term (the first 36 additional items) versus long term at one week (the second 36 near and far transfer items). Feedback timing, and near- and far-transfer items were randomized within and across participants.

Summary of Results: Participants spent a similar amount of time reviewing immediate and delayed feedback. Far transfer items were consistently more difficult than near transfer items, but there was no significant effect of feedback timing on subsequent performance regardless of the correctness of the original response.

Discussion and Conclusions: We found no effect of feedback timing on near or far transfer of learning in an authentic MCQ test setting.

Take-home Messages: The absence of an effect of feedback timing on learning transfer suggest that there is likely to be no disadvantage to delaying provision of feedback until the completion of all items rather than after each item in formative test settings.

#SC1.1 - Short Communications: Assessment: Feedback

#SC1.1.8 (6510)

Proposing the “3-2-1 feedback model ” to clinical clerkship training

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ABSTRACT:

Background: A suited feedback from clinicians allows medical students to derive self-awareness in areas of strength and areas for improvement, which clarifies expectations and demonstrates suggestions. In order to improve students’ skills, knowledge, and learning motivation as they progress towards qualification as doctors, we therefore proposed an innovated “3-2-1 feedback model”.

Summary of Work: The “3-2-1 feedback model ” serves as a specific template for balanced feedback : 3 specific feedbacks in total ,2 positive feedbacks, and 1 negative feedback. Furthermore, clinicians provide actionable steps instead of general ideas after thorough discussion with students, which actually helps them improve performance and reach their goals more efficiently. Clerkship students who were on their first clinical attachment, took part in the program. Each of them received a “3-2-1 feedback” at the time they finished the OSCE simulation test.

Summary of Results: All fifty first-year clerkship students from MacKay Medical College were invited to participate in the study, and forty-four of them agreed. After receiving feedback, students were asked to complete a questionnaire, with more than 75% positively commented on the “3-2-1 feedback model ” for giving more useful and pertinent feedback. Furthermore, many of their reflections to open-ended questions revealed that learning motivation as well as sense of achievement have significantly elevated. Specifically, a few students even mentioned that they were more willing to accept and handle negative feedback through this way.

Discussion and Conclusions: The “3-2-1 feedback model ” encourages the clinicians to give both positive and negative feedbacks, which brings up the ideas of cultivating motivation and competitiveness. Thus, students get access to build competence in various aspects such as, medical knowledge, patient care, communication skills, and so on.

Take-home Messages: The “3-2-1 feedback model ” is a practical way for instructors to help students discover their potential. Not only do they improve knowledge acquisition but learner motivation and satisfaction.

#SC1.1 - Short Communications: Assessment: Feedback

#SC1.1.9 (6941)

Students fail to accept peer feedback due to lack of communication skills

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ABSTRACT:

Background: Development of effective communication skills is one of the important goals in medical education. As the peer to peer feedback is not a regular part of our learning process, the aim of the study was to evaluate the readiness of the students for unbiased feedback between each other and open discussions of their mistakes.

Summary of Work: Participants were 2 lecturers and 22 MD students of the 7th semester. After selection the participants signed informed consent. The study was conducted in January of 2020 during the pediatric clerkship. Students were divided in 2 groups and one of the students was giving the feedback to his/her peers after every class during 11 days. The questionnaires were developed for the students and lecturers.

Summary of Results: 8 students answered that giving feedback to their peers was difficult. According to the answers 8 students were absolutely and 9 mostly unbiased while giving the feedback. Both lecturers mostly agreed with the feedback given by the students. However 16 students indicated that feedback from peers can initiate conflicts between them. Both teachers and 12 students think that talking about mistakes leads to interesting and helpful discussions. However only 7 students agree that peer feedback has a positive impact on receptiveness of own mistakes, while 15 disagree. 16 students disagree that peer feedback improves the way of communication between the students and 16 students disagree to have peer feedback as a regular part of future classes.

Discussion and Conclusions: According to our results most of the students are able to give correct feedback and analyze the positive impact of the open discussions about their mistakes. However their communication skills are not good enough to avoid conflict situations and accept remarks from their peers. We suppose that one of the reasons of this can be less practice of sharing their feedback with each other. The best way to improve students communication skills might be to divide them in smaller groups and giving them different activities which encourage them to interact with each other or pair two students together and changing them periodically.

Take-home Messages: Open feedback between students can lead to conflict situations due to the lack of communication skills.

#SC1.1 - Short Communications: Assessment: Feedback

#SC1.1.10 (6997)

Physicians Reactions to Multisource Feedback Data and Facilitated Feedback

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ABSTRACT:

Background: Research identifies the critical role that facilitation plays in promoting reflection and supporting performance change following multisource feedback (MSF). The R2C2 model was developed for initiating feedback conversations using data to plan and implement practice change. This study investigates how physicians who underwent MSF with quantitative and qualitative data, followed by a conversation with an R2C2-trained facilitator, reacted to their feedback; and which CanMEDs roles were targeted in the development of action plans.

Summary of Work: For this study, 139 Alberta physicians underwent MSF followed by a one-hour conversation with a trained facilitator to review the MSF data and discuss action plans. Following the conversation, each physician created up to three action plans. For each session, facilitators wrote a report describing their interaction with the physician, including a section on how the physician reacted initially to their MSF data. Participant data and facilitator reports were used to code physicians' reactions as either receptive or non-receptive. In addition, observable change targeted in physician action plans was coded against the CanMEDS framework.

Summary of Results: The majority of physicians (96%) were receptive to their MSF data. Regardless of reaction, most action plans targeted the Communicator (40%), Collaborator (15%) and Professional (15%) CanMEDs roles. Less receptive physicians were more likely to target changes related to the Professional role (25%), and less likely to target changes related to the Collaborator role (4%) compared to those who were more receptive (15% and 16%, respectively).

Discussion and Conclusions: Using this MSF with quantitative and qualitative data along with a facilitated feedback process, there appears to a relationship between physician reactions to MSF, receptivity, and targeted roles in developed action plans.

Take-home Messages: There appears to be a relationship between the MSF data, facilitated feedback and action plan creation. Facilitated feedback may help physicians to create action plans for quality improvement.

#SC1.2 - Short Communications: Assessment: General

#SC1.2.1 (4875)

Exploring the factors that influence the development of self-assessment skills in first and second-year undergraduate medical students at the University of Montreal

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ABSTRACT:

Background: As medicine is evolving at a rapid pace, many faculties have adopted a self-regulated learning (SRL) approach to develop autonomous learners (Frank et al., 2010). An essential pre-requisite to SRL is self-assessment (White et al., 2014). At the University of Montreal, the Personal Learning Plan is a mandatory self-assessment activity for first and second-year undergraduate medical students, yet, students express reluctance engaging in this activity. Thus, the aim of this study was to explore how first and second-year medical students perceive SA and the factors that shape the latter.

Summary of Work: A qualitative study including one focus group and six individual semi-structured interviews was conducted. The researcher sought to obtain a purposeful sampling. Thematic analysis as described by Braun and Clarke (2006) was the method of data analysis. To add interpretative rigour, a member check was performed and was operated in three different ways (Kitto et al., 2008; Lincoln & Guba, 1985).

Summary of Results: The transition from adolescence to adulthood constituted the overarching theme. The first main theme pertained to the perception of self-assessment as a subjective process and encompassed three subthemes: the limited perceived value of self-assessment, the non-recognition of accurate of self-assessment and the lack of integration of external data into the definition of self-assessment. The second emergent theme centred on participants' motivation when engaging into self-assessment and was further subdivided into internal and external influences that shaped this motivation.

Discussion and Conclusions: The key features and concepts related to the transition to adulthood, such as the development of identity and the achievement of cognitive and psychological maturity, gave meaning to findings and were helpful in understanding the first and second-year medical students' engagement in self-assessment. Finally, Self-Determination theory by Ryan & Deci (2000) provided a useful framework to analyse the participants' motivation and was the basis for the recommendations to improve the Personal Learning Plan.

Take-home Messages: The educational recommendations presented in light of the findings of this study are: 1. Cultivating self-determined motivation 2. Providing scaffolding 3. Enhancing opportunities and quality of feedback 4. Making the self-assessment activity relevant to the students.

#SC1.2 - Short Communications: Assessment: General

#SC1.2.2 (5190)

Designing psychometric test for prospective medical students based on cognitive model of learning: paradigm shift to student-centered learning

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ABSTRACT:

Background: Inefficient learning strategies lead to more stressful educational environments hindering adequate cognitive processing of information, making students unable to study independently. In this study, we developed the psychometric test for prospective medical students based on constructed cognitive model that will allow teachers to design effective learning environment tailored to specific needs of students.

Summary of Work: We surveyed 313 current medical students using Perceived Stress Questionnaire, Freiburg Personality Inventory, 3x2 Achievement goals model, Kolb learning styles inventory, Dunlosky learning habits inventory and Cognitive Load Measuring Instrument. Academic achievements were measured by progress test score and GPA standardised by year of study. The model was then built using structural equation modelling. Based on this model, we developed the psychometric test which included these 5 questionnaires that was administered to 546 prospective medical students.

Summary of Results: Multiple regression analysis revealed 9 parameters statistically significantly influencing academic achievements. Based on regression equation, we calculated the psychometric score predicting the future academic performance of prospective students. The psychometric test revealed the lack of sanguine personality (the average score was only 37.2%) and self-directed educational habits (the average score for learning habits 50.7%, for convergency – 57.7%) required of future medical worker. At the same time all prospective students displayed the high motivation to academic achievements (the average score of 70.3%) and low perceived stress (50.7%).

Discussion and Conclusions: Structural equation modelling confirmed the theoretical predictions that convergent learning combined with distributed practice and practice-testing contribute to academic stress reduction and produce less extraneous cognitive load in students. This contributes to better germane cognitive load and academic achievements. The sanguine personality traits also contributed to lower stress; however, even neurotic personal traits could be overcome with adequate achievements goals and efficient study habits. The necessary soft skills and psychological profile of future doctor could be formed by the addressed learner support and consultancy in the framework of constructed cognitive model of learning.

Take-home Messages: Shifting to new paradigm of student-centered learning requires more than just good knowledge-based teaching. Our research showed the importance of initial diagnostics of prospective students with the psychometric test for further tailored educational interventions to develop effective student-centred approach to teaching.

#SC1.2 - Short Communications: Assessment: General

#SC1.2.3 (5856)

How Do Medical Students' Perception of Written Assessment Influence Their Learning Approach?

AUTHOR(S):

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ABSTRACT:

Background: A number of learning approaches exists: surface versus deep and strategic versus non-strategic. Educators aspire that their students adopt a deep learning approach. Little is known, however, about how students perceive various assessment formats or the influence of these perceptions on their approach to learning.

Summary of Work: We conduct a descriptive study to document student perceptions of assessment formats used in medical education and how these influence their learning approach. Our hypothesis is that medical students' perceptions of the assessment formats influences their learning approach; with knowledge recognition formats encouraging more superficial learning approaches and knowledge generation formats encouraging more deep learning approaches. A questionnaire containing closed and open ended questions was used to explore our aim. 186 medical students who completed their rotation in Obstetrics & Gynaecology during the 2018/19 academic year were invited to complete the online survey. Demographic data and quantitative outcomes were characterized using descriptive statistics. Qualitative outcomes were analysed using content analysis for themes.

Summary of Results: Utilising Chi and Wylies ICAP framework, we find that majority of our respondents are actively, constructively and interactively engaging with their learning materials and employ a strategic manner in learning the subject. Most confirmed no change in learning approach when preparing for the end-of-rotation and end-of-year assessment. Majority would change their current study strategy if the written assessments were changed to SAQs.

Discussion and Conclusions: This study provided reassurance that while our current method of written assessment is not perfect for encouraging deeper learning approach, it is indeed encouraging broader learning of O&G topics. Understanding student perspectives of written assessments and how it influences their learning approach allows tailoring of written assessments and adjustment in teaching approach in order to foster deep learning approach. Understanding the materials used as study resources gave an insight to medical educators when preparing the teaching materials that will best enhance students learning experience.

Take-home Messages: Student perceptions of written assessment methods affect their learning approach. A sizable portion of respondents opined that knowledge-generation assessment formats would encourage deeper-learning approach. This perception could be changed by preparing learning materials using high-quality SBAQs that engages higher-order cognitive level.

#SC1.2 - Short Communications: Assessment: General

#SC1.2.4 (6414)

Learning-oriented assessment innovations to promote anatomy learning

AUTHOR(S):

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ABSTRACT:

Background: Despite access to high quality learning materials, junior clinicians frequently report inadequate confidence in anatomical knowledge foundational sound clinical practice. Therefore, this project aims to enhance anatomy learning in visuospatial and language domains, develop students' insights regarding effective learning strategies, build confidence to accurately recognise and apply knowledge, and enable teachers to identify and support potentially at-risk students in growing cohort sizes.

Summary of Work: Class structure and assessment methods were revised in two third year undergraduate anatomy courses to incentivise optimal preparation for laboratory classes and enhance student-to-student and student-anatomical material interactions within each 2-hour practical class. We added pre-class online quizzes, in-class team-based tasks and self-assessment tools. All tasks were designed to develop, consolidate, test and provide feedback regarding core visuo-spatial and verbal anatomy knowledge and learning strategies. Final examination performance was compared to measures acquired throughout the course, in addition to measures of spatial ability and attitude to anatomy practical classes at the commencement of the course.

Summary of Results: Attendance improved from approximately 75% to over 90%. Student-student and student-specimen interactions were high during in-class team-based tasks. Course attrition and failure rates decreased and student satisfaction measures improved. Final examination scores correlated positively with pre-class online task engagement ($r = 0.48$, $p < 0.0001$), including early engagement. Ongoing work aims to identify potential impacts of pre-existing visuospatial ability, attitudes to laboratory tasks and self-assessment measures.

Discussion and Conclusions: These pedagogical and assessment innovations were achieved using existing staff expertise, anatomical resources and learning management systems. They effectively incentivised laboratory class preparation and student interactions with each other and with learning materials, and promoted student success related to visuo-spatial and language learning. Early detection of students at risk of poor outcome may be assisted by monitoring engagement with preparatory on-line tasks via the learning management system.

Take-home Messages: Learning-oriented assessment tasks can improve student engagement, learning outcomes and satisfaction in undergraduate anatomy topics, and may aid early identification of students requiring additional support to succeed.

#SC1.2 - Short Communications: Assessment: General

#SC1.2.5 (4976)

Comparing the educational impact of MCQs and SEQs on Learning Approaches of Dental Students

AUTHOR(S):

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ABSTRACT:

Background: Assessment has a direct impact on the learning approach used by the students. Students adopt surface learning when assessment tool only assess lower level of cognition while they adopt a deep approach when the assessment is focused on exploring deeper understanding of the subject. This study was conducted with an aim to assess the impact of assessment tool: MCQs and SEQs on learning approach of dental students.

Summary of Work: It was a quantitative co-relational study conducted on 2nd and 4th year students of BDS. A pre-validated “Revised Study Process Questionnaire” was used to identify the approaches used by students for SEQ and MCQ examinations. After obtaining approval from ERB, written consent was taken from participants. Data was analyzed by using SPSS version 21. To determine the relationship between learning approach and assessment tool, Spearman’s rho correlation coefficient and Wilcoxon signed ranks test were used. Internal reliability was also calculated.

Summary of Results: Out of 150 students, 96 completed the questionnaire. 32 male and 64 female students participated in this study. Reliability for MCQ examination is 0.67 and for SEQ’s is 0.71. Correlation test showed that surface approach correlates significantly with MCQ’s (0.73) while a negative co-relation exists with SEQ’s (-0.14). Deep approach has a strong and significant correlation with SEQ’s (0.80) as compared to MCQ’s (0.056).

Discussion and Conclusions: Learning approaches used by the students in order to pass the examination depends on the assessment tool in addition to other factors like self-motivation, perception about assessment and situation. This study suggested that students used deep approach for SEQ’s while they adapted surface approach for MCQ’s. It may be due to the fact the students perceive MCQS as assessing lower order thinking and hence used surface approach for its preparation while adopts deep approach for the essay examination as they are perceived to assess not only higher order thinking but also analytical and critical thinking skills.

Take-home Messages: Students are strategic learners when it comes to learning and assessment. Assessment tools used in any examination should be designed to assess deeper understanding of the subject rather than surface memorization in order to motivates the student to adapt deep approach to learning.

#SC1.2 - Short Communications: Assessment: General

#SC1.2.6 (5047)

Examiner background as a factor in assessor variance

AUTHOR(S):

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ABSTRACT:

Background: Objective Structured Clinical Examination (OSCE) using the borderline group as the standard-setting method is an established method to assess clinical competence in medical education. However, this method requires a large number of examiners who are familiar with the competency level of the students being examined. The examiners are often recruited from various sources. This variability could influence the validity and reliability of the examination. This study focused on the examiners' background (General Practitioners, Specialists and Basic Sciences Faculty) as a factor in assessor variance.

Summary of Work: The scores of students who were graded as a borderline score of Year-3 medical students of 3 cohorts (n=583) is collected in 3 OSCE of 16 stations, 5 minutes each. The scores were categorised according to the type of examiner who evaluated the students. Using SPSS, the data were analysed to calculate the correlations between examiner types. The stations were blueprinted and aligned to the curriculum map. All examiners received training and underwent calibration in the understanding of the competency expected.

Summary of Results: 1965 scores (out of 9322) were marked borderline and analysed. The mean scores for all three group ratings were lowest among the general practitioner and highest among the Basic Science Faculty. One-way ANOVA performed shows there are statistically significant differences ($p < 0.0001$) in these scores. The scores between Specialist and Basic Sciences Faculty were more closely related and that the General Practitioner was significantly different from the other two examiner categories in all global ratings from pass, borderline and fail.

Discussion and Conclusions: Despite the training and standardisation received, the background of the examiner remains a factor in the perception of global ratings. The general practitioner is the primary deliverers of the clinical skills curriculum, develops questions and coordinates the OSCE. This study is consistent with literature that a significant source of examiner bias in OSCE with positive familiarity associated with a significant increase in ratings. This study demonstrated that the background of the examiner is an important factor in influencing the examiner variance and must be recognised when planning and coordinating the OSCE.

Take-home Messages: Examiner background is an assessor variance in OSCE.

#SC1.2 - Short Communications: Assessment: General

#SC1.2.7 (5902)

Longitudinal assessment of dental students: Building an argument for validity

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ABSTRACT:

Background: Longitudinal data have been proposed as one of the strongest methods for student assessment in clinical subjects (Albino et al., 2008; Dawson et al., 2017). Scottish dental schools have recently adopted a longitudinal assessment system, known as LIFTUPP©, however the data it collects have yet to be meaningfully compared to established assessment methods. This study aimed to investigate the criterion validity of longitudinal assessment by comparing it with the outcomes of final professional degree examinations (held in BDS4&5).

Summary of Work: Group-based trajectory models tracking clinical performance over time were produced for three dental student cohorts (2017-19; n = 234) using a threshold model based on the Bayesian information criterion. General linear models assessed whether longitudinal clinical performance was associated with final undergraduate examination results.

Summary of Results: Different development patterns between groups of students can be identified within LIFTUPP© data. All clinical performance trajectories displayed an upward trend between BDS3 and BDS5. A threshold model with two distinct trajectories fitted the data best for all three cohorts, with one group of students performing better than the other. In the two most recent cohorts, a higher percentage of the better performing trajectory group produced a top fifth performance in the final undergraduate examinations (Cohort 2: 29% vs 18% (BDS4); 33% vs 15% (BDS5)); (Cohort 3: 19% vs 16% (BDS4); 21% vs 16% (BDS5)). No such association was observed in cohort 1.

Discussion and Conclusions: Comparing longitudinal assessment against established methods contributes evidence to a validity argument on using longitudinal data for clinical competence assessment. The association between “better” longitudinal clinical performance and “better” undergraduate examination outcomes indicates LIFTUPP© data have a degree of criterion validity. The lack of association in cohort 1 may have been caused by poorer calibration among assessors following the initial adoption of LIFTUPP© into the BDS curriculum.

Take-home Messages: Trajectories models created using LIFTUPP© data can distinguish different clinical development patterns among undergraduate dental students. “Better” LIFTUPP© data trajectories are associated with improved final undergraduate examination performance.

#SC1.2 - Short Communications: Assessment: General

#SC1.2.8 (6564)

Master challenges in medical assessments together

AUTHOR(S):

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ABSTRACT:

Background: The assessment culture of medical education is changing. It should increasingly focus on the skills required for the medical profession. To this end, a nationwide competence framework for a core curriculum at the faculties has been drawn up with the National Competence Based Catalogue of Learning Objectives for Undergraduate Medical Education (NKLM) in Germany. However, the effort required to implement competence-oriented examinations is high, as there are often not enough resources available for the creation and quality assurance of valid content and the implementation of practice-oriented examinations. Furthermore, for adequate performance recording, a programmatic structure of the examinations in the sense of a curricularly linked overall examination programme is necessary. These challenges can only be implemented in a large network.

Summary of Work: The Umbrella Consortium for Assessment Networks (UCAN) is an academic association of 71 institutions, supported by the non-profit Institute for Communication and Assessment Research. For 14 years UCAN has been developing standards, workflows and tools for the preparation, implementation and quality assurance of examinations. Currently, the association is working in several task forces to implement the new requirements for medical examinations: Digital technologies are becoming increasingly important today. Current developments in the field of electronic testing show, that the usage of computer-based systems and mobile devices is changing.

Summary of Results: More than 600,000 items were written by 12,000 colleagues. Best practice examples for reliable examinations, assessment content and workflows are collected and used in the partner institutions. New exam formats are continuously being developed. So far, approx. 12 million students have been assessed in 35,000 examinations using the UCAN tools.

Discussion and Conclusions: Many years of cooperation in a collaborative network has proven to be an efficient way to meet new challenges in medical assessment. Especially with regard to future requirements for competence assessment and the evaluation of workplace-based testing, networks are highly recommended.

Take-home Messages: Institutions should work together in the field of medical assessments to master common challenges. The successful cooperation at UCAN has shown, that this concept is both innovative and efficient.

#SC1.2 - Short Communications: Assessment: General

#SC1.2.9 (6695)

The International Progress Test as Unsupervised Formative Assessment

AUTHOR(S):

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ABSTRACT:

Background: The International Progress Test (IPT) is an adaptive progress test provided by the European Board of Medical Assessors. In the Medical Faculty of the University of Helsinki, the test is formative. Students participate twice each academic year and have to have at least 10 tests performed before graduation. Students receive an output of the test with which they can identify their strengths and weaknesses. The test is performed fully supervised in an exam hall setting with over 600 students participating. We hypothesize that the performance of students of an unsupervised test would not be inferior to that of those performing the test under supervision.

Summary of Work: In early 2019, 100 students were recruited to participate and randomized to the supervised (Group S, 50 students) and the unsupervised group (Group U, 50 students). In March and November 2019, students in Group S performed the two tests supervised according to the established routine while the students in Group U performed the tests unsupervised. The results of both groups are analyzed in similar manner to those not participating in the study.

Summary of Results: In repeated measures ANCOVA no significant differences were found between the two groups in regard to group allocation or test occasion with the student's academic year as a covariate. Also, the interaction of group and test occasion was not significant.

Discussion and Conclusions: When used as formative assessment, we found that supervision of the IPT does not contribute to the students performance. In the future, formatively used IPT could be performed without supervision. This substantially reduces the need for resources, such as personnel, required to run the test.

Take-home Messages: When used as formative assessment, the IPT can be performed without supervision.

#SC1.2 - Short Communications: Assessment: General

#SC1.2.10 (4775)

Language Interpretation in Undergraduate Medical Examinations: Developing Guidelines for Educational Practice.

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ABSTRACT:

Background: Language barriers can result in the delivery of poorer healthcare services for patients who do not speak the same language as their care provider. While the ability to work through interpreters is a core skill for medical graduates, training in this area is identified as a significant gap in both the medical curriculum and the empirical literature. Consequently, the impetus for this study arose from a need to understand language interpretation practices in undergraduate clinical examinations with the aim of developing guidelines for educational practice.

Summary of Work: The research context involved clinical medical examinations where English speaking medical students are required to examine and take histories from Arabic speaking patients with limited English language proficiency. Action research was used to guide the study as this approach facilitated the examination of particular dynamics within the local setting while also enabling specified action to be taken and evaluated. Consequently Action Research Cycle 1(ARC1) involved evaluating the use of interpreters in clinical examinations while Action Research Cycle 2(ARC2) focused on examining a cloud-based speech recognition system which facilitated the instant translation of Arabic into English and vice versa.

Summary of Results: Data collection involved conducting focus group interviews with a convenience sample of students and translators, while semi-structured interviews were conducted with faculty and an external examiner. Data was then subjected to rigorous thematic analysis, which produced a series of themes. In Action Research Cycle 3 (ARC3) the themes generated from ARC 1 and ARC 2 were reviewed in association with international best practice literature to develop guidelines for educational practice.

Discussion and Conclusions: The guidelines include; developing specific standards of practice to guide language interpretation within clinical examinations; developing specific preparatory programmes for students and interpreters; establishing a steering committee to oversee language interpreter processes; standardising the use of terminology and developing a research stream focusing on language interpretation in clinical examinations.

Take-home Messages: Language interpretation in clinical examinations is highly complex and warrants further research. A focus on examining patient's experiences and exploring the feasibility of utilising language interpretation software within a clinical examination setting would be valuable.

#SC1.3 - Short Communications: Assessment: OSCE

#SC1.3.1 (4125)

Roles of OSCE-progress test for undergraduate medical students during clinical clerkship

AUTHOR(S):

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ABSTRACT:

Background: Due to the proliferation of competency-based frameworks, continuous formative assessments in clinical clerkship are becoming increasingly necessary. However, the methods are problematic, especially with regard to skill and attitude. Progress testing (PT) is a periodical testing approach to assess students' knowledge by providing repetitive opportunities to strengthen their knowledge and self-directed learning attitude. To assess effectiveness of skill and attitude, the objective structured clinical examination-progress test (OSCE-PT) is used in limited postgraduate contexts. However, the role of OSCE-PTs during clinical clerkship remains unclear.

Summary of Work: The fifth and sixth-year students of a medical school in Japan (n=235), took the OSCE-PT in three stations to assess technical and non-technical clinical skills presumed to be achieved to them at their graduation. The students were instructed about OSCE-PT beforehand. They were assessed by an examiner at each station with a checklist (CL), a training level rating scale (TLRS), and a year-adjusted global rating scale (yGRS). The students then received the results and written feedback. Finally, they were asked to provide their perceptions on the OSCE-PT.

Summary of Results: Overall CL scores for the students in their 5th- and 6th-year were 58.5 ± 1.0 and 60.0 ± 1.0 (%), respectively ($p < 0.01$). TLRS also differed significantly ($p < 0.01$). On the other hand, yGRS showed no statistical difference ($p = 0.24$). Chronbachs alpha of the stations was moderate to satisfactory (0.58 - 0.80). Qualitative descriptive analyses of students' comments revealed that they were motivated by OSCE-PT, but also felt uncomfortable being assessed on skills they had not yet be taught. They also realized they had depended on cramming for the tests.

Discussion and Conclusions: This study revealed that CL scores and TLRS in OSCE-PT can be utilized as markers of progress, while yGRS can be used for yearly summative assessment. The students' responses were consistent with a previous report on PT in Japan. However, more detailed information should be provided (i.e. purpose of the PT and application of the feedback) to support their self-directed learning.

Take-home Messages: OSCE-PT will be more effective if incorporated with other feedback sources (e.g. direct observation and portfolios) and advices to utilize the results of the test.

#SC1.3 - Short Communications: Assessment: OSCE

#SC1.3.2 (5345)

Essential Components for Implementing High-Quality OSCEs: A Scoping Review

AUTHOR(S):

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ABSTRACT:

Background: High-quality clinical assessments are a crucial component of any medical school's assessment programme. The Objective Structured Clinical Examination (OSCE) is one of the most common instruments used worldwide to assess medical students' clinical skills and competencies. The OSCE is widely adopted for high-stakes exams, yet it is often implemented variably, with few measures of assessment 'quality', across institutions. Identifying the OSCE components that consistently produce high-quality clinical assessments would allow the development and implementation of valid and reliable OSCEs.

Summary of Work: A scoping review was conducted to explore the available literature concerning OSCE design and implementation. The search terms were: OSCE, quality, implementation, design, application, medicine and undergraduate. For inclusion, articles were required to be written in English, have search terms in the titles or abstracts, and discuss the OSCE implementation and design process. The 'advanced search' option was used to combine search terms in nine databases: PubMed, Ovid Embase, Global Health, PsycINFO, MEDLINE, Web of Science, Cochrane Library, ERIC and Scopus. The reference list of each included article was manually searched for additional articles that also met the scoping review criteria.

Summary of Results: The search found 554 publications, but only 39 met the key inclusion criteria. Analysis of these papers revealed that the common key components essential for producing high-quality OSCEs included: establishing an examination planning board; conducting thorough blueprinting; training the exam organisers, station writers, and assessors; training simulated/standardised patients; using validated scoring sheets; planning the venue logistics; undertaking post hoc psychometric analysis; evaluating the implementation process; and giving and receiving feedback from different stakeholders to inform development of subsequent implementations.

Discussion and Conclusions: Implementing high-quality OSCEs is a complex task – a multifactorial process in which each component can affect the overall quality of the assessment. The results of this scoping review suggest a set of common components that, when appropriately employed, could help designers implement high-quality OSCEs.

Take-home Messages: Each of the components mentioned above should be considered and employed appropriately and professionally during the implementation process to ensure high-quality OSCE.

#SC1.3 - Short Communications: Assessment: OSCE

#SC1.3.3 (5761)

The Utility of Early Mock OSCE Exams in First Clinical Year Medical Students

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ABSTRACT:

Background: The Medical Education (MedED) Society at Imperial College School of Medicine supports third-year (first clinical year) medical students in OSCE preparation in several ways. An annual OSCE guide is released to the 300+ third-year students. An OSCE tutoring scheme is also run whereby fourth- and fifth-year medical students tutor third-year students in clinical examinations, skills, and conditions across major systems. In summer-term, MedED also runs a full 12-station mock OSCE for roughly 100 students. This year we conducted an additional spring-term mini-mock OSCE (6 stations: 3 clinical examinations & 3 histories) and we aimed to assess its utility in improving students' confidence and familiarisation with the exam.

Summary of Work: Online feedback forms were collected at the end of the mini-mock and were retrospectively analysed. Feedback forms included Likert-type rating scale questions, asking candidates to state the degree to which they agreed to different propositions, and open-ended questions.

Summary of Results: 45 students participated and 100% completed feedback. All students agreed (31.1%) or strongly agreed (68.9%) that the mock provided them with a better insight into clinical examinations. All students agreed (24.4%) or strongly agreed (75.6%) that the experience enabled them to effectively identify their areas of weaknesses. Having the exam early in the academic year (4 months before the exam) was also considered beneficial, with the majority of candidates agreeing (17.8%) or strongly agreeing (80%) that the timing was useful in guiding upcoming preparation for the summative examination. Finally, 53.3% of students mentioned that personalised feedback from examiners was the most helpful element of the examination.

Discussion and Conclusions: These results demonstrate the utility of peer-assisted mock OSCE examinations early in the academic year. Literature has documented the importance of peer-led mock OSCE examinations, highlighting the value of feedback and their importance in increasing confidence. Following the results of this study, further research comparing performance of this cohort and of the students not having had the additional early mock is essential to assess whether implementing a yearly spring-term mock OSCE would be beneficial.

Take-home Messages: Additional early mock clinical examinations might help students better prepare for summative examinations.

#SC1.3 - Short Communications: Assessment: OSCE

#SC1.3.4 (6088)

SIMUportfolio: Web-based Application for OSCE

AUTHOR(S):

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ABSTRACT:

Background: An objective structured clinical examination (OSCE) is one of the gold standards in the evaluation of complex clinical skills in medical and healthcare study programmes. OSCE management (planning, organisation, implementation and evaluation of results) is time-consuming from the perspectives of curriculum designers, teachers, guarantors, standardised patients and OSCE supervisors. The Simulation Centre (SIMU) of the Faculty of Medicine of Masaryk University in the Czech Republic, one of the largest and the most modern simulation centres in Central Europe, needs a systematic technological support of this quite complicated process.

Summary of Work: The solution in the form of a web-based platform, the so-called SIMUportfolio, has been designed, developed and implemented as an in-house long-term and strategic project. It brings an innovative approach to an effective integration of various project plans and results achieved in the past. It provides a comprehensive parametric description of curriculum linked to recommended study materials. Moreover, a dedicated module for OSCE has been implemented, intended for the examinations' guarantor to design and to plan all stations. Based on specific requirements of all stakeholders involved in the OSCE process, the following features and functionalities have been deployed: (1) creating a station, including the allocation of a room, the allocation of human resources (observers, students and standardised patients) and their assignment to particular stations; (2) real-time examination using structured forms, evaluation and analysis of results.

Summary of Results: The SIMUportfolio platform serves as a complex online tool to support the life cycle of a specific evaluation via OSCE. All crucial phases are covered by three submodules: The "Sketch" module allows the OSCE designer to define the stations and to plan the examinations. The "Execute" module has been designed with the aim to be used by observers during the examination. The OSCE "Report" module is the last component of the entire OSCE module in the SIMUportfolio platform.

Discussion and Conclusions: A pilot run of OSCE at the Faculty of Medicine of Masaryk University was realised in autumn 2019 during the simulation-based first aid training.

Take-home Messages: SIMUportfolio, a tool for complex OSCE management in practice.

#SC1.3 - Short Communications: Assessment: OSCE

#SC1.3.5 (6111)

The effectiveness and duration of hand hygiene in objective structured clinical assessment; are we failing to recognise its importance?

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ABSTRACT:

Background: The practice of good hand hygiene is considered an important practice for all healthcare professionals in reducing the incidence of healthcare-associated infections. It represents one of the ten elements to prevent infection from the NHS Standard Infection Control Precautions (SICP). To minimise transmission of infection the World Health Organisation has outlined five moments of hand hygiene. Hand washing technique is taught as part of medical schools' curriculum and students' abilities to demonstrate effective technique is assessed at undergraduate level as part of their objective structured clinical assessments (OSCE).

Summary of Work: Medical students at the University of St Andrews are taught hand hygiene by the NHS SICP's "How to handrub" guide. This recommends a seven step process lasting 20-30 seconds and was used as the expected standard of care. 155 first year undergraduate medical students undertook a formative OSCE and one station measuring blood pressure was used to assess alcohol based hand rub technique before and after simulated patient interaction. Video recording of the examination allowed the exact timings and steps completed by each student to be determined.

Summary of Results: On average students spent 6.1 seconds (range 2 – 14 seconds) performing hand hygiene with alcohol based rub and completed 4.3 of the guided 7 steps. 91% of students washed their hands prior to patient interaction compared to 72% following patient contact. Students scoring in the top quartile for the station were statistically significantly more likely to perform hand hygiene (95.6% vs 75.4%), omitted fewer steps (2.0 vs 4.1) and for longer duration (7.0 vs 4.1 seconds). Moreover, students who spent longer performing hand hygiene received higher global impression of their competency scores from both simulated patients and examiners.

Discussion and Conclusions: As the OSCE aims to simulate clinical practice these findings suggest that medical students may not be performing adequate hand hygiene in clinical settings. This may have implications in minimising transmission of healthcare associated infections.

Take-home Messages: Medical students' hand hygiene is significantly under the recommended duration and frequently omit steps in OSCEs. This may negatively impact the spread of healthcare associated infections in clinical environments.

#SC1.3 - Short Communications: Assessment: OSCE

#SC1.3.6 (6375)

Medical students with an attitude: Is there a relationship between attitudes, patient orientation, course attendance and communication skills in OSCE performance?

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ABSTRACT:

Background: Doctor-patient communication proved to impact healthcare safety and health decision making. In the context of increased access to information and low levels of population health literacy, psychosocial skills of healthcare professionals are crucial.

Summary of Work: The goal of this study was to develop a standardised OSCE focused on psychosocial skills of medical students in the middle and at the end of the medical school and implement it in several faculties in Germany. We explored the link between attitudes towards communication skills learning, patient orientation and OSCE performance. By January 2020, 207 2nd and 3rd year medical students in Hamburg were tested in five OSCE stations assessing basic communication skills, shared decision making, risk communication and psychosocial anamnesis skills. Socio-demographic variables were collected on students' gender, age and native language among others.

Summary of Results: A good communication score on the OSCEs was associated with a good psychosocial skills score upon admission into medical school ($r=0.27$). Female and bilingual students were more patient oriented and had better OSCE communication scores than male students or students whose first language was German or other than German ($p<0.001$). Patient-oriented students also had a better communication score ($r=0.23$) and more positive attitudes towards communication skills learning ($r=0.35$). For more than a third of students (34,4%) the physical examination was the most important part of medical consultations while 12% found it hard to take communication courses seriously. More than half of the students believed that when patients look up health information they are often more confused than well informed while 18% believed patients should completely rely on information provided by their physician.

Discussion and Conclusions: Analysis of additional data (200 more participants) to be aggregated end of February 2020 may alter reported results. In spite of attitudes and patient orientation being self-assessed, negative attitudes were present. No links have been found between course attendance, OSCE performance and attitudes or patient-orientation.

Take-home Messages: Consideration of psychosocial skills remains crucial in the selection of medical students. Routine assessment of attitudes and systematic assessment of communication skills continue to well inform curriculum development and evaluation.

#SC1.3 - Short Communications: Assessment: OSCE

#SC1.3.7 (6385)

Towards a national OSCE-exam after internship in pharmacy

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ABSTRACT:

Background: “Constructive alignment” is a concept which ties together learning outcomes, teaching methods and assessment forms for better learning. Pharmacy students in Norway spend four (bachelor level) or six (integrated master) months in a pharmacy towards the end of their education. After passing their placement exam students can apply to the national government to become authorized health personnel, and the course directors at the five Norwegian schools of pharmacy found that a common exam would be an advantage for students, future employers and the universities. Before this collaboration some used written exams, others used oral, but neither was in alignment with the teaching method “placement”.

Summary of Work: Associate professors from two universities started the collaboration by visiting a university in the UK to learn and get inspiration from their OSCE-exam. Based on the learning outcomes for the placement, we developed seven different OSCE-stations. Simulated patients were used for two stations and a simulated doctor for one. Other stations were for preparation, written assignments or multiple choice questions. We developed a scoring system where both simulants and assessors graded the students performance in communication, clinical skills and legislation.

Summary of Results: The students were able to demonstrate the skills they had acquired during placement and gave a positive evaluation of the exam. The assessors found it much easier to assess the achievement of the learning outcomes because they saw the students in relevant situations. The scoring system turned out to be suitable.

Discussion and Conclusions: The exam was completed in two different cities simultaneously and the contributing universities exchanged external assessors. After four years the National Council for Professional Education in Pharmacy recommended that all five universities should participate. Currently 4 of 5 schools of pharmacy have joined. The final school is planning to join in 2021. The joint exam has led to fruitful discussions about learning outcomes and assessment and helps to ensure that students meet the same standards of good practice before obtaining their authorization.

Take-home Messages: An OSCE-exam is a good way to assess learning from placement. A common national exam is an advantage for students, future employers and the universities.

#SC1.3 - Short Communications: Assessment: OSCE

#SC1.3.8 (6449)

Assessor's Views on Entrustment Rating Scales in Objective Structured Clinical Examinations

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ABSTRACT:

Background: Entrustment rating scales are key to the concept of Entrustable Professional Activities (EPAs). We recently explored the additional use of an entrustment rating scale in existing Objective Structured Clinical Examinations (OSCEs) with a focus on the evaluation of student's task performance (Holzhausen et al. 2019). In this study, we analyze and explore the perceptions of OSCE assessors on the addition of an entrustment rating scale using a quantitative and qualitative approach.

Summary of Work: The study was conducted at the Charité – Universitätsmedizin Berlin, Germany. In the regular fifth year OSCE consisting of six stations, student performance was rated by the assessors using a clinical skills check list, a global communication rating and the additional 6-point entrustment rating scale (Chen et al., 2015). After the assessment, assessors (n = 64) rated all three rating scales regarding usability and transferability on a 5-point Likert Scale. In addition, assessors (n=19) took part in three focus groups to share experiences and perceptions.

Summary of Results: Quantitative analyses showed that the usability of the entrustment rating scales was rated positively, but lower than the scales for clinical skills and communication. The ratings on transferability did not differ between the three scales. Qualitative analyses indicated a higher perceived practical relevance for the entrustment scale, an added value for formative feedback but an unfit to some OSCE stations (for instance: breaking bad news by medical students).

Discussion and Conclusions: The ratings and perceptions of the assessors indicate that an entrustment rating can be seen as a useful addition to the clinical and communication skill rating on student performance in a fifth year OSCE. But this did not apply to all types of OSCE stations and further exploration is needed.

Take-home Messages: Assessors hold diverse perceptions on the addition of an entrustment rating scale to an existing OSCE in undergraduate medical education.

#SC1.3 - Short Communications: Assessment: OSCE

#SC1.3.9 (6430)

Strengthening the feedback culture in a Postgraduate Residency Program

AUTHOR(S):

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ABSTRACT:

Background: Feedback is defined as specific information presented to a learner that facilitates professional development through the process of reflection. Timely provision of constructive feedback to learner is important in optimizing the learning curve. The aim of the current study was to see the effectiveness of various interventions on feedback practices of faculty members.

Summary of Work: This is a quasi-experimental study (pre post design) study. It was conducted from Nov 2009 to Mar 2011 at The Aga Khan University, Pakistan. Faculty development workshops, allotment of specified feedback time and restructuring of residency feedback form was done as interventions. Data collection was done pre-post intervention. Residents' performance was assessed using 360 degree evaluation forms by nine raters. Residents and faculty satisfaction regarding feedback process was evaluated using a pre-piloted questionnaire. One way ANOVA was used to assess the resident's performance. Wilcoxon rank sum test was applied to assess the effect of interventions on faculty and resident's satisfaction.

Summary of Results: Mean satisfaction scores of residents was significantly improved ($p < 0.05$). Pre and post intervention faculty satisfaction score also demonstrated significant difference in overall satisfaction level, from 47.88 ± 13.92 to 63.40 ± 8.72 ($p < 0.05$). No significant difference was observed in resident's performance as measured by 360 degree evaluations.

Discussion and Conclusions: This study showed improved faculty engagement and satisfaction for the provision of feedback to the trainee resident. Strengthening this culture requires continuous reinforcement, individualized feedback to the faculty members regarding their feedback practices and continuing faculty development initiatives.

Take-home Messages: Feedback facilitates in encouraging the learners to improve their knowledge, attitude and skills. It is a two way process which requires expertise at the end of feedback provider as well as receiver. This study demonstrated improvement in overall feedback culture in training programs.

#SC1.3 - Short Communications: Assessment: OSCE

#SC1.3.10 (6411)

OSCE to assess clinical competence in dental students

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ABSTRACT:

Background: The University of Barcelona proposed at the end of 2018-19 course the administration of an OSCE in order to assess students at the end of graduation.

Summary of Work: There were 8 competences to be measured by the OSCE: clinical information gathering (38%), clinical reasoning (20%), clinical operative skills (16%), communication (9%), sterilization and cross infection control (7%), ethics (4%), prevention (4%) and working with other members of the dental team (2%). The OSCE exam was built up with 8 different clinical cases in 15 stations. Standardised patients combined with mannequins were used in five stations. Experts scoring as observers were used in six stations and at the rest (four stations) students had to answer written questions about the previous one. The interdisciplinary OSCE was set-up for all fifth-year students (n=88) in June of 2019, at the end of the degree. Stations were 10 minutes of active time, with 2 minutes between stations to allow students to move to the next station and for examiners to complete their marking. Two circuits of the same stations were run simultaneously and three times repeatedly until all students have been through the OSCE on the same day.

Summary of Results: The total OSCE mean was 6.7/10, with a minimum of 4.9/10 and a maximum of 8/10. The results per competence were: communication 8.3/10, working with other members of the dental team 8.1/10, sterilizations and cross infection control (7.7/10, prevention 7.6/10, clinical operative skills 7.5/10, clinical information gathering 7.3/10, ethics 7.1/10 and clinical reasoning 5.2/10.

Discussion and Conclusions: OSCE is a good format to assess dental students at the end of their graduation. Further studies about giving feedback to students and recording both their opinion and the opinion of the staff involved have to be made during the next few months. In addition, the OSCE results underline some education needs that must be solved, like some knowledge gaps or specifically patient necessities, and it is important to have a task force among all the teachers involved to solve them.

Take-home Messages: OSCE offers a good register of the dental students' clinical performance.

#SC2 - Short Communications: CPD

#SC2.1 (6184)

Building Capacity for Scholarship in CPD With SACMEs Virtual Journal Club

AUTHOR(S):

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ABSTRACT:

Background: Continuing Professional Development (CPD) has as its primary goal improving the quality of health care. CPD employs educational interventions and supports the self-directed, practice-based learning efforts of clinicians. There is a well-recognized need across academic medical centers for advancing scholarly approach and output in teaching, practice and engagement within the field of CPD.

Summary of Work: With the goal of advancing capacity for scholarship in CPD for faculty and staff, we created a longitudinal interactive program within the Society for Academic CME (SACME) and studied its outcomes. SACME's Virtual Journal Club (VJC) is expert-led and facilitated live webinar, available asynchronously on the society's website. Sessions are participatory and allow equal time to introductory expert-delivered formal presentation and to facilitated peer discussion. Topics are generated from the current larger medical education and CPD literature and build on each other. Session overview, key discussion points, and primary literature source(s) are posted in advance.

Summary of Results: Over a 4-year period, 33 hour-long sessions have been delivered live and are also available as asynchronous curriculum. Over 1000 learners have participated in this highly interactive program with an average of 18 questions discussed per live session. However, the asynchronous discussion forum is not very active. Evaluation scores are consistently high for the quality of the presenters and facilitators, but inconsistent about relevance to individual's practice and learning from peers as influence to one's practice.

Discussion and Conclusions: Over the years, VJC has gained in reputation, number of participants increased and some surprising outcomes appeared. The series is often used by CME/CPD programs for faculty development, beyond society's membership. A community of users emerged who, generally, behave in accordance with what is known about networked learning. The success and longevity of the program is frequently credited to the consistency of the facilitator. While the program has been generally considered successful in reaching its primary goal, we are now studying more directly the association of the program with the users' scholarly practitioner confidence levels and scholarly output.

Take-home Messages: Improving capacity for scholarship in CPD across relevant domains can be positively influenced by a longitudinal program that employs volunteer peer expertise within the community of learners.

#SC2 - Short Communications: CPD

#SC2.2 (4154)

General practitioners and practice nurses viewpoints on multidisciplinary knowledge sharing

AUTHOR(S):

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ABSTRACT:

Background: General practitioners (GP) and practice nurses (PN) play an increasingly important role as central caretakers for more complex chronic care patients in many countries. Complex chronic care patients often require a multidisciplinary care approach and knowledge extending beyond the strict pharmacological medical requirements. Multidisciplinary team-based care and knowledge sharing is well known within hospital care. GPs normally work independently, and little is known about how they and their practice nurses perceive the possibility of sharing knowledge within a structured multidisciplinary setting.

Summary of Work: The study aimed to explore with whom GPs and PNs presently share knowledge, whether they would find structured multidisciplinary knowledge sharing useful, and under which conditions. An explanatory sequential mixed method was used based upon questionnaires and semi-structured interviews. Thirty doctors and ninety nurses answered a questionnaire. The questionnaire was followed up by semi-structured interviews with four doctors and four nurses working in general practice.

Summary of Results: The GPs and PNs mainly shared knowledge with their colleagues in the GP practice setting. They found that sharing knowledge to improve patient care would provide a meaningful activity for a structured multidisciplinary meeting that also could include patients. They agreed that multidisciplinary knowledge sharing could improve their professional relationship with their patients and colleagues and saw an opportunity to develop a shared language, to discuss on equal terms and expand their knowledge in other professional areas. A successful meeting would require organization and facilitation.

Discussion and Conclusions: GPs and practice nurses viewed knowledge on patient care and patient data as meaningful activities for sharing in a structured multidisciplinary meeting and found that a multidisciplinary team meeting would improve their professional relationship with their patients and colleagues. Successful structured, multidisciplinary meetings require external organization and facilitation.

Take-home Messages:

- General practitioners and practice nurses value sharing patient data and develop their professional relationships through multidisciplinary structured meetings with other specialists and potentially patients.
- Multidisciplinary meetings should be based on equal terms between the professional groups, and without alienating specialized terminology.
- The extensive evidence from multidisciplinary knowledge sharing within hospital care may be utilized when implementing similar activities in general practice.

#SC2 - Short Communications: CPD

#SC2.3 (5905)

An evaluation of practice-based small group learning in Wales

AUTHOR(S):

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ABSTRACT:

Background: In 2018, a new practice-based small group learning (PBSGL) initiative was launched in Wales by Health Education and Improvement Wales (HEIW). Devised in Canada and adopted by NHS Education for Scotland (NES), the initiative is designed to promote interprofessional learning in primary care.

Summary of Work: The groups comprised 5-12 members, typically GPs, nurses and practice-based pharmacists who met every six to eight weeks in 2018-19 to discuss patient cases and evidence, drawing on NES materials. For the evaluation we adopted a mixed-method design. We held focus groups with the seven PBSGL groups across Wales. Transcripts were thematically analysed. Preliminary results informed the construction of an online survey distributed to all PBSGL participants. Ethics approval was obtained from Cardiff University.

Summary of Results: PBSGL provided a structure for bringing staff together. The small group provided a safe and relaxed learning environment. All participants were able to contribute knowledge and experience. Relationships among group members and group size were perceived to be important in facilitating discussion and ensuring everyone had a voice. Participants commented on how the meetings created opportunity to challenge practice. Many reported occasions where they had made changes to practice as a result of the PBSGL. Some also felt that the momentum for change was enhanced by the interprofessional learning that provided a more holistic perspective of patient care, driving whole practice change.

Discussion and Conclusions: In comparison with the Scottish study (Cunningham et al 2016), a greater variety of healthcare professionals participated in PBSGL in Wales, with at least three professions in each group. Although participants from both the Wales and Scotland studies reported on the positive learning environment offered by PBSGL, GP participants in Scotland were not unanimous about the value of input from other professionals. Some of the differences may arise from group composition and the established relationships between group members in Wales.

Take-home Messages: PBSGL is a valuable approach to learning that benefits multiple healthcare professions and can positively enhance day-to-day practice.

#SC2 - Short Communications: CPD

#SC2.4 (6409)

Development and Implementation of a Simulation-Based Short Course on Effective Communication in Patient Safety Incidents for Healthcare Professionals

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ABSTRACT:

Background: Effective communication between patient and healthcare provider and between healthcare professionals are key for prevention and management of the patient safety incidents. Continuing professional development program on effective communication in patient safety incidents has been limited, especially in resource-constrained public hospitals, in Korea. Based on the educational needs, we developed a simulation-based short course on effective communication in patient safety incidents for healthcare professionals and firstly implemented to experienced registered nurses (RNs) in public hospitals across the country.

Summary of Work: We developed the one-and-a-half-day course according to Kern's six steps approach. Needs assessment was conducted with cross-sectional surveys. Brief lectures on SBAR and facilitative communication, role play using 3 scenarios (patient identification error, medication error, falls) and feedback, and time-in time-out simulation with simulated patients or participants (SPs) using 3 scenarios (medication error, handover error, violent patients) and debriefing were used as educational strategy. The scenarios were developed using real safety incident cases and the SPs were trained with an experienced trainer. We assessed the changes of participants' knowledge about patient safety incidents and relevant communication strategy using pre- and post-course online quiz and evaluated the participants' responses (10-point scale) and written comments on the course with an anonymous evaluation questionnaire.

Summary of Results: Fifty-one RNs participated in two pilot courses. Hospital experience of the participants was 4 (1-6) year. The participants' overall satisfaction to the course, role play and time-in time-out simulation were very positive (9.2 ± 1.3 , 9.3 ± 1.2 , and 9.4 ± 0.9 , respectively). The level of recommendation of the course to the other professionals was high (9.2 ± 1.4). The participants' knowledge was significantly improved after the course. Many participants positively commented on the practical experiences through multimodal simulation activities on common patient safety incidents in their settings.

Discussion and Conclusions: A simulation-based short course on effective communication in patient safety incidents was feasible and could be helpful to the experienced RNs in the resource-constrained public hospitals.

Take-home Messages: This simulation-based short course is a good example of how simulations can be effectively used for the CPD program on a specific topic requiring practical experiences of healthcare professionals work in the resource-constrained public hospitals.

#SC2 - Short Communications: CPD

#SC2.5 (6673)

How to collaborate to develop continuing professional development for General Practitioners?

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ABSTRACT:

Background: A reorganization of management of type 2-diabetes in Denmark in 2018 transferred greater responsibility and a larger more complex patient group to General Practitioners (GP). “A development of Continuing Professional Development (CPD) was initiated to meet the needs for new competencies. This presentation provides an inside perspective on the development process. The approach used was a triad combination of Design Based Research, Collaborative Innovation and Theory Based Evaluation. Between Fall 2018 and Spring 2020, an interprofessional group of collaborators - endocrinologists, GPs and health educational specialist - developed and pilot tested four CPD activities with different perspectives on type 2-diabetes: treatment, patient centered approach, organization of the clinic and intersectoral collaboration. The learning activities included; e-learning, webinars, a board game, story-telling, simulated patient-consultations, roleplay and case-based facilitated dialogue

Summary of Work: The focus of the research was to study how using the development approach outlined above motivated and inspired the content and learning methods of the CPD activities. Thematically focused document analysis is used to identify if and how the approach was applied. Interviews with members of the development group is used to explore their experiences of the process and perceptions of the link between approach and activities

Summary of Results: Preliminary findings indicate that the developmental approach was applied - identifying several central elements of the approach including; a step-wise backward unfolding of the intervention theory, face-to-face-meetings with equal participation and several iterations during the development. Initial analyses suggest that the development approach sparked curiosity and willingness to challenge previous conception of CPD for GPs both in relation to content and methods.

Discussion and Conclusions: From the perspective of the leader of the development of CPD this approach has highlighted some challenges – how to downsize the importance of individual agendas and establish a working space without usual hierarchy structures embedded in the health system. This discussion has potential to inform future leaders of development of CPD for GPs. An important issue considering the growing complexity of GPs work

Take-home Messages: Applying this development approach can initiate interprofessional collaboration and introduce new types of learning activities in CPD for GPs.

#SC2 - Short Communications: CPD

#SC2.6 (3862)

Pharmacy students use guided reflection and entrustment (EPA) assessments to appraise 'secret' patient/pharmacist encounters in the selfcare community workplace

AUTHOR(S):

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ABSTRACT:

Background: Pharmacists are entrusted to help patients minimize risks and maximize benefits when self-selecting treatment for minor ailments. Patients often initially access the Internet for advice. Undergraduates must understand and assimilate both patient and pharmacist perspectives on their path to self-regulated practice. Innovative entrustment assessments of clinicians by pre-clinical students, typically a supervisor's responsibility, may hone student epistemic agency and increase awareness of collective professional norms.

Summary of Work: Second year (pre-clinical) students (n= 240) posed as patients seeking a pharmacist's advice in a community pharmacy, after having reviewed Internet information sources on a self-selected topic. They inquired about product selection or presented a therapeutic dilemma. Using structured guided reflection, they analyzed relevant aspects of the encounter, including interpersonal dynamics; tone, language level and organization; reaction of clinician to Internet research; validity of information given; and to what degree practitioners demonstrated practice competencies. Students completed an EPA assessment of the observed pharmacist and proposed measures to personally optimize implementation of this responsibility when in practice. Perceptions were analyzed from observations, reports, surveys, class discussions and interviews. EPA rankings (anchored to 5 levels of supervision) were tabulated.

Summary of Results: Student reflections, as patients, highlighted themes of entrustment and confidence in the pharmacist as an authoritative resource. As prospective pharmacists, they evaluated the clinician in terms of best practice guidelines, competencies demonstrated, barriers observed during the consultation and feelings about their future professional role. EPA reports rated majority of pharmacists able to practice unsupervised and 20% role-models/able to supervise others. Time constraints for communication, not content expertise, was the primary obstacle.

Discussion and Conclusions: Students valued this contextual opportunity to directly experience competencies required for patient care prior to their clinical year: subject expertise, communication, collaboration, professionalism, advocacy and scholarship. Assessing practitioners' level of entrustment was considered transformative in reinforcing the importance of expertly performing this professional role with appropriate time management once in practice.

Take-home Messages: Undergraduates heightened their appreciation of patient perspectives, Internet influences and clinician expertise in integrated competencies through 'secret' role-play encounters in the workplace, by performing guided reflections and EPA assessments.

#SC2 - Short Communications: CPD

#SC2.7 (4603)

Microlearning in Continuing Professional Development

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ABSTRACT:

Background: Despite active involvement in teaching, many CPD educators do not have formal training in education. Microlearning is an online asynchronous learning format that promises to deliver just-in-time information to CPD educators. We hypothesized that ophthalmologist CPD educators would benefit from a microlearning experience (MLE) to improve the quality of their written learning objectives.

Summary of Work: We created an MLE about writing effective learning objectives. In phase 1, 25 CPD educators, scheduled to lecture at a conference, were invited to watch the MLE, write and classify their learning objectives according to Bloom's taxonomy and complete an evaluation survey. We compared the classification of learning objectives from this study to one previously published by Legaré, which did not employ an MLE intervention.

Summary of Results: In phase 1, 20% of participants completed the exercise and survey. After participating in the MLE, participants rated it as useful, indicated they intended to apply it in practice, and categorized their learning objectives higher on Bloom's taxonomy compared to those categorized in Legaré's study, which was without an MLE intervention. In phase 2, 29% of participants provided feedback. All agreed the intervention was clear and useful, and 86.7% expressed intent to use the information in their future learning interventions.

Discussion and Conclusions: Our study suggests that CPD educators recognized the value of creating effective goals and objectives; were eager to improve their teaching skills, and that microlearning is a useful and accepted form of learning. The disparity between the classification of learning objectives post-MLE and that of those within Legaré's investigation lead us to conclude that microlearning experiences such as this may be an effective medium to encourage higher levels of learning in CPD learning objectives. The majority of participants found the MLE clear and useful. Further studies are necessary to measure the impact of microlearning interventions for CPD educators.

Take-home Messages: a) CPD educators recognize the value of creating effective goals and objectives; b) Microlearning might be a useful and effective learning methodology for CPD educators.

#SC2 - Short Communications: CPD

#SC2.8 (4869)

Mapping the current CPD landscape in health professions: A scoping review of knowledge syntheses

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ABSTRACT:

Background: Continuing Professional Development (CPD) is offered across the spectrum of health professions through formal and informal learning activities. Over the last decade, various knowledge syntheses have attempted to summarize the CPD literature. However, these have been primarily focused on CME or formal learning activities. Thus, this review seeks to answer: What is the current landscape of knowledge syntheses focused on the impact of CPD on health professionals' performance defined as behavior change and/or patient outcomes?

Summary of Work: The authors searched PubMed, Embase, CINAHL, Scopus, ERIC, and PsycINFO for knowledge syntheses published between 2008 and 2019 that focused on independently practicing health professionals and reported outcomes at Kirkpatrick's levels 3 and 4.

Summary of Results: 7,613 citations were retrieved from databases; 63 satisfied the inclusion criteria. Findings revealed a broadening definition of CPD interventions; the rise in popularity of eLearning as a modality for CPD; the limited availability of studies reporting outcomes at Kirkpatrick level 4; and, the cost considerations of CPD offerings. 59% of syntheses included multi-component approaches; and, 46% of syntheses incorporated eLearning interventions – either stand-alone or in combination with other interventions. 66% of syntheses reported outcomes that impacted healthcare practitioners' behavior change and/or patient outcomes; however, the findings reported at Kirkpatrick level 4 were not of high quality. 16% of syntheses mentioned the cost consideration of interventions though it was not their primary focus.

Discussion and Conclusions: CPD, across health professions, is an umbrella term for a variety of learning activities incorporating formal and informal approaches. Increasingly, CPD offerings embrace a multi-component approach that blends formal and informal interventions, including eLearning interventions. The use of eLearning is increasing in popularity but remains an emerging technology. Several of the knowledge syntheses raised concerns regarding both financial and human costs in CPD offerings, which are increasingly being addressed in the CPD literature.

Take-home Messages: CPD activities are actively adopting a multi-component approach that includes formal and informal approaches. eLearning options and cost of programs are being considered.

#SC2 - Short Communications: CPD

#SC2.9 (5679)

Improving the engagement with outcomes-based CPD in the UK Veterinary Profession

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ABSTRACT:

Background: Veterinary surgeons and nurses must complete 35 / 15hours of CPD per year respectively. The Royal College of Veterinary Surgeons (RCVS) carries out an annual audit of CPD records and in 2019 around a third of the profession was found to be non-compliant. Furthermore, the requirements for CPD were focused on 'inputs', an approach known not to promote effective learning or positive impact on practice. Our aim was to implement a more educationally robust approach across the professions, and improve overall engagement with CPD.

Summary of Work: In 2018/2019 an outcomes-based approach to CPD was developed around the 'Plan, Do, Record, Reflect' cycle, and two separate pilot studies were carried out with a sample of volunteers. Feedback indicated a range of potential barriers to successful implementation, including resistance to 'reflection', a limited understanding of different types of CPD (particularly CPD carried out in the workplace) and the need for a better recording platform. We developed a novel, bespoke CPD recording platform which is available as an App, so that practitioners can plan, record and reflect on their CPD 'on the go'. This includes the ability to upload photos e.g. of clinical cases, and reflect on their learning using an audio feature. Additional features such as reminders to record / reflect aim to improve engagement.

Summary of Results: Outcomes-based CPD was launched in January 2020, and despite the challenges has received a positive response. We have promoted a wide range of CPD types, including informal CPD in the workplace such as team discussions on clinical cases, significant events and clinical audits, which were rarely recorded as CPD previously. We will present data on the response to CPD by veterinary professionals following the launch, including details of how CPD is planned, recorded and reflected upon since the development of the new App.

Discussion and Conclusions: Addressing the challenges to engaging with CPD has had a positive impact. In addition to data on the engagement with CPD by the veterinary professions, we will present the novel features of the 1CPD recording platform.

Take-home Messages: A multifaceted approach to addressing the barriers to engagement with CPD has resulted in positive engagement with our outcomes-based model.

#SC2 - Short Communications: CPD

#SC2.10 (5981)

Exploring doctors' beliefs and behaviours regarding the maintenance of professional competence. A qualitative study.

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ABSTRACT:

Background: Maintenance of professional competence (MPC) aims to support doctors in developing and maintaining good professional practice. In Ireland, MPC is a legal requirement that is comprised of collecting and recording continuing professional development activity and conducting an audit per annum. Failure amongst some doctors to engage fully with the MPC process remains a problem. We conducted a qualitative study to explore the link between doctors' beliefs about MPC and their engagement with the process.

Summary of Work: We interviewed 42 doctors purposively sampled from a range of specialties, scopes of practice, age, and geographical location. We conducted thematic analysis to examine patterns of meaning within the data. Our analysis was informed by the Theory of Planned Behaviour, which posits that an individuals' behavioural beliefs, subjective norms and perceived behavioural control, shape behaviour.

Summary of Results: The findings identified a continuum of behaviour relating to MPC ranging from engaged compliance to disengaged compliance. Engaged compliance was exemplified by motivated and reflective behaviour. Minimal, cynical and box-ticking behaviour were inherent in disengaged compliance. Engaged compliance was underpinned by strong behavioural beliefs of the positive benefits of MPC for the profession and public. Behavioural beliefs related to disengaged compliance were that MPC was unfair, unnecessary and unbeneficial. Participants orientated toward both engaged compliance or disengaged compliance identified similar barriers to meeting the requirements of MPC.

Discussion and Conclusions: The findings broaden our understanding of doctors' engagement with MPC. Behavioural beliefs about the value and impact of the process mediated engagement with the process. Participants shared perceptions about barriers to participation in MPC; however, such perceptions did not over-ride strongly positive beliefs about MPC or impact behaviour oriented towards engaged compliance.

Take-home Messages: The findings suggest that those tasked with the design and implementation of MPC programmes should aim their efforts towards strengthening doctors' behavioural beliefs in relation to the value and impact of MPC. Targeted initiatives that help doctors to recognise the value of MPC at a personal as well as professional level and to maximise the impact of MPC on their practice will shape behaviour towards engaged compliance with the process.

#SC2 - Short Communications: CPD

#SC2.11 (6016)

Using concurrent and retrospective think-aloud interviews to understand physician cognition during geriatric patient encounters in the emergency department.

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ABSTRACT:

Background: The ability to make clinical decisions in Emergency Departments (EDs) is challenged by high levels of uncertainty and task complexity. Medical residents, especially, often experience difficulty with Clinical Decision-Making (CDM). Literature on expert decision making describe how experts particularly excel at making complex, decisions under uncertainty. They excel by typically making faster and more accurate decisions, possibly by deliberate use of knowledge structures to guide and moderate their CDM. This process may constitute a trainable cognitive decision-making competency. The aim of this study is therefore to map out thought processes involved in clinical decision-making within both expert and novice practitioners, and by that, describe differences and similarities, to explore CDM learning opportunities.

Summary of Work: In order to investigate this phenomenon, the study investigates decisions related to geriatric patients who are characterized by a high level of complexity, which calls for expertise with several somatic and psychiatric diseases, as well as an understanding of socio-cultural, -emotional, and -contextual factors. In-situ think-aloud interviews will be conducted at two emergency departments. It will utilize both concurrent think-aloud elicitation method during the consultation and a retrospective think-about follow-up interview. Furthermore, it will systemize the verbalization of clinical decision-making into protocols and decision trees, in order to quantify and compare the process between novices and experts.

Summary of Results: Initial results from approximately 14 concurrent, and 14 retrospective think-aloud interviews will be presented.

Discussion and Conclusions: Initial results will be discussed in relation to the theoretical framework of CDM, more specifically medical expertise and clinical reasoning.

Take-home Messages: We aim to provide preliminary suggestions for possible learning opportunities for CDM, in relation to postgraduate training and continuing professional development.

#SC2 - Short Communications: CPD

#SC2.12 (6176)

The Ontological Choreography of CPD: results from an environmental scan of CPD Leaders and Program Directors

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ABSTRACT:

Background: Reports have forecast significant changes ahead for Continuing Professional Development (CPD). With new models on the horizon, CPD developers will require additional knowledge and training. However, the current system is not set up to deliver this. Our objective was to learn how CPD leaders and developers came into their roles, if they are engaged in scholarship and the challenges and opportunities in pursuing CPD scholarship.

Summary of Work: We conducted a mixed-method study. We invited current/recent CPD leaders and directors in our Faculty of Medicine for individual interviews focused on career paths, CPD and scholarly activities, networks, and supports and challenges. We then invited 405 Program/Conference Directors who had accredited a program through UofT CPD in 2017 or 2018 to participate in a survey covering similar topics as the interviews. We integrated findings using the framework of ontological choreography in our final analysis.

Summary of Results: We conducted 13 interviews and our survey response rate was 28.7%. We identified three themes: 1) The pathway to becoming an expert in CPD planning and delivery is often unplanned, unclear and un-credentialed; 2) CPD is undervalued as a field, with inadequate time and funding allocated; and 3) Engagement with scholarship is variable while identifying resources to support scholarship is difficult.

Discussion and Conclusions: The ontological choreography of CPD invokes a diversity of meanings for CPD across its many different contexts (academic department, clinical workplace, team, individual etc.). To prepare for the future of CPD, we suggest similarly diverse strategies: identify people earlier on in their careers through fellowships or mentorships, offer a variety of resources for supporting CPD, and consider the undervaluing of CPD. These findings resonate with national discussions about concerns around the valuing of CPD and supports the movement in Canada to build a CPD-specific credential to ensure a pipeline for developing expert CPD developers for the future.

Take-home Messages: To build the Continuing Professional Development of the future, we suggest planned, credentialled pathways for new leaders, a variety of scholarly supports for CPD and CPD scholarship, and to collectively address the undervaluing of the CPD field.

#SC2 - Short Communications: CPD

#SC2.13 (6833)

National ACP-OSCE program in Asia: Experience of Taiwan's ACP education

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ABSTRACT:

Background: In Jan 2019, Taiwan has officially approved Patient Autonomy Law (PAL) which allows all citizens in Taiwan to make advance decision (AD) for 5 critical conditions. According to the law, all citizens wish to make an AD must go through official advance care planning (ACP), which will be held by certified healthcare professionals (HCP). 20 hospitals in Taiwan were appointed as ACP demonstration hospitals for a year. To evaluate the process and the comprehensiveness of those ACP professionals in demonstration hospitals, we designed a national ACP-OSCE (Objective Structured Clinical Examination) program.

Summary of Work: The program was designed as 40-minutes OSCE test. All OSCE test took place in qualified OSCE room. Participants were categorized as different ACP team members to illustrate true scenario. Teachers were asked to observe ACP professionals' action, response and communication skill through one-way mirror. All teachers were provided "guidance of teachers" with standardized grading instructions in advance in order to minimize inter-rater differences. Standardized patients (SP) were also provided "guidance of SP" with instructions of role with specific lines to minimized performing differences. Participants' attitude, cognition and confidence were evaluated before and after OSCE.

Summary of Results: In Dec 2019, totally 44 ACP professionals completed ACP-OSCE program, including 18 physicians, 17 nurses, 6 social workers, and 3 psychologists. The average score of communication skills increased from 3.47 to 3.91; The average score of medical professionalism increased from 3.61 to 4.02; The average score of law understanding increased from 3.45 to 3.86; The average score of counseling skill increased from 3.58 to 3.81; The average score of ACP problem solving increased from 3.47 to 3.90.

Discussion and Conclusions: This is the first national ACP-OSCE program in Asia. The key elements for a successful ACP-OSCE program are: 1. Well-designed structured guidance for teachers and SP. 2. Instant feedback from teachers and SP to improve ACP skills. 3. Teacher's experience in problem solving, guidance and fast response during OSCE test.

Take-home Messages: ACP-OSCE program helped ACP professionals to improve their counseling skills more efficiently and with more competency. We believe that our ACP-OSCE program could be applied to different country for improving ACP process in the future.

#SC2 - Short Communications: CPD

#SC2.14 (5903)

A needs assessment using an innovative approach to assess perceived and unperceived learning needs of psychiatrists in the province of Quebec

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ABSTRACT:

Background: Since 1999, mental health has been a priority for the Canadian government. Despite this, little is known about psychiatrists' up-take of continuing professional development (CPD), which is required to maintain their licensure. Gaps in psychiatrists' competence can interfere with the delivery of optimal patient care, particularly when these gaps have not been appropriately identified. This comprehensive needs assessment (NA) investigates the perceived and unperceived CPD needs of psychiatrists practicing in Quebec, Canada.

Summary of Work: An online, anonymous, cross-sectional survey using multiple-choice and open-ended questions was delivered to members of the Association of Quebec Psychiatrists (AMPQ). Data on perceived learning needs was gathered by asking participants to list two topics they would like to learn about in the next 12 months. Data on unperceived needs was collected via the critical incident method focused on managing two challenging clinical cases. Data analysis included descriptive statistics (SPSS 24.0), content analysis and triangulation of sources. Two coders independently analyzed all qualitative data guided by the Theoretical Domains Framework (TDF). This study was approved by the McGill University's Institutional Review Board (IRB).

Summary of Results: Of the 1150 AMPQ members, 187 (16%) psychiatrists completed the survey. Over half were female (56%), treating adults (60%) and practicing in a university hospital (49%). Top perceived and unperceived learning needs focused on anxiety, neurodevelopmental and psychotic disorders and psychopharmacology. Perceived factors that contributed to challenging clinical cases included the complexity of the case (51%), patient characteristics (19%) and working environment/resources (17%). A "complex" case was characterized by multiple comorbidities, resistance to treatment and polypharmacy. Consulting colleagues (49%) and text/reference books (17%) were the most frequently accessed resources.

Discussion and Conclusions: Collecting data via a multi-method approach of NA supports the development of relevant CPD programs. Future NA should cover psychiatrists' perceived and unperceived needs beyond the medical expert role to include intrinsic CanMEDS competencies such as collaboration, communication, and advocacy.

Take-home Messages: A comprehensive needs assessment is the cornerstone for effective and relevant CPD. Among the variety of methods to assess psychiatrists' unperceived needs, the critical incident method is effective and feasible.

#SC2 - Short Communications: CPD

#SC2.15 (5784)

Achieving ACCME Accreditation with Commendation in 2 years: A Tale from an International Site of a US Medical School in Qatar.

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ABSTRACT:

Background: Weill Cornell Medicine-Qatar (WCM-Q) established in 2001 as an International site of WCM in New York, and shares the commitment to excellence in teaching, research, patient care. In 2013, the importance of certifying activities for credit and the overall value ACCME accreditation brings to a program including dissemination of best practices, fair balance and valid content was recognized. Consequently, we sought the development of an accredited CME/CPD program at WCM-Q to serve the needs of the healthcare practitioners.

Summary of Work: Established the division of CPD in 2014. Identified the needs/target audience, developed goals/objectives, estimated resources, established a timeline, and defined outcomes and outcome indicators. Developed policies and procedures, created boards and committees and developed accredited activities both independently and in collaboration with other entities. Achieved provisional accreditation in 2018 and decided to apply for accreditation using the new commendation criteria. Created a strategic plan based on our SWOT analysis and aligned our strengths with the ACCME's new commendation criteria focusing on the areas that are needed and that we are able to meet.

Summary of Results: WCM-Q was awarded Accreditation with Commendation by the Accreditation Council for Continuing Medical Education (ACCME®) for a period of 6 years following a two-year provisional accreditation. We demonstrated leadership, innovation and creativity in the development of our program. We were commended for supporting our healthcare workforce by promoting team-based care, population health, community collaboration, and clinicians' communication skills and for our commitment to improving our program and contributing to research and scholarship in CME.

Discussion and Conclusions: The success in achieving accreditation with commendation in a short period of time was largely due to our systematic approach. It was important to have leadership support and to secure appropriate resources to ensure that we build a strong infrastructure and to educate our team and community. The second critical element was engaging our stakeholders as we conducted our SWOT analysis and aligned our strengths with the needs of the healthcare workforce in Qatar and the new commendation criteria.

Take-home Messages: It is possible for an International CME/CPD program to attain ACCME accreditation with Commendation through strategic planning.

#SC2 - Short Communications: CPD

#SC2.16 (6276)

A Brief Mindfulness Program in Continuing Professional Development - Cultivating Awareness, Stress Management and Compassion

AUTHOR(S):

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ABSTRACT:

Background: Recent studies reported wide-ranging benefits of clinician mindfulness training, namely reduction of burnout, increased empathy, and improvements in patient-centered care. Often using the intensive 8 Weeks MBSR, Mindfulness-Based Stress Reduction Beach, M. C., et al. (2013). A multicenter study of physician mindfulness and health care quality. *Ann Fam Med* 11(5): 421-428. In this study, we examined a relatively brief mindfulness program inspired by Craig Hassed MD, Monash University: Be firm with the philosophy but flexible with the form.

Summary of Work: We examined if a relatively brief Mindfulness Medical Training Program inspired by Oxford Mindfulness professor Mark Williams and French psychiatrist, Christophe André enhances: - capacities in stress management, - mindful attention and awareness aptitudes, - and Canadian Medical Competencies (CanMEDS) including compassionate communication. The program consists of nine hours of classic mindfulness and compassion exercises over three weeks (3 hours per week) in a continuing medical education program instructed by the first author. Online questionnaires were used to collect data: First, participants were invited to complete questionnaires to auto-evaluate their pre-(respondents N=68)/ versus post-training (respondents N=61) abilities at: i) practicing mindfulness and compassion exercises, ii) cultivating awareness in daily life and medical practice, and iii) taming challenges like stress management in their everyday or professional life. Second, the 34 most recent participants (N=34) were evaluated using the Mindful Attention Awareness Scale (MAAS) pre-/post-training. Third, 53 participants answered these pre-post CanMEDS: health advocacy, compassionate communication (patient physician alliance), professionalism.

Summary of Results: Before the program participation 77%, 63%, and 79% (N=68) answered they were not comfortable with the above mentioned abilities i), ii), and iii) respectively, while they became 93%, 98%, and 93% (N=61) sufficiently or very comfortable after the intervention. Compared to pre-training Mindful Attention Awareness Scale (MAAS) scores (47.9±11.6), post-training scores (54.8±11.2) significantly improved (N=34, z=3.82, p=0.0001.) According to CanMEDS assessment (N=53), 74% noted improvements in health advocacy, 40% in compassionate communication, 25% in professionalism.

Discussion and Conclusions: The relatively brief mindfulness program examined here was found effective to help MDs participants to learn basics mindfulness skills.

Take-home Messages: A relatively brief program may be a first step before continuing with more intensive programs like MBSR.

#SC2 - Short Communications: CPD

#SC2.17 (6715)

Test-enhanced learning in health professions continuing education: A systematic review

AUTHOR(S):

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ABSTRACT:

Background: Continuing medical education (CME) is essential for medical professions to maintain or improve competence within clinical and professional roles. It is important to evaluate and improve the educational value of CME activities. The benefits of test-enhanced learning (TEL) have been observed in undergraduate and postgraduate learners. However, the studies that investigated TEL within CME showed inconsistent results. Therefore, we systematically reviewed the effect of TEL in health professions continuing education.

Summary of Work: We searched electronic databases, medical education journals, and reference lists. Controlled studies comparing TEL to studying the same material or to the other TEL strategy were included. Two independent authors screened articles for inclusion, data extraction, and quality assessment. Random effect model meta-analysis was used to combine and report learning outcomes.

Summary of Results: We finally included four randomized controlled trials with a total of 266 responders from 440 consented participants (60.5% response rate). For the TEL format, two included studies used short answer questions (SAQs), and the other two used multiple-choice questions (MCQs). Concerning the number and frequency of intervening tests, individuals in the TEL group in all studies were exposed to multiple tests (2 to 4) separated by different time intervals (1 to 4 weeks). Of all four included studies reported outcomes on retention, two (50%) showed the efficacy of TEL over control in CME activities (one use SAQ, and one use MCQ). Only one study reported outcome on “transfer”, and the majority of individuals (80%) agreed with the effect of TEL.

Discussion and Conclusions: Comparing to control, TEL might be as good in knowledge retention and better in knowledge transfer in CME activities. The efficacy of TEL could be influenced by the test format, number and frequency of intervening tests, and feedback. Testing remains an underused education intervention in CPD, and more research is needed to examine the optimal factors designing TEL activities. To conclude, the effect of TEL in CME is not as robust as being largely recognized among various educational settings.

Take-home Messages: TEL may demonstrate its efficacy in CME activities and multiple learning outcomes. Educators could incorporate TEL in CME activities to improve recall, retention, and transfer.

#SC2 - Short Communications: CPD

#SC2.18 (6776)

Contextual factors that play a role in Public Health CME for GPs: a mixed methods systematic review

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ABSTRACT:

Background: Continuing medical education (CME) improves patient outcomes when offered correctly. However, evidence indicates that CME is not being appropriately developed or suitably utilised to achieve this outcome. Identifying contextual factors that influence CME development, delivery and uptake are an important step in addressing these concerns. This study describes a systematic review examining contextual factors in the literature that play a role in Public Health (PH) CME for GPs.

Summary of Work: A convergent integrated mixed methods systematic review of PH CME literature for GPs is underway. A systematic search of published and grey literature databases from inception using keyword concepts of 'GP', 'CME, and 'PH Topics' has been completed. Two reviewers have independently screened results based on title/abstract and full-text. Data extraction against a developed a priori theoretical framework (a unification of Biggs' 3P Model and Bronfenbrenner's bioecological systems model) is ongoing by a single reviewer, with second reviewer verification of random 20% sample. Methodological quality is being assessed using the Mixed Methods Appraisal Tool (MMAT), with no article excluded based on quality. Final framework synthesis as per the 'Best Fit' Framework Synthesis methodology will be completed through review team consensus.

Summary of Results: Out of 1,571 unique references, 35 articles have been included in the final selection. The majority of studies are UK, Australia, and USA based, with primary prevention and mental health the top two PH topics. Overall, the methodological quality of studies is considered low (<4/5 on MMAT). The developed a priori framework adequately describes the majority of findings. Early codes that do not fit the framework relate to 'patient profile', 'healthcare systems', 'unintended outcomes', and 'beliefs and attitudes'.

Discussion and Conclusions: Understanding contextual factors in PH CME for GPs is relevant, given the challenges GPs face with changing patient demographics and community-led care. Synthesising findings against a theoretical framework allows providers to consider consequences of contextual factors when developing CME programmes, potentially leading to more effective, appropriate and timely PH CME.

Take-home Messages: Understanding factors that influence PH CME for GPs may lead to more effective CME design and delivery, ultimately improving dissemination of important PH issues through CME.

#SC2 - Short Communications: CPD

#SC2.19 (7266)

Virtual ENT Clinics as an Educational Tool for General Practitioners

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ABSTRACT:

Background: The primary care specialist interface is a key organisational feature of many health care systems. Patients are referred to specialist care when investigation or therapeutic options are exhausted in primary care and more specialised care is needed. Referral has considerable implications for patients, the health care system and health care costs. A review of the literature suggests that involvement of hospital specialists in the triage process and their interaction with GPs in joint clinics is more effective than issuing referral guidelines.

Summary of Work: 'A Proof of Concept' project was implemented between the ENT Department and the Beacon Medical Group was carried out. An ENT Consultant, An ENT Fellow (on the specialist register) and a specialty doctor took part in the pilot with 2 GP coordinators from the Beacon Medical group (Four GP practices). Enhanced triage and virtual clinics were set up using a secure electronic patient record system (System One) which supports a 'one patient, one record' model of healthcare. The system was enhanced by having access to ENT patient images captured by their GPs using adaptors to mobile devices and an image capture software that allows linkage to System One securely. General practitioners submitted a virtual referral letter and the ENT Specialists provided a working diagnosis, suggested management plan as well as free text comments to GPs.

Summary of Results: The total number of patients reviewed in the pilot were 287 patients. The number of patients with complete data were 279 patients. Referrals to secondary care were avoided in 38 out of 279 patients (13.6%). Referrals were better managed/pathway changed in 183/279(65.6%)

Discussion and Conclusions: This education innovation has a significant potential of providing specialist care 'at place' for ENT patients, minimising secondary care referrals, providing secondary/tertiary care capacity for patients in need of such care and enhancing the quality of patient care by ensuring appropriate patient care pathways are followed from primary to secondary care. General practitioners have access to specialist input and educational support incorporated into their working practices.

Take-home Messages: This model of Virtual Clinics offers an innovative way to enhance ENT Knowledge and Skills for General Practitioners with a resultant positive impact on patient care.

#SC2 - Short Communications: CPD

#SC2.20 (6494)

It takes a village: Team characteristics as an essential presage factor of effective interprofessional education interventions

AUTHOR(S):

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ABSTRACT:

Background: In 2012 we implemented a biennial continuing professional development (CPD) activity for a multidisciplinary cancer team at our tertiary hospital, using evidence-based interprofessional education design for service improvement. A program evaluation based on the 3P model (presage, process and product) showed positive outcomes (AMEE 2019 abstract 62), including changes in behaviour and organizational practice. We tried to implement this model of CPD in another cancer team at our institution with no success. Why did it work in our team?

Summary of Work: We conducted semi-structured interviews with 19 team members using a typical purposive sample strategy. A grounded theory approach was used with inductive analysis of narrative comments coded by two researchers, using the constant comparative method. Emergent themes were categorized through discussion and consensus.

Summary of Results: The four themes identified were sense of belongingness, contribution, learning and vision. The central theme identified was a strong sense of belongingness to the team, including respect, inclusion, connection and shared values. The willingness to contribute was a value, but also seen as a natural consequence of members' engagement. The vision and educational leadership emerged from within the team and was aligned with the team identity, allowing the team to learn together from practice, in practice and for practice.

Discussion and Conclusions: The underlying mechanisms of effective IPE and CPD are under scrutiny and systematic reviews have used the 3P model as a frame of analysis. Presage factors studied usually include drivers, geography, resources, and teacher and learner characteristics. Our work suggests that, for service improvement activities at the post-qualification level, the characteristics of the team is an essential factor. Such characteristics align with the theory of communities of practice, and the design of the CPD activity as a reification of the community and a venue for the negotiation of meaning and identity might improve outcomes.

Take-home Messages: Team characteristics seem to be an important presage factor for interprofessional CPD activities. Aligning the design of the education intervention with the characteristics of the community of practice might be a successful strategy to improve outcomes.

#SC2 - Short Communications: CPD

#SC2.21 (7238)

Navigating physician education: Curriculum mapping provides directions to uncharted continued professional development

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ABSTRACT:

Background: Family physicians must maintain competence over a broad range of topics to ensure quality-care for their diverse populations. Continuing professional development (CPD) courses provide one avenue for family physicians to stay up-to-date in knowledge and skills. Curriculum mapping is a useful way to analyze the course offerings to determine to what extent the objectives align with the vast array of competencies required of family physicians. The map can is an important data set to use for needs assessment.

Summary of Work: Using Microsoft Excel, we compiled a total of 547 individual presentations from the 36 different CPD courses that took place between 2017-2019. We mapped these courses to a list of competencies for family physicians developed by consensus of stakeholders. We assigned a single point to each time a competency was addressed in the presentation's learning objectives.. Analysis of the results was done to inform future planning.

Summary of Results: Among the 547 presentations reviewed, competencies met most often were within the broad and overlapping categories of "Care of the Adults" (85.9%) and "Family Medicine Expert" (90.4%). Competencies met the least often were mapped to the categories of "End-of-life-care" (0.9%) and "Maternity and Newborn care"(2.4%) Within the nonmedical expert CanMEDs categories Health Advocate (4.9%) and Professional (5.7%) were lowest.

Discussion and Conclusions: The process demonstrated the importance of using precise and descriptive learning objectives if they will be used as part of a mapping or needs assessment process. The medical expert and care of the adult were highly represented understandably. The less often covered competencies warrant discussion about why that is, and recognition of bias of the planning committees. Use of the curriculum map summary data has already influenced program development in our centre, leading to more programming in the under represented areas.

Take-home Messages: Curriculum mapping is a useful tool to identify gaps in competencies. This can be used as a guideline when designing the learning objectives for future CPD courses. The results can also facilitate reflection on why some competencies are over or under-emphasized.

#SC2 - Short Communications: CPD

#SC2.22 (5108)

Antibiotic Cafe: Using a World Cafe model to facilitate Peer-to-Peer learning amongst qualified hospital staff

AUTHOR(S):

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ABSTRACT:

Background: Learning cafes are being increasingly utilised in undergraduate education as a safe, informal environment for learning. They are an effective and refreshing learning style promoting peer-peer learning and are enjoyed by/beneficial to student attendees. We aimed to extrapolate learning cafés to qualified staff across the trust to discuss antimicrobial resistance. In doing so we can both address the issue of AMR as well as provide a novel learning experience for staff.

Summary of Work: The World Café model was used to facilitate a discussion of using antimicrobials in Clinically Futile Scenarios an issue identified as a priority for addressing on a trust-wide level. An MDT pilot group was set up including patient representatives to decide the questions which would provide the café discussion points. The cafes were then run across all sites of the Northumbria Trust on successive dates with feedback collected after each one.

Summary of Results: The Cafes were attended by a total of 96 participants over 3 cafes. There was a good variety of staff in attendances including medical, nursing and pharmacy staff. Feedback was positive from the staff in attendance with the mix of professions and skills being praised as a real driving factor for the varied and interesting discussion. All those who attended said they would attend again if the opportunity arose and would be keen for the format to be used for future learning events.

Discussion and Conclusions: The Antibiotic Café has been shown to be an effective method of informal peer-peer learning where qualified health care professionals can share expertise and experiences for collaborative learning. It provides a novel platform for raising awareness of AMR and provides staff with learning/CPD-opportunities. Whilst there was a range of attendees, it was noted certain staff groups e.g. junior doctors and non-clinical staff were limited therefore this can be addressed going forward.

Take-home Messages: Learning cafes provide a fun, interactive peer-peer learning opportunity at an undergraduate level but can be extrapolated to a post-graduate, professional context as well. Qualified staff enjoy the informal style of a learning café and it can be used as a platform to address topical issues e.g. antimicrobial resistance.

#SC3.1 - Short Communications: Curriculum - CBME/OBE

#SC3.1.1 (6750)

Developing the national learning outcomes for graduating doctors using the Delphi method

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ABSTRACT:

Background: In 2018, the undergraduate medical education in Finland was evaluated by the Finnish Education Evaluation Centre. The international evaluation panel recommended to define the national learning outcomes for the graduated doctors. The Delphi method was chosen for developing a consensus on the knowledge, skills and behaviours of the “Finnish doctor”. The aim of this study was to analyse the Delphi process when defining the national learning outcomes.

Summary of Work: A national working group was established, representing five medical schools, primary and specialized healthcare, professional and patient organisations, students and young doctors. The Delphi panel was chosen using a purposive sampling of the stakeholder groups. The working group used the General Medical Council’s (GMC) Outcomes for graduates in formulating the first version of the intended learning outcomes (ILOs). The panelists evaluated the relevance of ILOs using a four-point scale and suggested revisions. Two Delphi rounds have been carried out using an anonymous online questionnaire.

Summary of Results: The first version of the 183 learning outcomes was sent to 108 panel members who had confirmed their participation in the expert panel. In the first round, 85 experts answered the questionnaire. In the second round, the number of respondents decreased (63) but the profile of the respondents was sufficiently similar. The consensus in a single ILO was reached when 93% of the panelists evaluated it extremely or somewhat relevant. On the first round, the consensus was reached in 66% of ILOs. On the second round after reformulations, the amount of ILOs with consensus had increased up to 73%. After two rounds, the number of ILOs were reduced from 183 to 146 and the formulations were homogenized. The third panel round is ongoing and the national curricula outcomes will be launched in March 2020.

Discussion and Conclusions: The Delphi consensus method and the iterative process between the working group and the expert panel served well for generating a shared view of what the Finnish doctor should master at graduation.

Take-home Messages: The Delphi method provides a valuable tool for the collaborative definition of the learning outcomes at the national level.

#SC3.1 - Short Communications: Curriculum - CBME/OBE

#SC3.1.2 (4861)

Dimensions of Executive Functions and Learning Management and learning outcomes in freshmen of the School of Medicine

AUTHOR(S):

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- Carlos Ramos, Universidad Catolica de Quito, Ecuador
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ABSTRACT:

Background: The Executive Functions also called cognitive administration are relevant for academic development in students of higher education since they allow the effective regulation of emotions and cognition needed for good academic performance. Meanwhile, Learning Management allows students to identify their ways of learning, which facilitates problem solving, the search for alternatives and the anticipation of answers.

Summary of Work: The purpose of this research is to analyze the relationship between the different components of Executive Functions and Learning Management with Learning outcomes measured with EFECO , Scale for Assessing Executive Funtions in Self-Report and Learning Management. A quantitative paradigm with descriptive and correlational approach was used, the sample consists of 119 freshmen of the School of Medicine of University Catolica del Maule, Chile.

Summary of Results: The components of Executive Functions are independently correlated with learning outcomes, the results show that there is a positive correlation with: behavior supervision ($p < 0.001$); ability to verify the task ($p = 0.030$); cognitive flexibility ($p < 0.001$); planning ($p = 0.006$). On the other hand, there is a positive correlation in the dimensions of Learning Management functions that correspond to: perception of performance ($p = 0.002$) and self-management of learning ($p = 0.004$).

Discussion and Conclusions: It can be inferred that higher order specific cognitive factors and learning management variables related to perception of ones own performance influence academic performance. These results can guide the design of accompaniment and intervention actions of these specific skills in freshmen to help improve their academic progression.

Take-home Messages: Medical students today are a diverse population. Neuroscience gives us opportunities to improve learning outcomes through the early recognition of the dimensions of executive functions which allows the design of more specific support activities to contribute to a better academic progression.

#SC3.1 - Short Communications: Curriculum - CBME/OBE

#SC3.1.3 (4199)

Outcome-based education: evaluation, implementation and faculty development

AUTHOR(S):

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ABSTRACT:

Background: Developments in Outcome-based education (OBE) and innovative shifts in its pedagogical approaches have reshaped the learning environment of curricula at medical schools. This instructional design has gained popularity due to its authenticity and systematic approach. However, this needs organized supervision and faculty training in order to achieve the desired goals for the program.

Summary of Work: This article examines the application of OBE at a private medical school in Saudi Arabia. It describes the curriculum review process and the characteristics of the curriculum reviewers involved. It evaluates the curriculum using Harden's Outcome-based Education implementation (OBE Inventory profile (a) 'the Ostrich', (b) 'the Peacock' (c) 'the Beaver' and (d) Transition to beavers (Harden, R. M., 2007). This included the nine components of the OBE implementation inventory profile. OBE reviewers satisfaction about OBE implementation was evaluated and plotted using implementation inventory profile.

Summary of Results: This analysis shaped our institutional profile almost similar to the transition to beavers. Significantly, these findings supported the efforts to implement the OBE and directed to continue the persistence efforts in order to establish the profile of the beavers. At the program level, the study identifies gaps and suggests suitable recommendations to enhance the enactment of OBE. Furthermore, it assists with faculty development strategies by proposing a model in the form of mnemonic "ADAPTATION Species" to be utilized for faculty development.

Discussion and Conclusions: In this study, the researchers determined that in order to be true to the beaver, we need to be as adaptive as the beaver and secure transformation in the educational ecosystem. Conclusion We strongly encourage medical educators to apply the nine components of the OBE implementation inventory to evaluate their level of implementation of OBE. To further build up this model, the authors propose a mnemonic "ADAPTIVE Species" as an instructional prompt to develop these qualities in medical faculty. ADAPTIVE(Assertive, Developer, Assessors, Prime movers, transparent, Innovators, Vigilant, Evaluators, Selectors)

Take-home Messages: • There is strong desire for faculty training through workshops and refresher short courses to implement and evaluate OBE. • Faculty developers must design and follow the guidelines of OBE evaluation tools.

#SC3.1 - Short Communications: Curriculum - CBME/OBE

#SC3.1.4 (5236)

An Empirical Investigation into Milestones Factor Structure using National Data from Clinical Competency Committees

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ABSTRACT:

Background: Since 2013, the ACGME Milestones have served as a measure of residents' professional development. The six general competencies in the Milestones framework are further divided into sub-competencies depending on the needs of the medical specialty. Milestone ratings are determined for each sub-competency by the Clinical Competency Committee (CCC) of each program semi-annually during residency. The present study investigated if Milestones data obtained empirically from CCC ratings in a single specialty reflected the 6-domain competency framework.

Summary of Work: National ACGME Milestone ratings from Obstetrics and Gynecology (OBGYN; 28 sub-competencies, 275 programs) from 2018-19 were examined. Data from 1371-1459 residents – depending on post-graduate year (PGY) and assessment period – were used in the analysis. Intra-class correlations (ICC) were calculated by sub-competency to gauge program-clustering effects on ratings. These effects were attenuated by obtaining the within-program covariance matrix using residents' deviation scores from their program mean. The matrix was used in confirmatory factor analysis to compare the fit of the 6-domain factor model against 5 other plausible models, including one-factor and 3-split-factor-PC (3PC) models. The model-data fit was evaluated using Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA), and Bayesian Information Criterion (BIC).

Summary of Results: Moderate to high levels of ICC were prevalent among sub-competencies (0.37-0.86). Across PGY levels and assessment periods, the 6-domain factor model was a better fit than 4 other plausible models (CFI=0.84-0.90, RMSEA=0.06-0.08, BIC=-4161.01-11443.01). In addition, the 3PC split model resulted in marginally better fit than the 6-domain factor model (CFI=0.91-0.95, RMSEA=0.04-0.06, BIC=-5316.86-10489.86). The three factors in PC that emerged were: (1) obstetrical-technical skills; (2) gynecology-technical skills; and (3) knowledge-based patient care.

Discussion and Conclusions: CCCs appear able to uniquely distinguish 6 general competencies as expected, but also differentiate PC sub-competencies as further substantively-meaningful constructs. The consistent findings over PGYs and assessment periods provide support for the meaningful use of Milestones as a measure of performance trajectories.

Take-home Messages: This study provides internal structure validity evidence for the Milestones within a single specialty, and sheds light on CCCs' shared understanding of the distinctive content embedded within the Milestones.

#SC3.1 - Short Communications: Curriculum - CBME/OBE

#SC3.1.5 (5276)

Examining the Longitudinal Consistency of Milestones-Based Learning Trajectories: National Study of Family Medicine Residents

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- Eric Holmboe, Accreditation Council for Graduate Medical Education, USA

ABSTRACT:

Background: Trended milestones data reported to the Accreditation Council for Graduate Medical Education (ACGME) can be used as educational outcome data to measure the developmental progression of learners. Learning trajectories illustrate the pattern and rate at which learners acquire competencies. This study investigates the longitudinal consistency and developmental patterns of residents. We aim to identify the reliability of learning trajectories to detect differential progression that can yield meaningful intervention and remediation for residents.

Summary of Work: National data from Family Medicine were used, representing six semi-annual reporting periods from July-2016 to June-2019 (514 residency programs; 3,872 residents). To estimate longitudinal consistency, we used growth rate reliability (GRR) and growth curve reliability (GCR) for 22 sub-competencies in the ACGME Family Medicine Milestones, incorporating clustering effects at the program level. Latent class growth curve models with quadratic effects were used to examine longitudinal learning trajectories.

Summary of Results: The milestones reporting system demonstrated reproducibility to consistently differentiate individual longitudinal differences for formative purposes (Mean GRR=.63); there was excellent evidence of precision for model-based rates of change (Mean GCR=.91). Milestone ratings increased significantly across training years and reporting periods, $p < .001$. Patterns of developmental progress varied by sub-competency. There were three or four learning trajectories for each 22 sub-competencies. For example, for the professionalism sub-competency, residents were classified to four groups of learning trajectories; trajectories diverged further after postgraduate year (PGY)-1, indicating potential remediation point between end of PGY-1 and PGY-2. Similar inferences for learning trajectories were found for practice-based learning and improvement, systems-based practice, and interpersonal and communication skills. Sub-competencies in medical knowledge and patient care demonstrated more consistent patterns of upward growth.

Discussion and Conclusions: The milestones reporting system provides reliable longitudinal data for individualized tracking of progress in all sub-competencies. Learning trajectories with supporting reliability evidence can be used to understand residents' developmental progress and tailored for individualized learning plans and remediation.

Take-home Messages: Identifying different patterns of learning trajectories can serve to target and remediate learners who may show signs of difficulty in their training. Identifying learning trajectories will also allow study of factors that may mediate their learning progress.

#SC3.1 - Short Communications: Curriculum - CBME/OBE

#SC3.1.6 (5322)

Do we need to review competencies required to prepare the dental graduate for the 21st century?

AUTHOR(S):

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ABSTRACT:

Background: The Medical and Dental Professions Board of the Health Professions Council of South Africa, adapted the CanMEDS core competency framework to inform medical and dental curricula in South Africa. This adapted version of CanMEDS is referred to as the AfriMEDS competency framework. The purpose of this research was to explore and describe dental educators' knowledge and attitude of the AfriMEDS core competency framework at a South African dental school.

Summary of Work: A case study approach to qualitative inquiry was used in this study. Participants were purposefully selected and two focus group semi structured interviews (6 and 7 participants) were conducted. The inclusion criteria was dental educators who were course coordinators in clinical disciplines. An interview protocol was used to guide the interviews. Interview transcriptions were uploaded to the Atlas ti programme for data analysis. Themes were identified in the literature and thematic analysis was performed using the Atlas ti programme.

Summary of Results: Dental educators considered the following as essential competencies for a dental graduate: Health care professional, Communicator, Collaborator, Critical thinker, Health Advocate, Digital competence, Ethics, Evidence based dentistry, Internationalization and Professionalism. Interestingly, participants were more concerned about factors that influence the achievement of these identified competencies. Learning and teaching matters, secondary school education and the value of alumni feedback were new emerging themes from the data.

Discussion and Conclusions: Although the importance of the AfriMEDS core competencies was recognised, concerns regarding factors affecting its successful implementation were raised. Evidence based dentistry Internationalization and Digital competencies were highlighted by the dental educators as essential for the new 21st century dental graduate. These competencies would ensure that they are prepared for the changing world of work.

Take-home Messages: A review of required core competencies should be considered to prepare the dental graduate for the 21st century.

#SC3.1 - Short Communications: Curriculum - CBME/OBE

#SC3.1.7 (5440)

Who owns responsibility? An administrator's take on implementing time-variable medical training

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ABSTRACT:

Background: Developments in outcome- and competency based medical education led to the introduction of time-variable medical training (TVMT). Implementing such programs in practice leads to significant challenges. Providing time-variable training programs at the level of individual trainees requires a serious change in the way training programs are organized. Because trainees have an important role in clinical service, it is likely that time variation in postgraduate medical training has repercussions on the organization of teaching hospitals. Therefore, the transition to outcome-based education not only involves changes in the educational programs but also in the organization of teaching hospitals. In this short communication, we discuss the effects TVMT has on the administrative level of teaching hospitals and the strategies that hospital administrators use to cope with these educational developments.

Summary of Work: During this short communication, we use the insights that we have gained during an exploratory qualitative study. We interviewed administrators of hospitals who were actively implementing TVMT in their postgraduate programs. This study is part of a research project aimed at the exploration of the organizational effects TVMT and explored the effects at hospital departments, trainee and staff interaction and financial consequences of shorter training programs.

Summary of Results: Several problems of implementation were identified: existing governance structures proved unfit to cope with the financial and organizational implications TVMT. Administrators respond to these problems by delegating responsibilities to departments, reallocating tasks, learning from other hospitals and scaling up their teaching facilities.

Discussion and Conclusions: Hospital administrators perceive the implementation of TVMT as challenging. TVMT affects the existing equilibrium between education and clinical service. Administrators' initial attempts to regain control, using steering strategies that are based on known concepts and general outcomes, do not work, nor did their subsequent wait-and-see approach of leaving the implementation to the individual departments.

Take-home Messages: The implementation of TVMT inflicts serious organizational challenges at the administrative level of teaching hospital organizations. The relation between training and clinical service has to be addressed when implementing TVMT.

#SC3.1 - Short Communications: Curriculum - CBME/OBE

#SC3.1.8 (5458)

Exploring Residents' Perspectives of Competency-Based Medical Education Across Canada

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ABSTRACT:

Background: As Competency-Based Medical Education (CBME) is being implemented across Canadian residency programs, little is known about residents' perceptions of this model despite their being the group most directly affected by the transition. This study examined how Canadian residents understand CBME and their lived experiences with implementation.

Summary of Work: An online questionnaire with Likert-type and open-ended questions was administered to residents across Canada. A total of 434 residents completed the survey, of whom 295 were from traditional training programs ("pre-CBME") and 139 were enrolled in a CBME program. The Mann-Whitney test was used to examine differences across samples. An emergent thematic approach was used to analyze the qualitative data through open coding in NVivo.

Summary of Results: Three themes emerged across both groups: program outcome concerns, changes, and emotional responses. In relation to program concerns, both groups were concerned about the administrative burden, challenges with the assessment process, and quality of feedback. Only pre-CBME residents were concerned about faculty engagement and buy-in. In terms of changes, both groups of residents discussed a more formalized assessment process with mixed reactions. Residents in the pre-CBME sample reported greater perceived concerns for faculty time constraints, difficulty with assessment completion, and more time spent on administering the program rather than facilitating quality learning experiences. Residents in CBME programs reported being more proactive in their learning and greater self-reflection. Both resident groups expressed strong emotional narrative responses that included experiencing greater stress and frustration in a CBME environment.

Discussion and Conclusions: Our findings demonstrate that residents across Canada have mixed feelings and experiences regarding CBME. Their positive experiences align with the aim of developing more self-directed learners. However, the reported concerns suggest that programs will need to address specific shortcomings to increase buy-in, while the emotional responses associated with CBME may require a cultural shift within residency programs in order to guard against burnout.

Take-home Messages: The transition to a new curricular model such as CBME can result in unintended outcomes including heightened levels of anxiety and stress as reported by residents. This suggests the need to attend to residents' well-being in a CBME environment.

#SC3.1 - Short Communications: Curriculum - CBME/OBE

#SC3.1.9 (6275)

Evaluating the Child and Adolescent Psychiatry sub-specialty program using a rapid-cycle approach

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ABSTRACT:

Background: Queen's University launched competency-based medical education (CBME) in July 2017. Due to the relatively small size of the Child and Adolescent program, the ability to iteratively respond to programmatic needs has been limited, primarily due to the lack of data. The purpose of this study is to evaluate the transition to CBME for the Child and Adolescent Psychiatry program at Queen's University.

Summary of Work: The first cycle of this rapid evaluation was completed in November 2019. Twelve stakeholders from the program including residents, faculty, program leaders, allied health professionals, and educational consultant (n=12) participated in semi-structured focus groups or individual interviews to understand experiences following CBME implementation and to identify areas for improvement. All data were analyzed thematically. A second evaluation cycle will occur in the Spring of 2020 to determine the effects of interventions and changes made within the department.

Summary of Results: The first evaluation cycle resulted in nine key recommendations that are being implemented prior to the second evaluation cycle. Participants identified several barriers and facilitators to effective CBME implementation. Across all stakeholders, time commitments and refinement of assessment tools were identified as key concerns. Program leaders also highlighted the specific challenges associated with being a smaller and relatively new program. Residents described a myriad of benefits of the CBME approach, including enhanced quality of feedback. Moving forward, findings illustrated the importance of supportive leaders and learning opportunities with faculty and residents with CBME experience. Results indicated areas of refinement regarding the clarity of CBME expectations, integration with allied health staff, and the interpretation and alignment of assessment tools.

Discussion and Conclusions: Findings highlighted stakeholders' experiences with the transition to CBME, and offer insight into potential barriers and facilitators for enhancing the quality of CBME implementation.

Take-home Messages: The use of program evaluation has resulted in timely feedback about CBME implementation that will be used to inform iterative program development. The process has also helped to collect a variety of stakeholder perspectives within the program.

#SC3.1 - Short Communications: Curriculum - CBME/OBE

#SC3.1.10 (7004)

An Evaluation of the Implementation of CBME in Radiology at Queen's University

AUTHOR(S):

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ABSTRACT:

Background: Canadian postgraduate Radiology programs are tentatively scheduled to switch to a Competency-Based Medical Education (CBME) framework, entitled Competence by Design (CBD) in July 2021. However, as part of an institution-wide transition, the Radiology program at Queen's University implemented CBME in July 2017. This study aimed to conduct a program evaluation of Queen's Radiology implementation of CBME.

Summary of Work: Using rapid evaluation methodology, the intended implementation of CBME in the Queen's Radiology program was explicitly described. Focus groups and interviews were then conducted with trainees, faculty, and program leaders, on their experiences in the first two years of implementation. Analyses were abductive, using the CBME core components framework (Van Melle et al., 2019) and thematic analysis to understand stakeholders experiences, and compare planned versus enacted implementation, with an aim towards adaptation.

Summary of Results: Overall, stakeholders felt "the concept [of CBME] makes sense", but it is still unclear "whether or not it will produce better physicians". A more structured curriculum, as well as frequent and timely assessments, were identified as benefits of CBME. A reduction in time off-service was met with positive reviews by most, though some staff had reservations. Increased workload, case availability, creating faculty buy-in, and understanding stage-specific entrustment were cited as major challenges. Concerns about the compatibility of CBME with diagnostic specialties and 'fee for service' compensation models were also raised.

Discussion and Conclusions: This study provides critical insights into the successes and challenges of implementing CBME in Radiology. While the CBME culture is slowly changing in the program, these results highlight areas for discussion and optimization. These findings will be used to support continued change to the Queen's Radiology program and will provide other Radiology programs with valuable information about CBME implementation.

Take-home Messages: Evaluating the implementation of CBME in Queen's Radiology uncovered a number of challenges. Some of these challenges seem to be common across specialties; however, a number of other challenges appeared to be unique to Radiology. As such, this study provides a unique view on CBME implementation and highlights a number of considerations for other programs in the process of implementation.

#SC3.1 - Short Communications: Curriculum - CBME/OBE

#SC3.1.11 (7310)

Vitalizing a whole-task curriculum: Acceptations and resignations of health and illness conditions in the era of Competency Based Education

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ABSTRACT:

Background: Several medical schools have initiated a transition from traditional curriculums towards Competency Based Education (CBE) frameworks supported by the principles of workplace learning. This transition has required, at least, four essential elements: 1) specific domains of professional practice (e.g. communication); 2) a set of detailed, real and well-focused activities at the workplace (e.g. performing a physical examination), 3) a supportive instructional design based on whole tasks principles (e.g. 4C/ID model) and, 4) a comprehensive system of assessment of clinical competency. In practice, however, CBE is vitalized by specific conditions of health and illness included in the curriculum, resulting from the local burden of disease, demographics and context of practice. Although it seems obvious, this selection represents a challenge for educators, clinicians and curriculum designers in contexts in which general practitioners have to deal with more than 80% of the burden of disease, as Latin America. We present our experience to identify these diseases.

Summary of Work: The School of Medicine of Universidad de la Sabana (Colombia) initiated a transformation of the traditional curriculum into CBE adopting an Entrustable Professional Activities (EPAs) framework. Since 2017, the essential aforementioned elements have been covered. Ultimately, to vitalize this curriculum we adopted a stepwise Delphi method involving different taskforces of stakeholders, from basic and clinical disciplines, who accepted and rejected different specific health and illness conditions included in the traditional curriculum. An iterative process of discussion allowed to optimize the number of conditions adjusted by the level of entrustment decisions previously defined.

Summary of Results: A total of three hundred conditions were identified in the traditional curriculum. After the iterative process of discussion, analysis of relevance and internal validation by the main faculty the final conditions included in the new curriculum were close to 150.

Discussion and Conclusions: The process of transition from traditional into CBE frameworks require progressive steps. The efficiency of curriculums based on CBE, however, deserves further research.

Take-home Messages: The conditions of health and illness vitalize the curriculum but this process requests acceptances and resignations from the faculty and the academic community. An iterative teamwork that seeks consensus is an appropriate strategy to achieve this type of curricular changes.

#SC3.2 - Short Communications: Curriculum - Community Oriented/Social Accountability

#SC3.2.1 (7227)

Building a future generation of socially accountable leaders - A peer-led approach

AUTHOR(S):

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ABSTRACT:

Background: The International Federation of Medical Students' Associations has shown great involvement in the field of Social Accountability in the last years, selecting it as one of its Global Priorities for the consecutive terms of 2016/2019 and produced significant results on an international level, such as being awarded the Charles Boelen Award for publishing the Students' Toolkit on Social Accountability together with THENet in 2017. However, while IFMSA has been advocating for Social Accountability internationally, monitoring local and national action is essential to achieve its implementation. Hence, IFMSA held a global campaign to raise awareness about students' actions towards a socially accountable medical education and to assess the extent to which medical students are engaging with their peers towards teaching, advocating, and implementing socially accountable actions within their medical curricula.

Summary of Work: A campaign has been implemented to highlight the students' achievements in promoting and implementing a socially accountable medical education by conducting a global assessment on students activities. This has been done through a questionnaire addressing the type of activities medical students lead within their medical schools and communities (peer education, students' representation, curriculum assessment, students campaigns, etc), and how it impacts their medical education systems, in terms of exposing medical students to a community-based learning environment and accessibility to a career as a General Practitioner and Family Medicine. The data collecting period is from January until March 2020. Results will be analyzed and promoted in AMEE.

Summary of Results: Results will be analysed in the period April- June and ready for presentation at AMEE2020 in September.

Discussion and Conclusions: People-centered care is only possible through socially accountable medical education. Understanding students' perspectives on implementing a socially accountable medical education requires analyzing the student-led activities within medical schools and/or communities.

Take-home Messages: There has been great progress in the general awareness on social accountability in the last years. However, much work is still needed to develop concrete actions towards the development of socially accountable education.

#SC3.2 - Short Communications: Curriculum - Community Oriented/Social Accountability

#SC3.2.2 (5240)

The role of social accountable medical education in addressing health inequity in Aotearoa New Zealand

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ABSTRACT:

Background: Medical education provides a locus to apply the principles of social justice to advocate for indigenous health inequities. Within the education field, social accountability measures have been used to increase equity.

Summary of Work: This study uses a social accountability lens to explore the perspectives and experiences of academic and clinical leaders, students, and patients engaged with the Indigenous Health curriculum at the University of Otago Christchurch. Structural analysis was utilised to organise the data, using Ellaway et al (2016) framework, which included the concepts of context, mechanisms, and outcomes.

Summary of Results: Using an Indigenous research paradigm as a theoretical framework, and drawing on qualitative analysis, the structural coding based on the concepts by Ellaway et al(2016) of contexts, mechanisms and outcomes were utilised to frame the analysis . These three concepts well emerged as defining the key themes which described the activities, enablers and mechanisms that identified the Indigenous health curriculum as a method for achieving social accountability among Māori (Indigenous) communities, medical education, and health services.

Discussion and Conclusions: This study describes how one medical school's Indigenous health curriculum is attempting to address Indigenous health inequities, using social accountability measures. Stakeholder engagement highlights the importance of Indigenous communities advancing a social accountability approach through dynamic and responsive leadership that values each stakeholder's experience. The Indigenous health curriculum and its processes can enact real-time stakeholder experiences to inform student-learning outcomes, to inform curriculum design and development, and provide monitoring of the Indigenous health curriculum. The Indigenous health curriculum enables the medical school to be part of a socially accountable community that advocates for social justice through Indigenous health equity.

Take-home Messages: The Indigenous health curriculum and its processes can enact real-time stakeholder experiences to inform student-learning outcomes, to inform curriculum design and development, and provide monitoring of the Indigenous health curriculum. The Indigenous health equity.

#SC3.2 - Short Communications: Curriculum - Community Oriented/Social Accountability

#SC3.2.3 (5493)

Is learning physical examination skills at General practice effective? – Using GPs to teach physical examination skills to pre-clinical medical students.

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ABSTRACT:

Background: Teaching clinical skills in the preclinical phase of the medical program is traditionally conducted using simulated patients, guided by clinical tutors. Previous studies have shown that early exposure to clinical skills programs has improved the understanding, confidence, clinical reasoning and subsequently improving their OSCE results, and ultimately benefiting patients.

Summary of Work: We piloted a method of teaching physical examination skills to first year medical students by General practitioners at their clinics using real patients – called “General Practitioner Longitudinal Program” (GPLP). This new method was applied to year 1 medical students who are based at Sunshine Coast while a traditional method was applied to a control group based at Gold Coast. Both cohorts of students followed the same Griffith MD curriculum. Participating General practitioners were trained by specialist consultants to standardise their teaching. A survey was administered to measure their self-evaluated knowledge, experience and confidence before and after the GPLP program and its control. Mann Whitney U test was used to evaluate the change in knowledge, experience and confidence. A separate set of questions were given to evaluate their clinical reasoning capacity. Wilcoxon sign rank test was used to measure the change in clinical reasoning capacity. All analyses were done in SPSS version 25

Summary of Results: There was a statistically significant increase in the mean of knowledge, experience and confidence from pre to post GPLP, being, 6.24, 6.17, 6.5 respectively and there is a statistically significant difference between the two groups $p = 0.001, 0.02, 0.01$ respectively. There was a statistically significant increase in the clinical reasoning capacity from pre to post GPLP, being 2.06 and $p = 0.000$.

Discussion and Conclusions: Teaching physical examination skills by general practitioners using real patients at their practice has shown to be very effective in increasing students’ knowledge, experience and confidence as well as clinical reasoning capacity.

Take-home Messages: Physical examination can be taught more effectively by GPs using real patients at their practices compared to traditional method.

#SC3.2 - Short Communications: Curriculum - Community Oriented/Social Accountability

#SC3.2.4 (5500)

Person-Centered Care: Developing a national consensus for teaching social prescribing across the UK

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ABSTRACT:

Background: Approximately 1 in 4 patients consult their family doctor for social problems and welfare advice. For this group of patients, the biomedical model alone fails to meet patient needs. Social prescribing (SP) complements this model by enabling healthcare professionals to refer patients to a link worker, to co-design a non-clinical social prescription to improve their health and wellbeing. However, SP and person-centred care do not represent a formal part of the medical school curricula. Aim: To develop a national consensus for teaching social prescribing in UK medical schools.

Summary of Work: A national survey was disseminated across medical schools through the SP Champion Scheme to evaluate student perceptions and preferences. Results were assessed using qualitative thematic analysis. Key academics, clinicians and various stakeholders were then invited to a national focus group to review and complement student preferences.

Summary of Results: Five main themes have been highlighted by a total of 613 students representing all (34) medical schools in the UK: 1. Timing; 2. Delivery method; 3. Style; 4. Content; 5. Assessment. Both survey respondents and focus group members emphasised the need to reframe values and perceptions starting from the first few years of medical school. Most importantly, both groups highlighted the need to formally assess this concept to consolidate learning.

Discussion and Conclusions: A comprehensive report was developed based on student preferences, stakeholder's comments, and current teaching examples. This indicative curriculum complements current outcomes for graduates and has the potential to provide flexible SP teaching recommendations to medical schools worldwide.

Take-home Messages: SP complements the biopsychosocial model by delivering person-centred care to patients, however it has not been formally introduced into the UK medical school curriculum. A national consensus for the teaching of SP has been created through data collated across all UK medical schools and aims to offer guidance on how to integrate SP into the curriculum.

#SC3.2 - Short Communications: Curriculum - Community Oriented/Social Accountability

#SC3.2.5 (5641)

Advancing a social justice agenda in health professions education

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ABSTRACT:

Background: In countries where the realities of health inequity, the extreme effect of social determinants of health and service in resource-constrained environments dominate, curricula need to respond by delivering clinically competent professionals who are also critically conscious of the contexts and systems in which they will serve. Curriculum coherence, however, requires that those teaching within a particular programme have a shared set of understandings regarding the broad principles upon which that curriculum is built. A disconnect could have serious implications for achieving the curricular aims.

Summary of Work: This qualitative study situated in an interpretivist paradigm, specifically sought to advance a social justice agenda. We explored the range of understandings that HPE teachers on two undergraduate programmes bring as they interpret the principles underpinning their curricula. Thirty-four respondents, including programme co-ordinators and module leads, participated in eleven focus groups and eleven individual interviews. Data were analysed thematically.

Summary of Results: Themes were clustered around what the respondents' understandings were; and what they meant for students, teachers, teaching practices, curriculum development, and professional identity. These participants understood the need to develop students who were not only clinically competent but also critically conscious of the contexts in which they serve and the health care systems within which they practice. However, there were differing views. Some felt that 'clinical competence' should be emphasised and questioned whether it was their responsibility to address issues of social justice.

Discussion and Conclusions: Implementing curricula that seek to foster critically conscious graduates has implications for the role and identity of the HPE teacher. It raises questions about what counts as knowledge, and about how far our responsibility extends in preparing students to take on the role of change agent.

Take-home Messages: The role and identity of the HPE teacher is a crucial element in bridging the disconnect between the intentions of curriculum designers and the delivery of curricula. Bridging this disconnect requires engaging with issues of role and identity among both curriculum designers and HPE teachers. This seldom forms part of the process of curriculum design and points to a re-envisioning of the role of HPE centres in the process of curriculum development.

#SC3.2 - Short Communications: Curriculum - Community Oriented/Social Accountability

#SC3.2.6 (6582)

Public health education for French medical students: assessment of a community-based service learning experience in Lyon faculties of Medicine.

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ABSTRACT:

Background: French graduated doctors have insufficient knowledge regarding prevention and health promotion, due to a lack in public health education. In 2018, French government set up a community-based service learning on prevention for undergraduate health students, with the aim of increasing their awareness of key public health issues. Students first underwent formal instruction to acquire basic concepts in health promotion through e-learning, and to learn how to be effective in health education through interactive seminars. Then, they conducted interventions on selected public health topics in junior to high schools.

Summary of Work: We wanted to assess this new program through medical students' perception. A mixed-method study was conducted: measure of the students' satisfaction about the interactive seminars through 580 responses to a questionnaire; semi-directive interviews of a panel of twenty students, before and after their intervention; observations of six interventions in three schools.

Summary of Results: Interviews showed that students' perception of the program evolved from negative due to its new and compulsory nature, to positive after interventions in schools. They felt valued by taking part in the program. They also began to understand their medical role in health educating people and gained a better understanding of social inequalities. Students developed competences as project management, communication skills and empathy for people with lower literacy level. Observations of students' interventions showed they had an adequate utilisation of health education tools acquired during the program. Questionnaire showed that interactive seminars had a good students' satisfaction, and allowed students to gain confidence in their own teaching capacities.

Discussion and Conclusions: Force of the study is the mixed methodology providing complementary results. Main weakness is the selection bias in the qualitative approach which included students with a more positive perception of the program than the others. The establishment of a public health community-based service learning in our faculty initiated students to health education and promotion. Students finally found benefits of the program in developing their professional and human skills.

Take-home Messages: Community-based service learning is an original and effective way to increase students' awareness in public health issues and empathy for literacy problems.

#SC3.2 - Short Communications: Curriculum - Community Oriented/Social Accountability

#SC3.2.7 (7240)

Community engagement academic program.

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ABSTRACT:

Background: Community engagement (CE) program facilitates community-campus partnerships to create sustainable health-related interventions and foster civic engagement. It was designed to promote social responsibility, entrepreneurship and leadership among medical students through engagement with local communities.

Summary of Work: In the year preceding the course opening, intensive investigations with major stakeholders in the city identified a priority for engagement with four underserved sectors: young adults living with mental health disorders, , refugees, youth at risk, and youth on the continuum of prostitution and shelter for the homeless. 25 students were selected for the program. Students study and critically explore principles related to community engagement. After the initiation stage, each group works with community partners to define and prioritize the needs and to accordingly design a specific course of intervention. At the end of the first semester, each group prepares a collaborative summary paper describing the process and the findings,

Summary of Results: Preliminary results from students reflective narratives indicate themes such as: Developing compassion, sensitivity to peoples natural surrounding, developing cultural humility or cultural competency, sensitivity to underserved populations and to people living in poverty, developing a better understanding of community and the importance of community engagement, and also developing a better understanding of oneself, in terms of their fears, their hopes, their stigmas and things like that. In this presentation we will share a more detailed analysis of student perspective as well as participant perspectives, including students, community members and faculty mentors.

Discussion and Conclusions: The projects created opportunities for medical students to lead fellow students as group mentors in the University. Through providing early exposure to communities in need, encouraging teaming with other students and community partners to create a new health-related project and supporting leadership and innovation, this program brings a paradigm shift to the typical medical education in Israel. Implementing this program on a wider, national scale will provide all medical students in Israel with a broader understanding of healthcare and hands-on experience in challenging social contexts.

Take-home Messages: Community-oriented student-led service-learning academic program can be held successfully, highly benefiting the people of the communities served while enhancing students' academic education, practical skills and sense of personal worth.

#SC3.4 - Short Communications: Curriculum - EPA

#SC3.4.1 (5671)

Bottom-up Model of Developing Entrustable Professional Activities for Emergency Medicine Residency Training

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ABSTRACT:

Background: Entrustable Professional Activities (EPAs) have been adopted as a major strategy to operationalize competency-based medical education (CBME) in workplace environment. While the buy-in of clinical teachers is crucial for the success of implementation, the prevailing model of developing EPAs majorly rely on consensus of experts. This study describes a bottom-up model and reflections of developing EPAs from clinical teachers' perspectives.

Summary of Work: This study consisted of three stages. Firstly, a survey of representative professional activities after a faculty development workshop of introducing EPAs to clinical teachers was conducted. Secondly, a qualitative content analysis of the potential items from the survey was conducted by clinician educators to let the potential EPAs topics emerged. Thirdly, through iterations of focus group discussion by program directors and pilot development from potential EPAs topics to fully described EPAs based on AMEE Guide No. 99, the consensus of final EPAs was achieved.

Summary of Results: Taiwan Society of Emergency Medicine (TSEM) conducted 20 standardized faculty development workshops around Taiwan. A total of 283 clinical teachers (around 800 in whole nation) responded to the survey with 772 items found. Three major categories and 53 potential EPAs topics (18 related to sub-competencies of emergency medicine milestone project, 23 were context-specific patient care, 12 related to special tasks in emergency medicine) were emerged from the qualitative content analysis. Through four iterations of focus group discussion and voting, seventeen topics (12 context-specific patient care and 5 special EM tasks) entered pilot development of fully description and finally seven topics (all context-specific patient care) achieved consensuses for national implementation.

Discussion and Conclusions: In literature, developing and validating EPAs majorly relied on few experts. TSEM developed the EPAs topics with a bottom-up model from clinical teachers' perspectives. During the process, we also found that some clinical teachers still cannot clearly distinguish the concepts of sub-competency and professional activities, which would be the focus of future faculty development.

Take-home Messages: The implementation of CBME needs to consider the perspectives, workload of clinical teachers. The bottom-up development model simultaneously facilitates faculty development, buy-in and gradual implementation for EPAs in national level.

#SC3.4 - Short Communications: Curriculum - EPA

#SC3.4.2 (5510)

The transition from medical school to Post-graduate Year (PGY) -1 training: perspectives of AAMC Core EPAs Pilot schools graduates

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ABSTRACT:

Background: The Association of American Medical Colleges (AAMC) Core Entrustable Professional Activities (EPAs) describe 13 activities graduates should be able to perform upon entering residency, regardless of specialty. In 2015, ten AAMC Core EPA Pilot schools began implementing curricular content and assessments using the Core EPAs framework. We examined the relationship between their graduates' self-assessed readiness to perform Core EPAs under indirect supervision at the start of residency and ease of transition to residency.

Summary of Work: With IRB approval, the AAMC administered a confidential survey to a subset of Pilot schools' 2019 graduates, 3 months into PGY-1 training. Using de-identified survey response data, we examined between-group differences and independent associations for gender, medical school, specialty (8-categories), residency orientation life-support-course participation and preparedness to perform Core EPAs under indirect supervision (proportion of 13 EPAs that resident was prepared to perform under indirect supervision at the start of residency; "EPAs-preparedness") with transition to residency rating (transition was:1=much harder to 5=much easier; 3=about as expected).

Summary of Results: Among 228 respondents with complete data, mean [standard deviation] transition rating was 3.1 [0.9]. In bivariate analysis, rating was not associated (each $p > .05$) with gender or life-support-course participation, but was associated (each $p < .05$) with specialty (2.6 [0.9], obstetrics & gynecology [OBGYN] vs. 3.6 [0.8], other non-surgical, non-primary-care specialties ["other"]), medical school (range, 2.8 [0.8]-3.7 [0.9]) and EPAs-preparedness (corr.=0.33). In linear regression, transition rating predictors included EPAs-preparedness (beta coefficient [β] 1.3; 95% confidence interval [CI] 0.8 to 1.8), specialties (each vs. "other") of internal medicine (β -0.5; CI -1.0 to -0.1), surgery (β 0-.7; CI -1.2 to -0.3) and OBGYN (β -0.9; CI -1.5 to -0.3) and medical school (data not shown).

Discussion and Conclusions: Each of EPAs-preparedness, specialty and medical school was independently associated with ease of transition.

Take-home Messages: By self-report, graduates who were prepared to perform Core EPAs under indirect supervision at the start of the PGY-1 year had an easier-than-expected transition. School-specific differences in other curricular aspects (e.g. acting internships) and specialty-specific differences in PGY-1 resident expectations/responsibilities may underlie transition differences associated with medical school and specialty.

#SC3.4 - Short Communications: Curriculum - EPA

#SC3.4.3 (6183)

Lessons from the AAMC Core Entrustable Professional Activities (EPAs) for Entering Residency Core EPA Pilot Project: Student Perspectives of Workplace-Based Assessment

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ABSTRACT:

Background: Core EPAs articulate tasks graduating students should be able to perform under indirect supervision. Our study explored perspectives on EPA-specific workplace-based assessments (WBAs).

Summary of Work: In a questionnaire administered to M3 students in 2019, we examined satisfaction with WBA feedback quality, quantity, and comfort in asking supervisors for EPA-specific WBAs. We calculated an implementation impact score (IIS; sum of responses (0=strongly disagree to 3=strongly agree) to statements “use of Core EPAs at my school” 1) “positively contributed to my confidence in my clinical abilities”, 2) “helped me understand what will be expected of me at the start of residency”, and 3) “positively contributed to the quality of my education”. ANOVA and Pearson correlations tested between-group differences; regression identified IIS predictors. The survey included two narrative questions: “What aspects of EPA implementation at your school” a) “have been most helpful to you as a learner?” (HELPFUL), and b) “could be improved or altered?” (IMPROVE). Iterative analysis for themes by two study members was performed until consensus.

Summary of Results: Among 429 respondents satisfaction with quality (mean 1.49 [SD 0.90]), quantity (1.50 [0.91]), and comfort (1.72 [0.92]) varied across schools (each $p < 0.05$). IIS (4.54 [2.50]). IIS was associated with satisfaction with quality, quantity, and comfort (corr=0.67, 0.57, and 0.47 respectively, $p < .05$), and also varied by school (2.95-6.56; $p < 0.05$). In multilevel linear regression, satisfaction (β 1.32; [95% confidence interval 1.05-1.59]) and comfort (β 0.48 [0.27-0.69]) predicted IIS. Across 335 students’ comments, HELPFUL themes included: EPAs created common expectations for learners and faculty; and the culture of feedback was positively impacted by EPAs; predominant IMPROVE themes included: detrimental impact of lack of awareness of EPAs among stakeholders; and lack of shared understanding of EPA assessments.

Discussion and Conclusions: There was variability in impact scores between schools. EPA WBAs were more impactful for students when they perceived quality feedback. Students’ narrative comments identified Core EPAs as useful in helping to understand expectations for clinical performance.

Take-home Messages: Ongoing-faculty development efforts, communication about curricular and assessment practices, and user-friendly WBA systems are warranted for effective implementation of Core EPAs.

#SC3.4 - Short Communications: Curriculum - EPA

#SC3.4.4 (6811)

Implementing the AAMC Core EPAs for Entering Residency framework in undergraduate medical education (UME): student perspective on the role of workplace-based assessments

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ABSTRACT:

Background: To inform curriculum quality improvement efforts, faculty at institutions piloting the Association of American Medical Colleges Core EPAs queried the student perspective about project implementation and its impact on their education.

Summary of Work: A 31-item, online questionnaire was administered to M3 students at all 10 schools in Spring 2018; we analyzed responses for students at 8 schools with Core EPAs curricula for all their M3 students. We calculated an implementation impact score (IIS; sum of responses [0=strongly disagree to 3=strongly agree] to 3 statements about Core EPAs in the curriculum (“positively contributed to my confidence in my clinical abilities”, “helped me understand what will be expected of me at the start of residency”, “positively contributed to the quality of my education”). We used Pearson correlations and ANOVA for between-group differences in IIS and multilevel, linear regression analysis to identify IIS predictors.

Summary of Results: IIS (mean=4.54; SD=2.51; study sample size N=429) was associated with (each $p < .05$) satisfaction with WBA feedback quality (corr=.67), satisfaction with WBA feedback quantity (.57) and comfort in asking supervisors for WBAs in core EPAs (.47). IIS also varied ($p < .05$) by school (range, 2.95-6.56); associations with a standardized academic performance measure and with gender were non-significant. In multilevel (nested by school) linear regression analysis, each of satisfaction with WBA feedback quality (beta coefficient [β] 1.31; 95% confidence interval [CI] 1.04-1.58) and comfort in asking supervisors to complete WBAs in core EPAs (β .49; 95% CI, .28-.70) independently predicted IIS. Findings for all other variables were not significant. Regarding school effects, a null model showed that between-school differences accounted for 18.2% of IIS score variance (intra-class correlation [ICC] = .182). After accounting for all independent predictors, ICC was significantly reduced from .182 to .065.

Discussion and Conclusions: Across 8 schools, satisfaction with WBAs feedback quality and comfort in asking supervisors to complete WBAs were independently associated with students’ endorsement that Core EPAs implementation positively impacted their education.

Take-home Messages: Key aspects of Core EPAs implementation are preparation of faculty to provide high-quality feedback on WBAs and a learning environment that encourages students to ask supervisors to complete WBAs.

#SC3.4 - Short Communications: Curriculum - EPA

#SC3.4.5 (4620)

From the Classroom to Entrustment. The Development of Motivational Interviewing as an Entrustable Professional Activity

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ABSTRACT:

Background: The move towards value-based care and population health has highlighted the prominent role of social and behavioral factors in determining health outcomes. Patient-centered behavioral guidance to improve patient self-management is recognized as an evidence-based intervention for a variety of chronic conditions but has yet to be generally adopted as a core physician competency or core entrustable professional activity (EPA). Motivational Interviewing (MI) is an evidence-based patient-centered behavioral intervention involving an integrated set of competencies, featuring reflective listening, affirmation, evocation, and collaborative planning. While students' knowledge, confidence, and skills around behavior change counseling have shown improvement through lectures and workshops, competence tends to diminish over time, and on-going reinforcement of students' skills from clinical faculty in authentic clinical settings has been a missing component of MI training programs.

Summary of Work: We implemented competency-based MI training and assessed competency outcomes for medical students and faculty. The existing MI competency framework, the Motivational Interviewing Treatment Integrity (MITI), was not practical for workplace-based assessment and coaching by physician educators while simultaneously providing clinical supervision. After joining the Association of American Medical Colleges Core EPA Pilot, we applied an iterative group process to develop an EPA and workplace-based assessment based on established MI competencies. Following a process modelled on the AAMC Core EPA Pilot to create EPA one-page schematics, a team of MI trainers and medical educators developed a one-page schematic and Workplace-based assessment (WBA) for an EPA based on MI.

Summary of Results: Drawing upon nine years of developing MI curriculum, we describe how we transitioned training from the classroom to the clinical setting employing an EPA framework, and present a one-page schematic and related WBA for an EPA based on MI.

Discussion and Conclusions: We propose that MI is a core EPA for future physicians practicing value-based care, and offer a roadmap for curriculum implementation.

Take-home Messages: • MI is an evidence-based patient-centered behavioral intervention involving an integrated set of competencies. • An MI encounter is an observable, discrete task that can be framed as an EPA. • We propose an EPA based on MI as a workplace tool to enhance MI skill development.

#SC3.4 - Short Communications: Curriculum - EPA

#SC3.4.6 (4920)

Can the entrustable professional activities (EPAs) make the postgraduate training program in Taiwan more effective as an assessment tool?

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ABSTRACT:

Background: Since 2013, the Ministry of Education in Taiwan has amended the year of study for medical school from 7 years to 6 years. In combination with the PGY training for the period of 2 years after graduation, the concept of Competence-Based Medical Education will be more necessary. In this study, we implemented EPAs as an assessment tool to check the outcome of PGY training and report the effectiveness.

Summary of Work: We collected summative evaluation from 1,242 trainees (28 PGY training hospitals) and applied the EPAs to check the outcome of PGY training courses in General-Medicine, General-Pediatrics, Emergency and Anesthesiology. We cooperated with specialists association to design the contents of EPAs. In General-Medicine, we applied the scale with entrustable, untrustable and not available, the others are as Level I to Level V.

Summary of Results: According to the summative evaluation, the pass rate is 99.92% (N=1,241). In General-Medicine course, the highest rate (99.67%) of entrustable level is EPA-1 "taking history and physical examination", and in General-Pediatrics course, there are about 90% trainees could arrive above level III "trainer should check key performance after trainee practiced". In Emergency course, the levels of entrustment in EPA-2 "Common operating skills" which were under level II "trainer should assist if be necessary" had higher rate than other EPAs. In Anesthesiology course, most PGYs in EPA-2 "monitored for cardiovascular function and diagnosed" could arrive level II "trainer should assist if be necessary".

Discussion and Conclusions: For the 6 years medical students, there are 80 core competencies should be arrived for level III or IV when they graduated. To be linked the school education, the evaluated result of PGY training program is aimed to Level IV or Level V. In our study, it has a very high pass rate for the summative evaluation which means the trainees become more competent. To implement the concept of CBME, the development of EPAs should be more individualized. We think the EPAs could help trainers realize the competent practice of trainees systematically and evaluate the training outcome effectively.

Take-home Messages: Audiences will understand the effect of EPAs on PGY training program, and the impacts to clinical training and consensus between trainers.

#SC3.4 - Short Communications: Curriculum - EPA

#SC3.4.7 (4936)

Entrustable professional activities in clerkships, electives and subinternships: a scoping review

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ABSTRACT:

Background: The intensity of supervision and inversely the degree of independence should change during and with each clinical rotation of medical students. Previous literature reviews on Entrustable Professional Activities (EPAs) had a focus on postgraduate training or assessment or a very global perspective. The emerging evidence for developing, implementing and assessing EPA-based curricula on the clerkship, subinternship and elective training level has not been synthesized yet.

Summary of Work: We conducted a scoping review following the PRISMA-ScR Checklist and searched the databases PubMed, Cochrane Library, ERIC, Embase, PsycINFO, Ovid journals, Scopus, Web of Science and MedEdPortal (with the last search update on August 6th, 2019). Qualitative and quantitative research as well as conceptual and curriculum development reports on clerkships, subinternships and acting internships were included and analyzed.

Summary of Results: We identified 3,309 records through multiple data base searching and 1858 were screened after duplicates removal. A total of 36 articles were used for data extraction. Of these 47 % reported on EPA and EPA-based curriculum development for clerkships, 50% reported on implementation strategies and 53% reported on assessment methods and tools in clerkships. Three national EPA-frameworks for UME have been published and are being used for clerkship curriculum design in UME. Validity frameworks for developing EPAs were used inconsistently and some UME EPAs score low on the EQual-Tool for quality assessment of EPAs. EPA-based clerkship curricula have been implemented in several specialties and a range of supervision scales is being used.

Discussion and Conclusions: Our scoping review summarizes the emerging evidence on EPAs in UME clinical curricula of clerkships, subinternships and electives. We see an upward and international trend in quantity of published articles respectively. Methods for developing EPAs and defining entrustability measurements for clerkships vary greatly and no clear standard has emerged yet. However, some educational case reports indicate that EPA-based clerkship curricula might be used effectively for transforming UME assessments from time- to competency-based progression.

Take-home Messages: Some published EPAs need revision to meet quality standards. Longitudinally integrated clerkships seem to be better suited for summative entrustment decisions. EPA-based curricula allow for time-variable progression to residency.

#SC3.4 - Short Communications: Curriculum - EPA

#SC3.4.8 (5100)

Who Can Do This Procedure? Using Entrustable Professional Activity To Determine Curriculum And Entrustment In Anaesthesiology

AUTHOR(S):

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ABSTRACT:

Background: We need a more formalized, structured and consistent curriculum in teaching ultrasound guided nerve blocks (USGNB) in anaesthesiology training programs. Entrustable Professional Activity (EPAs) might be very useful to develop such a curriculum. Using an EPA framework offers a stepwise approach using assessments for entrustment decisions. For USGNB, it all comes down to: who is allowed to perform which block with how much supervision?

Summary of Work: To help in the design a postgraduate curriculum for USGNB in anaesthesiology using EPAs, a needs assessment was performed. A quantitative and qualitative survey was designed by one of the authors and sent to program directors of anaesthesiology residents training programs in Switzerland, Germany, Austria, USA and Canada (n=244), using contact data from national societies and data available online. The survey addresses questions of experience with EPAs, expectations of EPAs and need for EPAs in this context. Departments already using EPAs will be compared to those who have not yet adopted EPAs in their programs.

Summary of Results: As of February 1, 2020, 108 responses were collected (44% response rate), mainly from Switzerland, USA and Canada. While 66% of participants were familiar with EPAs, only 7% used EPAs for entrustment decisions and 53% have not implemented a system to decide when a resident is allowed to perform a certain procedure, far from deciding the degree of supervision needed to perform a block. While 55% think the implementation of EPAs will bring more paperwork and assessment time, 46% think EPAs should become an integral part in residents training. Fifteen percent do not think EPAs should become an integral part in residents training whereas 39% were undecided.

Discussion and Conclusions: Based on the results gathered to date, it is suggested that EPAs should be integrated in residents' training programs for teaching USGNB in anaesthesiology training programs. Updated results and a comparison of answers from anaesthesiologists from different countries will be presented at AMEE2020 annual meeting (ongoing survey).

Take-home Messages: If you are currently not using a System to decide when a resident is allowed to perform a certain procedure, consider implementing EPAs.

#SC3.4 - Short Communications: Curriculum - EPA

#SC3.4.9 (5727)

Exploring emotional processing in final year medical students when performing EPAs

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ABSTRACT:

Background: The concept of entrustable professional activities (EPAs) operationalizes the progress of a trainee as a step-by-step process towards independent practice and outlines the knowledge, skills and attitudes to be acquired. Little is known about the emotional processing of trainees when performing and progressing on EPAs. This study explores the emotional experiences and perceptions of medical students, when carrying out professional activities in their final clerkship year.

Summary of Work: In a qualitative study, students of the Charité - Universitätsmedizin Berlin wrote online diaries during their final clerkship year with one surgical, one internal medicine and on elective discipline placement. They answered open questions about their perceptions and experiences when performing EPAs, i.e. professional activities under various levels of supervision. A deductive- inductive content analysis was used for data evaluation.

Summary of Results: A total of 13 final year medical students took part. Their reporting on performing EPAs were substantially colored by a wide range of experienced emotions. Positive emotions (e.g. joy, proud) were mainly described during professional activities of personal interests, success of handling uncertainties, difficulties and gaining confidence. Negative emotions (e.g. frustration, boredom) were often reported in case of task performance failure and routine activities. How students perceived a specific situation highly depended on their judgment about the task as well as on supervision quality, social interaction and communication. Students described a highly motivational impact of positive emotions on taking over responsibility for professional activities. Negative emotions were experienced as blocking from further task performance, but also leading to a perspective to take difficulties as a challenge.

Discussion and Conclusions: The performance and progress on EPAs goes along with impactful and highly variable emotions in final year medical students. Student's emotions are dependent on their task performance and judgement about the situation, but also influence their perceived confidence to learn and perform future professional activities.

Take-home Messages: Beyond acquired knowledge, skills and attitude, the individual emotional processing should be taken into account when guiding and supervising medical trainees in the progress towards independent practice.

#SC3.4 - Short Communications: Curriculum - EPA

#SC3.4.10 (6262)

Linking the College of Family Physicians of Canadas Key Features to Family Medicine Entrustable Professional Activities as core competencies for assessment.

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ABSTRACT:

Background: This project links two assessment frameworks in Family Medicine (FM) Residency education by mapping selected College of Family Physicians of Canada (CFPC) Key Features (KFs) as core competencies for assessment to a set of established FM Entrustable Professional Activities (EPAs). The CFPC Evaluation Objectives (including the 99 Priority Topics and their KFs) remain the basis for FM resident assessment in Canada. Sufficient sampling of assessment data based on these KFs (n=947) supports overall summative decisions about competence. Some Canadian FM Programs have also developed sets of outcome EPAs but, none have so far adopted the CFPC KFs as core competencies that define their EPAs for the purposes of assessment, especially at the more granular patient-encounter level

Summary of Work: 26 FM EPAs were developed by the Calgary FM Residency Program through a 4-round Delphi process. A 3-stage consensus-seeking process was utilised to assign selected KFs, as core competencies, to each of these EPAs. Stage 1 involved 2 independent reviewers selecting KFs for each EPA. Stage 2 comprised multiple meetings by a small leadership group who reviewed, accepted or discarded the initial KFs. This group further assigned KFs to CFPC Family Medicine Professional Profile (FMPP) domains. To agree on the final sets of KFs for each EPA, the last stage involved small groups of Family Physician teachers participating in online surveys and facilitated face-to-face meetings.

Summary of Results: The average number of KFs assigned to each EPA was 82 (10-419). The range was 1 to 12 EPAs for each KF; 316 KFs were assigned to one EPA and 1 KF was assigned to 12 EPAs. 103 (“orphaned”) KFs were not assigned to any EPAs. All FMPP domains were represented except Scholar.

Discussion and Conclusions: This study directly links selected CFPC KFs to a set of training outcomes (EPAs) developed by the Calgary FM Residency Program, adding to the validity of the CFPC KFs as ground-level, observable behaviors that can be assessed and used to make higher-level decisions about competence.

Take-home Messages: The CFPC Key-Features can be used to describe the core knowledge and skills, for the purposes of assessment of higher-level expected outcomes (EPAs) in FM Residency training in Canada.

#SC3.4 - Short Communications: Curriculum - EPA

#SC3.4.11 (7246)

Can Clinical Reasoning be Assessed as an Entrustable Professional Activity?

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ABSTRACT:

Background: The future of assessment in undergraduate medical education will be centred heavily on competency-based assessments such as the Entrustable Professional Activities Framework . The goal is assessment for learning rather than the contrary. This philosophy is especially important for the development of clinical reasoning (CR) abilities in our undergraduate medical students.

Summary of Work: Adapting the Clinical Reasoning Cycle (CRC) from Levett-Jones et al. a novel electronic workplace-based assessment (WBA) was designed to encourage CR development through feedback for all clinical students (n= 1380) from a large UK medical school. The steps of the CRC were translated into nine domains for feedback during a presentation of patient encounter. Following completion of this preceptors were asked for a global rating using the EPA framework on the students overall competence. Students completed this WBA once a placement across the last three years of a five-year programme (17 placements).

Summary of Results: Data from 8000 WBA demonstrated positive progression of clinical reasoning skills in our students from requiring full supervision to independent practice with supervision when requested. Breakdown of the nine CR domains identified significant challenges in conducting and presenting hypothesis driven physical examinations for year 3 and 4 students (demonstrating little or no evidence of this skill) and equally strengths in student performance around collecting cues and explaining underlying pathophysiological processes. Early indicators have identified improved student performance in clinical summative exams (OSCE) with an increase in cohort success from 92% to 97% in their final year exams.

Discussion and Conclusions: Clinical reasoning focused WBAs aligned to the EPA framework showed meaningful progression of students through their undergraduate programme developing increased competency from Year 3 to year 5. It has also allowed the identification of cohort strengths and weaknesses within specific CR domains. This tool has demonstrated an accessible model to assess clinical reasoning in the workplace, provide individualised feedback and identify areas for curricula development.

Take-home Messages: Clinical Reasoning can be effectively incorporated and treated as an Entrustable Professional Activity and provide students with support in their development towards foundation level competency.

#SC3.4 - Short Communications: Curriculum - EPA

#SC3.4.12 (5773)

Implementation of Surgical Entrustable Professional Activities (EPAs)

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ABSTRACT:

Background: It's our social accountability to promise graduate students fulfill professional requirements. It is also urgent shifting time base curriculum to competency base curriculum after restrictions of working hours. The aim of this project was to develop and implement entrustable professional activities (EPAs) in the surgical department under such requirements.

Summary of Work: A step by step peer-discuss process was conducted to develop four surgical EPAs which transformed from ACGME general surgery milestone project. The clinical competence committee was organized for the EPA level assessment of each student using self-rating and committee-approving base.

Summary of Results: Four EPAs include: perioperative care, operation, meeting & administration and shift & consultation to cover all sub competencies and milestones of ACGME GS (general surgery) milestone project. Each EPA could be transformed according to the need of specialty. There were significant different among different level of students on the results of self-EPA-assessment. The results of CCC discussion not only approve or adjust such self-evaluation but more important give effective feedback to students for persistent improving.

Discussion and Conclusions: Our EPA program fulfill the need of competence base medical education up to date. Our results demonstrate its applicability. The current EPAs might need further modified, while the processes promote faculty development, student feedback and self improvement.

Take-home Messages: Our EPA program respond to the goal of tentative CBME requirement. It also easy applicabile both for teachers and students. Successful implimentation of such program needs effective CCC to promote better understanding and effective feedback for students.

#SC3.5 - Short Communications: Curriculum - Evaluation/Change

#SC3.5.1 (7099)

Empowering students in the development of medical curricula: do students believe it works?

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ABSTRACT:

Background: In 2012, members of the Johns Hopkins University School of Medicine (JHU SOM) founded the Student Curriculum Review Team (SCRT) to establish a student-led curricular improvement process. SCRT has provided a voice for student feedback—offering class-wide open forums for discussion through ‘town halls,’ direct peer-to-peer correspondence, and a collaborative, confidential avenue for comments.

Summary of Work: The purpose of this study was to assess student perceptions about the efficacy and utility of SCRT at JHU SOM. Through a cross-sectional analysis conducted between October and November 2019 surveying second- and third-year medical students, we found that students value the student-driven nature of SCRT as a modality to offer feedback and refine the pre-clinical curriculum.

Summary of Results: 113 (47%) completed surveys were returned, and 48 (43%) students submitted free-form responses describing interactions with SCRT. A majority (60%) reported SCRT’s impact on their medical education as “positive,” with most (97%) endorsing it as an effective forum that enables them to express their concerns. Students interacted with SCRT through course evaluations (80%), town halls (68%), and communication with SCRT members (42%). Students expressed enthusiasm for the added value of this organization, with 84% of respondents agreeing that “SCRT meets needs that are not met by other curricular organizations at Hopkins.” Respondents were significantly more likely to turn to systems used by SCRT than any other ($P=0.04$). Content analysis of student responses describing an experience with SCRT revealed three themes: feeling validated when communicating with peers, collaborating to identify areas for course refinement, and engaging in self-reflection during these conversations.

Discussion and Conclusions: JHU SOM students value that SCRT is a student-led, curricular change organization and are most likely to provide course feedback through a SCRT-affiliated modality. The positive perceptions of SCRT can be attributed to filling a gap not addressed by other organizations, transparency in the feedback process, and open communication.

Take-home Messages: As other academic institutions consider the role of student feedback in course refinement, it may be beneficial to consider implementing student-led feedback mechanisms both to empower students and engage in continued improvement of medical education.

#SC3.5 - Short Communications: Curriculum - Evaluation/Change

#SC3.5.2 (5246)

Joining Hands: Transforming the Clinical Placement Evaluation Process

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ABSTRACT:

Background: Evaluating clinical education placements for medical students in rural Victoria, Australia is characterised by student completion of end of placement spot evaluation surveys. This summative approach leaves little time to address any concerns for the benefit of the current student cohort or for other program stakeholders; teachers, administrators or the health service. Coupled with this is the diversity of evaluation tools used across sites delivering the same course. This diversity means that a complete picture of placements and what is being achieved across the various sites cannot be obtained and common issues may not be identified.

Summary of Work: To ensure that our evaluation process is focused on learning and growth rather than simply achieving objectives, our process introduces a collaborative approach to evaluation and adds continuous monitoring so as to identify, and respond to, trends over time with input from staff, students, health services and where possible, consumers (patients and their families) for the purpose of program improvement.

Summary of Results: We are piloting the process at one site with regular communication of progress across the remaining sites. The move to continuous monitoring has been logistically smooth with careful attention to plentiful provision of explanations and discussion prior to commencement. Monitoring tools have been modified in accordance with user feedback and stakeholders have expressed relief that current program practices have been retained for use as monitoring measures. Extension to other sites will occur once the pilot has been completed and reviewed.

Discussion and Conclusions: Listening, learning and letting the site make decisions and take control of monitoring, evaluation and improvement has been an important driver for stakeholder ownership of, and engagement with the process. Indications thus far suggest that, not only are sites willing and able to self-monitor but their knowledge of local contexts and issues produces extremely rich and usable data. Stakeholders' motivation to strengthen the program and to support and develop each other is a powerful impetus to persevere.

Take-home Messages: Site stakeholders are invested in their programs and will work to improve them when they have a sense of purpose, direction and control.

#SC3.5 - Short Communications: Curriculum - Evaluation/Change

#SC3.5.3 (7027)

Encouraging Medical School Accreditation Worldwide – An Update on ECFMG’s 2023 Accreditation Requirement

AUTHOR(S):

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ABSTRACT:

Background: Over the past 20 years, the number of medical schools worldwide has grown dramatically, to more than 3,200 at the current time, with more and more students attending schools outside their home region. These trends represent a challenge to those who rely on the current systems of quality assurance and accreditation, which can vary widely, including aspiring medical students, directors of post-graduate training (PGT) programs, and regulatory authorities.

Summary of Work: Certification by the Educational Commission for Foreign Medical Graduates (ECFMG®) is required for international medical graduates to enter post-graduate training in the United States. In response to the above issues, starting in 2023, applicants for ECFMG Certification must be a student or graduate of a medical school that is accredited by an accrediting agency recognized by the World Federation for Medical Education (WFME). By requiring accreditation by a recognized accrediting body, ECFMG seeks to increase the transparency, consistency and quality of undergraduate medical education worldwide.

Summary of Results: Since ECFMG announced its requirement in 2010, 20 accrediting agencies have become recognized by WFME, with many more initiating the process. Moreover, the requirement has led to increased interest by medical schools in achieving accreditation, and by medical students in ensuring their schools meet accreditation standards. ECFMG has introduced an implementation plan for the requirement that includes providing guidance for aspiring medical students on selecting a school, as well as adding information about a school’s accreditation status to the World Directory of Medical Schools and the physician reports sent by ECFMG to PGT program directors, hospitals, and regulatory authorities.

Discussion and Conclusions: The 2023 Medical School Accreditation Requirement is stimulating global accreditation efforts. It also aligns with efforts by WHO and others to strengthen health workforce accreditation systems. The effects are already being seen, as current trends demonstrate a heightened interest in accreditation as 2023 approaches.

Take-home Messages: ECFMG’s 2023 Medical School Accreditation Requirement is encouraging global accreditation efforts. It will also increase the information publicly available about medical schools, while providing greater assurance to medical students, regulatory authorities, and the public that these future physicians will be appropriately educated.

#SC3.5 - Short Communications: Curriculum - Evaluation/Change

#SC3.5.4 (4270)

Implementation and evaluation of leadership program for medical undergraduate students in India

AUTHOR(S):

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ABSTRACT:

Background: Most Indian medical schools lack formal leadership training though the students are expected to evolve into leaders. The module for student leadership program (SLP) was designed and evaluated with an objective to expand students' leadership skills and vision of setting student leadership cell.

Summary of Work: The SLP was implemented as a pilot program in four phases; Phase-I consisted of reflective writing; phase-II and III addressed self-management and team-management respectively using dedicated techniques. The final phase consisted of experiential learning projects giving participants an opportunity to lead a multidisciplinary team. Mixed method design was used for evaluation as per Kirkpatrick 4-level model; quantitative analysis through pre and post-session questionnaire and qualitative analysis through students' reflections written after each session.

Summary of Results: Twenty-four students of MBBS final-year were included on voluntary basis and the program was delivered over 6 months (2-hours/week). There was significant improvement in pre and post-session scores in self-perceived skills in respective domains of reflective writing (4.55±1.74; 7.68±1.04), self-management (5.35±1.30; 8.09±0.73), team-management (5.38±1.50; 8.0±0.95) and experiential learning (5.82±1.33; 8.27±0.94). Themes and conclusions emerged from qualitative analysis of students' reflections which helped in having an in-depth understanding of their experiences and preferences. Student leadership cell was constituted as a platform for students to engage in multidisciplinary leadership activities in different stages of their professional development.

Discussion and Conclusions: The SLP, designed as per the best evidence guidelines in medical education, ensures a comprehensive evaluation; pre and post-session questionnaire for Kirkpatrick's level-1 and 2 and experiential learning for level-3. Through reflections the students illustrated their own leadership journey and analyzing them helped us in understanding their perspectives. We hope to achieve level-4 effectiveness through the student leadership cell by exploring long-term effects of leadership training on the 'system' and organizational practice.

Take-home Messages: Leadership training through dedicated programs should now be an undergraduate priority. The evaluation process needs to go beyond 'learner satisfaction and self-assessed knowledge' and objective evidence of learner's behavioral change are to be explored.

#SC3.5 - Short Communications: Curriculum - Evaluation/Change

#SC3.5.5 (4568)

Evaluating the effectiveness of medical curriculum from lecturer' perspective: a tool development and validation

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ABSTRACT:

Background: The curriculum is the foundation of the teaching-learning process and as the heart and soul of all educational institutions. Evaluation of the medical curriculum can be developed by context and stakeholders that encompasses values, perspectives, and needs. This study aimed to assess the curriculum effectiveness from the lecturer perspective to develop an evaluation tool.

Summary of Work: This research consists of 3 phases, namely: exploration phase (qualitative), development phase, and validation phase. The qualitative phase used purposive sampling and involved four lecturers for semi-structured interviews. The themes that emerged from the qualitative finding was then developed into a 37-items questionnaire. The development and validation phase was conducted by exploratory factor analysis (EFA) to 74 subjects and confirmatory factor analysis (CFA) involved 73 other subjects. Data analysis used SPSS 21 version for EFA, and LISREL 8.8 for CFA. The results of EFA guided questionnaire revision which then distributed for validation in confirmatory factor analysis.

Summary of Results: The 147 lecturers have completed the questionnaire. Seventy-four lecturers yielded 37 items of a questionnaire with six domains that were well constructed. The detailed perspective of the EFA result suggested that the most appropriate fit was six factors, which explained 73.52% of the variance between them after 20 iterations with Cronbach alfa value of 0.958. They comprise 1) curriculum structure, 2) assessing learning outcome, 3) lecturer competencies, 4) content of the learning module, 5) assessment capacity and 6) the learning method. The results of the EFA guided questionnaire revision and was then distributed for confirmatory factor analysis. The CFA found that 37 items were a valid and reliable representation of the latent variable because of all t-loading values above 1.96 (range 2.24 to 5.16).

Discussion and Conclusions: The tool has achieved the desired construct validity score and reliably represented an evaluation tool to assess the effectiveness of the curriculum from the lecturer's perspective.

Take-home Messages: Achievement of a good educational outcome could be approached through the effectiveness of the medical curriculum in which continuous evaluation must be conducted.

#SC3.5 - Short Communications: Curriculum - Evaluation/Change

#SC3.5.6 (4636)

The effect of curriculum reform on medical graduates preparedness for practice: a three-year longitudinal study

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ABSTRACT:

Background: The Taiwanese medical education system has undergone a national curriculum reform beginning in 2013. This major change mostly involved shortening the clinical rotation period from three to two years. Graduation is an important transition, announcing that medical students are now ready to be doctors. We conducted a longitudinal cohort study from 2017-2020 covering the undergraduate to post-graduate periods to assess the effect of curriculum reform on medical students' preparedness for independent hospital practice.

Summary of Work: A previously validated Preparedness for Hospital Practice Questionnaire (PHPQ) was used for this longitudinal survey. The survey participants were 44 volunteer medical students from the 2012 cohort (old curriculum) and 41 from the 2013 cohort (new curriculum). From 2017-2020, all participants were recruited two years before graduation and were followed until one year after graduation. Six serial PHPQ surveys were conducted every six months. The participants' basic demographics and degree of burnout were also analysed. In addition, qualitative data, including audio recording diaries and focused group interviews, were conducted in order to provide possible explanations for the results.

Summary of Results: For the preliminary results, the overall Cronbach's alpha was 0.95. The results showed that Taiwanese medical students were least prepared for interpersonal skills (mean=2.68) and were best prepared for self-directed learning (mean=4.22). While students from both curricula demonstrated steady increases in their preparedness in all eight domains, the new curriculum cohort showed a significantly higher level of burnout at the beginning of clinical rotation ($p=0.007$) and a lower level of preparedness when they encountered real-world independent practice shortly after graduation ($p=0.05$).

Discussion and Conclusions: The curriculum reform resulted in a shortened clinical rotation period, and, as a result, decreased clinical learning experiences. Possible educational interventions, including simulation or integration of clinical courses, should focus on facilitating independent clinical practice, inter-professional collaboration, and the application of medical knowledge.

Take-home Messages: Taiwanese medical students were less prepared in interpersonal skills and better prepared for self-directed learning. The curriculum reform may be associated with a higher level of burnout and a lower level of learners' preparedness for practice during the transition from students into doctors.

#SC3.5 - Short Communications: Curriculum - Evaluation/Change

#SC3.5.7 (4993)

Course Evaluation by the Final Year Medical Students and Learning Needs Assessment

AUTHOR(S):

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ABSTRACT:

Background: Course evaluation in teaching and learning is crucial for quality assurance and improvement. We attempted to ensure the effective course delivery for the final year medical students tailor-made to their felt needs for learning. The aims of this study were to evaluate the year's teaching course and investigate the felt learning needs and preferred approaches to teaching and learning.

Summary of Work: The evaluation included an online questionnaire survey with a five-point Likert scale and open-ended questions regarding the year's course evaluation of (a) orientation, (b) 11-session essential medicine, (c) 12-session humanised health care, (d) felt learning needs, and (e) preferred teaching approaches. These were distributed to the final year medical students in 2019 at Khon Kaen Medical Education Centre, Thailand.

Summary of Results: In total, 37 online-questionnaires responded (100%). The final year medical students strongly agreed (76%) and the rest agreed (24%) with the orientation workshop. Their learning needs during student orientation included procedural skills and emergency care for a clinical clerkship. The strongly agreed rating in the essential workshops and humanised health care courses were 91% and 75%, respectively. The students preferred e-logbook (84%) to paper-logbook (16%). The top three teaching approaches were workshop, lecture and team-based learning. The students' learning needs before graduation were real-life working experiences sharing by the senior graduates, financial management and continuing medical education.

Discussion and Conclusions: Most students strongly agreed and were satisfied with the current year course and suggested add-on topics citing help with curriculum planning and review of weak areas before graduation. These findings were valuable for future curriculum design to better prepare for the upcoming class.

Take-home Messages: Regular course evaluation and the student felt learning needs assessment improve effective medical education and target real learner demand.

#SC3.5 - Short Communications: Curriculum - Evaluation/Change

#SC3.5.8 (5532)

Helping to ease the Transition from Medical School to Residency: Initial Findings from the Learner Education Handover Pilot Project (LEaPP)

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ABSTRACT:

Background: Background: Learner Education Handover (LEH) refers to a model for sharing relevant information to facilitate a smoother transition for a learner proceeding from undergraduate medical education (UGME) to postgraduate medical education (PGME). The objective of our study was to carry-out a pilot of the LEH, investigating both feasibility and stakeholder perceptions of the proposed model.

Summary of Work: Summary of Work: Five medical schools across Canada volunteered to pilot the LEH at their institutions. Each school was asked to consider infrastructure, human resources and existing policies when implementing the pilot of the LEH. Forms were sent by each receiving PGME institution to incoming first year residents between April and July 2019, prior to the annual July 1 start date. Interviews were subsequently held with PGME deans, wellness office representatives and first year residents who completed the LEH. Thematic analysis of the data was conducted.

Summary of Results: Summary of Results: N= 123 LEH forms were completed across the 5 schools. Common concerns listed by residents were personal coping readiness for residency, the need for accommodations and managing finances. For the qualitative phase, N = 16 interviews comprising, n= 3 PGME Deans, n = 8 wellness office staff and n=5 residents interview participants. PGME Deans reported that they remained at “arm’s length” from the LEH implementation. Wellness staff reported that the LEH implementation was feasible given their existing infrastructure and policies. Residents reported that the LEH is useful however they would still be reluctant to disclose information for fear of how the information might be used and the stigma associated with disclosing mental health problems.

Discussion and Conclusions: Discussion and Conclusions: The LEH form was seen as a valuable tool that focuses on the transfer of relevant information related to academic progression including academic vulnerability, learner accommodation requirements, professionalism challenges, and health, emotional and social issues to help the learner transition into residency.

Take-home Messages: Take Home Messages: 1. The LEH is feasible for implementation within the existing infrastructure of wellness offices. 2. More resident education about the LEH’s purpose and the use of its information is needed. 3. More work is needed to help create a safer culture for resident disclosure.

#SC3.5 - Short Communications: Curriculum - Evaluation/Change

#SC3.5.9 (5843)

Quality evaluation of clinical placements from three perspectives

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ABSTRACT:

Background: Quality follow-up of clinical placements has been carried out for five years in collaboration between Region Stockholm and local universities that provide health care programmes; Karolinska Institutet, Ersta Sköndal Bräcke University, the Red Cross University and Sophiahemmet University.

Summary of Work: The follow-up was done from three perspectives including students as well as employees and managers of the healthcare institutions that provided clinical placements. The following quality indicators were used: overall assessment, learning environment, supervision, patient/client, student and collaboration. Within each area, corresponding questions were designed to suit the different target groups. Digital questionnaires were automatically sent out by e-mail to the students the week after each clinical placement that exceeded one week. E-mail addresses were generated from information in the Clinical Placement Program, KliPP. The questionnaires to employees and managers of healthcare institutions were sent out together with the annual employee survey.

Summary of Results: The annual result autumn term 2018 to spring term 2019 showed a high degree of student satisfaction. The students considered clinical placements as a valuable part of their education, result 85 (Index 0–100). One area of development was the students experience of training and discussing evidence-based practice, result 75. In comparison, their experience of training safe working methods to avoid risks and incidents showed 78. Employees requested increased collaboration with the universities and support regarding the supervision assignment. Managers thought that development of health care institutions was promoted by the presence of students but saw difficulties in increasing the number of students. More than 3500 students answered the questionnaire. The overall response rate for students was 32% with a difference between the educational programs, RR = 18-72%. The response rate for health care employees was 73% and for managers 93%.

Discussion and Conclusions: The results can be broken down to a local level and used for quality follow-up and development of specific clinical placements in collaboration between educational- and healthcare institutions. Development areas for this quality follow-up are to increase the response rate in certain educational programs and to include more caregivers and educational institutions.

Take-home Messages: Evaluation of clinical placements from three perspectives can facilitate quality development in clinical education.

#SC3.5 - Short Communications: Curriculum - Evaluation/Change

#SC3.5.10 (6100)

Beware: Mapping the Emotional Experience of Curricular Transformation

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ABSTRACT:

Background: Many medical schools are making significant changes to the way their curriculum is structured and delivered, yet little is known regarding the emotional experience of students, faculty and staff during this process. Exploring the emotional landscape of those anticipating and undergoing curricular transformation can inform strategies for addressing these with various stakeholders to heighten success.

Summary of Work: After IRB approval, four-hundred medical students, faculty, and staff from Sidney Kimmel Medical College were invited to comment on their emotional experience during the recent transition to a new curriculum utilizing an online virtual forum. Through group concept mapping software, groupwisdomTM, we gathered quantitative and qualitative information via brainstorming, sorting and rating steps. Synthesis of 177 brainstorming comments resulted in 64 unique statements employed in a rating and thematic sorting exercise. Demographic information was also collected. Data analysis and concept map generation was done through multidimensional scaling.

Summary of Results: Six major themes emerged: 1) Missed opportunities 2) Uncertainty 3) Abandoned 4) Overwhelmed 5) Apprehensive 6) Enthusiastic. Ratings provided quantitative data for each theme with “Enthusiastic” having the highest level of resonance (3.21) and “Abandoned” the lowest (1.88). A comparative analysis using participant demographic information demonstrated high correlations for faculty, students and administrative staff. However, student subgroup analysis revealed the dominant theme for the final cohort in the legacy curriculum to be “Abandoned” while for the first cohort in the new curriculum it was “Enthusiastic”.

Discussion and Conclusions: Overcoming resistance to successfully implement curricular change requires attending to the emotional needs of stakeholder groups. While the dominant emotional theme for all groups was one of enthusiasm, mixed with it were uncertainty, apprehension and being overwhelmed. In particular, student subgroups in the legacy vs. new curriculum had different emotional experiences during this change. They may require discrete approaches to support their well-being during this process. Study limitations are modest response rate and size of demographic comparison groups.

Take-home Messages: Faculty, students and staff elucidated six major emotional domains experienced during recent curricular transformation. Key strategies for communicating and addressing these with the various subgroups would ensure a supportive environment for all stakeholders.

#SC3.5 - Short Communications: Curriculum - Evaluation/Change

#SC3.5.11 (6467)

Developing a novel CPD-QI program to upskill health care workforce to care for children with developmental disability

AUTHOR(S):

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ABSTRACT:

Background: People with intellectual disabilities (ID) have poor hospitalisation experiences. In paediatrics, the assumptions and attitudes of healthcare staff negatively impact the care of children with ID. More research is needed to review the types of education programs that lead to improving staff attitudes and self-agency to undertake necessary adjustments and improved care for persons with ID in hospital.

Summary of Work: This project aims to evaluate the effectiveness of a novel in-service program to upskill staff to care for children with ID and challenging behaviours (CB) using motivational interview (MI), flipped classroom and process mapping. Four departments from a major tertiary childrens hospital volunteered to participate in the program. Staff were asked to participate in a pre-session activity then attend in-service (CPD-QI) sessions. Evaluation: Presession interviews with carers of children with DD and CB. Parent themes were then embedded into the process mapping exercise combining staff feedback elicited during the session. The in-service sessions were recorded and transcribed; themes of change and goals discussed were extracted. A summary report and process map was returned to each department. The pre and post session survey with staff was analysed for any changes to knowledge, skills and confidence. Focus group sessions done 6-9 months post intervention session were also conducted.

Summary of Results: The results demonstrate noticeable changes in staff behaviour in undertaking necessary adjustments and a shift in the post session survey scores. Results of the changes to clinical practice and systems improvements will be presented according to each department goals. The staff felt that the program was an effective way to enable reflective practice, and problem solving. The use of patient feedback and the process mapping activity were powerful motivators for improvement.

Discussion and Conclusions: Addressing the human factors involved in organisational change is far more effective than top-down, linear approaches towards behaviour change. More research is needed to see if these sessions delivered over time and the implementation of strategies would result in diffusion of skills, influencing culture and social norms.

Take-home Messages: Effective education and training programs need to consider human factors and customised to need. Using MI group facilitation and QI strategies is effective to translate knowledge into action.

#SC3.5 - Short Communications: Curriculum - Evaluation/Change

#SC3.5.12 (7133)

It was 'really good stuff'...while it lasted

AUTHOR(S):

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ABSTRACT:

Background: Innovation in medical education is rife, and in fact could be considered the norm. Conference proceedings are full of abstracts describing new approaches to teaching and learning. Journals regularly publish papers about projects in their infancy but deemed sufficiently interesting to be disseminated. A few years ago Medical Education published a thought-provoking letter in which the author (Walsh, 2010) speculated about the sustainability of the kind of innovation reported in their dedicated section, 'Really Good Stuff' (RGS), and asked "Would it be worthwhile to survey RGS articles 10 years on?" The aim of this project was to carry out that survey.

Summary of Work: Research question: What factors enhance or inhibit the sustainability of innovations in medical education? An on-line questionnaire was sent to authors of abstracts published in RGS between 2011 and 2015 (n = 309, excluding pilot May 2012). One reminder was sent and an attempt was made to contact the author's institution where the survey invite was undeliverable.

Summary of Results: Response rate 24%. 71% of the innovations continued at the time of the survey. Of these, 27% had spread to other institutions. The presence of a local champion, learner factors such as feedback and engagement, and institutional support were considered the most significant factors that help promote sustainability. Conversely, a lack of institutional support, lack of a local champion and lack of funding/resources were the most commonly cited factors felt to be responsible for demise. Changes in expectations of staff (e.g. roles/workloads) and faculty development were also considered important.

Discussion and Conclusions: It has been suggested that at least 75% of innovations will have a half-life of less than 5 years (McCoubrie, 2007). The proportion of innovations that continued was thus much higher than expected. The barriers and facilitators cited here echo those described elsewhere in the literature (Hudson et al., 2015, Greenhalgh et al., 2017).

Take-home Messages: Sustainability is key to maximizing the educational impact of the many and varied innovative approaches published in journals. The factors described should be considered at the earliest stages to maximise the likelihood of meaningful and sustained change.

#SC3.5 - Short Communications: Curriculum - Evaluation/Change

#SC3.5.13 (4969)

STUDENTS' EXPERIENCES OF HUMOUR USE IN A CROSS-CULTURAL HEALTHCARE SETTING

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ABSTRACT:

Background: Humour can be rehearsed or spontaneous and is a fundamental aspect of communication. A 'sense of humour' is generally viewed as a virtuous quality yet there are both positive and negative imports to humour use.

Summary of Work: This paper used a broad qualitative approach to explore healthcare students' experiences and perceptions of spontaneous humour use in a cross-cultural healthcare setting in the Kingdom of Bahrain. A purposive sample were recruited to three audio-recorded focus groups (2 medical, 1 nursing: n= 17) to discuss their experiences of communication in clinical settings. Unprompted, participants' subsequently highlighted examples of humour which were further explored. An interpretative framework (McCreadie and Payne 2010) was applied to all data which was illustrated via a transcription system to highlight how participants accounted for humour within the focus group interactions.

Summary of Results: The challenging vagaries of a cross-cultural clinical setting are directly relevant to the humour that emerges in its various forms. We reviewed an inappropriate form of tendentious humour – aberrant humour – and outlined how it arises and is accounted for by the participants. Students were worryingly more likely to justify the practice of aberrant humour where senior medical staff included them in humour expression.

Discussion and Conclusions: Medical students were subjected to aberrant humour which was 'front stage' with an audience, initiated by senior medical staff, and involved humour at, not with medical students, and, or patients. If medical students are repeatedly exposed to, and included in the expression of aberrant humour they may be more likely to acquiesce over time with aberrant humour becoming ingrained, potentially leading to ethical erosion.

Take-home Messages: This study adds to the relatively limited work on spontaneous humour in healthcare interactions and the emerging area of 'learner neglect'. It provides a nuanced overview of students' experiences of humour use in a cross-cultural healthcare setting. The data provided can be used to enhance communication inputs in both curricula (nursing and medical). Healthcare students need to be cognisant of humour per se, how it may emerge in nuanced interactions; and its relevance to coping, resilience and cultural assimilation.

#SC3.7 - Short Communications: Curriculum - General

#SC3.7.1 (6181)

Exploring the ethical considerations in medical education projects involving children

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ABSTRACT:

Background: Video-Reflexive Ethnography (VRE) is an evolving methodology exploring communication and interactions within healthcare. Besides data analysis by the researcher, these interactions can be self-analysed within the clinical team partaking in the research. VRE, therefore, holds appeal through its potential benefit for both participants and researchers. VRE comprises three stages: video ethnography, clip selection, and reflexive sessions (focus group like sessions where clinicians reflect on their group practice).

Summary of Work: My PhD project, observing how surgical trainees learn in paediatric surgery outpatient clinics, involves filming clinics during the video ethnography phase, including children and their families. In addition to the usual ethical considerations when including adult patients in research, involving children brings additional deliberations. This project has undergone both local university ethics and UK national Research Ethics Committee (REC) approval and is currently being undertaken in a tertiary hospital.

Summary of Results: Research preparation has encouraged my in-depth consideration of the safeguarding rights of children during medical education research. **Consent:** Various groups, including youth groups, were consulted about the project to ensure acceptability and feasibility. Consent of the children was carefully considered, with age-related information sheets and consent forms. **Distress to children and families:** During the clinics, various supports are in place for the children and their families. A red card is provided, which may be shown at any time to stop filming. After the clinic, access to a clinical psychologist is available if needed. **Confidentiality and data storage:** Video clips will only be shown during the reflexive sessions or presented externally with participant permission. All data, including the clips, will only be kept for three years following the study.

Discussion and Conclusions: The process of gaining ethical approval may be challenging when working with children. In addition to considering the impact of the research for the child, it is important to consider the researcher's clinical role (if applicable) when making ethical decisions. Maintaining one of the VRE principles, participant care, has been fundamental in gaining ethical approval.

Take-home Messages: Gaining ethical approval for research involving children in clinical settings may be difficult, especially when filming; however, with careful considerations, children may provide useful additional insights when completing medical education research.

#SC3.7 - Short Communications: Curriculum - General

#SC3.7.2 (119)

Increasing uptake of arts-based approaches to medical education: results from a narrative medicine masterclass

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ABSTRACT:

Background: The use of arts in medical education is becoming more widespread in the UK at both undergraduate and postgraduate levels. Medical student engagement with arts subjects in a structured manner has been reported to increase empathy, professionalism and coping strategies for work-related stress. However, as this topic is unfamiliar to most clinical tutors, they are understandably cautious to use arts in their teaching methods. Resultantly, there is considerable disparity between teaching aspiration and delivery with this method.

Summary of Work: We report on the influence of an educational session to introduce clinical tutors to the use of arts to teach students core topics in primary care such as communication, ethics, illness behaviour, mental health, addiction and palliative care including use of certain tools and techniques as well as looking at approaches to improving students' Emotional Intelligence. Resources used included visual arts, fiction and poetry.

Summary of Results: Two tutor workshops were delivered to 21 tutors in total, of which 14 (67% response rate) provided feedback by an online questionnaire. Tutors rated the usefulness of the workshop as 4.4 out of 5. Many qualitative positive comments were received on how engaging the session was and how tutors had developed a direction and tools for incorporation arts into their future teaching sessions.

Discussion and Conclusions: The small group of tutors who attended the educational session were self-selected and therefore had some prior interest in the topic. Conclusions Face to face educational sessions can help to develop tutor skills, enthusiasm and willingness to incorporate arts resources in their delivery of teaching primary care core topics. Further work is needed to determine whether upskilling and promoting enthusiasm has a tangible impact on the use of this method.

Take-home Messages: This small-scale project has demonstrated that tutor training has a positive impact on clinical tutors' willingness, empowerment and enthusiasm to use arts-based teaching resources to deliver core topics in primary care.

#SC3.7 - Short Communications: Curriculum - General

#SC3.7.3 (5494)

Implementing peer-learning during clinical training - a pilot-study with focus on both students and educators

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ABSTRACT:

Background: Biomedical scientist students specializing in clinical physiology undergo a 3 year education consisting of 25% practical training in a clinical setting. Clinical practice have a traditional setup, where one clinical supervisor is responsible for one student. This hasnt worked optimally since most clinics have staff shortages and examination time have been reduced due to high production. Evaluations from students show that theyre not getting enough practical training and supervisors has too little time to give feedback. Peer learning is a pedagogical model that has been implemented with good results for other student categories. The purpose of this pilot-study is to investigate whether peer learning is an alternative to the traditional set-up for this specific student group.

Summary of Work: The project initialized (spring 2019) with educating clinical supervisors and designing/preparing clinical training based on peer learning. The study was performed during 4 weeks clinical training (fall 2019), including 8 students. The control group consisted of 8 students that did their clinical training according to traditional set-up. Analysis of the result is ongoing. Depending on the outcome, the implementation of peer learning is planned during fall 2020.

Summary of Results: The analysis of the result is ongoing, preliminary result show that students performing clinical training according to peer learning perceive this pedagogical model as good/very good and they felt support and encouragement from their clinical supervisors. They all achieved the intended learning outcomes. The analysis of the results will be finished during spring 2020.

Discussion and Conclusions: With the right tools/preparations peer learning seems to be a good model for students during clinical training which hopefully can lead to a development and deepening of the intended learning outcomes. The students take more responsibility over their own learning and have more time for feedback with their peer/supervisor. The model contributes to more clinical placements for students which in the long-term can lead to an increased number of Biomedical scientists which our healthcare system is dependent on.

Take-home Messages: Peer learning is a pedagogical model that can be implemented for students during clinical training. Peer learning can be beneficial for students, educators, clinical supervisors and long-term also for the healthcare system. A win-win model!

#SC3.7 - Short Communications: Curriculum - General

#SC3.7.4 (5358)

High-value, cost-conscious care attitudes in the graduate medical education learning environment: A variation of views that residents misjudge

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ABSTRACT:

Background: Training medical residents in delivering high value, cost-conscious care (HVCCC) is crucial to control rising healthcare costs and promote sustainable healthcare. To better understand the training context in which residents have to learn to provide HVCCC, we aimed to measure key stakeholders' HVCCC-attitudes in residents' learning environment, compare these with residents' perceptions, and identify factors associated with attitudinal differences among each stakeholder group.

Summary of Work: We conducted a survey of 312 residents, 305 staff physicians, 53 administrators and 1049 patients from 66 (non)academic hospitals across the Netherlands between June 2017 and December 2018. Respondents completed the Maastricht HVCCC Attitude Questionnaire, containing three subscales: (1) high-value care, (2) cost incorporation, (3) perceived drawbacks. Resident respondents estimated the HVCCC-attitudes of other stakeholders answered questions on job demands and resources.

Summary of Results: Multilevel modelling showed that attitudes differed on all subscales: staff physicians and administrators reported significantly more positive HVCCC-attitudes than residents, while patients' attitudes were significantly less positive. Residents underestimated staff physicians' attitudes and overestimated patients' attitudes. Increasing age was, among residents and staff physicians, associated with more positive attitudes toward HVCCC. Among patients, lower perceived health quality was associated with less positive attitudes. The more autonomy and work pressure residents perceived, the more positive their HVCCC-attitude.

Discussion and Conclusions: HVCCC-attitudes vary among stakeholders in the residency-learning environment, and residents misjudge the attitudes of both staff physicians and patients. Staff physicians and administrators are challenged to steward healthcare resources in light of limited resources, while patients tend to focus predominantly on their own health. Not adequately knowing staff physicians' thoughts and being unaware of patients' concerns might negatively affect residents' attitudes and behaviors regarding HVCCC. Older staff physicians are potentially the best role models for residents.

Take-home Messages: Residents may benefit from educators forthrightly addressing this variation and encouraging staff physicians and administrators to explicitly share and model their positive views. Providing residents with empathic patient-centered strategies for communicating the benefits of HVCCC can be beneficial. Additionally, learning environments that optimize autonomy and work pressure may result in more favorable HVCCC attitudes and behaviors, bolstering a sustainable healthcare.

#SC3.8 - Short Communications: Curriculum - IPE

#SC3.8.1 (4258)

Interprofessional education in early undergraduate curriculums – a Middle East perspective

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ABSTRACT:

Background: Many undesirable outcomes experienced by patients are attributed to misunderstanding or poor communication among members of the healthcare team. Interprofessional education (IPE) is aimed at addressing that through a collaborative approach to develop healthcare students as future interprofessional team members. IPE is an emerging concept in the Middle East and remains novel in the United Arab Emirates (UAE). The aim of this study was to introduce and evaluate IPE involving students from two universities in UAE.

Summary of Work: The context of study was a neurosciences course at Mohammed bin Rashid University (MBRU) College of Medicine. The participants were third year medical students (n=48) and pharmacy, nursing, and physiotherapy students (n=25) from the University of Sharjah. The IPE groups (n=8) were composed of six medical students and three students, one from each the schools of pharmacy, nursing, and physiotherapy. The session started with an introduction to the learning concepts of interprofessional health care teams and collaborative patient centred care. Two case-based patient scenarios on the topics of stroke and pain were used, intentionally designed to generate discussion across all disciplines. The students were asked to discuss the cases and then answer a series of questions encompassing the immediate/long term management of the patient, the role of each profession and actions to improve the team interactions. Data using the RIPLS questionnaire was collected before and after the session on all study participants.

Summary of Results: The results indicated that there were no significant differences regarding readiness for interprofessional learning among the different academic disciplines, however the majority of students strongly agreed that the IPE contributed to their understanding of the interprofessional healthcare teams roles.

Discussion and Conclusions: The first implementation of this session demonstrated that students met the educational objectives and gained a better sense of interprofessional collaboration.

Take-home Messages: IPE introduced in early years of healthcare undergraduate curriculums will contribute to the students understanding of the role of the different professions in a healthcare team.

#SC3.8 - Short Communications: Curriculum - IPE

#SC3.8.2 (5778)

ATTITUDES OF HEALTH PROFESSIONALS TOWARD INTERPROFESSIONAL HEALTHCARE TEAMS IN MONGOLIA

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ABSTRACT:

Background: Patients have complex health needs and typically require more than one discipline to address issues regarding their health status (Lumague et al.). Interprofessional education (IPE) is an approach to develop healthcare students for future interprofessional teams. Interactive learning requires active learner participation, and active exchange between learners from different professions. The purpose of this study is to describe attitudes toward interprofessional education in Mongolian healthcare professionals.

Summary of Work: Curran et al and Gardner et al developed the Attitudes Toward Health Care Teams (ATHCTS, 14 items-IPC, 15 items-IPE, 13 items – IPLAS, 10 items for barriers) measured attitudes toward health care teams. The suitability of the correlation matrix was determined by the Kaiser-Meyer-Olkin estimate of sampling adequacy and Bartlett's Test of Sphericity. The number of factors retained for the initial solutions and entered into the rotations was determined by application of Kaiser's criterion (eigenvalues > 1). To clearly define the structure, an exploratory factor analysis using varimax rotation was conducted. The level of significance was set at 5% for all tests.

Summary of Results: Demographic characteristics of health care professionals are management's team 6.3% (n=35), doctors 29.4% (n=163), nurses 56.9% (n=316), others 7.5% (n=41). As shown in attitudes toward health care team, the overall modified ATHCTS mean score of health care professionals at Mongolian National University of Medical Sciences (MNUMS) was significantly higher (3.8 ± 0.95 , $p < 0.0001$). The Kaiser-Meyer-Olkin index was 0.899, indicating sampling adequacy, and the Bartlett Sphericity Chi Square index was 1161.536 ($p < 0.0001$). Cronbach's alpha of the 14 items was 0.999, revealing a high rate of internal consistency.

Discussion and Conclusions: In conclusion, international research study's result showed for important of IPE. In contrast to Mongolia our, the inclusion of interprofessional, faculty-led IPE programs should be developed through identified proponents of IPE initiatives. Results suggest that faculties and students in Mongolia could learn, at least in part, about CP through on-site practical training. IPE programs may be useful in learning about team efficiency in addition to strengthening attitudes toward the value of IPE to health care providers and receivers among undergraduate students.

#SC3.8 - Short Communications: Curriculum - IPE

#SC3.8.3 (4209)

Simulation strengthens interprofessional collaboration for healthcare students in primary care

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ABSTRACT:

Background: Primary healthcare providers are responsible for patients with increasingly complex problems. Introducing interprofessional collaboration in healthcare curricula prepares students to meet these challenges. Simulation-based learning may be a powerful facilitator for active and safe learning, but is mostly used in acute clinical situations. We explore simulation as a strategy to train students in interprofessional collaboration in sub-acute clinical scenarios in primary healthcare.

Summary of Work: We tested two low-fidelity simulation scenarios with common, sub-acute patient situations from primary healthcare: An older patient stays at a nursing home after having a hip fracture and surgery, and he develops a urinary tract infection or a pneumonia. Healthcare students (n=27) in their final stage of education (medical students, master students in advanced geriatric nursing and bachelor students in nursing) were allocated to ten groups. The groups were assigned to do a clinical assessment, agree on a probable diagnosis and develop a treatment plan during both scenarios. The facilitators guided the groups from briefing through to debriefing with focus on collaboration and communication. The study is an exploratory, qualitative study with interaction analysis of segments from video recordings of the simulations.

Summary of Results: Different forms of interaction and communication affected interprofessional collaboration, especially during the development of a care plan. The content and structure of the care plan and the team's efficiency in settling a plan as a team depended on 1) the ability to recognize each other's contribution, 2) mutual knowledge development and 3) the awareness of setting and roles. This emerged through dialogue, gestures, gaze and body language. During debriefing, several groups reflected on clarifying concepts such as close monitoring and deterioration of the patient.

Discussion and Conclusions: The sub-acute scenarios show potential to identify interactions and communication affecting collaboration. Using the scenarios in healthcare education may help students to develop productive interactions strengthening interprofessional collaboration. Furthermore, the simulation scenarios are feasible to use on-site in an education facility with minimal technical equipment.

Take-home Messages: Low-fidelity, on-site simulation scenarios based on common, sub-acute clinical situations shows promise in training students in interprofessional collaboration preparing for the complexity of primary healthcare.

#SC3.8 - Short Communications: Curriculum - IPE

#SC3.8.4 (4413)

Examining Interprofessional Team Decision Making through a Distributed Cognition Lens

AUTHOR(S):

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ABSTRACT:

Background: As the complexity of patient care increases, so too does the call for inter-professional teams to provide care. While these teams are increasingly necessary, communication within healthcare teams has been identified as common sources of medical errors and these have been difficult to address despite considerable efforts. Research approaches that focus on human actions and interactions do not fully address the inherent complexities involved in team-based patient care.

Summary of Work: This study explored the socio-material aspects of inter-professional healthcare team communication and decision making through direct observation and video review of team-based acute care simulation, along with post-simulation participant interviews. A distributed cognition theoretical framework was used to study the interactions between team members, as well as those involving mediating artifacts, and relate these to expected performance measures to better understand how team communication, decision making and collaborative activities affect patient outcomes.

Summary of Results: The physical environment and mediating artifacts were found to impact the identification, communication, and interpretation of patient related information and ultimately on patient care decisions within inter-professional healthcare teams. This study reported contributions to team cognition, awareness, and decision making that have not previously been described in acute care inter-professional team assessment, and that effectively contributed to patient care outcomes.

Discussion and Conclusions: The physical environment was found to support communication and decision making through the provision of visual fields and horizons of observation, the creation of redundancy, the proximity to data sources, and the mobility of team members. Barriers to effective communication were identified and explored, as were the unique road-maps each cohort took to achieve necessary patient outcomes. The role that socio-material elements had on independent and interdependent task was also explored.

Take-home Messages: The data gathered supported the idea that the physical environment in which care takes place, as well as mediating artifacts that gather, display, communicate, and maintain patient information considerably affect multiple aspects of care and contribute to the team cognition and situation awareness. In healthcare team assessment, expanding the unit of analysis using socio-material approaches may provide greater insight, and aid in dealing with the increasing complexities of acute care.

#SC3.8 - Short Communications: Curriculum - IPE

#SC3.8.5 (4449)

The hidden interprofessional curriculum through the eyes of medical students: fresh eyes on old problems

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ABSTRACT:

Background: Medical students' professional identity is influenced by their early experiences in the clinical workplace, where they undergo socialisation processes that may be hidden from faculty and unaddressed within formal curricula. With the current educational emphasis on complexity, preparedness for practice, patient safety and team-working it is necessary to evaluate and respond to what students are learning about collaborative practices and interprofessional dynamics during their clinical placements.

Summary of Work: All year 2 MBBS students at King's College London (n=394) were invited to submit a short essay describing, evaluating and reflecting on their experiences of how healthcare professionals work together as part of their formative coursework. They had 50 days clinical experience across primary and secondary care. We consented 311 participants with ethical approval and analysed a random selection of anonymised essays using an inductive thematic approach. Thematic saturation was achieved after 30 essays, 50 essays were fully coded and all were read.

Summary of Results: Four overarching categories of themes were mapped onto a model for assessing hidden curricula (Haidet and Teal, 2015). Students identified suboptimal practices including tribalism, hierarchies and siloed working. They reflected on underlying contextual drivers including structural issues at the interfaces between services, understaffing, workload, IT shortfalls, shifting teams and unfamiliarity with people and places. They described and admired teams that were able to navigate these tensions successfully. They showed insights into how collaborative practices impact on processes, patients and practitioners, and made suggestions for improvement and dissemination of excellence. Students predominately expressed active engagement rather than detached resignation, although processing dissonance was challenging for some.

Discussion and Conclusions: To mitigate the negative impacts and leverage the positive aspects of this hidden curriculum educators might consider providing students with opportunities to discuss interprofessional team behaviours in a safe environment; leveraging students lived experiences as raw material for systems thinking and quality improvement; and closing the feedback loop to placement sites on behalf of students so that examples of excellence can be identified and shared.

Take-home Messages: We challenge the current paradigm in interprofessional education which tends to emphasise idealised behaviours and protocols. We suggest instead that educators support learners in learning from interprofessional healthcare as practised.

#SC3.8 - Short Communications: Curriculum - IPE

#SC3.8.6 (4532)

Interprofessional patient safety Team-based learning (TBL): learning from each other

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ABSTRACT:

Background: Each year in Australian hospitals, avoidable adverse events resulting in patient deaths or long-term pain and disability. Patient safety literature indicates that while medical errors are frequent they are rarely associated with incompetent healthcare professionals or with inadequate technical knowledge. They are most commonly associated with the context, complexity and uncertainty of clinical decisions – factors such as situational awareness, risk communication, cultural awareness and poor teamwork. This necessitates that healthcare graduates are equipped to recognise these factors and contribute to safer patient care. The purpose of our study was to design and pilot an 'interprofessional Patient Safety' team-based learning (TBL) module, for senior health professional students. Furthermore, we aimed to explore participants' perceptions of the structure and outcomes of the session, using the conceptual framework of social capital.

Summary of Work: Senior health professional students from pharmacy, nursing and medicine (n=27) participated in the interprofessional patient safety TBL session. Student feedback following completion of the TBL was collected by questionnaire and focus groups. Observations of the session were recorded. Quantitative data were analysed using descriptive statistics. A coding framework was developed to code qualitative data, using the theoretical lens of social capital.

Summary of Results: In total, 26/27 (96%) of participants completed the questionnaire, and 20/27 (70%) attended the focus groups. Findings indicate that participants found the interprofessional delivery of the patient safety session key to its success. The learning environment was enriched by the TBL framework, enabling students to prepare, practice through testing, and problem solve through intra and inter team discussion, and interact with the facilitators.

Discussion and Conclusions: We have provided a useful, interprofessional framework to assist development of social capital among health professional students. The interactive TBL format helped to maximise the social advantage of interprofessional group learning. Our results indicate that the interprofessional TBL was well received by medicine, nursing and pharmacy students, providing a useful approach to teaching patient safety.

Take-home Messages: Participation in a well designed interprofessional TBL has the potential to shift knowledge and attitudes towards a greater appreciation of patient safety issues, and better prepare our health professional students for the workforce.

#SC3.8 - Short Communications: Curriculum - IPE

#SC3.8.7 (5357)

Effectiveness of introducing interprofessional education to pre-qualification health professionals: a systematic review and meta-analysis

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ABSTRACT:

Background: Interprofessional education (IPE) aims to bring together different professionals to learn with, from, and about one another in order to collaborate effectively with each other in the interprofessional team. Ideally, IPE should begin in the early training period and extend throughout a person's professional career. However, the evidence suggested IPE activities have the intended impact on pre-qualification learners is limited, especially for learners during the foundational education stage. We aimed to use a systematic review and meta-analysis to evaluate the impacts of introducing IPE to pre-qualification students to foster students' knowledge, skills and attitudes.

Summary of Work: The databases of Embase, Cochrane library, PubMed and ProQuest were searched for the fulltext without language limitations using following keywords and associated terms: Interprofessional education, pre-qualification and effectiveness up to December 2019. We also handsearched the Journal of Interprofessional Care (1995 to 2019). The quality of individual and overall evidence was evaluated by Medical Education Research Study Quality Instrument (MERSQI). Two reviewers working independently selected studies and extracted data. Meta-analysis was performed with the Review Manger software. Sensitivity and subgroup analysis were used for additional meta-analysis.

Summary of Results: We included 42 studies with 4039 pre-qualification students, of which 31 were controlled before and after studies and 11 were RCT studies of IPE interventions consisted of team-based learning, case-based learning, simulation-based learning, and other activities. The overall methodological quality of the studies was moderate. IPE inventions were associated with a significant increase in the knowledge domain (SMD 3.88, 95% CI 2.37-5.39), a moderate increase in the attitudes domain (SMD 0.82, 95% CI 0.48-1.16) and a moderate increase in the skills domain (SMD 0.35, 95% CI 0.12-0.58). Subgroup analysis suggested team-based learning learners seemed to benefit more from IPE. Additionally, 6 studies were associated with significant improvements in clinical outcome.

Discussion and Conclusions: Despite the wide variation in IPE programs designed for pre-qualification learners, evidence suggests a positive impact to foster students' knowledge, skills and attitudes. Over all, well-designed studies are needed to ensure the processes and the long-term impacts of IPE to pre-qualification students.

Take-home Messages: Although IPE programs designed for pre-qualification learners are diverse, IPE is effective to foster students' knowledge, skills and attitudes.

#SC3.8 - Short Communications: Curriculum - IPE

#SC3.8.8 (6218)

A preliminary reliability and validity of the Chinese Version of the IPE attitude by a Shadow Modeled Inter-Professional Education (SMIPE) for the final year nursing students

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ABSTRACT:

Background: Shadowing model, in which participants observe different professionals at work, can make contributions to inter-professional collaboration. Few studies used shadowing-based curriculum to build up IPE attitude for nursing students. Therefore, the purpose of this study explored the effectiveness of the shadowing model inter-professional education (SMIPE) and the reliability of IPE attitude questionnaires for the final year nursing students.

Summary of Work: We designed the SMIPE project on the final year clinical practicum for nursing students in Taipei Medical University. This project involved 3 healthcare providers, including pharmacists, respiratory therapists, and radiation technologists. 52 Students joined 3-hours shadowing with 3 healthcare providers on the last section of clinical practicum. This project consisted of 4 phases including the explanation of learning purpose, the observation toward preceptors, the discussion at the end of section, and a reflective assignment. They finished the Readiness for Inter-professional Learning Scale (RIPLS, ranged 19 to 95) and a self-administered 12-items questionnaire of IPE attitude (SA-IPE, ranged 12 to 72) according to previous studies reviews after this project. Pearson correlation analysis and Cronbach's Alpha were used to exam the reliability and Validity of two questionnaires.

Summary of Results: Students reported a significant increase of IPE attitude after this SMIPE. The RIPLS scores increased from 82.44(SD=6.7) to 84.57 (SD=4.03, $t=-2.53$, $p=0.015$). The score of SA-IPE raised from 67.3 (SD=7.62) to 70.2 (SD=3.84, $t=-3.43$, $p=0.001$). There was significantly positive correlation between the RIPLS scale and the SA-IPE questionnaire (Pearsons correlation coefficient: pre-test 0.620, $p<0.001$; post-test 0.391, $p=0.004$). Cronbach's Alpha of the SA-IPE questionnaire was 0.93. They noted that they got a lot of interesting knowledge and understanding of job's roles on those shadowing professionals.

Discussion and Conclusions: The results of this study suggested that SMIPE might have the effectiveness on IPE attitude in the final year nursing students. The SA-IPE questionnaire had shown a positive correlation with RIPLS scale. The final year nursing students learned the roles of other healthcare professionals on interprofessional collaboration and then to reflect their professional position in clinical practice.

Take-home Messages: We will determine the effectiveness of the SMIPE to determine whether it influences nursing students' behavior on interprofessional collaboration.

#SC3.8 - Short Communications: Curriculum - IPE

#SC3.8.9 (6230)

Interprofessional Identity: Shifting Focus from Disciplines to the Patient

AUTHOR(S):

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ABSTRACT:

Background: The notion of interprofessional teamwork encompasses multiple issues and is embedded in a rapidly changing healthcare system. Health professionals training involves different practice frameworks and philosophies of care, leading to multiple professional identities that are often in conflict. Limited data exists outside of acute care and the operating room on how interprofessional teams' function and interprofessional identity has not been well defined. This study sought to contribute to an understanding of power and hierarchy in a variety of healthcare contexts and develop a concept of interprofessional identity.

Summary of Work: Following Research Ethics Board (REB) approval, eight female health professionals participated in the study: 3 medical disciplines, 4 allied health and 1 from nursing representing 9 different teams including long-term care settings. Phenomenological interviews were conducted and a two step coding process used to identify themes and relevant quotes representing the participants' experiences. From these data, an in-depth understanding of team functioning was obtained and a concept of interprofessional identity generated.

Summary of Results: Three main themes were identified: leadership, entanglement and transformation. Leadership behaviour influenced team functioning and how individuals perceived their role. Team members had agency when their input was valued and disempowered when excluded or their input dismissed. Participants saw the patient differently when part of the team; this shift in thinking was transformative. The following definition of interprofessional identity is proposed: interprofessional identity involves patient focussed goal setting through team, patient and family interactions that change individual discipline viewpoints to a unified, more holistic view of the patient's situation, needs and goals.

Discussion and Conclusions: Team-based care continues to have issues of hierarchy and conflict yet can transform thinking around the patient. The proposed concept of interprofessional identity shifts the primary focus to the patient's needs and how each discipline helps meet them rather than approaching care from a discipline perspective. This could change our thinking around interprofessional education, team building and leadership.

Take-home Messages: The hierarchy in healthcare continues to be a challenge. Long-term care settings introduce different challenges from those in acute care. The proposed concept of interprofessional identity shifts health professionals thinking from discipline related goals to a primary focus on the patient.

#SC3.8 - Short Communications: Curriculum - IPE

#SC3.8.10 (6659)

Teaching interprofessional clinical pathways in undergraduate medical education.

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ABSTRACT:

Background: Successful interprofessional clinical pathways are essential for adequate patient treatment. However, they are not part of medical education in Switzerland so far. When we designed the new bachelor in human medicine at ETH Zurich, we developed a new course “Interprofessional Clinical Pathways” to address this need.

Summary of Work: The course follows a fictive patient with rectal carcinoma through stops within the Swiss health care system, e.g. pharmacist, web search, general practitioner and all other medical professions. The module focuses on the patient’s perspective and all steps of the pathway were visualised with video, from the perception of her first symptoms, to the visit of the pharmacy followed by hospitalisation, operation, chemotherapy until home care. The videotaped patient case was used as a guidance for lecturers and students to refer to the case when needed. During the course the students met representatives of different health professions including students from pharmaceutical and nursing science, with whom they engaged in group works and peer teachings. The additional project “bring your own patient” helped students to transfer the knowledge and reflect about the health care system using a patient of their own environment. They analysed and summarized their case in a written essay.

Summary of Results: 83 bachelor students in their 3rd year took part. The essays show, that students can reflect critically on the clinical pathway of their “own” patient and are able to change perspectives (patient and healthcare provider) which are important characteristics for future medical doctors. These findings were backed up by the course evaluation pointing out specific learnings at the interface between different medical professions.

Discussion and Conclusions: The combination of patient history, interprofessional meetings, peer teaching and reflections about student’s own cases may sensitize students for the complexity of interprofessional patient pathways at an early stage of their study.

Take-home Messages: Sensitizing students early for the complexity of interprofessional clinical pathways and introducing them to joint problem-solving with students from other health professions can help to improve patient care in the future.

#SC3.8 - Short Communications: Curriculum - IPE

#SC3.8.11 (6683)

Increasing awareness of oral diseases and professional scope of practice through interprofessional education: A student-led pilot intervention between senior undergraduate medical and dental students

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ABSTRACT:

Background: Few Interprofessional Education (IPE) interventions between medical and dental students have been reported. Oral health and its relevance to general health and wellbeing is not explicitly included in medical curricula. Similarly, dental students, despite extensive theoretical human disease exposure, seldom utilise this knowledge in primary care practice. Further, anecdotally, there is little understanding of the scope of each other's professions. Our aim was to deliver a clinically-oriented IPE intervention and to evaluate its impact in changing students' understanding of the relevance of IPE and cross-professional knowledge.

Summary of Work: During 2019, a cohort of clinical medical and dental students in their fourth and fifth years at Newcastle University were invited to take part in an online survey to assess their baseline knowledge of IPE. Following this, fifth year students undertook an IPE workshop that was developed and delivered by a final year dental student, followed by a repeat survey to re-assess knowledge post-intervention. Workshops were timetabled and designed to complement each degree's IPE curriculum.

Summary of Results: 104 students took part in this study. Statistical analysis of results was carried out to assess the objective learning gain in both cohorts. Qualitative data, in the form of free-text responses, underwent thematic analysis. Key findings included increased understanding of the value of IPE, and confidence around the other profession when dealing with the clinical scenarios encountered. Students in both professions reported wanting interprofessional opportunities to learn earlier in their curricula.

Discussion and Conclusions: Sharing knowledge between medical and dental students, and introducing them to other professionals' scope of practice in a safe learning environment, may facilitate increased objective and measurable knowledge of oral and medical conditions that overlap. Moreover, improving competence and confidence through interprofessional working is likely to result in better patient outcomes.

Take-home Messages: • Medical and dental students value IPE learning as a means of increasing their knowledge of other professions' scope of practice and increasing their confidence when encountering clinical scenarios relating to overlapping knowledge. • IPE opportunities between medical and dental students should be utilised where possible, with institutional support and careful mapping of scopes of practice.

#SC3.8 - Short Communications: Curriculum - IPE

#SC3.8.12 (6770)

Using interprofessional simulations to understand helping behaviours in clinical teams: Exploring dimensions of the helping phenomenon

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ABSTRACT:

Background: Members of interprofessional health care teams frequently encounter challenges that require them to seek assistance from inside and outside the team. While we know that these interprofessional helping behaviours are socially complex, we don't fully understand how dynamic clinical contexts shape how help is sought and enacted. Simulation offers the possibility of exploring the helping phenomenon in scenarios that are designed to mimic the complexities of the health care context whilst attending to educational outcomes and goals.

Summary of Work: Anesthesia residents, OB/GYN residents, practicing nurses, and midwives participated together in interprofessional team simulations that required them to identify and manage obstetrical emergencies while also attending to crisis resource management principles. Using the tenets of grounded theory, this study utilized 14 video-observations, 11 focus groups as well as individual interviews from these interprofessional simulations. Transcripts were analyzed iteratively using a constant comparative method of identifying and refining key themes. Observational data were used to elicit participant insights during individual interviews. Theoretical sampling was used to identify interview participants and saturate themes.

Summary of Results: Helping engagement was influenced by individuals' shifting perceptions of leadership/followership responsibilities, and by their ability to speak up. We found that team members tended to make assumptions about professional roles (role assumptions) and about the availability of human and material resources (socio-technical assumptions). As a result, participants frequently assumed that others would take responsibility for key tasks, rather than explicitly reassessing the leader/follower dynamic or speaking up to request or provide help.

Discussion and Conclusions: Interprofessional simulation provides an opportunity to expose and challenge assumptions that may interfere with functional helping behaviours within interprofessional care teams. Simulation has been heralded within the medical education literature as a space where learners can work at their limits of expertise. Our work demonstrates that when these limits are reached, learners and professionals grapple with how provide or obtain help in order push beyond boundaries.

Take-home Messages: Interprofessional simulation provides a fruitful environment in which to explore helping behaviours within clinical teams.

#SC3.8 - Short Communications: Curriculum - IPE

#SC3.8.13 (5804)

Clinical results of an inter-professional student-led medication review program

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ABSTRACT:

Background: Medicine is becoming increasingly specialized with specific referral questions and clearly defined outpatient clinic goals. Even though all specialist should have a holistic view, general medication evaluation is mostly of minor importance. An inter-professional student-led medication review program (ISP) team reviewing medication in geriatric patients could show promising results. To fully understand the significance of this team we analyzed the added value of an ISP-team on top of standard care in regard to the number of accepted START/STOPP items 1 and 3 months after the patient visit.

Summary of Work: We performed a randomized controlled trial where a varying team of healthcare students (medical, pharmacy and nursing specialists) review two of the four patients visiting the memory clinic of an University medical center. After a medication review the ISP-team discuss their findings in a multidisciplinary meeting and update the electronic-patient system. After each patients visit, medication advices of the control group (physician without ISP-team) and intervention group (physician with ISP-team) are compared to an independent review panel using START/STOPP criteria. One and three months after the correspondence letter is send to the general practitioner (GP), a follow-up medication overview is requested from the local pharmacist to analyze applied changes. A telephone call to the GP was performed by the ISP-team one month after the visit, to remind the GP of the medication advices.

Summary of Results: 200 patients (100 control and 100 intervention) have been analyzed. START/STOPP criteria were more often correctly addressed in the correspondence letter in the intervention group (59%) than in the control group (27%). Most of the advices (61%) had been incorporated into the medication overview after one month. The telephone call to the GP increased the acceptance of the medication changes with (6%). Most advices were related to stopping anticoagulants and antihypertensives and starting osteoporosis and cholesterol treatment.

Discussion and Conclusions: These results show that the addition of an ISP-team on top of usual care is associated with optimization of the quality of prescribed medication. Most advices have actually reached the patient and can thereby prevent future medication related harm. Further analysis will also show changes treatment satisfaction and adverse drug reactions changes.

#SC3.9 - Short Communications: Curriculum - Strategies

#SC3.9.1 (4446)

The coming of a new age in medicine: Planning for the introduction of artificial intelligence in diagnosis and management.

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ABSTRACT:

Background: Artificial intelligence (AI) is used in healthcare to manage data, identify patterns, and can make decisions with minimal human intervention. One of its most challenging contributions in healthcare is likely to be in diagnosis and treatment. What is not known at present is what practising doctors, trainees and patients understand about how AI can be used, the attitudes to its use in patient management and how we should design educational programmes to facilitate its introduction. However, it is recognised that medical paradigms and the increased sophistication of problem solving systems in medicine are shifting.

Summary of Work: We interviewed physicians, trainees, medical students and patients at a Hospital in New Zealand using a semi-structured questionnaire. We elicited responses on the understanding of AI, its current and future use in healthcare, whether it would help or hinder management, potential problems, impact on patient consultations, ethical and privacy concerns. A narrative comparison analysis was conducted across the four groups.

Summary of Results: There were marked differences between the four groups we interviewed. Physicians had a good understanding of the current use of AI and were able to give detailed accounts of how it could be used in their particular area of future practice. They were also aware of the potential biases in decision making, the need to inform patients and the privacy and ethical issues involved. Surprisingly trainees were much less well-formed and medical students had even less understanding of its use in diagnosis and management. Patients too had a very limited understanding of the potential of AI and expressed strong preferences for their management to be controlled by physicians.

Discussion and Conclusions: The lack of understanding of the future role of AI amongst trainees and medical students was unexpected given the amount of exposure of the role of AI in healthcare in the lay media. Medical students will require more opportunities to learn how AI will influence their practice in the future

Take-home Messages: Education programmes to facilitate the introduction of AI into routine clinical care need to address to the specific needs of physicians, trainees, medical students and patients.

#SC3.9 - Short Communications: Curriculum - Strategies

#SC3.9.2 (4570)

Comparison of team-based learning versus case-based learning in Pediatrics: Motivation and satisfaction of medical students.

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ABSTRACT:

Background: Case-based discussion has been used as our learning strategy for the 4th year medical students in a Pediatrics rotation. Team-based learning (TBL) is an alternative teaching technique encouraging students to think critically and work effectively as a team. Therefore, the TBL has been introduced to our curriculum since 2016. However, we did not know whether TBL improved students' motivation and satisfaction compared to case-based learning (CBL).

Summary of Work: One of eight CBL sessions was changed to a TBL session. Medical students were assigned to study prepared-learning materials before participating in the TBL session. In the session, students performed individual and group readiness assurance tests. Then, clinical application exercise was engaged by teams of students facilitated by instructors. For CBL session, designated students prepared and facilitated discussion on common pediatric problems, assisted by instructors. At the end of each TBL and CBL sessions, students were asked to respond questionnaires (Likert scale 1-5) assessing the quality of learning and teaching processes, levels of learning motivation and overall satisfaction. There were open-ended questions regarding advantages of TBL and CBL for students' written narratives. We compared the scores of motivation and satisfaction items between TBL and CBL. The written narratives were iteratively read and coded by 2 researchers.

Summary of Results: We reviewed questionnaires from three classes of medical students, total of 543 participants. The mean of the motivational score of TBL was 4.473; whereas that of CBL was 4.385 ($p=0.016$). The mean of the satisfaction score of TBL was 4.453; while that of CBL was 4.337 ($p=0.014$). Students perceived TBL enhanced thinking processes and improved their team working skills by promoting listening, sharing, and discussion within the groups.

Discussion and Conclusions: Among differences of culture and learning styles, attitudes of medical students on TBL have been reported mostly in the positive way as this study. Our students felt motivated by the TBL teaching strategy. They also experienced collaborative learning while working in the groups. Our study supports the use of TBL for increasing students' motivation and satisfaction of learning.

Take-home Messages: TBL influences medical students to have higher motivation and satisfaction.

#SC3.9 - Short Communications: Curriculum - Strategies

#SC3.9.3 (4817)

Medical course design for flexibility and individualisation

AUTHOR(S):

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ABSTRACT:

Background: Students and universities increasingly seek flexibility in learning options; however, terms such as flexible are not yet consistently defined in the medical education literature. Our aims were to i) distil recent learning about flexibility initiatives in the medical education literature, ii) define flexibility, and iii) synthesise these findings into a framework incorporating design and pedagogy options and considerations.

Summary of Work: A systematic literature review and narrative synthesis of papers published in English since 2009 was undertaken. The focus was on papers that reported on initiatives intended to create flexibility in pre-registration medical courses.

Summary of Results: Based on review of 1805 search returns and 318 full-text articles, two interconnected concepts were identified: flexibility and individualisation. Flexibility describes mechanisms which allow students choice on how they allocate time and resources to meet the requirements of their core medical education. These included reduced lecture time, flipped classrooms, time-variable progression, acceleration, deceleration, and articulated degree entry and exit options. Individualisation describes options which enable student-driven direction, extension, or expansion of medical education into special interest areas. These included dual degrees, breadth subjects, curriculum tracks, elective service learning pathways, electives, and selectives. Institutional considerations within the literature include matching suitable assessment methods with course structure, impacts on course integration, need for evaluation in course reform, promoting social and professional identity formation in cohorts, planning for necessary resources, and the importance of institutional partnerships.

Discussion and Conclusions: Though not always clearly defined as such, international medical education literature describes a rich variety of flexibility and individualisation initiatives. The proposed conceptual framework, reflecting both flexibility and individualisation, can help guide institutional considerations for contemporary course design.

Take-home Messages: As the competencies of our junior doctors adapt to meet a rapidly changing world, it is essential that our course structures foster this, and allow for flexibility, diversity and individualisation. It is imperative that we have a conceptual framework to assist in discussions, implementation and delivery.

#SC3.9 - Short Communications: Curriculum - Strategies

#SC3.9.4 (4868)

Ensuring quality and consistency in online and blended Health Professions Education courses

AUTHOR(S):

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ABSTRACT:

Background: Health Professions Education (HPE) graduate programs are moving online. As online programs are offered across different campuses and by different instructors, it is essential to institute a quality assurance plan.

Summary of Work: In 2019, the Graduate Programs in HPE at Uniformed Services University adopted the Open SUNY Course Quality Review (OSCQR) rubric as a quality assurance tool. Before implementation at the course-level, the rubric, which is open source, was customized to the Programs specific requirements and a dashboard that displayed review status, review results for each course, and an overview of criteria across the Program was created.

Summary of Results: Sixteen Masters and doctoral courses in the Program were reviewed by the course faculty, two faculty peer reviewers, and a student reviewer. Course reviews were initiated upon completion of a course offering with a review timeline of 2 months. Reviews from all reviewers were compiled, and an after-review report was generated to include an action plan. Across the courses, an average of five course elements was identified for improvement. 100% of faculty incorporated the feedback received and made changes to their courses. All reviews and action plans were imported into the dashboard to enable tracking of the review process and provide a programmatic view of consistency and compliance. The flexibility of the tool and the administrative dashboard provide a robust quality assurance ecosystem that can be implemented at a programmatic or university level.

Discussion and Conclusions: This process has been beneficial to faculty and the Program. Faculty have reported satisfaction with the process and appreciated the detailed feedback provided by various reviewers enabling them to improve their course offerings. Programmatically, the dashboard has compiled data allowing for (1) quality assurance across all courses in the Program and (2) analysis of compliance longitudinally over several course offerings.

Take-home Messages: The flexibility of the open-source OSCQR tool allows it to be revised for use with various forms of online courses. It can also be tailored to individual programs. Implementing a peer-review process based on a common rubric empowers faculty and enables quality assurance across courses.

#SC3.9 - Short Communications: Curriculum - Strategies

#SC3.9.5 (5273)

Charting the Course for Online PA Education: The Next Horizon

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ABSTRACT:

Background: The move to online learning has become one of the most challenging events in Physician Assistant (PA) education. Although many PA programs have made curricular enhancements where specific parts of a course are delivered online, new advances in online technology now make it possible to deliver an entire PA didactic curriculum online.

Summary of Work: The blending of the latest innovations in online technology with a problem-based learning (PBL) curriculum enables programs to engage students using the Socratic method online while providing feedback in real time. Online students work through patient cases, where faculty facilitators ask probing questions to dive deep into subject matter. A new technology involves the use of a bidirectional learning tool (BLT) where students work through a problem independently and submit their answers to the questions presented as they move through the problem, followed by faculty feedback to enhance learning. Traditional lectures are recorded and transmitted to students for viewing and reviewing. Online technologies are complimented by on-campus immersions where students learn the more structured nuances of medical education.

Summary of Results: Students completing the first year of the curriculum scored equal to or better than the national average on the PA Clinical Knowledge Rating and Assessment Tool (PACKRAT) exam overall, and in all specialty and task areas. In an end-of-didactic curriculum survey, students felt well-prepared for clinical rotations and felt the curriculum met their learning needs. After completion of eight clinical rotations, preceptors rated student preparedness 4.53/5, and students rated preceptor satisfaction 4.77/5.

Discussion and Conclusions: Although data is still being collected and evaluated, preliminary results indicate online technology can be successfully implemented in a blended PA curriculum which includes asynchronous lectures, synchronous face-to-face PBL sessions, the use of bidirectional learning tools to provide faculty feedback, online testing technology, and on-campus immersions.

Take-home Messages: • Online curriculum strategies can emphasize knowledge retention and provide feedback to learners in real time. • Students and preceptors alike feel that the online curriculum prepares students well for clinical practice. • These technological advancements can be used to integrate online technology into existing curricula to enhance program outcomes.

#SC3.9 - Short Communications: Curriculum - Strategies

#SC3.9.6 (6207)

Moving from an MBBS to an MD – where are we at after 3 years of implementation?

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ABSTRACT:

Background: Many medical programs internationally have moved to the US style Doctor of Medicine (MD) program. Australian is no different, with its twenty medical schools offering undergraduate or post graduate entry, a variety of 4, 5 and 6 year programs, all accredited by the Australian Medical Council. The main difference between the programs is largely research training.

Summary of Work: Bond University Medical School on the Gold Coast, Australia, transitioned from an MBBS to a Bachelor of Medical Studies/Doctor of Medicine Degree in 2016, which was described in the external evaluation as ‘novel and innovative’. The program allows undergraduate entry and master’s degree exit, in an accelerated program over 4 years and 8 months. The flexible program allows students to choose from three project options in their final year: a research project, or a professional project or a capstone experience. The health equity capstone projects enable students to undertake placements in the Solomon Islands, South Africa or India, as well as remote Indigenous communities. The professional projects have resulted in innovative simulation mouldages and the development of a bank of examination questions used as students practice exams. The variety of other tasks are collected in an electronic portfolio and fully integrated with the existing curriculum and assessment process.

Summary of Results: The first three cohorts (n=290) have now graduated having completed almost 200 projects, all have presented at a conference and many have published from this work.

Discussion and Conclusions: This paper describes the model, innovations, a summary of the project outcomes to date and how they contribute to the community and the evidence base, as well as the challenges for others to learn from.

Take-home Messages: This innovative model is breaking new ground in the way in which a masters level MD program could be developed, whilst maintaining undergraduate entry. Health equity capstone programs offer students unique opportunities in public health and sustainable development that can change the students career pathway and contribute to those most in need.

#SC3.9 - Short Communications: Curriculum - Strategies

#SC3.9.7 (6704)

Comparing approaches to curriculum mapping in depicting the coverage of a national outcome standard.

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ABSTRACT:

Background: Curriculum mapping of an institutional program to a given national outcome standard plays an increasing role in the design and implementation of competency-based medical education. There is only sparse information in the literature how different mapping approaches compare in depicting the relative coverage by an institutional medical curriculum.

Summary of Work: We mapped exemplarily the undergraduate medical curriculum of our institution (Modular Curriculum of Medicine = MCM), Charité – Universitätsmedizin Berlin to the German national competency-based outcome standard (Nationaler Kompetenz-basierter Lernzielkatalog Medizin = NKLM). The mapping process was done by a small, constantly reconciling working group. In step 1, we matched MCM level 3 objectives (L3, representing the course learning objectives) to NKLM objectives. A MCM L3 objective was matched when it showed a thematic intersection with or represented a thematic subset of the NKLM objective. In step 2, we employed three primarily quantitative approaches (single MCM L3 match, triple MCM L3 match or relative NKLM L2 by subordinate MCM L3 match) and one primarily qualitative matching approach (MCM L3 content comparison) by three independent raters to derive the degree of NKLM coverage.

Summary of Results: In step 1, a total of 8,140 MCM L3 objectives were collated to 2,105 NKLM objectives. In step 2, and overall NKLM chapters and sections, the quantitative approaches yielded high relative coverages (single MCM L3 match: 73%, relative NKLM L2 by subordinate MCM L3 match: 82%), except with the triple MCM L3 match approach (42%). A lower relative coverage was seen with the qualitative MCM L3 content comparison approach (41%). The interrater concordance was higher than 80% in this approach.

Discussion and Conclusions: Quantitative mapping approaches provide overviews on the pattern of relative coverage by the institutional curriculum and need less resource investment. The qualitative content comparison approach provides a better representation of the scope and depth of the coverage by the curriculum, but needs more resource investment.

Take-home Messages: The approach to curriculum mapping has a high impact on depicting the relative coverage of a national competency catalogue by an institutional medical curriculum.

#SC3.10 - Short Communications: Curriculum - Subjects

#SC3.10.1 (5070)

Behavioral Science as a Subject in MD Curricula, Concerns from Georgia

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ABSTRACT:

Background: “Behavioral Science” as a subject has been included in various curricula, and probably most prominently examinations (e.g. USMLE) globally. The World Federation for Medical Education (WFME) global standards elaborates on the requirements under “behavioral and social sciences” name, listing topics relevant to a long list of sciences: biostatistics, community medicine, epidemiology, global health, hygiene, medical anthropology, medical psychology, medical sociology, public health and social medicine. On the other hand, the Georgian national Medicine Sector Benchmark documents discusses it as a separate subject. There is an obvious confusion regarding the context, and hence curricular inconsistencies.

Summary of Work: We reviewed the existing practices, conducted focus group discussions and academic personnel interviews. We also conducted a student survey, exploring their perspectives, needs and expectations. Finally, we analyzed these findings in international context.

Summary of Results: There is little scholarly literature exploring and/or reporting Behavioral Science teaching approaches in MD programmes. The relative standards are too general to focus a dedicated course. We observed that Behavioral Science teaching is mostly seen as a stand-alone subject, focused on physiology of behavior, psychology and psychiatry, with high focus on neuroscience and pathology. There is less focus on social elements or integration with other disciplines which are commonly united into the “behavioral science” moniker in international platforms. Formats of teaching are homogenous and involve little interaction. Students generally reflect dissatisfaction with used textbooks, find expectations unmet.

Discussion and Conclusions: While most of Georgian medical school curricula we studied teach “Behavioral Science” as a subject, these mostly focused on neuroscience and psychology/psychiatry, with little integration with other disciplines which are usually discussed together with “Behavioral Science” in international documents, or are integrated in examination sets.

Take-home Messages: Based on the background information analysis, we suppose that there is a need of general, international (and definitely a national one) agreement on what exactly does “Behavioral Science” as a subject mean?, should it have its own place in the curricula or should the related topics be toughed across a range of disciplines?, what should be taught, by whom and how? A relevant discussion of the topic in international formats is required.

#SC3.10 - Short Communications: Curriculum - Subjects

#SC3.10.2 (4421)

Assessing social and behavioural sciences: challenges and opportunities

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ABSTRACT:

Background: Despite the heightened awareness of the significance of social and behavioural sciences (SBS), there is currently little published evidence about how these subjects are assessed and the best way to assess them.

Summary of Work: In 2019 the BeSST (Behavioural and Social Science Teaching in medicine) community of practice organised three workshops with participants from 20 Medical Schools to determine what methods are being used to assess sociology and psychology topics and the rationale for the adoption of these methods. While the workshops were UK based, we will draw on the discussions (via BeSST events) with colleagues from other countries which suggest that the challenges are shared.

Summary of Results: Participants referred to a range of assessment methods being used, however the dominant mode remains MCQs. Most participants felt that this was not evidence-based and that MCQs are not appropriate for assessing SBS outcomes. There is limited SBS assessment in later years of the programmes. Developing integrated assessments is complex and can lead to a dilution of SBS content. There is concern that the use of MCQ assessment for the UK Medical Licensing Assessment (MLA) will have negative implications for SBS assessment and curriculum presence. Despite these challenges participants emphasised opportunities for collaboration and developing a stronger evidence base on SBS assessment.

Discussion and Conclusions: Arguably assessment is one of the most dominant and contentious topics within medical education with ongoing debates over the most appropriate methods for determining if students have met learning outcomes or competencies. Despite the wider inclusion of SBS as core to graduate outcomes, the findings from the workshops highlight that assessment may not always be considered 'fit for purpose'. There are significant challenges around defining what we are assessing; how we are assessing; and who is involved in assessment that are fundamental to ensuring SBS is meaningfully included in medical education.

Take-home Messages: Social and Behavioural Sciences are core to medical education in order to prepare graduates to meet the needs of their communities in a rapidly changing environment. To ensure their inclusion is meaningful we must develop assessments that are fit for purpose and a stronger evidence base to underpin good assessment practice.

#SC3.10 - Short Communications: Curriculum - Subjects

#SC3.10.3 (4656)

Educational interventions to ensure prescribing competence in new prescribers: a systematic review of quantitative and qualitative evidence

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ABSTRACT:

Background: Prescribing competency involves the ability to prescribe rationally for the benefit of patients. There has been a sustained policy and workforce shift to increase uptake of prescribing in non-traditional roles. This changing landscape, and new evidence, suggests the need for an updated review of interventions to ensure competence in new prescribers.

Summary of Work: A systematic review was undertaken according to the PRISMA guidelines. The review sought to characterise the training and its impact on knowledge, skills, and behaviours of learners; patient outcomes; and resource use. An exhaustive search strategy included all main databases. No restrictions were applied by date nor language. The MERSQI tool was used to critically appraise studies with the Kirkpatrick evaluation framework used to categorize outcomes.

Summary of Results: 5,758 records were screened with 38 studies meeting final inclusion criteria (8 RCTs, 16 quantitative nonrandomised, 9 quantitative descriptive, and 3 mixed methods studies). Studies were conducted in the UK (n=14), the Netherlands (n=6), Turkey (n=3), Bahrain (n=2), Australia (n=2), USA (n=2), with one study in each of South Africa, Germany, Yemen, Canada, India, Sweden and Malaysia and two multisite studies. Most studies focused on medical students (n=32), or a mixture of nursing and medical students (n=1); three studies focused on nurses and one each included dental students or pharmacists only. The evaluation of interventions was heavily weighted towards the reaction (17) and learning (20) of participants with only a few evaluating their behaviour (3). A pharmacist facilitated interventions in some studies (6) with the 'near peer' of foundation doctors facilitating teaching in three studies. Some interventions were didactic only (2) but many had applied elements of learning (16).

Discussion and Conclusions: There was much heterogeneity in both study design, outcome choice and reporting quality. The vast majority of studies confined their assessment of learners' competence to knowledge assessment neglecting the higher order of Miller's framework of competency. The WHO Guide to Good Prescribing was the most widely evaluated tool and is now incorporated into many national curricula.

Take-home Messages: Future interventions should consider more valuable assessments of higher order downstream competency assessment (e.g. OSCE, prescribing audits) as well as the longer-term impact of educational interventions. Education specific to non-medical prescribers needs more research.

#SC3.10 - Short Communications: Curriculum - Subjects

#SC3.10.4 (4892)

Teaching Sociology to Medical Students: perceptions and experiences of UK teachers

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ABSTRACT:

Background: Sociology has been taught to UK medical students since at least the late 1960s. However, its inclusion in medical curricula became mandatory with the publication of the General Medical Council's *Tomorrow's Doctors* in 1993. Despite sociology being a core part of the medical curriculum since that time, little research has explored the experiences and perceptions of those teaching it.

Summary of Work: To explore the perceptions and experiences of sociologists teaching medical students in the UK, ten one-to-one, in-depth, semi-structured interviews were conducted with individuals who had experience teaching sociology to UK medical students. Twelve medical schools were represented. Interviews were digitally recorded, transcribed and thematically analysed.

Summary of Results: All participants reported that the key benefit of teaching medical students is that it might help improve patient care. However, eight teachers identified a lack of support from and isolation within their schools as well as little career support and progression. They also described being marginalised by mainstream sociologists. These participants responded by modifying their teaching and research practices in ways that often contradicted the norms and values of their home discipline and this consequently created dissonance. The support they received largely came from the Behavioural and Social Sciences Teaching in Medicine (BeSST) professional network. In contrast, two participants working in larger teams holding key positions inside their schools acknowledged being supported by their colleagues, having clear career pathways as well as promotional opportunities and therefore experiencing overall work satisfaction.

Discussion and Conclusions: There is a gap between the GMC's acknowledgment of sociology as a core subject within medicine and the reality that most teachers feel undervalued and disempowered in their schools. This process can be described as decoupling where there is a gap between formal policies and actual institutional practices.

Take-home Messages: Professional networks like BeSST provide important support for individuals teaching sociology to medical students. However, medical schools should strengthen career planning, revisit promotion criteria, appoint sociologists into key positions and help teachers maintain links with their home discipline.

#SC3.10 - Short Communications: Curriculum - Subjects

#SC3.10.5 (5414)

Webinars: Can they Reach and Teach Population Health to over 370 Final Year Medical Students?

AUTHOR(S):

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ABSTRACT:

Background: In 2019, a 'Population Health' (PH) programme was introduced for final year medical students at the University of Manchester. Clinical placements emphasising PH were created across North-West England. Contact time with tutors was required to fulfil programme objectives including a reflective piece of writing. To reach students across geographically spread placements, a novel approach was employed.

Summary of Work: Students attended two interactive webinars during their placement. PH concepts were introduced and contextualised through presentation of two life-stories of older individuals, both presenting with hip-fracture. Interactivity was fostered using audience participation through polls and 'live-chat' question and answer (Q&A). Historic and demographic details added fidelity. Knowledge consolidation and transfer was incorporated through reflection on PH themes during the webinar (health inequalities and deprivation), and audience consideration of analogous interventions relevant to their placement. Interaction during the webinar was reviewed and a questionnaire sought learners' views regarding webinar utility.

Summary of Results: Four 'sets' of webinars were delivered to 371 students. 80-98 students attended per session. During each webinar, an average of 104 items were posted in Q&A exercises. These allowed tutors to gauge knowledge. For instance, posts considering frailty definitions included "lack of physiological reserve" and "reduced grip strength". 42 students completed the webinar utility survey. 66% indicated they understood more about PH. 76% agreed the webinar was a useful method. 'Take-home' messages included reflecting on funding allocation and the 'inverse-care law' concept. 14% highlighted technical issues (including audio quality) impaired the experience. Other negative views included finding the Q&A "intimidating" (lack of anonymity).

Discussion and Conclusions: Teaching students dispersed over a wide geographical area is challenging. The webinar format was acceptable, 'worked' for most students and eliminated both time and environmental costs of travelling. Students interacted during the Q&A and reflected on complex subjects including resource allocation. Technical factors can disengage learners - poor audio equals a poor experience! Exploring why some learners feel "intimidated" during Q&A is an important for further work.

Take-home Messages: Webinars are a valid, interactive method for teaching complex curriculum areas. They can reach and teach learners spread across a wide geographical area.

#SC3.10 - Short Communications: Curriculum - Subjects

#SC3.10.6 (5568)

Bridging the Gap in Undergraduate Medical Leadership and Management Training

AUTHOR(S):

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ABSTRACT:

Background: Medical leadership and managements (MLM) skills are important for doctors to possess early on in their training and have a positive impact on work in the National Health Service. Although guidance on these skills has been published, teaching on MLM is yet to be successfully integrated into the undergraduate medical curriculum. Hence, we designed Lead with Purpose week (LPW), a one-week programme aimed to provide medical students at the University of Exeter with MLM training.

Summary of Work: Students' views on MLM were evaluated through focus groups and using a survey. Results from this were combined with the Medical Leadership Competency Framework to design LPW. Six events took place including interactive talks from healthcare leaders such as the Director of the Faculty of Medical Leadership and Management. Students then applied their learning in an interdisciplinary, 'hackathon-style' team-based innovation challenge. This combined MLM theory with practical work.

Summary of Results: 55 students took part in LPW, with 38 students participating in the innovation challenge (eight groups). Themes arising from the focus group and survey included an agreement that the students' curricula lacked adequate teaching on MLM, and that such teaching should be made mandatory. Students also expressed that the practical element of LPW was effective in consolidating their understanding of MLM.

Discussion and Conclusions: The LPW talks instigated discussions on practicing MLM at an undergraduate level and successfully introduced teaching on MLM to medical students. Students learned about the definition of MLM and valued applying these skills in the innovation challenge. Although there remains more work to be carried out into formally incorporating teaching on MLM to medical students, we propose that methods such as LPW effectively complement the core curriculum.

Take-home Messages: • Medical students value teaching on MLM. • Coupling teaching on MLM theory with a practical MLM-based teamwork was effective in equipping students with confidence in using these skills. • First-hand insight into MLM from healthcare leaders provided knowledge and inspired the development of MLM skills. • Providing students with an opportunity to apply these skills yielded better understanding and awareness of their purpose within healthcare.

#SC3.10 - Short Communications: Curriculum - Subjects

#SC3.10.7 (6090)

Global health in undergraduate education in Sudan: Knowledge, Attitude and Practice of Khartoum University medical students towards Global health

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ABSTRACT:

Background: Globalization and other relevant phenomena such as the colossal migration influx, ageing of the population, brain drain etc. all necessitates medical curricula to transcend national medicine and encompass a more global approach. This is especially true in the context of developing countries where they yet remain passive subjects to the ongoing global decisions, health inequities or global pandemics.

Summary of Work: This was a descriptive cross sectional institutional based study. The study was done in Sudan, Khartoum University-Faculty of medicine, in which 342 students were systematically randomized according to the population in each grade to ensure representation, with 88% response rate. Self administered questionnaire was used. The questionnaire contained 3 sections to assess the knowledge, attitude and practice of medical students towards global health as a general concept and the agreement of including global health education as part of their official medical education curriculum. Data was analyzed using SPSS version 25.

Summary of Results: By a percentage of 64%, the study revealed a high level of interest towards including global health as part of the official curriculum. The students also by a level of 92%, thought that global health is a very relevant of medicinal teaching vs 8% who thought it had little relevance to university students. Overwhelmingly, 97% of the participants had poor practice in activities related to global health. Which is also coupled by a poor level of knowledge among the study participants (64.4%). Moderate and good knowledge were shown by 28.9% and 2.6% of the respondents respectively.

Discussion and Conclusions: The study concluded that there is a knowledge gap among Khartoum medical students regarding global health as general concept although the students showed good attitudes and willingness to have global health as part of their future career. Also there is a need for more opportunities in teaching and learning in this interesting field.

Take-home Messages: Students are aware of the importance of global health and will respond positively if included; Global health programmes and exchange opportunities are needed, so students can experience the work in international settings with different resources; Doing global partnerships will increase these needed opportunities and will raise the ranking of universities.

#SC3.10 - Short Communications: Curriculum - Subjects

#SC3.10.8 (6638)

The missing element in medical education: comprehensive abortion care

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ABSTRACT:

Background: Access to safe abortion care depends largely on the prevalence of skilled providers, but gaps in medical curriculum of health professionals to provide care may further limit the availability of abortion providers. IFMSA and Ipas conducted a study to identify gaps in abortion education and to collect new evidence to promote comprehensive reproductive health care in medical curricula around the globe.

Summary of Work: This cross-sectional descriptive mixed methods study used an online quantitative survey to explore abortion study content and intentions among medical students. The study used purposive sampling to reach medical students of IFMSA's global and regional networks. The online survey was supplemented with a purposively selected group of 10 key informants for in-depth interviews.

Summary of Results: A total of 1,717 medical students from around the world responded to the online survey. One-fifth (21%) are planning to specialize in gynaecology, the remainder chose general medicine or other specializations. Most of these students (58%) believe abortion subject should be mandatory in medical school. Yet nearly a third of students who responded to questions on educational content (n=492) said they had no abortion content in their curricula. Less than 4% of all surveyed medical students reported having a hands-on practical lesson on abortion. Although most respondents (52%) believe that governments should be responsible for providing abortion services, they fear stigmatization (42%) if they provided abortion care.

Discussion and Conclusions: There is a strong willingness from medical students to have abortion training as part of comprehensive reproductive health care education in medical schools, however, the topic is currently not prioritized due to abortion stigma and fear from professors and medical school authorities. Most students who had abortion in their curricula had only one lecture on the topic, and clinical training is very limited.

Take-home Messages: The results highlight the gap between what students are being taught related to abortion care, and the needs of women. Improving abortion content in medical curricula is essential to reduce abortion-related morbidity and mortality.

#SC3.10 - Short Communications: Curriculum - Subjects

#SC3.10.9 (7025)

Organ Donation in Medical curricula - A global analysis

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ABSTRACT:

Background: Inarguably, organ donation has great life-saving potential. Not only is it able to save patients' lives but improve their quality as well. To ensure a high quality donation system, however, well trained doctors are a core principle. Medical education must therefore offer both the knowledge and skills needed for medical students. The International Federation of Medical Students Associations (IFMSA), aimed to understand the extent to which the topic is included in medical curriculum globally and develop tools to support advocacy for inclusion of organ donation into curriculum.

Summary of Work: An online, quantitative study assessing organ donation teaching in different medical universities globally was conducted. Additionally, qualitative data was obtained from focused group discussions. Using the collected data, a draft course proposal on organ donation was developed, alongside a guide on how to advocate for its inclusion efficiently.

Summary of Results: 183 answers from 154 universities across 57 countries were collected. Students from 42% of universities noted that their curriculum contains no course on donation or transplantation. From 88 universities that had a course on organ donation, 82% only contain lectures, 27% include discussions, 30% have case studies, and only 6% have workshops. When asked if their curriculum offers adequate knowledge on ethical aspects of donation, only 20% said yes and 26% of respondents indicated knowledge on the national waiting list system operation.

Discussion and Conclusions: The survey's results show a large disparity between curricula from around the world. A statistically large number of universities do not include the topic in their curriculum whatsoever. When it comes to existing curricula, is the curricula on organ donation and transplantation not only un-unified in terms of content, it is also subject to large differences in methodology of the knowledge delivery. The majority of curricula also showed limitations in the spectrum of delivered content, without it having a cross-cutting and wholesome structure, inclusive of ethical, humanitarian or practical aspects.

Take-home Messages: There is a considerable lack in organ donation education within medical curriculum. Essential topics related to organ donation are not addressed by many universities, such as the ethical and legal aspects. IFMSA calls for a structured inclusion of organ onation are not addressed by many universities, such as the ethical and legal aspects. IFMSA calls for a structured inclusion of organ donation within medical curricula.

#SC3.10 - Short Communications: Curriculum - Subjects

#SC3.10.10 (6593)

Research Camp: an innovative and peer-led approach to Research Education in undergraduate medical curriculum

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ABSTRACT:

Background: In an attempt to bridge the perceived gap of research education in medical curriculum, International Federation of Medical Students' Associations (IFMSA) developed Research Camp (RC) – a peer-led research education workshop for medical students that aims to teach basic concepts in Medical Research.

Summary of Work: IFMSA has organized two editions of RC in Hungary and Jordan with 22 and 18 participants respectively. RC is a 4-day (36 hours) peer-taught workshop using a systematic approach to help students design their own study, from formulating a research question to essential research methodology. Focus is also put on research outcomes and publishing, including Open Access. The second RC was prolonged to 5 days (37 working hours with additional time for reflection and protocol preparation) allowing students to present their developed research protocols and to critically appraise each other's protocols.

Summary of Results: Research camps were attended by 40 participants from 15 countries in total. Pre and post evaluation was conducted at both camps where the understanding of basic research principles and topics was graded on a Likert scale. An average improvement of 34% was seen with both camps.

Discussion and Conclusions: Our results show that RC successfully improves comprehension of research and empowers students to lead independent projects regardless of background or abilities of the participants and that peer-education represents a possible and effective method in closing the gap in research knowledge for medical students.

Take-home Messages: IFMSA's Research Camp was a successful application of Peer-assisted Learning. Students were exposed to the basics of medical research in a diverse and engaging learning environment.

#SC3.10 - Short Communications: Curriculum - Subjects

#SC3.10.11 (7351)

POSTERS AS A LEARNING TOOL TO UNDERSTAND THE VALUES OF CADAVERIC DISSECTION

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ABSTRACT:

Background: The undergraduate medical students need to be made aware of the ethical values of cadaveric dissection. In this regard, the medical council of India (MCI) strongly encourages the incorporation of ethical and attitudinal components at the beginning of the undergraduate medical curriculum through Attitude, Ethics, and Communication (AETCOM) Module. In the present study, we incorporated poster making as a learning tool for first-year medical undergraduates to make them understand and acknowledge the contribution of body donors.

Summary of Work: For the past two academic years, the students have made posters in small groups with themes 'Voluntary body donation' and 'Ethical values of cadaveric dissection.' We announced the topics a week before the event so that the students could gather relevant information. The students presented their posters in front of a panel involving an Anatomist and a Bioethics expert. The panel graded the posters based on their content, creativity, and display and rewarded the best posters. We displayed all the posters in the dissection hall throughout the year. Students shared their learning experiences in the form of feedback.

Summary of Results: Students in small groups (12-13 in each) of the two academic years prepared 40 posters. The students reflected their creativity through posters. They expressed their thoughts on the ethical, humanitarian aspects and the process of voluntary body donation. The idealization of every poster seemed unique, and they were diverse in the expression of views. Few of them strongly depicted the importance of cadaveric dissection and the noble act of body donation. The students opined that poster making was an enjoyable learning process, and it helped them demystify the values of cadaveric dissection.

Discussion and Conclusions: Poster making encouraged students to understand the values of cadaveric dissection. The posters reflected on their thoughts and views and highlighted the respectful handling of cadavers. Through feedback, the students revealed that this process had motivated them to inculcate professionalism, human values, and empathy.

Take-home Messages: Poster making could be an innovative learning tool to make students understand the values of cadaveric dissection.

#SC3.10 - Short Communications: Curriculum - Subjects

#SC3.10.12 (7353)

Learning Gross Anatomy using the Dissection Module in an Indian Medical School: Benefits and Pitfalls

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ABSTRACT:

Background: Teaching anatomy has been centered on dissection for centuries. For generations, the use of cadavers has been the chief pillar for learning Anatomy. However, the limited availability of cadavers, the difficulties imposed by the ethical issues for their use, the advent of modern technologies in learning have led to use of substitutes such as prosection, anatomical models, artificial organs, audio-visual aids, virtual/augmented reality tools etc. Therefore, in light of these changes we put forth the following arguments: Can dissection still be considered as a valuable learning tool for exploring human Anatomy? Or are there other options that students can undertake to develop their anatomical knowledge?

Summary of Work: The study was conducted on 145 first-year MBBS students of Kasturba Medical College Manipal using a questionnaire. It invited the students to provide their opinion related to the advantages and disadvantages of learning Anatomy by self-dissection, dissection classes versus other educational resources used in learning Anatomy. The results were expressed in frequency and percentage.

Summary of Results: Majority of the students (66.4%) agreed, saying dissection provides a three-dimensional perspective of structures. On the contrary, 55% felt it is time-consuming, and the smell of formalin is unpleasant. About 46% felt prosection (Pre-dissected specimens) helped them to get to the important information quicker without spending extra time on dissection. But when asked whether dissection should be removed from the curriculum, the majority (62.2%) strongly disagreed. However, it was agreed that dissection should be supported by other educational modules (i.e., plastinated specimens, video demonstrations, dissected specimens etc) (52%).

Discussion and Conclusions: The study strengthens the belief of using dissection for better teaching and learning in Anatomy. It further glorifies that dissection hall teaching would be the best approach for learning Anatomy.

Take-home Messages: • Dissection module enhances the process of teaching and learning in Anatomy. • The newer modalities such as VR, plastination, 3D anatomical models, artificial organs, audio-visual aids may serve as supplements to enhance the teaching-learning process.

#SC3.10 - Short Communications: Curriculum - Subjects

#SC3.10.13 (7354)

Teaching & Learning Anatomy via the 'Lecture Capture System'- A Students' Perspective

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ABSTRACT:

Background: Lecturing is a commonly used teaching method for communicating conceptual knowledge in a large group. However, students attention span is limited. Introduction of a lecture capture system would, therefore, be advantageous in filling this void.

Summary of Work: The study was conducted on 202 first year Medical Undergraduate students (96 males & 106 females). The students were exposed to 'Impartus i.e., a lecture capture system for four months. In the end, the usage & perception of the students regarding the lecture capture system was documented using a validated questionnaire. Results were expressed in frequency & percentage.

Summary of Results: The usage of the lecture capture system helps in understanding the concepts better as agreed by 76.83% of the student population. Majority of the students watch the lectures online as per convenience (79.30%). About 55.44% stated that the lecture capture system is easy to use. Students (62.87%) were of the belief that watching lectures online would help to recall the points that they had failed to understand in the class. However, 70.78% of students preferred face to face classroom lecturing system. Topics on Embryology & Neuroanatomy were strongly favored by a majority of the students (72.38%) to be viewed in Impartus.

Discussion and Conclusions: The lecture capture system is beneficial as it favors the teaching-learning process and can supplement traditional lecturing. Face to face lecturing is however preferred over online lectures. Issues such as poor internet connectivity and other technical glitches should be taken care to promote better use of the lecture capture system.

Take-home Messages: • Lecture capture system is beneficial for teaching-learning Anatomy. • The lecture capture system encourages the students to understand the intricacies of human anatomy better by continuous and convenient way of learning. • The traditional classroom teaching supplemented with easy access to the recorded lecture videos will help to enhance the learning experience in Anatomy.

#SC3.10 - Short Communications: Curriculum - Subjects

#SC3.10.14 (3812)

Biochemcity: A 3D Edutainment Application For Learning Biochemistry

AUTHOR(S):

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ABSTRACT:

Background: Biochemistry course is an integral part of all life science training (medical doctor, dentist, biologist, biotechnologist, veterinarian, food and agricultural engineer). It is one of the most difficult disciplines and is the bottleneck of the basic module in most training. The most challenging part of learning biochemistry successfully is understanding and memorizing the reactions with the structural formula of the molecule and understanding the systemic network of these reactions. There is currently no software program/application on the market to assist in this process.

Summary of Work: Biochemcity is a language-independent mobile application that breaks the past practice and tries to provide a new concept to teach biochemical core material (biochemical reactions and network).

Summary of Results: “Biochemcity” guides the user through a labyrinthine network of metabolic pathways in a revolutionary “edutainment” environment, providing a successful alternative learning strategy. The concept is based on the fact that metabolic pathways can be conceived as a real road network, plastically illustrating the metabolic connection points, the junctions, the real connections between the parts that are far apart in the curriculum or the textbooks. We are building a 3D city on this map, which creates the background of the application. In this cosy night city, the user has to find his/her way with street lamps built-in mini-games, each of which hides a biochemical reaction.

Discussion and Conclusions: Successfully solving and practising the reactions on that graphical interface (turning on the street lamps) leads to the discovery of the whole city, that is, to master the matter (more light -> more knowledge). Since the curriculum is only displayed on the graphical level/interface, (language interface is not required to use it), it can be used in any language environment.

Take-home Messages: - Biochemcity is a language-independent mobile application. - The concept is based on the fact that metabolic pathways can be conceived as a real road network. - In the 3D Biochemcity the user has to find his/her way with street lamps built-in mini-games, each of which hides a biochemical reaction. - more light -> more knowledge

#SC3.10 - Short Communications: Curriculum - Subjects

#SC3.10.15 (4419)

Using role analysis to create a Foundation Pharmacist Framework

AUTHOR(S):

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ABSTRACT:

Background: As the demand for pharmacists with enhanced clinical skills has increased, there is a need to provide consistent and improved access to foundation training as an efficient and effective means of upskilling the workforce, particularly early career pharmacists.

Summary of Work: Objectives •To analyse the current and future (5 years) roles of foundation pharmacists in the UK •To develop a common framework that defines the attributes required of foundation pharmacists across all sectors of practice. A multi-method role analysis was carried out to identify the attributes associated with successful performance of a foundation pharmacist. This consisted of a desk top review, interviews and focus groups with relevant stakeholders (n=46), and a validation questionnaire rating the importance of the attributes identified (n=850). Overall, approximately 900 individuals participated in the role analysis.

Summary of Results: Nine attributes were identified, each represented by a number of behavioural descriptors. These were: Applying Clinical Knowledge & Skills, Professional Accountability, Evidenced-Informed Decision Making, Person-Centred Care, Communication & Consultation Skills, Collaborative Working, Leadership and Management, Education, Research and Evaluation and Resilience and Adaptability. The framework has been designed to dovetail with both the Initial Education and Training Standards and the Advanced Pharmacy Framework thereby having a clear place in the continuum of career development.

Discussion and Conclusions: The outputs of the role analysis and subsequent framework are intended to inform the development of a future UK foundation pharmacist curriculum and assessment

Take-home Messages: The key attributes for the end of Foundation Pharmacist training have been defined in a UK Framework that will be used to inform future curricula and national assessments.

#SC3.10 - Short Communications: Curriculum - Subjects

#SC3.10.16 (5205)

Preparedness for 2020 and beyond: final year students' reflections on troublesome and important thresholds they have crossed.

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ABSTRACT:

Background: Ensuring that graduates are prepared for complex future practice is a challenge for all medical schools, yet how to achieve this remains uncertain. The extensive literature often discusses the competencies needed to be prepared, rather than the “ways of thinking and practising” (WTP) (McCune and Hounsell 2005).

Summary of Work: This paper describes a qualitative study that aimed to explore students' perceptions of change and learning during medical school and gain insights into why our graduates report being well prepared for practice. Two months before qualification, Peninsula students review their personal reflections from previous years, undertaking written reflection on: • Personal change over their 5-year course. • The most difficult and important concepts they have encountered (Randall et al, 2018). Following ethical approval, all year 5 students were invited to participate in the study and 36 took part. The research team each reviewed 10 anonymised student reflections, identified themes and agreed an analytical framework. Data were coded using NVivo.

Summary of Results: Looking back at their past reflections led students to reflect on past struggles, subsequent growth and transformed understandings with respect to several themes including emotional regulation, reflective practice, self-management and also ‘it’s about the whole person’, ‘we cannot fix everyone’, ‘there is no single right answer’ and ‘health and healthcare is complex’. Most students expressed feeling confident for future responsibilities, often linking their confidence to these themes. While students understood that ‘the system has limitations’ and ‘home-work balance will be challenging’, a few expressed anxiety about coping with these once qualified.

Discussion and Conclusions: The themes identified in this study have features of threshold concepts and WTP; several relate to troublesome and possibly threshold concepts previously reported in studies with earlier year medical students (e.g. Neve et al 2017). Threshold concepts are considered fundamental to the grasp of a discipline (Meyer and Land, 2003). Evidence of ontological and behavioural change, and of students integrating these concepts into their thinking suggests our students had crossed thresholds in learning.

Take-home Messages: Grasping these concepts may be key for preparedness for future practice. Understanding their threshold nature could help educators refine curricula and support student learning.

#SC3.10 - Short Communications: Curriculum - Subjects

#SC3.10.17 (5644)

Understanding the “Why?” – Linking pathophysiology to clinical skills teaching in preclinical medical curriculum

AUTHOR(S):

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ABSTRACT:

Background: Clinical skills teaching in preclinical years frequently lacks integration with basic sciences. For different body systems, history and physical examination checklists are used to teach about specific symptoms and signs. However, students seem to struggle in linking their knowledge in pathophysiology with these signs and symptoms to understand the “why” e.g. Why do we ask for symptoms of jaundice or look for signs of the same in a patient with suspected gall stones?

Summary of Work: We conducted a series of workshops for preclinical medical students in two Australian universities which aimed to address this knowledge gap. Each 2-hour workshop focused on 3-4 common clinical presentations relating to a body system (Gastrointestinal, Respiratory and Renal systems). These vignettes corresponded to the concurrent PBL cases to ensure horizontal integration between clinical skills and basic sciences. First, the students watched a brief video summarising key pathophysiological mechanism of common signs and symptoms relating to a particular vignette. Next, they worked in groups guided by near-peer and clinical facilitators to reason through basic-science mechanisms and understand why they would ask the questions or look for signs included in their checklists. A survey was administered to collect feedback on the workshop. Pre and post workshop quizzes were used to evaluate the change in knowledge (paired t-test was used). All analyses were done in SPSS version 25.

Summary of Results: There was a statistically significant increase in the mean post-workshop quiz scores at all 3 workshops (highest mean difference 4.5, 95% CI 3.4 – 5.6). Majority of the students (92%) rated the workshop as highly (44%) or extremely (48%) effective in integrating pathophysiology & clinical skills teaching while 92% of the students found the workshop to be extremely (50%) or highly (42%) useful in their clinical skills learning.

Discussion and Conclusions: These workshops have shown to be very effective in integrating pathophysiology & clinical skills teaching in preclinical medical curriculum.

Take-home Messages: • It’s important to understand the “why” behind the checklists used for teaching clinical skills • Workshops integrating clinical skills & pathophysiology have shown to be effective in understanding this.

#SC3.10 - Short Communications: Curriculum - Subjects

#SC3.10.18 (5802)

Integrating basic and clinical medical sciences using simulation

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ABSTRACT:

Background: Helping medical students see the relevance of the basic sciences to clinical practice is a common challenge in our setting since they have limited opportunities to integrate knowledge and make meaningful connections among concepts during the preclinical years.

Summary of Work: A project was carried out in a medical school which has a discipline-based curriculum. After workshops for those teaching faculty in basic sciences, five clinical cases that included content from different basic disciplines were developed, with clear clinical signs and symptoms. Employees and senior students were trained to play the role of a patient. All students from the first and second year (120) participated in these simulation exercises. Each student was provided an opportunity to interact with the standardized patient (SP) followed by individualized feedback and collective debriefing in small groups. The debriefing focused on both content and communication skills. Feedback was collected from all students, and a focus group was organized with nine randomly selected students to provide more in-depth perceptions of their experience. All the students also answered pre-and post-tests designed to assess the application of the knowledge addressed in each scenario. Interviews were conducted with the faculty members.

Summary of Results: Faculty showed high enthusiasm and thought that these activities were useful to motivate students to understand basic sciences concepts instead of memorizing facts. The students were motivated to interact with SPs and were able to see the clinical relevance of the basic sciences concepts. However, they felt their communication skills were poor. The average number of correct answers increased significantly ($p < 0.01$) in the post-test in three out of the five tests.

Discussion and Conclusions: Even though it is time-consuming, we designed a low-cost activity with the potential to integrate basic sciences with each other and basic with clinical sciences. Moreover, the feedback and debriefing sessions were also helpful tools to improve communication skills since the beginning of the course.

Take-home Messages: Clinical simulations are valuable strategies that enable the integration of basic sciences concepts and their application in clinical contexts. Institutions with similar teaching modalities could easily benefit from this positive experience.

#SC3.10 - Short Communications: Curriculum - Subjects

#SC3.10.19 (6520)

Educational and motivational impact of a Holistic online Foundational Knowledge course for medical students transitioning into postgraduate medical program

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ABSTRACT:

Background: The University of Sydney MD program is a postgraduate degree that accepts students from diverse academic and cultural backgrounds of which 20% are non-science background (NSB). Many students struggle with the breadth of material as evidenced by their assessment outcomes. With the implementation of a new medical program which has a higher cognitive load in basic and clinical sciences (60%), our aims were to maintain a non-discriminatory entry criterion through preparing all students for entry through a unique and holistic online foundational knowledge course (HOFC).

Summary of Work: A unique HOFC provided clear assumed knowledge in biology, physiology and anatomy, and material to support transition, self-care skills, teamwork and metacognitive skills was developed. Pre and post-HOFC surveys and focus groups were used to evaluate critical factors of student motivation and engagement and addressed student expectations and perception of value.

Summary of Results: Student motivation included transition from equity, fairness and well-being, a perception of the value-add of HOFC and self-evaluative judgement in self efficacy, motivation, metacognitive skills or lack thereof. Three themes describing the opportunities and challenges for the HOFC to impact; “becoming”, “being” and “staying” a student. These themes reflected transition issues such as study skills, planning learning and HOFC designed self-assessment interactivities; post-transition phase as students became aware of student cohort culture and assessment expectations; and unintentional consequences of fear of failing and not being good enough.

Discussion and Conclusions: Further longitudinal evaluations of the HOFC in terms of engagement, diagnostic, prognostic and therapeutic value will be conducted. To date the HOFC matches student expectation of fairness, equity and wellbeing and engagement confirms knowledge gap by NSB students.

Take-home Messages: The HOFC provides a useful mechanism to support diversity and transition of all students entering a graduate medical program and for students to feel more prepared for entry and thriving in a graduate entry medical program.

#SC3.10 - Short Communications: Curriculum - Subjects

#SC3.10.20 (6746)

Twelve Tips for Successful Integration of Foundational Science in the Post-Clerkship Curriculum

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ABSTRACT:

Background: Traditional medical curricula generally place the majority of foundational science learning into the pre-clerkship years. Practical solutions are needed to incorporate foundational sciences into the clinical years of undergraduate medical education. This abstract describes the lessons learned after purposefully integrating foundational sciences with clinical experiences in the post-clerkship curriculum at Vanderbilt University School of Medicine (VUSM).

Summary of Work: Five years ago, VUSM formally launched “Integrated Science Courses” (ISCs) that combine rigorous training in the foundational sciences with meaningful clinical experiences. These courses were designed and led by clinical and foundational science experts and undergo a rigorous evaluation process. Immediately after finishing each course, students completed an anonymous course evaluation. Course materials and assessments were reviewed by a panel of experts annually. Furthermore, course enrollment data were assessed annually and the ISC leadership met with the ISC directors monthly to better understand their needs.

Summary of Results: Between AY 15-16 and AY 19-20 eleven to sixteen ISCs were delivered annually. Overall, students were highly satisfied with the integration and utility of foundational science learning with their clinical experiences. However, it became clear that students gravitated to some courses over others. In addition, ISC educators required additional training in curriculum development and assessment methods. We have formulated twelve tips for successful implementation of foundational science integration in the post-clerkship curriculum that encompass student buy-in, diversity of course offerings, tailoring of courses to student interests, faculty development, and long-term sustainability.

Discussion and Conclusions: The successful implementation of ISCs demonstrate how teams of foundational science and clinical domain experts can collaborate to design and execute courses that integrate foundational science knowledge with clinically meaningful engagements. These highly innovative courses cover a breadth of foundational sciences and clinical experiences. Importantly, students felt that they learned foundational science that would be used throughout their future medical training and practice.

Take-home Messages: The integration of foundational sciences in the post-clerkship medical curriculum is challenging and resource-intensive, yet feasible. Course enrollment data and results from the course evaluation process drove faculty development and refinement of the ISCs to better meet the needs of educators and students.

#SC3.10 - Short Communications: Curriculum - Subjects

#SC3.10.21 (6949)

Pathways to connection: Using organized patient encounters to foster awareness, reflection and relational skills in first-year medical students

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ABSTRACT:

Background: Medical education aims to integrate biomedical expertise with relational skills that can only develop through personal experience and emotional maturation. PASKON is a 40-hour course in patient contact centered around 2-3 hours home visits to seriously ill patients by groups of four students, followed by presentations and discussions in class, with the patient participating. Plenaries engage students in reflective dialogues on core medical concepts such as sickness, personhood, professionalism, emotion, and narrative, over 6 months, informed by 20 patients with widely different function losses. Students write reflection essays after their home visit and get feedback from trained senior peers.

Summary of Work: We randomly selected 60 of 180 essays, translated them to English, and did a thematic text analysis of students' emotional and cognitive reactions to their first patient encounter in the capacity of medical student.

Summary of Results: The essays conveyed that these students, though junior and medically ignorant, were met by their patient informants with the trust, openness and intimacy characteristic of physician-patient interactions. The students often felt intensely insecure, unprepared for the role they were given, and experienced the patient encounters as alternately exhilarating, threatening, heart-warming and thought-provoking, coloured by emotions such as dread, compassion, helplessness, fatigue, joy, embarrassment or pride. Students highlighted how prejudice, immaturity, perfectionism and fear often diverted their attention from the patient. They identified a range of personal qualities and specific behaviours that enhance the student-patient interaction, such as curiosity, humility, sincerity, active listening, eye contact, body posture, not interrupting, and laughing with the patient. Ideal student behaviour was characterized as being human, seeing the person you're sitting with, meeting the person's suffering, willingness to be intimate, and stepping outside of your comfort zone.

Discussion and Conclusions: The study shows that junior medical students' initial patient encounters are emotionally salient events, and indicates that reflection on the experiences may foster emotional literacy and stimulate the development of a patient-centered professional identity.

Take-home Messages: Planned early patient contact has the potential to foster self-awareness, emotional maturity, relational skills, and patient-centered attitudes.

#SC3.10 - Short Communications: Curriculum - Subjects

#SC3.10.22 (7163)

A novel approach to undergraduate assessment of anatomy – the use of augmented reality to improve constructive alignment.

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ABSTRACT:

Background: The use of 3D virtual learning in medical education is increasingly popular. Virtual 3D visualisation allows for active stereoscopic learning and is easily adopted into medical curricula. This has proven to be an acceptable alternative to traditional anatomy teaching, increasing knowledge while stimulating learners' motivation and engagement (1). There is, however, a lack of constructive alignment between the emerging 3D education technologies, the persistence of 2D (pen-and-paper or monoscopic) assessment and the use of clinical anatomy in the 3D environment (2).

Summary of Work: Using DynamicAnatomy (3), an augmented reality anatomy teaching application, we designed an assessment scenario for medical students. This consisted of a 10-minute session with real-time interaction between the assessor and examinee, both wearing Microsoft HoloLens goggles and sharing a holographic model. The assessment tested both simple recall and higher order thinking (applied anatomy). The proof-of-concept was evaluated by a team of medical students and clinical teachers for feasibility and acceptability using a Likert scale and free-text comments.

Summary of Results: All participants could effectively demonstrate their knowledge and found the technology user friendly. Participants remarked on the assessment's ability to test multiple aspects of anatomy, including function. All participants judged the assessment fair. Every participant enjoyed the assessment, particularly the real-time interaction with the assessor, and would prefer the 3D assessment scenario over a paper-based examination. No significant adverse effects were reported.

Discussion and Conclusions: We demonstrated the feasibility and acceptability of virtual 3D assessment in a mixed-reality environment. Educators highlighted the assessment's suitability to ask low, as well as high order questions, including spatial and functional knowledge using the same materials. The virtual examination allows for greater standardisation of the assessment material, permitting better oversight of the process. The ability to demonstrate functional anatomy allows examiners to assess the students' understanding of clinical scenarios in relation to basic anatomy. Future research could include randomised trials comparing the virtual and traditional anatomy assessments, building on the successful proof of concept.

Take-home Messages: The novel augmented reality 3D assessment may achieve better constructive alignment between anatomy teaching, assessment and clinical practice.

#SC4.1 - Short Communications: Education Management - Diversity

#SC4.1.1 (6682)

Gender equity: a key aspect of university transformation

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ABSTRACT:

Background: Gender equality has become a priority worldwide promoted by social movements and supported by legislative initiatives. Argentina fosters gender mainstreaming in the Higher Education System by creating secretariats, institutionalizing protocols and developing training programmes. Currently, 70% of argentinian public universities are working on these matters but experiences in gender mainstreaming are still incipient.

Summary of Work: This study takes place at a University Institute of Health Sciences with a high social commitment. A training programme was developed for teachers and authorities of 85 undergraduate and postgraduate degree levels and residencies. It approached 3 main issues: gender perspective at university; teaching practices and institutional policies, through three workshops. The main characteristics of these workshops were: teacher personal engagement, reflection, diversity of perspectives, and collaborative construction of alternative courses of action.

Summary of Results: This study systematizes participant's productions during the workshops. In the first one, teachers became aware of scenes from their educational and professional career path in which they recognized violence, gender stereotypes, pay gap, glass ceiling, discrimination on the basis of gender or sexual orientation. Regarding the second issue, during the workshop, teachers identified examples of contents and educational activities without gender perspective and proposed alternatives for its development. Throughout the last workshop, teachers discussed gender gap in the access to hierarchical positions, composition of research teams and the lack of gender perspective in institutional policies. In certain cases, teachers suggested ideas to ameliorate these situations.

Discussion and Conclusions: Participants enrolled in this training discussed the current practices, identified possible remedial strategies for these situations and drafted proposals with gender perspective. This programme enhanced awareness of gender inequity. To overcome the initial sensibilization on these issues and promote real changes, this University plans new actions to promote gender mainstream.

Take-home Messages: We believe this study can be a contribution to review practices in health sciences universities, by promoting the development of realistic, collective, inclusive and enriched gender mainstreaming.

#SC4.1 - Short Communications: Education Management - Diversity

#SC4.1.2 (4512)

Barriers to entry as AO faculty and for advancement in the organization for women and other underrepresented groups

AUTHOR(S):

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ABSTRACT:

Background: AO Foundation is a medically guided, not-for-profit educational organization led by an international group of surgeons specialized in treatment of trauma and disorders of the musculoskeletal system. AO faculty are members of the organization who run hands-on, educational courses in the various disciplines of orthopedic surgery for surgical residents and other members of the medical community. Women and certain ethnic groups are underrepresented in orthopedic surgical residency programs compared to the demographics in medical and veterinary schools. AO, as a selective professional organization, reflects even less gender and ethnic diversity than the wider medical and veterinary orthopedic communities.

Summary of Work: In 2019, a 75-item online survey was sent to ~14400 with objectives for describing participation and involvement in AO activities as an AO faculty member, assessing opportunities and inclusion within the AO, and analyzing how mentorship has impacted individuals' involvement as an AO faculty. Participation was voluntary and anonymous.

Summary of Results: Response rate was 33%. The analysis confirmed that women and underrepresented minorities (URMs) are poorly represented among AO faculty. Over 50% of faculty did not apply through a formal channel for membership, and recruitment patterns revealed a significant ($P < .00001$) gender dependency for recruitment, where men were more likely to recruit mostly men. Women were more likely to recruit equal proportions of men and women or recruit mostly women. Results for mentoring followed the same patterns and appeared to relate to significant differences found among men and women, white and URM, at leadership levels in the organization. Therefore, it appears that current recruitment and mentoring practices serve as barriers to increasing diversity of AO, and advancement within AO, for women and URM.

Discussion and Conclusions: The results highlight the need to reassess AOs current faculty selection, recruitment and mentoring processes to accomplish gender and ethnic parity and equal access to ensure entry and advancement within AO.

Take-home Messages: The survey focuses on insights from current AO faculty members that will help form an integral part of future decisions and directions AO is taking in making AO a more diverse and accessible organization.

#SC4.1 - Short Communications: Education Management - Diversity

#SC4.1.3 (4614)

Social Justice in medical education: how do students from low socioeconomic minorities feel during their socialization in medical school?

AUTHOR(S):

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ABSTRACT:

Background: The selection processes for medical schools are still mainly cognitive and favor students able to dedicate full-time to their education, which culminates in a bias towards admitting students from upper social classes. Recently, affirmative policies have been adopted to enhance social diversity and inclusion. The program called PROFIS was devised in a university in Brazil to include students from poor neighborhoods. We hypothesized that students coming from a low socioeconomic background face different challenges in their socialization process which are potentially emotional. Identifying and understanding these emotions is essential for tailoring supportive actions during the medical course.

Summary of Work: Medical students originated from PROFIS made a Rich Picture representing a challenging situation they experienced in medical school, considering their admission background. After the drawing, students were interviewed to understand the situations represented and the emotional reactions involved. The interviews were transcribed and an iterative thematic analysis was performed to explore the emotional challenges students face considering their social and economic background.

Summary of Results: Students feel proud of being the first generation to get a university degree. They feel privileged, happy to imagine a social ascent, optimistic about the future and grateful for their opportunity. At the same time, students struggle with their financial and social limitations. They feel anger, frustration, injustice, despair, sadness, discouragement, anguish, fear, low self-esteem and extreme insecurity. They also experience racial and social prejudice and have difficulties in feeling part of the group. During the interviews, the situations were narrated with plenty of details and the emotions were triggered again, suggesting a lack of emotional closure.

Discussion and Conclusions: The socialization process of low socioeconomic students evokes intense emotional reactions. The positive emotions are a strong motivator, but students struggle to make sense of negative experiences. The lack of emotional closure may hamper students' professional development by promoting emotional detachment and avoidance of social experiences perceived as conflicting.

Take-home Messages: Affirmative policies should go beyond inclusion and support the emotional and professional development of underprivileged students.

#SC4.1 - Short Communications: Education Management - Diversity

#SC4.1.4 (6314)

Evaluating SJT's in South Africa - selecting for potential in educationally disadvantaged applicants to medical school

AUTHOR(S):

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ABSTRACT:

Background: The Ottawa consensus statement on selection (Patterson et al, 2018) notes that the majority of SJT research is from North America, Europe and Australasia. Work in these countries does not necessarily transfer to South Africa, where selection needs to address the fact that it is the ethnic majority of the population that remains under-represented in medicine. Our history demands that we address equitable access to medical school to create a more representative and diverse health workforce. As prior academic achievement remains the bedrock of medical school selection, the challenge is to recognise the potential of students from poorly resourced schools who are thus educationally disadvantaged. Previous research in the UK suggests that using SJT's in selection could aid widening participation to such students (Lievens et al, 2016). This study is the first to explore the use of SJTs for medical selection in South Africa. We set out to ascertain that implementing SJT's would not inadvertently disadvantage any particular demographic group of our applicants to medical school.

Summary of Work: Following an initial proof of concept pilot on enrolled 1st year health sciences students at Stellenbosch University (N=501), the SJT was re-piloted in 2019 (N=957) alongside the existing selection process and evaluated for possible implementation. The SJT design involved local subject matter experts to ensure relevance and content validity.

Summary of Results: Psychometric analysis showed the SJT performed in a consistent manner, demonstrating good reliability ($r=.89$) and no correlation with prior academic attainment. The SJT differentiated between candidates, and showed no group performance differences for ethnicity, language or socio-economic status.

Discussion and Conclusions: Results demonstrated the SJT to be an effective and fair method for selection into medicine at Stellenbosch University. Benefits, challenges and practical implications regarding the use of the SJT to promote diversity and inclusion in selection will be presented.

Take-home Messages: There are indications that our current selection approach does not select for the non-academic characteristics that we want to see in our students. The next step will be to determine the place of SJT's in our selection algorithm.

#SC4.1 - Short Communications: Education Management - Diversity

#SC4.1.5 (4796)

Indians Into Medicine: A Model Program for Indigenous Physician Workforce Development

AUTHOR(S):

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ABSTRACT:

Background: Indigenous people are, unfortunately, poorly represented in US medical schools. Over the last two decades the total number of Indigenous students matriculating has hovered around 200 students, in spite of the total slots rising to over 21,000. Further, 43% of US medical schools have zero Indigenous students.

Summary of Work: For the last 46 years, the University of North Dakota Indians Into Medicine (INMED) program has provided Indigenous students with the support they need to succeed in medicine. INMED has programs for Indigenous students from 7th-12th grade, pre-med, an intensive prep program before they start medical school, and intensive support throughout medical school (Summer Institute (SI), MCAT Prep, CLIMB).

Summary of Results: INMED has graduated over 240 Indigenous physicians and hundreds more have participated in our youth summer programs.

Discussion and Conclusions: While the rates of medical school acceptance have remained remarkably stagnant for Indigenous students, we have almost half a century of guiding Indigenous students into medicine. We hope to be able to help Indigenous populations around the world to create similar programs.

Take-home Messages: Indians Into Medicine is a remarkably successful healthcare pathway program with support for Indigenous students from 7th grade to graduating medical school. These programs could be used as a model for other medical school locations around the globe.

#SC4.1 - Short Communications: Education Management - Diversity

#SC4.1.6 (5195)

“Today’s shook me up a lot inside... it’s definitely changed me”: emotional responses and transformative learning through working with disadvantaged communities

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ABSTRACT:

Background: Health professions’ curricula should reflect, and promote understanding of, the priority health needs of diverse communities (Rourke, 2013). Peninsula Medical and Dental Curricula have a strong social engagement focus. Students take part in 4-day pathways, working with a diverse range of community organisations and people from disadvantaged groups (e.g. elderly, homeless, people with learning disabilities) to explore their lives and health needs. This study aimed to gain insight into students’ lived experiences, including: - Transformative moments and troublesome learning - Changed understandings of social accountability - Factors that enable or impede learning

Summary of Work: Ethical approval was obtained. Students recorded audio-diary reflections directly after social engagement sessions which were uploaded to a secure site, transcribed and analysed. Thematic analysis identified and refined themes through a cyclical iterative process. Data were coded using NVivo software.

Summary of Results: Fourteen Year 2 dental and Year 3 medical students produced 50 audio reflections. Analysis identified a three-act structure of the pathway: set up, confrontation, climax and resolution. Key themes included recognising and overcoming challenges and uncertainty; critical reflection about themselves and their assumptions, their role and societal issues; and major shifts in their understanding of diverse communities and other people’s lives. An overarching theme was the strong emotions described by students, which changed as projects progressed.

Discussion and Conclusions: Learning directly from, and with, disadvantaged communities can lead to transformation in students’ understanding of others, themselves and the ‘bigger picture’. In line with studies on transformative learning (e.g. Schalkwyk et al, 2019), immersion in new contexts, forming connections with others, having one’s world view challenged and plans going wrong, all appeared to facilitate shifts in thinking, as did experiencing negative emotions. Adaptability, interaction with service users and support and feedback helped students address challenges. Overcoming challenges was associated with positive emotion.

Take-home Messages: Educators often work hard to remove challenges and make learning ‘easier’ for students. This study suggests that unsettling contexts, negative emotions and obstacles may facilitate transformative learning around social engagement and diversity, as long as students are appropriately supported through this process.

#SC4.1 - Short Communications: Education Management - Diversity

#SC4.1.7 (6360)

Mobilizing staff and students to create space for courageous conversations about diversity, equity and inclusion. The Equal Opportunities in Medical Education project and the Krit*Meds

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ABSTRACT:

Background: To foster a medical culture that maximally contributes to equal social and health outcomes, we need to 'fix' the pedagogical and research climate in which health professionals are socialized. According to social movement theory, social networks of medical students and staff can bring about social change by challenging practices of exclusion and inequity.

Summary of Work: Two student-led projects in Germany (MHH) and the Netherlands (Amsterdam UMC-VUmc) aimed to (1) create space for critical dialogue and courageous conversations; (2) encourage network participants' awareness of institutional(ized) injustice, and; (3) mobilize staff, students and other stakeholders to challenge inequity and exclusion. The Amsterdam-based participatory project Equal Opportunities aimed to fill the curriculum gap on diversity issues, and was carried out with a diverse group of 15 students, physicians and a visual artist. At Hannover Medical School (MHH), increased visibility of mainstreaming actions within the faculty accelerated networking between staff and students.

Summary of Results: In Amsterdam, the project resulted in a flexible, composite module that consisted of four interrelated but separate building blocks. The module will be implemented in the regular curriculum. At MHH, and based on the Amsterdam project and the results of a local survey on sexual harassment, students and staff developed a teach-the-teacher workshop 'Diversity, Equity and Inclusion' directed at both teachers and students. Existing building blocks (e.g. vignettes for small group dialogue and an educational short film 'Variations on White') were translated into German, new blocks were added, and three workshops were organized with, so far, ~50 participants.

Discussion and Conclusions: Jointly, the Amsterdam and MHH networks created momentum by connecting activities that aimed towards more inclusive institutions. Project participants have gained critical consciousness, acquired the skills to mobilize networks for collective activities, built (self)respect, developed interpersonal skills, and learned a language to identify and call out injustices.

Take-home Messages: Social networks of staff and students have much to offer in terms of social change and fostering diversity, equity, and inclusion in medical education.

#SC4.1 - Short Communications: Education Management - Diversity

#SC4.1.8 (6873)

High school students' perceived barriers, facilitators, and unequal opportunities in medical school admissions

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ABSTRACT:

Background: In many countries, the medical student population is not representative of the diversity in the entire population. In the Netherlands, concerns exist that the use of selection procedures may deter potential students from underrepresented populations to apply for medical study. Potential applicants' perceptions about possible barriers and facilitators to getting ready for selection and getting admitted might inform their preparations and decision to apply or not, thus influencing the diversity of the candidate pool and ultimately the student population.

Summary of Work: We conducted a qualitative study using a constructivist approach with semi-structured interviews and thematic analysis. A diverse group of 21 high school students who expressed interest in applying to a medical study were interviewed about their perceptions of and preparation for the selection procedure, how people in their networks influence their decision-making and preparation, and their perceived chances of getting admitted. We collected data until sufficiency was achieved.

Summary of Results: The results suggest that the facilitators perceived to be most important to prepare for medical selection are volunteering and paid work in the healthcare sector, having a network via parents to gain a volunteer position, and access to extracurricular programs. A common barrier perceived by all students is obtaining a high grade point average in high school. First-generation students more often addressed socio-economic barriers, e.g. lack of time for volunteering or studying due to part-time jobs, and doubts about study choices in general which are often finance-related (with medical programs being seen as long, expensive studies versus shorter non-medical programs). Non-first generation students described more personal, psychological barriers, e.g. insecurity, stress, fear of failure, motivation, pushing parents, and competitiveness.

Discussion and Conclusions: Students who seemed most privileged were also most aware of the unequal opportunities this created and expressed concerns of fairness and solidarity towards more disadvantaged applicants. Our results can be used by Dutch Universities for designing Widening Participation initiatives.

Take-home Messages: Not all applicants perceive equal access to health professions education in the Netherlands and they may require help in getting admitted to health professions education.

#SC4.1 - Short Communications: Education Management - Diversity

#SC4.1.9 (7151)

The WATCCH programme: a multiprofessional approach to widening access to careers in healthcare

AUTHOR(S):

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ABSTRACT:

Background: Widening participation to healthcare careers is a global priority. The WATCCH (widening access to community careers in healthcare) programme supports school students from lower socioeconomic backgrounds interested in healthcare careers. Whilst most widening access schemes have focused on one healthcare profession, WATCCH uniquely supports students access a range of healthcare careers. We explored the impact of WATCCH on participants' perceptions and aspirations for a healthcare career.

Summary of Work: WATCCH provides education on a range of healthcare careers including medicine, nursing, physiotherapy, midwifery, pharmacy and physician associates. The programme consists of education workshops including question and answer sessions with multiprofessional panels. These run alongside a primary care work experience placement with opportunity to shadow multiple healthcare professionals and application support. Focus groups were conducted on the closing day of the 2017 and 2018 programmes exploring learning from WATCCH and its impact on future career choices.

Summary of Results: 32 students participated in focus groups. Thematic analysis highlighted students' improved understanding of the roles and responsibilities of different professions, and new awareness of the range of healthcare careers available. This impacted on personal aspirations, with many considering careers not previously encountered. WATCCH also provided participants with role models from relatable backgrounds in multiple professions. These new role models contributed to students believing they could also achieve these careers.

Discussion and Conclusions: The multiprofessional nature of WATCCH was key in broadening students' understanding of the wide range of careers within healthcare, prompting applicants to consider new careers in relation to their own interests, aspirations and capabilities. WATCCH also provided relatable healthcare role models, a well-recognised need for students from lower socioeconomic backgrounds. This successful programme has now expanded to include mentoring and a longitudinal workshop programme. Further research is being conducted on participant higher education and career outcomes.

Take-home Messages: Multiprofessional widening access schemes can improve understanding of the wide range of healthcare careers available and provide much needed relatable role models for students from lower socioeconomic backgrounds. This is vital at a time where many healthcare systems face a recruitment crisis, with under-representation of individuals from lower socioeconomic backgrounds.

#SC4.1 - Short Communications: Education Management - Diversity

#SC4.1.10 (5798)

Promoting Gender Education for Medical Students and Healthcare Professionals in Taiwan 2000 - 2020

AUTHOR(S):

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ABSTRACT:

Background: Gender and health has since 1995 been one of the focal points on the UN Gender-Mainstreaming agenda, and yet medical journals did not request gender analysis until 2012. As the most gender equitable country in Asia, how did Taiwan catch up this global trend and successfully arrives at its current step of mandatory gender analysis for medical research?

Summary of Work: This research collected government documents, study reports, course curriculum, and interview data to trace how Taiwan implement gender education for medical students and healthcare professionals. Important events include Taiwan government releasing its first 'White Paper on Women's Health' in 2000, mandating gender course credits for healthcare professionals since 2007, and asking gender analysis for clinical research for granting purposes in 2016. Therefore, analyses are done in three phases.

Summary of Results: In phase I (2000-2007), many feminist activists were invited to join government gender equality committees to help government officials to understand the importance of gender perspective in health and help them settle gender mainstreaming policies and projects. However, this influence did not yet spread out to reach medical researchers or practitioners. In phase II (2008-2015), after implanting the top-down order 'Healthcare Professionals Registration and Continuing Education Act,' all healthcare professionals were required to take gender courses. Good outcomes included raising doctors' gender consciousness and sensitivity, gender friendliness of healthcare environments, gender equality for students and practitioners, and prevention of sexual harassment. Yet that most advocates were not 'professional insiders'- medical doctors or researchers was the shortcoming of this phase. It could be resolved when phase III (2016-2020) started requesting gender analysis for clinical research, a turn to knowledge issues.

Discussion and Conclusions: Gender education in health in Taiwan could be more successful if the gender analysis policy could be enlarged and if gender medicine literature could be integrated into curriculum. Feminists have been the major force in promoting this course. Medical practitioners and researchers need to take a more active role.

Take-home Messages: 'Professional insiders' are necessary for gender education in health.

#SC4.1 - Short Communications: Education Management - Diversity

#SC4.1.11 (5228)

Indigenous health: designing a clinical orientation program valued by learners

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ABSTRACT:

Background: Indigenous health programs are seen as a curriculum response to addressing health disparities and social accountability. Several interrelated teaching approaches to cultural competency curricula have been recommended, however evidence of the impact of these on learner outcomes including engagement and self-reported competencies is limited. We aimed to explore undergraduate medical student perspectives of an indigenous health orientation program to inform curriculum strategies that promote learning, and development of clinical skills.

Summary of Work: We analyzed quantitative and qualitative student evaluations (n = 602) of a three-day immersed indigenous health orientation program between 2006 and 2014 based on Likert-scale responses and open-text comments. We conducted a thematic analysis of narrative student experiences (n = 426).

Summary of Results: Overall, 509 of 551 respondents (92%) rated the indigenous health orientation program as extremely or highly valuable and most (87%) reported that the course strongly increased their interest in Indigenous health.

Discussion and Conclusions: Undergraduate medical students valued an Indigenous health program delivered in an authentic Indigenous environment and that explicitly reframed historical notions of Indigenous health to contextualize learning. Content relevant to clinical practice, faculty knowledge, and strengthened peer interactions combined to build learner confidence and self-reported Indigenous health competencies.

Take-home Messages: Awareness of historical and contemporary Indigenous perspectives to contextualize knowledge together with multiple pedagogical approaches, faculty role modelling, and peer interaction during teaching support learner engagement and skill development. This builds a curriculum that increases learner confidence working with Indigenous patients in New Zealand.

#SC4.2 - Short Communications: Education Management - Faculty Development

#SC.4.2.1 (3819)

What teaching metaphors say? Transition to learner-driven teaching in health sciences education

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ABSTRACT:

Background: Education in the health sciences world-wide is transitioning from a teacher-centered to a learner-centered approach. This change has impacted all of the components of the institutions that provide these educational programs: classroom design, faculty training and development, information technology, selection of learners.

Summary of Work: Using metaphor analyses, this study investigates the effects on medical school instructor attitudes about teaching by having a series learning experiences in either a traditional lecture hall or in a collaborative/engaged learning classroom. 127 medical school faculty, all at the assistant professor level, participated in six session faculty development series conducted primarily in 'lecture format,' however, 62 of the participants completed the series in a classroom designed for collaborative/engaged learning, and the others completed it in a traditional lecture hall. At the conclusion of the series, both sets of participants were invited to make a free-hand drawing of their 'conception' of teaching and label or give a word to the drawing that represents it, "metaphorically." Drawings and metaphors were analyzed by non-study raters, and all metaphors were categorized into one of three domains: teacher-centered, learner-centered, learner-driven.

Summary of Results: Faculty who completed the series inside a collaborative/engaged learning classroom perceived their roles primarily in the learner-centered/ learner-driven domains (79.5%), whereas those that completed it in the lecture hall conceived their roles as primarily teacher-centered (82%). Examples of metaphors in three categories were; learner driven Waze app, wall free school, learner centered Labyrinth, GPS and teacher centered Akhfash goat, Alpinist.

Discussion and Conclusions: Recently, more attention has been paid in changing view of teaching and forming teaching identity in faculty development programs. In other words, if view of teaching do change from teacher center to student center/driven, then medical teachers would become passionate for self-development in the field of education. Creating a culture of active learning by changing educational space could facilitate this process. One way is implementing faculty development programs in active learning space.

Take-home Messages: Changes from teacher-center to student-driven learning is time consuming, culture and context bound. Changing learning space could enhance learning culture.

#SC4.2 - Short Communications: Education Management - Faculty Development

#SC.4.2.2 (4346)

Who are GP supervisors and what do they need?

AUTHOR(S):

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ABSTRACT:

Background: Australia has several pathways to fellowship in general practice (GP), with the main pathway being the Australian General Practice Training (AGPT) Program. Under this program, general practice trainees spend at least 18 months in a supervised community general practice training post. Previous research on supervisors has identified characteristics and traits of good supervisors. In 2019, Western Australian General Practice Education & Training (WAGPET) sought to better understand their own supervisors who are actively supervising trainees in general practice.

Summary of Work: Approximately 20% of Western Australian supervisors completed a comprehensive survey on their own demographics and characteristics. The survey identified supervisor wants and needs related to GP training. It included supervisors from varied backgrounds, including whether they work in urban, regional or remote locations.

Summary of Results: The WAGPET survey identified demographics such as duration of supervision and career history. Further results demonstrated multiple traits of supervisors and their opinions on what aspects of supervision are truly important. Focus was placed on the identified needs of supervisors and their opinions on essential requirements of trainees, including expectations of trainees, desired competencies when entering GP training, and preferred characteristics of trainees. The survey results will significantly influence the development of continuing professional development activities for supervisors in Western Australia.

Discussion and Conclusions: This short communication session will present key results from the WAGPET supervisor survey. The audience will be invited to comment on the findings and also the challenges of supervision in community general practice. The AMEE 2020 presentation will be a valuable opportunity to highlight the similarities and differences between international general practice training programs. It will inform how training organisations can adapt to support general practitioners to deliver quality supervision in the changing landscape of GP training.

Take-home Messages: GP supervisors are a diverse group of individual doctors, with varied opinions on the most valuable aspects of GP training and expectations of trainees. Identifying supervisor's needs and wants will assist training organisations to provide structured and targeted support to supervisors, ultimately improving the quality of general practice training.

#SC4.2 - Short Communications: Education Management - Faculty Development

#SC.4.2.3 (4432)

Sustained effects of training modules for leaders among clinical instructors for core competences promotion in Taiwan: a 4-year explanatory case study

AUTHOR(S):

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ABSTRACT:

Background: Accreditation Council for Graduate Medical Education (ACGME) core competencies (CC) are essential for general medicine-based primary care of junior medical trainees. In Taiwan, regular faculty development (FD) program for promotion (teaching and assessment) of CC has been operated for years. Leadership is emphasized in new intervention (FD module to meet multiple (instructor and leader) roles and evolving responsibilities (conducting, designing, and leading) of clinical instructor for CC promotion.

Summary of Work: Through asking questions in the context of level 2 (participants familiarity and confidence in CC promotion) and 3 (participants sustainability in CC promotion) of Kirkpatrick's framework, this 2-year follow-up explanatory case study compares the effectiveness of intervention module with regular module.

Summary of Results: Clinical instructors who participated the FD module during year 2013-2014 were defined as the regular group (n=28) and the intervention group (n=28) comprised of participants in 2015-2016. Before the formal (hands-on) training, intervention FD module participants were asked to study online, which includes the contents of the first 30 hours as in the regular FD module; the hands-on trainings are a 30-hour training of conducting, designing, and leading skills followed by a 10-hour reflective end-of-module presentation of their real-world practices.

Discussion and Conclusions: In comparison with regular FD group, higher degree of improvements in participants self-reported familiarity, confidence and sustainability in CC promotion were noted among the intervention FD group. In the intervention FD group, senior academicians (associate and full professor) are more substantially involved in designing and leading CC-based courses than junior academicians (lecturers and assistant professors). Among non-teaching award winners, the follow-up degree of sustained involvement in conducting, designing and leading CC-based courses among intervention FD group were significantly higher than the regular group.

Take-home Messages: Our study demonstrates that the leadership training in intervention FD modules substantially motivated clinical instructors as leaders for CC promotion.

#SC4.2 - Short Communications: Education Management - Faculty Development

#SC.4.2.4 (4831)

EPAs for training, assessment and certification of teachers in the health professions: A proposed framework

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ABSTRACT:

Background: Health professionals spend a significant proportion of their time teaching future generations, yet most of them have not been formally trained or certified to teach. We propose that Entrustable Professional Activities (EPAs) may offer an accessible framework for health professionals who are experiencing the competing demands of clinical service and research. Entrustable Professional Activities (EPAs) were conceived to improve education and supervision of health care professionals and have since become well established in this domain (Ten Cate O, 2019; Chen HC, Ten Cate O, 2018). In this study we have applied EPAs in a new domain: teaching. There are a variety of teaching tasks and formats in health profession education, ranging from mentorship and supervision at the workplace to lecturing and educational design. We aim to define those activities that most health professions teachers perform as EPAs and provide a framework for assessment of teaching proficiency using these EPAs.

Summary of Work: A two-round Delphi study and a focus group with nominal group technique were conducted in the Netherlands to define teaching EPAs and explore how they can be assessed.

Summary of Results: Analysis of the Delphi study showed consensus for nine teaching EPAs: lecturing, tutorials, skills education, bedside teaching, mentoring and tutoring, student supervision at the workplace, assessment of written work, designing a course, and designing and conducting summative assessments. In our analysis of the focus group, consensus was found for five methods for evaluating teachers: self-evaluation, evaluation of students, video-recordings of teaching sessions, (peer-)observation of teaching sessions and summaries of students' understanding after a teaching session.

Discussion and Conclusions: EPAs defined in this study can be used for shaping initial training and professional development as well as for establishing tailored certification and quality monitoring of health professions teachers. Both are important steps towards recognition of educational competence of health professions teachers and quality assurance of health professions education. International validation should be a next step.

Take-home Messages: The EPAs developed in this study show potential for informing education, assessment and certification of health professions teachers.

#SC4.2 - Short Communications: Education Management - Faculty Development

#SC.4.2.5 (5491)

House Calls: Success in Faculty Development Through Communities of Practice in Distributive Medical Education

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ABSTRACT:

Background: The emergence of community-based, distributive medical education (DME) as a new model of medical education presents universities with new challenges in faculty development (FD). Although institutions offer ongoing faculty development programs at the main campus, individual DME teachers often cannot easily participate in central programming. Few theories or models guide the design and implementation of FD programs in this setting.

Summary of Work: Both Dalhousie and McMaster Universities recently entered a second decade of DME. The teams arrived at a similar curriculum organization independently. In our collaboration, we found the conceptual framework of communities of practice (CoP) and network theory a major factor in our success. We describe the process of harnessing the organization of clinical CoP's for faculty development in our DME communities. We solicit key stakeholders in each CoP with offers of educational events. We work with them to develop learning objectives and educational design. After careful planning, we deliver content to the natural environment of existing clinical CoP ("House Calls") where colleagues with similar scopes of clinical practice normally congregate and engage in social and professional group functions. We adjust our programming based on their feedback, and periodically offer updated content. Over time, we recruit additional key stakeholders within the CoPs, who in turn become advocates of faculty development work in their groups.

Summary of Results: Using this method, our teams are seeing greatly increased participation in faculty development events, positive feedback to workshops, and requests for more content. Enriched by FD activities, faculty members experience a strong connection with the DME campus. Some are inspired to design and facilitate their own FD activities. Others form new communities of teaching practice that transcend clinical CoPs.

Discussion and Conclusions: Faculty members and FD teams can access each other through the existing clinical CoPs. As faculty members benefit from FD content, FD teams help deliver the universities' academic mission in the DME setting.

Take-home Messages: FD in the DME context can be successful through harnessing the potential of existing CoPs.

#SC4.2 - Short Communications: Education Management - Faculty Development

#SC.4.2.6 (5629)

Course observation for facilitation skill development in novice problem-based learning (PBL) tutors

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ABSTRACT:

Background: Recruitment and training of tutors are critical to the success of a problem-based learning (PBL) curriculum. PBL tutors with different training backgrounds need a coordinated training program to facilitate professional development. The objective of this study was to evaluate the effectiveness of course observation as a training program for facilitation skill development in novice PBL tutors.

Summary of Work: Fifty-two novice PBL tutors from Departments of Medicine (DM) volunteered to select 2 sessions of scenario discussion from DM PBL courses, facilitated by senior DM tutors, in the second (humanity/society), third (anatomy/physiology), or fourth (pathology/pharmacology) school years to observe. Tutors' observations were collected by a structured questionnaire before and after the course observations. The facilitator questionnaire used in this study included 32 items related specifically to the role of the facilitator requiring rating scale responses. Each of the items was further categorized under the 4 key facilitation competencies namely (i) Facilitation skills (ii) Programme/curriculum knowledge (iii) Personal qualities and (iv) Subject-matter expertise.

Summary of Results: The mean rating of the self-rated confidence as a PBL facilitator before and after course observations were 3.94 and 4.24 in a total of 5 levels rating, respectively. The significant improvement, after course observations, was noted in 14 items of all 4 categories, including monitor group cohesion, stimulate prior knowledge, cultivate respect for the group opinions, evaluate group progress, activate students prior experiences, seek clarification of ideas, clarify inconsistencies in problem-solving, assess students, liaise between curriculum team and students, check learning outcomes are achieved, become mentor, work as a colleague in a group, evaluate own performance, and identify learning needs.

Discussion and Conclusions: Most novice PBL tutors have been experienced teachers in their expert fields. However, they may not know how to successfully facilitate a small-group PBL curriculum. Novice PBL tutors can be regarded as active learners in the observation process, and our results suggest that these tutors benefit from course observations regarding the 4 key facilitation competency categories.

Take-home Messages: Course observations may help novice PBL tutors to develop knowledge and competency regarding the roles and responsibilities of the facilitator, and contribute to the success of a PBL curriculum.

#SC4.2 - Short Communications: Education Management - Faculty Development

#SC.4.2.7 (5939)

Co-construction of systematic reviews with patients, public and stakeholders: integrating experts by experience into evidence synthesis

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ABSTRACT:

Background: Patient and public involvement (PPI) has become an expectation of good quality healthcare and education empirical research (Involve). PPI is less well-established within evidence synthesis. Qualitative approaches to evidence synthesis are increasingly used across healthcare (see ‘Swim’ guidance for non meta-analyses BMJ 2020) and in particular within healthcare education, reflecting the heterogeneity of literature and value attributed to context during interpretation of findings. Principles of reflexive critical thinking, now commonplace within qualitative empirical research, are used here to explore spaces for PPI-researcher co-construction.

Summary of Work: We examined how PPI is reported within a set of published systematic reviews. Realist synthesis is a well-recognised approach. However, PPI is not currently included within the RAMESES guidance. In this presentation, we share our analysis of realist PPI reports. We reflect upon the implications of identified findings for reviewers synthesising clinical education research and the range of ways to include and report experiential knowledge (e.g. stakeholder experts; users; and reflexive criticality of the researchers own experiences and influence on their review interpretations).

Summary of Results: PPI terminology is varied and used to mean a wide breadth of roles and knowledge. These include strategic inclusion of PPI on steering groups, through to inclusion of PPI in screening and analysis. Reporting often provides little detail of how PPI were involved; how and why they were recruited; the knowledge they contributed; and how this shaped the evidence synthesis approach and findings.

Discussion and Conclusions: We present two frameworks for prompting researchers and PPI contributors. These aim to enable explicit dialogue between PPI and researchers about the expectations and nature of experiential knowledge used within systematic reviews. They aim to maximise the accurate reporting of the nature of PPI and ways contributions influenced the review.

Take-home Messages: 1. PPI or user contributor involvement is well-established in empirical research, but less well within evidence synthesis 2. Meaningful PPI and user involvement can maximise opportunities for impact and implementation of clinical education research 3. Framework prompts can encourage researchers and user contributors to reflect upon the role of experiential knowledge; opportunities for dialogue; and make explicit how experience is used to shape the review process and findings.

#SC4.2 - Short Communications: Education Management - Faculty Development

#SC.4.2.8 (6149)

Just in Time Teaching Tip (JITTs) Sheets: Technologically Assisted Faculty Development

AUTHOR(S):

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ABSTRACT:

Background: For students rotating in clinical learning environments, teaching mostly originates from trainees or clinicians who are not formally trained. Clearly defined and geographically accessible structured postgraduate trainee/faculty teaching resources is very limited. Limitations are (1) time constraints and (2) delivery of the content at a point in time relevant to the trainee/faculty.

Summary of Work: We report the “Just in Time Teaching Tips (JITT)” program, an electronic infographic teaching program utilizing technology-assisted modalities to help prepare trainees and faculty on how to teach and foster learning in busy clinical environments. An email software platform automatically re-sizes content for mobile devices and allows pre-scheduled distribution of evidence based infographics to trainee/clinician teachers in a time-sensitive manner.

Summary of Results: Collaborating with residents and faculty across 8 clinical specialties, 6 generic and 20 clinically specific JITT infographics were developed by the System’s faculty development office. Over an eight-week period 529 residents and faculty received weekly JITTs. An average of 55.9% of the JITTs were opened across all specialties. In a post survey, 91% of residents reported reading the Tip sheets, which addressed effective teaching. 89% of the residents stated the JITTs aligned with their clinical specialty were useful. 75% of the residents reported the frequency of delivery was just right. 70% of the residents reported the JITTs changed how they taught. 80% of the faculty found the JITTs a useful resource to enhance teaching skills in the clinical environment, “useful, easy to read, concise and informative”. 50% of faculty reported encouraging residents to use the JITTs.

Discussion and Conclusions: Just-in-time faculty development provides a mechanism to send infographic JITTs immediately before teaching, which positively impacts the learning environment. Future iterations could benefit from Podcasts and web-based accessible repositories to address current limitations. JITTs are effective means to deliver timely faculty development. Faculty developers must expand their creativity for delivery of content and develop systems using technology-assisted modalities.

Take-home Messages: Faculty and trainees must partner to reinforce the use of electronic JITTs in their clinical learning environment. Time of distribution is a critical factor that influences success.

#SC4.2 - Short Communications: Education Management - Faculty Development

#SC.4.2.9 (6329)

Targeted educator development: moving beyond “making it up as I go along.”

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ABSTRACT:

Background: University-based health professions educators are typically recruited from clinical environments and enter academic institutions into complex educational roles. However, for many health professions educators, navigating this transition is complicated by a lack of formal qualification in education coupled with inconsistent expectations regarding their educational role and development. Moreover, in a context where universities are increasingly introducing teaching-focused pathways, educators are facing increasing demands in relation to educational scholarship and innovation. Therefore, this study sought to determine how university-based health professions educators make sense of and navigate their educational role and their developmental needs.

Summary of Work: Using a case study approach, we conducted 15 interviews with educators and educational leads in one institution which has teaching sites across urban, regional, rural and remote locations. Participants were from diverse health professional backgrounds, at different career stages, and in different educational roles and locations. Data were analysed using an inductive and theory-informed approach.

Summary of Results: Results illustrate various themes relating to how health professions educators conceptualise their educational role and developmental needs, including: experiencing a tension between teaching as an individual endeavour and scholarship as a collaborative activity; lack of mechanisms to support developing shared wisdom in education; moving beyond teaching activities to navigating educational systems; and managing trust and credibility internally in the university and externally. While participants expressed a strong desire to strengthen their educational practice by understanding foundational educational principles and educational theory, their professional development in education was opportunistic, based around discrete activities/events, occurred locally within established groups, and not responsive to the needs of educators across different career stages.

Discussion and Conclusions: Results suggest a need for a shift in focus from faculty development to developing educational leadership within a career trajectory. This implies the need for a longitudinal and holistic approach to thinking about how to support educators and educational leaders in the health professions.

Take-home Messages: Health professions educators, irrespective of their career stage and professional background, require support to develop and hone their craft and to navigate the varied and complex demands they face in their educational roles.

#SC4.2 - Short Communications: Education Management - Faculty Development

#SC.4.2.10 (6417)

The relevance of educational beliefs for faculty development in medical education: validation of a beliefs framework.

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ABSTRACT:

Background: The educational beliefs of medical academics influence their teaching practice. Insight into these beliefs is relevant to direct the quality of education. Within medical education, qualitative studies exploring academics' educational beliefs are rare. This study contextualises a validated higher-education 'beliefs' framework about teaching and learning to medical, student-centred education to enable application within the medical profession. The framework comprises a matrix in which the beliefs are ordered according to belief orientations and belief dimensions. The orientations range from teaching- to gradually more learning-centred. The dimensions represent qualitative different aspects of the belief orientations.

Summary of Work: We conducted a qualitative study using semi-structured interviews with 26 academics from two international medical schools with student-centred curricula. To adapt the framework we used the original framework as a template, while we explicitly remained open to new belief orientations, belief dimensions, and beliefs. To assess the quality of the adapted framework, we first determined an inter-rater agreement of the participants' belief orientations. Next we related the belief orientations of the participants to two contextual factors which are known to be associated with educational beliefs.

Summary of Results: Six belief-orientations emerged, comparable to those of the original framework. We uncovered one new dimension, and made refinements within three other dimensions by extending their constituent beliefs. Thus the belief orientations became more clearly demarcated, which also created an even sharper boundary between teaching-centred and learning-centred belief orientations. The inter-rater reliability (Cohen's kappa) was 0.849. We found significant differences in belief orientations between the academics of the two medical schools and between those teaching clinical topics versus basic science topics.

Discussion and Conclusions: Although the belief orientations have a generic character, the new and extended belief dimensions are strongly related to the medical education and student-centred contexts in which we conducted this study. The adapted, refined framework provides a comprehensive classification of the educational beliefs of medical academics.

Take-home Messages: The relevance of the adapted framework will be exemplified with the narratives of two participants holding contrasting belief orientations, which also demonstrates how the framework can facilitate reflection on educational beliefs.

#SC4.2.1 - Short Communications: Education Management - Faculty Development (Mentoring)

#SC4.2.1.1 (6131)

Group mentoring for undergraduate medical students - What factors decide mentors' satisfaction?

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ABSTRACT:

Background: Group-based mentoring is increasingly used in undergraduate medical education to stimulate professional identity formation. Research indicates that mentors may understand their role in qualitatively different ways: as someone who can answer questions and give advice, as someone who shares what it means to be a doctor, or as someone who listens and stimulates reflection.

We wanted to study how the mentors' approach to mentoring and their perceived rewards influence the degree of satisfaction with being a mentor.

Summary of Work: A survey was done among physician-mentors at three medical schools: McGill University, Canada, UiT The Arctic University of Norway, and University of Bergen, Norway. The response rate was approximately 60 % at each school (N=272).

Summary of Results: The mentors graded their agreement with nine statements describing how they approach group mentoring. Six items, strongly correlated, represented the role of a listening mentor, stimulating reflection. A factor analysis yielded one dominating factor, the "mentor score". Six questions were asked about the perceived rewards of being a mentor. Of these, the relationship with students and exploring what it means to be a good doctor most strongly related to a high "mentor score". Both the mentor score and the reward items correlated strongly with satisfaction of being a mentor. Mentors' satisfaction was mainly related to interest in students' personal development, building relationships with students, being a role model, and the mentor's experience of professional growth. Groups with highly satisfied mentors spent more time discussing students' clinical experiences, and patients' suffering and sickness.

Discussion and Conclusions: Our findings suggest that mentor satisfaction, which is decisive for pedagogical quality and sustainability of mentor programs, is related to the mentors' perceived role and interests. Interest in students' personal development and their own professional development seem to be indicators of mentors' satisfaction.

Take-home Messages: Interest in both students' and the mentors' own development should be encouraged in successful mentorship programs.

#SC4.2.1 - Short Communications: Education Management - Faculty Development (Mentoring)

#SC4.2.1.2 (3829)

The Royal Melbourne Hospital Clinical School Peer Mentoring Program

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ABSTRACT:

Background: Transition from a pre-clinical medical student to the clinical environment can be challenging. A slightly more experienced peer group can provide additional mentoring support during this crucial time.

Summary of Work: The Royal Melbourne Hospital (RMH) Clinical School (University of Melbourne) delivers the medical course to 60-70 students per year level during the 2nd-4th clinical years (MD2-4) after the pre-clinical year (MD1). The MD3 students are ideally placed to become peer mentors for the incoming MD2 students. 36 “MD2 peer mentors” (in groups of 3, mentoring groups of 5-6 mentees) were selected based on non-technical skills. They participated in 2 psychologist-delivered professional development workshops (Understanding Personality Types and Emotional Intelligence). The program was evaluated after 12 months through mixed methods.

Summary of Results: Mentees: 39 mentees (65%) responded to the evaluation questionnaire. All found the program useful. Most (71%) had at least fortnightly contact with their mentors. The most marked improvements were “understanding of their role and demystifying the MD2 year” (82%) and “sense of community/belonging” (79.5%) and “clinical skills/knowledge” (97.4%). Mentors: 24 mentors (67%) responded to the evaluation questionnaire. 91.7% found the program helpful to their own learning (communication skills etc). All had developed a close relationship with their mentees and were keen to continue mentoring them the following year. Significant gaps identified by the mentors were lack of confidence/perceived responsibility in teaching clinical content, and lack of professional development in teaching strategies/use of an external psychologist perceived as being unfamiliar with their needs. “MD2 is overwhelming and confusing... Having people who knew what we were going through, had been through it recently and could help us along the way made a world of difference. I loved that they became like family to us... I really don't think we would have made it through MD2 without them” 2019 MD2 Mentee

Discussion and Conclusions: A peer support program is a valuable additional support during a time of transition and the professional development of mentors is a key factor to success. Future directions will be discussed.

Take-home Messages: A peer support program with trained mentors should be considered especially during transitions.

#SC4.2.1 - Short Communications: Education Management - Faculty Development (Mentoring)

#SC4.2.1.3 (4359)

Mentors' beliefs about their roles in health care education.

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ABSTRACT:

Background: Individual mentors interpret and enact their mentoring in different ways; even between mentors receiving identical role descriptions, the actual mentoring practice varies (Loosveld et al., in press). To a certain extent, interpretations depend on the interaction between a mentors' professional context (e.g., duration of the relationship or need for assessment) and individual beliefs on how mentors perceive and perform their job, and give meaning to it. These individual beliefs could for example be; goals and purposes of mentoring, whether the mentoring relationship is primarily mentor or mentee driven, and strategies and methods to put these beliefs into practice. Since mentoring is so inherently personal, it is difficult and potentially even undesirable to exhaustively prescribe what mentoring should look like. In order to acknowledge individual mentoring variation during faculty development of mentors, facilitating the development or refinement of individual perceptions is crucial.

Summary of Work: We reconstructed mentors' individual beliefs through the lens of the personal interpretative framework (Kelchtermans, 2009). This contains the professional self-understanding (what) and subjective educational theory (how) of teaching. Semi-structured interviews with mentors were analysed first taking the individual mentor as our unit of analysis, before looking across our sample to build a general explanatory pattern.

Summary of Results: The analysis resulted in the identification and description of 4 mentoring positions: the facilitator, coach, monitor and exemplar. Each position represents a coherent pattern of normative beliefs about oneself as a mentor and how to enact these beliefs in practice.

Discussion and Conclusions: Four mentoring positions could be identified. These give insight in individual mentoring perceptions, and can serve as the basis for personalized faculty development. Awareness of these positions can help mentors understand why they act the way they do in certain situations, and how this affects the learning and development of their mentees. It can also help mentors identify personal learning needs and therefore signal personal opportunities for faculty development.

Take-home Messages: The four mentoring positions should not be read as a prescription of what mentoring practice ideally looks like. Rather, the goal of this research was to provide an interpretative description of the diverse ways in which mentors think about their goals and practices as mentor.

#SC4.2.1 - Short Communications: Education Management - Faculty Development (Mentoring)

#SC4.2.1.4 (4460)

Development and validation of an electronic mentoring questionnaire for health professions' students in Switzerland

AUTHOR(S):

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ABSTRACT:

Background: Mentoring programs are widely implemented in health care professions' education as students benefit in career planning, academic orientation and research productivity. Mentoring programs' evaluation is important for improving their content and process design. The Department of Health Professions at the Bern University of Applied Sciences (BFH-H) validated a handwritten evaluation questionnaire for the Bachelor of Science (BSc) programs (midwifery, nursing, nutrition and dietetics, physiotherapy) in 2017. However electronic questionnaires show advantages over handwritten ones such as guaranteeing unambiguous and complete answers and prompt analyses.

Summary of Work: The aim was to develop and validate an electronic mentoring questionnaire for BFH-H students in order to provide online evaluation. The hypothesized four-factor model (1. Benefit of mentoring, 2. Mentee behavior, 3. Formal aspects of mentoring program, 4. Role of mentees) with 24 items was tested using exploratory factor analysis plus Varmix rotation followed by confirmatory factor analysis. Statistics was performed with SPSS 25.0 for Mac and the confirmatory analysis with AMOS 16.

Summary of Results: A sample of 339 sixth semester students participated for validation. The value of Kaiser-Meyer-Olkin-criterium revealed an MSA-value of 0.886, which can be classified as high. The confirmatory factor analysis found a moderate to good Model-Fit-value (RMSEA = 0.069 (90% CI = 0.059 - 0.079) moderate Fit; CFI = 0.940 und TLI = 0.916 good Fit), which means the theoretical model was appropriate as empirical data were reflected. Questionnaire items were reduced from 24 to 17. A five-factor structure (Benefit of mentoring; role of mentees; personal development, formal requirements and design of mentoring program) was confirmed by means of confirmatory factor analysis.

Discussion and Conclusions: The results demonstrated that the electronic questionnaire is a valid standardized instrument, which fulfills the criteria of good quality. This electronic questionnaire is a short and user-friendly instrument that should be implemented in the sixth semester of the BFH-H BSc programs. Results should be discussed critically and if necessary, used for adaption i.e. improvement of the mentoring program.

Take-home Messages: This electronic questionnaire and its validation are not transferable to another University, however, may serve as a model for such implementation.

#SC4.2.1 - Short Communications: Education Management - Faculty Development (Mentoring)

#SC4.2.1.5 (5774)

Scoping review of e-mentoring practices: a framework for successful mentoring relationships

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ABSTRACT:

Background: Mentoring enhances academic, personal and career development. However, time and geographical limitations have placed a strain on traditional face-to-face mentoring. E-mentoring has been increasingly seen as an alternative to traditional mentoring approaches.

Summary of Work: Guided by Arksey and O'Malley (2005)'s framework for scoping reviews, independent literature reviews of e-mentoring were performed. 3353 articles were identified from 9 databases, and 44 articles were included and thematically analyzed using Braun and Clarke (2006)'s approach to thematic analysis. This systematic scoping review provides an evidence-based framework on successful e-mentoring practices. The six themes derived were mentor-mentee selection, initiation of the mentoring relationship, types, enabling factors and desired characteristics of mentor and mentee in e-mentoring practices.

Summary of Results: E-mentoring can be categorized as synchronous (live video, webcams, video-conferencing) or asynchronous (instant messaging services, emails) with both used for specific roles. The e-mentoring process relies heavily on effective matching of mentees to appropriate mentors. The matching process in turn depends on effective online profiles and adequate support by the host organization. Frequent, planned and structured online communication is crucial to cultivating successful relationships highlighting the mentoring structure as a key aspect of effective e-mentoring programs. The e-mentoring relationship should be mentee-centered, flexible, academically and psychosocially supportive, built on mutual respect, trust, and active, shared commitment to the relationship. Immediate feedback, recognition of the mentoring relationship and similarities in values, attitudes, working styles and interests between the mentor and mentee are important to successful relationships. Desired characteristics of an e-mentor include experience, influence and achievement, competency with navigating online platforms, humility and commitment to shared learning and availability for mentorship. Desired characteristics of an e-mentee include proactiveness, robust preparation and awareness of their professional goals.

Discussion and Conclusions: Whilst e-mentoring does facilitate new mentoring communications, it is evident that it should be utilized with face-to-face meetings in a blended approach. Face-to-face meetings help establish rapport, expectations and goals particularly at the start of the e-mentoring relationship and during the provision of feedback.

Take-home Messages: E-mentoring facilitated by a structured, supportive and mentee-centered approach, provides an effective means of complementing face-to-face mentoring meetings. Its role as a standalone approach to mentoring remains to be proven.

#SC4.2.1 - Short Communications: Education Management - Faculty Development (Mentoring)

#SC4.2.1.6 (5886)

Group mentoring of medical students in Canada and Norway – influence of mentors' age and gender

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- Donald Boudreau, McGill University, Canada
- Edvin Schei, University of Bergen, Norway

ABSTRACT:

Background: Group-based mentoring is increasingly used in undergraduate medical education to stimulate professional identity formation and provide a safe space for student reflection. Research indicates that mentors understand their role in different ways: as someone who can answer questions and give advice, as someone who shares what it means to be a doctor, or as someone who listens and stimulates reflection. CanNorMent is a mixed-methods investigation of physician-mentors' experiences and perspectives at three medical schools: McGill University, Canada, UiT The Arctic University of Norway, and University of Bergen, Norway.

Summary of Work: We present results from a survey among all mentors at the three medical schools, with a response rate of approximately 60 % at each school (N=272: 116 women, 153 men, 3 undefined).

Summary of Results: We asked the mentors to grade their agreement with nine statements indicating their own understanding of their mentoring role. Based on their responses, we created individual mentoring profiles. The profiles were shown to be independent of mentors' age and gender, as was mentors' degree of satisfaction with being a mentor. Mentors were also asked to grade their interest in different topics. The genders differed regarding interest in student wellness issues, in the topics of poverty and health, and in patients' suffering and sickness. On these topics, female mentors expressed higher interest compared to male mentors. Female mentors also reported that their groups spent more time than male mentors discussing students' private experiences and wellness issues. With increasing age of the mentor, more of the group meetings' time was spent on the topics of clinical communication, clinical skills training, poverty and health, empathy, and suffering and sickness.

Discussion and Conclusions: Our findings suggest that although the mentors' own perception of their mentoring role does not differ with age or gender, but both variables influence how student groups work and the selection of topics for discussion.

Take-home Messages: When working with mentor development, one should be aware that the mentors' age and gender may influence the content and process of group mentoring.

#SC4.2.1 - Short Communications: Education Management - Faculty Development (Mentoring)

#SC4.2.1.7 (6154)

Mentoring - the three year itch

AUTHOR(S):

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ABSTRACT:

Background: Mentoring is integral to the development of doctors in complex, pressured, work-based environments. At the Royal Children's Hospital (RCH), mentoring has been anecdotally successful in an informal sense but a formalised program has not been as effective. Drawing from corporate and medical literature and considering survey data from our junior medical cohorts, we surmised that a self-selected online approach would empower both the mentor and mentee.

Summary of Work: This presentation will outline the design, implementation and evaluation of a successful junior resident medical officer (JRMO) mentoring program, which has run for the last three years. The program includes a self-selected dyad model utilising mentor videos and eLearning resources housed on the RCH Learning Management System to maximise flexibility, sustainability and accessibility. A brokering and support system for the mentors and mentees is also in place.

Summary of Results: Junior resident medical officers (JRMO, post-graduate Year (PGY) 2-4) at RCH are invited to participate in a self-selected dyad mentoring program. The mentors volunteer their time and knowledge and come from the registrar (PGY3,4) and fellow (PGY5,6) cohort. This program runs for ten months and mentees were advised to be in contact with their mentor every 6-8 weeks. Since 2016 we have had 94 mentees opt into the mentoring program, with 92 volunteer mentors. The group participants were able to access a range of online tools when establishing and conducting their mentoring relationship.

Discussion and Conclusions: Our findings demonstrate the feasibility of our approach, high uptake of program tools by participants, high satisfaction from participants and early success, with the majority of mentoring relationships continuing informally at the completion of the ten month program. This successful and sustainable program has seen mentoring embedded in, but also influencing, the culture of the organisation and expanding the pool of mentoring alumni.

Take-home Messages: Success requires three main elements, flexible design, champions of the program and continual evaluation.

#SC4.2.1 - Short Communications: Education Management - Faculty Development (Mentoring)

#SC4.2.1.8 (6615)

Near-peer mentoring as a method to support first year medical students

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ABSTRACT:

Background: Several medical students face difficulties in following the curriculum on time each year. Near-peer mentoring can serve as a method to increase motivation and thereby success rate in failing students. Therefore, the aim of this study was to analyze the effects of student-led support sessions on student performance in the first semester of the medical program.

Summary of Work: We collected descriptive data on the first six courses during the first two curricular years by tracking individual student results in each freshman cohort to analyze time to course completion. Voluntary student-led support sessions were offered to students in the first semester during the cell biology and biochemistry course. Near-peer mentors were recruited among medical students in the second year. Surveys and interviews were used to obtain feedback from students and near-peer mentors.

Summary of Results: Our analyses show that students failing the first semester had an enhanced risk of failure in the second semester (15% compared to 3% in students who passed the first course). An increased number of students passed the final exam during the semester when support sessions were offered, compared to the preceding year. Support sessions were generally appreciated by the attending students. However, attendance declined over the semester.

Discussion and Conclusions: Early failure was identified as a risk factor of poor performance in later courses. Near-peer mentoring during the first semester might be a method to support students at risk, and during this pilot seemed to increase cohort performance on the final exam. Strategies to increase student attendance during support sessions should be developed to reach a majority of students.

Take-home Messages: Performance in early courses will affect student success and well-being in later semesters. Near-peer mentoring during challenging courses is a possible method to support students both academically and socially.

#SC4.2.1 - Short Communications: Education Management - Faculty Development (Mentoring)

#SC4.2.1.9 (6620)

A scoping review of the relevance of e-mentoring practices: benefits and challenges

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ABSTRACT:

Background: Mentoring facilitates the personal and professional development of mentees and mentors. Facing time and physical constraints and a shortage of mentors, e-mentoring is increasingly suggested as a substitute for face-to-face in-person mentoring meetings. However, there is no consensus on the advantages and disadvantages of e-mentoring. This systematic review seeks to address this gap to guide the development of effective medical education programs.

Summary of Work: Guided by Arksey and O'Malley's methodological framework and PRISMA guidelines, this systematic scoping review was conducted to map prevailing accounts of the advantages and disadvantages of e-mentoring. A combination of directed content analysis and Braun and Clarke's thematic analysis approach (henceforth the split approach) was adopted to independently analyse the data.

Summary of Results: 3353 articles were identified from 9 databases, and 44 full-texts articles were analysed using the split approach. The themes and categories identified from use of the approaches were consistent and include the advantages and disadvantages of e-mentoring, for mentors, and for mentees.

Discussion and Conclusions: E-mentoring has shown similar clinical effectiveness to traditional mentoring. It obviates many logistical constraints of traditional mentoring, by transcending physical and geographical boundaries, optimising time and human resources, and offering flexibility. Synchronous communication, essential for brainstorming, teambuilding and decision-making, can be supplemented by asynchronous mentoring approaches such as emails, for reflective and responsive communication. E-mentoring enhances oversight of mentees and the mentoring relationships and facilitates timely, personalised, appropriate, specific, holistic and longitudinal support and feedback. This allows mentors and mentees a chance to build continuous and long-term mentoring relationships through convenient and flexible online meetings. However, it is suggested that the loss of non-verbal communication makes it difficult to establish rapport whilst proficiency in technology and online literacy, as well as coordination and facilitation are also required to make mentoring successful. E-mentoring also diminishes protected time and can impinge upon personal life.

Take-home Messages: E-mentoring has much potential to strengthen mentoring relationships and support personal and professional developments in medical education. However, a sustainable e-mentoring program must be supported by effective structuring of the mentoring process, access to e-mentoring platforms and training in information technology proficiency for mentors and mentees.

#SC4.2.1 - Short Communications: Education Management - Faculty Development (Mentoring)

#SC4.2.1.10 (7035)

Medical Simulation in a Mentor Training Program

AUTHOR(S):

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ABSTRACT:

Background: In tune with increased focus on the quality of inservice training, the training of faculty to become better qualified as mentors to carry our clinical mentorship has become one of the areas of focus. We here present the RIKS – project (i.e. reflection in communication and collaboration), a joint effort between St. Olav Hospital, Department of Anaesthesia, NTNU Department of Medicine and Health Services, and the Medical Simulation Centre at St. Olav. The aim of the project is to strengthen the quality of further education through strengthening the competence of the mentors, thereby increasing the relevance for students. The target group is nurses in anaesthesia who mentor students in their bed-site and clinical practice.

Summary of Work: RIKS offers training through a pedagogic method based on reflection, communication and collaboration in clinical praxis. Medical simulation as a learning space offers an arena where theory, training and experiences are aligned through debriefing as a methodology for reflection and learning. Debriefing is a form of learning that affords summative and formative assessment for the students, as well as peer evaluation. To further enhance and structure the learning experience, RIKS employs observation tools, i.e. mini-CEX and an ANTS-based tool developed for nurse anaesthetists. The training is conducted through a two-days introductory course before the practice period of the students.

Summary of Results: RIKS use the evaluation model of CIPP (Context, Input, Product, Process) and a stakeholder analysis methodology to evaluate the various aspect of the project trajectory. This enables formative and summative evaluation as the projects evolves. We will in particular focus on how RIKS have enriched the student experience through the training of the mentors.

Discussion and Conclusions: The project intends to contribute to a better understanding of how the mentor role can be trained to improve the student experience and their learning outcomes. We will also discuss the medical simulation as a learning arena and experiences in extending its uses to new areas, such as the training of mentors.

Take-home Messages: The flexibility of medical simulation as a space for learning.

#SC4.3 - Short Communications: Education Management - General

#SC4.3.1 (7042)

How many medical students and medical schools do a population of 5 mill need? What is the preferred study model? A report from Norway

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- Jeppe Emmerson, Faculty of Medicine, Aalborg University, Denmark

ABSTRACT:

Background: Norway has one of the highest densities of medical doctors according to OECD-numbers, with 4.8 doctors per 1.000 inhabitants (2018). But the numbers of medical graduates, 11.1 per 100.000 inhabitants, are lower than the average in OECD. This is compensated with a high share of foreign trained doctors, 39,7 %. The Norwegian government investigated the situation by establishing an expert group to consider the educational capacity in Norway and an increase of medical schools. Besides the group should consider different models for a clinical curriculum for Norwegian students studying medicine abroad.

Summary of Work: The expert group collected a wide range of historical, national and international information and estimates for the future, and analysed it together.

Summary of Results: The estimated need for starting positions for doctors were 1150 a year, while there were 950 starting positions. The four medical schools in Norway had a total of 3600 students and graduated 620 doctors a year. While 3166, 47 %, of Norwegian medical students studied abroad. Student density varied from 23,9 per 100.000 inhabitants in the north to 7,4 in south-east. All the medical schools proposed an increase in number of students, and as known in advance one university expressed plans for establishing a medical school. The expert group agreed unanimously that Norway should educate more medical doctors. The group suggested that more of the education should take place in broader spectrum of hospitals and primary health care and proposed more decentralised training at campuses outside the university cities. A six-year integrated program was proposed as the preferred model. There were different opinions about the number of medical schools in Norway.

Discussion and Conclusions: Norway should educate more doctors in accordance to The WHO global code of practice on international recruitment of health personnel.

Take-home Messages: A national plan for education of doctors to fulfill the WHO code needs to involve all parties; universities, students, all involved parts of health care and the responsible governmental ministries.

#SC4.3 - Short Communications: Education Management - General

#SC4.3.2 (7327)

Lessons learnt from tackling bias in Higher Education: Navigating white fragility, defensive dialogue and the loss of your own narrative

AUTHOR(S):

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ABSTRACT:

Background: In 2019 the author ran an ASME pop-up event was titled “Exploring Unconscious Bias: developing teaching for healthcare faculty and students”. This 45-minute session was an example of a new training scheme being implemented at the University of Bristol (UoB) Medical School that focused on equipping participants with skills to challenge unconscious bias and microaggressions in their own professional, educational and personal lives. This forms a significant part of the UoB Medical School commitment to addressing the BME attainment/awards gap and improving minority students’ experiences. One year on the author will be expanding on this pop-up event by sharing the lessons he has learnt during a year of training medical school staff. The author will discuss barriers to implementation and solutions others may consider when beginning this work in their own organisation. The purpose of the presentation is as follows: • Overview of the current “Bias and Bystander” training being run at UoB Medical School • Summary of the barriers faced during the first year of implementation • Discussing solutions to these barriers and how these can be implemented in other settings

Summary of Work: For the last year, UoB Medical School has been providing training on unconscious bias, microaggressions and bystander skills to its staff. These sessions have been well received, with a further study taking place to review the impact on staff behaviour and attitudes. However, this is a challenging topic to teach, one that requires staff to be open to reflection and internal critique. The challenges that have been faced during this year will be summarised, and the most significant difficulties highlighted for discussion. This presentation will share some of the solutions that have been generated, and these will be discussed in the context of wider educational theory. The primary focus is to consider how a teaching space that asks staff to examine their own internal bias can be made safe but remain challenging.

Summary of Results: One of the primary barriers that have been encountered is the emotional and defensive response to discussions around bias and discrimination. These emotive conversations occur when staff feel threatened by the topic of discussion, and these behavioural justifications are often difficult to navigate. One particular and well-recognised response to discussions around white privilege is that of “white fragility”, originally coined by Robin DeAngelo and examined in their 2001 paper in the International Journal of Critical Pedagogy (DiAngelo, 2011). It is the specific defensive response that seeks to silence further discussions around individual and institutionalised racist behaviours. However, defensive responses are not only limited to discussions around race and ethnicity, and the author will share experiences of navigating not only white fragility but other difficult conversations which can hinder the educational purpose of this training. The final barrier to be covered will focus on the personal cost for trainer running this session. This is especially true when trainers teach about protected characteristics that relate to their own lived experience.

Discussion and Conclusions: The purpose of this presentation is to highlight the barriers and solutions that exist when establishing an educational dialogue with staff in higher education establishments to challenge their own, their peers and their institutions bias. As an out and proud gay man, the author will discuss the emotional burden on those delivering this training when their own narrative is challenged, highlighting the need for a support network for trainers with protected characteristics; be they Queer, BAME/POC, female, disabled or any other protected characteristic that shouldered this work Closing this presentation the author will seek to inspire a conversation about how institutions can consider the wellbeing of their staff tackling these issues, presenting some ideas that have been generated through the last year of lived experience delivering this training.

#SC4.3 - Short Communications: Education Management - General

#SC4.3.3 (7243)

Lessons Learned: Setting Up a Mini Med School on a Shoestring Budget

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ABSTRACT:

Background: The “Mini Med School” (MMS) concept was conceived 30 years ago by a professor who wanted to showcase to the general public the teaching and learning happening at his medical school. Since then, other medical schools and government agencies around the world have created similar series of weekly lectures on basic science and/or biomedical topics. The costs associated with putting on such event is usually handled by these large organizing institution.

Summary of Work: Despite a lack of internal funding availability, the remoteness and small size of our medical program, our team set up a MMS in our rural community. A very diverse group of 59 members of the public attended 2 hours of activities weekly for 6 consecutive weeks. Our MMS spiral curriculum featured a variety of teaching methods and environments, regular assessments, and a graduation ceremony.

Summary of Results: The age of participants was well-balanced from <16 to 69 years old with a few outliers at either extreme. Nearly 30% possessed a college education, while 24% had less than a high school diploma. Over 50% of attendees wanted to increase their health knowledge and vocabulary, experience medical school, and/or were planning to pursue a health-related occupation. 100% of participants rated the program as engaging, fun, and worth attending again.

Discussion and Conclusions: Despite the diversity of participants and limited funds, our MMS was highly rated by all. We attribute our success to the engagement and in-kind donations from our small local medical community. Additionally, we asked and received different forms of support from both private and public organizations. Lastly, we made judicious use of technology to keep our costs in check. Our experience demonstrates that money is not necessary to put on a MMS extravaganza when one uses a bit of creativity, engages the interest of the local medical and public community, utilizes freely available technological resources, and reaches out to local, provincial, and national organizations for support.

Take-home Messages: A low-cost MMS which feels like, to quote one of our mini students, one of the greatest experiences of my life! is within everyones reach.

#SC4.3 - Short Communications: Education Management - General

#SC4.3.4 (5415)

Opening up clinical pharmacology and therapeutics education: an international consensus study on the advantages, barriers and solutions to the use of open educational resources

AUTHOR(S):

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ABSTRACT:

Background: Clinical pharmacology and therapeutics (CPT) teachers often use digital educational resources in their curriculum. However, they rarely make these resources openly available. This study aimed to assess the advantages and barriers that CPT teachers perceive about sharing their materials. Moreover, the second part of this study aimed to reach consensus on solutions for these barriers to include in the development of an international online platform for collaboration and open education.

Summary of Work: For the first part of this study, a cross-sectional survey was sent to the principal CPT teachers of 279/304 European medical schools. Advantages and barriers perceived about sharing educational materials were questioned using a combination of 5-point Likert type questions and open questions. The latter were analyzed using thematic analysis. For the second part, the results were presented during the education meeting of the bi-annual EACPT congress and discussed by the participants until consensus was reached. This session was audio-recorded and subsequently transcribed verbatim, results are described narratively.

Summary of Results: 93 CPT teachers (33%) have answered the survey. 92 (99%) feel that openly sharing resources is beneficial. The perceived advantages and barriers were classified in 7 themes each. The three most mentioned advantages were: access to more resources, inspiration from others and quality of teaching materials. The three most mentioned barriers were: Language issues, local differences and expected costs of the platform. During the consensus meeting, approximately 60 international attendees agreed that the main language of the platform should be English and that local differences may be minimized by clearly explaining them, and by largely teaching the uniform basics of prescribing. Moreover, it was agreed upon that the platform should primarily aid teachers in finding suitable educational resources, should be free of charge and should include creative commons licenses.

Discussion and Conclusions: European CPT teachers almost uniformly see the advantages of openly sharing digital resources, but perceive barriers (e.g. language, prescribing ethics). Consensus was reached on potential solutions for these barriers to include in our proposed online platform.

Take-home Messages: Barriers that prevent CPT teachers from openly sharing resources revolve largely around differences in language and prescribing ethics.

#SC4.4 - Short Communications: Education Management - International Dimensions

#SC4.4.1 (6243)

Global partnerships in postgraduate medical education: A cultural exchange to enhance learning in Psychiatry

AUTHOR(S):

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ABSTRACT:

Background: In 2014, the Department of Psychiatry and Behavioural Neurosciences at McMaster University entered into an educational partnership with the Department of Psychiatry at Mbarara University of Science and Technology (MUST) in Uganda. The partnership, referred to as “McMUST,” was initiated with the primary goals of increasing educational capacity within MUST and offered novel, mutually beneficial, innovative, and robust training opportunities for MUST and McMaster University psychiatry learners alike.

Summary of Work: Nine visits to MUST were held between 2014-2019. Evaluation forms were collected following six of these visits, prompting participants to rate their overall level of satisfaction with the visit and provide written comments. Satisfaction ratings were summarized using means and standard deviations. A simple linear regression with time as the predictor variable and overall satisfaction as the outcome variable was conducted to examine changes in satisfaction over time. Narrative comments were aggregated and analyzed using qualitative content analysis. Two coders read comments and summarized themes.

Summary of Results: Satisfaction ratings revealed consistently high ratings (across all years: $M = 4.50/5.00$, $SD = 0.46$) with no significant changes across time, $p = .23$. Participants described their overall learning experience as extremely positive, noting their learning had been deeply enriched by the experience. Participants were appreciative of opportunities for in-depth skill development, including clinical skills and cultural competency. Many highlighted the value of community-based learning in a global mental health setting. Pedagogical techniques implemented during the trip were described as salient and resulted in a meaningful, team-based learning experience. Specific challenges focused on time constraints, high patient volumes, and competing clinical demands. Suggestions for improvement included prolonging the time in the learning encounter as well as providing opportunities for bi-directional exchange.

Discussion and Conclusions: The McMUST partnership has provided a novel, global training opportunity for postgraduate trainees in Uganda and Canada. It has been consistently highly rated over the years and continues to be a valuable experience.

Take-home Messages: The McMUST partnership provides a prototype for other global health learning partnerships to enhance clinical care in education as well as cultural competence within a meaningful, mutually beneficial global collaboration.

#SC4.4 - Short Communications: Education Management - International Dimensions

#SC4.4.2 (4522)

One thousands written reflections for faculty development

AUTHOR(S):

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ABSTRACT:

Background: Numerous studies value the reflection in faculty development and identify the use portfolios as a way of promoting a reflective practice. Some of these publications also distinguish different levels of depth in these written reflections. But none of them describe what the health sciences educators reflect on and what do these reflective actions involve.

Summary of Work: In this study, we identify topics and characterize the reflective actions of university teachers of health sciences produced in portfolios written in the context of a two-year teacher training program. We analyze 965 texts written by 175 teachers in training during 2007-2016, using a qualitative interpretative method.

Summary of Results: As a tendency we find three main topics: teaching methods, assessment and curriculum design. Firstly, teachers mainly develop alternative teaching methods to replace lectures. They layout problem or case based learning activities for their students, role playing, collaborative learning, etc. Secondly, they reflect on assessment (formative and summative) looking for tools based on competence rather than knowledge. They also problematize curricular designs and put forward new programs focused on learning objectives instead of just proposing lists of topics organized in a timeline. When they write about these three topics they develop some reflective actions: problematize, appreciate and/or design alternatives. They primarily problematize practices that were reproduced acritically (39%), they recognize valuable educational activities using pedagogical criteria (37%), they design alternatives (22%) to their teaching strategies, program designs, learning assessments, learning management, etc.

Discussion and Conclusions: This study reveals that reflective professionals problematize, appreciate and design alternatives for their teaching practices. Faculty development programs need to educate by way of reflecting on teaching and learning with an academic focus on actual situations taking place in their daily practice.

Take-home Messages: In order to transform teaching practices at universities, reflection should be the way to and the aim of teaching training programs.

#SC4.4 - Short Communications: Education Management - International Dimensions

#SC4.4.3 (4470)

How an Agile, Cross-Functioning Consultant Service for Health Profession Educators in a Large Academic Institution Can Lead to Faculty and Learner Success

AUTHOR(S):

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ABSTRACT:

Background: In this ever- increasing academic demand of being productive scholarly and meeting expectations for promotion, health profession educators are facing mounting pressures that they have not confronted before. Through vision and financial support of the department chair, we developed an innovative educational consult service to serve 1,500 pediatric faculty with various academic career paths. We strove to form a high-functioning team of expert faculty developers to promote educators' professional development through scholarly activities and scholarship.

Summary of Work: The team possesses a wealth of expertise in clinical teaching, educational scholarship, faculty development, scholarly and grant writing, educational portfolio preparation and promotion. Being an agile, cross-functioning interprofessional team affords us the opportunity to provide a large number and a broad range of consultations that meet increasing demands with high efficiency. We suggest that our team agility is characterized by resilience, quick decision making, and empowerment to act. Our team is stable yet dynamic. The team provides consultations that are held face-to-face, over email, virtual conference sessions and via phone. We use multiple coaching modalities such as: peer mentoring circles, consultations to other leaders, grooming of future consultants, educator sessions, a faculty "college", interprofessional educator development, an educational awards process and educational grant funding and support. Given accumulative experiences over 5 years, the team has now extended support to faculty of 4 affiliated hospitals as well as international scholars.

Summary of Results: Based on program evaluation, there have been increased numbers of teaching awards, educational grants, innovation recognition locally and nationally, and promotions. Ultimately, overall teaching effectiveness has been at all time high based on evaluations by our medical trainees.

Discussion and Conclusions: The record numbers of attendees at various faculty development offerings reflect great enthusiasm among our educators. Our educators report sense of belonging in this large educational community that inspires them to best teach learners by delivering high quality education.

Take-home Messages: By supporting a high-functioning, agile and interprofessional team that can guide faculty in their academic endeavors, the return on investment will be manifold.

#SC4.4 - Short Communications: Education Management - International Dimensions

#SC4.4.4 (4514)

Knowing me, knowing you. - Establishing shared mental models to support healthcare professionals in cross-border collaboration in a European border-region.

AUTHOR(S):

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- Michael Hoven, Maastricht University, the Netherlands

ABSTRACT:

Background: Cross-border collaborations in healthcare can be beneficial for both patients and healthcare professionals, especially in border-regions. However, these collaborations often show added complexity due to amongst others language barriers, differences in policy and education, and cultural aspect. Previous studies highlighted the necessity for dedicated training for healthcare professionals collaborating across borders.

Summary of Work: We designed a workshop in which collaborating healthcare professionals are stimulated to share their experiences and expectations of the cross-border collaboration. The workshop is based on the outcomes of an elaborate needs analysis, and elements of authentic, reflective and collaborative learning. The workshop aims to aid awareness of differences between stakeholders, and development of shared mental models of cross-border healthcare. The workshop was evaluated in surveys, focus group interviews and, later on, individual interviews.

Summary of Results: The workshop was piloted in an international and interprofessional group. Based on the pilot, minor adaptations were made. Thereafter, the workshop was provided to healthcare professionals involved in cross-border collaborations in unplanned and planned healthcare in a European border-region.

Discussion and Conclusions: When collaborating across borders, awareness about differences in a.o. systems, language, education and culture is key. The designed workshop allowed healthcare professionals to reflect on, and discuss practical challenges involving these differences. The integrated learning principles aid the process of creating awareness, and may ultimately lead to the establishment of shared mental models of cross-border collaborations in healthcare.

Take-home Messages: A workshop build on both practical and theoretical foundations may support healthcare professionals in overcoming challenges of cross-border collaborations.

#SC4.4 - Short Communications: Education Management - International Dimensions

#SC4.4.5 (4975)

Developing collaborative healthcare education programmes for staff in low and middle income countries: reaching consensus on the best approach

AUTHOR(S):

- Elaine Hill, University of Central Lancashire (UCLan), UK*

ABSTRACT:

Background: Continuing professional education (CPE) programmes improve staff knowledge, skills, retention and practice (Willis-Schattuck, 2008), but remain costly and rare in the developing world. One potential solution involves healthcare educational collaborations between institutions in high-income countries (HICs) and low/middle-income countries (LMICs) to provide culturally-appropriate CPE in LMICs (Buchan and Campbell, 2013). To be effective, educational partnerships must take account of potential barriers arising from differences in cultural norms, language, available technology and organisational structures within collaborating countries. However, there is currently no consensus, and little published literature, on how best to collaborate.

Summary of Work: A Delphi study, involving healthcare educators in several HICs and LMICs, sought to reach consensus on the most effective approaches by determining: - How international collaboration can be most effectively used to develop educational programmes for healthcare staff in LMICs - What barriers exist and how these can be successfully overcome - What makes successful collaborations work

Summary of Results: Participants recognised the need for trust, mutual goals and commitments, acknowledging and accepting differences and overcoming logistical barriers to collaboration. Crucially both HIC and LMIC experts expressed concerns regarding inequities arising from LMIC/HIC power imbalances. Many funders and publications have western-centric expectations regarding intellectual property rights, authorship order and collaboration objectives, which may not meet LMIC needs. Consequently LMIC partners may feel challenged to contribute as equals whilst HIC partners expressed concerns relating to western paternalism, guilt over past colonialism and being perceived as 'white saviours'.

Discussion and Conclusions: Whilst HIC/LMIC partners may share mutual goals, commitment and find ways to overcome logistical and cultural barriers, truly equal partnership may be hampered by the very HIC systems which seek to support collaboration.

Take-home Messages: Fundamental changes are needed to HIC perspectives and practices to enable true HIC/LMIC healthcare education collaborations to flourish.

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#SC4.4 - Short Communications: Education Management - International Dimensions

#SC4.4.6 (5666)

Pilot Study of a Global Health Classroom. A Collaboration between Otago Medical School, New Zealand and School of Medicine Tecnologico de Monterrey, Mexico.

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ABSTRACT:

Background: Global Health Classroom (GHCRC) is a learning model developed collaboratively between Otago Medical School (OMS) New Zealand and partnered medical schools mainly in the Pacific. This model employs the use of videoconferencing software to connect students from around the world. In 2018 GHCRC won the AMEE 2018 Patil Innovation Award. In 2019 we trialled a GHCRC between OMS and School of Medicine Tecnologico De Monterrey (ITESM). This pilot aimed to create a model that would optimise conversation between international peers from countries with differing cultures and health systems.

Summary of Work: We conducted a videoconference between 12 students from OMS and 10 students from ITESM. The key difference between the established GHCRC model and this pilot was the use of small “breakout groups” during the videoconference, to enhance interaction between students. In order to achieve this, we split the original group of 22 into two separate rooms, each with its own audio and video. A survey with Likert-scale and free-text questions evaluated the students’ experiences and reported knowledge gained during the GHCRC.

Summary of Results: Eighty-six percent of participants considered the breakout groups an effective way to create student-to-student interaction, increasing learning opportunities. 95% of students’ reported learning new knowledge in areas such as determinants of health and health systems, which align favourably with recommended learning outcomes in the literature. Students in both countries also reported an increased interest in learning about global health following the GHCRC.

Discussion and Conclusions: The pilot was highly successful, demonstrating that the GHCRC model is readily applicable and adaptable for new partnerships. Participants from both schools enjoyed the GHCRC as they were able to interact and learn together about each other’s health systems and cultures. This collaboration led to a significant enhancement of the GHCRC model, through the use of “breakout groups”. Direct interaction between students from different countries allows for greater interactions and the exchange of information, cultural views and personal experiences in healthcare.

Take-home Messages: 1. GHCRC is an effective model for global health learning, with high levels of student satisfaction and engagement in global health learning; the benefits are reciprocal. 2. Direct student-to-student interaction improves engagement and learning.

#SC4.4 - Short Communications: Education Management - International Dimensions

#SC4.4.7 (5708)

Finding your feet: student participation during initiation of international clinical placements

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ABSTRACT:

Background: International placements challenge students to find the right level of participation, as local practices, language and time pressure may affect their engagement in patient-related tasks or team activities. This study sought to unpack the initiation process during international clinical placements with the ultimate aim to achieve active student participation.

Summary of Work: Following a constructivist grounded theory approach, we conducted two individual interviews with 15 undergraduate healthcare students (before departure and whilst on placement). To identify emerging themes, we applied an iterative process of data collection and constant comparative analysis. Several team discussions informed further analysis, allowing us to reach a more conceptual level of theory.

Summary of Results: From our findings we constructed a four-phase model of healthcare students' initiation of international clinical placements, which brings into focus how the phases of 'orientation', 'adjustment' and 'contribution to patient care' build up towards a 'sense of belonging'. We identified several factors that induced active student participation in practice, such as a favourable workplace setting, opportunities for learning and a local support network.

Discussion and Conclusions: Active student participation starts even before the students arrival. This participation is aimed at different goals, depending on the four phases of initiation in clinical practice. These phases can be used to support workplace learning, eventually leading to a sense of belonging.

Take-home Messages: Given the time students need to fully utilise the workplace learning opportunities afforded by the placement, we have reason to question the value of short-term placements such as international electives. Understanding the different phases of initiation during international clinical placements can help support students in adjusting and moving to full participation and belonging.

#SC4.4 - Short Communications: Education Management - International Dimensions

#SC4.4.8 (6446)

Acquiring competencies in small groups with international and non-international students in undergraduate medical education

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ABSTRACT:

Background: Medical curricula are increasingly internationalized, with international students being mixed with domestic students in small group learning. Small group learning is known to foster competency learning in undergraduate medical education, specifically communication, collaboration, leadership, and professionalism. However, it is unclear what happens with the learning of competencies when international students are introduced in small group learning. This study explores if students in international small learning groups master the competencies collaboration, leadership and professionalism at the same level as students in non-international groups in an undergraduate medical curriculum.

Summary of Work: Students were divided into four learning communities (LCs) in which tutor groups are the main instructional format. The tutorials of two LCs are taught in English, with a mix of international and Dutch students. The tutorials of the other two LCs are taught in Dutch with almost all domestic students. Trained tutors assess three competencies (collaboration, leadership, professionalism) twice per semester, as 'not on track', 'on track', or 'fast on track'. By using One-way ANOVA and Chi-square tests, we compared the results on competency assessment of students of 3 academic year cohorts (N=1215) twice per semester between the four LCs, in the first two undergraduate years.

Summary of Results: The analysis revealed that students in the English taught LCs received more 'fast-on-tracks' than the students in the Dutch taught LCs. This higher performance was true for both international and Dutch students in the English taught LC's. Prior knowledge, age, gender, nationality and the tutor did not explain this phenomenon. The passing rate ('on track' plus 'fast on track') for the minimum level of competencies did not differ between the mixed and non-mixed groups.

Discussion and Conclusions: When students are educated in mixed groups of international and Dutch students, they can obtain the same basic competency levels, no matter what mix of students is made. However, students in the mixed international groups outperformed the students in the homogenous Dutch groups. Future research should explore if these findings can be explained from differences in motivation, perceived grading or social network interactions.

Take-home Messages: Students in international small learning groups outperform students in non-international groups concerning competency learning.

#SC4.4 - Short Communications: Education Management - International Dimensions

#SC4.4.9 (6954)

The power of a checklist in medical education

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ABSTRACT:

Background: The International Federation of Medical Students Associations (IFMSA) professional exchanges program has offered international clinical placement opportunities to over 14,000 students per year. These have enriched the students medical knowledge and medical skills. However, we have identified a missed opportunity in building the global health knowledge of students while they are on clinical placements abroad. To address this, we have been improving the learning objectives present in the 'Student Handbooks', which are used by students who participate in our exchange program.

Summary of Work: We have developed a set of global health learning objectives that are specific and prescriptive of the experiences gained in a practical environment. This checklist of objectives allows students to view each learning opportunity and medical system difference or 'difficulty' as an essential part of their global health knowledge. Each learning objective has been thought of to ensure that the student fully incorporates themselves into the new environment, and learns from doing and asking rather than pure observation. The objectives in the checklist are drawn from the 'Global Health Education competencies toolkit' by the Consortium of Universities for Global Health (CUGH).

Summary of Results: In the 'Student Handbooks', a list of fourteen objectives will be incorporated under the 'Global Health Learning objectives' section. These objectives are applicable to all departments and will be incorporated into all department-specific handbooks. Advice from experts in the field of global health has been sought and improvements made accordingly to create this final checklist.

Discussion and Conclusions: IFMSA aims to have the test phase implementation of the checklist for students going on international clinical placements from April 2020 to August 2020. Students using the updated handbooks will be asked to fill out a post exchange assessment form regarding the number of objectives met in their placement and usability of the checklist.

Take-home Messages: In exchange and elective placements the importance of practical global health learning is paramount, however, to learn we need guidance. A checklist of objectives provides students the surety that they are meeting the needs of being Tomorrow's doctors.

#SC4.4 - Short Communications: Education Management - International Dimensions

#SC4.4.10 (5244)

Exploration of Exposure-based Curriculum to Increase Interest in Health Sector Leadership Among Medical Students

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ABSTRACT:

Background: Throughout the health sector, there exists a spectrum of leadership positions in hospital, business, policy, and other spaces. But simultaneously, MDs are notably absent in many of these influential positions. Due to concerns about doctors' readiness for these roles, medical education researchers have conducted studies investigating the importance of leadership curriculum in medical schools.

Summary of Work: Despite 7.5 hours of first-year didactic teaching integrated at Mayo Clinic ASOM, we feel that the current curriculum lacks real-world demonstration of how to practically apply its abstract principles to our future careers. We thus propose that there is inadequate contact with the variety of leadership positions that physicians can pursue. To remedy this, we developed a week-long interactive curriculum modeled after exposure-based curricula to demonstrate to students how their interests, culture, and passion can converge in physician-leadership.

Summary of Results: Data was gathered about perceptions of medical leadership and influence of our intervention in a group of students at the end of their first year. Through pre- and post- surveys, there was an increase in the use of big-picture/abstract words associated with leadership, a decrease in perceived barriers to pursuing leadership careers, and participants found the new course "new and additive" in comparison to the didactic course.

Discussion and Conclusions: Students need to be equipped with the skills, vision, and guidance to lead. Even with skills training in medical school, most students were still unsure of how they would navigate towards future leadership roles. Our exposure-based intervention helped to bridge the gap, and students finished the course seeing less obstacles in thinking about leadership careers, thinking more broadly about what leadership means, and feeling more satisfied in their training. By showing students physician-leaders outside of the clinical setting, we were able to empower them to pursue health industry positions traditionally restricted to non-clinician leaders.

Take-home Messages: 1. Didactic-only curriculum in medical student leadership training is currently insufficient. 2. At the end of their first-year, students feel they are not prepared to integrate physician-leadership into their career planning. 3. Addition of exposure-based curriculum is necessary to give students concrete career paths and encourage the development of physician-leadership.

#SC4.4 - Short Communications: Education Management - International Dimensions

#SC4.4.11 (6665)

East meets West: Entering the Second Decade of Weill Cornell Medical College in Qatar

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ABSTRACT:

Background: The “globalization” of medical education is centuries old. However, the last decade has witnessed an increase in the engagement of US and European medical schools in both Asia and Africa. Examples of such engagements include entering into partnerships that facilitate students, residents, and faculty exchange and the founding of transnational campuses that are missioned to enhance the healthcare workforce. Although the intended goal of any such partnerships is to improve medical education in the host country, their presence can create an environment that enhances satisfaction and retention of well-trained physicians and hence contributing to improvement in the quality of care.

Summary of Work: Weill Cornell Medical College in Qatar (WCMC-Q) is an example of a transnational site that offers an American MD degree. Established in 2001, WCMC-Q was the first medical school in Qatar invited by Qatar Foundation. The majority of the students are Qatari nationals or long-term residents (~136/200). The faculty are appointed and promoted in their corresponding departments in the home campus in NY. The curriculum is designed in NY and contextualized in Qatar to meet the local needs. Three quarters of the students apply and match in the US and the rest complete residency training in Qatar’s ACGME-I accredited programs

Summary of Results: Entering its second decade, WCMC-Q has 384 alumni. Twelve percent are working either at the medical school or at one of its affiliate hospitals. Around 600 of the physicians in the healthcare system have clinical faculty appointments at the medical school and a large number of residency programs are accredited by the ACGME -I. Facilitating factors include 1) strong support by the sponsor, Qatar Foundation, 2) adaptive leadership , 3) thoughtful use of technology, 4) cultural humility, and 5) community engagement.

Discussion and Conclusions: WCMC-Q is meeting its mission of participating in the development of the healthcare workforce in Qatar. Funding and positive relational factors are the foundation for its success to date.

Take-home Messages: The availability of financial resources is necessary but not sufficient for the success of transnational campuses. Aligning the mission of the campus with the needs of the host county and being respectful of its culture are key.

#SC4.4 - Short Communications: Education Management - International Dimensions

#SC4.4.12 (7142)

Assessing the Impact of a Global Health Training Module and IFMSA UNESCO Ethics module in the Largest Medical Exchange Program in the World

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ABSTRACT:

Background: Preparatory trainings for students going on international medical electives have been proposed as a route to increase participants' knowledge and competencies needed for their elective experience; however, literature on the outcomes of such trainings is limited. Since 1951, the exchange program of the International Federation of Medical Students' Associations (IFMSA) offers more than 14000 students the opportunity to go on such electives. Despite exchange students being requested to attend Pre-Departure and Upon Arrival Training, a standardised Global Health training module and Ethics module was not integrated into IFMSA Exchanges until 2018.

Summary of Work: Global health training combines theory with group discussions, case studies, simulations, and addresses various topics in global health. Ethics Training includes 16 case studies of ethical dilemmas that could be encountered during an exchange, with theoretical portions on cultural sensitivity, medical and research ethics. During the impact assessment phase, 8 IFMSA National Member Organisations (NMOs), from different regions of the world, delivered the trainings; Ethics training was also trialled in the IFMSA General Assembly in Tanzania; participants filled a pre- and post-assessment form, which included self-report and objective knowledge-based questions. Comprehensive statistical analysis was performed to measure self-assessment scores before and after the training, and variation in scores.

Summary of Results: GH training: 89 students completed both evaluations, 26 of whom received prior education on global health. Participants showed statistically significant improvements in all items assessed. Ethics training: 104 students from 32 countries completed both evaluation forms; of these, 73% had received prior ethical training. Participants showed statistically significant improvements in self-rated competencies for 16 of the 18 domains assessed.

Discussion and Conclusions: The training modules are effective in improving participants' knowledge and understanding of global health, ethical and cultural competencies, and prepares them for medical electives abroad. Despite being developed within the context of IFMSA exchanges, the study results can be generalised to all medical trainees as the concepts are applicable to different types of international medical electives.

Take-home Messages: These trainings have the unique potential to actively involve the future health workforce in global health and stimulate them to connect perspectives and improve their ethical and cultural competencies, resulting in health solutions worldwide.

#SC4.4 - Short Communications: Education Management - International Dimensions

#SC4.4.13 (7145)

An overview of Medical Education systems around the world: Patterns and Trends

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ABSTRACT:

Background: The International Federation of Medical Students Associations (IFMSA) has been active since 1952 in the meaningful involvement of medical students worldwide within their respective medical education systems. With modernization, understanding the structure and development of medical education in different regions round the world is integral to identify the main patterns and trends as well as challenges facing educational systems globally.

Summary of Work: IFMSA has conducted a quantitative survey through our existing network in member countries to outline how Medical Education Systems are formulated and to comprehend the diversity of medical curricula in the world. Currently a database of medical education systems of almost 100 countries is being developed and revised.

Summary of Results: 371 responses were collected, covering medical schools from 83 countries. A majority (72.2%) belong to the public sector. When it comes to curricula duration, most medical schools (65%) have 6 years of education. Basic sciences are represented in 90% of medical schools' preclinical curricula, whose teaching methodologies are mainly traditional courses (77.1%). As for the clinical training, 97% of subjects were mandatory, and use a combination of evaluation methods (written, oral and practical exams) to assess medical students in at least 29% of cases.

Discussion and Conclusions: The survey has enabled us to highlight some medical education issues medical schools and students are facing, such as traditional teaching courses dominating the teaching methodologies and practical skills are assessed in an insufficient amount. This survey is not meant to assess the quality of the educational institutions but rather to create a basis to discuss the development of medical education systems around the world, patterns and trends of medical education per region.

Take-home Messages: Understanding Medical Education Systems worldwide is a very important step in developing a global approach towards meaningful students engagement and participation in developing their curricula. IFMSA has produced a detailed report to thoroughly present a n overview of medical education systems worldwide, positive trends, challenges and perceived gaps.

#SC4.5 - Short Communications - Education Management - Selection

#SC4.5.1 (7189)

Evaluating the validity evidence of admissions and medical school performance variables on student outcomes at McMaster University (Hamilton, Canada)

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ABSTRACT:

Background: The processes of medical school admissions are time and resource extensive. Accordingly it is essential to ensure that the measures used to select students are valid in their ability to distinguish applicants on their future ability to perform in medical school. A number of pre-admissions measures have been shown to be strongly correlated with medical training outcomes. However this evidence is equivocal with different institutions reporting different levels of association. This study examines the relationships between the admissions measures utilized at McMaster University (Hamilton, Canada), many of which were developed at McMaster University (i.e., MMI), and students' medical school performance, licensing examination success, and residency match outcomes.

Summary of Work: Retrospective data from five graduating cohorts (2014-2018) of McMaster medical students (N=1021) were analyzed using stepwise logical regression. Independent variables included identity and demographic information, undergraduate GPA, MCAT score, and MMI performance and Situational Judgement Test scores. Dependent Variables included OSCE and progress testing assessments, Medical Council of Canada Qualifying Examination Part 1 (MCCQE1) performance (pass/fail), and residency match success (yes/no) on the Canadian Resident Matching Services (CaRMS).

Summary of Results: Findings suggest that student gender and having graduate degree were significantly associated with passing the MCCQE1 ($\chi^2(9)=78.963, p<0.001$), and that MCAT performance, situational judgement test outcomes, and the discipline of undergraduate training were significant factors associated with residency match success ($\chi^2(10)=24.286, p<0.01$).

Discussion and Conclusions: The study highlights the validity evidence supporting the use of certain admissions variables at McMaster University. Notably, the MMI, a McMaster innovation, did not register any significant associations within this cohort.

Take-home Messages: The validity evidence for admissions procedures is inherently contextually dependent. These findings highlight how we must consider time and nature of application in addition to institution when contemplating the influence of context.

#SC4.5 - Short Communications - Education Management - Selection

#SC4.5.2 (6680)

Adding Teamwork and Interpersonal Communication Component in Medical School Entrance Exam

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ABSTRACT:

Background: Teamwork and interpersonal communication skills are important traits for medical practitioners. Multiple Mini Interviews (MMIs) are regarded as a reliable tool to assess applicants' non-cognitive traits in medical school entrance examination. However, traditional MMIs are not validated to assess applicants' ability of teamwork and interpersonal communication skills. This study was to evaluate the effects of adding a station to evaluate applicant's teamwork and interpersonal communication skills in addition to traditional MMIs in the entrance examination.

Summary of Work: The MMIs entrance exam consisted of 5 individual interview stations and 1 group test station. Each group had a total of 3 applicants who were given instructions to complete an assigned task within 30 minutes. The applicants were evaluated and scored according to their personal performance and group interactions. Assessors gave individual applicant a score by his or her performance in four domains in this station. A test analysis for reliability and validity was performed within one month after completion of the entrance examination.

Summary of Results: There were 102 applicants enrolled in this exam, 47 males and 55 females. The average of group test score was 16.4 ± 2.2 , total MMIs score 82.2 ± 9.5 , and the final entrance examination score of the exam was 87.9 ± 5.0 . Female applicants performed better than male in the group test station (16.8 vs. 15.9). The group test scores highly associated with the MMIs and final entrance examination scores ($r=0.87$ and 0.88 , $p<0.01$). The internal consistency was high (Cronbachs $\alpha=0.90$) for the whole MMI stations, but the value dropped to 0.88 when group test was removed.

Discussion and Conclusions: The group test station designed for evaluating applicants' teamwork and interpersonal communication skills showed good internal reliability. Most female applicants performed well in group test station by showing their good articulation fluency and attitude for cooperating with others. Both the applicants and examiners expressed high satisfaction about this station design. Although the group test station showed high concurrent criterion validity, the predictive validity should be examined after the accepted applicants start medical school.

Take-home Messages: Adding a group test station to evaluate teamwork and interpersonal communication can be a feasible and reliable method to be applied in medical school entrance exams.

#SC4.5 - Short Communications - Education Management - Selection

#SC4.5.3 (5146)

Towards greater equity, diversity and inclusion in medical and health sciences studies in Quebec, Canada : Evaluation of the “Accès médecine et santé” pipeline program of Université de Montréal

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ABSTRACT:

Background: Accès médecine et santé is a pipeline program that aims to demystify medical and health sciences studies for youth from multicultural and disadvantaged backgrounds. Activities are offered throughout the school year as well as over the summer. Our objective was to assess the program’s impact on participants’ perception of medical and health sciences studies.

Summary of Work: An online survey was sent to former participants of either regular activities during the school year (group 1) or immersion summer weeks (group 2) between 2014 and 2017 who had already completed their high school and college education. Sociodemographic information and data about perception of medical/health sciences studies were collected. Descriptive statistics were computed and frequency comparisons were made between pre/post answers for perceived barriers and enablers to university-level medical and health sciences studies using McNemar’s test.

Summary of Results: Participation rate was 31.6% (n=154). Participants’ ages ranged from 18 to 23 years (mean= 20.3 and median= 20) with 72.7% identifying as females. Overall, 51.9% of the participants were born outside of Canada, mostly in countries of the Maghreb (20.0%) and Sub-Saharan Africa (13.8%). More than half of the participants in both groups chose to pursue university medical or health sciences studies (58.9%). Participants reported that the program helped remove some of the barriers they perceived in undertaking medical and health sciences studies. Their fear of not being “good enough” to complete these studies decreased after their participation ($p < 0.001$). They also reported changes in their perception of these studies. After the program, they perceived them as being less competitive ($p = 0.013$), unbalanced ($p = 0.013$) and demanding ($p = 0.021$) than they did initially.

Discussion and Conclusions: Our pipeline program reaches a very diverse group of students. The various activities seem to have a positive impact on participants’ perception of some barriers related to health sciences and medical studies. Most of the respondents chose to pursue medical or health sciences studies.

Take-home Messages: Pipeline programs may help to encourage medical and health sciences studies, possibly by alleviating barriers, real or perceived, by future applicants.

#SC4.5 - Short Communications - Education Management - Selection

#SC4.5.4 (6032)

An Impossible Task? Insights from a novel MMI station

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ABSTRACT:

Background: Multi-station mini-interviews (MMIs) are increasingly popular in UK medical schools, as they objectively generate multiple impressions of a candidate (Pau et al, 2016). However, there are concerns that as MMIs have evolved into standard and predictable patterns, interviewees can 'learn' answers, via coaching or courses. A new UK medical school addressed this by introducing a MMI station specifically testing non-cognitive skills, in the context of a manual skills test. This test was deliberately extremely difficult, and aimed at assessing psychological parameters rather than skill demonstration. The aim of this study was to analyse candidate results on this station, and evaluate how these scores related to a more standard, question-based station and the overall interview score.

Summary of Work: Candidates undertook a manual task station as part of the MMI. They were informed this task was designed to be difficult, but advised to perform it to the best of their ability. They were marked according to the demonstration of non-cognitive skills, including perseverance, innovation and integrity, using a domain/descriptor framework. Forty-two candidates were observed for their demeanour and the presence of motor tells. Qualitative data was collected from interviewers.

Summary of Results: 287 candidates were assessed. Their mean score was 20.8 (range 4-25), the highest mean across all stations. There was a weakly positive correlation ($r=0.364$) between scores on this station and the overall interview score. There was negligible correlation with a more standard, values-based question used on another station ($r=0.171$), indicating the new station may test for very different qualities. Motor tells displayed by candidates included sighing, tutting and nervous laughter. Interviewer data highlighted potential difficulties with candidate differentiation.

Discussion and Conclusions: Non-cognitive skills testing is a difficult area within medical student selection as they can be difficult to assess in an artificial environment with limited time. Our data showed that candidates generally performed the best on this station, and there was a positive correlation between scores on this station and the overall interview score.

Take-home Messages: While it is impossible to test for all the non-cognitive skills and traits required in medicine, introducing stations assessing specific psychological abilities may help quantify non-cognitive skills and traits more organically.

#SC4.5 - Short Communications - Education Management - Selection

#SC4.5.5 (4447)

Social mobility vs Social accountability: A critical discourse analysis of widening access to higher education and medicine in the UK and Australia

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ABSTRACT:

Background: The ways in which different countries approach widening access (WA) to medical education are shaped by their unique social, political and economic circumstances. Yet many countries with historical links and similarities in their health and higher education systems look to each other's policies and processes in formulating their own strategies. To examine this, we analysed key policy documents from the UK and Australia to gain a critical understanding of the discourses of WA to medical school in these two contexts.

Summary of Work: A systematic search strategy was guided by five a priori themes based on targets within the United Nations Sustainability Goals (2015); access to higher education, access to professional careers, health workforce diversity, improved health outcomes, and reducing inequality. 17 documents (UK n=9, Australia n=8) published between 2008-2018, produced by UK and Australian government departments, regulatory agencies and national organisations were identified. Analysis involved two iterative stages, beginning with the application of a document analysis framework to the texts that laid the foundations for a Foucauldian approach to critical discourse analysis.

Summary of Results: In the UK, discourses of social mobility and individual responsibility within a meritocracy are arguably still paramount in a class-based society that values its position as a world leader in a globally-competitive knowledge based economy. By contrast, the Australian narrative is dominated by the discourse of social accountability in achieving equity and workforce diversity, prioritising affirmative action and community values in working towards 'nation building'.

Discussion and Conclusions: Moving away from a neoliberal framing of policy and practice towards notions of redistribution and recognition may be useful in reconceptualising WA to medical education. Using complexity theory to reframe WA to medicine as a wicked problem encourages a move towards more contextual and multi-faceted solutions, and future approaches should explicitly consider the historical disempowerment of marginalised groups.

Take-home Messages: Putting the perspectives of disadvantaged groups at the core of the design and development of policy related texts is key to achieving parity in access to medical education, and should perpetuate discourses that recognise the strengths that non-traditional applicants can bring to the profession.

#SC4.5 - Short Communications - Education Management - Selection

#SC4.5.6 (4452)

Fair medical school admissions – a discourse analysis of public writings about selection and lottery procedures

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ABSTRACT:

Background: Medical school admissions are subject to heated debates. Driven by public and political opinion the Netherlands moved away from an admissions lottery, to a seemingly fairer system of selection procedures. However, how people perceive this new situation has not been investigated. Therefore, we studied what stakeholders consider ‘fair’ in Dutch medical school admissions.

Summary of Work: We performed a discourse analysis (based on Willig’s six-stage approach) in which we selected ‘fairness’ as our discursive object. Data consisted of: a) published political documents; b) posts (mainly from applicants) on an online discussion forum; c) newspaper articles. As a second layer of analysis we categorized the discourses according to three types of organizational justice: a) fair selection outcomes (distributive justice-DJ-); b) fair processes (procedural justice-PJ); c) fair treatment of stakeholders (interactional justice-IJ).

Summary of Results: The following discourses claimed: ‘The admissions system is fair when... - ... procedures are the same for everyone’ (PJ). Responsibility for fairness lies with the selection committees and the government. - ... all applicants have equal opportunity to meet the criteria’ (DJ). Medical schools must ensure that everyone is able to participate, and preparation courses are considered doping. - ... those who work hard get admitted to medical study’ (DJ). Applicants are responsible for their selection outcomes. - ... those who are really motivated or considered to be the right person to become a doctor get admitted’ (DJ). Programs have a responsibility to “track down” the right applicants, and rejecting them is considered a “waste of talent”. - ... “the right student gets into the right place” (DJ), a vague and unjustified discourse mainly used by the Education Minister.

Discussion and Conclusions: Various discourses of fairness in admissions are in use within these forums, with tension between them. Although ideas of equality and equity are endorsed (PJ), the DJ discourses are dominant, especially those reinforcing meritocratic admissions (DJ). Solutions for inequality are sought in transparent admissions systems (IJ). Surprisingly, discrimination and bias were not part of the discourses.

Take-home Messages: The difficulty designing a system that satisfies all stakeholders is reflected in the tension between different discourses about fair admissions.

#SC4.5 - Short Communications - Education Management - Selection

#SC4.5.7 (4887)

Differential attainment at medical schools: where to start?

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ABSTRACT:

Background: Medical education should be fair, with success determined solely by ability. However, candidates from some groups (e.g. those who are older, ethnically non-white, or not native to the country of study) are less likely to succeed in medical education. Usually termed Differential Attainment (DA) these deficits should be reduced to develop a fairer, more representative medical education system. However, at a local level it is difficult to know where to begin to evaluate and address DA.

Summary of Work: We describe work across four Scottish medical schools. Using a mixture of quantitative and qualitative methods, we investigated how staff approached the problem of DA, who identified and reported on DA and why, how approaches to solving DA were organised and resources allocated, and how such processes can be used elsewhere.

Summary of Results: Until very recently, DA has not been systematically evaluated at the institutions. Most actions were ad-hoc and launched by individual staff members who discovered issues in passing. Small scale attempts to address DA were useful only when the scope of the problem led to a wider, coordinated response across many stakeholders. The student groups investigated for potential DA were often selected in a similarly ad-hoc fashion based on a visual inspection of results, whereas groups exhibiting much higher DA went unnoticed, leading to disparities in resource allocation and attention.

Discussion and Conclusions: An organised approach to DA is necessary to both investigate trends rigorously and to reduce gaps. The lack of specific policy guidance, combined with the difficulties of carrying out complex investigatory work, often left staff members creating ad-hoc action rather than drawing on previous evidence or building towards a unified approach. Staff routinely evaluate DA with a view to mitigating unfairness, but collaborative work involving trained educationalists is necessary to ensure progress. Importantly, despite the sensitivity of the subject matter, sharing information can yield useful ideas and improve policy.

Take-home Messages: Sharing information about DA widely (within and beyond institutions) is important to avoid small-scale ad-hoc solutions and to ensure best practice spreads throughout programmes.

#SC4.5 - Short Communications - Education Management - Selection

#SC4.5.8 (5302)

Pre-clinical Academic Outcomes of Medical Students selected by Multiple Mini-interviews

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ABSTRACT:

Background: Conventional medical students selection composes of general subjects [Biology, Physics, Chemistry (28%); Mathematics (14%); English-language (14%); Thai-language (7%); Social (7%)] and subject-specific [Intelligence test (10%); Aptitude test (10%); Medical ethics (10%)]. Students were ranked and selected according to high scores. The newly developed medical selection uses Biomedical Admission Testing (BMAT) and multiple mini-interviews (MMIs). This study evaluates pre-clinical academic outcomes of medical students selected by those 2 methods.

Summary of Work: A 6-year Medical Curriculum composes of Pre-clinical year (year 1 first semester of year 3). The second semester of year composes of Community Medicine, Pathology, and Introduction to Medicine. We compare Pre-clinical academic outcomes represented by semester grade (grade-point average, GPA) and average grade at the end of the academic year (GPAX) in group A (22 medical students selected by BMAT & MMIs and in group B (150 by conventional method).

Summary of Results: The median (interquartile range) of GPA in group A was significantly greater than in group B in the second semester of year 1, and in the first and second semesters of year 2 [3.60 (0.5) vs 3.32 (0.79), $p = 0.01$; 3.78 (0.56) vs 3.33 (0.76), $p = 0.04$; 3.89 (0.40) vs 3.75 (0.51), $p = 0.03$; respectively; but not significantly different in the first semester of year 1 [3.47 (0.37) vs 3.40 (0.5), $p = 0.44$] and in the first semester of year 3 [3.58 (0.75) vs 3.46 (0.64), $p = 0.3$]. All GPAX of pre-clinical year (year 1-3) in group A were significantly greater than in group B [3.57 (0.38) vs 3.32 (0.64), $p = 0.04$; 3.69 (0.42) vs 3.44 (0.56), $p = 0.03$; 3.67 (0.47) vs 3.47 (0.57), $p = 0.04$; respectively.

Discussion and Conclusions: Medical students from both tracks have the same pre-clinical academic outcomes in the first semester of year 1. However, after the first semester of year 1, medical students selected by BMAT and MMIs have pre-clinical academic outcomes significantly better than those selected by conventional track. Six years academic outcome along with other outcomes should be followed longitudinally.

Take-home Messages: Medical students selected by BMAT and MMIs has better pre-clinical academic outcomes.

#SC4.5 - Short Communications - Education Management - Selection

#SC4.5.9 (5565)

MMI predictive validity of cognitive and non-cognitive assessments during medical training.

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ABSTRACT:

Background: Multiple Mini Interview (MMI) are popular and used in many countries. The method shows moderate to high reliability of scores. However, few convincing validity results are available. The present study compares results from high and low MMI scorers at admission and their performance during medical training at the University of Montréal.

Summary of Work: Among the 2019 finishing students, two retrospective cohorts were assembled: 50 lowest/50 highest scores on MMI. Results obtained in courses and during in-training competencies assessment were collected. Performances were compared using T-test and ANOVA.

Summary of Results: More women are included in the higher MMI group (78% vs 55%; $p=0.01$). On cognitive measures; student in the higher group show better performance in Year 1 ($ES=0.44$; $p=0.03$) and on progress test ($ES=0.47$; $p=0.02$). On non-cognitive measures: students in the higher group show better performance in OSCE in global rating ($ES=0.57$; $p=0.01$) and in patient assessment ($ES=0.65$; $p=0.003$). Out of 11 clerkship rotation assessments, the higher group shows better performance in psychiatry ($ES=0.43$; $p=0.04$), palliative care ($ES=0.48$; $p=0.02$) and pediatrics ($ES=0.47$; $p=0.02$). On CanMEDS competencies, the higher group shows better performance on expertise ($ES=0.72$; $p=0.001$), professionalism ($ES=0.59$; $p=0.005$) and on communication ($ES=0.69$; $p=0.001$)

Discussion and Conclusions: This study supports the MMI predictive power on some non-cognitive performance during medical studies. Although, finer analysis reveal that many students in the lower group show comparable performances to those in the higher group. This study shows that MMI provides moderate prediction power of important competencies assessed during medical training.

Take-home Messages: Women have better MMI results; MMI have a predictive power for non-cognitive competencies (global rating in OSCE and patient assessment) Higher MMI candidates perform better in communication, expertise and professionalism.

#SC4.5 - Short Communications - Education Management - Selection

#SC4.5.10 (5791)

Implications of using an SJT in admissions for predicting future professionalism issues in training

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ABSTRACT:

Background: Admission committees face the challenge of predicting future problematic students. Traditional cognitive measures can predict academic success, however, traditional non-academic measures provide little differentiation between applicants or predict professionalism problems. To examine the potential incremental value in SJTs pre-interview The University of Saskatchewan piloted the use of an online Situational Judgement Test (SJT), CASPer, in over 30 residency training programs to broadly measure non-academic qualities pre-interview.

Summary of Work: This study examined the impact on professionalism issues, formal remediation incidents and associated financial comparison based on two cohorts based on different processes of screening for non-academic attributes pre-interview in Canadian specialty selection. This retrospective cohort study examined differences in resident performance prior to and after SJT implementation across specialty selection programs. Each cohort of trainees included 2 years of first-year residents (PGY1) who were followed for 18 months either with the use of CASPer in selection (2017 & 2018 n = 237) or the two years prior to the implementation of CASPer (2015 & 2014: n = 234). The outcome included professionalism incidents and remediation issues, and a cost-comparison associated with remediation. There were no other major changes to the admissions process during this time.

Summary of Results: In the non-SJT cohort, there were 12 professionalism concerns, 5 required formal intervention at the level of the university across all training programs. In the CASPer-assessed cohort, there were 3 professionalism concerns, with only 1 required formal intervention. In the control cohort, there were 7 trainees with low ratings in the non-medical knowledge roles, 5 were remediated. In the CASPer-assessed cohort, 3 trainees received low ratings on non-medical knowledge roles, 2 were remediated. The total cost savings associated with fewer remediations (not including faculty time) for the CASPer-assessed cohort was \$119,754.72 CAD.

Discussion and Conclusions: The results indicate both the potential for cost and time savings across specialty training programs with the inclusion of an SJT to the pre-interview screening of applicants. This information can be used to screen out or identify residents requiring additional support in non-medical expert areas of practice.

Take-home Messages: The results demonstrate the incremental value of including an SJT, CASPer, as an indicator of future professionalism in-program.

#SC4.5 - Short Communications - Education Management - Selection

#SC4.5.11 (6272)

Predicting students who struggle: a “wicked problem” for medical student selection

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ABSTRACT:

Background: Most literature regarding performance in medical students focuses on success; or is limited to first year performance, undergraduate students or mainly academic measures of selection. Most students who successfully complete medical education will go on to become competent medical practitioners, regardless of their academic rank at graduation. On the other hand, despite increasing competition and rigour in medical selection, a proportion of students will still struggle academically. Few studies have focused on identifying the factors that contribute to attrition.

Summary of Work: University of Wollongong (UOW) delivers a graduate entry MD program producing Australian doctors with a desire to practice medicine in rural areas. Thirteen student cohorts (n=916) were categorised into three groups based on performance in all course assessments. The “satisfactory group” successfully completed all summative assessments on first attempt. The “borderline” group failed at least one summative assessment but subsequently passed. The “impeded progress” group had failed then either repeated a full subject, left the program, or were excluded. Detailed demographic/selection data was analysed to determine group differences.

Summary of Results: The “impeded progress” group of students were more likely to be older (P=0.05), from a rural area (P=0.0025), have a science or humanities background (P=0.04) and have completed a postgraduate degree (P=0.03). They had slightly lower scores on all selection measures (GPA P<0.0001, GAMSAT P=0.001, portfolio P=0.05, interview P=0.0005). The group were more likely to be male, and interviewed elsewhere (not significant). The borderline students were similar to the satisfactory group with the only difference slightly lower mean GPA/GAMSAT scores (p=0.001).

Discussion and Conclusions: While there were statistically significant differences between student groups, the score variations on individual measures were small and students with lower scores in some areas still performed well. Clearly, students who struggle have a combination of factors that affect their ability to perform, including personal, social and environmental factors that we cannot measure at selection.

Take-home Messages: Even with programmatic and holistic selection models, accurately predicting students who struggle is a complex and challenging problem. Identifying characteristics that place students at risk instead allows schools to provide early intervention and adequate support to reduce attrition and improve overall performance.

#SC4.5 - Short Communications - Education Management - Selection

#SC4.5.12 (7136)

Experience of multiple mini-interviews for the resident selection: the interviewers perspective

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ABSTRACT:

Background: In addition to specific medical competencies of each residence, there are non-cognitive mainstreaming competences which are exposed in personal interviews. The multiple mini-interview (MMI) method was developed to improve the psychometric characteristics of traditional interviews. It is based on the objective structured clinical examination. It comprises several independent evaluating stations with interviewers, in a timed-circuit from which a total score is obtained for each applicant in relation to non-cognitive attributes through simulated problems situations that the applicant must solve.

Summary of Work: The selection of medical residents of the Instituto Universitario Hospital Italiano (IUHIBA) is carried out through a knowledge test and the assessment of personal characteristics through a face-to-face interview. Currently, 44/49 of the residences use the semi-structured traditional panel interview. 4/49 have adopted the MMI method. It is essential to know the perspective of the interviewers in the MMI to obtain information about their strengths and weaknesses.

Summary of Results: A non-anonymous electronic questionnaire was made of 6 questions. The response rate was 82% (41/50). 64% of the answers are from the teaching team and the remaining from other central teaching roles of the training program: directors, supervisors, chief of residents. The main strengths were: greater objectivity, multiple perspectives, possibility of evaluating different non-cognitive competences and less time demand. The main weaknesses were: lack of improvisation, little time to become acquainted with the applicant, lack of space for debate among the interviewers and difficulties to compare the differences among the candidates in certain stations. 73% would repeat this interview method. The main changes suggested were: more time per station, improvement and renewal of cases, and more training for the role of interviewers

Discussion and Conclusions: MMI is an innovative implementation for our institution. It is essential to obtain information from stakeholders and analyze the cost-effective balance to introduce improvements next year. Our current challenge is to verify whether the MMI methodology increased the predictive validity of the future performance of residents.

Take-home Messages: This method implies an important investment in terms of human, physical and economic resources for the university. Therefore, it is necessary to evaluate the scopes and benefits of the MMI methodology for admission to residency programs.

#SC4.5 - Short Communications - Education Management - Selection

#SC4.5.13 (7308)

Selection in context: the use of contextual criteria in UK medical school admissions

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ABSTRACT:

Background: Students from lower socio-economic backgrounds and those who attended state funded education are underrepresented in UK medical schools. There is evidence that grade requirements are the most significant barrier to those from the lowest socio-economic groups. Many UK universities have adopted 'contextual admissions' in which applicants that meet specified criteria are offered a reduced threshold for interview or reduced grade offers. This study seeks to describe how different medical schools define 'non-traditional' applicants and the criteria they use for eligibility for contextual admissions.

Summary of Work: This cross-sectional study collected data from the websites of all UK medical schools. Forty medical schools were identified (35 established, and 5 undergoing GMC approval), and their websites were reviewed in May 2019. All text relating to widening access, widening participation, or contextual admissions was extracted. A coding framework was generated based on the classification of criteria described by the Sutton Trust. Two researchers independently coded all criteria to the framework and met to discuss any discrepancies.

Summary of Results: We identified 40 medical schools in the UK, offering 74 courses. Of these 74, 39 were standard entry five-year (or 6 year including intercalated degree) courses, 16 were four year graduate entry courses, and 19 were six year courses with a preliminary or gateway year. Twenty-nine out of 39 standard entry courses explicitly referred to contextual admissions and the criteria used to inform these decisions on their websites. Of these, most (27/29) used a combination of at least two levels of criteria. We found that there was significant variability in the criteria used and how different schools defined eligibility for an individual criterion.

Discussion and Conclusions: These results demonstrate that most medical schools use a combination of criteria drawn from different levels for contextual admissions to their standard entry programmes, as is recommended by the Medical Schools Council (4). However, there are significant variations in the criteria, and the cut offs for these, that different medical schools use when making contextual offers. Furthermore, many schools do not describe the criteria they use, or how to determine eligibility.

Take-home Messages: Further clarity and transparency is required regarding the use of contextual criteria.

#SC4.5 - Short Communications - Education Management - Selection

#SC4.5.14 (3826)

Changing Perception: An Evaluation of the Leeds Medical Education Academy Summer School

AUTHOR(S):

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ABSTRACT:

Background: McLachlan (2005) suggests how WP (widening participation) initiatives should focus on outreach activities, with a lack of evaluation of the impact and effectiveness of WP activities. This research project will focus on the evaluation of the Leeds Medical Education Academy Summer School (LMEASS): a week-long outreach activity, which is created and delivered by medical students, doctors and admissions staff at the University of Leeds. The aim of the LMEASS is to shift the perception of medical school and raise the aspirations of WP students in applying to medical school. This study aims to assess how and the extent to which the LMEASS changes the perception and aspirations of students.

Summary of Work: 22 participants were recruited via email to take part in an online questionnaire. Questions consisted of a mixture of Likert scale and open-text questions. The frequency and mode were calculated in the Likert scale data and open-text responses were thematically analysed.

Summary of Results: The Likert scale data showed a positive perception of the LMEASS, with modal responses in either 'agree' or 'strongly agree' in the statements which asked whether a shift in perception and aspiration occurred. Three themes were identified: sense of community, perception of medical school, and the journey into university.

Discussion and Conclusions: The Likert scale data showed a change in the perception and aspirations of students, with the themes of the study demonstrating how this was/wasn't achieved. The significance of WP medical student volunteers was highlighted in shifting the perception and aspirations of students and providing insight into medical school with a WP perspective. Seeing a student of a low-socioeconomic background in medical school inspired and motivated the participants in applying to medical school, which suggests that WP interventions should reflect the focus of WP in selecting WP medical students to volunteer.

Take-home Messages: Higher Education institutions need to encourage and select WP volunteers to reflect the WP students in attendance, with further research needed to explore the motivations of WP medical students volunteering at WP outreach activities.

#SC5 - Short Communications: Learning from Failure

#SC5.1 (4330)

Safety trumps learning, but 'it depends': Factors influencing supervisors' decisions to allow trainees failure in clinical situations

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ABSTRACT:

Background: Clinical supervisors have acknowledged allowing trainees to fail for educational purposes. A definition of this phenomenon has been advanced: "While supervising a trainee's clinical performance, the supervisor detects an imminent trainee mistake, has the opportunity to intervene but deliberately chooses not to do so because the educational gain for the trainee is perceived to outweigh the potential consequences for the patient". (Klasen et al. *BMJ Q&S*, 2019). However, this preliminary definition is insufficient as it does not explain how supervisors decide whether to allow failure in a specific instance. A rich theoretical explanation of how supervisors judge the balance between patient safety and trainee benefit is necessary to understand this phenomenon.

Summary of Work: Constructivist grounded theory methodology informed the study. Data collection and analysis of the interviews were conducted iteratively. We interviewed 19 clinical supervisors from various specialties before we reached sampling sufficiency. By identifying themes through constant comparative analysis and exploring their interrelationships, we developed a model of supervisors' judgment process for deciding whether or not to allow failure.

Summary of Results: Supervisors allow trainee failure via a complex, but apparently judgmental process influenced by four main factors. Patient-factors were perceived by supervisors to be the dominant influence on whether they allowed failure; beyond a certain threshold, supervisors would not risk patient safety regardless of potential educational benefit. However, this threshold was fluid rather than static: it varied both between supervisors and between situations within supervisor. Three other factors interacted with patient factors: trainee-, supervisor-, and environmental factors.

Discussion and Conclusions: Patient safety serves as a trump card of sorts, but it is a fluid threshold. The complex interplay between the four factors likely influences this fluidity and requires further exploration if we are to inform faculty development in this domain.

Take-home Messages: To support appropriate decisions about allowing failure, this work brings us closer to a model of how, when, and why clinical supervisors might decide to use this powerful educational strategy in clinical training.

#SC5 - Short Communications: Learning from Failure

#SC5.2 (4249)

End of block review of ILOs, a novel way to improve student satisfaction and avoid feedback fatigue

AUTHOR(S):

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ABSTRACT:

Background: In the clinical years of medical education there is difficulty adequately covering Intended Learning Outcomes (ILOs), resulting in a discrepancy between ILOs and Actual Learning Outcomes (ALOs). This discrepancy causes student dissatisfaction and, possibly, poorer academic outcomes. In a 5 week surgical block at a large teaching hospital it became clear that this caused frustration amongst students; it also became clear some students had little awareness of ILOs whilst other students recognised this disconnect but didn't communicate it to staff.

Summary of Work: An intervention was designed to increase awareness of ILOs, identify gaps in ILO delivery and improve student 'ownership' of the curriculum. A conversation between staff and students was implemented late in each block where the students would address the ILOs and delete those which had been adequately covered. The remaining list could direct further student study and allow identification of gaps in curriculum delivery. End-of-block feedback was gathered which allowed assessment of student satisfaction.

Summary of Results: Sequential data on ILO coverage has allowed the block to be better organised on each repetition. Involvement of students in a manner which directed their subsequent study resulted in greater student satisfaction as demonstrated in their block satisfaction rates but also in their qualitative statements. As gaps in ILOs were covered other new gaps arose, however satisfaction rates increased despite this.

Discussion and Conclusions: This intervention improved student satisfaction and curriculum delivery. It showed students that course faculty recognised that gaps in the ALOs exist and removed the impression that problems were ignored, in turn improving students' faith in the curriculum. Students appreciated the direction it gave to studying. It also subverted feedback fatigue as it gave good course data whilst not feeling like feedback. Drawbacks of this intervention include that it is only deliverable to smaller groups; it can cause frustration if large curriculum areas are uncovered and it may distract from adequate study of the curriculum.

Take-home Messages: This simple intervention may increase student satisfaction, can give useful feedback and can improve student and staff communication. It is not widely applicable to large groups.

#SC5 - Short Communications: Learning from Failure

#SC5.3 (3744)

Medical health education curriculum reform and it's trials and tribulations

AUTHOR(S):

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ABSTRACT:

Background: Organisational change management within curriculum reform can be challenging; however, effective, and diverse communication strategies, empowerment and involvement of staff can positively impact change management. Drawing from our own experience within a large Australian medical school, the authors will drill down on the human factors that challenge communication and change management strategies, to share tips and pitfalls.

Summary of Work: A change sizing and readiness survey was used; the survey is based on the Awareness, Desire, Knowledge, Ability and Reinforcement (ADKAR) Model. The Survey participants were asked 17 multiple-choice questions and 3 open ended questions. For the multiple-choice questions, participants were given a Likert scale spectrum to choose from.

Summary of Results: This research highlights that the most important factors in achieving curriculum reform is clear communication and the involvement and empowerment of staff. There is no doubt that if we did not consult widely with our stakeholders, if we did not get them involved via the working parties and committees and if we did not let them have a say, make decisions and listen to their feedback, this curricular change would simply not be possible. The effort to initiate and sustain our new MD curriculum will be significant.

Discussion and Conclusions: This research shines a light inside insight our lessons learned; taking on board what worked well and why in our project and avoid the mistakes that we have made. This research will challenge the reader to consider, within the context of their own organisations, how stakeholders will be persuaded to buy into a new educational initiative or program in time for go-live, so that they are ready, willing and able to adapt to the new environment. Take Home Messages

Take-home Messages: The key factors in achieving curriculum change are: • Clear two-way communications with all relevant stakeholder • Early stakeholder involvement in the change project • Staff empowerment

#SC5 - Short Communications: Learning from Failure

#SC5.4 (4511)

Descriptors for unprofessional behaviours of medical students: a systematic review

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ABSTRACT:

Background: Medical educators who observe professionalism lapses in their students do not always denominate these lapses clearly in professionalism evaluations. Evaluating professionalism is difficult, partly because educators are afraid to be subjective, but also because a commonly adopted language to describe unprofessionalism does not exist. This study aimed to create a consistent terminology to describe unprofessional behaviours, by generating an overview of descriptors for unprofessional behaviour based on research evidence of real-life unprofessional behaviours of medical students.

Summary of Work: We conducted a systematic review based on PRISMA-guidelines. Data were extracted using a coding sheet based on the BEME-collaboration. The 'unit of analysis' was: descriptions of medical students' unprofessional behaviours as witnessed by stakeholders or admitted by students themselves. A constant comparative approach was used, meaning that the researchers brought their ideas together in a cyclic process of reading, writing, reflecting and revising.

Summary of Results: The search yielded 11,963 different studies, of which 46 met our inclusion criteria. We found 205 different descriptions of unprofessional behaviours, which were coded into 30 descriptors, and subsequently classified in four behavioural themes indicating a lack of Involvement, Integrity, Interaction, and Introspection.

Discussion and Conclusions: Involvement, integrity, interaction and introspection matter in medical school, as they do in physician life. By exhibiting these behaviours students can gain trust of faculty and peers, just as doctors gain trust of colleagues and patients. A crucial question is whether the behaviours found in students relate to future unprofessional behaviours as a physician. This has been shown for poor initiative, irresponsibility and diminished capacity for self-improvement, but it is not yet known whether the other behaviours found in this study also predict future performance as a physician. Explicitly denominating unprofessional behaviour serves two goals: [i] creating a culture in which unprofessional behaviour is acknowledged, [ii] targeting students who need extra guidance. Both are important to avoid unprofessional behaviour among future doctors.

Take-home Messages: The resulting framework, which we call The 4 I's, provides a common language to describe medical students' unprofessional behaviour and is proposed as a tool for educators to denominate students' unprofessional behaviours.

#SC5 - Short Communications: Learning from Failure

#SC5.5 (4852)

Exploring what may influence Patient Safety teaching and learning outside the formal curriculum in the early years– is it a safe environment to learn from failure?

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ABSTRACT:

Background: The medical education literature shows that the hidden and informal curricula of clinical attachments have an important impact on how medical students learn Patient Safety. However, an aspect that remains unclear is whether there are any influences which may impact on the teaching and learning of this subject in the ‘pre-clinical’ years. As Imperial College is currently undergoing a curriculum review process across all programmes, this offers the ideal opportunity to identify whether we can provide a safe environment in which our students learn patient safety concepts, such as learning from error, right from the beginning of their medical training.

Summary of Work: A qualitative method was chosen guided by a phenomenological approach, in an attempt to obtain a picture of the learning environment in the early years relating to patient safety concepts, using error-disclosure and whistleblowing as central foci. With the aim to go beyond what teaching was planned but see what participants perceived was delivered to students and what their experiences might be, seven tutors were interviewed and two student focus groups were held (n=6,7). Initially, the ways patient safety was currently taught in the early curriculum was explored and clinical vignettes were used to prompt discussion. Audio recordings were then transcribed, coded and categorised into five main themes: the current curriculum, truth-telling, professional identity, transition through medical school and the “other-than-formal curriculum”.

Summary of Results: Data demonstrated that students were already familiar with Patient safety concepts even from the beginning of training but comments were mixed suggesting that there is still much we can do to promote an environment where students feel able to share concerns and admit mistakes.

Discussion and Conclusions: Several recommendations are discussed which could easily be incorporated into the early curriculum including setting clear expectations for staff and students, having clear transparent reporting systems, incorporating patient safety concepts into early years assessment and adapting teaching to individual student learning needs.

Take-home Messages: Students do not just learn how to deal with error when they enter the clinical environment. We have much to teach them from the early curriculum and cannot forget this in how we plan our courses and in our behaviour as tutors.

#SC5 - Short Communications: Learning from Failure

#SC5.6 (5181)

Medical students' and faculty's perceptions of psychological safety in the core clerkship: The experience of Harvard Medical School and Universitas Indonesia

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ABSTRACT:

Background: Psychological safety describes people's perceptions of feeling safe to take interpersonal risks. The medical education literature encourages educators to foster a psychologically safe environment, but few studies explore what educational approaches create psychological safety in clinical clerkships. This study aimed to characterize psychological safety in clinical clerkships in two medical schools in different cultural contexts, Harvard Medical School (HMS) and Universitas Indonesia (UI).

Summary of Work: We carried out a mixed-methods study at HMS and UI. We distributed an online survey using Edmondson's psychological safety scale to measure students' psychological safety. We then conducted semi-structured interviews of students and faculty. We transcribed the interviews verbatim and analyzed them using qualitative content analysis.

Summary of Results: Survey results indicated that HMS and UI students' psychological safety did not differ significantly. Students and faculty in each school also shared a similar understanding of the construct of psychological safety. Students and faculty reported that students learn better in psychologically safe environments. Both students and faculty described that students feel psychologically safe in their clerkships when students feel their concerns are addressed, are able to act without fear, and are not preoccupied by having to portray themselves as competent. Differences between the two schools appeared in the factors participants described that influence students' psychological safety, including social, personal, and organizational factors.

Discussion and Conclusions: We described the construct of psychological safety in a medical school in the US and one in Indonesia and characterized factors that influence psychological safety in these contexts. Study participants at HMS and UI characterized the construct of psychological safety and its consequences similarly even though these schools are located in countries with different cultural values. We consider psychological safety and the factors that influence it through the lens of cultural context and Hofstede's Cultural Dimensions Theory.

Take-home Messages: Psychological safety is a construct that can be determined in medical schools in different cultural settings. Psychological safety may be influenced by cultural context and education leaders should consider these factors when formulating culturally appropriate interventions to foster psychological safety.

#SC5 - Short Communications: Learning from Failure

#SC5.7 (5514)

Failing Playfully: A Case Study from Veterinary Medicine

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ABSTRACT:

Background: Students studying in the medical field are often highly motivated and competitive, and find failure a challenge. Yet in their future careers, failures are unavoidable – hence it is increasingly recognised that developing interventions to help students build coping mechanisms is an important consideration for the veterinary and medical curriculum. The aim of this intervention was to provide a playful learning scenario where students could explore their abilities and limitations in dealing with the psychological impact of the experience of failure in a “safe” environment.

Summary of Work: We created a new interactive class where students engage with a highly fictionalised role-play scenario, facilitated by fourth year peers. This was delivered to 102, first year veterinary undergraduate students to allow them to explore ‘failure’ using playful learning. Through this the students were encouraged to cross boundaries, e.g. to behave unethically, selfishly and to explore the ramifications of these actions. They were told that the scenario was designed to ‘defeat’ them, and they were to ‘win’ by any means necessary. At the same time, the game was designed so that a ‘win’ condition was impossible. To encourage playfulness, the scenario was written as ‘zombie apocalypse’. At the end of the class a debrief was built in that included videos of practicing veterinary surgeons discussing their own failures as well as providing personal insights into their own strategies on dealing with failure.

Summary of Results: A qualitative & quantitative student-led survey evaluation highlighted that even in a playful scenario, some students experienced stress but generally all (91.7%) enjoyed the experience, and 84.5% felt that playful learning should be used in the veterinary curriculum.

Discussion and Conclusions: It is difficult to formally evaluate the effectiveness of this intervention on students’ long-term resilience to dealing with failure. However, observations and feedback suggest that this helps their development of key professional skills such as team work, communication, leadership, dealing with incomplete information, etc. suggesting that playful learning has a useful role to play in the veterinary curriculum.

Take-home Messages: Playful learning has a useful role to play in the veterinary curriculum.

#SC5 - Short Communications: Learning from Failure

#SC5.8 (6023)

Learning from medical students: how they overcame low academic performance

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ABSTRACT:

Background: Low academic performance of students is a distinctive characteristic during the initial years of a university career implying negative consequences for both students and institutions. The aim of this study was to identify factors that affected the performance of medical students at a private Medical School in Buenos Aires, Argentina, during the junior years of the career and what strategies they had implemented to improve their academic performance. An exploratory retrospective study was carried out.

Summary of Work: Ten students, from third to fifth year, who had poor academic performance at the beginning of their career and managed to improve were selected. In-depth interviews were conducted with these students in order to identify their strategies.

Summary of Results: All students were able to identify a key point of inflection that led them to make specific changes in their method of study, in aspects such as planning and organization. This point of academic inflection was accompanied by emotions of anguish and frustration. However, they recognized their determination for the career was intact. Faced with these critical situations, all students had both internal (personality, resilience, perseverance) and external (family, friends, sports) protective factors.

Discussion and Conclusions: Students who were able to overcome low academic performance at the onset of their career were clearly aware of the need to make changes in their strategies and showed the necessary perseverance to achieve their goals. In these situations, students were positively affected by personal and social factors. Having these protective factors may be determinant to sustain the study of their career as medical students. Institutions could provide assistance at this particular moment strengthening the role of the academic advisor or teachers so that the student recognizes this turning point. Being able to overcome this moment would be a key factor to successfully complete their studies.

Take-home Messages: The student's conscious role in recognizing that she or he must generate actions. This academic point of inflection is accompanied by anguish and frustration. So called bad students aren't so: Initial low academic performance does not necessarily imply that goals would not successfully be achieved.

#SC5 - Short Communications: Learning from Failure

#SC5.9 (6213)

A framework for analysing the antecedents of demanding teaching experiences on health professional educators in higher education

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ABSTRACT:

Background: Challenging interactions for health practitioners and adverse events experienced by students are well-described. In contrast, there is scant published research regarding the antecedents of demanding teaching-related experiences on health professional educators. To address this gap, we aimed to develop a conceptual framework for characterising demanding teaching experiences and their antecedents.

Summary of Work: Literature about mindset, stress, and coping has been used to construct a framework to guide data collection and analysis. Qualitative interview data will be collected from approximately 20 healthcare practitioners who teach students in health professional programmes in workplace contexts. First an inductive approach will be used to interpret the lived meaning of participants' demanding experiences as themes. Second, a deductive approach will be used to situate the themes in relation to currently available evidence and theory.

Summary of Results: The analytical framework we have constructed for this study will allow us to interpret relationships among ways in which participants situate their demanding teaching experiences within their conceptions of themselves as teachers and their professional identities. It will also allow us to become aware of the personal, social, and organisational factors that contribute to these experiences and interpret their costs and benefits.

Discussion and Conclusions: The proposed analytical framework enables a systemic interpretation of demanding teaching experiences. At a personal level, findings may be used to help individuals reflect on their teaching practice and consider how they might (re)frame, (re)appraise, and cope with demanding teaching experiences. At a social level, findings can be used to support the wellbeing and retention of teaching community members by creating professional development activities and resources. At an organisational level, implementing evidence-based recommendations may promote institutional cultures of acceptance, safety, and inclusivity.

Take-home Messages: Better understanding the personal, social, and organisational antecedents and impacts of demanding teaching events will enable us to normalise these experiences, sometimes interpreted as failures, and to make evidence-informed suggestions for systemic changes to support education within our institutions.

#SC5 - Short Communications: Learning from Failure

#SC5.10 (6532)

The UCL Amnesty experience

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ABSTRACT:

Background: 'Exam recall' is a recognised phenomenon where students record items after leaving the exam. At UCL medical school, sports clubs and societies have developed banks of these items. This posed two problems. First, students believed that members of these clubs had an unfair advantage in their summative assessments. Secondly, these banks posed a threat to the validity of our assessments.

Summary of Work: To address this, UCLMS introduced an Amnesty in which students could submit (anonymously if they wished) material related to assessments to a Cognito site. These submissions were then uploaded to a SharePoint site, which could be accessed by all students. We were aware that some material on the Amnesty site was in the summative assessments. We chose not to alter these assessments. Instead, we analysed the results to see if it had any effect on student performance.

Summary of Results: The Amnesty site has been open since December 08. We have received over 150 submissions; these include SBA questions, OSCE stations and tutorial notes. Initial analysis show <10% of our question banks have been submitted. We will analyse the results from the items included in the Amnesty that were also in the summative assessments for the last two years. Data to date has not shown any significant change in the performance, however the number of items is small. The students' perception of the Amnesty process has been very positive; there has been a significant increase in their perception of the fairness of our assessment process.

Discussion and Conclusions: By analysing data over more cohorts, we will increase the number of items included in the analysis, this will give a more reliable indication of the effect of publishing assessment items on performance. Addressing the students concerns about fairness has resulted in a more open dialogue with students about the assessment process.

Take-home Messages: The Amnesty process has shown us that a small proportion of our assessment material has been compromised. Initial data has not shown any change in the performance of these items. Whilst there is still work to do to achieve transparency in the assessment process, the Amnesty is proving to be a step in the right direction.

#SC5 - Short Communications: Learning from Failure

#SC5.11 (6649)

Bridging the gap: Learning patient safety skills in a team-based simulation

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ABSTRACT:

Background: Exploration of the national examinations impact in Indonesia revealed a gap in patient safety education which affected how new graduates perceived their roles in health care. The evaluation in UGM showed the lack of patient safety competence before entering clinical placement. Supervisors and users in healthcare centres raised concerns whether student doctors risking the safety of patient care. This project aimed to bridge the gap before students entering clinical setting.

Summary of Work: A module for patient safety training was developed, including the training for clinical skills instructors. Twenty-eight students participated; learning the skills in a team, in a simulated emergency unit, delivery room, and wards. Clinical cases were presented by simulated patients. The assessment was conducted using team-performance skills assessment, while the evaluation was conducted using a questionnaire and focus groups.

Summary of Results: Students scored good performance in the assessment; where they were able to recognise patient safety issues and perform first steps management. This project helped boosting their confidence and refining their skills, integrating reasoning and professionalism. Learning in a team was deemed as beneficial: sharing responsibilities, leadership, and communicate with another team (hand-off and patient reporting). Instructors observed the improvement of skills in patient safety and perceived that this could help students for better clinical phase learning.

Discussion and Conclusions: Team-based simulation has been known to be useful in improving the competence of health care professionals. For students entering clinical placement, this step is vital to equip them with comprehension and acquisition of patient safety competence. Facilitation by instructors was crucial, especially in case-discussion, providing in-time feedback, debriefing, formulating an action plan. This project needs more involvement from clinical departments and practising GPs. To evaluate how this project actually affects students performance in the clinical setting, a tracer study needs to be conducted in the near future.

Take-home Messages: This project offers an approach to bridge the gap in patient safety skills between preclinical and clinical phase. Team-based learning in various simulated settings provides a wide variety of patient safety issues, which can be tailored. Providing feedback and facilitating the cases need teaching skills, therefore it should be accompanied by a faculty development programme for instructors.

#SC5 - Short Communications: Learning from Failure

#SC5.12 (6826)

Learning from serious incidents: Changing the 'blame' culture

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ABSTRACT:

Background: Medical Errors can lead to patient harm. Reported errors can be analysed in serious incident (SI) reports to improve patient safety. Simulation may provide more interactive and practical learning that ensures patient safety and prevent future errors. Few share their experiences, missing valuable learning opportunities. Using simulation, we aim to focus on medical knowledge, system errors, improve transparency of SIs, and encourage an open culture of learning from these cases.

Summary of Work: We have developed a simulation scenario based on a SI of a surgical patient and formulated learning outcomes from the SI report. This will be delivered within our high-fidelity surgical simulation course for junior doctors. The scenario focuses on a critically unwell patient with bowel ischaemia. Debriefs will focus on medical knowledge, human factors and systematic failures. The facilitators will role model and share their experiences with medical errors and encourage participants to do so in a safe environment. We hope this approach may form the initial steps of creating an open culture. We have scheduled two sessions in March 2020 and further sessions later on. We have designed pre and post-simulation questionnaires with both quantitative and qualitative components and we will explore their perceptions on sharing medical errors and open discussions.

Summary of Results: We will present the data from these questionnaires with our own experiences of implementing this course in our presentation.

Discussion and Conclusions: Challenges within our systems may be identified during simulation and debrief discussions, generating methods to address these shortcomings. This is also an opportunity for governance teams to demonstrate active learning and improve patient safety. SI simulation can be developed with multiple scenarios in other specialities, incorporating multi-disciplinary teams to benefit the wider healthcare environment. We believe SI simulation will provide a powerful learning opportunity for the participants and encourage an open culture and improve clinical governance.

Take-home Messages: SI Simulation is an interactive learning technique to improve patient safety. It can provide training on human factors, root cause analysis and system errors, and promote an open and transparent environment.

#SC5 - Short Communications: Learning from Failure

#SC5.13 (6166)

“If you don’t mark me, how do I know how I’m going?” Fostering self-evaluation and honest feedback discussions in a programmatic assessment model.

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ABSTRACT:

Background: Deakin University’s Doctor of Medicine (MD) program implemented a programmatic approach to Workplace-based Assessments (WBA) in 2019. In this model, students are not provided with a numerical outcome for each of the component assessment tasks completed during their clinical placements. Instead, a panel arrives at a summative judgement based on the outcome of the accumulated assessment tasks performed at the end of the year. Whilst this model brings many strengths, in particular the capacity to gauge and recognise individual pathways of learning, students also need to understand how they are tracking throughout the year.

Summary of Work: The aim of this work was to introduce a system to support good feedback discussions at the point of completion of the WBA, and also the development of self-reflective and self-regulated learning as students transitioned through the MD course.

Summary of Results: Both assessors and students are encouraged and supported to value the feedback process through discussions and documentation of outcomes. Appropriate documentation is facilitated by WBA forms which structure the feedback across curriculum domains. Students are also expected to regularly undertake the Learning Needs Analysis (LNA) process, which was designed to be inclusive of all curriculum domains, adapted from the CanMEDS framework. The model adopted involves an initial self-assessment which is subsequently discussed with a staff member assigned to the student. This role has been maintained separately to all assessment processes, to encourage frank sharing and feedback exchanges. Students also meet with their Clinical School Director to review progress at the mid-year timepoint.

Discussion and Conclusions: This system allows identification of students needing assistance with study skills, or those experiencing personal issues which impacted on their studies at an early timepoint.

Take-home Messages: Programmatic assessment enables high-stakes decisions to be made on the basis of data progressively and systematically collected across an extended period. To support students through this process students must both capitalise on the rich feedback opportunities provided by the WBA program and develop critical self-regulated learning skills which hinge on evaluative judgement. A structured process has been implemented to achieve this.

#SC6.1 - Short Communications: Postgraduate - Assessment

#SC6.1.1 (3908)

Implementing an Early Safety Assessment in Australian General Practice training, using early Programmatic Assessment

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ABSTRACT:

Background: General practice trainees (registrars) often work in isolation when commencing in primary care. As part of a comprehensive Royal Australian College of General Practice funded research project to develop a workplace-based assessment (WBA) framework for use within Australian general practice (GP), the key concept emerged of assessing registrars early because of safety concerns. An early safety assessment (ESA) was subsequently developed to ensure that registrars were safe to practise in the workplace when commencing training with appropriate supervision.

Summary of Work: A pilot study was undertaken implementing an ESA, in the first twelve weeks of community practice, using programmatic techniques. Entrustable professional activity styled questions were developed using confidence scales in seven key safety areas, including high-risk presentations and paediatric patients, areas where trainees may lack experience. The 'safe seven' questions were asked at three key points by the supervisor and medical educator to develop an understanding of the progression and safety of the registrar. Formal reporting on professional, personal, practice and performance issues was undertaken on all trainees to establish baseline characteristics of the trainees, taking into account the early assessments and safe seven questions. Registrars who had low confidence scales or had clear gaps in their scores were identified and discussed at a programmatic assessment medical educator meeting.

Summary of Results: Key themes that emerged were that low confidence scores mapped with safety concerns, that the safety questions unmasked unconsciously incompetent trainees and that early intervention could be provided based on formal reporting early in training.

Discussion and Conclusions: The ESA provides feedback to the registrar, practice, supervisor and medical educator regarding clinical safety. Using programmatic techniques and collating data points early provided a more comprehensive understanding when deciding and then implementing a remediation plan or additional support.

Take-home Messages: Assessment of safety early in the training of a registrar is important in order to protect the patients, the practice and the registrar themselves. Programmatic assessment using multiple data points including sequential 'safe seven' assessments has been shown to highlight safety concerns and enable focussed intervention.

#SC6.1 - Short Communications: Postgraduate - Assessment

#SC6.1.2 (5479)

How Doctors-in-Training Experience Progression in Autonomy and Entrustment

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ABSTRACT:

Background: Despite the introduction of entrustment decisions, concerns abound that doctors-in-training are not afforded appropriate autonomy. Progressive autonomy is an important aspect of graduate medical education (GME), and entrustment decisions are meant to support that progression. Understanding how residents experience entrustment decisions and their impact on daily clinical practice would help illuminate how progressive autonomy could be optimally supported. This project explores how physicians-in-training experience the process of earning trust and progressive autonomy using Vygotsky's zone of proximal development (ZPD) as a sensitizing insight.

Summary of Work: Using a constructivist grounded theory approach, we conducted semi-structured interviews with doctors from various specialties and levels of training to solicit their accounts of influential experiences in their progressions in autonomy. Through constant comparison and iterative analysis, we identified key themes and their conceptual relationships.

Summary of Results: Our participants identified significant patient care episodes during their training that contributed to two key processes: (a) earning their supervisors' trust and (b) developing progressive autonomy. These episodes shared three features: (a) recognizing the boundary between their current unsupervised capabilities and a new level of autonomy, (b) mindfully negotiating progressions in autonomy with their clinical supervisors, and (c) overreaching their known capabilities, which may or not succeed. These judgments required understanding about what comprised reasonable overreaching for specific patient care situations, based on: • Recognition of clinical situations affording opportunities for overreaching just beyond their current level of capability • Commitment to a tentative plan that enables the overreach Several factors impeded residents' perceived progression in autonomy: (a) "hovering" by clinical supervisors, often interpreted as a lack of trust, (b) hedging (not committing to a plan), and (c) not understanding the rationale when supervisors modified their plans.

Discussion and Conclusions: Doctors-in-training actively manage their workplace learning related to earning trust and developing autonomy. They make judgments that lead to overreaching their current unsupervised capabilities. This overreaching extends just beyond the traditional ZPD, but must remain within limits of safe and appropriate care for patients.

Take-home Messages: Doctors-in-training are active participants in the entrustment process, which requires mindful negotiations with supervisors to take advantage of opportunities to overreach.

#SC6.1 - Short Communications: Postgraduate - Assessment

#SC6.1.3 (6607)

Comparison between shift-based milestones, mini-CEX, DOPS, and CbD among Anesthesiology residents: A pilot study

AUTHOR(S):

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ABSTRACT:

Background: Mini-Clinical Evaluation Exercise (mini-CEX), Direct Observation of Procedural Skills (DOPS), and Case-based Discussion (CbD) are widely-used workplace-based assessments (WPBAs) for clinical trainees. We attempt to compare those three methods to the shift-based milestones among residents in Anesthesiology.

Summary of Work: We reviewed all of our residents' clinical evaluation results, including shift-based milestones (per month), mini-CEX (per three-month), DOPS (per month), and CbD (per month). A total of 8 resident anesthesiologists with 327 assessments from Jan 2017 to June 2019 were analyzed. We initially used the spearman correlation to test the respective association between the year of training and WPBAs aforementioned. We conducted an independent t-test to investigate the discrepancy between the first and fourth quartile among these tools. We further performed a paired t-test to delve into the variability (deviation from the mean) among WPBAs.

Summary of Results: There was significantly positive correlation between the year of training and shift-based milestones (coefficient= 0.767; $p < 0.01$). The distinction of first and fourth quartile of shift-based milestones, mini-CEX, DOPS, and CbD were 4.1290, 0.8969, 1.1127, and 0.9208, respectively. Paired t-tests revealed significant difference between shift-based milestones and mini-CEX ($n = 16$, $t = 6.199$, $p < 0.01$), DOPS ($n = 93$, $t = 15.712$, $p < 0.01$) as well as CbD ($n = 45$, $t = 10.328$, $p < 0.01$).

Discussion and Conclusions: This pilot highlights the practical value of shift-based milestones among WPBAs for residents in Anesthesiology. Compared to the other tools, shift-based milestones tend to illustrate a resident's progression in specific knowledge, skills, and professionalism on their learning journey toward graduation. The reasons for the advantage of shift-based milestones are probably related to its timely and structured evaluations composed of six-core competencies and 256 sub-competencies. Nonetheless, each assessment has its pros and cons and we cannot undermine other WPBAs because they can aid the cultivation and completion of clinical competence. Limitations were that it occurred in a single institution with small sample size and we did not include Entrustable Professional Activities for the comparison.

Take-home Messages: In Anesthesiology, WPBAs using shift-based milestones may lead to a better illustration of trainee's learning curve of competence from a novice to an expert.

#SC6.1 - Short Communications: Postgraduate - Assessment

#SC6.1.4 (7255)

The medium and the message: The impact of electronic data to capture qualitative comments in a competency based assessment system

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ABSTRACT:

Background: In 2013-2014, our program transitioned away from paper to an electronic version of data collection for logging our workplace-based assessments (WBA). Although electronic assessment records can easily record, store, and analyze data in real time, local focus groups suggested that transitioning from paper to electronic may have been detrimental to certain faculty groups.

Summary of Work: We examined WBAs from 85 raters on 30 residents from October 2012 to June 2015. Paper-based comments were collected from October 2012-June 2013, electronic comments were from July 2013-June 2015 using an online e-portfolio system at McMaster University. Comments were examined for quality and word count. We used the QuAL evaluation tool to determine the quality of assessment comments. We conducted separate ANOVAs to compare word count by medium and faculty years in practice. We conducted a correlation analysis to determine if word count was related to scores on the QuAL score (Evidence, Suggestion, Connection).

Summary of Results: A total of 2,556 McMAP records entered our analysis, including paper-based (1,018) and electronic(1,538) formats. Word counts for the electronic comments ($M=15$) were significantly higher than the paper version ($M=11$, $F=18.2$, $p < 0.001$). There was a main effect of the medium on the transition from paper to electronic on the McMAP scores, paper ($M=6.02$ [95% CI 5.94-6.10]) vs. electronic ($M=6.11$ [6.06-6.17], $F = 13.3$, $p < 0.001$). Word count increased on average after the transition (from 11 to 15 words). Looking closely at faculty, there was a main effect of years out in practice ($F=7.6$, $p < 0.001$). We replicated a high level of agreement for QuAL4 score ($\kappa=0.95$). Longer comments were positively correlated to scores on Evidence ($r=0.63$, $p < 0.01$), moderately associated with scores on Suggestion ($r=0.43$, $p < 0.01$) and Connection ($r=0.58$, $p < 0.001$).

Discussion and Conclusions: Following a transition to electronic assessment data capture, faculty of all experience levels wrote more. There was no interaction effect between faculty years-of-experience on the word count of comments. Digitalization of WBAs can have a positive change in the length of comments, which may be moderately correlated to elements within the QuAL score that connote higher quality.

Take-home Messages: Educators should not fear that digitalization of WBA data will depreciate its quality or quantity.

#SC6.1 - Short Communications: Postgraduate - Assessment

#SC6.1.5 (4660)

Improving Narrative Feedback for Resident-led Academic Rounds: The Effects of Evaluation Form Design Changes

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ABSTRACT:

Background: Medical learners benefit from feedback that is timely, specific, and actionable, yet previous research has shown that feedback tends to be lacking in both quality and quantity. This research explores the effect of a formatting change (i.e., relocating the comment section from the bottom of a form to the top) on residents' oral presentation evaluation forms and, in particular, if this affects the quality and quantity of narrative feedback provided by evaluators.

Summary of Work: A feedback scoring system based on the theory of deliberate practice, was used to assess the quality of written feedback provided to residents on academic rounds evaluation forms before and after implementing a form design change. Other form variables including word count, presence of any comment and Likert numerical ratings were also assessed. Additionally, evaluators were surveyed to explore their subjective experience of this formatting change.

Summary of Results: When the comment section was placed at the top of the evaluation form there were significantly more comments present ($\chi^2(1) = 6.54, p=0.011$) as well as a significant increase in the specificity related to the deliberate practice component of task, or what was done well ($\chi^2(3) = 20.12, p<.0001$). The formatting change did not have a significant effect on evaluators' subjective experience, with the most commonly identified barriers to providing narrative feedback were time constraints and concern about potential harm to learners.

Discussion and Conclusions: Placing the narrative feedback section more prominently on evaluation forms may help to increase both the quality and quantity of feedback delivered to learners. Medical educators might improve the value of learner feedback by incorporating more deliberate practice components in their written feedback in a time-efficient manner.

Take-home Messages: Changes to the format of evaluation forms, specifically, providing space for narrative feedback at the top of a form, offer a feasible means of potentially increasing the quantity and quality of narrative feedback that medical learners' receive from their evaluators.

#SC6.1 - Short Communications: Postgraduate - Assessment

#SC6.1.6 (5008)

Unheard Voices – Nurses’ Perspectives on Providing Multisource Feedback of Resident Physicians

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ABSTRACT:

Background: Multisource Feedback (MSF) - an assessment method that includes feedback from non-physicians - is increasingly being incorporated into residency training programs to facilitate more holistic resident assessment. Registered nurses (RNs) are a key source for MSF as they often observe trainees during clinical encounters where supervisors are not present. This study investigated RN perspectives about providing MSF and explored the factors influencing their engagement in MSF of resident physicians.

Summary of Work: Informed by constructivist grounded theory and applying a workplace-based assessment lens as a sensitizing concept, we interviewed 11 emergency medicine and 5 internal medicine RNs from two tertiary care centers in Ottawa, Canada. Participants were interviewed about their experiences working with and observing residents in clinical practice. Interviews were coded and analyzed in an iterative fashion by a research team consisting of physicians, a social scientist and a nurse.

Summary of Results: RNs consistently felt they could provide feedback regarding a resident’s skills, behaviors and abilities, particularly those related to patient advocacy, communication, leadership and professionalism. Furthermore, RNs expressed wanting to contribute to resident training through MSF. However, they reported hesitancy in providing feedback because of fear of crossing professional boundaries and apprehensions that their feedback might not be perceived as credible by residents and supervisors.

Discussion and Conclusions: RN interactions with residents offer a unique opportunity for observation of resident performance. Feedback from nurses may serve as a robust means of assessing resident non-medical expert competencies. However, tensions around socio-professional boundaries remain a major barrier to implementation of RN driven MSF.

Take-home Messages: RNs can provide unique feedback about resident performance that can be valuable to residency programs. However, there remain barriers surrounding socio-professional boundaries that need to be overcome in order to obtain this feedback.

#SC6.1 - Short Communications: Postgraduate - Assessment

#SC6.1.7 (6038)

What Processes do Clinical Competency Committees use to Perform their Work? Identifying Opportunities for Faculty Development

AUTHOR(S):

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ABSTRACT:

Background: Clinical Competency Committees (CCCs) are decision-making groups entrusted with making formative and ultimately high-stakes judgements about trainee performance. Given the paucity of research around CCC decision making processes, the aim of this ethnographic study was to study how CCCs approach their work.

Summary of Work: This ethnographic study began in 2019. Residency programs were invited to participate through their program directors (PDs) using purposive sampling. Data collection included three sources: 1) an on-line demographic survey, 2) observation of CCC meetings, and 3) a post-observation audiotaped semi-structured interview. Data collection and analysis were conducted using an iterative approach. A review of the field notes and interview transcripts was performed to identify initial codes and themes. A subset of the data was then coded by 3 investigators to refine the coding structure and revise themes.

Summary of Results: Seventeen observations have been completed to date: 5 procedural programs (emergency medicine, general surgery and obstetrics/gynecology) and 12 non-procedural programs (internal medicine, family medicine and pediatrics). Initial data analysis yielded the following broad themes: 1) roles of the CCC beyond that of rater, including advising and remediating trainees and serving a quality improvement function for the program's assessment system, 2) varying methods of presenting trainees' data, 3) approach to the group's decision making process - including pre-meeting work and incorporating unique membership perspectives, 4) impact of PD and CCC chair leadership style on group dynamic, 5) varying levels of feedback provided from CCC to trainees, and 6) difficulty interpreting the milestones (criteria for trainee performance).

Discussion and Conclusions: CCCs serve multiple important functions in residency program assessment systems. Our preliminary findings add depth to our understanding of CCC group processes and provide examples of both effective practices and the challenges faced by CCCs. Results from this study will help to inform effective practices for CCCs and guide faculty development efforts.

Take-home Messages: Faculty development programs for CCCs should focus on the type and quality of assessment data needed, rater training, further identification of factors involved in the CCC's decision making processes, and the nuances of creating group feedback for trainee and programs.

#SC6.1 - Short Communications: Postgraduate - Assessment

#SC6.1.8 (6555)

SwisSETQ, a feedback instrument for clinical supervisors: updating SETQ for Switzerland

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ABSTRACT:

Background: To improve teaching quality in graduate medical education (GME) clinical supervisors should be provided with meaningful feedback. Various instruments for this purpose have been developed in the past, however their constructs were based on educational concepts from the last century. To account for recent and future developments in Swiss GME we aimed to design an up-to-date, web-based instrument generic for GME.

Summary of Work: Building on a well established and validated instrument (SETQsmart) we modified and expanded its items by adding recent GME concepts. The 'CanMEDS 2015' framework as well as the concept of Entrustable Professional Activities (EPA's) were incorporated into the existing structure. In particular, we integrated the general principles 'Interprofessionalism', 'Accountability for the Continuity of Care / Patient Centeredness', 'Patient Safety', 'Continuous Professional Development', and 'EPAs'. We ensured content validity by iterative discussion rounds between specialists in medical education and clinical supervisors. The reliability of the instrument was enhanced by two subsequent think-aloud rounds with future users (trainees of various stages). The items of the resulting instrument were mapped against the CanMEDS roles.

Summary of Results: For the SwisSETQ we arrived at a 35-item online tool with seven main topics: Learning climate, Professional attitude towards residents, Learner centeredness, Evaluation of residents' knowledge and skills, Feedback to residents, Professional practice management, Role modeling. Each single item is rated on 7-point Likert scale. All CanMEDS roles relevant to teaching in GME were found to be included into the instrument.

Discussion and Conclusions: SwisSETQ integrates important up-to-date concepts of medical education into a well-established instrument to provide feedback to clinical supervisors. The new instrument will be statistically validated in the field of clinical training (anaesthesia and surgery). It is thought to improve the further development of postgraduate medical education in Switzerland.

Take-home Messages: SwisSETQ is an upcoming tool to provide feedback to clinical supervisors in Switzerland.

#SC6.1 - Short Communications: Postgraduate - Assessment

#SC6.1.9 (6585)

Implementation of City-wide Faculty Development of Developers and Raters for Quality Assurance of End-of-Residency Clinical Skill Examinations

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ABSTRACT:

Background: Residency training for physicians became mandatory in China. Ideal formats for assessing residents in a feasible manner while maintaining the reliability of data and validity evidence of the results are under exploration. Challenges have emerged as large volume of examinees from multiple disciplines must participate in clinical skill examinations with a limited timeframe (2 weeks) for delivering the exams, while there is a shortage of well-trained and competent examination developers and raters.

Summary of Work: A 6-month step-wise, standardized faculty development approach based on the ADDIE model has been established that contains: 1) examination-developer training, 2) examination blueprinting, 3) clinical case development, 4) clinical case review and piloting, 5) clinical case revision, and 6) rater and SPs training. This has been carried out for 13 clinical disciplines of the residency programs in Shenzhen, China. Post-faculty training and post-examination surveys were sent to exam designers and raters to evaluate their opinions towards the assessment faculty development approach.

Summary of Results: 1. Eighty-seven examination developers and 288 raters were trained and surveyed among the 13 residency disciplines in Shenzhen, all the developers and 276 trained raters responded the survey; 2. 86 out of 87 (98.8%) developers found the training to be helpful to ensure and improve the quality of the examinations by improving clinical case and item development process. 3. The raters scored the overall quality of the exam 8.20 ± 1.03 (min=5.00, max=9.00, N=276); pros and cons of the examinations were also given by the raters.

Discussion and Conclusions: A 6-step standardized faculty development framework has been established and implemented within Shenzhen, China to prepare for large-scale clinical skills examination of residents; The majority of the clinical skills case developers and raters have identified that the important role of such faculty development to ensure the quality of clinical skill assessment, whilst further improvement and iterations can still be made to the approach.

Take-home Messages: No prior report on the approach to faculty development has been made regarding the training framework for quality assurance clinical skill assessment of residents in China. Such approach is transferrable to an even larger-scale. Existing models of faculty development training can adopt and localized to large scale applications.

#SC6.1 - Short Communications: Postgraduate - Assessment

#SC6.1.10 (6587)

An evaluation of formative assessments as a predictor of future Fellowship Exam Performance among general practice registrars

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ABSTRACT:

Background: General Practice (GP) training in Australia is culminated with a series of summative exams: AKT, KFP and OSCE offered biannually. For many GP trainees, these exams, especially the AKT and KFP exams, present large obstacles on the path to independent practice. Passmarks for each exam are determined using a modified Angoff method and are publicly reported. Our GP training program incorporates formative assessment, usage and performance data which has been analysed against the results of over 400 trainees.

Summary of Work: Using designed studies on assessment activities (results, compliance) as well as an AI-like approach to learning behaviour, we examined the predictive impact these factors had on exam performance. Selecting both fixed (age) and variable factors (assessment scores, completeness) we analysed the direct impact of each variable on exam outcomes. Additionally, we utilised our LMS dataset to examine adaptive learner behaviours and impacts on exam success.

Summary of Results: Scores from many formative assessments were not predictive in exam outcomes. These included resubmission numbers, EPA entrustment levels, direct observation assessments scores, multi source feedback assessment scores and activity completion alone. The predictive variables were found: age of candidates (negative correlation) as well scores on an MCQ and KFP style quizzes and learning goal quality. The examination of the LMS data set log revealed different patterns of engagement, whereby both time in the system and completion of the program activities alone were not predictive. The predictive variables included the sequencing of activities within the program and completion of specific activities.

Discussion and Conclusions: Our study shows that exam preparedness does not directly overlap with a trainee's ability to safely practice independently. Formative assessments are critical to bringing a trainee to competency, but this is not reflective in an ability to pass the summative exams. With the arrival of the Big Data age, leveraging these datasets will increase our ability to specifically target each learner with the guidance they need to be safe to practice independently.

Take-home Messages: Knowledge is predictive of knowledge-based exams. Leveraging Big Data insights in Medical Education is important in understanding and fine tuning progression to independence.

#SC6.2 - Short Communications: Postgraduate - General

#SC6.2.1 (5985)

Exploring the Impact of Electronic Health Records on Trainee Learning in Hospital-Based Academic Centres: A Scoping Review

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ABSTRACT:

Background: Electronic health record (EHR) use has increased in healthcare, with many citing benefits of improved efficiency and documentation. However, relatively less attention has been paid to the impact of EHRs on trainees. The purpose of this scoping review was to understand the impact of EHRs on trainee learning in hospital-based teaching centres.

Summary of Work: We searched MEDLINE, EMBASE, Cochrane, and Scopus from January 1st, 2000 to March 1st, 2019. Keywords representing EHRs and its variants were combined with terms including but not limited to; learning, teaching, trainee, and teaching hospitals. The inclusion criteria were peer-reviewed primary studies, written in the English language, relevant to the context of teaching hospitals, and a focus on EHR use and trainee learning. Studies were excluded if they examined how trainees learn to use EHRs. 1040 studies were retrieved, and 11 met the inclusion criteria.

Summary of Results: This review qualitatively synthesizes the existing knowledge surrounding the educational benefits and challenges of EHR use. Studies indicated that while trainees' use of EHRs were beneficial in improving general medical knowledge; it hindered their grasp on technical skills such as communicating with patients. Many of the challenges relate to EHR functionality and policies around trainee EHR use. These challenges can undermine trainee learning and their ability to meaningfully support patient care.

Discussion and Conclusions: There is a lack of research that explores the impact of EHRs on trainee learning. The literature that does exist is predominantly interview-based, with a lack of observational studies. Current studies hint at problems that are context-specific, rather than exploring the overarching impact of EHRs. Future research needs to focus on comparing EHRs to better understand their impact on trainees in hospital settings.

Take-home Messages: As we navigate a generation that will be using EHRs as a primary form of documentation, we must consider its impact on medical education. Further understanding of the affordances and constraints of different EHRs regarding learning is essential as we move forward to advocate for a particular system use in academic centres. Additional strategies and policies for effective teaching in conjunction with EHRs must be examined and developed.

#SC6.2 - Short Communications: Postgraduate - General

#SC6.2.2 (6211)

Grappling with uncertainty: a grounded theory from residents' perspective

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ABSTRACT:

Background: It is well known that medical uncertainty and its tolerance affect doctors' well-being and quality of medical practice profoundly. However, the theory of process during facing medical uncertainty and coping process in medical trainees has never been clearly established. Accordingly, the authors aimed to address the lived experiences of residents regarding medical uncertainty and its coping strategies from their own perspectives, and obtain substantial theory about the process of facing and coping of medical uncertainty.

Summary of Work: A constructive grounded theory method was used to collect and analyze the data. In-depth interviews were carried out with purposefully sampled trainees at two training hospitals in South Korea.

Summary of Results: 10 major categories and 137 sub-categories emerged. Each of the major categories were; (1) Medical uncertainty, (2) Facing uncertainty, (3) Context of the medical environment, (4) Experiencing hierarchical authority, (5) Self-awareness and regulations, (6) Communications and collaborations, (7) Coping positively to uncertainty, (8) Practicing defensive medicine, (9) Coping negatively to uncertainty, and (10) Growing as a professional. According to the theory emerged, in the context of medical environment of training hospital and position as trainees, residents encounter medical uncertainty and respond positively or negatively and practice defensive medicine in general. In result, eventually they grow as genuine professionals.

Discussion and Conclusions: In conclusion, young doctors face medical uncertainty in the context of surrounding medical environment. They grow as professionals through dealing with uncertainty positively or negatively and perform defensive medical practice routinely. Eventually, they become professionals in accordance with the levels of self-awareness, communications and collaborations and experiences of hierarchical authorities. From the hypotheses we have induced, further research is needed.

Take-home Messages: From the theory emerged, several insights could be given regarding medical education; reconsidering values of defensive medicine, improving flexibility of hierarchical authority in institution, and importance of teaching self-awareness and communications.

#SC6.2 - Short Communications: Postgraduate - General

#SC6.2.3 (5834)

Advocacy, collegiality, and hospitality: aspirations for online postgraduate clinical education

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ABSTRACT:

Background: Online learning has often been portrayed as easily scalable, yet the quality of online postgraduate programmes depends on social relationships and material conditions. In healthcare, postgraduate students often study part-time, alongside full-time jobs, with significant family and career responsibility, and are dispersed across geographical, cultural, and disciplinary settings. We explored teachers' efforts to develop online environments in relation to these considerations.

Summary of Work: We conducted a thematic analysis of semi-structured interviews with 15 teachers on 15 online postgraduate healthcare programmes, across three UK institutions. We asked about approaches, challenges, and necessary conditions to fostering curiosity, criticality and adaptive capacity in their students. Our aim was to theorise principles that underpinned the development of conducive online postgraduate learning environments.

Summary of Results: The experiences and approaches of teachers were organised into three themes: advocacy—because online education is still not well understood within institutions; collegiality—to foster a more equal educational relationship, as peers; and hospitality—to provide space for unexpected difference and diversity, and to support adjustment to online study. These themes frame the aspirations of participants to deliver meaningful online postgraduate clinical education to a diverse, international student group. Our themes highlight contextual and structural considerations, including home and work settings of students, and the policies, infrastructures, and support networks within which teachers work.

Discussion and Conclusions: The potential of online postgraduate clinical education is dependent on environments that support meaningful activity between students and teachers, and create space for both to think, expand their horizons, and develop ways of working and learning. At the same time, economic pressures, and associated policies and strategies of standardisation and transparency, act against efforts ideas to explore and to produce trusting relationships. Our participants' recognition of this drives them towards aspirations of advocacy, collegiality, and hospitality in an effort to maintain quality education.

Take-home Messages: Quality online education requires space to develop, explore, and adapt, not only for online students but also for their teachers. Aspirations of advocacy, collegiality and hospitality can help teachers protect students and the quality of online education.

#SC6.2 - Short Communications: Postgraduate - General

#SC6.2.4 (6070)

A Case Study examining what Internal Medicine Residents learn in the Ambulatory Care Setting

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ABSTRACT:

Background: Over the past decades, the care of patients with complex illness is increasingly moving from the inpatient to the outpatient setting resulting from innovations in medical technology and a larger world population with more chronic diseases. Consequently, it is critical for internal medicine (IM) trainees to be prepared to provide care for patients with chronic and complex illness in ambulatory care. The literature informs us what should be learned with little of what residents actually learn in ambulatory care. The lack of insight of what they are learning hampers the medical education community's ability to provide the appropriate learning environment. The aim of this study is to understand what IM residents learn in ambulatory care.

Summary of Work: We used an instrumental case study approach involving two purposefully selected, large IM residency programs in New York City. We conducted two focus groups with residents during their ambulatory care rotation, and two with preceptors who solely supervise in ambulatory care. Program directors overseeing both programs and faculty overseeing the ambulatory care curriculum also participated in focus groups. We used an iterative process to analyze the data and identify themes.

Summary of Results: Identified themes produced four domains in which residents learn: (1) patient care needs, (2) functioning of health systems, (3) personal traits as a physician, and (4) how they engage in optimal learning. Residents learn that providing ambulatory care necessitates balancing the inherent tensions between each of these domains. A frequent tension among these domains occurs in caring for socially complex patients in light of time constraints, limited resources, and lack of knowledge.

Discussion and Conclusions: Workplace-based learning is critical to residents training and would benefit from addressing these tensions. It is crucial for residents' learning to develop learning environments that deal with the tension between the ideal and realistic patient care given these tensions.

Take-home Messages: The results of this study provide a framework to understand what residents learn in the ambulatory care setting, which will enable improved design of their curriculum and learning environments to better prepare IM residents as healthcare providers for the 21st Century.

#SC6.2 - Short Communications: Postgraduate - General

#SC6.2.5 (6354)

Family Medicine supervisors' perceptions of the registrar-training programme at one South African university

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ABSTRACT:

Background: In January 2018, the Family Medicine department at the University of the Witwatersrand in South Africa replaced the seminar-based registrar-training programme in operation between 2015 and 2017 with an integrated programme. The new programme combined online resources on the university's learning management system (LMS) and monthly scenario-based sessions with the clinical training. The aim was to provide more scaffolding and better standardisation of the four-year training programme across six decentralised sites spread over two provinces. This paper reports on supervisors' perceptions of the new programme at the end of the first year of implementation.

Summary of Work: Five supervisors from three decentralised sites were purposively sampled for having taught on both training programmes. Semi-structured interviews conducted in November 2018 explored the supervisors' perceptions of the new programme and their suggestions to improve it. The interviews were audio-recorded, transcribed verbatim, and analysed thematically.

Summary of Results: Three themes were identified. The first, Integrated is better than non-integrated, highlighted the benefits of the online resources and the scenario-based sessions. The second theme, Supervisors need support too, related to the need to provide training and technical support for the teachers. The final theme, Room for improvement, focused on the supervisors suggestions for promoting more effective registrar usage of the online resources.

Discussion and Conclusions: The supervisors valued the implementation of a programme with better structure and online resources to scaffold registrars' training and promote the standardisation of the teaching across the different training sites. The scenario-based sessions provided opportunities for registrars to integrate and apply their knowledge. However, comprehensive training on the use of the LMS and ongoing technical support for supervisors and registrars are needed to realise the potential of the programme. The supervisors concerns around registrars' usage of the online resources and how to improve the usability of the online content could be informed by exploring registrars' experiences of the integrated programme.

Take-home Messages: 1. Teachers require training on how to use online platforms and ongoing technical and departmental support. 2. Online resources can promote standardisation of the teaching and learning across decentralised training sites. 3. Ongoing feedback is essential to improving training programmes.

#SC6.2 - Short Communications: Postgraduate - General

#SC6.2.6 (6465)

European Guideline Education on Cost-Conscious Care (CoCoCare): Results of the First Pilot Group

AUTHOR(S):

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ABSTRACT:

Background: Rising health expenditures continue to threaten the sustainability of healthcare systems worldwide. Nevertheless, health professionals' knowledge of cost-conscious practices remains limited. Clinical guidelines aim to guide the decision process, influencing the quality and cost-effectiveness of healthcare. Involving professionals in the guideline development process could increase their motivation to use guidelines.

Summary of Work: In 2018, European consortium initiated a collaboration – CoCoCare – with the aim of developing a guideline education program for residents across Europe. The aims of the training have been to teach residents how to develop and implement high-quality, evidence-based guidelines and to equip residents with the competences to work more cost-consciously. The training consists of three elements: online modules, one-day face-to-face workshop, and training-on-the-job assignments spread over a period of one year with the average workload of one day per week. The topics of the training include general introduction to clinical guidelines, evidence-based decision-making, patients' perspective in clinical guidelines, cost-conscious care, and guideline implementation. At the end of the training, the participants are encouraged to develop a guideline on the topic of choice.

Summary of Results: In 2019-2020, the first pilot group has participated in the CoCoCare training. Twenty-two neurology residents from fifteen European countries enrolled in the first pilot training, completed the online theory module and attended a one-day workshop at EAN congress in 2019. The first two course elements were rated with an average of 4.5 (on the scale of 1-5). Participants expressed the need for longer and more interactive training elements. 36% of the participants were actively involved the training-on-the-job assignments, which could be attributed to generally high dropout rates in free online courses.

Discussion and Conclusions: The CoCoCare guideline education program has been well-received by the participants of the first pilot course. Feedback collected during the first pilot will be used to optimize the program for the second pilot. Incorporating participants' feedback and attracting continuous support could facilitate the long-term sustainability of the program.

Take-home Messages: Guideline education could facilitate health professionals' knowledge of cost-conscious practices. Continuous financial support and expert involvement are crucial for ensuring the long-term sustainability of such programs.

#SC6.2 - Short Communications: Postgraduate - General

#SC6.2.7 (6999)

Do online synchronous learning methods directly compare to face to face learning? A comparison of trainee Advanced Paediatric Nurse Practitioners performance during a postgraduate MSc programme.

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ABSTRACT:

Background: Online learning is well established within medical education but there is limited evidence directly comparing online synchronous methods to face to face teaching. The MSc in Advanced Paediatric Clinical Practice facilitated by Kid's Health Matters through Liverpool John Moore's University uses a flipped classroom teaching method with scheduled clinical teaching sessions which are either accessed online or in person.

Summary of Work: We aimed to compare the exam performance of students who attended the clinical teaching sessions online and face to face. A retrospective cohort study was performed for year one of the Masters programme between 2016 and 2019. Each student was classified according to whether they attended the scheduled session face to face or via online synchronous methods for each week of the course. The percentage of sessions attended online was calculated and the students who were in the upper quartile range were classified as predominately online users with the rest as face to face users. A direct comparison was made between the exam results of the two groups.

Summary of Results: 77 students were included in the analysis over three years across three different Msc tracks. The median amount of content attended via an online synchronous method was 41% with an interquartile range of 21%-75% across all the year groups. The mean exam result for each person was calculated across all 4 exams and these medians of these results were compared between the two cohorts. A Mann Whitney U test was performed to look for statistical significance between the groups. Further comparisons were made between the cohorts for each individual module and tracks taken which also showed no significant difference between the cohorts. The median exam result was 69% (range 59-84%) and 68% (range 51-80%) for the online and face to face cohort respectively with no significant difference shown ($p=0.307$).

Discussion and Conclusions: Our results demonstrate that exam performance is not affected by how students access teaching when comparing synchronous online learning and face to face sessions. This helps alleviate any concerns that may arise about students on the same programme learning in different ways.

Take-home Messages: Synchronous online learning methods are comparable to face to face learning.

#SC6.2 - Short Communications: Postgraduate - General

#SC6.2.8 (7070)

Perfecting practice for rarely performed procedures: a simulation-based, multi-centre randomized trial

AUTHOR(S):

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ABSTRACT:

Background: Mastery learning, which deconstructs a complex task into sequential sub-steps combined with deliberate practice to achieve each step in sequence, represents an important method to enhance simulation-based procedural skills training. This study compared mastery learning using deliberate practice with self-guided practice on skill performance of a life-saving procedure, a bougie-assisted cricothyroidotomy (BAC).

Summary of Work: In this multi-centre, randomized study at five North American emergency medicine (EM) residency training programs, we assigned 176 EM postgraduate trainees to either mastery learning and deliberate practice (ML+DP) or self-guided practice for BAC. Three blinded airway experts independently evaluated BAC skill performance by video review before (pre-test), immediately after (post-test) and 6-12 months after (retention-test) each training session. The primary outcome was post-test skill performance using a 5-point global rating score (GRS) ranging from 5 to 35. A secondary outcome, defined a priori, was performance time to complete the BAC skill (chronometry). Timing and GRS scores were analyzed separately. We used a univariate analysis and repeated measures ANOVA.

Summary of Results: There was no difference between groups in their GRS or performance time. Overall, there was significant improvement in GRS performance from pre-test to post-test (23 to 27, $p < 0.0001$) and decreased performance time (85 to 53 seconds, $p < 0.0001$). There was no difference in the primary outcome, GRS score, between groups at the post-test ($p = 0.08$) or retention-test. The ML+DP group did perform the skill faster than the self-guided practice immediately after (51s vs 57s, $p = 0.05$) and at the retention-test (66s vs 76s, $p < 0.0001$).

Discussion and Conclusions: Mastery learning coupled with deliberate practice provides systematic and focused feedback during skill acquisition. However, it is resource intensive and its efficacy is not fully defined. In this study, MP+DP did not result in improved global performance however, it did result in faster performance times, a relevant finding for time-sensitive procedures. These results are important for educators who seek to optimize technical skills training in a competency-based model of medical education.

Take-home Messages: There was no difference in skill performance by postgraduate trainees who received either ML+DP or self-guided practice. Procedural performance time, however, was faster after ML+DP.

#SC6.2 - Short Communications: Postgraduate - General

#SC6.2.9 (6474)

The education of Traditional Chinese Medicine (TCM) in Taichung Veterans General Hospital.

AUTHOR(S):

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ABSTRACT:

Background: More and more patients seek for Traditional Chinese Medicine (TCM) treatment in Taiwan. As a medical center, high quality of medical education is one of our goals and missions.

Summary of Work: To strengthen the medical profession of TCM doctors, and to enable the TCM doctors to have the ability of holistic health care, the Ministry of Health and Welfare (MOHW) has launched a program for TCM post-graduate year training. The training program include Chinese Internal Medicine, Chinese Gynecology & Obstetrics, Chinese Pediatrics, Chinese Acupuncture, Chinese Traumatology, Chinese Medicine. In addition, we teach them about patient safety, holistic health care, shared decision making, and have interprofessional education. Close cooperation with western medicine department is one of our features, which is an advantage to promote integration of Chinese and Western Medicine. The teaching methods include revise medical record, lecture, skill practice, outpatient department teaching and bedside teaching. The residents also participate part of the teaching as a training to become a teacher. We assess the interns and residents' learning performance by Mini-Clinical Evaluation Exercise (Mini-CEX), Direct Observation of Procedural Skills (DOPS), Case-based Discussion (CbD), 360-degree evaluation, Objective Structured Clinical Examination (OSCE) and other evaluation tools.

Summary of Results: Every year, we hold an OSCE and assess the six core competencies for the interns and residents' as learning outcome. The OSCE's score for interns and residents were 81.22 and 83.16, respectively. The improvement of the six core competencies for interns and residents were 11.1%. In the past five years, the pass rate for the national Chinese medical license examination was 100%. Our department has been the Ministry of Health and Welfare (MOHW)-certified clinical training unit of Chinese Medicine.

Discussion and Conclusions: The education of TCM doctors is an important issue. We keep modifying the teaching method to become an excellent training unit of Chinese Medicine. The next step for TCM education in Taiwan might be simulation-based medical education and specialist training.

Take-home Messages: We teach and assess the interns and residents through various methods, and aim to train a doctor with the ability of holistic healthcare.

#SC6.2 - Short Communications: Postgraduate - General

#SC6.2.10 (4464)

What are the characteristics and attributes of junior doctors who leave training programs in the UK's National Health Service (NHS)? Why do these doctors leave?

AUTHOR(S):

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ABSTRACT:

Background: The UK's National-Health-Service(NHS) is experiencing a workforce crisis. In 2011, when surveys were first conducted, 71.3% of Year 2 junior-doctors progressed into higher training-posts. By 2016 this had dropped to 50.4% and the latest figures from 2018 show the rates had plummeted further to 37.7%. The statistics emphasize the sheer quantity of doctors who are leaving the workforce. What is missing is an understanding of the characteristics and attributes of doctors who leave their training posts and understanding of why they do so.

Summary of Work: To address these issues, we conducted a mixed-methods study of doctors who have left an NHS training program within the last 15 years. Our study population included UK-medical-school graduates who no longer receive a regular salary from the NHS. An online survey of over 300 doctors has ascertained the characteristics and attributes of these doctors. Using semi-structured interviews of 20 doctors, we have explored the reasons why these doctors leave.

Summary of Results: A multitude of themes have emerged, with factors such as loss of respect, lack of value and fragmented-teamwork predominating. Results suggests that there is a perception of almost complete loss of training of our doctors in favour of service provision leading to a demoralised workforce at breaking point. Pay, recruitment, and chaotic scheduling are frequent reasons doctors cite as catalysing their decisions to step away from UK training into more flexible, better paid, and more personalised approaches to their training overseas. Many spoke of their regret that they had felt forced to leave.

Discussion and Conclusions: These results, from the voices of those who have left, provide critical information for the healthcare system to identify interventions and strategies to enhance retentions. Surprisingly, exit interviews are scarcely held and our study is the first to provide this detailed data. If we can begin to understand who leaves, and why, we can begin to identify motivations, driving-forces, and perceived gaps in training-programs allowing us to develop targeted-interventions to enhance retention. The good news is that there is much that is amenable to change, and large sums of money may not be required to begin the fix.

Take-home Messages: *Workforce in Crisis *Retention strategies necessary

#SC6.2 - Short Communications: Postgraduate - General

#SC6.2.11 (4725)

Supervisors speak: What young doctors learn in transition from student to doctor

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ABSTRACT:

Background: The transition from student to doctor is not only a ceremonious occasion but also a challenging step for recently graduated doctors and their supervisors. The magnitude of this challenge is illustrated by the gap between programs directors' expectations and new residents' performance, specifically; research shows a mismatch between knowledge and experience acquired during medical school and what is needed to work effectively as a starting young doctor. In organizational psychology, 'what needs to be learned as newcomer in an organization' is called 'onboarding' or 'newcomer adjustment'. This falls within a larger process of organizational socialization. Daily supervisors observe this process in the hospital and that is why we ask them: what do recently graduated doctors learn in their role as doctor in the hospital as organization?

Summary of Work: Semi-structured interviews were conducted with 17 supervisors from different specialties and hospitals (academic, non-academic teaching) in the Netherlands. A thematic analysis approach was used to identify the learning content of newcomers.

Summary of Results: We identified six themes that characterized the learning of recently graduated doctors; "performance proficiency" entails the knowledge and skills needed to successfully perform specialty-specific tasks. Learning the "organization and logistics" deals with the practicalities of getting things done and is time-consuming. The third theme "behavior" is about how to behave in a specific department as doctor and how to behave as newcomer in the hierarchy. "Personal development" entails the personal and professional growth of the newcomer, which is illustrated by the person-specialty fit. A fifth theme, "people", captures collaboration with other health care workers, which requires knowledge of formal and informal relationships. Understanding each other in this collaboration, is covered by "language".

Discussion and Conclusions: Entry into a hospital as organization for doctors as newcomers is a critical time as they learn to adjust to their new environment. This learning process extends beyond medical content, and entails knowledge to work effectively and efficiently as a doctor in the organization.

Take-home Messages: While medical school equips doctors with knowledge and skills in the medical domain, working as part of a hospital organization requires different skills and knowledge; newcomers undergo an adjustment process before they can perform effectively and efficiently.

#SC6.2 - Short Communications: Postgraduate - General

#SC6.2.12 (5703)

Career paths in dentistry: the value of dental core training

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ABSTRACT:

Background: To work in NHS dentistry in the UK requires a five-year dentistry degree and one-year Foundation (Vocational) training. Some dentists then complete optional years of Dental Core Training (DCT). In terms of gaining experience and exploring options, one year of DCT may be undertaken for similar reasons to Foundation Year 3 for some junior doctors.

Summary of Work: With the aim of understanding career motivations and preferences of trainees pursuing DCT, we gathered data across England from 176 dentists following DCT in 2019, through focus groups or individual paper-based responses to questions. The majority (68.8%) were in DCT1.

Summary of Results: We identified three broad groupings based on dentists' primary motivation for pursuing DCT. The first group comprised individuals who knew they wanted to work in general dental practice but first wanted additional experience and training: "I just want a bit more training before going out to practice". A second group intended to pursue speciality training and DCT was an important step on that pathway: "I want to specialise and recognise DCT is fundamental to achieve competencies required". The third group included dentists less certain about their career path who viewed DCT as an opportunity to explore different options: "it helps you decide what you want to do". Group one and two therefore had relatively clear career directions. Those in group three entered DCT with more uncertainty and expected the experience to clarify preferences or rule out options. There was consensus that DCT is "useful for anybody" and geared to "multiple" career paths. When asked about longer term career intentions, many anticipated a future that would include a mix of jobs, perhaps working part-time in general dental practice and part-time in a specialist unit.

Discussion and Conclusions: We conclude that DCT appears to be advantageous both for those intending careers in general dental practice, those aiming for specialist practice as well as those uncertain of their future career trajectory. For some recently qualified dentists, undecided on their career, DCT1 may serve functions similar to "Foundation Year 3" for junior doctors.

Take-home Messages: DCT is currently flexible enough to accommodate different motives and evolving career trajectories.

#SC6.2 - Short Communications: Postgraduate - General

#SC6.2.13 (7065)

Ophthalmology training in Latin America: compliance with global accreditation standards

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ABSTRACT:

Background: Residency training in Latin America is of varied quality. This heterogeneity spans a wide spectrum from centers of excellent educational quality, including clinical, surgical and academic training, to centers where residents do not have academic or surgical training, and only see patients, with little or no supervision. The purpose of our study was to describe the compliance with accreditation standards in Latin America ophthalmology residency programs according to what is defined by the World Federation for Medical Education and adapted by the International Council of Ophthalmology, with the objective of analyzing the state of situation of the region in terms of strengths and weaknesses and, subsequently, seek opportunities for improvement and provide feasible recommendations to increase the quality of resident training.

Summary of Work: An electronic survey was sent by email to 258 residency programs in 18 out of 20 countries of the region, between February and March 2019. The 39 questions followed the ICOs self-evaluation, about program mission and outcomes, the educational program, assessment of trainees, trainees, trainers, educational resources, program evaluation, governance and administration, continuous renewal, and surgical program.

Summary of Results: 138 complete surveys representing 138 distinct training programs were obtained (53.49%). The most significant deficits found were: lack of protected time for study, research, and courses; underutilization of journal clubs, few published research papers; high proportion of lectures taught by residents; lack of rotations through Low Vision, Refractive Surgery, Histopathology, Infectious Diseases, Neurophthalmology, and Oncology; prevalence of service over education; lack of assessment of all aspects of professional competence; non-compliance with minimum numbers of recommended surgical procedures; lack of autonomy in the selection of residents and in making decisions about the budget allocated to programs; absence or underutilization of continuous improvement processes; poor formal training of instructors.

Discussion and Conclusions: This is the largest study that has been conducted to investigate the situation of ophthalmology residency programs in Latin America, and shows the strengths and weaknesses of resident training in the region.

Take-home Messages: The conscientious scrutiny and identification of problems can be carried out using the frame proposed by the WFME and the ICO to facilitate improvement of residency programs in an organized and progressive way.

#SC6.2 - Short Communications: Postgraduate - General

#SC6.2.14 (7196)

Postgraduate specialization time duration in Europe

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ABSTRACT:

Background: Duration of specialized postgraduate training in Europe has been regulated since 2005 by the directive 2005/36/EC of the European Parliament and of the Council which aims to standardise duration of both medical studies and postgraduate training programmes in the EU/EEA area. The final aim is to facilitate movement of doctors across Europe through mutual recognition of qualifications.

Summary of Work: Member countries of the European Junior Doctors Association (EJD), were surveyed in Autumn 2019 regarding the duration of the different postgraduate training programmes among different medical specialties in their country.

Summary of Results: All 22 EJD member countries responded to the survey. Only specialties with a minimum duration set on the directive were analyzed. Most of the member countries have postgraduate training programmes which fulfil the minimum duration requirement stated in the EU directive. There were a few member countries who, at the time being, do not fulfil the requirement for minimum duration for a few PGT programmes. In specialties such as Anaesthetics, Endocrinology, General Haematology, Otorhinolaryngology and Tropical Medicine the effective average duration was at least 2 years more than the minimum duration by the directive. In specialties such as Cardiology, Gastroenterology, Paediatrics and 16 other specialties the effective average duration was at least 1 year more than the minimum duration in the directive.

Discussion and Conclusions: PGT programmes amongst European countries vary in the maximum duration of training across different specialties. Despite duration not being the sole factor into account when comparing training programs, this is the only standard widely available at the moment in EU/EEA. Considering that, in many cases, the average duration is considerably above the minimum duration a review of this directive is needed in order to ensure harmonisation and effective implementation of mutual recognition of qualifications.

Take-home Messages: To ensure true free movement of doctors in Europe, by assuring similarly qualified doctors, the variations of duration in postgraduate programmes should be harmonized through a review of the directive.

#SC6.2 - Short Communications: Postgraduate - General

#SC6.2.15 (6866)

Evaluation of the new CanERA accreditation systematic implementation model

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ABSTRACT:

Background: The Canadian residency education accreditation system evolved into a system with many manual procedures and process-oriented standards. Three Canadian accrediting colleges came together, forming CanRAC, to develop a new conjoint residency accreditation system aligned with the principles of competency-based medical education (CBME), comprising 10 components. However, given the high-stakes nature of accreditation, there was a desire to test any new innovations before they were fully deployed.

Summary of Work: CanRAC developed a three-stage prototype model of implementation; each prototype collected and implemented feedback from various accreditation stakeholders to improve upon previous phases and gradually increase impact on and effort required by all. Quantitative baseline forms and qualitative survey forms were distributed directly to surveyors, postgraduate office, program directors and administrators. Prototype 1 evaluation focused on the content and evidence of the draft standards; Prototype 2 expanded to the surveyor experience of CanAMS, evidence for standards, decision support, and a needs assessment for onsite accreditation reviews; Prototype 3 consisted of full testing by the schools, programs, and surveyor teams. Prototype evaluation focused on: content and evidence of the standards; decision-making; the onsite accreditation review process; training; and the new digital platform, CanAMS.

Summary of Results: Over 100 accreditation stakeholders completed evaluation surveys throughout the prototypes. Results informed CanERA process and content development, such as: a) development of required evidence to meet standards; b) new features for the onsite review model (e.g., interviews with program administrators, schedule flexibility and option for second meeting with program director); c) improvements to the user experience, work flow, and efficiencies in the CanAMS (e.g., integration of specialty specific standards, improved table formatting, offline capability); and, d) enhancements to the stakeholder training methodology.

Discussion and Conclusions: Prototype evaluation provided invaluable lessons learned for informing improvements and developments needed for iterative implementation. CanERA has been shaped directly by stakeholders involved in the accreditation process and is a system based on continuous improvement. Others who are implementing accreditation systems should consider using a similar implementation evaluation model.

Take-home Messages: The CanRAC prototype model of rapid improvement cycles and increasing impact on stakeholders provides a successful, pragmatic change management model for health professions education and accreditation reform worldwide.

#SC6.2 - Short Communications: Postgraduate - General

#SC6.2.16 (5169)

The implications of work-hour limitations and Labor Standards Law in post-graduate residency experience in Taiwan

AUTHOR(S):

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ABSTRACT:

Background: The Accreditation Council for Graduate Medical Education (ACGME) work-hour limitations (WHLs) were implemented in July 2003, to avoid high levels of fatigue, burnout, and psychological distress in residents. Many expect WHLs to improve residents' well-being, the effects on resident education and patient care.

Summary of Work: Since September 1, 2019, post-graduate residents in Taiwan have begun to apply the relevant provisions of the Labor Standards Law, including the average weekly WHLs must not exceed 80 hours. We conducted a questionnaire survey three months after the implementation to understand whether the residents themselves understand the regulations, implementation status, and the related satisfaction levels.

Summary of Results: 21 residents (post-graduate year 1 to 5) who received internal medicine training in Shin Kong Memorial Wu Ho-Su Hospital at Taiwan (SKH) took the questionnaire. All the residents understand the laws and regulations. The more junior residents tend to fail to meet WHLs (5 of 10), while senior residents can almost meet the WHLs (9 of 11). Most of the reasons why the junior residents fail WHLs are to stay in the hospital to handle written (6 of 10) or clinical work (1 of 10). Most of residents believe the WHLs has neutral (13 of 21) or positive (8 of 21) impact on medical profession and life. The average satisfaction score was 7.3 and 8.0 for junior and senior residents, respectively, which is consistent with the overall questionnaire response. But the lowest score appears in the most senior residents group, probably because they need help to cover the work of junior residents.

Discussion and Conclusions: Our findings suggest that WHLs in Taiwan have had a positive effect on internal medicine residents. However, the returns of junior residents are worrying. The hospital may strengthen the guidance of the written and clinical work to help these junior residents to complete their due tasks in time. SKH internal medicine training program should also pay more attention to the support system among residents, so as to avoid too many responsibilities being taken by too few people.

Take-home Messages: More care needed for junior residents to complete WHLs. Find out the WHLs conditions in other training programs in SKH.

#SC6.2 - Short Communications: Postgraduate - General

#SC6.2.17 (4707)

The new cultural norm: reasons why UK foundation doctors are choosing not to go straight into speciality training

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ABSTRACT:

Background: In 2018 only 37.7% of UK foundation doctors went directly into speciality training with the number steadily declining since 2011. Until recently there has been little research to explore this development and we therefore set out to explore these reasons in detail. Much of the current research focuses on where FY2 doctors are going and not why they are choosing not to enter speciality training.

Summary of Work: We undertook semi-structured interviews with 16 foundation year two doctors, who had not applied to speciality training, from two regional foundation schools. Transcripts were thematically analysed.

Summary of Results: The reasons that foundation doctors are choosing not to go straight into speciality training centre around the themes of feeling undervalued, career uncertainty and a new cultural norm. They report major feelings of uncertainty regarding career choice at such an early stage of their profession and this challenge was magnified by a perceived lack of flexibility of training and the growing normality of taking time out from training. Trainees feel a lack of support in planning and undertaking an “FY3” year and being helped back into the workforce. Trainees overwhelmingly reported that they feel undervalued by their employers. Importantly, however, not going into training directly was not always a reflection of dissatisfaction with training. Many trainees spoke very positively about their planned activities and often saw a break in training as an excellent way to recharge, develop skills and prepare for the rest of their careers in medicine.

Discussion and Conclusions: Taking a year or more out of training after foundation years has become the new cultural norm for UK junior doctors and reasons for this include feeling undervalued, career uncertainty and the perception that this is now “normal”. Exploring these factors with participants has generated a number of recommendations related to improving the workplace environment, allowing more flexibility in training and supporting those who chose to take an FY3.

Take-home Messages: We consider it is vital that NHS managers, medical professionals and educators are aware of and understand these reasons in order to improve training for junior doctors and ensure a workforce for the future.

#SC6.2 - Short Communications: Postgraduate - General

#SC6.2.18 (5090)

Compassion: finding the right middle. Development of a compassion training for Dutch residents

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ABSTRACT:

Background: Previous studies showed that compassion is crucial for the quality of healthcare. Compassion can be seen as a virtue: a moral quality of physicians which is developed through experience in practice. Despite the positive effects of compassion on both patients and physicians, being compassionate can be challenging for physicians. Furthermore, it is not always clear what the right mean of being compassionate is. Therefore, we developed a training to both reflect upon and foster compassion in residents.

Summary of Work: A literature review was conducted to get an overview of theoretical constructs of compassion and interventions fostering compassion. This was followed by semi-structured interviews with patients (n=12) and residents (n=12) about their views and experiences concerning compassion and the need for support by means of a training. Interviews were analyzed using template analysis, to identify predefined themes by using a coding template. Next, in a co-creation session with residents, patients and other stakeholders, the framework of the training was established by discussing learning objectives, topics and learning activities of the training.

Summary of Results: A practice-based training was developed consisting of two small, interactive group meetings of 4 hours. Four elements of the training were identified: 1) knowledge about compassion, e.g. the effect of compassion on the quality of healthcare, 2) insight into own emotions, beliefs and resistance concerning compassion, 3) recognizing the patients' need regarding compassion, and 4) exercising skills to find the right middle of compassion. These topics are incorporated into various learning activities, such as groups discussions and reflective exercises.

Discussion and Conclusions: The compassion training aims to support residents in reflecting on being compassionate in the right way. Various exercises have been developed to support residents in acquiring relevant competencies with regard to the role of compassion in their work. The training will be piloted early 2020.

Take-home Messages: Residents and patients identify compassion as an essential aspect of being a good physician. Residents often experience challenges in being compassionate, which leads to patients perceiving a lack of compassion. Training residents in being compassionate might support the quality of care.

#SC6.2 - Short Communications: Postgraduate - General

#SC6.2.19 (5149)

Does initial postgraduate career intention and social demographics predict perceived career behaviour? A national cross-sectional survey of UK postgraduate doctors

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ABSTRACT:

Background: Research indicates that initial career intentions and personal characteristics (e.g. gender) can influence medical-career decision-making. However, little is known about how personal characteristics and intention interact with career decision making. To address this gap, we examined the link between career intention at the start of the 2-year UK Foundation Programme (FP) and career intentions upon its completion.

Summary of Work: Data came from the 2017 UK National Career Destination Survey, a cross-sectional study completed by all second year Foundation doctors. We included respondents' demographics (gender, graduate status on entry to medical school, career intention on starting the FP) as independent variables and used career intention as an outcome measure (e.g. Specialty [residency] Training (UK), NHS Non-training Posts/Further Study, Career Break, Working Abroad). Multinomial regression was used to assess the independent relationship between respondents' background characteristics and career intention.

Summary of Results: There were 6890 participants and 5570 usable responses. 55.9% of respondents were female and 43.1% were male, 77.1% were non-graduates and 22.9% were graduate entrants to medical school. Approximately two-thirds (62.3%, n=2170) of doctors who had an original intention to pursue specialty training after F2, still intended to do so on completion. Most of those who stated at the start of F2 that they did not want to pursue specialty indicated at the end of F2 they would be undertaking other employment opportunities outwith formal training. However, 37.7% of respondents who originally intended to pursue specialty training on FP completion did something different. Graduate entrants to medicine were more likely to immediately progress into specialty training compared with their peers who did medicine as a primary first degree.

Discussion and Conclusions: Original intention is a strong predictor of career behaviour. However, a considerable proportion of doctors changed their mind about their career in the two years post-graduation, and most in the direction of taking time out of formal training. These findings provide some insight for policy makers and those in charge of postgraduate training to better structure medical career posts.

Take-home Messages: Medical education is a huge investment for countries and individuals so it is crucial to understand factors which might predict doctors' future career behaviours.

#SC6.3 - Short Communications: Postgraduate - Junior Doctor as Teacher / Burnout

#SC6.3.1 (4563)

Supporting Junior clinical teachers: how do they know what to teach and what do they need?

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ABSTRACT:

Background: Medical students learn in work-place environments, facilitated by clinical staff. The frequency and type of teaching undertaken by junior clinical staff is unclear. This study aims to explore the frequency and nature of teaching offered by junior doctors, how they know what to teach, what support they receive and what support they would like.

Summary of Work: A survey was distributed to resident medical officers (RMOs) working in hospitals with medical students. The RMOs were asked their involvement in teaching, to describe how they knew what and how to teach; support they received and would like to receive. The free text comments were coded into themes.

Summary of Results: The most frequent type of teaching by RMOs was practical skills, with many involved in one-one theory and few giving lectures and formal small groups sessions. RMO seniority influenced the type and amount of teaching. The most dominant themes of what to teach was based on experience, patient availability and student stated desires. How they taught was mainly informed by previous exposure as a learner. Many junior staff reported receiving no support in their teaching, although some recognised support from senior clinical staff. Themes for support requested included more time to teach, a better appreciation of what to teach, encouragement from seniors and strategies to enhance teaching skills. A minority felt that support was not required.

Discussion and Conclusions: The themes identified in respect to what to teach were mainly pragmatic and could be recognised/built upon to support a mandate for RMO teaching. The dominant theme of imitation in respect to how to teach has benefits and limitations with a potential onus to help RMOs develop a framework to encourage insight to identify and build upon good learning experiences. Some of the themes of support identified are system issues, e.g. time and others about tangible provision of resources. Health services and Universities need to work together to ensure appropriate teaching support.

Take-home Messages: • Many junior clinical staff feel unsupported in their role as a teacher • Health services and Universities should work together to ensure support for RMO teachers

#SC6.3 - Short Communications: Postgraduate - Junior Doctor as Teacher / Burnout

#SC6.3.2 (5690)

“You’re Hired!” Supporting Foundation Doctors’ Wellbeing and Resilience Through Foundation Leadership and Management (FLM) - England’s First Clinical Leadership Apprenticeship

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ABSTRACT:

Background: Medical leadership and management (MLM) is core in clinical practice yet training, specifically supporting medical student to foundation year 1 (FY1) doctor transition, is lacking. Over 25% of FY1s exhibit pathological anxiety, have the highest GMC trainee burnout levels, and clinician wellbeing and burnout is a national concern. The government apprenticeship scheme provides English trusts ring fenced funds for vocational, nationally benchmarked MLM training, and is approximately 80% underspent.

Summary of Work: In a partnership between the authors, South Tees Hospitals Trust, and an apprenticeship training provider, FLM was launched in 2017. FLM consists of 12 FY1 specific, MLM-themed modules including: self-awareness; leadership styles; and negotiation and conflict. FLM, mapped to the FY1 curriculum, leads to a national qualification. All FY1s receive centralised module workshops; those that voluntarily enrol on the apprenticeship additionally meet monthly with a leadership coach to discuss workplace situations, applying new MLM knowledge and skills, and gain feedback. Coaches offer holistic and pastoral support. Participants’ monthly Brief Resilience Score (BRS) is surveyed with qualitative details, including what is most impacting on their resilience, and FY1s can request additional support.

Summary of Results: 2017 starters reported significant increases in 12 leadership domains. Using 2018 starters’ baseline BRS, and compared to 5-7 months after, BRS increased in 70% of FY1s enrolled in FLM (n=17) whilst decreased in 70% of non-enrolled (n=18). For 2019 starters’ (enrolled, non-enrolled and a FY1 control group from non-FLM operating trusts) baseline BRS from August 2019 showed resilience levels (n=119): low in 39%; normal in 57%; high in 5%. In December 2019 (n=86); low in 49%; normal in 50%; high in 1%. Most common reasons selected for impact December BRS were: ‘just rotated into a new job’ (52%); ‘work related stress’ (38%); work-related anxiety (33%). Qualitative statements overwhelmingly report positive impact, especially holistic support provided by the coaches.

Discussion and Conclusions: Apprenticeships offer locally delivered MLM programmes which positively impact on FY1s’ wellbeing and resilience and offer useful quantitative and qualitative insights. Leadership coaches are especially impactful on FY1s.

Take-home Messages: Apprenticeships provide the opportunity for widespread funded, sustainable and benchmarked MLM training for all professions and levels which can support clinicians’ wellbeing and resilience.

#SC6.3 - Short Communications: Postgraduate - Junior Doctor as Teacher / Burnout

#SC6.3.3 (4415)

Burnout, Resilience and Joy in Work - What Does It Really Mean for Junior Doctors?

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ABSTRACT:

Background: Burnout among doctors is increasing, with higher rates observed in trainees and junior doctors (Dyrbye, 2014). While some studies suggest that resilience leads to less burnout, and consequently greater job satisfaction, these associations may not necessarily be linear. This study aims to explore the relationship between burnout, resilience and joy in work (JIW) amongst junior doctors, and whether there are differences between trainees and non-trainees.

Summary of Work: We surveyed 94 junior doctors (i.e. house officers, medical officers and junior residents) within the National Healthcare Group's three institutions. Burnout was measured via the Maslach Burnout Inventory: Emotional Exhaustion (EE), Depersonalization (DP) and Personal Accomplishment (PA). Clinically-significant burnout was defined as high EE or DP (Shanafelt, 2002). Resilience was measured using the Brief Resilience Scale. JIW was measured via a visual analogue happiness scale, with subdomains adapted from the Institute for Healthcare Improvement's JIW Framework (Perlo, 2017). Factors associated with burnout and JIW were derived from thematic analysis of qualitative responses.

Summary of Results: 89.4% of junior doctors had clinically-significant burnout, 78% low resilience, and only 23% felt happy at work. Burnout was negatively associated with JIW (100% of doctors who were burned out felt unhappy, $\chi^2=6.505, p=0.039$). Non-trainees were more prone to high burnout in both EE and DP compared to trainees (66.7% vs. 33.3%, $\chi^2=4.55, p=0.033$). The associations between burnout and resilience, and resilience and JIW were not significant. Factors affecting burnout include high workload, lack of work-life balance, and lack of support from seniors. Factors contributing to JIW include having good workplace relationships and culture, promotion of wellness, resilience and work-life balance, and having a sense of physical and psychological safety.

Discussion and Conclusions: Burnout in junior doctors is high and negatively impacts JIW. Having good work-life balance, working relationships and a sense of safety is important. Interventions should target these areas, and also pay attention to non-trainees who may not have access to the same support systems as trainees.

Take-home Messages: Burnout is negatively associated with joy in work. Amongst other factors, improving work-life balance, workplace relationships and promoting physical and psychological safety may be potential areas for intervention.

#SC6.3 - Short Communications: Postgraduate - Junior Doctor as Teacher / Burnout

#SC6.3.4 (4548)

ZENITH+: Developing a near-peer resident-educator track within the Internal Medicine residency training program in Singapore

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ABSTRACT:

Background: In response to an increased demand from residents to learn how to teach effectively, a resident-led medical education development program (ZENITH) was introduced in 2018 in the SingHealth Internal Medicine (IM) residency program. ZENITH consists of a general track for all residents and an advanced track for residents who aspire to pursue a career in medical education (ZENITH+). We describe our experience spearheading the ZENITH+ program.

Summary of Work: From 2018-2020, we selected 15 participants for the ZENITH+ program. They were SingHealth IM residents or senior residents with a strong interest in medical education and have passed their residency examinations with good clinical progress. We performed a needs-analysis of these residents. Their main interests were learning how to provide effective feedback (80.0%), teach clinical reasoning (46.7%) and perform educational related research (40.0%). Other interests included how to mentor their juniors (33.3%), conduct bedside teaching (33.3%) and designing educational initiatives (13.3%). We are also working on providing opportunities for these residents to share their experiences in educational conferences.

Summary of Results: We arranged for these residents to be mentored by clinical faculty with an interest in clinical education. These mentors met up with the residents quarterly to discuss their progress and assisted them in refining their educational initiatives. The ZENITH+ group came together quarterly to discuss each other's progress and provided feedback based on the challenges that they faced. Through ZENITH+, we aimed to bring together resources to assist residents become better teachers. Despite being a new program, we have already assisted the participants in terms of building up their educational portfolio, understanding core educational pedagogy and creating an interest in education as a career focus. Based on the feedback from the residents, the program was well received.

Discussion and Conclusions: ZENITH+ is still in its initial phase. We are working with the clinical faculty to prepare materials for residents to hone their skills in teaching and reinforce their identity as teachers.

Take-home Messages: We envisage that Zenith+ will create an educational culture that emphasizes an evidence-based approach to teaching and learning in SingHealth.

#SC6.3 - Short Communications: Postgraduate - Junior Doctor as Teacher / Burnout

#SC6.3.5 (4948)

How does postgraduate-year resident as teacher inspire students' learning self-efficacy for interpretation of diagnostic tests

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ABSTRACT:

Background: During the clerkship, the lessons of clinical knowledge are usually given by clinical doctors. However, postgraduate-year (PGY) residents might be more suitable to be the teachers for the medical students since they have just finished the clerkship and would better understand the blind spots of learning. Therefore, in this study, we performed a series of lessons for interpretation of diagnostic tests by PGY residents as teachers and evaluate students' learning self-efficacy.

Summary of Work: Three PGY residents performed total eight lessons of four clinical topics for 88 medical students in clerkship, and three clinical mentors were involved for evaluation of teaching performance. The clinical topics covered platelet and coagulopathy, diagnosis of electrolytes imbalance, electrocardiography, and laboratory tests for infection. After the course, all medical students received learning self-efficacy survey with a modified tool with seven 5-point questions of three domains, including cognition, psychomotor, affective factors, which had been validated by Kang et al. in 2019. One sample test was used to analyze students' learning self-efficacy and test value 4 was applied to prove the significant benefit.

Summary of Results: In the analysis of test value 4 of students' learning self-efficacy, mean difference of cognition, psychomotor, and affective domains of electrolyte imbalance were respectively 0.67 ± 0.11 ($P < 0.001$), 0.59 ± 0.12 ($P < 0.001$), 0.73 ± 0.12 ($P < 0.001$); lab of infection were 0.65 ± 0.1 ($P < 0.001$), 0.62 ± 0.1 ($P < 0.001$), 0.8 ± 0.09 ($P < 0.001$); platelet and coagulopathy were 0.36 ± 0.14 ($P < 0.05$), 0.3 ± 0.14 ($P < 0.05$), 0.52 ± 0.12 ($P < 0.001$); electrocardiography were 0.86 ± 0.11 ($P < 0.001$), 0.68 ± 0.14 ($P < 0.001$), 0.87 ± 0.08 ($P < 0.001$). To compare the different efficacy of three domains, affective domains achieved the best significant difference.

Discussion and Conclusions: Student's learning self-efficacy including cognitive, psychomotor, and affective domains showed significant benefit from the lessons for interpretation of diagnostic tests given by PGY residents as teachers. Among all domains, affective domain achieved the best significant efficacy. Therefore, PGY resident as teacher can not only help medical students in clerkship learn clinical knowledge but also inspire their motivation to learn. The long-term learning efficacy would definitely increase with good attitude towards learning.

Take-home Messages: PGY resident as teacher can be beneficial for learning self-efficacy of medical students in clerkship and improve their long-term learning efficacy.

#SC6.3 - Short Communications: Postgraduate - Junior Doctor as Teacher / Burnout

#SC6.3.6 (5722)

Freshly degreed or field-experienced residents: the hiring match for the best Junior Teacher!

AUTHOR(S):

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ABSTRACT:

Background: In France, residency begins after six years of undergraduate training program and a national ranked exam. At the Lyon-Est faculty, residents - as junior teachers (JT) - lead weekly 2-hour teaching sessions for around 400 undergraduate students, to reinforce their theoretical knowledge for the exam and to develop their clinical competence. We questioned the hypothesis that medical students' satisfaction with these sessions depends on the JT's residency experience.

Summary of Work: An online survey was sent weekly to participating students to assess their overall satisfaction for it. Survey questions concerned session's usefulness, resident's pedagogic skills and global educational value of the workshop. A numeric scale of 0-5 or 0-10 was used as format for answering questions. Answers to questions were compared according to JTs' length of residency (more or less than one year of residency: "<1y" vs ">1y") with a Chi-2 test.

Summary of Results: Fifty-four residents (19 "<1y" and 35 ">1y") were assessed. From the responses of 1,062 students, a greater rate of scores of 4-5/5 or 8-10/10 about our three most relevant questions was found for ">1y" residents, compared with younger ones. Indeed, for ">1y" and "<1y" residents, rates were respectively 88.1% and 82.4% for session's usefulness ($p=0.01$); 92.2% and 82.4% for pedagogic skills ($p<0.001$); and 83% vs. 77.2% for global education value ($p=0.03$).

Discussion and Conclusions: Results demonstrate significant higher students' satisfaction for the most experimented Junior Teachers. We can imagine students prefer established JTs' clinical experience than recently graduated JTs, even if we can assume that the latter have a more examination-centered teaching about theoretical knowledge. Forces of our study are: anonymous and blinded data collection and quantity of data collected, with participation rate at 38.2%. The main weakness is a potential confounding factor knowing that some established JTs have already been a JT, thus having more teaching experience.

Take-home Messages: Don't believe students want freshly graduated Junior Teachers' advices to succeed their exam! They definitely prefer residents with clinical maturity and consider them as more pedagogical. Our students may be not so examination-centered than we imagine...!

#SC6.3 - Short Communications: Postgraduate - Junior Doctor as Teacher / Burnout

#SC6.3.7 (5801)

Becoming a medical educator and more: Why training doctors undertake teaching fellowships

AUTHOR(S):

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ABSTRACT:

Background: A teaching fellow is defined as a 'doctor employed to teach, often undergoing a teaching qualification' (Woodfield and O'Sullivan, 2014). Research on the impact of teaching fellows has shown benefits to medical students, (Woodfield and O'Sullivan, 2014), educational institutions (Hashim et al, 2013) and wide benefits to the fellows (Keelan and O'Grady, 2018), including the opportunity to pause the 'runaway train of clinical training' (Thomson et al, 2016). Research has considered the challenges of being a fellow, (Ker et al, 2018) but no research has sought the views of teaching fellows on motivations for undertaking the role, or the perceived or achieved benefits.

Summary of Work: The Trust has recruited medical education teaching fellows in recent years. This study aimed to elicit views of teaching fellows on the motivations for, and the challenges and benefits in, undertaking a teaching fellowship. Qualitative data from past, present and incoming teaching fellows was collected, firstly from anonymous questionnaires with, subsequently, semi-structured interviews. The data was analysed via thematic analysis.

Summary of Results: Eight teaching fellows participated. The most common motivational theme was the opportunity for self-improvement in medical education. Perceived benefits of the role centred upon knowledge and theory acquisition and dissemination. Whilst survey data showed teaching fellows were least likely to be motivated by time out of training, and the prospect of reduced clinical work was not perceived as a primary benefit, interviews revealed that burnout and the desire to reflect and refocus were real considerations. Most challenges expressed involved adaptation to non-clinical working practices.

Discussion and Conclusions: Data showed fellows are primarily motivated to develop as medical educators. This is seen as the prime benefit. Fellows universally saw the fellowship as an exciting developmental opportunity. More work is needed to look at how fellowships can be more clearly defined, developed and supported, while maintaining the autonomy of the role. Whether time out of training with an educational focus has broad restorative powers, should be explored.

Take-home Messages: The development of a culture of learning within an organisation is aided by enthusiastic teaching fellows that are motivated by becoming professional medical educators and who see both individual and organisational benefits in their role.

#SC6.3 - Short Communications: Postgraduate - Junior Doctor as Teacher / Burnout

#SC6.3.8 (6678)

To ask or not to ask? Understanding residents' help-seeking behaviour in the clinical learning environment

AUTHOR(S):

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ABSTRACT:

Background: Residents' help-seeking behaviour fosters their learning and supports the quality of care. In this study, we investigate the process of seeking help when residents have patient-related questions. Studies exploring residents' help-seeking behaviour have mainly focused on the resident-supervisor dyad and paid less attention to the role of allied health professionals and peers. Including the role of other healthcare professionals, might be promising as residents often perceive that seeking help from supervisors is complicated. Therefore, we aim to understand residents' help-seeking behaviour in the clinical learning environment, including the role of all healthcare team members.

Summary of Work: Using constructivist grounded theory methodology, we conducted 17 semi-structured interviews with a purposive sample of residents from various specialities and training levels within one Dutch academic medical centre. We collected and analysed data iteratively using constant comparison to identify themes and explore their relationships. We used theoretical sampling in later stages until theoretical sufficiency was achieved.

Summary of Results: Residents described how their help-seeking was an ever-continuing balancing act in which four factors were weighed and balanced against each other in the process of deciding to ask for help or not: managing relationships with other staff, seeking autonomy, providing good patient care and safeguarding their credibility as (junior) physician. The outcome of the balancing act was affected by personal, contextual and relational attributes in the clinical learning environment, and influenced whether help was sought and from whom.

Discussion and Conclusions: Help-seeking behaviour seems to be a part of residents' socialization into the workplace and their professional identity formation. The socialization was clarified further by the apparent role of the health care team at large. Creating an inviting learning environment in which questions are welcomed will help ensure residents' learning and patient safety.

Take-home Messages: Help-seeking is a complex, social process and often experienced as difficult for residents. Promoting help-seeking behaviour includes that it is recognized as an important aspect of both learning and patient safety management. Supporting residents' help-s

#SC6.3 - Short Communications: Postgraduate - Junior Doctor as Teacher / Burnout

#SC6.3.9 (7200)

Burnout in European Junior Doctors: facilitating healthy, sustainable working environments for junior doctors across Europe.

AUTHOR(S):

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ABSTRACT:

Background: In 2019 the World Health Organisation defined Burnout as a syndrome resulting from chronic workplace stress that has not been successfully managed. In 2018 the European Junior Doctors Association (EJD) noted that there was no pan-European data on burnout in Junior Doctors and conducted a review of existing data from amongst the member nations. EJD continued to build on this work and has produced a framework to reduce burnout in Junior Doctors across Europe.

Summary of Work: EJD approached twenty-one member nations to find which had existing data on burnout and wellbeing in junior doctors. This data was used to quantify the rate of burnout in junior doctors, identify recurring themes and define contributing factors. Based on this data EJD has hosted workshops including a workshop at AMEE 2019, and conducted inter-professional discussion. Working with other European organisations to gather and critique information, a framework of recommendations has been produced to promote healthy working environments for junior doctors across Europe.

Summary of Results: Burnout is a major concern in terms of both the professional and personal needs of doctors. Although there was no consistent methodology, of the ten nations who had existing data on burnout, levels of reported burnout in Junior Doctors ranged from 30-63%. Contributing factors included: hours worked, poor work-life balance, lack of workplace support, lack of staff, low professional autonomy and lack of appreciation. Discussion at AMEE 2019 and with European medical professionals concluded that change is required at an organisational rather than individual level.

Discussion and Conclusions: Our results have suggested that action should be taken to promote healthy organisations to reduce burnout rates amongst doctors. Change is required by institutions, educators, employers, regulators and governments. Solutions will need to be tailored to national circumstance and are subject to professional and political will.

Take-home Messages: 1. The experience of burnout in Junior Doctors across Europe is common and is having a negative impact on training and work-life balance. 2. Organisational change rather than individual coping strategies is required to tackle work place burnout in Junior

#SC6.3 - Short Communications: Postgraduate - Junior Doctor as Teacher / Burnout

#SC6.3.10 (7323)

Unintended benefits of bringing junior doctors into a new undergraduate medicine small group teaching programme: reflections on Lifestyle Medicine and Prevention at Imperial College School of Medicine

AUTHOR(S):

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ABSTRACT:

Background: In September 2019, Imperial College School of Medicine launched a brand-new Lifestyle Medicine and Prevention (LMAP) module applying a blended-learning approach of online materials and face-to-face, clinician-led tutorials.

Summary of Work: To deliver teaching to more than 350 first-year students and allow for meaningful discussions, 32 parallel sessions (with 12 students in each) was needed for each of the tutorials, resulting in over 150x hour-long sessions in the first two terms alone. A pool of volunteer junior doctors was recruited to facilitate the teaching. Junior doctors were identified as being trusted messengers to add gravitas and validity to the innovative and sometimes-challenging content. We identified a wide range of unintended benefits through this process.

Summary of Results: For the junior doctors involved we were simultaneously able to achieve: • CPD opportunities allowing access to the online learning and planned briefing and de-briefing sessions with the LMAP team on topics including sleep, physical activity, nutrition, stress, finances, addictions, relationships and behaviour. Feedback frequently highlighted topics were both relevant personally, professionally and sometimes entirely new to the teachers. • Observation, structured feedback and reflection on teaching skills during the student-facing sessions allowed for teaching volunteers to develop their skills and confidence in a supportive and constructive environment. • The establishment of a junior doctor network interested in Lifestyle Medicine and Prevention, enabling ongoing sharing of opportunities, resources and discussion to contribute to pushing the discipline forward more broadly. • Space for junior doctors to reflect on their own lifestyle behaviours and personal experiences in the form of peer-support away from their workplace. • Celebration of contribution from junior doctors to the education of junior peers outside the context of service provision.

Discussion and Conclusions: These unintended benefits of the local curriculum review offer opportunities to connect more meaningfully undergraduate and postgraduate spheres, with the potential to build resilience at a system level and share best practice

Take-home Messages: -

#SC7 - Short Communications: Professionalism

#SC7.1 (4534)

Factors related to professional identity formation in the different phases of medical training

AUTHOR(S):

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ABSTRACT:

Background: Professional identity formation (PIF) is the goal of medical education. To provide an effective training environment, the factors influencing PIF should be elucidated. Five PIF scales were developed. The developing scale (DS) evaluates personal maturation and socialization as professionals, and the other four scales evaluate Kegan's stage-specific attributes. These quantitative instruments enable the analysis of factors related to PIF.

Summary of Work: Sixth-year medical students, 2nd-year residents, and medical doctors working at Kagoshima University responded to a self-administered questionnaire composed of the PIF scales and items asking about their experiences, including: whether they were respected and treated as a physician by patients and families, instructors, and health professionals; whether they had role models or effective mentoring; and whether they experienced clinical difficulties and dilemmas. Respondents' scores were then analyzed to identify correlated factors.

Summary of Results: Response data from 116 6th-year medical students, 35 2nd-year residents, and 220 medical doctors indicated that DS and high stage scale scores increased after graduation and were highest in experienced doctors. Among students, residents and medical doctors with less than 12 years of clinical training, the presence of role models or mentors was significantly correlated with DS, stage 3 and higher stage scores. Among students and residents, the experience of being treated as a physician was significantly correlated with DS, stage 3 and higher stage scores. In addition, stage 2 scores also correlated among students. Doctors with 12 or more years of clinical experience showed a negative correlation between DS or stage 3 scores and clinical difficulties and dilemmas.

Discussion and Conclusions: Role models and mentors might facilitate stage 3-specific attitudes, such as respecting others and accepting professional values. For medical students and residents, being respected and treated as a physician might be a strong influential factor in their PIF.

Take-home Messages: Influential factors related to PIF differed depending on the stage of training. Being respected as a physician might be especially important for young medical trainees. Role models and mentors might have an effect on the PIF of young doctors and medical trainees.

#SC7 - Short Communications: Professionalism

#SC7.2 (4805)

From me to us and beyond: A cross-sectional study on medical students' and junior doctors' emerging professional identity

AUTHOR(S):

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ABSTRACT:

Background: A key objective of medical education is to empower graduates to internalize the meaning of medicine towards their professional identity. Integrating personal attributes with professional values promotes professional identity formation. However, it has yet to be investigated when medical graduates start to establish an integrative understanding of their professional identity.

Summary of Work: Semi-structured interviews were conducted with 78 medical students (Years 4 & 6) and junior doctors (1 & 2 years post-graduation) about two career-defining events (a memorable patient encounter and a career turning point). For each event, participants were asked to describe what happened, how they felt, and how the event informed their professional identity and changed their view of self. Interviews were transcribed and coded to capture the extent to which participants' professional identity were informed by personal attributes and/or professional values.

Summary of Results: The coding scheme (based on Kegan's theory of adult development) showed excellent inter-rater reliability between two raters based on 20 interviews (ICCpatient encounter = .85 & ICCturning point = .89). From these narratives, we were able to identify different stages of professional identity formation. In the early stage (the 'Me' stage), participants rely on external rewards and personal qualities to define their professional self. In the intermediate stage (the 'Us' stage), participants actively reflect on societal expectations, organizational norms, and interactions with patients and other healthcare professionals. The more advanced stage (the 'Mastery of me' stage) is characterised by an extensive integration between professional and personal values and a strong commitment to medicine. We are currently coding the remaining transcripts and expect to find increases in professional identity stage between medical students and junior doctors.

Discussion and Conclusions: Medical graduates' professional identity develops in stages by resolving different tasks. Educators should tailor their curriculum to address the various demands of each developmental stage to better support medical students' and graduates' professional identity formation.

Take-home Messages: A successful integration of professional values and personal ideals allows medical graduates to "think, act, and feel like a physician" – the ultimate stage of their professional identity formation.

#SC7 - Short Communications: Professionalism

#SC7.3 (5978)

The Power of Professionalism: An Innovative Award to Promote Professionalism

AUTHOR(S):

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ABSTRACT:

Background: The Center for Professionalism at Baylor College of Medicine created the Power of Professionalism (POP) Award as an cost effective way to recognize and validate members of our community who demonstrate noteworthy actions, such as acts of compassion, empathy, selflessness and teamwork. Acknowledging noteworthy behaviors can reinforce career satisfaction. Proactively validating positive behavior may be more effective than remediating unacceptable behavior.

Summary of Work: Candidates for the POP award are nominated when observed performing acts of outstanding professionalism and is open to all members of the BCM community, medical students, residents, fellows, clinical and basic science faculty, as well as administrative staff. Nominations are submitted electronically and must include one paragraph describing a specific act of exemplary professionalism. Awards are given at Departmental Grand Round in order to share the experience with a large audience of peers. These brief ceremonies are an opportunity to restate the importance of professionalism for career satisfaction and optimal patient outcomes.

Summary of Results: To date, 103 nominations have been received and 94 have been rewarded. There was a 53% response rate to our recent study. 89% agreed/strongly agreed that receiving the award improved any sense of professional burnout; 88% felt that the award validated their professional efforts; 90% felt the award demonstrated Baylor's commitment to professionalism. 83% felt motivated to continue demonstrating the highest level of professionalism.

Discussion and Conclusions: The POP Award is an inexpensive, easily scalable innovation which has created an expanding culture, emphasizing positive professional behaviors, publicizing positive role models and giving personal and peer recognition. The Award increases individuals' engagement with their own positive potential, as well as inspires others.

Take-home Messages: The POP Award has shown potential to make a significant contribution towards enhancing professionalism in our institution. Recognizing these actions can bring alive ones sense of connection to what is good about their work, thereby increasing career satisfaction and decreasing career burnout. This will have a positive effect on their patients and trainees. The POP Award validates that caring, professional behavior matters.

#SC7 - Short Communications: Professionalism

#SC7.4 (6512)

Professionalism- how are medical student perceived?

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ABSTRACT:

Background: The development of professionalism in undergraduate medical education is to ensure future doctors maintain high professional standards in all aspects of patient care. Our aim was to get multifaceted opinions on professionalism among medical students (MS) so as to provide better feedback.

Summary of Work: This was a prospective study on observed facets of professionalism among MSs collected over a 6 weeks period at Guys and St Thomas Hospital, 2019/20. Patients, medical students and frontline teaching staff were invited to fill in questionnaires in the various domains as described by the GMC UK. These included honesty, punctuality, confidentiality, respectfulness, responsibility, compassionate, communication skills, appearance, attendance and commitment. These domains were scored from 1 (least satisfactory) to 5 (most satisfactory). We concluded the questionnaire by asking opinions on how should professionalism be assessed.

Summary of Results: There were a total of 114 responses. 60% were frontline educators and patients. 40% were MS. Mean score over all the domains, was comparable among all respondents- 3.83 /5. MS scored themselves most in respectfulness(4.42) and confidentiality(4.36), whereas educators and patients scored confidentiality(4.47) and appearance the highest(4.19). All parties scored least for attendance(3.1) and punctuality(3.23). 85% stated that attendance is relevant. 74% expressed that 80% attendance during academic year is important. Over 50% of the medical students felt that professionalism should be assessed with one to one feedback. However over 65% educators and patients felt bedside mannerism and one to one feedback would be preferable assessment modes.

Discussion and Conclusions: It is reassuring to note that Confidentiality scored the highest. However, it is interesting to note that frontline educators, parents and MS observed that attendance and punctuality among MS were least satisfactory. High level awareness of patient confidentiality supports the importance of ethical modules included in the curriculum. Educators and patients recognised that attendance and punctuality are important domains of professionalism.

Take-home Messages: It is vital to look into methods to address the challenges around attendance and punctuality as they are important domains of professionalism.

#SC7 - Short Communications: Professionalism

#SC7.5 (6726)

From Leonardo da Vinci to Meredith Grey: An Innovative Approach to Teaching Professionalism and Ethics

AUTHOR(S):

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ABSTRACT:

Background: While professionalism and ethics are key in the education of medical students, best practice for how to instruct and deliver these topics is still widely debated. Long considered part of the hidden curriculum, application and discussion of such topics in a traditional classroom setting can still be challenged. With this in mind, an innovative workshop series with a creative approach towards professionalism and ethics education was designed.

Summary of Work: 'Body and Self' is a 9-week workshop series designed for first year, undergraduate medical students in a professionalism and ethics module. In the weekly workshops, students participated in professionalism- and ethics-related activities by engaging with a range of interdisciplinary topics, including: philosophy, culture, body donation, organ donation, art, poetry, television, and cinema. Students completed weekly qualitative evaluations for the workshop topics, as well as an end-of-term evaluation. Further, the assessment was based on the creative approaches, requiring students to create an original art piece as the basis of a reflective essay relating to the workshops' content. Content analysis was used to code all evaluation responses for student views.

Summary of Results: Twenty-two students were enrolled in the workshop series. Evaluations indicated that all workshop sessions were generally positively received. Many students commented that topics and activities introduced encouraged not just consideration for professionalism and ethics, but opportunities for highly personal reflection and 'deep thinking.' Topics that students felt 'aligned' better with medicine were appreciated more, and the majority of negative comments arose from students views that humanities-related topics did not seem applicable to their medical education. Still, numerous students also commented on the potential for greater empathy and better communication with future patients, resulting from many of the activities.

Discussion and Conclusions: Participating in interdisciplinary and active teaching sessions related to professionalism and ethics was a positive and deeply engaging opportunity for students.

Take-home Messages: The addition of creative and interdisciplinary topics has the potential to support deeper levels of reflection, and personal consideration of professionalism and ethics, for medical students.

#SC7 - Short Communications: Professionalism

#SC7.6 (6456)

Validation of the measurement of Professional Identity among medical students

AUTHOR(S):

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ABSTRACT:

Background: Professionalism represents a cornerstone of the medical profession, and medical educators are actively developing ways to measure professional identity formation among medical students. A quantitative approach to this problem has been lacking. In the present study, we investigated the validity and reliability of using Brown's Professional Identity Questionnaire (PIQ), developed among nurses, to measure professional identity among medical students.

Summary of Work: We used the American Psychological Association's account of validity to test the PIQ's validity in terms of its internal structure, its relation to the Academic Self-Regulation Questionnaire scale for qualities of motivation, its content, and its reliability in terms of the internal consistency between its items. We performed factor analysis, a Pearson's correlation test, and an evaluation by experts on the construct of professional identity.

Summary of Results: We found two latent factors underlying the items of the PIQ. As expected, we found a negative to positive spectrum of Pearson's correlations corresponding to increasingly internal qualities of motivation. Experts unanimously rated four out of ten of the PIQ's items as relevant, and reliability analysis gave a good Cronbach's alpha value of 0.82.

Discussion and Conclusions: In order to strengthen the validity of the PIQ's scoring as a reflection of professional identity in medical students, a few minor alterations are warranted. These include rescaling the instrument's answers on the basis of intensity rather than frequency and introducing an item in order to ensure coverage of each quality of motivation. To fortify the argument for its valid and reliable use, future research might look into additional dimensions of validity as well as recruit a larger pool of experts to rate its contents. Overall, our results support the validity and reliability of quantitative measurement of medical students' professional identity using the PIQ. Educators may use the instrument as a tool for monitoring PIF among their students, as well as for designing and evaluating their medical curriculum.

Take-home Messages: Measuring professional identity quantitatively using the PIQ can complement existing qualitative evaluation and, thereby, aid educators and researchers in their quest of training the doctors of tomorrow.

#SC7 - Short Communications: Professionalism

#SC7.7 (5513)

Open Space, a basic surgical skills learning laboratory for medical students

AUTHOR(S):

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ABSTRACT:

Background: There is an increasing interest in optimizing the relationship between cost and benefit when it comes to teaching surgical skills. The traditional instructor-based method is expensive, limits number of participants and yields little hands-on time. We developed a free learning-laboratory for practicing suture for medical students.

Summary of Work: Three cohorts of medical students were recruited. We anticipated that group 1, 1st semester students (n=299), was driven by curiosity and interest. Group 2, 7th semester students (n=240), would train to prepare for the formalized teaching and their first clinical stay. Group 3, 8th semester students (N=254), would train prior to the practical exam.

Summary of Results: In total, 218 students participated; 38% of group 1, 20% of group 2, and 22% of group 3. Group 1 and 2 trained continuously throughout the semester. Almost half of all participants from group 3 trained the week before the exam. Students found it difficult to find the time to train during their elective stay.

Discussion and Conclusions: The study evaluated three groups of students. Group one trained mainly because of an interest in surgery and the social aspect of training together. Group two and three group trained to prepare for their elective stays, whereas group three trained prior to their practical exam.

Take-home Messages: Open Space learning-lab allows students to train whenever it suits them and encourages different groups to train. It allows students to prepare for clinical stays or practical exams but motivation and lack of protected time are important factors to consider.

#SC7 - Short Communications: Professionalism

#SC7.8 (7299)

Reading Reflections: Learning from a Written Measurement of Exemplary Professional Identity

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ABSTRACT:

Background: How can we understand structured, reflective writing as a humanistic undertaking in medical education? At our institution we evaluate professional identity (PI) through the Professional Identity Essay (PIE), a nine-question structured reflective writing measure that is scored based on Kegan's stage theory of identity development. Conceptualizing the qualities of a mature PI is critical to supporting professional development and can be enhanced not only by PIE stage scores but by closely reading PIE content.

Summary of Work: We are using the PIE to understand the MPI of faculty identified as professional exemplars by students and peers. We invited 32 faculty to participate in the study; 23 completed the PIE to date. PIE scoring focuses on response structure—how and why respondents justify responses—, not content—what and how respondents write. PIE content offers a field to explore the meaning of physician professionalism and through which to inform trainees about PI formation.

Summary of Results: Faculty share their own experience, writing creatively and reflectively. Strikingly: “I came to the profession from the side of truth rather than love... I was changed by my experiences... where I saw the brokenness of so many lives, and found in spite of myself that I had to think about my patients as not so different than me. I was helped along in this by my study of literature—the world's great repository of empathy.” Beautifully: “[Medicine] demands self-sacrifice. And I say this in a completely uncomplaining way... As much as this profession takes from me, it is dwarfed by what I have received in return. It makes me exactly who I am today.”

Discussion and Conclusions: The structured PIE yields stage scores to enrich our understanding of medical professional identity development. But it may also demonstrate a richly descriptive, phenomenological understanding of what it means to be a physician. In attending to the words of physicians as a creative and reflective undertaking, we may be able to utilize the PIE as a uniquely mixed-methods measure that supports professional development and aesthetic appreciation simultaneously in medical education.

Take-home Messages: By attending to the content of exemplary faculty narratives, we can better consider ways to discuss PI and support trainee PI formation

#SC8.1 - Short Communications: Student - as Teacher

#SC8.1.1 (4525)

A peer-assisted-learning (PAL) scheme: insights from the Imperial College MedED society 2019 Year 3 lecture series attendees.

AUTHOR(S):

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ABSTRACT:

Background: Peer-assisted learning (PAL) is the development of skills and knowledge through active support from peers. Imperial College Medical Education (MedED) society is a student-led society providing PAL to medical students. One of these PAL initiatives is a Year 3 lecture series, a 4 month long evening lecture series, that runs from January to March every year, designed to equip third year medical students with the knowledge and skills necessary to perform well in their summative end-of-year written exam.

Summary of Work: After every lecture, feedback forms were sent out to medical students that attended a lecture. Feedback was collated from all lectures that happened in 2019. A thematic analysis was performed to identify what students liked about the series and what they thought should be improved.

Summary of Results: We analysed 845 responses with 160 providing answers to open questions. For positive feedback, 49% of respondents found case-based discussions useful, for example “I really liked how he explained the reasoning behind the correct answer to the case and why the other answers were wrong”. Furthermore, 30% of respondents appreciated the interactive form of the sessions, for example “Enjoyed how the lecturer gave us time to answer the question and then we vote for the answers online”. In terms of further improvement, 90% of respondents highlighted the fact that the lecturer often covered a lot of content over a short space of time which impacted concentration – “it would be nicer to have fewer topics so that the lecturer doesn't rush” and “slower pace needed” were examples.

Discussion and Conclusions: The lecture series could benefit from starting earlier, in November as opposed to January, to allow more lectures that are less content heavy. In the future, it would be interesting to gather feedback from lecturers to identify their reasoning behind their decision to teach and what they hope to learn at the end of the series.

Take-home Messages: Peer tutors need to utilise technology to engage their younger tutees. Furthermore, teaching via case-based discussion rather than traditional information-heavy slides improves tutees' concentration and learning.

#SC8.1 - Short Communications: Student - as Teacher

#SC8.1.2 (5180)

Peer Assessment: Development and Delivery of the OSCE

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ABSTRACT:

Background: There is an expectation that all healthcare professionals display competence in teaching, assessment and providing feedback. Development in this field starts with formative peer assisted learning and teaching in the undergraduate environment. Using peers or near-peers (in this case having 1 year more experience than the cohort being examined) to provide assessment in summative exams remains unexplored. This study investigates how the use of near-peers for summative assessment marking compares to marking by academic staff in an OSCE with a prescriptive marking schedule.

Summary of Work: BDS4 Peer Assessors (PA) developed an OSCE question. Each PA (n=3) was paired with an academic staff assessor (ASA) (n=3). Peer and academic marked the candidates' performance independently, only the score given by the ASA's contributed to the final grade. Two years later the process was repeated on the same cohort of examination candidates with the PA's now 1-year post-qualification. Statistical analysis was performed to compare the scores awarded by PAs during each timeframe and against the marks awarded by the ASA's.

Summary of Results: During round 1, 28 students (62.2%) were awarded the same score by both PA's and ASA's. On 17 occasions there was a discrepancy between the score (37.8%). Bias was skewed slightly in favour of PA's scoring higher than ASA's (mean difference of differences -0.0667). Round 2 consisted of 27 students, (55.1%) were awarded the same score by PA's and ASA's. On 22 occasions (44.9%) there was a discrepancy. Bias was skewed in favour of ASA's scoring higher (mean difference of differences 0.0612).

Discussion and Conclusions: PA's are able to write OSCE stations, produce marking schemes and effectively assess their near-peers. The levels of agreement between PA and ASA are strong. Our results show a slight trend for PA's to mark more leniently when they were undergraduates compared to less leniently at 1-year post qualification.

Take-home Messages: Peer assessment can be utilised within summative examinations. Incorporating peer assessment into examinations could be employed as an innovative strategy in addressing the burden of limited resources and understaffing.

#SC8.1 - Short Communications: Student - as Teacher

#SC8.1.3 (5571)

Reflections on Teaching from students-as-teachers: analysis of teaching Portfolios

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ABSTRACT:

Background: A major medical curriculum renewal was introduced in our University in 2018. The new six year curriculum is outcome-based (EPAs), student-centered, integrated, problem and community-based and flexible. Students-as-teachers (SAT) participated in the previous discipline-based curriculum (DBC). Since different teaching competencies for the new curriculum were necessary, a new SAT training programme was designed and implemented. The elaboration of a reflective teaching portfolio (RTP) was implemented as a teaching and assessment strategy.

Summary of Work: The 1.5 year training programme is based on 3 pillars: foundations of constructivist principles of teaching, practice observation and reflection-on-action. One of the principal learning activities is the personal RTP where SATs are required to complete 5 entries during their training. The RTP of 20 SAT in training were qualitatively analyzed using grounded theory.

Summary of Results: Several categories were evident after the analysis: the impact of the different roles and teaching activities SAT perform; the complexity of the interactions between teachers, SAT and students; the diversity and integration of the teaching activities in the new curriculum contrasted with the DBC; the need for competence both in medical and teaching contents before performing as SAT the differences between their previous conceptions on teaching (discipline or lecture-based) and the “new” ones; the importance of planning teaching activities.

Discussion and Conclusions: RTPs promote the acquisition of educational concepts and constructivist dimensions, and stimulate reflection on teaching roles in the University. The unique opportunity of participating as students and SATs in two different running curriculum with diverse educational perspectives enriches the conceptualization and application of the programme’s contents. SAT are positively surprised by the way students learn in the new curriculum in contrast to their own learning experience in the traditional curriculum. Also, identifying conceptual mistakes in RTPs provides the programme information to develop strategies to improve the teaching-learning process.

Take-home Messages: RPTs is a powerful teaching activity to promote reflection, assessment and change in SAT training. We believe that this work can motivate other universities interested in teacher training of SATs, especially in the framework of integrated curricula. On the other hand, we are confident in transmitting the value of the portfolio as an instrument for learning assessing.

#SC8.1 - Short Communications: Student - as Teacher

#SC8.1.4 (4133)

A Peer Tutor System for Clinical Skills Teaching which is effective, cost-efficient and popular: why our medical students prefer clinical skills teaching from fellow students rather than doctors

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ABSTRACT:

Background: A vast proportion of clinical skills teaching at SGUL is delivered by peer tutors, who are medical students selected and trained to teach clinical skills. We have carried out a feedback survey which demonstrates that students unequivocally prefer student peer tutors over qualified doctors to teach them clinical skills. Peer tutors are also more cost-efficient than qualified tutors, and highly effective (as evidenced by the high OSCE pass rates).

Summary of Work: Survey and analysis of student perspectives (146 students) on the following aspects: - Whether students prefer peer tutors (students) or qualified tutors (doctors) -Which tutors (peer or qualified) have the greatest impact on their learning -Which attributes students value most in clinical skills tutors -Underlying reasons behind student perspectives of clinical skills tutors -Student preferences (of tutors) for specific categories of clinical skills -Cost benefit analysis of employing peer tutors rather than qualified tutors -Key aspects of SGUL peer tutor system, including recruitment, training and quality control.

Summary of Results: - Peer tutors have much greater impact on learning than qualified tutors: 34% vs 21% - Medical students unequivocally prefer being taught clinical skills by peer tutors (students) over qualified tutors (doctors): 38% vs 31%; -Peer tutors have a better understanding than qualified tutors of the knowledge and skills level that students need to be taught at; -Knowledge, exam strategy and approachability are the most important attributes for clinical skills tutors to possess; -Students value the importance of learning in a relaxed, less formal way, much more so than factors such as knowledge, group dynamic, and insight from clinical practice

Discussion and Conclusions: Our peer tutor system is an exemplar of an effective, cost efficient system of clinical skills teaching. This analysis proves that our students overwhelmingly prefer being taught clinical skills by fellow student peer tutors rather than doctors. We have deconstructed, explored and discussed the underlying reasons for this.

Take-home Messages: Using sophisticated methods of selection, training and quality control, we have produced a clinical skills teaching system in which student peer tutors outperform doctor qualified tutors in many crucial aspects. The longstanding assumption that clinical skills teaching is best delivered by fully qualified doctors is misplaced and outdated.

#SC8.1 - Short Communications: Student - as Teacher

#SC8.1.5 (4402)

Team-based Learning in Peer-Assisted Learning Program at University of Health Sciences, Cambodia

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ABSTRACT:

Background: Peer-Assisted Learning (PAL) program has been initiated since 2016 by students for students to promote the culture of independent learning. It started with necessity to tackle a problem that medical students are struggling to learn medicine by themselves in the early years of medical school. We achieve it by creating a 12-week result-driven course to teach them how to learn physiology in an integrated way.

Summary of Work: In 2019, we adopted Team-based Learning (TBL) as a main educational strategy in PAL program. We randomly assigned 30 students into 6 TBL groups throughout the program. The TBL format consisted of 3 steps: 1. Readiness Assurance Process - to get students ready for learning through individual preparation. 2. Applied-focused Activities - students work in their TBL group to discuss guiding questions and apply physiologic concepts into their clinical applications during the class. 3. Peer-evaluation - every four weeks, each TBL group has to do peer-evaluation to give feedback to each other and their team based on 5 criteria; individual preparation, self-discipline, teamwork, class participation and what to improve next.

Summary of Results: We used a mixed-method; a quantitative method to assess how effective TBL is to help students learn. All 30 students completed a 30-point MCQ and written assessment before and after the program. The overall average pre-test score was 17 (66%), which improved to a post-test score of 25 (83%), the difference being statistically significant (p -value < 0.001). A qualitative method used to evaluate students abilities to communicate, work in a team and give feedback to each other. We collected data from a survey, peer-evaluation, and facilitators feedback. Over 96%, 90% and 70% of students believed that they improved their teamwork, communication, and feedback, respectively.

Discussion and Conclusions: This is the first report of using TBL in undergraduate medical education at the Faculty of Medicine in Cambodia. Our results support the notion that students learn effectively as individuals and learn better in teams.

Take-home Messages: We believe that TBL not only improves student learning and makes them more independent but also builds-up their ability to work in teams, how to communicate among team members and to give each other feedback.

#SC8.1 - Short Communications: Student - as Teacher

#SC8.1.6 (5138)

Using Structured Reflections to Evaluate Clinician-Educator Development during a Longitudinal Medical Student as Teacher Elective

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ABSTRACT:

Background: Teaching is a physician core skill. We offer a longitudinal medical student as teacher elective (MST) with expectations to teach within different courses of the medical school curriculum during the final medical school year. Previous data indicate that student reflections support developing teaching skills, self-confidence, and a professional identity as a medical educator. However, no detailed analysis of structured student reflections focused on teaching has been reported. We describe a systematic qualitative analysis of reflective teaching logs (RTLs), which reveal valuable insights and feedback for students, faculty and the overall course environment.

Summary of Work: The RTL provides specific details on MST participants' teaching experiences, the educational setting, pedagogy, duration, role, faculty co-facilitator, and reflections-on-action ("reflections on teaching"). Thirteen RTLs from two MST cohorts were analyzed. Students facilitated learning in the following pedagogies, (1) Small Group; (2) Clinical Skills/Physical Diagnosis; (3) Large Group and Problem-based learning; (4) Integrated Anatomy Lab; and (5) Clinical Teaching. Qualitative analysis of the student reflections was performed to identify themes aligned with the pedagogical encounters and learning environments. Two researchers independently analyzed the entries using general principles of open coding.

Summary of Results: Twelve themes emerged: 1) Teaching Effectiveness; 2) Joy of Teaching; 3) Instructional Techniques; 4) Effective Session Facilitation; 5) Thorough Preparation; 6) Instructional Design; 7) Assessment; 8) Readiness for Physician-Educator Role; 9) Diagnosis Development; 10) Case Development; 11) Feedback; and 12) Session Development. All RTL entries revealed in-depth self-reflective insights. A significant shift towards instructional design and readiness for integrating the dual role as clinician-educator was recorded from facilitators of Clinical Teaching sessions.

Discussion and Conclusions: Our longitudinal MST elective participants engaged in a variety of educational events, which provided opportunities and contexts for structured self-reflections on teaching. All MST participants' RTL entries revealed meaningful learning experiences for self-assessing teaching skills, heightened sensitivity for learner needs, and clinician-educator identity development. The RTL records the educational journey, enables students to be accountable and report and reflect on their experiences, and instills readiness for teaching.

Take-home Messages: Structured reflections on teaching are effective for promoting transformative learning and fostering educational skill advancement, learner sensitivity, teaching readiness, and professional identity development among participants within a longitudinal MST.

#SC8.1 - Short Communications: Student - as Teacher

#SC8.1.7 (5189)

Can Near-Peer Facilitated Small Group Learning Encourage the Development of Self-Regulated Learning Skills in Undergraduate Medical Students?

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ABSTRACT:

Background: Literature suggests that undergraduate medical students lack Self-Regulated Learning (SRL) skills, including goal-setting, monitoring progress and reflection, which are required for professional practice and lifelong learning. This research project evaluated the development of undergraduates' SRL skills following the introduction of a SRL-focused near-peer facilitated small group learning programme in an UK Medical School.

Summary of Work: Mixed Methods were used to gather students' perceptions of small group learning, near-peer facilitation and SRL development through an online questionnaire and focus groups. Near-peer facilitators' observations of changes in students' approach to learning were also explored through focus groups. Statistical and thematic analyses were carried out on the quantitative and qualitative data collected.

Summary of Results: Of the 105 questionnaire respondents (response rate from entire cohort=44.3%), 76.1% reported that they had become more self-regulated in their learning. Students who already identified as self-regulated articulated an increased awareness of SRL. One major barrier to students' development of SRL was their failure to recognise its importance to their future medical practice. Over 90% of participants agreed with the questionnaire items "small group discussions are effective for my learning" and "it was beneficial to have a senior medical student as the facilitator".

Discussion and Conclusions: Building upon existing literature findings, participants reported small group discussions as helpful in identifying future learning goals and subsequently developing their SRL skills. Near-peers were perceived as effective facilitators of students' SRL development due to their social congruence with students and their first-hand experience of the medical curriculum. Near-peers also expressed that their teaching skills developed through their involvement with the programme, indicating the reciprocity of skills development to all those involved.

Take-home Messages: SRL-focused near-peer facilitated small group learning programme can encourage the development of SRL skills in undergraduate medical students. Medical education providers may wish to consider introducing such teaching initiatives into their undergraduate curricula to the benefit of both their students and near-peer facilitators.

#SC8.1 - Short Communications: Student - as Teacher

#SC8.1.8 (5259)

Sonoist: An Innovative Peer-Teaching Initiative for PoCUS by Medical Students

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ABSTRACT:

Background: As Point of Care ultrasound (PoCUS) becomes prevalent in medicine, it is being increasingly taught worldwide. Students usually learn on standardized patients, therefore lacking an opportunity to correlate their ultrasound findings with clinical pathologies. Sonoist is a student-led initiative aiming to improve ultrasound training through peer-teaching with real patients. This abstract describes the Sonoist initiative, its implementation, and evaluation.

Summary of Work: Sonoist is developed by Independent-Practitioner-certified medical students who teach their peers how to scan patients with clinical abnormalities, while also correlating their ultrasound findings with physical examinations. Starting in May 2019, 7 sessions were held, with a sessional average of 3 participants and 3 patients scanned. Pre/post surveys collected data on ultrasound knowledge, participants' perceived improvement, and general feedback. Results were grouped by level of ultrasound training (novice n=8, experienced n=12) and their year of study (year 1-4).

Summary of Results: 87% (20/23) completed the survey. An increase in ultrasound skill was perceived by 100% of novices and 66.7% of experienced learners; novice learners improved by 27.5% while experienced learners improved by 8% ($p < 0.05$). Participants showed improvement in identifying clinical indications for ultrasound (novice 80%, experienced 81%) and an increase in sonographic knowledge (novice 69%, experienced 81.3%). All stated they would advocate for ultrasound in the future. 100% of novices reported that learning ultrasound was useful for correlating with physical exam and clinical diagnosis. In the experienced group, 91.7% stated usefulness of POCUS for physical exam and 88% for clinical diagnosis. All novices preferred peer-to-peer teaching, as did 83% of experienced students; the remainder preferred faculty teaching. There were no differences by medical year.

Discussion and Conclusions: Peer-to-peer ultrasound teaching such as Sonoist improves medical students' sonographic and clinical knowledge, likely due to a combination of early clinical exposure and a less stressful environment during peer teaching (1). (1) Hill A. et al (2011). Medical students-as-teachers: a systematic review of peer-assisted teaching during medical school. *Advances In Medical Education And Practice*, 157. doi:10.2147/amep.s14383

Take-home Messages: In the clinical environment, medical students prefer peer-to-peer teaching like Sonoist compared to staff-teaching. Detecting positive ultrasound findings at the bedside increases students' self-perceived and measured improvement, as well as skills in clinical diagnosis.

#SC8.1 - Short Communications: Student - as Teacher

#SC8.1.9 (5544)

Should We Teach Medical Students How to Teach?

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ABSTRACT:

Background: Teaching is inherent in modern clinical practice. Teaching skills not only facilitates training of juniors but also improves patient education and, therefore, patient management. Formal training in teaching during medical school is scarce and teaching experience varies considerably between students. Imperial College Medical Education Society (MedED), a student-run society, provides peer-assisted learning for medical students. The MedED 'Teaching Academy' is an ongoing, student-led pilot scheme, which provides monthly training in fundamental teaching skills, to pre-clinical medical students. The aim of this study is to assess the level of prior teaching experience in pre-clinical medical students and the demand for formal training in teaching during medical school.

Summary of Work: The scheme was advertised via year-group emails. 59 students applied of which 16 were accepted based on previous teaching experience. Enrolled students were asked to complete a pre-course questionnaire. Likert-type and free-text questions were used to further assess previous teaching experience, training and confidence in various areas (including small-group, large-group teaching and running educational projects).

Summary of Results: From the 16 students, 13 (81.3%) reported having some previous teaching experience, of which 6 (46.2%) taught on a weekly basis and 4 (31.3%) have ever taught once or twice only. Of those who taught regularly, the duration varied greatly between <3 months (1 student, 16.7%), 6 months (2 students, 33.3%) and ≥1 year (3 students, 50%). Tutoring was the most common past experience reported (6 students, 46.15%). Interestingly, 13 students (81.3%) have not received formal training on teaching. Overall, 13 students (81.3%) agreed or strongly agreed that they felt confident in small-group teaching (<10 students). However, only 7 students (43.5%) felt confident in teaching larger cohorts (>10 students). Main themes regarding areas of weaknesses involved 'explaining concepts whilst being concise' (6 responses, 37.5%) and 'keeping the audience engaged' (5 responses, 30.8%).

Discussion and Conclusions: This study highlights the variability in teaching experience amongst pre-clinical students and the lack of formal teaching training available. The lack of confidence in large group teaching can be improved through schemes such as the 'Teaching Academy'. Future studies should assess the efficacy of such training schemes by objectively assessing pre and post-course teaching skills, as well as collecting retrospective feedback.

Take-home Messages: Teaching experience varies greatly between medical students and more faculty-led training in teaching skills is needed during medical school.

#SC8.1 - Short Communications: Student - as Teacher

#SC8.1.10 (5553)

Optimising Structure and Content of Large Group Peer-to-Peer Lecturing based on Prospective Student Feedback

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ABSTRACT:

Background: The Medical Education society of Imperial College School of Medicine runs an annual lecture series for third year (first clinical year) medical students. From January to April, 30-40 lectures are delivered by senior clinical students from Years 4 to 6 covering a range of key clinical topics. Roughly 50-100 students attend each lecture, making it one of the largest student-led lecturing platforms in the UK.

Summary of Work: The objective of this study was to determine based on prospective student feedback how to optimise peer-to-peer lecturing in terms of series content, lecture format, and revision tools. This was the first time that a preliminary questionnaire was used before the series began. 321 students were invited to the series and asked to complete the online survey which recorded student concerns, learning goals, and factors that could improve their learning experience.

Summary of Results: 72 feedback forms were collected in total. The majority of students felt least supported for the written final exam compared to the practical OSCE exam (72.5% vs. 27.5%). The majority of students found that the use of take-home summary sheets was beneficial for revision (97.2%). 43 (59.7%) students preferred having consecutive lectures on the same topic, whereas 29 (40.3%) preferred to cover different topics during consecutive lectures. 47 (67.1%) students found it helpful to maintain the same lecturer for consecutive lectures, whereas 23 (32.9%) preferred having different lecturers. Of 31 responses, 19 (61.3%) students preferred covering content first in the lecture then attempting questions at the end, whereas 12 (38.7%) preferred vice versa.

Discussion and Conclusions: Student-supported adaptations include using take-home summary sheets, grouping lectures on the same topic with the same lecturer, and covering content before practising questions. Following completion of the adapted lecture series, future work should include collation of retrospective feedback on similar themes, as well as comparison of exam performance between the study cohort and previous cohorts.

Take-home Messages: Students preferred consolidating lecture content by attempting questions at the end. They also prefer to have a familiar lecturer and value lecture-specific resources to take away.

#SC8.1 - Short Communications: Student - as Teacher

#SC8.1.11 (6668)

Peer learning and peer teaching in laboratory practical sessions

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ABSTRACT:

Background: When learners shift from being students to being teachers, they develop skills in organizing and planning, collaboration, giving and receiving feedback and self-awareness. These are skills and abilities which often prove difficult to develop and examine. The aim of this study was to explore the impact of peer learning and teaching in laboratory practical sessions with biomedical laboratory science students.

Summary of Work: Two approaches with peer learning and teaching were carried out. Reciprocal, with students within the same class, or with senior students, supervising first year students. Students performed a laboratory practical under the supervision of teachers. Afterwards, students were given guidelines how to supervise and give feedback when acting as peer-teachers. The students supervised gave feedback and the peer-teachers reflected on their teaching.

Summary of Results: The reflections showed that the students in the teacher role felt that supervising forced them to take responsibility for their own learning and thereby enhanced it. The teacher role gave the students motivation to develop several skills, including planning, communication, and deepened learning. It increased their self-awareness as they were forced to reflect on their academic and social skills and how they could be improved. Students reported that they could ask more questions to their peer-teachers as they felt the peer-teachers had a greater understanding of their situation and more empathy as they were at a similar level academically.

Discussion and Conclusions: Formalised peer learning has been shown to help students learn effectively. Generic skills development and metacognitive training also benefit from peer-led teaching. While it was a challenge for many students to act as peer-teachers the majority found it rewarding. An additional benefit with peer teaching with senior students was that they could appreciate their own progression. It increased their confidence and self-esteem. Peer learning and teaching activities requires planning, but they were easy to implement. This pilot study shows the potential for peer-teaching in the laboratory practical setting and allows students to develop skills they would not normally practice.

Take-home Messages: Peer learning and peer teaching is challenging but rewarding for students and is easy to implement once planned.

#SC8.2 - Short Communications: Student - Characteristics / Career Choice

#SC8.2.1 (7001)

Which factors affect specialty choice and career plans of medical students in Turkey?

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ABSTRACT:

Background: The purpose of this research was to elucidate factors considered by Turkish medical students when formulating their specialty choice.

Summary of Work: We conducted qualitative interviews with 275 Turkish medical students from 6 different faculties regarding factors influencing specialty preference and their views on roles of primary versus specialty care. We qualitatively analyzed the data to identify factors students consider when developing specialty preferences, to understand their views about primary and sub specialty care, and to construct models depicting the pathways to specialization.

Summary of Results: Students mentioned factors such as respect for family member in the profession, illness in self or close others, preclinical experiences in the curriculum such as labs and dissection, and aspects of patient care such as the clinical atmosphere, charismatic role models, and doctor-patient communication as influential on their specialty preferences. Participating students generally distinguished between sub specialty care and primary care, but not primary care and family medicine.

Discussion and Conclusions: Preclinical and clinical experiences as well as role models are reported by Turkish students as influential factors when formulating their specialty preferences. Student understanding of family medicine as a discipline is low in Turkey. Students with ultimate aspirations to practice outpatient primary care medicine do not need to commit to systematic primary care training after graduation.

Take-home Messages: The Two Career model of specialization leaves the door open for medical graduates to enter primary care practice at anytime regardless of post-graduate residency training choice.

#SC8.2 - Short Communications: Student - Characteristics / Career Choice

#SC8.2.2 (4294)

Learning Techniques Adopted by UK Pre-clinical Medical Students

AUTHOR(S):

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ABSTRACT:

Background: Medicine requires an ability to effectively self-regulate learning. This involves accurate judgements of learning (JOL) to make sound decisions on learning technique (LT) use. Research has identified effective (e.g. retrieval practice and spacing) and less effective (e.g. re-reading, highlighting, massed practice) LTs for long-term learning.

Summary of Work: The study aims were to i) characterise the prevalence of LTs and ii) explore attitudes relating to LT effectiveness, in a representative sample of UK pre-clinical medical students. An anonymised questionnaire was used to quantify technique use and explore attitudes through a series of free-text and Likert-scale responses. 86 Year 2 medical students were included in the data analyses.

Summary of Results: Several less effective LTs were popular with students, with >60% using re-reading and highlighting frequently. 55.8% reported revisiting material again only during revision, highlighting a tendency for massed practice. Rewriting notes and writing summaries doubled in popularity during revision. Ineffective LTs were used by some students even if they did not believe them to be effective e.g. 42 students felt highlighting to be ineffective but 17/42 reported frequent use. 53.5% believed re-reading notes/texts several times was an effective LT. Most students reported frequent use of recall activities. The adoption of LTs was strongly influenced by students' personal reflection on LT effectiveness.

Discussion and Conclusions: Pre-clinical medical students adopt a range of LTs, with the prevalence of certain LTs similar to those described in general HE students. Writing out and re-reading notes, recall activities and highlighting were most popular. Many students believed certain ineffective LTs e.g. re-reading and highlighting to be effective. This may be due to the cognitive fluency these techniques afford, which gives a misleading "sense of knowing". Students' self-reflection on LT effectiveness plays an important role in LT selection. To encourage students to optimise the use of effective LTs, misunderstandings around the LT effectiveness and the metacognitive processes involved in their JOL should be explored and challenged.

Take-home Messages: There is a need to actively encourage students to optimise the use of more effective LTs. Strategies to encourage this optimisation should consider exploring and challenging the metacognitive processes students engage with when making judgements about their learning.

#SC8.2 - Short Communications: Student - Characteristics / Career Choice

#SC8.2.3 (7113)

Exploring factors that motivate and influence medical students to attend medical school

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ABSTRACT:

Background: This study explored motivation among a cohort of New Zealand medical students from The University of Auckland. The research questions were: 1) What motivates students to attend medical school? 2) What are the values, beliefs or cultural practices that influence students' decisions to go to medical school? 3) How do students' families influence their decisions to go to medical school?

Summary of Work: Twenty medical students from The University of Auckland in Years Two and Five of a Bachelor of Medicine and Bachelor of Surgery (MBChB) degree participated in semi-structured focus group interviews. Two cohorts of medical students were involved, Māori and Pacific Admission Scheme students (MAPAS), and non-MAPAS students. An interpretive methodology was used, and data analysed using thematic analysis.

Summary of Results: This study found both MAPAS and non-MAPAS students have intrinsic and extrinsic motivation to attend and continue medical school. However, the non-MAPAS students had more individualised motivations to study medicine whereas the MAPAS students were more motivated by collectivism. Family and cultural customs influenced MAPAS students' motivation to study medicine. Non-MAPAS students were influenced by positive school experiences. Common to both cohorts was the significant influence of family. Non-MAPAS students specified family members' professions and educational support as influencing factors. In contrast, MAPAS students identified being motivated to study medicine to improve the financial and health situations of their families.

Discussion and Conclusions: All students have different motivations for attending medical school which is influenced by their culture and environment. Culture encompasses the individual and their family, inclusive of ethnicity, beliefs, values and behaviours. Family plays a crucial role in motivating and influencing students to pursue medicine.

Take-home Messages: Motivation among medical students is influenced by their socio-cultural environment which is inclusive of family, ethnicity, beliefs and values. Student motivation is intrinsic that is, out of interest or enjoyment of learning medicine. Their motivation is also extrinsic – out of concern for future financial prospects and helping others. Family and cultural values have an influence on Māori and Pacific students' motivation and career choice. This may have influenced these students to take on a more collectivist approach in their motivation to pursue a career in medicine.

#SC8.2 - Short Communications: Student - Characteristics / Career Choice

#SC8.2.4 (7179)

The effect of grit on a graduation examination at Japanese medical university

AUTHOR(S):

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ABSTRACT:

Background: Medical students need to study hard over a period of years and pass several high-stakes tests to be a medical doctor. Therefore, they need not only high intellectual abilities but also the trait “grit” for continuous effort. Grit is defined as “perseverance and passion for a long-term goal,” and it consists of two factors: perseverance of effort and consistency of interest. Recent studies have shown that grit is associated with higher academic performance and lower rates of residents’ burnout. This study examined whether grit predicted performance in the graduation examination at Japanese medical university even when controlling for grade point average (GPA).

Summary of Work: Ninety-five undergraduates in the sixth year at Kansai Medical University, completed the Short Grit Scale at the beginning of the first semester. This scale consisted of four items measuring perseverance of effort and four items measuring consistency of interest. At the second semester, the students took the three graduation tests, which examined medical knowledge and reasoning. The comprehensive score (ranging from 0 to 100) was calculated from the three examinations and used for deciding one’s graduation. The GPA in the fifth year was obtained from school records. A hierarchical regression analysis predicting the comprehensive score was conducted. The GPA was entered in Step 1, and the grit scores for perseverance of effort and consistency of interest were entered in Step 2.

Summary of Results: The results revealed that the score for perseverance of effort predicted higher performance in the graduation examination ($B = .33, p < .005$) even after controlling for GPA ($B = .50, p < .001$). The score for consistency of interest, on the other hand, did not predict the examination performance ($B = -.14, p = .17$).

Discussion and Conclusions: The results show that grit predicted performance in the graduation examination. Notably, the effect of grit on the examination performance was found when controlling for GPA. Perseverance of effort, rather than consistency of interest, found to be a key factor for success in the high-stakes examination.

Take-home Messages: Grit predicted higher performance in the graduation examination for medical university even when controlling for GPA.

#SC8.2 - Short Communications: Student - Characteristics / Career Choice

#SC8.2.5 (4262)

Group Work 101 – Teaching Students How to Work Effectively in a Team

AUTHOR(S):

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ABSTRACT:

Background: Every student, no matter what program, will need to do some form of group work during their University studies. However, most students are never taught how to work in a team, so group work is consistently rated as one of the most disliked and stressful activities by students. In 2018, a new assessment task was introduced into a biochemistry course. Students had to work in a team to diagnose a patient with a metabolic disorder using an experimental technique they had carried out in the laboratories. It was clear that the teamwork aspect was their biggest struggle in completing this task. Learning to work in a group is an essential graduate attribute and students should be taught how to do this effectively.

Summary of Work: In 2019, the same assessment was repeated, but with the incorporation of a 10-week program on how to do group work. The program consisted of hands-on group bonding activities, a workshop on conflict resolution, peer-to-peer teaching activities, feedback sessions, presentations, and an individual term long reflection diary.

Summary of Results: Using a Likert scale, students were surveyed on various aspects of the assessment task. 88% of students strongly agreed or agreed that this assessment taught them valuable skills to work effectively in a team. In the final course survey conducted by the University, the students were asked to rate whether they felt part of the learning community. In 2018 before the interventions, 33% of the students strongly agreed with this statement while in 2019, this has jumped to 55%.

Discussion and Conclusions: The program appears to have helped students form better connections with their peers from the beginning which led to better engagement in the course overall. Students are naturally more inclined to become competent at a task through group work as mastery occurs together and their sense of community grows over time.

Take-home Messages: Providing students with more targeted training of 'soft' skills should be made a priority in their University learning process. Mastery of these skills early on could make their University experience a lot better.

#SC8.2 - Short Communications: Student - Characteristics / Career Choice

#SC8.2.6 (4890)

Why don't more educators motivate students by offering choices?

AUTHOR(S):

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ABSTRACT:

Background: Offering choices is a well-established strategy of autonomous learning and a central component in many motivation theories, such as control, self-determination, and interest theories. A recent survey of health science educators (n = 272) indicated that only 36% of educators had offered choices in the last year yet learning how to “motivate today’s learners” was an identified “much/some need” for 79% of these same educators. The aim of this study was to examine factors that hinder offering choices in the classroom for these teachers.

Summary of Work: Eleven faculty members from various disciplines who had completed the abovementioned survey participated in focus groups (n = 3) where they were asked to identify factors that encouraged and discouraged the offering of choices. Thematic analysis of the transcripts was performed and suggestions for addressing these factors were developed.

Summary of Results: Overall, educators saw some value in offering choices to students. The following themes were identified as factors that discouraged educators from offering choices: lacking confidence in their skills to meet student needs, lacking confidence in students’ generic skills, passive students, and larger, fixed content classes. Encouraging factors were stories of teaching and mentors.

Discussion and Conclusions: Examining the “why” behind educators’ lack of use of the motivational strategy of offering choices led to suggestions to improve the use of this strategy: (1) require students to complete a generic skills course, including critical thinking, digital literacy, active learning, and teamwork; (2) provide mentors and teaching stories, especially for new educators with large, fixed content courses; and (3) provide faculty development in skills that will increase educator confidence, including education on the value of offering choices while providing strategies. Examples of strategies that give students choices include allowing choice of assignments, assignment topic, and assignment format, as well as allowing students to find resources, contribute to course decisions, and lead instruction.

Take-home Messages: Having universities and faculty developers address the factors both educator-related and student-related that encourage or discourage offering choices may result in increased use of this motivational strategy by educators, resulting in more student engagement in the classroom.

#SC8.2 - Short Communications: Student - Characteristics / Career Choice

#SC8.2.7 (4912)

Teaching and Learning: the pathway to impact motivation

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ABSTRACT:

Background: Poor quality teaching and curricula, and the lack of a conducive research environment represent significant barriers within the educational system in achieving projected impacts. Motivation as a dependent variable is affected by several factors including personal characteristics like age and gender; and external factors like the teaching environment and teachers among others. Fulfilling the students' needs for competence, autonomy and relatedness, enrich students' intrinsic motivation towards learning. Working on the external factors affecting motivation and thriving to satisfy the students' needs through an educational system could be used to increase external motivation. Community Medicine and Public Health are chosen by a few Sudanese undergraduate students (1.8%) as a future career. This study assessed the outcome of the modification of teaching a community medicine course on students' motivation before and after its implementation.

Summary of Work: In this quasi-experimental study, a modified Motivated Strategies for Learning Questionnaire (MSLQ) was completed by 228/324 first-year medical students before and after the modification of the second course (occupational health) of the community medicine in semester two after their completion of the first course (environmental health) in semester one at the Faculty of Medicine, Khartoum University in the academic year 2016-2017. Introductory sessions, tutorials, field visits, interactive guest presentations, and wrap up sessions were added, the number of the assignment was decreased, and the timetable was changed.

Summary of Results: Although the reading hours spent for the course does not increase significantly ($p=0.715$), the motivation score of students was significantly increased ($p = 0.01$). They agreed that the Occupational Health Course is useful ($p=0.001$), and think it will be helpful to population health ($p=0.001$). The most satisfying intervention for the student was decreasing the number of assignments, the new course timetable and Almanara field visit (mean score 5.86, 5.74 and 5.46 out of 7), respectively.

Discussion and Conclusions: Intervention to increase the motivation towards community medicine can be designed with specific consideration drawn to the course content, active and experiential learning strategies with predicted outcome.

Take-home Messages: Improved teaching methods show high acceptance and increase students' motivation to learn.

#SC8.2 - Short Communications: Student - Characteristics / Career Choice

#SC8.2.8 (4992)

Resilience: Conceptualisations and curricular approaches of medical educators

AUTHOR(S):

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ABSTRACT:

Background: Concern has mounted about the high rates of psychological distress among learners, resulting in calls to cultivate resilience across the medical education continuum. Educators are strategically positioned to foster resilience in their learners through the formal, informal, and hidden curricula.

However, little empirical research has explored resilience in medical educators. Key questions such as how do they conceptualise resilience, and how do they support resilience in learners are particularly relevant.

Summary of Work: This research was part of a larger mixed-methods study examining resilience in medical educators. Open-ended questions exploring: (i) how educators conceptualised resilience, and (ii) how they were fostering resilience in their learners, were woven throughout a cross-sectional online questionnaire. Sociodemographic characteristics were also collected. UK-based educators involved in teaching medical students, trainees or doctors were invited to participate, and their anonymised responses were analysed using thematic framework analysis.

Summary of Results: 244 medical educators participated. The pattern across identified themes suggested that they predominantly conceptualised resilience as an individual process, rather than a more holistic perspective encompassing institutional, community, societal, and cultural dimensions. Approaches spanning the formal and informal curricula were mainly reported by participants to support resilience in their learners. In contrast, the hidden curriculum was seldom mentioned.

Discussion and Conclusions: Medical educators may conceptualise resilience in a way that differs from recent literature which views resilience through a multi-dimensional lens. Furthermore, the data suggests that their approaches to fostering learner resilience may potentially be neglecting the hidden curriculum or the structural and cultural aspects of medical education.

Take-home Messages: Educators play an important role in cultivating learner resilience throughout the medical education continuum and exploring how this occurs is a valuable area for further research. Faculty development initiatives should challenge educators to conceptualise resilience holistically as this may influence how they foster resilience in their learners. Curricular approaches that explicitly address the hidden curriculum should also be considered.

#SC8.2 - Short Communications: Student - Characteristics / Career Choice

#SC8.2.9 (6155)

It's like riding 2 horses simultaneously: A qualitative study exploring barriers and enablers to clinical academia careers in medicine and dentistry

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ABSTRACT:

Background: Gender inequality within clinical academia is well-documented. Women and minority groups are not progressing through clinical academic career pathways. This study aimed to understand the barriers and enablers to clinical academic careers for doctors and dentists in the UK. Particular interest was paid to its causes and possible interventions to facilitate equality. This qualitative exploration complements an ongoing systematic review.

Summary of Work: This study utilised 80 semi-structured interviews with dentists and medics who have pursued, successfully navigated to the top of, withdrawn from, or decided against pursuing clinical academic careers. Participants ranging from early stage PhD students fellows and clinical lecturers to those at the climax of their careers as Deans and Professors. Data were analysed using thematic analysis. A reflexive approach was observed throughout.

Summary of Results: Participants described their motivation to pursue clinical academia, with many being inspired during intercalation experiences. Numerous barriers described pertained to the duplication of effort with mandatory training and administration, as well as the daily struggles of negotiating two career tracks simultaneously – likened to riding two horses pulling in opposite directions. More significant concerns were raised with respect to gender discrimination, racial inequalities, reproductive decision making and the perception that ‘you need to choose career over family and caring responsibilities in order to succeed’. The biggest enabler reported was that of a good mentor. Flexible working arrangements, bridge funding, resilience and a support network outside of work life also were enablers for many participants. Participants suggested interventions to promote access including; mentorship programmes, bridging funding, transparent peer review and more flexibility of working time/contracts based on individual circumstances.

Discussion and Conclusions: There are numerous challenges associated with negotiating a career in clinical academia, much of which is related to the practical and administrative burden. A major barrier remains gender discrimination, in particular related to maternal status. Dental participants face an additional hurdle in that the career paths are less well documented. This study will develop an implementation plan for funders to assist in addressing inequalities.

Take-home Messages: Women and ethnic minorities struggle with the absence of positive role models and mentorship, with many attributing their own successes to little more than luck.

#SC8.2 - Short Communications: Student - Characteristics / Career Choice

#SC8.2.10 (6506)

Applicant's medical career preference and societal demands: A mismatch in the making?

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ABSTRACT:

Background: Medical school applicants choose to study medicine to pursue a career as clinical physician. Emphasis on cure and care in medical curricula reinforces this expectation. However, given changing societal demands for preventive and out-of-hospital care specialists, career expectations and actual job availability diverge. Whether or how current generation applicants anticipate on careers in line with societal demand is unknown. To gain a better understanding of career preferences and career-related mental resources, we investigated in medical school applicants (1) career preferences and (2) career adaptability ('reactively adapt') and career competencies ('proactively shape') mental resources to determine these preferences.

Summary of Work: During the medical school admission process applicants received a questionnaire and were asked whether they considered a specific specialty and, if so, which was their first preference. Career-related mental resources consisted of items from validated questionnaires: Career Adapt-Abilities Scale (CAAS) and the Career Competencies Questionnaire (CCQ).

Summary of Results: The questionnaire was completed by 233/398 applicants (59%), 200 applicants (86%) indicated a career preference. These applicants preferred a career in curative specialties, the four most popular being surgery (n = 42), paediatrics (n = 34), general practitioner (n = 14) and psychiatry (n = 13). Applicants scored significantly higher on career adaptability (Mean = 6.0; SD = 0.5) than on career competencies (Mean = 5.5; SD = 0.5).

Discussion and Conclusions: The current study underlines the discrepancy between early career preferences of medical school applicants and careers meeting societal demands. Even before entering medical school, applicants prefer curative care and they appear to adapt reactively more than shape proactively their career-related mental resources. In addition to our findings, identification of other key process indicators as drivers of career choice prior to and during medical school is needed to achieve a better fit between career choices and societal demands. Interventions should aim to change early career expectations by broadening the scope on future careers to meet societal demands.

Take-home Messages: Stimulate proactive awareness in medical school applicants to broaden their view of medical career options, as first step to close the gap between societal demands and supply of physicians.

#SC8.3 - Short Communications: Student - Engagement

#SC8.3.1 (7086)

“Well begun is half done”: The Importance of an Inclusive Programme at the start of Academic Education

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ABSTRACT:

Background: An inclusive programme at the start of the academic year is important to make students feel welcome and comfortable at University. An inclusive atmosphere is associated with enhanced study performance and better collaboration among students. However, many reports show that not all students actually feel included among their peers and different minority groups experience forms of exclusion during their education period

Summary of Work: To bring about an inclusive atmosphere for the bachelor's at the faculty of Medicine at Utrecht University, we developed a bias training for the student mentors that guide the first-year students through the first weeks at University. The aim of the bias training is to make the student mentors aware of their unconscious bias and to provide them with ideas to organise an inclusive introduction programme. Using a mix of qualitative and quantitative approaches, we investigated how the student mentors received the bias training and how they applied the obtained knowledge and insight during the introduction. In addition, we measured the perceived inclusion, belonging and authenticity, of the first-year students of using questions from the perceived group inclusion scale.

Summary of Results: Analyses of two-year results show that the bias training helped mentors to increase their awareness with regards to diversity and inclusion. Although some student mentors were already acquainted with the concept of bias, most of the student mentors quoted that the bias training provided useful ideas on how to include every student during group activities. After the second bias training and introduction, even more student mentors experienced the bias training as useful and instructive for an inclusive introduction.

Discussion and Conclusions: In conclusion, the bias training for mentors was regarded as useful and instructive. During the introduction, most students felt they were part of the group. However, several signals indicate room for improvement for an inclusive programme and environment.

Take-home Messages: The results indicate that student mentor training can lead to stronger skills when it comes to first year students' guidance and support and the first-year students may then perceive a higher level of inclusion during their transition to HE.

#SC8.3 - Short Communications: Student - Engagement

#SC8.3.2 (4400)

Students' perspective on student-staff partnerships in enhancing educational quality

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ABSTRACT:

Background: An evolution in student participation for enhancing educational quality is going on. Students are nowadays seen as adviser. That is, they can provide advice and feedback enabling teachers to improve education. Students are also considered as active partners for teachers to develop and improve education in student-staff partnerships (SSP's). SSP's are collaborations in which students and teachers contribute equally, but not identically to educational decision-making and implementation processes (Cook-Sather et al., 2014). SSP is all about active participation of students, but at the same time can be challenging for students (Healey & Healey, 2019). Previous research shows that students' willingness regarding SSP is ambivalent (Marquis et al., 2019; Martens et al., 2019). This study addressed the questions: What are students' current experiences with SSP? What would they prefer? To what extent do students' preferred perceptions of student participation differ from their current experiences? What are students' suggestions to improve student participation?

Summary of Work: 132 Second-year Biomedical Sciences students completed a questionnaire about their experiences and preferences (response rate=58.15%). The questionnaire contains two factors: students as advisers (6 items) and students as partners (4 items) on a 7-point Likert scale (1 =strongly disagree; 7 =strongly agree), and includes two open-ended questions. Scores below 4 are considered as insufficient and above 5.5 as good. Factor analyses and reliability analyses ($\alpha \leq 0.79$) were conducted, even as descriptive statistics, paired t-tests, and thematic analysis.

Summary of Results: Currently, students score on average 4.72 (SD=0.94) on viewpoint of students as advisers and 3.52 (SD=1.18) on students as partners. Students preferred score is 5.76 (SD=0.69) on students as advisers and 5.02 (SD=1.50) on students as partners. Preference scores exceeded students' current experiences for both scales: advisers (CI[-1.21;-0.87]) and partners (CI[-1.74;-1.26]). To enhance SSP's, students indicated a need for: transparent disclosure of changes and dialogues with the full student population.

Discussion and Conclusions: Students are partly satisfied with their current role as adviser, and neutral to how they are involved as partners. Students would prefer to participate more actively than they currently do and recommend enlarging the dialogue between teachers and students.

Take-home Messages: Future initiatives should research ways of combining these two roles into practice.

#SC8.3 - Short Communications: Student - Engagement

#SC8.3.3 (5086)

Students' Feedback Guiding Faculty Development in a Learner-centric Higher Education Setting: A Mixed-method Case-study

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ABSTRACT:

Background: Despite the recent surge in attention towards involving students in faculty development efforts, there are still no published studies that reflect upon processes of engaging students in identifying faculty development needs. Accordingly, this study aims at highlighting the means by which students can play an active role in defining the faculty development needs, based on which professional development opportunities can be devised.

Summary of Work: This study was undertaken at the Mohammed Bin Rashid University of Medicine and Health Sciences (MBRU). A mixed method case-study design was adapted to capture the perception of the students in relation to faculty development needs. Data was extracted from an annual survey that assesses the satisfaction of the students at the university. Quantitative data was analyzed using SPSS and qualitative data was thematically analyzed.

Summary of Results: The students indicated opportunities for improvement in the following two areas: student academic advising process (55.17%) and communication between the instructors and the students (50.59%), and a less prominent chance for development around the following two areas: opportunity to express opinion and teaching methods. The qualitative analysis resulted in six categories of recommendations, that were fit into two themes. The first theme refers to the dynamic between the instructors and students, and includes: improving the quality of the provided feedback, maximizing students' engagement, and maintaining a positive attitude. The second theme is related to the organization and delivery of the program, and includes: adhering to course guides, enhancing the quality of presentations, and enhancing the coordination across the faculty members.

Discussion and Conclusions: There seems to be an opportunity for improvement around communication between the instructors and students. Students want to be more engaged in their own learning process. In addition, the students are requiring more academic support, and are suggesting for that to happen via strengthening the advising skills of the instructors. Gaps in the teaching styles and methods of the instructors were also indicated.

Take-home Messages: There is added value of capturing the learners' perception of faculty performance. It raises the reliability of the implemented evaluation framework, and has the potential of substantially improving the rigor of Faculty Development initiatives.

#SC8.3 - Short Communications: Student - Engagement

#SC8.3.4 (5346)

Evaluation of the involvement of student lectors in simulation-based first aid course

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ABSTRACT:

Background: First Aid Simulation Course (FASC) is a unique project established in March 2016 as a student-led initiative. In 2017 it became part of the Medical Simulation Centre at the Faculty of Medicine of the Masaryk University. From the academic year 2019/2020 it is part of the curriculum as an option. From March 2016 we have organised 9 courses altogether for 270 participants. Participants cooperate in teams of 3 in 5 prepared simulated scenarios (5 min) followed by a structured debriefing session (20 min). Ten student lectors are involved in each course, they collaborate in pairs under the supervision of a mentor, design their own simulated scenarios and prepare for their role of lectors.

Summary of Work: Our aim was to evaluate and to map the contribution of students' involvement in the role of lectors in FASC. We designed a questionnaire and collected answers from 15 student lectors who were involved in the project for at least one course.

Summary of Results: We analysed the contribution of the involvement in 4 main categories: simulation related skills, literacy skills, soft skills and knowledge and skills in first aid. Students reported great improvement in all the categories. On the basis of their lectors' experience, 80 % of students would consider getting involved in medical education and teaching in the future. 20 % of respondents were influenced by this experience when choosing their speciality. 80 % of lectors participated later in some other course, activity or project to improve their knowledge and skills.

Discussion and Conclusions: It is necessary to work systematically with the students to promote their improvement in different skills. Workshops, mentoring and supervision support them to fulfil their role of lectors. It also ensures high quality of the simulated scenarios and debriefing session reported by the participants in their evaluation.

Take-home Messages: Involving students as student lectors in FASC lead to their improvement in different skill categories. It positively influences their attitude towards medical education and motivates them to consider their engagement in teaching later in their career.

#SC8.3 - Short Communications: Student - Engagement

#SC8.3.5 (5540)

The University of Ibadan Medical Students' Association (UIMSA) COM/CARD: A model for student engagement in medical education research and curriculum development

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ABSTRACT:

Background: Since its establishment in 1948 as a college under the University of London, the College of Medicine, University of Ibadan has carried out 6 different reviews of the curriculum wholesomely adopted from the parent institution. The last of these efforts, and most extensive till-date was carried out from 2004-2010 with the funding from the John T. and Catherine D. MacArthur Foundation, producing a document with the vision of building bridges to produce tomorrows doctors today. Historically speaking, none of these reviews had sufficiently engaged medical students and now, 10 years post-development, the curriculum is set for another review. This time however, a framework for effective student contribution was set-up by the medical student association, in form of the Committee on Curriculum Assessment, Research & Development (COM/CARD).

Summary of Work: The committee operates on three core pillars: -Medical Education Research: On relevant topics around competency-based medical education for presentation to the Curriculum Review Committee. -Social Media Sensitization: To inform medical students about curriculum content and updates on the review process and how it affects their medical education. -Inter-generational multi-stakeholder dialogues on the 2010 Ibadan Medical Curriculum. Key members of faculty were identified to serve the roles of advisers and research supervisors, in a bid to muster institutional support for our recommendations.

Summary of Results: Within the space of four months, the committee recorded the following achievements: -3 medical education research projects on the following topics: knowledge, awareness and perception of students on the 2010 medical curriculum; knowledge of, barriers to and opportunities for conducting research among Ibadan medical students; and Role of foreign elective opportunities in the development of the Ibadan medical student. -A dialogue workshop between students and faculty representatives, featuring exchange of ideas and recommendations made to the curriculum review committee. -Effective student engagements through regular Did You Know? and Curriculum Trivia posters.

Discussion and Conclusions: The UIMSA COM/CARD could serve as a model for effective student engagement in curriculum review and development processes.

Take-home Messages: Medical Students Associations have a role to play in engaging students in curriculum assessment, review and development.

#SC8.3 - Short Communications: Student - Engagement

#SC8.3.6 (5958)

Early Medical Students Engaging in Health Systems Improvement

AUTHOR(S):

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ABSTRACT:

Background: Over the past decade, medical educators have argued that lack of attention to quality improvement, value-based care, interprofessional collaboration, and health care economics – collectively known as health systems science (HSS) - has limited the ability of the US health care system to achieve its potential. Many have called for education reform to engage students in improving health systems. Academic health centers experience tensions between their clinical and education missions. Challenges include the focus on traditional sciences; limited faculty expertise, and perceptions that students strain health systems. To date, most physicians still lack training in health systems improvement.

Summary of Work: We conducted a qualitative study of a large-scale integration of HSS education with health systems. The novel Clinical Microsystems Clerkship at University of California San Francisco embeds all pre-clerkship students with physicians and interprofessional teams to address clinical problems. It includes workshops (19 hours); project sessions (half-day, 28 weeks); and faculty development. For all projects from 8/2017 – 11/2018, we analyzed: 1. project reports (background; problem; goals; gaps; experiments; action; and reflection); 2. project posters, and 3. physician and project lead surveys.

Summary of Results: All 2018 second-year medical students (n=152) submitted health systems improvement project reports (n=53). We analyzed reports, posters, and surveys from physicians (n=26/27; 96%) and QI leads (n=13/21; 68%). Student teams (n=2-6 each) completed projects in 16 specialties spanning three health systems (academic, county, and veterans). All engaged multiple health professions; 43% involved patients. All addressed national priorities. Regardless of achieving project aims (54%), students improved the microsystem (72%). Most physicians (86%) agreed students achieved HSS learning goals. Sample projects include: Reducing Pregnancy-Related Hemorrhage and Death, Improving Value in HIV Pre-Exposure Prophylaxis, and Improving Hypertension Control in Black Patients.

Discussion and Conclusions: Our study shows that with an experiential HSS curriculum, early medical students can contribute to meaningful systems improvement. Most projects led to health system improvements. Students learned HSS, workplace professionalism, and the complexity of clinical process and outcomes. From operating rooms to nursing homes, students added value.

Take-home Messages: Health systems and medical schools can collaborate to teach systems improvement to early students while solving today's health care challenges.

#SC8.3 - Short Communications: Student - Engagement

#SC8.3.7 (6481)

Student-staff partnerships to enhance assessment and feedback

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ABSTRACT:

Background: The University of Glasgow has recently launched a student-staff partnership scheme to improve assessment and feedback. Two grants were successfully secured to improve the guidance provided to students for the Medical Independent Learning Exercise (MILE), as well as the feedback for that assessment.

Summary of Work: Following the MILE assessment, a set of online questionnaires and focus groups were run by the student partner, and the data analysed using thematic analysis. The resulting themes were used to create “tips for writing assessment guidance”, as well as a list of five “feedback criteria” for lecturers to use when marking. These tips and criteria were then applied to the MILE in the subsequent academic year, as well as the equivalent assessment on the Veterinary Medicine course, and to a different piece of coursework on the MBChB course. Additionally, another student-staff project was undertaken to develop peer-review guidance, for students peer-reviewing formative MILE assessments.

Summary of Results: Focus groups with students, lecturers and markers were run to collect data on the transferability of the tips for writing assessment guidance and feedback criteria. Focus groups were also undertaken to establish the peer-review guidance needs and to evaluate the resource created. The results showed that the tools created by the student partners were generally transferable to other courses and assessments. The benefits and limitations of these tools will be presented.

Discussion and Conclusions: Student-staff partnerships have been very effective in our Medical School to undertake small education research projects and generated tools that can be used to improve assessment and feedback in their own discipline as well as others. Including students in the research gave staff a better understanding of student needs, and led to the inclusion of guidance and feedback criteria which would not have been generated otherwise.

Take-home Messages: - Including students in strategies to improve assessment and feedback is an effective and rewarding strategy, leading to the creation of rich tools; - Following tips to write assessment guidance ensures that staff attend to all student needs; - Applying feedback criteria when marking ensures higher quality and more consistent feedback across markers.

#SC8.3 - Short Communications: Student - Engagement

#SC8.3.8 (7275)

STUDENT LED EDUCATION INTERVENTION TO IMPROVE KNOWLEDGE AND AWARENESS OF CARDIOVASCULAR DISEASE IN A TEACHING HOSPITAL IN CAMEROON

AUTHOR(S):

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ABSTRACT:

Background: Sub-Saharan African (SSA) countries face an epidemic of cardiovascular diseases (CVD) accounting for the highest mortality of all non-communicable diseases and is expected to double by 2030. The increase of CVD burden is driven by socioeconomic changes resulting in increased prevalence of cardiovascular risk factors, limited access and affordability of healthcare and gaps in knowledge and awareness of CVD and risk factors. A recent systematic review reported poor understanding and knowledge of CVD and risk among the general population in SSA, highlighting an important barrier to effective prevention and treatment of cardiac disease. Knowledge of a disease condition has important positive influence on health behaviours and can improve attitudes to treatment and compliance and thus impact on prevalence and outcomes. However resources to improve CVD patients' knowledge is scarce in many SSAs.

Summary of Work: Medical students in the University of Buea, Cameroon, spend extended periods during their training with hospitalised cardiac patients offering opportunities to educate and counsel patients to improve CVD awareness and self-management. In this study, students undertook self-learning of prescribed teaching modules. Competencies to deliver face-to-face patient counselling and education was assessed by formative peer assessment of simulated patient encounters evaluating extent and accuracy of knowledge; communication skills and patient centeredness in terms of contextualising educational material according to local beliefs, customs and language. Independent reviewers also provided feedback.

Summary of Results: We will report 1. the impact of a student led educational intervention to cardiac patients hospitalised in Buea Regional Hospital, evaluating patient knowledge and perceptions of CVD and management using qualitative and quantitative assessment 2. learner experience evaluated through unstructured reflections and structured feedback.

Discussion and Conclusions: Student led interventions have an established role in western medical schools and healthcare systems, and can have a powerful impact on quality improvement in patient care and health services and educational experience.

Take-home Messages: The relevance of this study is that it reports the feasibility and outcomes of a student led educational initiative in a healthcare setting in SSA where similar initiatives to harness medical student interventions can improve patient outcomes and enhance deeper learning and development of professionalism.

#SC8.3 - Short Communications: Student - Engagement

#SC8.3.9 (7280)

Revitalizing Student Engagement in Health Professions' Education: A Caribbean Health Professions School's Story

AUTHOR(S):

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ABSTRACT:

Background: Meaningful Student Involvement (MSI) is the process of engaging students in every facet of the educational process for the purpose of strengthening their commitment to education, community, and democracy. Prior to 2017, student advocacy, engagement, and representation at the Faculty of Medical Sciences (FMS), UWI Mona Campus, was minimal, ad-hoc, and siloed. The appointment of a new Dean in 2017 led to a revolutionizing of the process, culminating in the intention to apply for the AMEE ASPIRE-to-Excellence award for Student Engagement in 2021.

Summary of Work: In 2017, the new Dean selected, supported, and mentored a medical education student leader to lead change management in transformational leadership for meaningful student advocacy, engagement and representation in medical education and the Dean's vision, mission, and strategic plan in social accountability, and interprofessional education. This student leader originated from IFMSA's Jamaican representative body, the Jamaica Medical Students' Association (JAMSA) Standing Committee on Medical Education (SCOME).

Summary of Results: The medical student leader united the disparate leadership elements in both the medical school and the seven (7) multidisciplinary health professions schools by establishing medical students' and health professions schools' leadership councils, initiating student-led course and curriculum feedback (including in the development of a new course), piloted high-level policy input into the schools' governance processes and recruited a small working group of underclassmen to mentor as his successors upon graduation. This work has resulted in the most meaningful student involvement at FMS, Jamaica in the decade since JAMSA hosted an IFMSA General Assembly.

Discussion and Conclusions: Achieving the highest rung on Fletcher's Ladder of Meaningful Student Involvement of equity and shared decision-making between Faculty and students in the school's governance requires the breaking down silos, building a collaborative diverse leadership structure and working to achieve buy-in from both aspects of the top-down Faculty leadership and bottom-up student engagement. Transformational leadership and high-quality mentorship are essential for a successful change management process as evidenced by the revitalization of student engagement at the FMS, Jamaica.

Take-home Messages: Eliminating paternalistic hierarchical culture and recruiting a student leader champion are critical factors in transforming student engagement.

#SC8.3 - Short Communications: Student - Engagement

#SC8.3.10 (6661)

Co-designing a Curriculum Map with Medical Students

AUTHOR(S):

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ABSTRACT:

Background: • Feedback from the National Student Survey and student evaluated questionnaires indicated that UCL medical students were unclear about undergraduate ('MBBS') course content and what they needed to learn for assessments. • Prior to the 'Curriculum Map' (CM), students viewed Intended Learning Outcomes (ILOs) through year-specific study guides and the Virtual Learning Environment (VLE); no unified curriculum was available. • UCL Medical School undertook a student-staff collaboration to co-design and build an electronic CM.

Summary of Work: • A dedicated mapping team collaborated with students to research their views on the utility and functionality of a CM using mixed methods; a pan-student survey and focus groups, led by trained student facilitators. • All students were invited to complete an anonymous survey using Likert responses to obtain quantitative and qualitative data. • Seven focus groups were conducted with students from all years, which included showing CM prototypes. • Focus groups were transcribed and synthesised independently by two researchers using thematic analysis (Braun and Clarke, 2006). • Academic curricular content was collected from faculty, house-styled and inputted into the CM. • Ethics approval was obtained through UCL.

Summary of Results: • 93% of students completing the survey (n=409) said they were 'likely' or 'very likely' to use a CM, with 84% stating the importance of knowing module ILOs. • Thematic analysis of focus groups indicated that students wanted a simple CM to use intuitively and link between modules and years of the course, and to Outcomes for graduates (General Medical Council, 2018). • These data were used to co-design a student-centred CM, published in September 2019.

Discussion and Conclusions: • A CM provides clarity of the MBBS syllabus. • Students can use the CM to guide learning and as a revision aid. • The CM can be used by educators across all sites to harmonise expectations of students and staff.

Take-home Messages: • Through staff-student collaboration, a CM has been co-designed and launched, providing students with a centralised reference point for the UCL MBBS curriculum. • Additional focus groups and a second pan-student survey have been conducted following the CM's launch, to continue to improve this resource.

#SC8.3 - Short Communications: Student - Engagement

#SC8.3.11 (7268)

The Medical Students' Approach to Accreditation and Quality Assurance

AUTHOR(S):

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ABSTRACT:

Background: The International Federation of Medical Students' Associations (IFMSA), that is composed of 135 national member organisations worldwide, supports meaningful student involvement in accreditation and quality assurance, and therefore, has included this topic in their area of work.

Summary of Work: The aim of this study was to collect data from medical students on the recognition and accreditation status of medical schools worldwide as well as assess the involvement of medical students in the process of accreditation and quality assurance.

Summary of Results: Between 2017 and 2019, 372 responses were received from medical students on the accreditation status of their medical schools. 75% reflected that their medical schools are accredited, while the rest were either unsure (15%) or not accredited (10%). Out of all accredited schools, only 13% of the accreditation agencies were recognised by an international body. A second phase of the study is now ongoing, collecting data from 128 countries on the level of student engagement in national accreditation processes.

Discussion and Conclusions: The current student involvement in accreditation and quality assurance processes is insufficient. This is due not only to the fact that, when student involvement is part of the accreditation protocol, it often amounts to tokenism or an act of presence, but it can also be linked to a lack of knowledge and of interest by medical students. Therefore, there is a need for additional student-education on accreditation and quality assurance as well as teacher-education on the benefits of student involvement. As IFMSA believes in the relevance of student involvement, we have included this topic in our capacity building opportunities, and additional data will be collected in the upcoming months. Benefits of student involvement in accreditation processes are that it will increase the dialogue between the student- and teacher-body. Furthermore, students, as direct actors of their curriculum, have a good sense of what needs to be changed.

Take Home Messages: The current student involvement in quality assurance is insufficient. It is linked to and results in a lack of interest from the student body. It can ensure a better quality of these processes and of medical education.

#SC8.4 - Short Communications: Student - in Difficulty / Burnout / Wellbeing

#SC8.4.1 (5816)

An interprofessional educational intervention to promote awareness of medical student mistreatment

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ABSTRACT:

Background: Medical student mistreatment is prevalent across clinical learning environments globally. To heighten awareness and develop consensus of what mistreatment is, we developed an educational intervention with: a) video prompts portraying mistreatment and b) facilitated discussion for preceptors, residents and inter-professional clinicians as part of our institution's student informed multi-pronged approach to address medical student mistreatment.

Summary of Work: Our team of medical students, staff and preceptors developed two brief videos based on student experiences that conveyed different forms of mistreatment: public humiliation and discrimination. Following viewing of each video, presenters facilitated discussion of perceptions of mistreatment and its impact at twelve departmental grand rounds and two inter-professional conferences in our local setting. An experiential exercise regarding implicit bias and stereotyping also followed the discrimination video. Audience members were invited to provide informed consent and to respond to a fifteen-item survey regarding demographics, experiences of mistreatment, perceptions of mistreatment conveyed by the videos and the educational value of these discussions.

Summary of Results: Participants included clinical/academic faculty (n=61, 34.5%), interdisciplinary professions (n=51, 28.8%), residents/fellows (n=36, 20.3%), medical students (n=18, 10.2%) and nurses (n=8, 4.5%). Previous mistreatment was endorsed by 72.5% (n=124), most commonly faculty to trainee. On a Likert scale from 1 (not at all mistreated) to 5 (extremely mistreated), respondents perceived that moderate mistreatment occurred in the public humiliation (M = 2.8) and discrimination (M=3.1) videos. Participants (91%) rated the educational value of the discussion from moderately to extremely valuable.

Discussion and Conclusions: Inter-professional clinicians reported educational value in discussing perceptions of medical student mistreatment and its impact using a video based educational intervention. It was unique to openly discuss discrimination and stereotyping within health professions. Future research directions will include patient perceptions of mistreatment, its perceived impact on healthcare and evaluation of additional steps to reduce mistreatment in clinical teaching environments.

Take-home Messages: 1. A novel educational intervention for inter-professional clinicians to heighten awareness of the nature of mistreatment included video prompts portraying mistreatment followed by facilitated discussion. 2. Inter-professional clinicians identify mistreatment in brief videos that portray public humiliation and discrimination. 3. Facilitated discussion of videos portraying mistreatment was rated to have moderate to extremely high educational value.

#SC8.4 - Short Communications: Student - in Difficulty / Burnout / Wellbeing

#SC8.4.2 (7221)

Associations between academic or professional remediable medical student offences and admissions factors

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ABSTRACT:

Background: Professionalism lapses during medical school are predictive of future 'in-practice' offenses. Early identification of professionalism violations and implementation of effective remedial strategies are essential to medical education training. However, very few studies examine the relationship between remediable offenses and admissions factors that lead to professionalism violations. This study examines the way in which student characteristics, pre-admissions measures, and medical school performances are statistically associated with the likelihood a student will require remediation for academic and professionalism offenses.

Summary of Work: Data from five graduating cohorts (2014-2018) of McMaster University (Hamilton, Canada) medical students (N=1,021) were retroactively collected and analyzed using logical regression analyses. The relationship among student characteristics, pre-admissions variables, medical school performance, and remedial offenses both by occurrence (yes/no) as well as type (academic/professional) were examined.

Summary of Results: Findings indicate that gender, pre-clerkship OSCE performance, and personal progress test performance were significantly associated with having a remedial offense ($\chi^2(6) = 31.293$, $p < 0.001$). When only examining students that had an occurrence of a remedial offense (N=95), the regression outcomes indicate that female students have lower odds of having a professional remedial offense than males (OR=0.232, $p > 0.5$), ($\chi^2(4) = 11.678$, $p < 0.05$).

Discussion and Conclusions: These findings point to the admissions variables that are associated with remediation requirements.

Take-home Messages: These data serve the important purpose of enabling programs to identify at-risk students and to develop education interventions to offset the need for formal remedial activities.

#SC8.4 - Short Communications: Student - in Difficulty / Burnout / Wellbeing

#SC8.4.3 (5066)

Sexual Assault and Harassment in Medical Schools: The Problem and The Prevalence

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ABSTRACT:

Background: The #MeToo and #TimesUpHealthcare movements have brought national attention to sexual violence in the workplace, specifically medicine. Research has been done investigating misconduct toward peers by residents and attendings, however, no large study has been conducted investigating sexual misconduct in medical education. It has been shown that delinquent behaviors exhibited in medical school become further apparent during clinical practice. Our study aimed to determine the prevalence of sexual misconduct (harassment and assault) in medical education, the effects of sexual harassment and assault on a student's education, differentiate prevalence based on gender, and identify reporting rates and reasons for not reporting.

Summary of Work: This was an IRB approved cross-sectional study surveying 14 osteopathic medical schools through online surveys distributed by class representatives to their respective classmates. The submission of each survey implied consent. All submissions were anonymous.

Summary of Results: Survey response rate was 14.56% (n=1619) with 54% female, 44% male. 1 in 6 respondents experienced sexual misconduct, with 52% of events caused by students, 19% by preceptors, 11% by faculty. Prevalence of sexual assault was 4.9% and harassment was 12.6%. 80.5% of victims did not report sexual misconduct to their institution attributing reasons including a potential negative influence on career, being accused of overreacting, gaining a negative reputation, or concern that no action would be taken. Of those sexually assaulted, 78.8% reported that it interfered with their education, as well as 67.2% of those harassed.

Discussion and Conclusions: Our research demonstrated an occurrence of sexual misconduct impacting students in their medical education. This occurrence is concerning, given that primary offenders were students. This calls for further data collection into the prevalence, collective impact, and the structure of medical education surrounding the theme of sexual misconduct. Future research can fuel large scale interventions with a focus on improving reporting rates and decreasing prevalence by providing measurable goals.

Take-home Messages: Sexual misconduct is a problem in medical education, posing threats to the safety of students and patients. Reporting rates are shockingly low, more studies are needed to collect data on a large scale to create significant interventional strategies.

#SC8.4 - Short Communications: Student - in Difficulty / Burnout / Wellbeing

#SC8.4.4 (5943)

Predictive model of academic risk amongst first-year medical students.

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ABSTRACT:

Background: Detecting students at academic risk is a very important task in order to provide support to students in a timely manner. **Objective:** To create a multivariable model that detects students at risk of low academic performance (LAP) during their first semester.

Summary of Work: Prospective cohort study of 189 undergraduate medical students at the Medical School of the Universidad Andrés Bello, Viña del Mar, Chile. After obtaining informed consent at the beginning of the semester, students underwent several tests aimed at assessing educational strategies, mental health and demographic factors. These tests included the MSQ test: motivation (MOTIV) and learning strategies (LS); Inventory learning styles of Kolb; Learning Strategies (ACRA); Five Facet Mindfulness Questionnaire (FFMQ); Maslach Burnout Inventory; Emotional intelligence (EQI-short) and a psychosocial test to identify psychosocial risk (PT) and identify family support (FS). Prior academic achievement was assessed using test scores from university selection of mathematics (TSUM), language (TSUL) and sciences (TSUS); ranking score and average ratings in high school (ARHS). Academic performance was established using the academic records (AR), at the end of the semester. A LAP was defined as an average AR <6.0. Multivariable logistic regression techniques were used to develop the model.

Summary of Results: Participant's mean age was 18.8±1.5 years and 64.4% were female. 85 students (44%) fulfilled the LAP definition. Bivariate comparisons showed significant differences in TSUS, TSUM and MSLQ-LS between study groups. The final model included a TSUS <725: aOR 2,9 (95%CI 1,5 – 5,9); TSUS < 700: aOR 2,5 (95%CI 1,3 – 5,0); MSLQ learning strategies score <5.7: aOR 2,4 (95%CI 1,2 – 4,9); To live alone or friends had an aOR 2,4 (95%CI 0,99 – 5,7). The model's ROC AUC was 0,76 (95%CI 0,69-0,83).

Discussion and Conclusions: It was possible to predict LAP amongst undergraduate medical students using simple, easy to obtain variables with reasonable diagnostic accuracy. This model can help academic staff tailor support strategies for students at highest risk.

Take-home Messages: Academic risk can be predicted amongst undergraduate medical students using simple variables.

#SC8.4 - Short Communications: Student - in Difficulty / Burnout / Wellbeing

#SC8.4.5 (3751)

Grit protects medical students from burnout: a cross sectional study

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ABSTRACT:

Background: Burnout is a rampant issue plaguing the medical profession. Affected individuals report reduced empathy, a strong desire to leave the profession, fall ill frequently and have suicidal tendencies. These symptoms would invariably lead to poorer patient care. This phenomenon is reported as early as medical school with medical students reporting increasing rates of burnout despite being optimistic and engaged at matriculation.

Summary of Work: Based on a Job Demands-Resources model, this study aims to assess associations between specific job resources measured at the beginning of the first year of medical school with burnout symptoms occurring later in the first year. The specific job resources of grit, tolerance for ambiguity and social support were measured in Duke-NUS Medical School students at the start of Year 1. Students were then surveyed for burnout symptoms at approximately quarterly intervals throughout the year. Using high ratings of cynicism and exhaustion to define burnout, we investigated the associations of the occurrence of burnout with student job resources using multivariable logistic regression analysis.

Summary of Results: Out of 59 students, 19 (32.2%) indicated evidence of burnout at some point across Year 1. Stepwise multivariable logistic regression analysis identified grit as having a significant protective effect against experiencing burnout (Odds Ratio, 0.84; 95%CI 0.74 to 0.96). Using grit as a single predictor of burnout, area under the ROC curve was 0.76 (95%CI: 0.62 to 0.89).

Discussion and Conclusions: Grit was identified as a protective factor against developing burnout, suggesting that less gritty students are more susceptible to burnout. The results also indicate that grit is a robust character trait which can prognosticate burnout in medical students. Medical students could potentially benefit from enhanced efforts to develop grit. Additionally, medical schools should strive to foster a grit-positive culture which is supportive of students despite the demanding curriculum.

Take-home Messages: • Students with high grit scores have a lowered propensity to burnout in medical school. • Grit is a robust job resource which prognosticates the appearance of burnout in a medical student. • Medical schools should consider creating a grit-positive culture to prevent the onset of burnout.

#SC8.4 - Short Communications: Student - in Difficulty / Burnout / Wellbeing

#SC8.4.6 (4884)

Impact of Fighting Against Distress Program (FAD) on First Year Medical Students Psychological Health and Academic Performance at Alexandria Faculty of Medicine, Egypt

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ABSTRACT:

Background: Depression, anxiety and stress, are frequent and well-documented among medical students worldwide.

Summary of Work: Randomized controlled trial was conducted. Authors recruited mild and moderate depression, anxiety and/or stress cases of first year medical students at Alexandria faculty of medicine (AFM). participants were randomly assigned to either control or intervention group. the intervention group received a training program (fighting against distress) tailored by medical education and psychiatry departments at AFM to help students develop resilience against distress. 60 students in experimental group were compared to 66 students in control group (control group received the fighting against distress program later on), as regard psychological status and academic performance.

Summary of Results: There was statistical significant evidence that the intervention improved depression level in experimental group, as well as stress level ($p=0.001$). About control group, there was statistically significant deterioration in the depression and stress levels ($p=0.004$). Anxiety level showed statistically significant deterioration in intervention group ($p=0.003$) but more deterioration in experimental group ($p<0.001$). There was statistical significant evidence ($p=0.001$) that the intervention group achieved better grades in first semester exams compared to the control group ($p<0.001$).

Discussion and Conclusions: To our knowledge, most various interventions and stress management programs have shown promising results in reducing medical students' distress levels as well as in achieving better academic achievement as mentioned in different research work including ours, despite of different grades of students, culture and sample size. These results may be because distressed students are in need to any form of support or because medical students allover the world face similar stressors as: huge curriculum, high cognitive load, multiple assessments, facing uncertainty, etc. Our study concluded that fighting against distress program improved depression and stress scores as well as academic performance in intervention group compared to control group, anxiety level deteriorated in both groups but still better in intervention group.

Take-home Messages: For all medical schools, one of our demanding issues is to help medical students develop resilience strategies to cope with distress and burnout not just in academic years but later on. Psychological well being is mandatory to have a healthy learner who will be the doctor of the future.

#SC8.4 - Short Communications: Student - in Difficulty / Burnout / Wellbeing

#SC8.4.7 (5614)

Promoting collegiality and engagement in relation to burnout among undergraduate medical students in Thailand

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ABSTRACT:

Background: Burnout is an antithesis of engagement and relates to unbalance between job demand and resources. Collegiality among undergraduate medical students is one of the resources that can support students in academic, personal mental aspects. Studies on how to promote collegiality and engagement related to burnout, in order to alleviate burnout, are limited especially in Thailand.

Summary of Work: A mixed method study consisted of a burnout survey using the Maslach Burnout Inventory questionnaire –student survey (Thai version) among undergraduate medical students at Ramathibodi Hospital, Mahidol University. Then, students with burnout and non-burnout was selected by convenience sampling, to enter semi-structured individual interviews to explore medical students experiences influencing (positive and negative) their engagement and collegiality in the clinical workplace or in medical school. The data analysis was conducted iteratively while data collection was in process by 2 independent researchers until data saturation was reached.

Summary of Results: Fifteen students reported relationship between collegiality, engagement and burnout. Factors related to collegiality were 1) peer interaction: non-violence communication, inclusive /exclusive behavior, shared common interest; 2) Faculty and residents: positive learning environment, emotional regulation of teachers.; 3) Curriculum design and learning activities: time space to join activities, shared common goal; 4) Student culture: outstanding or weak students, allocate work negotiation and fairness; 5) Individual factors: value/effort to join group, self/group awareness. Factors related to engagement were 1) Meaningful tasks: patient care, create autonomy and sense of accomplishment; 2) Faculty and residents: positive learning environment, feedback, explain-think aloud; 3) Curriculum design and learning activities: classroom activities interrupted clinical clerkship, complexity/difficulty of assigned patients, 4) Informal extracurricular activities: socialization with medical students, extra-duty time spend with medical students.

Discussion and Conclusions: Some common factors related to both collegiality and engagement such as positive learning environment, curriculum design and learning activities which allow appropriate time space for each goals and also student's work allocation.

Take-home Messages: Faculty and residents and learning activities are both related to promote collegiality and engagement in relation to alleviate burnout. Faculty development, residents as teacher program and curriculum design committee should consider take these factors in relation to burnout.

#SC8.4 - Short Communications: Student - in Difficulty / Burnout / Wellbeing

#SC8.4.8 (5737)

Influence on student well-being of dedicated preparation for USMLE Step 1 and COMLEX Level 1 exams

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ABSTRACT:

Background: USMLE Step 1 and COMLEX Level 1 are the first in their respective series of national licensure exams in the U.S. and the most important factors for post-graduate training programs' decisions on whom to interview. Preparing for these high-stakes exams is believed to cause stress, but students' well-being during dedicated exam preparation periods (DEPPs) has not been studied.

Summary of Work: All students who completed DEPPs for first-level exams in 2019 at three U.S. medical schools were surveyed online shortly after their exams. Surveys included items on preparation resource use, resource cost, perceived financial strain, changes in six healthy behaviors, and professional development factors. Standard items assessing quality of life (QoL), burnout, and depression were also included. Logistic regressions assessed associations between predictors and worse QoL, burnout, and depression.

Summary of Results: Overall, 353/921 (38%) students completed surveys. DEPPs lasted a median of 7 weeks (IQR 6-9 weeks); students spent 62 hours/week (IQR 50-75 hours/week) studying. On average, students used 9.1 (SD 3.0) study resources, costing them \$929 (SD \$753); 34% reported preparation materials caused a significant financial strain. Students reported less: sleep (44%), eating healthy foods (56%), exercise (66%), time away from academic responsibilities (75%), time with family (85%), and time with friends (93%) during DEPPs compared to usual. While most felt their medical knowledge base (95%) and confidence in ability to care for patients (58%) improved, majorities reported worse overall QoL (73%) and feeling burned out (74%) and depressed (53%) weekly or more often during DEPPs. After adjusting for variance within schools, higher perceived financial strain and decreases in healthy behaviors were associated with worse QoL, burnout, and depression ($p < .001$); however, the number of hours/week studying and amount students spent on resources were not.

Discussion and Conclusions: Students work hard, decrease healthy behaviors, and suffer during DEPPs for first-level exams. Future studies should investigate if and when students recover from DEPP stress and how preparation-related stress influences exam scores.

Take-home Messages: Supporting students healthy behaviors during DEPPs may improve wellness, but encouraging less time studying may not. Targeting financial resources to students vulnerable to financial strain may more efficiently improve well-being than providing the same resources to all students.

#SC8.4 - Short Communications: Student - in Difficulty / Burnout / Wellbeing

#SC8.4.9 (7349)

Physician Assistant (PA) students may benefit more from earlier mental health training

AUTHOR(S):

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ABSTRACT:

Background: PA students experience a high degree of burnout, and mental health indicators have been shown to worsen during clinical year of training. However, stigma and lack of awareness of resources remain barriers to help-seeking, and no guideline currently exists to proactively support PA students mental health. This study evaluated the effectiveness of Mental Health First Aid (MHFA) training for PA students regarding mental health literacy and stigma, awareness of resources, and practical application.

Summary of Work: Incoming cohort (IC; n=31) and graduating cohort (GC; n=30) of PA students completed MHFA training in the week before matriculation and within one week of graduation, respectively. Pre- and post-training MHFA opinions quiz results were used to examine changes in mental health knowledge and stigmatising beliefs and attitudes, and student feedback was analysed to ascertain overall response to the training. Further, one-month follow-up survey responses were analysed to assess the utility of training.

Summary of Results: Both IC and GC saw improvements in their opinions quiz scores (12.50% vs 36.36%, respectively), and a paired t-test showed a significant overall improvement (95% CI 26.8932.97; $p < .0001$). Student feedback analysis (n=61) revealed overall IC sentiment, "Every PA student should take this course before starting PA studies," vs overall GC sentiment, "I wish I had this training earlier." One-month follow-up survey results revealed application of skills (n=16), including frequency (once, 75%; \geq twice, 25%) and help recipients (friend(s), 87.5%; self, 31.25%; family, 31.25%). 87.5% of respondents who used skills and resources were IC students.

Discussion and Conclusions: MHFA training was significantly associated with increased mental health knowledge and reduced stigmatising beliefs and attitudes in PA students. In particular, IC students appreciated learning about available resources and practical skills, and more than six times as many IC students reported using the skills and resources learned in the training to connect themselves and others to appropriate help and supports.

Take-home Messages: MHFA presents an effective strategy to support PA student mental health. Further, PA students may benefit more from earlier mental health training.

#SC9 - Short Communications: Surgery Education

#SC9.1 (4212)

Creating Equitable Opportunities & Enhancing Applicant Experiences through Structured Interviews

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ABSTRACT:

Background: Recent reports suggest that over eighty percent of surgery applicants receive at least one inappropriate or illegal question during the interview process. Implementing structured interviews can increase the efficiency, effectiveness, and fairness of this screening process. We describe the effectiveness of a half-day structured interview training course on improving faculty knowledge and applicant perceptions.

Summary of Work: Faculty across multiple general surgery residency programs participated in a half-day structured interview course led by Industrial-Organizational Psychologists at their respective locations. The interactive course uses audio and video-based vignettes to provide an introduction to structured interviews, common interviewer mistakes & biases, techniques for questioning & probing, and rating interviewee videos and obtaining group consensus. Faculty completed a 15-item pre and post-course competency assessment to measure changes in knowledge and skills. All interviewing applicants were sent a follow-up survey assessing interview day organization, faculty preparation, question relevance, ability to learn about the program, and overall experience compared to other programs using a 1 (strongly disagree) to 5 (strongly agree) Likert-type scale.

Summary of Results: 106 faculty across five general surgery programs in the United States completed the course. Interviewers demonstrated proficiency on only a third of the items on the interviewer competency assessment prior to completing the assessment (34%). After the course, baseline knowledge significantly increased across all interviewers ($p < 0.01$). Approximately a third of all interviewing applicants (133/400) responded to the survey. Overall, applicants agreed that the interview experience was more positive at these programs compared to other programs ($\bar{x} = 3.23$; $SD = 0.91$), with almost half reporting that the interview days seemed more organized (40%), faculty seemed more organized (45%), and questions asked were more relevant to residency requirements (43%) at these programs. Twice as many applicants agreed than disagreed that they were better able to determine their fit at these programs compared to other programs to which they applied (40% versus 21%, $p < 0.05$).

Discussion and Conclusions: Prior to focused training, surgeons demonstrate wide variability in knowledge and skills needed to conduct structured interviews. Training can create more uniform competency in this arena.

Take-home Messages: Structured interviews can be appreciated by applicants and may also help shape perceptions and understanding of the program.

#SC9 - Short Communications: Surgery Education

#SC9.2 (6130)

Triological Design Principles for Creating Virtual Patients: - support for education and training in major trauma

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ABSTRACT:

Background: Postgraduate such as surgeons, anesthesiologists and nurses, may work both in civil-military trauma. Many hospitals do not, however, support training time for this purpose (1-3). Triological learning methods aim at understanding how people work collaboratively, and transform it practically into educational principles (4, 5). The aim of this study was to identify design principles for development of credible virtual patients in surgical trauma education. Virtual patients are defined as web-based virtual cases, based on authentic trauma patients, requiring support for reasoned decision-making (6, 7).

Summary of Work: This study used design based research and triological design principles, with iterative processes of design and evaluation in collaboration with learners and educators. The population consisted of 11 international experts, representing the educators and 21 surgeons, anesthesiologists and nurses, representing the learners. The setting was an existing global course, "Definitive Surgical Trauma Care" (DSTC). Data sources consisted of participated observations, semi-structured interviews, surveys, log files and video-recorded resuscitations from an academic trauma centre.

Summary of Results: Data analysis identified design principles to address the specific needs in the area, required in the creation of credible virtual patients in the management of major trauma patients. The identified design principles were: • Creating some degree of realism • Encouraging agency, • Reflection and supporting interaction among learners and teachers • Provision of feedback on the users' choices. Parts of the result consisted of two designed and developed virtual patients, which focused on the management of patients with gunshot and blast injuries.

Discussion and Conclusions: This study has presented the design and development of virtual patient cases by transforming a seemingly limited sequence of steps into a case description of an authentic case. This is not a trivial task and allowing users to explore suboptimal decision-making in a virtual case quickly expands the size of the virtual case. Conclusions: The triological design principles with new additional design principles served as inspiration, to address the specific needs in the area when developing virtual patients for post graduate in surgical trauma education and training.

Take-home Messages: Future studies are needed to develop a model as support for design of virtual patients aimed for postgraduate in surgical trauma education.

#SC9 - Short Communications: Surgery Education

#SC9.3 (6686)

A randomized trial comparing cadaveric dissection and examination of prosections as applied surgical anatomy teaching pedagogues (ASAP)

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ABSTRACT:

Background: Surgical anatomy is a cornerstone of medical curriculum. It is increasingly less appreciated by clinical students with a decreased time spent in the operating theatre. With a move towards vertical integration, our goal is to reintroduce applied surgical anatomy to clinical years. Our ASAP study employed the RCT methodology in evaluating two pedagogues for this purpose: cadaveric dissection (CD) and examination of prosections (PE)

Summary of Work: In January 2019, 80 third-year students were randomized into two groups: CD and PE. Participants underwent a one-day course on applied anatomy differing only in pedagogue, CD or PE, but identical in the course curriculum. A pre-course test was used to establish baseline knowledge. Our primary outcome was the difference in post-course test scores. Secondary outcomes were the course duration, costs and participants' perceptions based on a survey. Two independent assessors graded the tests.

Summary of Results: 40 students each were randomized to the CD group and PE group. Response rate was 96.3%. Median pre-course test scores were 46.7% and 41.7% for the CD and PE group ($p > 0.05$). The median post-course test score was significantly higher in the CD group at 70.0% compared to 63.1% in the PE group ($p < 0.05$). The CD group took a longer time to complete the course, 411 mins compared to 265 mins. In the post-course survey scores, CD group outperformed the PE group in all domains including clinical relevance, motivation to participate in surgery, hands-on experience, and overall satisfaction.

Discussion and Conclusions: There is a quantifiable benefit in support of CD over PE in the teaching of applied surgical anatomy. Despite its greater resource need, CD provides learners with uninterrupted tissue planes and allows appreciation of the relation of structures and their clinical implications. This is reflected in participant surveys and supports resource allocation specifically in the clinical years where contextual correlation is better understood. The costs of CD may be reduced by sharing a single cadaver across disciplines and with greater awareness of cadaveric donations.

Take-home Messages: Cadaveric dissection is superior to examination of prosected specimens and has to be introduced at the most cost-effective time in clinical curriculum.

#SC9 - Short Communications: Surgery Education

#SC9.4 (6765)

Vertical integration in undergraduate surgical education: Case based anatomy in a workshop organized and led by near-peer students

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ABSTRACT:

Background: Earlier studies suggest that senior medical students have difficulties recollecting previously learnt anatomy and its application in clinical context. This was also the experience amongst fourth year medical students in their surgical clerkships at the medical university where the present study was conducted. By developing a learning activity tailored to the learning outcomes for the undergraduate surgery curriculum we sought to enhance medical students' retention and application of clinically relevant anatomical knowledge.

Summary of Work: We describe the design, implementation and evaluation of a student-driven elective one-day workshop in clinical anatomy offered to medical students during their surgical clerkships. In collaboration with surgical and anatomical faculty, two senior medical students defined key anatomical areas of clinical concern, and constructed six case-based stations to be taught on cadaver specimens. Three workshops with a total of 70 medical students were led by near-peer student teachers in the dissection laboratory during 2018-2019. Subsequent evaluation was performed using pre- and post-intervention online questionnaires and brief focus group interviews.

Summary of Results: Preliminary result shows that 96 % of the medical students fully agree/agree that the workshop facilitated learning outcomes. From the brief focus group interviews, five key features emerged as to what the students believed helped them in deepening and applying their pre-clinical knowledge of anatomy to their surgical training: 1) content in tune with the students' current level of training, 2) taught in a friendly atmosphere by near-peer tutors, 3) clear curricular alignment, 4) facility tailored for anatomical learning, and 5) timed to the middle of their surgical clerkships.

Discussion and Conclusions: The present study highlights the participating students' perceptions of a surgically oriented anatomy workshop, and which features they experience distinguish the value of the workshop in relation to other learning activities during the undergraduate surgery course. Near-peer student teaching seems to be useful in the surgical course.

Take-home Messages: Student-driven anatomy workshops led by near-peer tutors in the dissection laboratory appears to be a feasible and effective method for facilitating retention of anatomy knowledge in clinical application as well as steering students' learning in alignment with learning-outcomes in the surgery course.

#SC9 - Short Communications: Surgery Education

#SC9.5 (3775)

Creating a Surgical Masterclass with low budget: Helping medical students and junior doctors become active participants in theatre

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ABSTRACT:

Background: The aim of this surgical masterclass was to provide a curriculum-based surgical skills course at low costs using home-made models that mimic surgical tasks. The main objective is to encourage and enhance confidence of medical students and foundation doctors to participate in theatre through practising on models.

Summary of Work: The curriculum consisted of basic and application skills. Application skills involved practising on the home-made models. For example, an abscess model was made using everyday items such as sponges, custard, gloves and strings. Each model had an average cost of 30 pence. Classes were held from February – July 2019, each lasting 1-2 hours. Students completed a feedback form rating the usefulness and enjoyment of the class. Each student who completed the curriculum received a certificate and formative assessment by a senior registrar. They filled a separate feedback form which recorded their confidence of each skill before and after the course.

Summary of Results: A total of 37 students attended the course. 34 (91.9%) students gave the maximum rating for enjoyment and 33 (89.2%) gave the maximum rating for usefulness. 14 (37.8%) of the students completed the curriculum. There was an average improvement of 2.8 points (out of 5) in their rated confidence for each skill. Of those who completed the course, 10 (71.4%) managed to apply their skills clinically. Most of the students cited tailored teaching and one-to-one feedback being the most effective for their learning. Flexibility of the classes also allowed junior doctors to attend during working hours without affecting their clinical duties.

Discussion and Conclusions: An effective and enjoyable surgical skills class can be conducted feasibly at low costs. Innovative creation of models with everyday items is successful in allowing students to gain confidence in their application of clinical surgical skills. Conducting flexible surgical skills classes for junior doctors allowed them to gain enough confidence to actively participate in theatre and maximise their learning during a surgical placement.

#SC9 - Short Communications: Surgery Education

#SC9.6 (4275)

Absence or presence: silent discourse in the OR and impact on surgical team action.

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ABSTRACT:

Background: Effective operating room (OR) communication is essential to patient safety. A part of human discourse, silence occurs as action without sound with decipherable meanings. Our objective was to discern how silence occurs in the OR and its influences on individual and surgical team action.

Summary of Work: This constructive grounded study used semi-structured interviews with twenty-five surgical team members with diverse roles, building on Dauenhauer's framework of silence as communication and human performance. Transcripts were iteratively team-coded to develop themes and a model of silence's occurrence in the OR.

Summary of Results: Silence is immediately recognizable and linked to team actions. An important part of team communication, silence's expression is through verbal and nonverbal utterances, resulting in team cohesiveness or disengagement. Two contexts of silence were identified: homogeneous as team agreement through collective action, and disparate, as individual disagreement through disengagement. Within these contexts, two primary themes emerged: Power as exerted over another that shuts down communication, and Focus, occurring during critical moments. Five sub-themes emerged within power and focus: critical moments, during surgical complexity; respect, through patient consideration and acknowledgement/agreement with the attending; self-reflection, to problem-solve, assess actions, and regain focus; personal preference, not talking while working or deference to the attending; and, bad mood, perceived as being angry or irritable through avoidance and anti-communication.

Discussion and Conclusions: Silence is an embodied experience tied to a specific context wherein surgical teams must take notice through specific actions. When expressed as power, silence carries both positive and negative dimensions by solidifying the surgical team or eliminating communication. Whether homogeneous through cohesiveness, or desperate as a solitary act, recognition of silence as a part of discourse has important implications on surgical team function.

Take-home Messages: Surgical teams need to be more aware of the communicative power of OR silences and their impact on team performance.

#SC9 - Short Communications: Surgery Education

#SC9.7 (4364)

Development and evaluation of skills stations for hip and knee arthroplasty

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ABSTRACT:

Background: Surgeons who are starting to perform hip and knee arthroplasty must develop specific skills related to the procedures, otherwise patients will have suboptimal outcomes. Our initial 2-day principles courses consisted of lectures and small group discussions and had minimal integration of hands-on activities. Our objectives was to develop new skills stations and evaluate these compared to the other educational methods.

Summary of Work: A team of surgeons and education specialists and collaborators identified challenging parts of surgical procedures that provide teachable moments for a series of 6 hands-on skills stations. They defined learning objectives, steps, and take-home messages for each station. They developed and tested prototypes using dry bone models, real and 3-D printed instruments, and integrated visual assessment tools with target learners. Six hands-on stations for hip and knee were integrated as half hour educational experiences with a rotation plan for groups of participants.

Summary of Results: The stations were used by 446 participants at 10 courses worldwide during 2018 and 2019. Using a scale of 1 to 5 (1 = Not at all useful, 5 = Extremely useful), they had an overall average evaluation rating of 4.64 (range 4.71 to 4.57) compared with 4.56 for lectures (4.75 to 4.38) and 4.64 for discussion groups (4.83 to 4.44). Ratings for individual stations ranged from 4.71 to 4.57 and the average for all stations at an individual course ranged from 4.89 to 4.39. Faculty feedback comments were analyzed after each event.

Discussion and Conclusions: The simulation of several part tasks from arthroplasty procedures using dry bone models and surgical instruments seems to be an acceptable method of education for participants who are starting to perform these in their clinical practice. The results were replicated in many different countries and faculty engagement and feedback were perceived as key aspects of successful implementation.

Take-home Messages: A team approach is required for the design and development skills simulations to address challenging aspects of a procedure and provide teachable moments.

#SC9 - Short Communications: Surgery Education

#SC9.8 (4407)

Relational Interdependence Generates Insights about “Atomic” Intraoperative Teaching and Learning

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ABSTRACT:

Background: Improvements in intraoperative learning experiences for residents maximize the probability of achieving their ability to practice autonomously. Therefore, to enhance residents’ learning experiences, we reconceptualized intraoperative teaching/learning (IOT&L) to facilitate the identification of innovative ways to study and improve it.

Summary of Work: Billett’s theory of relational interdependence between social and individual agency formed our conceptual framework. We sought empirical examples of this framework in transcripts of filmed authentic surgeries in a university hospital and in teaching and learning surgeons’ interview comments. We coded these examples deductively, based on our conceptual framework, but also coded examples inductively. These examples yielded a reconceptualization of IOT&L and related research proposals.

Summary of Results: The examples prompted the following ways to reconceptualize IOT&L. First, IOT&L is a highly interactive interdependent process, largely occurring in minute irreducible discrete units, each unit intimately connected with a small step in the surgery’s progression. We observed residents appropriating new knowledge moment by moment and labeled this “atomic” teaching/learning because of its association with discrete teaching exchanges. Second, this atomic level of intraoperative learning depends strongly on the interaction between the learner’s agency and the social environment, resulting in socially-generated knowledge. Third, this duality and inter-dependency, crucial for residents to gain new knowledge, depends upon learners revealing a learning need and attendings immediately bridging the gap. In our data residents conveyed their learning needs to attendings who then gave them verbal and physical guidance related to completing the surgical step. Suggested research includes identifying types of attending guidance that allow residents to perform challenging steps successfully.

Discussion and Conclusions: Billett’s notion of interaction between learner agency and the social environment elucidates OR teaching/learning as a distinct pedagogical form, grounded in a high-stakes, time-critical, intensely interactive environment driven by cooperative tasks, dependent on learners revealing their learning needs. These highly cooperative actions blur the distinction between teaching and learning. Maximum learning and skill development exists within these granular exchanges.

Take-home Messages: IOT&L should be examined at the fundamental atomic level to improve it and propose actionable research steps emphasizing the intersection between learner agency and the OR social environment.

#SC9 - Short Communications: Surgery Education

#SC9.9 (4770)

“I always feel in the way”: surgeon and student perceptions of the hidden curriculum in the operating theatre

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ABSTRACT:

Background: Attending the operating theatre is a formative experience for many medical students; igniting a passion for surgery in some and inducing queasiness in others. Previous studies of undergraduate education in the operating theatre have focussed on the delivery of the formal curriculum. The hidden curriculum is the customs of community which are unintentionally and unknowingly passed onto students. This study aimed to investigate how the hidden curriculum operates and influences undergraduate education in theatre.

Summary of Work: Data was collected iteratively using semi-structured interviews of final year medical students and consultant surgeons who teach them at a single university. The interviews were transcribed, coded and general thematic analysis was carried out until thematic saturation occurred.

Summary of Results: Thirteen interviews were carried out with students and 14 with surgeons. Students focussed on the unfamiliar ‘learning environment’, ‘interactions’ with and between the various team members and the influence of ‘rules and etiquette’ in theatre, which are not always made apparent. They described ‘active participation’ as fundamental to learning and to a feeling of ‘social belonging’ to the theatre team. Clinicians discussed the impact of ‘external factors’ such as job plans and student timetabling. They differed on the necessity of active participation, believing students learn adequately from observation. Notably, students strongly associated surgical learning with theatre, whilst clinicians, conversely, felt that the majority of undergraduate surgical learning takes place outside the operating theatre, and attendance there is unnecessary.

Discussion and Conclusions: This study investigates the role of the hidden curriculum in the operating theatre from the perspective of undergraduate students and surgeon educators. Whilst there are areas of agreement, not all clinicians recognise the importance of active participation in student learning, and this may contribute to negative impressions of some students.

Take-home Messages: The hidden curriculum is a powerful influence on student learning experience in the operating theatre. Students, surgeons and the wider theatre team must be aware of this to effectively utilise this unique learning environment.

#SC9 - Short Communications: Surgery Education

#SC9.10 (4800)

Acute Surgical Emergency Patient (ASEP) Simulation Course

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ABSTRACT:

Background: Many surgical healthcare professionals feel inadequately prepared in dealing with acutely unwell surgical patients. Simulation can give doctors and nurses the confidence in managing these patients. Our aim was to run a full day interprofessional surgical simulation course for healthcare professionals. This is the only surgical interprofessional simulation currently being offered to healthcare professionals.

Summary of Work: We ran three full day interprofessional surgical simulation courses. Scenarios included managing acutely unwell surgical patients, prioritising when assessing multiple patients and being called when scrubbed in theatre. Each scenario had a surgical doctor and nurse, and this led to discussion on relevant human factors and clinical learning points. Evaluation was done by a pre and post course questionnaire.

Summary of Results: Candidates who attended the course found that their confidence increased in managing acutely unwell surgical patients (4.5/10 to 8.2/10), doing an A-E assessment (6.6/10 to 8.4/10) and providing a good handover (6/10 to 8.3/10). Candidates rated the course as 9.6/10. Some of the comments from the course were “teaching, excellent feedback in a safe environment” and “much more confident in assessing and managing acutely unwell patients”. All the candidates who attended the course said that they would recommend this course to a colleague and felt it should be made available to all healthcare professionals.

Discussion and Conclusions: This novel, high fidelity, interprofessional surgical simulation course was both well received and led to improved confidence in the management of acutely unwell surgical patients. All the candidates would recommend this course to their colleagues. We would therefore recommend that this course be made available to all healthcare professionals working in surgery.

Take-home Messages: Surgical simulation helps to increase confidence in healthcare professionals in managing acutely unwell surgical patients. All candidates would recommend this course and feel that it should be made available to all healthcare professionals in surgery.

#SC9 - Short Communications: Surgery Education

#SC9.11 (5697)

Perception of General Surgery Residents Towards Handling Burnout

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ABSTRACT:

Background: A baseline study of National Healthcare Group (NHG) General Surgery (GS) residents in 2017 concluded that the prevalence of burnout was 72% and the most effective coping strategy was support from families, friends, peers and colleagues. Driven by the study results, the Program sought to build a stronger social support structure for the residents. The aim of this study is to evaluate the perspectives of current GS residents towards handling burnout in order to institute further measures to mitigate burnout.

Summary of Work: The Maslach Burnout Inventory (MBI) survey was re-administered online to all current NHG GS residents together with a customized questionnaire aiming at evaluating their perspectives on burnout management. 32 residents completed the MBI survey while 31 residents completed the questionnaire. Responses were anonymized and given in free-text format to reflect the diversity of perspectives from residents.

Summary of Results: 63% of the residents met the criteria for burnout on at least one MBI subscale. The main themes distilled from the free text questionnaire of how residents perceive dealing with burnout include: 1. Having support from friends and family 2. Having recreational activities outside of work 3. Taking time away from work to rest and professional shielding 4. Engaging in sports 5. Sharing with peers about struggles 6. Having a growth-mindset to keep learning and persevere. One response mentioned not having bandwidth to think about mitigating burnout.

Discussion and Conclusions: The themes and reduced burnout rate reinforce the value of the program's previous interventions in strengthening social and peer support structures. Recreational and sports activities could be avenues through which the program can strengthen cohesion between residents and reduce burnout. Having formal structures to ensure adequate rest, and training residents to have a growth-mindset could be potential interventions. Given that these themes were derived from the residents, the commensurate interventions may be more efficacious, pending further research.

Take-home Messages: Multiple facets contribute to mitigating burnout, as perceived by our residents. Synergistic and healthy approaches such as recreational sports and adequate rest can hence be planned to reduce burnout in this stressful but rewarding environment.

#SC9 - Short Communications: Surgery Education

#SC9.12 (5883)

Implications of Clinical reasoning in surgery – Team-based-Learning in an inverted classroom format

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ABSTRACT:

Background: Competence based medical education in surgical specialties should not only justify practical skills but should improve surgical problem solving. Knowledge of indications for operations, their limitations and curative value are also relevant to the competent clinician. Competence includes the ability to discuss surgical options, risks and complications and knowledge pertaining to perioperative patient-management. Clinical-reasoning courses are able to develop those clinical competences in undergraduate education.

Summary of Work: We developed a clinical-reasoning course for the 6th clinical semester. An inverted classroom format was used with a required online preparation. During classroom teaching, a team-based-learning format was used, solving clinical problems under the supervision of experienced clinicians.

Questionnaires and focus-group-interviews were used to evaluate the course, the team-based-learning approach, the inverted classroom model and the attainment of surgical competencies.

Summary of Results: Students (N = 134) rated the course on a likert scale (1=absolutely unsatisfied, 7=absolutely satisfied; median ± standard deviation): Course content: 6±1.2, knowledge gain: 6±1.2. They evaluated specific aspects on a likert scale (1=totally agree, 6=totally disagree): Thorough preparation for the course: 2±1.3, online content was applicable in course: 2±0.9, knowledge taught in new format is retained: 2±1.0, knowledge taught in traditional lectures is retained: 4±1.2, team based learning is useful: 2±1.4, course increased interest in surgical specialties: 3±1.3 After half a year focus group interviews demonstrated that a team-based teaching approach encouraged verbalization and discussion of diagnostic and therapeutic strategies. The content was useful for future work and influenced the approach to surgical problems. The course did not influence career decisions.

Discussion and Conclusions: We successfully implemented a clinical-reasoning course in surgery. A high level of knowledge gain was achieved, and retainment of knowledge was rated higher than in traditional lectures. The course was able to facilitate gaining competence in surgical patient management. Career decisions were not influenced, which we attributed to the participants being very advanced students with firm plans for future careers.

Take-home Messages: A clinical-reasoning course using inverted classroom and team-based-learning approaches can facilitate gaining clinical surgical competencies and can transfer those to their further study.

#SC9 - Short Communications: Surgery Education

#SC9.13 (6255)

Does medical school influence wanting to be a surgeon?

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ABSTRACT:

Background: Career choice may be influenced by experiences at medical school. This research builds on social cognitive careers theory (SCCT) which proposes three linked variables influencing career decisions: self-efficacy beliefs (belief about capabilities in specific career); outcome expectation (career interest will result in positive outcomes) and personal goals.

Summary of Work: The profile of students with a surgical preference at the beginning and end of their medical programme was generated from a national longitudinal career database of students attending both New Zealand's Medical Schools. It was hypothesised that surgical preference will alter during the programme due to moderation in SCCT. This would be reflected in numbers (%) choosing surgery as a career preference.

Summary of Results: The percentage of students indicating a definite career preference for surgery increased from the beginning to the end of medical school, 10.5% to 20.5%. When data was matched, 57% wanting a surgical career at the start of medical school retained their interest. Of students definitely indicating surgery on entry to medical school, 34.5% were women and 65.8% were men, with similar proportions at the end, 36.9% women and 63.9% men. This represented 6.9% of women and 14.4% of men of the total medical student population on entry to medical school increasing to 15.2% women and 25.9% men at the end of the medical programme. Similar proportions of students by ethnicity stated a career preference for surgery (7.9% Māori, 9.8% from Pacific Islands, 6.2% NZ European and 6.6% other ethnicities).

Discussion and Conclusions: Medical School has an influence (positive and negative) on surgical career choice for some students who enter medical school. Medical school experience did not specifically influence the proportion of women or ethnicity minorities selecting surgery as a career. Further qualitative work is required to confirm the utility of the SCCT model.

Take-home Messages: • Some students have decided on surgery at the start of medical school and do not change this preference. • Experiences at medical school can positively or negatively influence some students with respect to changing their surgical career preference. • Experience does not proportionally reduce preference for surgery by gender or ethnicity.

#SC10 - Short Communications: Sustainability

#SC10.1 (6911)

IFMSA Climate Change in Every Medical Curricula Vision

AUTHOR(S):

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ABSTRACT:

Background: IFMSA recognizes climate change as the biggest global health emergency of our century that demands action of utmost urgency. To strengthen climate resilience, we must ensure a well prepared health workforce who are knowledgeable about the impact and influence climate has on health and are equipped with the skills, knowledge, and values to take action. In response to a perceived gap in medical curriculum globally, IFMSA adopted a Climate-Health vision that calls to have an element of climate-health included in the curriculum of every medical school.

Summary of Work: A multiphase project currently in process commenced with a global survey last year, and periodic biannual monitoring of climate change in medical universities in all 127 countries through national reports.

Summary of Results: The survey was filled by 118 countries. 15.3% of countries reported that climate change is enlisted as one of their public health priorities in their own countries. 30.5% reported that at least one of their medical schools have climate change in the curriculum. Upon collective review of the number of all their medical faculties, only 15.9% of their faculties had climate change integrated in the curricula.

Discussion and Conclusions: Although some countries have successfully incorporated this topic in medical curricula, yet many countries and medical faculties are lagging behind. There is a need for greater investment in studying the systematic integration of climate change & health education into health professions curricula and training of future healthcare professionals on health sector mitigation and adaptation to climate change.

Take-home Messages: Medical students should be equipped with the knowledge and skills to manage climate-related illnesses, engage in eco-health promotion, and disease prevention, hence paving the way for a climate-resilient society.

#SC10 - Short Communications: Sustainability

#SC10.2 (4664)

Embedding Sustainability in Quality Improvement Education

AUTHOR(S):

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ABSTRACT:

Background: Quality improvement (QI) is a key element of healthcare education and professional practice. The UK's General Medical Council requires newly qualified doctors to apply principles of both QI and sustainable healthcare to medical practice. The 'Sustainability in QI' framework (SusQI) is an established approach for delivering quality improvement projects that maximise health gains while minimising environmental, social and economic costs, the "triple bottom line" of sustainability(1). 1. Mortimer F et al. Sustainability in quality improvement: redefining value. *Future Healthcare Journal*. 2018; 5(2):88-93.

Summary of Work: We have incorporated SusQI resources and support into a variety of contexts including undergraduate medicine (King's College London, University of Bristol), postgraduate medicine (Severn Foundation School), and postgraduate nursing (University of Brighton) linked to either core or optional areas of their curricula. Our project develops, evaluates and improves a set of standardised evaluation tools and resources to facilitate wider adoption.

Summary of Results: Based on the Wenger-Traynor value creation framework, a mixture of qualitative and quantitative evaluation explores satisfaction with resources, intentions and motivations to apply learning, application of learning and realisation of value in clinical contexts, and transformational perspective shifts such as the following: "This framework has radically altered how I approach quality improvement, in how I deliver quality improvement to the students I teach, in my own practice and in how I appraise the work of others." QI teacher, Imperial College London Research is ongoing; completion by June 2020.

Discussion and Conclusions: Preliminary findings suggest that integrating concepts of sustainability enriches QI learning and practice for many health professionals, while empowering them to take action on environmental and social concerns. The intentional, applied and realised value of the resources and toolkit will be discussed across a range of educational contexts.

Take-home Messages: Integrating sustainability into quality improvement education is a promising strategy to support health professionals to address environmental and social challenges in healthcare. Our study explores the effectiveness and value of the SusQI framework and resources as an educational tool for achieving this.

#SC10 - Short Communications: Sustainability

#SC10.3 (4978)

Evaluation of the delivery of sustainability-focused quality improvement teaching via novel technology to third-year medical students.

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ABSTRACT:

Background: The need for sustainable healthcare is recognised internationally. The General Medical Council mandates that medical graduates apply the principles of sustainable healthcare to medical practice and be competent in QI. The Sustainability in Quality Improvement (SusQI) framework integrates sustainability outcomes into mainstream quality improvement (QI) methods. We aimed to develop and evaluate sustainability-focused QI teaching for medical students.

Summary of Work: A workshop was delivered to third-year University-of-Bristol medical students via video-conferencing software using a Microsoft® Surface Hub. This novel technology allowed centralised teaching and interactive small-group activities to be delivered to all students across the Severn region. Students completed pre-session questionnaires, assessing self-reported domains of knowledge, confidence, attitudes and applied value. Post-session evaluation re-assessed these domains as well as reaction to the session.

Summary of Results: Of the third-year cohort (n=342), 59.7% completed the baseline questionnaire and 35.4% completed post-session questionnaires. Students reported an improvement in knowledge in sustainability in QI (6.2% to 57.6%, p<0.001), sustainable healthcare (14.8% to 63.6%, p<0.001) and the health impacts of climate change (23.4% to 74.8%, p<0.001). Levels of confidence (% reporting 'completely' or 'fairly') increased in undertaking a QI project (3.1% to 27.1%, p<0.001), knowing what QI involves (6.7% to 65%, p<0.001), and identifying a need for QI (3.5% to 47.9%, p<0.001). After the session, 84.3% thought the teaching should be part of core medical curricula and 62% reported they were likely or very likely to undertake SusQI projects.

Discussion and Conclusions: Integrating sustainable healthcare into quality improvement teaching leads to improvements in understanding, confidence and intended application of key concepts and practical methods in both topics. Our teaching takes advantage of video-conferencing technology to facilitate interactive teaching to a geographically sparse cohort of medical students to inspire and equip them to undertake sustainability-focused QI projects.

Take-home Messages: • Integrating sustainable healthcare and quality improvement into medical curricula is an educational priority. • Our teaching session uses the SusQI framework to address this need, providing a unique approach to introducing both topics. • Teaching these crucial themes early on will motivate and prepare students to undertake sustainability-focused QI projects throughout their careers, supported by ongoing undergraduate and postgraduate SusQI teaching nationally.

#SC10 - Short Communications: Sustainability

#SC10.4 (6193)

Green is not a dirty word: sustainability in health professions education

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ABSTRACT:

Background: Sustainability in health professions education (HPE) involves teaching and learning that develops students' knowledge, skills and attitudes of how human health is impacted by environmental changes. Teaching environmental sustainability (ES) and climate change (CC) to health professions students is increasingly valued by future HPE employers. An ES/CC curriculum can enrich existing learning and promote graduate attributes including global citizenship.

Summary of Work: An interprofessional group of academics from Monash University, Australia conducted an exploratory mixed method study to: 1. Survey current or foreseeable regulatory and accreditation requirements for incorporating ES/CC into HPE 2. Evaluate current levels of awareness of CC effects and incorporation of ES/CC into HPE curricula 3. Explore resources useful in incorporating ES awareness and CC impacts on health into HPE for students.

Summary of Results: While 96% of participants (n=163) agreed that all health professions students should learn about sustainability and 91% could list a few examples of direct effects of CC on human health, only one-third were confident in implementing sustainability in their teaching. Indeed, the majority (81%) of respondents have not taught sustainability at all, citing lack of time, resources and knowledge as barriers.

Discussion and Conclusions: The results demonstrate a large disparity between respondents' attitudes and their capacity to teaching sustainability in HPE. Universities therefore need to provide opportunities to enable educators to embed sustainability into the health professions curricula.

Take-home Messages: There is a clear gap in our collective understanding of how best to teach CC and ES to health professions students. By harnessing the motivation and enthusiasm for CC and ES as identified in the study, a great opportunity exists for interprofessional collaboration and curriculum enhancement to better prepare our health professional graduates for the future. Indeed, this study illustrates that far from being a dirty word, a 'green' curriculum may have the capacity to empower HP educators to embrace the forthcoming challenges of a changing environment and its impacts on health through education.

#SC10 - Short Communications: Sustainability

#SC10.5 (6839)

Sustainable Healthcare in the Dental Curriculum - the Asian Experience

AUTHOR(S):

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ABSTRACT:

Background: A sustainable healthcare system can only be realised by delivering quality management and improved public health without exhausting the planets resources nor resulting in irreversible ecological destruction. For long-term success, this needs to be taught formally in curricula of healthcare institutions, practically applied, then assessed and evaluated.

Summary of Work: Dentistry has a significant impact on individuals, communities and environments. Until recently this content has been taught in bits and pieces in most curricula of dental schools. In this context we introduced a Green Dentistry module in second year that cut across other modules to ensure every aspect of sustainable healthcare was integrated with other modules. With 2 module credits in the semester, Green Dentistry sessions were scheduled at the end of every week in the semester, and followed the theme for that particular week. Students were tasked with thrashing out the issues raised in the theme and proposing solutions, remedies and managements that would make the theme sustainable for the individual, the community and the resources of the planet in the long-term. At semester end, students filled in feedback forms based on a 5-point Likert scale, then participated in written and verbal reflection.

Summary of Results: Most students (89%) enjoyed the sessions and agreed these future-proofed their education and increased their readiness. Many students (78%) felt they would not have been aware and/or would not have otherwise given importance to the areas covered in the module. A majority of students (91%) stated that student-directed learning (SDL) for the module was initially difficult, but it had helped them develop a deeper understanding and greater work preparedness (75%). A small number of students (24%) felt that lectures should supplement some critical areas to bring everything together. All students passed written examinations (SAQs and OSCEs) for the module.

Discussion and Conclusions: The overall feedback was encouraging, together with the stated observation of improved communication, teamwork and interpersonal skills. This module will run for the next cohort, albeit with minor changes based on the feedback received.

Take-home Messages: In this changing world and environment, the onus is on course developers to ensure that our dental students are future-ready with requisite knowledge and exceptional skills.

#SC10 - Short Communications: Sustainability

#SC10.6 (6891)

Environmental Sustainability in Dental Education

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ABSTRACT:

Background: Advocacy to embed environmental sustainability in the dental curricula using a bottom-up approach should start by exploring the current landscape. This work aimed to explore current knowledge and attitudes amongst dental undergraduates and teaching staff regarding environmental sustainability in dentistry (ESD) at Queen Mary University of London and Harvard University. Additionally, it aimed to explore the presence of ESD and barriers and enablers to embedding it in the dental curricula.

Summary of Work: A cross-sectional survey using piloted electronic questionnaires for students and staff has been carried out. Ethical approval was obtained. Questions with Likert scales, multiple choice and/or free-text responses were used. Descriptive and thematic analyses were used to summarise preliminary data.

Summary of Results: Preliminary results indicated that 10% and 25% of students and staff respectively were moderately or extremely familiar with ESD. Although 85% of staff agreed on the importance of ESD only 44% expressed their interest in introducing ESD into the dental curricula. Amongst students, 86% agreed on the importance of ESD and 85% expressed their interest in learning it. Only 3% and 13% of students and staff respectively were aware of any ESD content within the curricula or schools' policies. Staff stated multiple barriers to embedding ESD in the curricula including lack of knowledge (57%), lack of educational materials (42%), lack of time (37%) and other barriers such as current infection control regulations and ESD not being part of the learning outcomes set out by dental education regulatory bodies. Enablers included offering training courses (58%), educational resources (48%) and time (50%) to staff to work on embedding ESD in the curricula.

Discussion and Conclusions: ESD does not exist formally in the dental curricula at both institutions. Despite poor knowledge, very positive attitudes to adopt ESD in the curricula exist amongst students and staff. Enablers include providing resources and policy reforms.

Take-home Messages: A top-down approach is needed to support bottom-up approaches to embed ESD in UK and US dental curricula. This includes embedding ESD in UK and US dental education standards, providing resources and adopting a critical evidence-informed approach in revising infection control regulations.

#SC10 - Short Communications: Sustainability

#SC10.7 (7277)

Learning about health, sustainable environment and health care through concept mapping

AUTHOR(S):

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ABSTRACT:

Background: During recent years it has become obvious that health professional educations need to include learning about ways to achieve a sustainable environment and health care. It may however be a challenge to integrate these perspectives into clinical education.

Summary of Work: Our aim was to find a strategy to help medical students gain perspectives on how factors at global, national, regional, and local level may influence human health, today and tomorrow. The aim was also to facilitate student learning about their future opportunities to promote health through working towards a sustainable environment. We applied “concept mapping” – a pedagogical tool to help students depict a system of relationships – in the first core course for medical students at Karolinska Institutet, Sweden. Students, in groups of 4, were provided 50 concepts from different disciplines including law, global health, social medicine, epidemiology and occupational medicine, which they were asked to briefly define and cluster. The nodes formed should then be connected, based on student consensus, using lines or arrows to represent relations. Students were encouraged to put captions on nodes and to use symbols or drawings. When finished, the work was presented to a teacher who commented and gave feedback.

Summary of Results: We observed a great engagement from students in creating the concept maps. The discussions were lively and involved creative thoughts about different ways to cluster the concepts to visualize how different areas and levels are interrelated. Some students used metaphor drawings to describe the interdependence between different areas. As an example, one group drew a pumping heart to show how research is essential for making wise decisions at the governmental level and at the clinic.

Discussion and Conclusions: Our experience from applying concept mapping in this setting for the present purpose is very positive. We could observe how students organized the concepts graphically and moved from linear thinking patterns to more integrated holistic patterns. They discussed decision making processes, costs for different interventions aiming at protecting planetary health and promoting human health, trade-offs, and potential effects on vulnerable groups.

Take-home Messages: The concept mapping learning activity seemed to enhance students’ self-efficacy in influencing social- and health care development, advocating health.

#SC10 - Short Communications: Sustainability

#SC10.8 (7317)

Needs Assessment for Sustainable Healthcare Education (SHE) Curriculum at U.S. Medical School

AUTHOR(S):

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ABSTRACT:

Background: In 2019, the American Medical Association introduced a resolution calling for teaching on the relationship between climate change and human health among trainees and practicing physicians. Sustainable Healthcare Education (SHE) focuses on the impact of climate change and ecosystem alterations on health, and the impact of the healthcare industry on the planet. Research suggests that only a minority of US medical school curriculums currently provide any teaching about environmental sustainability. US medical schools are not keeping pace with a growing need for SHE teaching.

Summary of Work: This is a student-driven, faculty supported initiative to integrate climate change and sustainability into medical curriculum at the University of Michigan Medical School. Guided by previous literature, we created and distributed an online 36-question needs assessment regarding 12 SHE learning objectives to all current medical students, to assess the current state of sustainability curriculum and help determine the need for SHE learning opportunities.

Summary of Results: One-hundred and twenty-six current medical students completed the needs assessment, comprised of 36.51% first-year, 15.08% second-year, 18.25% third-year, 26.98% fourth-year, and 3.17% MD-PhD students. The majority of students, 60.1% reported that they were not being engaged at all by the medical school in each of the 12 learning objectives. When asked about their interest in engaging these topics in the curriculum, the majority, 85.1% expressed that they were interested or very interested in engaging with the learning objectives. Students were most interested in learning about the medical, ethical, and legal factors in caring for patients with environment-related disease.

Discussion and Conclusions: Medical students at a U.S. based medical school desire training in topics related to climate change and environmental sustainability that are not currently being provided by the medical curriculum. The results of this survey will guide the development of a 4th-year medical student elective on SHE learning objectives. If successful, this could provide a model for expansion to other medical schools and collaboration between institutions.

Take-home Messages: There is a clear learning gap between the current level of student engagement around topics related to climate change and environmental sustainability, and the interest and needs of students in these areas.

#SC10 - Short Communications: Sustainability

#SC10.9 (4746)

Annual reporting on the inclusion of health and climate change within medical curricula in Australia for the MJA-Lancet Countdown – can a national indicator measure action?

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ABSTRACT:

Background: Climate change and environmental degradation threaten human health and society. An appropriately skilled and mobilised health workforce is urgently required to prepare health systems, reduce the environmental footprint of health care and advocate for change. Medical programs in Australia, however, currently do little to prepare graduates. The Lancet Countdown provides independent monitoring of the global health impacts and responses to climate change. An indicator to measure the response by medical education has not been reported due to difficulties in establishing a method. The MJA-Lancet Countdown provides a national Countdown for Australia. From 2020, the Countdown will include this indicator to measure the inclusion of climate change and health in Australian medical curricula.

Summary of Work: Medical Deans of Australia and New Zealand, the peak body for professional medical education in Australia and New Zealand, has formed a Climate Change and Health Working Group. This Working Group has developed graduate outcome statements and learning objectives which have been circulated to all medical schools to support curriculum change. The indicator will measure the degree to which medical schools are engaging with this emerging area of practice. The Working Group is developing an evidence-based, acceptable approach to annual reporting of this indicator.

Summary of Results: The first episode of reporting in the MJA-Lancet Countdown in 2020 will be described. Progress towards defining the purpose of the indicator, who will use it, what data will be collected and how, and stakeholder involvement will be presented.

Discussion and Conclusions: The challenges with reporting the indicator and next steps will be discussed. Limited health workforce capacity is obstructing the response by health systems to climate change, including the implementation of national health and climate change strategies. Health professions education must respond, and this response be measured and monitored. A system-level response supported by collaboration can help achieve change.

Take-home Messages: The health education sector must prepare practitioners to mitigate and adapt for climate change; Health professions education has been slow to incorporate environmentally sustainable healthcare into curricula; System-level responses supported by collaboration can assist; Action should be measured and monitored.

#SC10 - Short Communications: Sustainability

#SC10.10 (5395)

Developing sustainable healthcare in medical school curricula

AUTHOR(S):

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ABSTRACT:

Background: Climate change is the biggest global health threat of the century. The NHS, with a similar carbon footprint to the island of Cyprus, contributes to this crisis. A sustainable healthcare system is one which provides good quality healthcare, without depleting natural resources or damaging planetary health. The GMC recognises in 'Outcomes for Graduates 2018', that future doctors will need to be able to understand and apply the principles of sustainable healthcare to clinical practice. However, this is a new concept for some educators, which makes teaching the topic to medical students challenging.

Summary of Work: An initial literature review revealed there was little evidence on medical educators' baseline knowledge of the topic or attitudes towards sustainable healthcare education. Using a previously validated questionnaire, we sent an online survey to educators on the GP contributor database at Glasgow University. Thematic analysis of the results will be completed which will inform recommendations on how sustainable healthcare could be implemented into our curriculum.

Summary of Results: Response rate of 18% (85/472). 94.1% of participants believed that "sustainable healthcare is an important topic which future doctors need to learn about" but only 8.2% of participants felt that "medical educators and clinicians have adequate knowledge of sustainable healthcare to teach the topic". Only 21.2% of participants felt confident to "explain the health effects of climate change to a layperson". Just 4.7% felt confident to "describe how clinical practice might look, in a more sustainable healthcare system."

Discussion and Conclusions: Almost all medical educators surveyed (94.1%) agreed on the importance of sustainable healthcare being part of the curriculum but the majority did not feel confident on the subject themselves. Thematic analysis will evaluate the survey data in more detail and delineate the ideas offered regarding how sustainability could be implemented into the curriculum.

Take Home Messages: Clearly there is a gap between the GMC stipulation that doctors must practice sustainable healthcare and the insufficient knowledge of doctors on this subject. This survey offers further insights into the knowledge and attitudes of medical educators on this issue and further evaluation of this work will inform our recommendations.

#SC11.1 - Short Communications: Teaching and Learning - Approaches

#SC11.1.1 (6536)

Transformational learning through Being Mortal

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ABSTRACT:

Background: Otago Medical School provides experiential learning to explore aspects of chronic conditions and end-of-life care (EOLC) through taking on the role of assistant caregiver in residential care facilities (RCFs). Experiential learning is dependent on the serendipitous nature of the placement combined with how the student interacts with their experience. Consequently, the learning can be highly variable. We investigated if introducing an activity may address this variability. This research explored what impact reading the book *Being Mortal*, with an emphasis on chronic conditions and EOLC, had on students' experiential learning. Moreover, what impacts would reading *Being Mortal* have on students while doing their placement compared with students who did not read the book. We were not only interested in 'what' affect it may have, but more in 'what way' it may have an effect.

Summary of Work: A quasi case-control study was implemented with 11 participants randomly divided into two groups. Group 1 undertook their placement alongside reading the text and completed the data collection methods of: a pre-survey, focus groups, audio diaries, a post-survey, and an individual one-to-one interview. Group 2 undertook their placement and completed the same data gathering activities but without reading the text. We used thematic analysis drawing on insights from transformational learning theory in combination with models that analyse the depth of students' reflections.

Summary of Results: The results show the similarities and differences in both groups regarding: what issues were reflected on and; the types and depth of reflection students undertook. The findings also illustrate two key areas where *Being Mortal* impacted students during their experiential learning, that of context and perspective taking.

Discussion and Conclusions: Interacting with *Being Mortal* alongside experiential learning highlighted the breadth of areas reflected upon, along with students' depth of reflection. Interestingly, students reading *Being Mortal* seemed to have less of an emphasis on reflecting on themselves personally compared to the group that did not. There may be aspects of interacting with the book that influence students' learning in particular directions, which may also be counter-productive.

Take-home Messages: Introducing engaging literature to assist with the variability in experiential learning can stimulate opportunities for learning that may not otherwise arise.

#SC11.1 - Short Communications: Teaching and Learning - Approaches

#SC11.1.2 (6813)

Gateway to Communication: Collaborating across training bodies to engage doctors in communication skills workshops

AUTHOR(S):

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ABSTRACT:

Background: Education in communication skills for doctors, especially on how difficult conversations with patients are handled has become a focus for postgraduate training bodies¹. Support is needed to upskill doctors in communication skills and, with the current demands on the health service, training needs to be available on demand and easily completed locally. The Royal College of Physicians of Ireland (RCPI) collaborated with the HSE and other postgraduate training bodies to develop an online course. The objective of this course was to create awareness of effective communication in the healthcare setting and to signpost and encourage participants to attend existing skills training workshops available across the training bodies and the HSE.

Summary of Work: Four key modules were developed that complemented the HSE National Healthcare Communication Programme (NHCP). Learning and instructional design theory was applied, and scenario-based learning videos were integrated to prompt reflective learning. Learners are guided within the course to skills-based workshops to practice good communication skills.

Summary of Results: Analysis is undergoing to determine the uptake of the course and to measure the success of increased participation in the skills workshops.

Discussion and Conclusions: Developing an online course to deliver learning on communication skills might seem to go against the purpose of the e-intervention. However, the intention of the course is to deliver learning around communication methodologies and not skills and competencies. The online medium provides a platform to retain a cohesive structure when collating and signposting various national policies, initiatives, and training courses.

Take-home Messages: This self-guided online course is not constrained by space/time limitations of face-to-face learning and allows for vicarious experiences². • **Efficient:** Available online and on demand for all doctors and readily accessible. • **Effective:** Learners complete the course, reflect and signs up to communication skills workshops. • **Satisfactory to the Learner:** Interactive and user-friendly online learning experience. • **Successful:** The Learner engages in skills training in established workshops.

References: 1. Scally, G. (2018). Scoping Inquiry into the CervicalCheck Screening Programme. 2. Jordan, A., Carlile, O., Stack, A., (2008) Approaches To Learning: A Guide For Teach

#SC11.1 - Short Communications: Teaching and Learning - Approaches

#SC11.1.3 (4089)

Exploring Self-Directed Learning among Medical Students using Systems Thinking Framework

AUTHOR(S):

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ABSTRACT:

Background: Goal-directed and self-controlled learning behaviours, broadly termed as self-directed learning (SDL), are critical skills to be acquired for lifelong learning. Given the gaps in overarching theoretical frameworks around how senior clinicians can foster SDL using competency-based ePortfolios of medical students, we explored the application of systems thinking based learning framework, designed earlier by the authors, in exploring how SDL can be fostered among first year medical students by Learning Advisors.

Summary of Work: About 193 Year 1 medical students (70% cohort) and 33 Learning Advisors (senior clinicians) across six clinical schools participated in a pilot wherein students met their advisors twice a year to discuss their progress as collated within an ePortfolio along with pre-and post-meeting self-appraisal forms. In-depth qualitative data from focus groups and interviews with both students and advisors provided insights into SDL behaviours. We then explored the application of a pre-designed 3-6-3 Cs systems thinking framework (3-6-3 Cs) in fostering SDL in terms of micro-meso-and macro-level learning systems.

Summary of Results: Both students and advisors valued discussions around deep learning strategies, career guidance, professional identity, balancing extracurricular skills, and life as a clinician. Using the 3-6-3 Cs systems thinking framework, depth of learning occurs when students meaningfully link micro-level 3 Cs (Content-Cognition-Confirmation); go beyond the meso-level 6Cs within their immediate program (Commands-Contexts-Coordinates-Collections-Collations-Connections (of progress)); and reflect on bigger picture of macro-level 3Cs (Collective reflections-reCalibration-Continual development) that reflect life beyond medical student.

Discussion and Conclusions: Systems thinking provides metatheoretical integration of the learning sub-systems allowing agility in fostering SDL behaviours that enable students to broaden their horizon beyond immediate program-level goals (meso-level) towards deeper learning the art and science of medicine (micro-level), whilst keeping in sight the broader picture of life as a healthcare practitioner (macro-level).

Take-home Messages: • The epistemic framework of systems thinking provides deeper understanding of boundaries, perspectives and relationships between various learning subsystems. • This lends reflective agility to students and advisors when fostering self-directed learning behaviours while navigating their journey as healthcare professionals through various learning subsystems.

#SC11.1 - Short Communications: Teaching and Learning - Approaches

#SC11.1.4 (6260)

Self-regulated learning as a threshold practice

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ABSTRACT:

Background: Self-regulated learning (SRL) is now recognised as an important skill for health care professionals to develop. Yet, not all education systems provide specific support for the development of SRL. In order to assist our students to become self-regulated learners, Programmatic Assessment for Learning (PAL) was introduced into our four-year graduate entry medical program in 2017. To support SRL, our curriculum includes Progress Testing across all years of the course, Team Based Learning (Years 1&2) and Clinical Placements (Years 3&4). Additionally, each student is allocated a learning coach: an academic whose role is to support and assist students to develop SRL through regular meetings and engagement with a reflective portfolio. Some of our early work in this area has suggested that the students' development as self-regulated learners is a threshold concept (TC). Given the prominence that SRL and TCs now have in the educational literature, we decided to study this in detail, with the analysis of students' development from the perspective of the learning coaches being the first part of a larger study.

Summary of Work: Focus groups and individual interviews were conducted with learning coaches to explore their perception of the students' development as self regulated learners, and the enablers and barriers to this development. Data were analysed using the TC framework.

Summary of Results: Early results suggest that learning coaches can clearly describe the development of SRL in students, but there is great variability in how and when this develops. There is a clear evidence of a threshold being crossed, however, this takes the form of an ontological shift or conceptual change, which suggests that rather than SRL being a threshold concept, it is more of a threshold "practice". Furthermore, learning coaches appear to undergo a parallel process in understanding SRL, possibly as they have never articulated this before. Further data are currently being collected and analysed and these findings will also be presented at the conference.

Discussion and Conclusions: SRL is a threshold practice that can be observed and articulated during PAL.

Take-home Messages: The development of SRL reflects an important threshold practice, and learning coaches are uniquely placed to observe, monitor and support this transition.

#SC11.1 - Short Communications: Teaching and Learning - Approaches

#SC11.1.5 (6322)

Experiences in the use of learning portfolio in teaching family medicine in medical clerkship

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ABSTRACT:

Background: Medical education has benefited from improvement in teaching strategies using technology. Gadgets like mobile phones, tablets and laptop computers and mobile applications and programs have been designed to provide avenue for interactive classroom discussions, on-the-go lectures and direct feedback-evaluation. Concepts in family medicine are similarly thought in such platforms. The convenience of using learning portfolio allows a medical student to report his learning experiences and process information to assess his index family as application of his learning which is highlighted in this study.

Summary of Work: The primary objective of this study is to determine the experiences of medical clerks in using learning portfolio as teaching strategy for family medicine concepts. Secondly, it identifies the strengths and weaknesses of such strategy to effectively allow students to apply their knowledge and skills. This descriptive study combined a review of learning portfolios submitted by 128 medical clerks collected from August 2017 to February 2018 during their family medicine rotation and a focused group discussion involving 24 cohort medical clerks. Thematic analysis was used to identify recurring themes in the shared experiences in using the learning portfolio.

Summary of Results: High satisfaction was expressed in areas that provided direct interaction with the index family assigned to the medical clerks. The structure of the learning portfolio was useful in providing a framework in screening the index family using the tools and analysis of the dynamics of the relationship of family members and biopsychosocial issues concerning the family.

Discussion and Conclusions: Structured learning portfolio provide a framework for learning concepts in family medicine including use of family assessment tools (i.e. family genogram, family APGAR, SCREAM), guidance in facilitating interventions such as family meetings and analysis of the dynamics and issues in the family system.

Take-home Messages: Family medicine concepts are effectively thought using experiential learning during the clinical years of medical students. The use of learning portfolio can be both a learning tool and a formative evaluation of the medical clerks undergoing rotation in family medicine.

#SC11.1 - Short Communications: Teaching and Learning - Approaches

#SC11.1.6 (4461)

Moan and Groan No More: Making It Meaningful - Learning from Reflective Practice to Transform the Teaching of Reflection

AUTHOR(S):

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ABSTRACT:

Background: Reflection is an essential attribute of competent medical practitioners and a formal part of UK medical licencing and revalidation. Consequently, teaching it is important in medical training (GMC 2018). Yet Aronson (2012) suggests there is uncertainty about how to teach it. Driessen (2017) describes how structured reflection often meets resistance from students and tutors, meaning reflection's transformational potential risks being lost. This study explores GP lecturers' experiences of teaching reflection and reflecting within clinical practice, to inform how reflection could be taught more effectively.

Summary of Work: This qualitative study consisted of semi-structured interviews with lecturers in primary care from two London medical schools, which were audio recorded, transcribed and analysed using thematic analysis. An interpretivist stance was used to explore the behaviour, perspectives and experiences of lecturers' reflective practice and teaching. Illeris (2009) theory of learning provided the framework. The educational principles of threshold concepts, social constructivist theory and transformative learning provided the lenses through which to understand this teaching.

Summary of Results: Lecturers report they and their students have negative perceptions of structured reflection, identifying it as a box-ticking exercise detached from meaningful reflective practice. However, lecturers operate from a transformed perspective where reflection within clinical practice is seen as innate and valued, but perceive that students haven't developed this transformed perspective and struggle to recognise its value. For reflection to be meaningful lecturers felt it needs to be linked to relevant clinical experiences through facilitated discussions.

Discussion and Conclusions: Identifying reflection as a threshold concept helps to see it as a process that occurs over time and to recognise students' transformative learning journey. In order to support students through the liminal state of learning to becoming reflective practitioners, we need to bring reflective practice back into view. To do this, clinicians need to recognise reflection in their daily practice and role model it to students.

Take-home Messages: If structured documentation of learning continues to be confused with meaningful reflection the negative associations will persist. Instead reflection needs to be tutor facilitated through relevant, timely, clinically integrated discussions. There is the potential to change student perceptions and support them as they master the skills to become competent reflective practitioners.

#SC11.1 - Short Communications: Teaching and Learning - Approaches

#SC11.1.7 (4637)

Imperial College's pioneering approach to case-based learning: digital enhancement, early integration and team-based programmatic assessment

AUTHOR(S):

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ABSTRACT:

Background: Clinical Science Integration (CSI) is an innovative, flagship module within Imperial School of Medicine's new curriculum. It employs a pioneering, technology-enhanced approach to case-based learning, utilising bespoke videographic patient presentations with task-based sessions to integrate basic science, clinical reasoning and consideration of values and behaviours and generate deep, connected learning. Tasks provide challenges authentic to a junior doctor's, building problem-solving and team-work skills. CSI is programmatically assessed using team-based learning (TBL) methodology.

Summary of Work: This presentation focuses on an interim evaluation of the module's successes and challenges, using qualitative and quantitative student feedback from a regularly-distributed survey, session attendance and TBL assessment results.

Summary of Results: Several positive themes have emerged from our interim evaluation: integration, motivation/engagement and teamwork. On average, 83.3% of students find CSI to be beneficial in integrating knowledge from different sources. Attendance has been consistently greater than 90% and comments suggest that sessions are highly engaging, with 84.8% agreeing that they were motivated to explore and learn more about the topic. 93.9% of students found the process of discussing an answer to positively impact their learning. This benefit is supported by an average increase of 12.2% from individual to team scores within the TBL assessment.

Discussion and Conclusions: Preliminary results show that the innovative technology-enhanced format of CSI helps students integrate their learning across the whole programme, emphasising the interconnected nature of medicine. The team-based element and patient-centred focus are widely perceived by students to be beneficial to learning, evidenced by high attendance and positive comments. The academic team recognises certain limitations and areas for improvement. For example, CSI uses TBL purely as an assessment tool and student challenges to TBL questions often indicate that correct understanding has not been fully developed, even after team discussions.

Take-home Messages: - Early integration of content promotes deep learning and understanding; - Working in teams to solve authentic problems centred around videographic cases provides memorable and engaging patient-centred learning; - TBL is an effective means of programmatic assessment and developing team-work skills. However, in our modified form, it may have limitations in potential learning benefits.

#SC11.1 - Short Communications: Teaching and Learning - Approaches

#SC11.1.8 (5101)

Does a high-fidelity simulation model help? Student perceptions of wrist fracture reduction training.

AUTHOR(S):

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ABSTRACT:

Background: Simulation has become increasingly common in teaching important competencies, such as distal radial (wrist) fracture reductions. The use of a high-fidelity model arm containing a simulated distal radial fracture was introduced for medical undergraduates' fracture education during clinical placement to the regional trauma unit. The aim was to assess the students' responses to this pilot of a high-fidelity model representing wrist fracture reduction, compared with traditional teaching methods.

Summary of Work: 48 medical students received training on wrist fracture reduction during their clinical placement. After a tutorial (discussing management principles, cases and x-rays), students each received one opportunity to perform a simulated wrist reduction technique. Students then completed a questionnaire with Likert scale responses regarding their previous level of educational experiences and attitudes to this educational experience. In the "bench model" group, 23 students used a high-fidelity model (Sawbones Colles' fracture reduction and casting technique trainer). In the "simulated patient" group of 25 students, the educator acted as a simulated patient.

Summary of Results: In both groups, 100% of students agreed/strongly agreed that the employed educational method was interesting, was beneficial, helped them understand the principles of fracture reduction, allowed them to receive real-time feedback, and would be useful to other students. 96% of responses in the simulated patient group and 87% of responses in the bench model group reported that students agreed/strongly agreed that the employed teaching method would be of additional benefit if used again, helped them to understand the "feel" of performing a wrist reduction, and made them feel more confident about performing the procedure in future.

Discussion and Conclusions: Students reported favourable outcomes for both educational methods, either using a bench model or an educator acting as a simulated patient.

Take-home Messages: Students felt that a high-fidelity bench model was beneficial for wrist fracture reduction education. However, a more traditional teaching method (without a bench model) was also well-received.

#SC11.1 - Short Communications: Teaching and Learning - Approaches

#SC11.1.9 (5216)

Neurology Goal Setting Study- Lessons from Sporting Excellence Translated into Medical Training

AUTHOR(S):

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ABSTRACT:

Background: Goal setting is used by world-class athletes and sports teams to maximise performance through cumulative improvement of many subcomponents of their given discipline. This study investigates the implementation of Goalscape goal setting software by medical students in the clinical skills setting as a tool to increase performance in objective structured clinical examinations (OSCEs).

Summary of Work: This study follows an RCT design. 43 3rd year medical students at Dundee Medical School undertook a mock neurology OSCE station (cerebellar examination). Students were randomly allocated into 2 groups 14 days prior to the OSCE. Group 1 (N=15) was given Goalscape software with a preset template designed by Dundee neurologists to help direct study focus. Group 2 (N=28) used traditional study methods. The difference in mock OSCE score between group 1 and 2 was compared by student t-test using SPSS 22 statistical software.

Summary of Results: The average OSCE score was 10.40/12.00 (SD 1.30) and 9.62/12.00 (SD 1.50) in the software and non-software groups respectively ($p=0.088$). Students rated the 'usefulness for visualisation' and 'overall usefulness of Goalscape for medical students' as 6.88/10.00 and 6.75/10.00 respectively using a qualitative questionnaire.

Discussion and Conclusions: This study demonstrated a trend towards improvement when utilising a structured goal setting software programme. This could be a useful tool to increase effectiveness of studying for OSCEs. Larger population studies with more robust methodology may quantify benefits further. Goal setting software has proven popular with students and its role within medical education will be investigated further.

Take-home Messages: Goal setting provides a structured approach to elite training in sport. Goal setting could may have a role in aiding skills acquisition for trainees/students in clinical training.

#SC11.1 - Short Communications: Teaching and Learning - Approaches

#SC11.1.10 (5498)

Two-day introductory program to build trust and facilitate teamwork among medical students

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ABSTRACT:

Background: Modern medicine is increasingly dependent on collaborative learning, shared decision-making, and interprofessional cooperation. Concurrently, medical students are selected on their individual accomplishments in a competitive education system. Like other people, they also tend to segregate in groups of gender, age, ethnicity, and socioeconomic status. To prepare medical students for a collaborative health care system, there is thus a need to facilitate the formation of an inclusive learning culture, which provides skills and training in teamwork. In this study, we developed and evaluated a two-day introductory team building program for medical students at the University of Oslo.

Summary of Work: The program was adapted from a model developed at the University of Pennsylvania, where it has been an integral element of a team-centered medical curriculum since 2009. It is based on established theories of team learning and involves a step-wise process to build trust, clarify goals, and assure commitment. A cohort of 118 newly admitted students were divided into 24 teams of 4 to 5 students each. Fourth-year students, assigned mentoring roles, each facilitated the activities of two student teams. To evaluate, we applied a pre- and post-survey, focusing on students' experiences with the implemented program.

Summary of Results: Only 37% of the participants expressed positive experience with group work from their prior studies. After the two days, 96% reported they had enjoyed the program, and 97% would recommend it to other students. Eighty-four percent felt a sense of belonging to their team, and 93% were satisfied with their team's level of commitment. The students expressed great satisfaction with their near-peer facilitators, while critical aspects concerned a tight program, inability to choose teammates, and lack of clarity about the future purpose of the teams.

Discussion and Conclusions: The program was well received by the students and facilitated the formation of well-functioning teams. The use of near-peer mentors was a success and may be further developed. A small number of students were not satisfied, and the underlying reasons should be further explored. There is also a need to clarify and develop how the teams are integrated in the overall curriculum.

Take-home Messages: Structured team building develops trust and collaboration among incoming medical students.

#SC11.1 - Short Communications: Teaching and Learning - Approaches

#SC11.1.11 (5582)

Advancing Scholarly work across Distributed Medical Education programs in Ontario, Canada

AUTHOR(S):

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ABSTRACT:

Background: Distributed Medical Education (DME) occurs at sites beyond, and often distant to, faculty of medicine institutions located within university campuses. DME programs are now an established part of medical education, and as such require thoughtful planning around how best to support and advance scholarship for both students and faculty located at these diverse teaching environments.

Summary of Work: In order to advance scholarship across DME programs, an innovative approach was undertaken by all six DME Deans associated with the Ontario Faculties of Medicine in order to reach consensus on key recommendations to promote scholarship. The Deans participated in a semi-structured facilitated session in which they shared and compared current state of DME scholarly activities and resources in each of their settings. The discussion was themed into 5 issues, and consensus was reached on recommendations to highlight the importance of developing scholarship and to consider strategies to engage and support students and faculty.

Summary of Results: Five improvement opportunities and recommendations with relevance to all sites were identified: • ensuring necessary scholarship activities are developed to meet curricular requirements and accreditation standards • ensuring education leadership in established academic settings recognizes and values the emerging role of scholarship within DME programs • developing mentoring and training for DME faculty to develop local expertise, rather than relying on established academic settings • incorporating scholarly activities into the value proposition and branding of DME programs, in a way that is aligned both with the strategic goals of their faculties of medicine and the needs of their local community • ensuring that resources, tools and measures of academic success are adapted to the local context

Discussion and Conclusions: The importance of nurturing a culture of recognition and value in scholarship that extends beyond the traditional academic health sciences centres is essential to the success of scholarship within DME settings.

Take-home Messages: Advancing scholarship in DME settings is necessary not only to meet accreditation and curricular requirements, but to ensure that students and faculty have equitable opportunities to pursue local scholarship that has relevance both to the community as well as the faculty of medicine to which the DME program belongs.

#SC11.1 - Short Communications: Teaching and Learning - Approaches

#SC11.1.12 (5626)

Implementing Team Based Learning in an Undergraduate Family Medicine Clerkship: What is its Added Value from the Students Perspective?

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ABSTRACT:

Background: Team Based Learning (TBL) has not been widely adopted in the Middle East. The purpose of this study is to explore the perception of undergraduate medical students regarding TBL in a Family Medicine (FM) clerkship in a start-up medical school in Dubai.

Summary of Work: The Mohammed Bin Rashid University of Medicine and Health Sciences (MBRU) is a new medical school in Dubai. MBRU offers a FM clerkship for its first cohort of fourth year students, who originate from 19 countries. In order to convey a generic, yet contextualized, FM curriculum, a series of seven application cases was developed, and in turn verified for authenticity by local professionals. The TBL pre-reading materials originate from Australian, British, European, Middle Eastern and North American sources. Sessions were delivered by FM physicians working in Dubai. For the purpose of this study, a mixed-method approach was used, with quantitative and qualitative data collected at baseline and at the end of the rotation. The initial data collection was intended to assess the baseline perception of FM. The second collection captured the students' reflection on the TBL experience, along with changes in perception of FM.

Summary of Results: Students greatly valued the space to voice their opinions, to think without the fear of high stakes exams, and to learn from mistakes. They reported enjoying themselves, and bonding as teams. In their opinion, this technique enhances a set of transferable soft skills (e.g., listening and negotiation). The data also revealed that the TBL experience increased their understanding and appreciation of FM.

Discussion and Conclusions: FM is a team-based endeavour. MBRU students will work in diverse societies, with many ethnic, cultural and religious influences. The TBL teaching process contributes to the students' appreciation of the importance of multidisciplinary learning and working, and tolerance. TBL also promotes skills in dealing with uncertainty and undifferentiated clinical presentations.

Take-home Messages: TBL was well-received by undergraduate medical students. It fostered thinking skills and team working in an enjoyable and challenging way.

#SC11.1 - Short Communications: Teaching and Learning - Approaches

#SC11.1.13 (5686)

The Virtual Renal Clinic: Use of a collaborative online platform to simulate outpatient learning in undergraduate education

AUTHOR(S):

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ABSTRACT:

Background: Social media within medical education increases student engagement and facilitates information sharing. New learners may be discouraged from sharing their ideas in a public forum. Private online collaborative platforms may offer these benefits in a more appropriate supportive environment.

Summary of Work: Using Microsoft Teams, an online environment simulating an outpatient clinic was created for groups of 4th year medical students rotating through a two-week renal medicine block. Students had access via laptops or a smartphone application. Two cases were provided per group and students were encouraged to discuss these with peers. Questions were set by a facilitator who also provided individualised expert feedback. Feedback was collected from 19/29 students using an electronic questionnaire. Engagement with the online platform was calculated by measuring frequency and word count of responses. This was correlated with performance in multiple choice questions (MCQ) relating to nephrology in the end of year summative assessment.

Summary of Results: 17/19 (89.5%) students agreed that this was an interesting way to learn, and 18/19 (94.7%) agreed that it helped them to assess and manage patients with kidney disease. 16/19 (84.2%) agreed that the platform was easy to use, and 15/19 (78.9%) would be interested in using this method in other specialties. Case difficulty and time spent relative to other learning methods was considered appropriate, and qualitative feedback highlighted case complexity, interactivity, benefits to clinical reasoning and suggested further developments. No significant correlation was observed between calculated clinical engagement and summative renal MCQ performance. Student performance was high, as 18/29 (62.1%) scored at least 75%, increasing difficulty in distinguishing student ability.

Discussion and Conclusions: Simulating outpatient medicine using online collaborative platforms is an acceptable learning method for medical students. It provides opportunities for facilitated clinical reasoning. The asynchronous learning method supports flexible learning within the clinical environment. This enables optimal and convenient utilisation of breaks between other activities by engaging with learning via a smartphone or other device.

Take-home Messages: Utilising online collaborative platforms can complement traditional learning methods within medical education and make good use of breaks between structured clinical activities.

#SC11.1 - Short Communications: Teaching and Learning - Approaches

#SC11.1.14 (6729)

Using Graph Database Visualization Tools to Improve the Development of Metacognitive Skills in Medical Students

AUTHOR(S):

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ABSTRACT:

Background: USMLE Step 1 is designed to measure a student's ability to integrate basic science and clinical material by system and process. Thus, helping students integrate information across different disciplines and semesters is paramount. Our previous work showed that student-initiated concept mapping lead to significantly improved outcomes. In the current pilot study, we examined whether graph database relational visualization tools to present lectures in a connected manner would foster metacognition would result in improved learning outcomes.

Summary of Work: The total sample consisted of 16 academically high-risk students who participated in six two-hour integrated lectures over the course of two weeks. The comparison group of 10 students received a usual PowerPoint lecture format on the same topics the previous semester. We used graph database relational visualization tools created specifically for this project to illustrate the relationship between all concepts (i.e., clinical and basic science) for each lecture. Concepts were illustrated as labeled nodes and relationships as a labeled edges. For example, (node: Osmotic diuresis) [LEADS_TO]-> (node: Polyuria). Students were given six multiple-choice quizzes (one quiz 24 hrs. after each lecture).

Summary of Results: Students exposed to the integrated lectures using the graph visualization tools scored significantly better across all six exams compared to students exposed to the traditional lectures, with an average +/- sd of 81.4 +/- 4.2 and 66.8 +/- 6.3, respectively. In addition, students reported A) being significantly more engaged during and after the integrated lecture compared to a typical lecture, B) spending more time reviewing material from previous semesters, and C) thinking about other material in a connected manner. We also showed that generating integrated lectures using graph database visualization tools is scalable and requires minimal training.

Discussion and Conclusions: In our previous study, we demonstrated the value of students creating concept maps. In this, we provide preliminary evidence that exposure to essential medical science information presented as visual relational concept maps rather than visual PowerPoint enhances learning outcomes. We will continue to add subjects to the intervention group to attempt to replicate or refute the findings.

Take-home Messages: An integrated/mapped lecture leads to improved outcomes and student engagement.

#SC11.1 - Short Communications: Teaching and Learning - Approaches

#SC11.1.15 (7038)

Medical Drama Series - an effective teaching method?

AUTHOR(S):

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ABSTRACT:

Background: Recent years research suggests that lectures are an outdated teaching format, looking to be replaced by innovative ways of delivering content to students, but not all teaching can be transferred to small teacher-student ratio formats. This poses the question, whether all lecture-size formats are bound to be ineffective and boring. Medical drama series are abundant and have all the drama lectures dont. While some overdo, others build up complex patient cases with intriguing differential diagnostic thinking. Students either have watched or watch these and can be mislead about the facts of reals medicine, especially in their preclinical years of studies. We addressed the desire for a fun teaching format with streamlining medical drama series under running commentary of a physician and evaluated the project for their learning outcomes.

Summary of Work: Episodes were prepared to address differential diagnoses, diagnostics and errors made in the show and followed up by a presentation about the final diagnosis. Students from all years were invited to take part extracurricular. A self assessment questionnaire asked the students multiple choice questions related to the contents of the episode without revealing the results, before and after the episode, then revealing the answers, including an anonymous identifier for matching and further feedback.

Summary of Results: Out of 320 students, 115 completed the self assessment, while 73 filled the feedback form. Matching the forms left 52 complete sets. While the overall trend showed a decrease in right answers, students which had filled both forms showed an improvement in performance. 69.4% of students gave best marks for fun experienced during the event. 50% of students extremely agreed, 36,1% agreed that they had had an learning experience.

Discussion and Conclusions: The complete forms, as well as the feedback questions show the intended outcome of a fun teaching format while actually delivering knowledge. We did not expect the unmatched forms to show a better overall performance of students in the preassessment. Different reasons may be at work: significantly less students filled in the feedback form after the event, which might be suspect to selection bias.

Take-home Messages: Our project showcases a fun way of delivering medical knowledge and can be recommended.

#SC11.1 - Short Communications: Teaching and Learning - Approaches

#SC11.1.16 (4037)

A novel 6D-approach to radically transform undergraduate medical education

AUTHOR(S):

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ABSTRACT:

Background: Designers of undergraduate medical education (UME) need to address the exponentially expanding volume and variability of scientific knowledge, through innovative student-centric pedagogical strategies and implementation of milieus, where information, communication and technology-enabled tools are seamlessly integrated, and lifelong information gathering, assimilation, integration and implementation is the ultimate goal. In UME, the basic sciences provide a scaffold allowing students to develop their personal critical decisional framework as well as define the understanding of normal human physiology, pivotal for the management of pathophysiology. However, most medical schools confine themselves to “stagnant-curricula”, with the implementation of “teacher-centered” pedagogical techniques in the delivery of basic sciences.

Summary of Work: To tackle the above, we present a novel “6D-Approach” for the dissemination basic science concepts through mentored journal-clubs. The approach is informed by a principle derived from Constructivism. The technique in which the 6D-approach can be implemented in UME, is shown using an example from a first-year course of Molecular Biology and Principles of Genetics at our medical school. A reflection on the impact of 6D-Approach for students as well as instructors is also presented.

Summary of Results: The 6D-approach was positively received by the students and the formal feedback for the course: Molecular Biology and Principles of Genetics, where the approach was repeatedly employed, indicated that students expressed satisfaction with the teaching strategies employed in the course, with ~ 89% of the students in the cohort strongly agreeing with the highest grading score “extremely satisfied”.

Discussion and Conclusions: The 6D-approach encourages retention of knowledge, critical thinking, metacognition, collaboration and leadership skills in addition to self-evaluation and peer feedback. Finally, and importantly, mentored journal clubs employed in the implementation of the approach represent an example of the medical education continuum, in particular highlighting the use of a continuing education method in UME.

Take-home Messages: Designers of UME need to address the exponentially expanding volume and variability of scientific knowledge, through innovative student-centric pedagogical strategies. Implementing mentored journal clubs, especially in basic science courses is an effective strategy understanding of normal human physiology and management of pathophysiology. Such journal club integrating pedagogical strategies encourages knowledge-retention, critical-thinking, metacognition, leadership skills in addition to self-evaluation and peer feedback.

#SC11.1 - Short Communications: Teaching and Learning - Approaches

#SC11.1.17 (7279)

Stories of Learning in Medical School based on the theory of Personal Epistemology

AUTHOR(S):

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ABSTRACT:

Background: Personal epistemology addresses the theories and beliefs that individuals hold about knowledge and knowing and the way in which such epistemological perspectives are related to academic learning. Hofer and Pintrich (1997) proposed that personal epistemological theories consist of two constructs: the nature of knowledge and the nature of knowing and are on a continuum from naïve to sophisticated beliefs. Personal epistemology is applicable to medical students in a problem-based-learning (PBL) program, as it emphasises self-directed learning, and beliefs about knowing and knowledge are important determinants of intellectual performance.

Summary of Work: This PhD investigated how personal epistemological beliefs were conceptualised by medical students at the end of their first two years in a PBL medical program; whether their beliefs evolved over the first two years, were related to the process of learning; and whether they differed between students from the lowest and highest ranked academic group. A series of interviews were conducted with twelve second year medical students selected according to a maximum variation purposeful sampling technique (Patton, 2002). Interviews transcripts were analysed using a combination of thematic analysis, the constant comparison approach, and a personal epistemological theory framework.

Summary of Results: The findings revealed students' prior learning experiences in high school had a major impact on their epistemological interpretations of the medical program. There was a pattern of epistemological beliefs between the two groups of students. Students from the lowest ranked group retained naïve epistemological beliefs after two years. These students misinterpreted the constructivist curriculum and their approach to learning was disabling. Students from the highest ranked group demonstrated sophisticated beliefs. These students struggled with the transition to the medical program but turned these into opportunities for epistemological development.

Discussion and Conclusions: These results provide an epistemological explanation for why some students struggle, and will continue to struggle based on their prevailing epistemological beliefs. The findings also suggested that the constructivist PBL approach was a major influence on the development of students' epistemological views, and a constructivist PBL medical program can accelerate student's epistemological development.

Take-home Messages: The theories of personal epistemological beliefs and their impact on student learning are important for curriculum design.

#SC11.2 - Short Communications: Teaching and Learning - Clinical Teaching General

#SC11.2.1 (4177)

A Small Private Online Course in Clinical Workplace Learning: the Design and First Impressions

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ABSTRACT:

Background: Clinical training faces several challenges such as time pressure, lack of observation and assessment and sub-optimal support of the intern in the diagnostic process. Integration of online learning in clinical training can remedy these problems. Here we describe the design, development, evaluation and integration of a Small Private Online Course (SPOC) in clinical training in Internal Medicine.

Summary of Work: A design-based research approach was applied to develop the SPOC, thereby integrating practical and theoretical aspects. Various stakeholders defined the needs, contents and goals of the course. The design was based on 1) general theoretical principles that learning should be constructive, contextual, collaborative and self-directed and 2) Self-Determination Theory, i.e. stimulating intrinsic motivation by promoting autonomy, competence and relatedness. This resulted in a 16 weeks SPOC consisting of weekly thematic assignments and including a virtual reality ward tour and patient visit, authentic patient cases, videos, collaborative and peer-reviewed assignments, discussion forums and self-assessments.

Summary of Results: Interns' impressions of the SPOC were evaluated by an online questionnaire (n=10) and a group interview (n = 19). Quantitative analysis of the questionnaire showed that most interns found the SPOC informative and useful, but they found interaction with peers in the SPOC not useful. Thematic analysis of the interview revealed constructive learning and competence training were well valued, as seen on positive comments on SPOC content and patient cases. However, self-directed and contextual learning could be improved since more flexible and just-in-time learning were preferred. Collaboration was suboptimal since teacher feedback was preferred over student feedback.

Discussion and Conclusions: From the first evaluation cycle we learned that the interns' perceived the course as informative and useful. However improvements can be made in flexibility of the course and collaboration, warranting further research.

Take-home Messages: Integration of online learning in clinical teaching faces many challenges. Using a design-based research approach in course development can help to improve the quality of integration.

#SC11.2 - Short Communications: Teaching and Learning - Clinical Teaching General

#SC11.2.2 (4712)

The value of Healthcare Team Observations for Patient Safety (HTOPS); results of a three year study with final year medical students

AUTHOR(S):

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ABSTRACT:

Background: Medical students should be trained to protect patients and place patient safety at the forefront of their practice. There are few relevant learning opportunities to achieve this which are directly linked to practice. We share the development of a learning approach to change medical student attitudes and practice culture towards patient safety: Healthcare Team Observations for Patient Safety (HTOPS). The approach mirrors methods used in aviation. Final year medical students spent 6 days in an acute hospital observing and anonymously recording real-time practice to identify safety concerns.

Summary of Work: We collected cycles of data on patient safety observations with stakeholder perspectives. Interviews took place with students (observers) and practitioners (observed) analysed for themes. Paper recordings were designed as an app. The study was funded by the Wellcome Trust.

Summary of Results: Thirty-seven medical students took part over three years. We report on the data from 2017-2019 where students identified 917 issues; themes of human factors, systems and environment. Five qualitative interviews with medical students highlighted that students felt they were 'almost marking the staff' and in some situations, the observers felt more welcomed. Students felt more aware of patient safety; "I think it makes you more vigilant in your own practice when you have to observe other people making those mistakes". Eleven interviews with NHS staff identified they felt 'a little tense' and 'uncomfortable' being watched. Several had a change of mind-set when they realised it was anonymous and aimed to help improve standards. Practitioners felt students were the right people to observe for safety being 'non-biased'. The observations were valued; "... as a Ward Sister... if the practice is not of an expected standard I would like to know". All, observer/observed needed clarity and reassurance about the process.

Discussion and Conclusions: HTOPS presents a promising approach to learning about the totality of patient safety in practice. The method feeds-back into front-line patient safety mechanisms and has the potential to raise standards and change culture; similar to aviation.

Take-home Messages: HTOPS offers the opportunity for collective ownership of safety concerns without blaming individuals and has been positively received by staff and medical students.

#SC11.2 - Short Communications: Teaching and Learning - Clinical Teaching General

#SC11.2.3 (6484)

Quality assurance of clinical training in longitudinal placements

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ABSTRACT:

Background: In order to achieve and maintain a high quality of competence-based training in longitudinal clinical placements, the German government is funding a cooperative project. This project aims to identify core issues for high-quality clinical training and to develop measures for students and their supervisors to ensure and improve the quality of such trainings even after the end of the funding period. Therefore, developed measures should be easy to handle for supervisors and students and be implemented in a sustainable manner.

Summary of Work: For the needs analysis, we conducted an inventory analysis and several expert interviews with both supervisors and students. We discussed the results with our cooperation partners from four medical schools and developed tailor-made, transferable measures. We piloted them at the Mannheim Medical Faculty. On the basis of formative and summative evaluation, manageability and sustainable implementation were ensured.

Summary of Results: We identified core issues such as structured observation, feedback and regular interviews between supervisor and student as well as a standardized training plan for students. For addressing these core issues, a logbook, an informative website and a training program for supervisors were developed, implemented and evaluated. The evaluation shows that the products achieve a high level of acceptance.

Discussion and Conclusions: High-quality clinical training in longitudinal placements requires the systematic implementation of comprehensive measures to provide and implement tailor-made learning and teaching techniques. The multi-stage development process with feedback loops leads to measures that are easy to handle for the target groups and ensure sustainable implementation.

Take-home Messages: High quality clinical training in longitudinal placements has to address core issues such as structured observation and feedback, standardized training plans for students and regular interviews between instructor and students, both to students and to the supervisors in different ways. This can be done via informative websites, training programs and logbooks.

#SC11.2 - Short Communications: Teaching and Learning - Clinical Teaching General

#SC11.2.4 (5203)

Medical students' experiences of a longitudinal integrated clerkship: a threshold concepts analysis

AUTHOR(S):

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ABSTRACT:

Background: Longitudinal integrated clerkships (LIC) are increasingly implemented by medical schools to address health services provision in underserved areas, and to provide established educational advantages to students. The University of Dundee offers a LIC option to 4th year students, where they spend a full academic year in Scottish rural primary care. A phenomenological study was conducted to explore students' perceptions of the learning afforded by LIC. Learning beyond transdisciplinary boundaries during LICs is proposed to create an educational milieu that could facilitate development of threshold concepts (TC) which are described as portals to a "previously unknown way of thinking about something". The data from the study was analysed using the Threshold Concept Framework (TCF) to develop an understanding of the potential transformative role of LICs.

Summary of Work: This qualitative longitudinal study was conducted using a phenomenological frame, to explore the lived experience of students identified through purposive sampling. Five subjects shared their experiences through written and audio diaries over a period of 1-2 months. The issues narrated in diaries were followed-up in individual semi-structured interviews. Transcripts were thematically analysed using the TCF to identify key themes.

Summary of Results: Data from 12 audio and 9 written diaries, and 5 interviews led to identification of the following four inter-connected themes associated with the LIC year: comfort with uncertainty, professional identity formation, developing meta-learning capacity and growth in confidence. These appeared transformative in nature and resembled TCs in their character and effect as described by study subjects.

Discussion and Conclusions: Student accounts in this study suggest that LIC exposure served as a catalyst leading to a transformed view of self in relation to becoming a doctor. Students reported being more confident in dealing with uncertainty, comfortable in their emerging professional identity, and described having enhanced meta-learning capabilities. Implications of these findings are discussed in relation to existing research and the LIC affordances which appear important in helping students navigate transformational portals.

Take-home Messages: A LIC exposure provides a stable and safe environment for medical undergraduates to negotiate several thresholds.

#SC11.2 - Short Communications: Teaching and Learning - Clinical Teaching General

#SC11.2.5 (5674)

A Meta-Analysis for Comparing Effective Teaching in Clinical Environment

AUTHOR(S):

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ABSTRACT:

Background: Many factors affect student learning outcomes, however studies comparing the relative effectiveness of different clinical teaching methods are limited. The aim of this study was to identify teaching-learning factors which characterise efficient teaching in clinical settings.

Summary of Work: The list of influences on educational achievement compiled by John Hattie (2012) was used as a basis for the first meta-analysis of learning effect sizes associated with teaching-learning factors in clinical education. A literature search was conducted in PubMed to identify articles which employed terms related to one or more clinically relevant teaching-learning factors. Selection criteria were applied to identify learner-focused studies, followed by categorisation of suitable articles according to their study design (pretest-posttest or controlled group). The Cohen's effect sizes (d) of teaching-learning factors were extracted or calculated from each study and a pooled effect size for each factor determined.

Summary of Results: Screening produced 132 articles suitable for analysis from 3454 studies retrieved by our literature search. Sufficient data allowed for the evaluation 16 teaching-learning factor effect sizes. In general, effect sizes derived from pretest-posttest study data were larger than those from controlled group designs, probably as a result of learner maturation effect. Mastery learning, small group learning and goal setting teaching-learning factors possessed the largest effect sizes ($d \geq 0.8$), while worked examples, play programs, questioning, concept mapping, meta-cognitive strategies, visual-perception programmes and teaching strategies demonstrated effect sizes between 0.4 and 0.8.

Discussion and Conclusions: This is the first study of its kind to provide a rigorous and comprehensive overview of the relative effectiveness of different clinical teaching methods. The study provides a substantial and objective theoretical foundation for developing new measurement tools. Teachers may use this data to optimise teaching within their individual contexts.

Take-home Messages: Clinical tutors may incorporate mastery learning, small group learning and goal settings into teaching practices for more efficient clinical learning outcomes.

#SC11.2 - Short Communications: Teaching and Learning - Clinical Teaching General

#SC11.2.6 (5826)

The role of augmented reality in training medical students on wound care

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ABSTRACT:

Background: Changing wound dressing is a required course for medical students in Taiwan. They are asked to change wounds dressing of hospitalized patients and of patients being followed at outpatient clinic in order to be capable of dealing with various stages of wounds. The diverse wounds and dressings those appear in the outpatient clinic sometimes need instructions. However, the senior instructors usually can't show up on time. We built up an on-demand augmented reality (AR) wound dressing system to help medical students to learn to change dressing quickly and correctively.

Summary of Work: In 2018, we built up an on-demand AR wound dressing system in the wound dress room. Which would recognize the wound type and broadcast the processes to treat the wound via earpiece or displayed on the screen immediately after the student activating the system. After the end of year 2018, duty medical students at wound dress room could ask the system by gesture during changing dressing. Every student would be required to complete a questionnaire after the shift.

Summary of Results: There were 179 medical students in Kaohsiung Veterans General Hospital during 2019. 82 were enrolled in this study. 75.9% of them reported changing dressing in outpatient clinic was helpful for them to learn wound care, especially in trauma wound. 17% of them demanded the AR wound dressing system. All of them were satisfied with the system. They reported it was most helpful for them in treating trauma, burn and complicated wounds. 85.7% of them felt it reducing stress of changing dressing.

Discussion and Conclusions: AR not only can aid in student education, but also can improve patient care through its ability to enhance medical training. We created and implanted an on-demand AR wound dressing system to help medical student to complete his learning in wound dress room. Which give instructions via sound or pictures when the students felt confused. We found in addition to improve the knowledge, skill and attitude about wound dress of medical students, AR could also save the time and effort of teachers.

Take-home Messages: AR could effectively help medical students to learn to change wound dressing.

#SC11.2 - Short Communications: Teaching and Learning - Clinical Teaching General

#SC11.2.7 (6373)

Individual self-practice of the ABCDE approach in virtual reality give a non-inferior outcome. A randomized controlled trail

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ABSTRACT:

Background: The Airways-, Breathing-, Circulation, Disability-, Exposure- approach (ABCDE approach) is the internationally recommended and widely used approach to ensure patient safety and recognize deterioration in the patient. However, practical aspects like cost, staff and availability of equipment challenges the quantity of simulation training. One possible solution to increase the opportunity for more practice is the use of virtual reality (VR) which can give the students the possibility to self-practice simulation. The aim was therefore to investigate if individual self-practice of the ABCDE approach in a virtual reality (VR)-application gave non-inferior learning outcome compared to using traditional equipment (TP) in first year medical and nursing students.

Summary of Work: A non-inferior paralleled group randomized controlled trail. The study was linked to a regular teaching programs and All students participated in a 15-minute ABCDE introduction session, before they self-practiced the ABCDE approach for 20 minutes in either a fully immersive and interactive VR application using hand controllers with some haptic feedback (VR-group) or with blood pressure gauge, ear-thermometer and oximeter (TP group). The primary outcome was the number of students who documented all the eight predefined observations in the ABCDE approach in the correct order on a practical test on an advanced simulator manikin with a time limit of 5 minutes,

Summary of Results: The primary outcome showed non-inferiority of the VR application with 24.8% in the VR-group doing all observations in correct order compared to 27.1% in the TP-group (absolute difference 2.3%-points, one sided 95% confidence interval 2.3-10.8%-points). This was well within the predefined one-sided non-inferiority limit of 13%-point. The secondary outcomes were also similar between the groups, but the more students in the VR-group reported liking the way they practiced (absolute difference 46%-points, 95% CI 36.5-56.6) and that it was a good way to learn (36.9% points, 95%CI 26.8-47). The VR-group also scored high on the System Usability Test (mean difference 6.4, 95% CI 2.8-10.1).

Discussion and Conclusions: Self-practicing the ABCDE approach in VR was non-inferior to self-practicing with traditional equipment.

Take-home Messages: VR solutions that is immersive and interactive can be used as a practical and engaging way to learn the fundamentals of the ABCDE approach.

#SC11.2 - Short Communications: Teaching and Learning - Clinical Teaching General

#SC11.2.8 (7230)

Preparing final year medical students for clinical practice by using simulated teaching scenarios: Feasibility and Feedback

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ABSTRACT:

Background: Adequate preparation of final year medical students for clinical practice is a key goal of the Irish Medical Council¹. Recognition and management of acutely unwell patients, prescribing and inter-disciplinary communication are recognized as challenges that interns face daily. Previously at our institution, lectures & logbooks were used as teaching methods. Recently, simulated teaching scenarios (SIM) were developed. The aim was to integrate key theoretical and non-technical skills in a realistic learning environment, in an effort to prepare students for the complexities of clinical practice.

Summary of Work: Ten high-fidelity SIM scenarios were created, covering acute medical and surgical emergencies that interns commonly face. All students underwent a pre-brief, where their psychological safety was stressed. The scenario design ensured that students worked in pairs to manage the patient. As the scenario progressed, additional students joined in, emphasising the importance of good handover. Students also received the opportunity to prescribe drugs, oxygen and fluids. The SIMs were delivered to 197 students over two semesters. Clinical tutors played the role of the nurse and also debriefed the participants. The ability of participants to communicate effectively with the patient, nurse & their peers was also ascertained.

Summary of Results: Student feedback was overwhelmingly positive. 94% of students agreed that they enjoyed simulation as a means for learning with 96.6% reporting that it helped their learning. 93% reported that they would like more SIM. All of the clinical tutors surveyed found delivery of SIM teaching more enjoyable than standard didactic teaching methods. A number of barriers were encountered. Resources were limited, with space & staff time in conflict with post-graduate training demands. Much time was devoted to writing the scenarios and ensuring fidelity with high-quality accompanying materials. All clinical tutors involved participated in a training day to ensure that they were able to effectively manage the debrief, which is an essential component of effective SIM teaching.

Discussion and Conclusions: Buy-in was obtained from students and educators. In future, it will be introduced to medical students earlier in the undergraduate curriculum.

Take-home Messages: High-fidelity simulation is novel and effective way to prepare final year medical students for the complexities of clinical practice.

#SC11.2 - Short Communications: Teaching and Learning - Clinical Teaching General

#SC11.2.9 (7082)

Idealism versus pragmatism: GP trainee perceptions of teaching medical undergraduates

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ABSTRACT:

Background: Development of teaching skills is considered to be one of the key requirements of GP training. Furthermore the benefits of near peer learning are well recognised, particularly between GP trainees and medical students. Despite this, previous research has shown 91% of GP trainees reported limited teaching opportunities in their training. This project attempts to look at the level of interest and the practical availability of GP trainees to deliver undergraduate teaching. The primary use of this finding would be to inform undergraduate medical curriculum developers when planning teaching sessions that could be delivered by GP trainees.

Summary of Work: GP trainees of the South Manchester training programme (North West Deanery) were asked to complete a brief electronic survey. This consisted of quantitative and qualitative questions to determine their teaching interest, their ideal frequency of teaching and realistic availability considering their work schedules.

Summary of Results: 21 GP trainees completed the electronic survey. 81% of respondents were interested in teaching medical students. 80% of respondents wished to teach at least once a month, with 72% saying they could realistically achieve this. The free text responses suggested GP trainees were motivated to engage in structured teaching opportunities.

Discussion and Conclusions: This small scale survey has demonstrated that GP trainees do wish to teach and also perceive that they have capacity to do so within a busy training programme. Near peer learning also allows role-modelling, career planning and teachers more socially and cognitively aligned to the students.

Take-home Messages: GP trainees are an enthusiastic and under-utilised group for undergraduate teaching. The next step will be to widen our data collection and to help inform the design and delivery of future structured teaching sessions conducted by GP trainees for medical undergraduates.

#SC11.3 - Short Communications: Teaching and Learning - Clinical Teaching: Clinical Reasoning

#SC11.3.1 (7352)

Student-Generated Reasoning Tool (SGRT): A novel approach to fostering critical thinking

AUTHOR(S):

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ABSTRACT:

Background: Various approaches to fostering medical students' critical thinking skills exist, ranging from unstructured (e.g., open-ended justifications) to structured methods (e.g., multiple choice, matching). However, the use of metacognitive strategies remains infrequent in medical education. The student-generated reasoning tool (SGRT) was developed and implemented in aims of combining structured and unstructured methods, by emphasizing student creativity, retrieval practice, and feedback.

Summary of Work: A mixed-methods two-phase study was conducted in 2019 on preclinical medical students. Students used SGRT to elaborate diagnostic or pathophysiological hypotheses, create plausible findings, and predict the effect of these findings on suggested hypotheses. Faculty provided feedback on justifications and students used SGRT to practice. In phase-1, at Harvard Medical School (n=171) our aim was determining the feasibility, preliminary impact of SGRT. Quiz scores were collected, compared with historical controls, and statistically analyzed. A phase-2 randomized controlled trial was conducted at University of Montreal (n=12) to isolate the effects of creation. Average exam scores were compared. In both phases, data obtained through surveys and interviews were analyzed using statistical and content analyses, respectively.

Summary of Results: In phase-1, SGRT-users were significantly more likely to get the quiz questions correct vs. non-users when controlling for average scores when SGRT was not implemented (OR=4.9; p<.001). In phase-2, the average exam scores were 33.5% higher in students who used the SGRT to create vs. not (mean=75.0% vs. 50.0%; respectively). Survey ratings on overall usefulness of SGRT rose by 20% in phase-2 vs. phase-1 (100% vs. 80%, respectively). Qualitative analysis in phase-1 revealed suggestions for improvement, which were successfully implemented in phase-2.

Discussion and Conclusions: The marked increase in average quiz performance, suggests gain in learning due to SGRT. Phase-1 recommendations led to phase-2 modifications that may help explain the significant rise in students' perception. Phase-2 revealed the creative aspect of the SGRT was fundamental to preliminary success.

Take-home Messages: The SGRT is a semi-structured reasoning tool that combines both System 1, automatic, and System 2, analytic, thinking, and underscores the creative potential of medical students. The implications of its design and preliminary results uncover an all-encompassing, feasible, approach to teach critical thinking to medical students, allowing instructor feedback on students' reasoning.

#SC11.3 - Short Communications: Teaching and Learning - Clinical Teaching: Clinical Reasoning

#SC11.3.2 (6804)

Teaching an Old Dog New Tricks: Training Faculty Facilitators for Case-Based Learning

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ABSTRACT:

Background: In 2017, our medical school changed from a traditional lecture-based pre-clerkship curriculum to an integrated case-based curriculum (CBL). CBL is a learner centered, inquiry-based pedagogy reliant on faculty facilitators to guide learning. The transition from teacher to facilitator poses a challenge to faculty. Facilitation requires the acquisition of a new set of skills: active listening, facilitation of learner drive discussion and goal setting and the abandonment of traditional teacher-learner power dynamics. Robust faculty development (FD) is needed to prepare faculty for this transition. While FD has traditionally addressed opportunities for professional growth, successful programs should be multimodal; engage faculty; support communities of practice; and offer evidence-based practices. To date, an exemplar FD program for training CBL facilitators is not widely available to the education community. The authors developed an immersive multimodal FD program to equip faculty with skills to facilitate CBL sessions.

Summary of Work: A four-phased FD program was developed. Phase 1 offered faculty a series of asynchronous modules covering principles of facilitation, including recommended resources and details of the new curriculum. Phase 2 provided faculty with video recordings of actual CBL sessions facilitated/modeled by expert [basic science and clinical] faculty with medical students. Phase 3, an in-person workshop, immersed faculty in a simulated CBL session, and was followed by a large-group debriefing. An optional Phase 4, offered to faculty weeks before their first session (just-in-time), was executed through co-facilitation with expert facilitators.

Summary of Results: Thirty-eight faculty were trained; 100% found the program helpful. While faculty comfort level increased after training (pre-training, 6.6/10; post-training, 7.1/10), this difference was not statistically significant [$p=0.8$]. Mean training post-test score (94.5%) was higher than mean pre-test score (75.8%) [$p<0.01$].

Discussion and Conclusions: The 4-phased FD program was successful in providing faculty with the skills to facilitate CBL sessions. It introduces an innovative, blended learning model to meet the varied needs of faculty. Time for training and the development of enduring materials remain limitations.

Take-home Messages: The authors developed a multimodal FD program linked to pedagogical principles that can be customized by other medical/health schools to successfully train faculty for CBL facilitation.

#SC11.3 - Short Communications: Teaching and Learning - Clinical Teaching: Clinical Reasoning

#SC11.3.3 (4537)

Interactive virtual scenarios as a methodology to improve Clinical Reasoning Skills in Physiotherapy

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ABSTRACT:

Background: Clinical reasoning is a fundamental competency in the learning process of health professionals. Aware of the difficulty of learning with traditional methods, teaching with storylines (interactive virtual scenarios) is a good alternative to enhance these competencies since they offer a platform with structured clinical cases for decision making, which usually a student will learn through real clinical experience. Considering the benefits with the use of virtual patients, the purpose of this study is to describe the impact of interactive virtual scenarios for the development of clinical reasoning skills in undergraduate Physiotherapy students.

Summary of Work: A sample of 92 students solved eight storylines remotely through a blended methodology in a physical therapy degree clinical course to later discuss them in class. Baseline and final assessments were done, assessment error percentage and clinical pattern recognition were obtained, and a satisfaction and difficulty self-perception survey was applied for each storyline. A test of proportions compared baseline and final assessments. To analyze the relationship between the variables, multilevel univariate logistic regression models were built.

Summary of Results: All contrasts between baseline and final assessment resulted statistically significant ($p < 0.001$). There were 2.63 times more possibilities to correctly recognize the pattern in the last storyline compared to the first one. Assessment error percentage after the intervention decreased and was associated with the opportunity to recognize the pattern precisely ($p < 0.001$). Thus, for each increasing unit in the error percentage, the possibility to correctly recognize the pattern decreased by 11% ($OR = 0.89$).

Discussion and Conclusions: The development of this innovative technological resource allowed students to systematically improve their recognition abilities of clinical presentation patterns and decrease mistakes in the decision-making process before the clinical practice. The incorporation of this technological resource through a blended learning format was well-valued by students, highlighting it as an opportunity to improve self-learning and clinical reasoning in physiotherapy practice.

Take-home Messages: The creation of an innovative technological resource in a storyline or virtual clinical history format could allow the students to integrate knowledge, clinical skills and assessment decision making focused on the patient, generating a better opportunity to prepare for clinical visits and clinical placement.

#SC11.3 - Short Communications: Teaching and Learning - Clinical Teaching: Clinical Reasoning

#SC11.3.4 (4719)

The interaction between electrocardiogram and history in clinical reasoning

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ABSTRACT:

Background: Clinical reasoning is an important competence for medical doctors. It is more than just solving a problem. It also requires making choices and taking decisions. An important aspect of clinical reasoning is the underlying cognitive process: both the fast (more intuitive) system 1 and the slow (more rational) system 2 thinking processes are involved. These processes are also at work in the evaluation (clinical reasoning) in case of chest pain, where electrocardiogram (EKG) and history are important for the first triage.

Summary of Work: Fifty-two third year cardiology residents evaluated 12 cases with a non-diagnostic EKG and non-typical history. They were divided into 2 groups: group 1 History first – EKG second (n=24) and group 2 EKG first – History second (n=28). After EKG as well as history they had to give their diagnosis as well as their certainty about it. All diagnosis given were scored by two experienced cardiologists to be correct, partly correct or wrong.

Summary of Results: Initially, in 179 cases the correct diagnosis was giving in group 1 and in 107 cases in group 2. ($\chi^2 = 80.1$; $p < 0.05$) Finally, in group 1 and group 2 correct diagnosis were given in 187 and 213 cases respectively and wrong diagnosis in 85 respectively 94. The time participants took to reach a diagnosis was in group 1 after history only 61+/-4 and after seeing the EKG 40+/-3 sec to come to a diagnosis. In group 2 after seeing the EKG 63+/-4 and after reading the 62+/-5 sec. In group 2 participants needed significantly more time in total ($p < 0.05$) as well as for judging the EKG ($p < 0.05$) The level of certainty was not different between the groups

Discussion and Conclusions: There was no significant relation between level of confidence and accuracy of the diagnosis Presenting first the EKG results in a lower number of correct diagnosis initially. Presenting the history first reduces the time participants needed to judge the EKG. Interpreting the EKG without having additional information requires more time, Suggesting a slower thinking process.

Take-home Messages: Taking the history of the patient before interpreting the EKG decreases the time needed to interpret the EKG and increases initial diagnostic accuracy.

#SC11.3 - Short Communications: Teaching and Learning - Clinical Teaching: Clinical Reasoning

#SC11.3.5 (4960)

A cognitive bias in diagnostic reasoning and its remediation by the “2-Dimensional Approach”.

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ABSTRACT:

Background: Misdiagnoses are associated with various cognitive biases, which are difficult to reduce even if physicians think about clinical cases deliberately. We propose a new “2-Dimensional Approach” that combines two perspectives in diagnostic reasoning: organs (brain, heart, lung, intestine/liver, kidney) and systems (metabolic, endocrine, blood/tumor, infection, immune, circulatory, nervous systems). Systems involve throughout the whole body and can be pathogenesis of diseases. As a result of diseases, organs show abnormal vital signs and symptoms. We investigated: (1) whether each individual resident has a bias for either organs or systems when they diagnose clinical cases, and (2) whether the 2D Approach can reduce such a bias.

Summary of Work: We randomly assigned PGY1 residents (n=105) to either the 2D Approach group (n=45) or a control group (n=60). After attending either a lecture on the 2D Approach or a non-related lecture, residents were asked to diagnose two clinical cases. We divided each diagnosis into one of the two categories, either “organs” or “systems”. We investigated whether each resident would diagnose the two cases into the same category, either organs or systems (i.e., a bias for either organs or systems).

Summary of Results: The participants in the control group tended to diagnose the two cases into the same category, either organs or systems (OR: 5.63, 95% CI: 1.62-21.7, p=0.0030, Fisher’s exact test). In the 2D Approach group, the category of diagnoses for Case 1 and Case 2 were not related to each other (OR: 2.14, 95% CI: 0.50-9.81, p=0.33).

Discussion and Conclusions: There is a bias for either organs or systems when residents diagnose clinical cases, suggesting that organs and systems are different perspectives in diagnostic reasoning. By combining these 2 different perspectives in a 2-dimensional matrix, the 2D Approach reduces this bias.

Take-home Messages: There is a bias for either organs or systems when junior residents diagnose clinical cases, and the 2D Approach helps residents reduce this bias by combining the organs and systems perspectives.

#SC11.3 - Short Communications: Teaching and Learning - Clinical Teaching: Clinical Reasoning

#SC11.3.6 (4985)

Communicating and learning clinical reasoning in talk: an observation study in handovers of residents

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ABSTRACT:

Background: Clinicians apply the abilities of clinical reasoning to make decision of diagnosis and treatment by considering multiple factors including: patients' symptoms/signs, examination data, benefit/risk balance, and preferences. Handovers, the most frequent and significant communicative process between clinicians, are important and necessary clinical activities. To understand how residents apply and learn clinical reasoning in handovers is important for patient safety.

Summary of Work: This is a qualitative longitudinal audio-study of n = 226 handover cases in both ordinary wards, intensive care units (ICUs) and emergency room. Twenty-one participants (including 6 in internal medicine, 6 in surgical, 6 in paediatric, and 3 in emergency department) participated. The transcribed data of handovers were coded using the ISBAR (Identification-Situation-Background-Assessment-Recommendation) handover structure and key elements of the clinical reasoning cycle. All codes were discussed in team meetings for consensus.

Summary of Results: Generally, most handovers followed the I-S-B-A-R sequence. Out-of-order sequence was found in complicated cases. The coded were belonging to the following categories: "Background"(33.4%), "Assessment"(24.9%), "Situation"(24.3%), "Identification"(9.3%), and "Recommendation"(8.1%). Clinical reasoning elements "infer" (10.3%) and "interpret" (9.0%) during "Assessment" comprised the most common clinical reasoning-codes. Similarity and differences were found in the patterning across different settings.

Discussion and Conclusions: Well-structured handovers with clinical reasoning help residents to perform patient care well and provide patient safety. We found how handover structure commonly aligned with the ISBAR, with components of clinical reasoning being present. Furthermore, handovers in ICUs of internal medicine and paediatric residents were similar due to similar environment/patient characteristics. Code density was associated with patient complexity. Increasing frequency for question-asking related to unfamiliarity with patients.

Take-home Messages: Clinical reasoning is an important component of the handover process. Clinical reasoning talk within handovers shows differential characteristics according to clinical specialties, environment, contents, and takeovers. Handovers can be a place in which clinical reasoning is learned. The obtained analysis results will be contributed to plan the teaching courses and assessment methods for clinical reasoning in handovers.

#SC11.3 - Short Communications: Teaching and Learning - Clinical Teaching: Clinical Reasoning

#SC11.3.7 (5026)

Improving medical student clinical reasoning skills with minimal disruption to clinician duties.

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ABSTRACT:

Background: AUC School of Medicine students must take the United States Medical Licensing Examinations [USMLE]. As part of the students' preparation for the USMLE Step 2 Clinical Skills [CS] Examination, which is a 12-station OSCE style examination, AUC asked faculty at 24 affiliated teaching hospitals in the US and UK to adapt some of its clinical teaching to mimic the CS examination.

Summary of Work: 11 clinicians explored ways that might save time and interfere least with patient work, using minimal resources. Attractive aspects of these initiatives have been amalgamated into a structured, task-based, formative learning event. Key features of the Step 2 CS Examination include the focused aspect of both the history taking and the physical examination, the clinical reasoning skills and the writing of a word-limited patient note [PN], professionalism, and adherence to time limits for each segment.

Summary of Results: A pilot study with 12 students was undertaken over a 24 week period, in the internal medicine and surgery specialties, in the outpatient clinic, and on inpatient (post-take) ward rounds. Students were paired. Suitable patients were selected from the outpatient or ward round list, and asked for consent. One student was briefed and took a focused history, a focused physical examination, and then wrote a patient note. The second student observed with a 12 item checklist to report essential undertakings of the first student, and to run the timing – 15 minutes for history and physical, and 10 minutes for the PN. The students swapped places for the next encounter. Clinicians continued with their ward round/clinic, but at appropriate intervals asked the relevant student to present the case and the PN, in front of the patient. Formative, immediate feedback is given. Clinicians confirmed the history and physical findings with the patient. The patient was asked to fill in a short questionnaire concerning the students' performance.

Discussion and Conclusions: This educational exercise can be implemented in any clinical setting. Written reports from students, clinicians and patients are highly favourable. USMLE Step 2 outcomes are being tracked longitudinally; preliminary data will be presented.

Take-home Messages: Clinicians can teach clinical reasoning skills with minimal disruption to service commitments.

#SC11.3 - Short Communications: Teaching and Learning - Clinical Teaching: Clinical Reasoning

#SC11.3.8 (5537)

The Association between Engagement in an Online Clinical Reasoning Training System and Performance on a Subsequent Clinical Competency Exam

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ABSTRACT:

Background: Health professional schools are increasingly adopting online systems to support students' self-directed learning and professional self-development. These systems come at a cost to institutions, but student engagement may determine their learning benefit. This study examined whether student engagement in online clinical learning was associated with performance on subsequent clinical competency examination.

Summary of Work: In 2016, our medical school launched an online, case-based training system to offer deliberate practice on reasoning clinically through 12 common chief complaints. Completion of the training was required, but students' learning activity was otherwise unmonitored. This study used an extreme-groups design to examine the association between student engagement in the training system and high-pass versus fail status on a subsequent summative clinical competency exam. Using a theoretically informed, locally developed rubric, investigators rated students' learning activity on two aspects of engagement: conscientiousness (e.g., timing of case completion) and cognitive investment (i.e., tailoring of free-text responses to case specifics). Raters comprised two medical education faculty, two nurse educators, and one clinical faculty member, all blind to the students' identities and exam status. The association between engagement and subsequent exam status was evaluated taking prior clinical competency exam scores into account.

Summary of Results: On average, high-pass students (N = 31) achieved a 72% engagement score, and failing students (N = 33) received a 57%, a significant difference (U = 304, p = .005). However, in logistic regression, engagement did not practically improve the prediction of exam status above and beyond prior clinical competency exam scores [Ex(B) = 1.034].

Discussion and Conclusions: Engagement in our online training system was associated with subsequent exam performance, yet neither necessary nor sufficient to achieve high-pass status. The association between engagement and exam status appears complex, possibly influenced by students' general orientation to self-directed learning, but also by strategic investment in alternative clinical learning opportunities thought to be "higher yield."

Take-home Messages: Effectiveness evaluation of online systems should take student engagement into account as an educational manipulation check. Institutions should ensure that students have diverse learning opportunities to accommodate their interests, motivation, and individual paths to improvement.

#SC11.3 - Short Communications: Teaching and Learning - Clinical Teaching: Clinical Reasoning

#SC11.3.9 (6061)

Improving complex and effective clinical reasoning: Implications for health professions' education curricula

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ABSTRACT:

Background: Clinical reasoning (CR) is considered the core of health professional's clinical practice. Accordingly, entry-level health professionals' education plays an essential role in shaping clinicians with high quality CR skills. Teaching CR is challenging and the impact of various instructional methods on students' skills remains uncertain. Thus, how students learn and apply their knowledge in CR warrants elucidation. The aim of this presentation is to describe two studies designed to refine understanding of students' learning processes, specifically physiotherapy students, across phases of CR, and to examine implications for health professionals' curricula overall.

Summary of Work: First, predictors of health professional students' CR skills in examination, analysis and treatment were investigated with the Reasoning 4 Change instrument and analysed with multiple regression analysis (n=151 physiotherapy students). Second, a qualitative analysis was performed to explore how predictors, phase of CR, and cognitive levels of learning were related.

Summary of Results: Cognition, metacognition, attitudes and curricula content were associated with physiotherapy students' CR skills in the examination phase. Curricula content, only, was associated with students' CR skills in analysis and treatment phases. Higher, more complex cognitive levels of learning were related to more complex phases of CR, i.e., analysis and treatment. The aggregated analysis of data indicated that the students acquired well cognitive skills necessary for the examination phase, but their cognitive skills were insufficient for more advanced and complex phases of CR.

Discussion and Conclusions: The relationships between CR phase and cognitive level of learning support that high, complex levels of learning are needed to perform CR comprehensively. The findings suggest an educational opportunity with respect to enhancing physiotherapy students' learning complex phases of CR in particular. Further study is needed to establish causality between cognitive skills and clinical reasoning skills.

Take-home Messages: Educators of physiotherapy students, and possibly other health professional students, need to be aware that each CR phase is related to a distinct complexity of learning and adapt their instructional methods accordingly. Also, analysis of examination findings, resulting in a diagnosis or a problem formulation, and identifying a treatment plan need increased focus in curricula to improve complex and effective CR.

#SC11.3 - Short Communications: Teaching and Learning - Clinical Teaching: Clinical Reasoning

#SC11.3.10 (7060)

Clinical Reasoning: from theories to the SPaRC model

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ABSTRACT:

Background: The Fellows project, a development and improvement course in educational skills, aims to stimulate teaching / learning skills, leadership, management and professional development in students of health professions. The course, developed by medical students from Pontifical Catholic University of São Paulo, has been organized since 2017, in two immersions, from different workshops, with themes of essential and specific skills.

Summary of Work: In 2019, one of the Fellows Project workshops was on clinical reasoning, which was designed to present different theories on clinical reasoning, to create a discussion about the teachers role in the development of the students clinical reasoning and to allow the participant to learn about the SPaRC model. For this, the participants were divided into four groups (each group guided by a student). The workshop started with a discussion of information contained in a clinical case. After a predetermined time, each group, mediated by the facilitator (student coordinator), presented a summary of the discussion to the other groups, with time for questions. Then, the facilitators made a presentation on the theories of clinical reasoning, dialoguing with each group, to identify the path taken during the discussion of the clinical case. After a short break, each group received a topic of conversation: real patient support, participation, learning and skill. Then they built the SPaRC model together, mediated by the facilitators. At the end, one of the coordinating students synthesized the content presented, built on a flipchart, throughout the workshop.

Summary of Results: The feedback allowed us to verify that the participants understood that there are steps for the construction of clinical reasoning and that the teacher is important to make the patient co-participant in the learning process, but the process is not simple.

Discussion and Conclusions: The workshop enabled students to understand that the cognitive process of clinical reasoning is complex and involves multiple dimensions of interaction. In addition, they were able to reflect on the influence of the context and the teachers role in the process of constructing clinical reasoning.

Take-home Messages: Teacher is important to make the patient co-participant.

#SC11.3 - Short Communications: Teaching and Learning - Clinical Teaching: Clinical Reasoning

#SC11.3.11 (7247)

Piloting Practicum Script, a clinical reasoning simulator, in an international multi-centre study: Preliminary results

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ABSTRACT:

Background: There is a growing demand for better assessment of medical students' clinical reasoning skills and their ability to manage uncertainty in clinical practice. This multicenter pilot study, coordinated by the Practicum Institute and the European Board of Medical Assessors, aims to investigate the utility of the simulation-based programme Practicum Script (<http://www.practicumscript.education>) as a clinical reasoning training tool in undergraduate teaching and assessment.

Summary of Work: The assessment material consists of 20 internal medicine clinical cases validated by a reference panel made up by 20 internists from 16 faculties. For each clinical case, final year students are asked to generate hypotheses in a 'free-text' format, assign them a level of likelihood and justify their answer. Subsequently, they need to report, in five different clinical scenarios, how new data may affect their prior hypotheses. Feedback is based on the concordance between their responses and those of the experts, summaries of experts' justifications, and relevant clinical evidence.

Summary of Results: The project is ongoing. Currently, 455 volunteer students from nine medical schools from Europe, the USA and Mexico are participating in the pilot. It is envisaged that more medical schools will join this study. We aim to perform psychometric analyses of the students' answers to the items for each case. Preliminary results from students who completed at least 5 cases ($n = 274$) show a mean number of 2.8 formulated hypotheses per case, a level of matching with experts of 80.97% in hypothesis formulation and 84.35% of valid answers in clinical scenarios. The validity based on the internal structure will be analysed using a hierarchical polytomous item response theory model. Cognitive diagnostic modelling will be used for determining profiles of specific clinical reasoning skills needed to solve each item. Student satisfaction and perceptions will be also evaluated.

Discussion and Conclusions: Practicum Script may be a valuable undergraduate educational resource to help students to deal with ambiguity in clinical practice and strengthen their clinical reasoning and decision-making.

Take-home Messages: There is a need for effective approaches tailored to development of clinical reasoning skills at the undergraduate level, and Practicum Script could contribute meaningfully to this goal.

#SC11.4 - Short Communication: Teaching and Learning - Clinical Teaching: The Patient

#SC11.4.1 (4424)

Authenticity in medical students' experience of feeling like a doctor

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ABSTRACT:

Background: Studies in education show a connection between authenticity, autonomy in learning and professional development. For the planning and execution of clinical education for medical students it is important to understand medical students' professional development and what makes them start to take on an identity as doctors.

Summary of Work: The aim of this study was to interpret the phenomenon of authenticity made visible in medical students' experiences of feeling like a doctor, i.e. how authenticity took shape in narratives about feeling like a doctor in clinical situations where students were challenged to be independent and to a high degree make choices and clinical decisions. The conducted research is phenomenological hermeneutic research tradition, interpreting participants' experiences in a life-world perspective using narrative inquiry. Fifteen medical students in their fifth year were interviewed focusing clinical situations. An abductive analysis approach was used in order to discover patterns and interpret data following a phenomenological hermeneutic research method for textual interpretation.

Summary of Results: The analysis resulted in a thematic structure of findings: 1. Opportunity to experience authenticity through creating relationships 2. Opportunity to experience authenticity through responsibility and 3. Opportunity to experience authenticity through independence, managing wholeness and follow-up processes and 4. Opportunity to experience authenticity through being able to reason and discern. Overarching the four themes was the perceived need for attachment i.e. attachment to patients, to supervisors, to the workplace, to the situation and to reasoning and knowledge.

Discussion and Conclusions: Essential for the experience of feeling like a doctor were internal authentic situations that resulted in the experienced membership of a community of practice and perceived development of professional identity. These findings advances the understanding of how clinical education should be organized, and thereby provide opportunity for students to form relationships with patients, future colleagues, other professional categories, and with each other as learners. There are implications for clinical education, such as the level of student engagement in the clinical workplace, the length of clinical placements, and how to make use of the student's knowledge.

Take-home Messages: Clinical placements need to provide the opportunity to form authentic relationships with patients, supervisors, the workplace and other professional groups.

#SC11.4 - Short Communication: Teaching and Learning - Clinical Teaching: The Patient

#SC11.4.2 (4729)

The effect of affect: a case study of 'difficult' emergency department patients and the potential implications for students

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ABSTRACT:

Background: It is well established that there exists a subset of patients that engender negative emotional responses in those providing their care. Empirical studies delineating the behaviours of these so called 'difficult' patient are however sparse. Establishing who these patients are is imperative; patients causing physician frustration report lower satisfaction with the encounter and experience worse health outcomes. It has recently been shown that disruptive patient behaviours impair physician reasoning. This supports field specific hypothesis and studies from other disciplines illustrating that less desirable individuals meet with less desirable outcomes. Literature on cognitive bias surmises that one way in which learners' attitudes to dislikeable patients are formed is via implicit learning. Equally, in dealing with such patients, it has been shown that students model clinicians' interactions.

Summary of Work: This case study focusses on an emergency department (ED) where students undergo an apprenticeship style attachment. We aimed to answer which patient behaviours the staff found generated a negative emotional reaction. This in the understanding students likely implicitly learn and model who 'we don't like.' We recruited participants from the ED staff by convenience sampling and used focus groups to explore commonalities in attitudes. Groups were audio recorded and transcribed. We undertook a reflexive thematic analysis generating semantic codes and arriving at themes inductively.

Summary of Results: Five clinician focus groups were held. Five main types of patient behaviours were identified; frequent attenders; patients care providers feel unable to help; patients altering the provider – patient dynamic; overly demanding patients and patient behaviours deemed unnecessarily time consuming. Experienced difficulty was moderated by individual differences and circumstance.

Discussion and Conclusions: There exists a subset of patients that generate negative emotions in their care providers. In an immersive clinical placement like that of emergency medicine, students will implicitly learn who 'we don't like' and this may contribute to their future related reasoning errors. Educational recommendations specifically concerning the role of emotion in this context promote increasing awareness regarding its existence, as has been done here.

Take-home Messages: Difficult patients do exist. Clinicians must be mindful that students will model and learn how they interact with them.

#SC11.4 - Short Communication: Teaching and Learning - Clinical Teaching: The Patient

#SC11.4.3 (6105)

Real-time patients' attitudes and experiences of involvement in undergraduate teaching

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ABSTRACT:

Background: Patients presenting to clinical settings with real-time illnesses provide valuable learning opportunities for medical students, particularly in primary care where majority of the patient contacts occur. In-depth evidence detailing the factors that determine patient involvement in medical education is sparse. This study is aimed at identifying patients' attitudes towards, and experiences of involvement in teaching consultations, and the factors that may affect their decision to participate.

Summary of Work: We conducted a cross-sectional questionnaire survey in GP practices in the North East of England. We explored patients' knowledge about medical education, attitudes towards, and experiences of involvement in teaching encounters. We tested the relationship between variables of interest and willingness to participate, using hierarchical logistic regression.

Summary of Results: We analysed 525 questionnaires from four GP practices. Four hundred and fifty-four (87.8%) respondents were willing to have students take part in their consultation, and 361 (71.9%) were willing to see a student alone before seeing the doctor. Willingness may be affected by patients' age and the sensitivity of clinical problem, as well as perceptions of certain costs and benefits of involvement. More than one third of respondents expressed the presence of a clinician as a precondition for approval of students' performing various active roles. Respondents had poor knowledge about medical education, and a significant minority perceived lack of autonomy about the presence of students in their previous encounters.

Discussion and Conclusions: These findings raise important issues regarding students' learning from patient encounters. For instance, students may have a restricted variety of clinical encounters they experience, or limited opportunity to practise their skills in authentic clinical settings. In addition, poor sense of autonomy may affect patients' subjective experience during the clinical encounter. Involvement could be enhanced by raising patients' awareness about medical students, respecting patients' autonomy regarding student involvement, and ensuring students are closely supervised during examinations and procedures.

Take-home Messages: This study provides in-depth evidence on the factors affecting patient involvement in primary care settings, and highlights important aspects of patient involvement which may be improved in order to optimise teaching and learning experiences for all.

#SC11.4 - Short Communication: Teaching and Learning - Clinical Teaching: The Patient

#SC11.4.4 (6468)

Patient-centered ward round – what we can learn from students and patients

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ABSTRACT:

Background: The patient is a key person for learning in health care. The students could be a resource in collaboration with clinical units to participate in the development and improvement of care and fulfil their learning outcomes. Little is known of the potential outcome of the meeting between the student and the patient where the aim has been to develop strategies to reach a more patient-centered (PC) ward round.

Summary of Work: An interprofessional faculty and student group participated in the study. Medical, nurse and physiotherapist students (N=44) answered a questionnaire picturing a model for a PC ward round. The medical students conducted patient interviews to examine patient views of the desirable content in a PC ward round and how it should be performed. Focus group interviews were conducted with the students with the same question. The evaluation was performed by the interprofessional faculty and a patient representative of the clinical unit participating in the project.

Summary of Results: A PC approach in consultation has been taught in primary care but 30% of the students indicated that they had not received practical training in carrying out a PC ward round. From the brief focus group interviews 5 key features emerged from the interviews with students where they regarded that 1) preparation 2) information 3) involvement 4) communication as well as 5) an individualized attitude as important for a PC ward round. The patients emphasized 1) planning 2) communication and having enough 3) time as well as 4) help to prepare for the ward round.

Discussion and Conclusions: The students are informed theoretically about patient-centeredness but have an unclear picture how it should be performed in relation to a ward round. The concept of patient-centeredness does not seem to have reached out to patients and information on how a PC ward round is performed should be given to the patients prior to admission to the ward.

Take-home Messages: In order to be able to implement an overall person-centered approach, standardized learning activities and patient information should be considered. Students can contribute to increased knowledge and development of care.

#SC11.4 - Short Communication: Teaching and Learning - Clinical Teaching: The Patient

#SC11.4.5 (6890)

What pre-clinical students learn about professionalism in pre-clinical observation learning: from perspective as anonymized patients in outpatient department

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ABSTRACT:

Background: Observation Learning in pre-clinical years is an important part of early involvement in clinical practice for medical students in China. Initiated by Sun Yat-sen University, it has been widely accepted in medical professionalism education in many medical colleges after 22 years development. To develop a method for improve the learning outcomes of professionalism education, we set a novel approach in pre-clinical observation learning session for medical students to visit the outpatient department as anonymized patients.

Summary of Work: The project consisted of pre-clinical students taking the program of “early involvement in clinical practice” in the First Affiliated Hospital of Sun Yat-sen University, who were from Grade 1 to Grade 3 of medical college. In 2019, 212 students participated in this program, were arranged to visit the outpatient department of our hospital as anonymized patients during their winter/summer vacations. 202 narratives based on their observations were collected and each student offered his or her reflections on their own narrative. The content of the narratives and reflections were analyzed.

Summary of Results: 81.37% of the students were satisfied with their experience as anonymized patients. 18.63% of them felt unsatisfied and offered constructive suggestions to help improving the service quality of the outpatient department. The majority (93.41%) were deeply impressed by the observation learning as anonymized patients. It not only directly illustrated them how doctors communicating with patients, but also offered them opportunity to view from a completely different perspective as patients, which made them think and feel like patients, getting them more empathetic, exerting an imperceptible influence on their mind of essential principles of medical professionalism, such as humanism, responsibility, altruism and excellence. Reinforcement on medical professionalism were shown in students’ narratives and reflections.

Discussion and Conclusions: Observation learning in visiting outpatient department as anonymized patients for pre-clinical students is a positive way for shaping professionalism in pre-clinical years of medical education. It can help developing students’ empathy with patients, communication skills, as well as better understandings for the doctor-patient relationships. Narratives and reflections written by students could deepen their understandings of the values and principles of professionalism in pre-clinical years.

Take-home Messages: Pre-Clinical Years; Professionalism; Observation Learning; Anonymized Patient

#SC11.4 - Short Communication: Teaching and Learning - Clinical Teaching: The Patient

#SC11.4.6 (7104)

Training Health Professionals in Shared Decision Making and Patient Agency: A Systematic Review

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ABSTRACT:

Background: Shared decision making (SDM) is a complex clinical activity that has not reached its full potential. Cited barriers include training gaps and there is inconsistent evidence for effective educational interventions. SDM, in which the decision is co-constructed by individual agents with their own social and behavioral contexts, may benefit from an approach incorporating patient agency and sociocultural influences. Cultural historical activity theory (CHAT) offers a suitable lens to study SDM. Using CHAT as a framework, we conducted a systematic review to identify strategies to teach health professionals and trainees about patient agency in published educational interventions for SDM.

Summary of Work: We searched MEDLINE, Embase, Web of Science, and ERIC from 2000 to January 2020 for studies describing educational interventions related to SDM and/or patient agency with patient-reported outcomes. We extracted the intervention context, health professionals targeted, theories used, educational approaches, evaluation, and components of the intervention, results, or discussion deemed to be aligned with elements of CHAT. Thematic synthesis was performed, using CHAT as a sensitizing framework, to code the study findings, organize codes into related areas, and identify/develop themes.

Summary of Results: 33 papers were included, representing 24 unique studies. Most studies evaluated a multi-component intervention, with combinations of written material, didactics, group discussion, role play, self-reflection, feedback, and tools for interaction. Studies used a variety of instruments and outcome measures. Few studies explicitly addressed patient agency, either in the design of the intervention or in reported outcomes. Application of the CHAT framework revealed most interventions do not include training around tensions that can arise when trying to implement SDM.

Discussion and Conclusions: Explicit instructional design around patient agency is rare in educational interventions for SDM. Using CHAT can highlight the role of agency and identify tensions that could be included in training. Future instructional strategies should consider the complexity inherent in co-constructing decisions. CHAT can aid researchers and educators in designing educational interventions to promote facilitation of patient agency.

Take-home Messages: Analyzing the literature in teaching SDM revealed insufficient attention to the role of patient agency; CHAT can be used as a framework to analyze and develop innovative approaches to help health professionals facilitate SDM with patients.

#SC11.6 - Short Communications: Teaching and Learning - Lectures/Flipped Classroom

#SC11.6.1 (5516)

Lecture capture programs in first semester courses increase student response rates, question quality, and knowledge retention

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ABSTRACT:

Background: Previous research demonstrated that student moderated question and answer (Q&A) function of a lecture capture platform (Echo 360) increase quiz scores and knowledge retention in first semester courses. Our current research has demonstrated that the student moderator- led Q&A forum increased the number of questions asked, the number of students participating in these online forums, the quality of questions, and decreased the confusion of lecture material in the first semester courses.

Summary of Work: 288 students in the 1st semester anatomy, embryology, and molecular cell biology courses participated in the study. Students were first incentivized to participate in the Q&A module. Six student moderators were selected who actively monitored and replied to questions. There was a statistically significant increase in questions asked (t test, $p=0.04$) compared to Q&A module without moderators and controls. There was a statistically significant increase in the number of participating students (t test, $p<0.05$). The quality of questions were analyzed and compared to performance and showed a positive correlation between Q&A and course grades (Pearson correlation $r=0.36$, $p=0.05$). Two ways repeated measures ANOVA revealed a significant increase in long term knowledge retention ($F=38.10$, $p>.05$) compared to controls. There was a significant decrease in number of lectures that were considered confusing (t test, $p=0.01$).

Summary of Results: After extensive incentivized integration of the module, Q&A use increased and continued at that elevated level in all courses. In addition, significant numbers of students responded to question threads by asking additional questions and not just reading what other students had asked. Perceived quality of Q&A questions also dramatically increased and showed a correlation to the frequency of responses in all three classes. The number of confusing portions of lectures are decreased with the use of Q&A.

Discussion and Conclusions: The act of self-questioning has been linked to deep vs. surface learning. This type of learning has been correlated to long-term knowledge retention. Student moderators increased its adaption by all three classes and correlated with increased students use and increases in long term knowledge retention.

Take-home Messages: This type of student led studying has shown great promise in increasing long term knowledge retention in a variety of medical topics.

#SC11.6 - Short Communications: Teaching and Learning - Lectures/Flipped Classroom

#SC11.6.2 (7241)

Beyond 46 Chromosomes: Experience of Teaching Clinical and Molecular Cytogenetics Laboratory as a Flipped Classroom

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ABSTRACT:

Background: Medical students must understand the types of common chromosomal rearrangements, related phenotypic risks, clinical use and limitations of genetic/genomic testing tools, and appreciate the importance of genetic testing. Yet, insufficient instructional time (3 hours) for teaching clinical and molecular cytogenetics in our 1st year basic science curriculum, overcrowded classrooms, lack of student prerequisite knowledge, and the amount and complexity of required material presented a significant challenge in creating efficient, long lasting, and clinically meaningful learning experience.

Summary of Work: We organized and tested learning of prerequisite knowledge through an interactive pre-class online assignment. The in-class work concentrated around 3-4 clinical cases and included small-group collaboration sessions and the whole-class facilitated discussions. During in-class work, we collected and displayed student-generated questions in real time and discussed each of these questions as needed. Finally, we assessed student learning through a post-class assessment test and student self-assessment questionnaire and analyzed student-generated questions.

Summary of Results: Flipped classroom combined with in-class small group case study and collective discussions is an effective instructional strategy for teaching genetics/genomics. It offered students the opportunity to generate a significant number of questions (56% of which, on average, demonstrated high-order thinking) about clinical, ethical, legal, social, scientific, and methodological aspects of the subject and effectively hypothesize well beyond the assigned reading.

Discussion and Conclusions: Implementation of this version of flipped classroom during the pre-clinical years can enhance students learning experience as well as improve their knowledge of genetic/genomic principles and attitudes toward the use of genetics in future medical practice. It can create an effective learning environment that allows students to co-construct their knowledge in attempts to confirm and expand their understanding of new concepts and reconcile different views on these concepts.

Take-home Messages: Coupled with inquiry-based pedagogy, small group case study, and whole-class facilitated discussions, flipped classroom approach can play an important role in further improvement of curriculum and instruction in medical education, in general, and teaching-learning genetics/genomics, in particular. To this extent, it can create a fertile ground for better understanding of fundamental principles of genetics/genomics and appreciation of their systemic role in informed clinical decision.

#SC11.6 - Short Communications: Teaching and Learning - Lectures/Flipped Classroom

#SC11.6.3 (4961)

The Learning Effectiveness for Nursing Students in Anatomy and Physiology Course Based on Flipped Classroom Design in a 5-year Program at a Junior College in Taiwan

AUTHOR(S):

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ABSTRACT:

Background: Anatomy and Physiology is a foundational course of medical education. However, it is difficult for students to keep bulk large content in memory, and to master abstract concepts of the course. Many studies indicated the flipped-classroom strategy increased the effectiveness of learning outcomes for many subjects in medical education.

Summary of Work: In present study, 521 second-year nursing students were age around 16 as participants enrolled in a 5-year program at a junior college in northern Taiwan between 2017-2018. A total of 312 students were as the control group, which was subjected to a conventional lecture approach, and the other students were as the experimental group. The teaching strategies of the experimental group were based on the flipped-teaching classroom which combined with pre-recorded lectures, note-taking, an instant-feedback system, and self-prepared questions. There were five unified proposition tests for all participants, and all raw score was converted to a T-score for statistical analysis. The five T scores were used to construct the long-term score trends by the trajectories analysis.

Summary of Results: Our study indicated which the scores were significantly different between the experimental and control groups varied with time. After the trajectories analysis, four long-term score trends were constructed, including “continually-high-scoring trend”, “continually-low-scoring trend”, “gradually-declining-score trend”, and “gradually-upward-score trend”. After adjusted academic year, the chance of students of the experimental group with the performance of continually-high-scoring trend and “gradually-upward-score trend” were significantly higher than the control group, which showed odds ratios (OR) and 95% confidence intervals (95% C.I.) were 2.4 (1.5-3.9) and 2.9 (1.7-4.8), respectively; the chance of students of the experimental group with the performance of continually-low-scoring trend and “gradually-declining -core trend “were significantly lower than the control group, which showed OR and 95% C.I. were respectively 0.5 (0.4-0.8) and 0.4 (0.2-0.6).

Discussion and Conclusions: The integration of a flipped classroom with note-taking and an instant-feedback system resulted in significant improvements in the effectiveness of student learning in the Anatomy and Physiology course.

Take-home Messages: The flipped classroom is work for 16-year-old nursing students in Taiwan.

#SC11.6 - Short Communications: Teaching and Learning - Lectures/Flipped Classroom

#SC11.6.4 (5122)

Teaching and Learning with Lecture Recording: Effects on student behaviour, study strategies and wellbeing

AUTHOR(S):

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ABSTRACT:

Background: Lecture recording, the practice of capture all or part of a teaching activity through the audio and/or visual recording is now common in many medical programmes. The practice of lecture recording can raise concerns for staff, who can question the added value of the recording, how it impacts the inherent value of the lecture space, and whether it supports student learning. By contrast, lecture recording is often positively received by students, who consider it a ‘safety net’ for their studies.

Summary of Work: In this session, we report on projects conducted at the Royal (Dick) School of Veterinary Studies between 2018 and 2020 following the introduction of an ‘opt out’ lecture recording policy. Over 9000 hours materials are recorded per semester at the R(D)SVS. In this mixed methods research, we explored staff attitudes through semi-structured interviews (n = 3); student study strategies through surveys (ongoing, n ~ 100), longitudinal repeated reflective blogs (n = 4), and think-aloud study sessions (ongoing, n > 5); and student behaviour in recorded lectures through the application of a novel classroom practice tool (FILL+, n = 28 lectures).

Summary of Results: In surveys, blogs and interviews, students indicate they are selective about what recordings they review. Students discuss finding recordings particularly valuable during extra mural studies or on the approach to exams. In reflective blogs, students discussed their changing study strategies as the year progressed, as they did not always follow through with the intent to review recordings regularly. In analysing classroom practice, we found that in lectures with comparable content, Graduate Entry students spent more time in discussion with the lecturer than a cohort of predominantly school leaver students in a t-test (p = 0.001).

Discussion and Conclusions: A key finding of this research is that lecture recordings can increase feelings of confidence for students struggling to keep up with content. In conclusion, lecture recording is a resource which students have come to expect, and they require guidance as to how to best use recordings to support their studies.

Take-home Messages: Some of the most common study strategies will be reported here, and student guidance shared.

#SC11.6 - Short Communications: Teaching and Learning - Lectures/Flipped Classroom

#SC11.6.5 (6311)

Lights, Camera, Action! The use of lightboards in a flipped classroom model to teach pharmacology concepts

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ABSTRACT:

Background: The flipped classroom model is becoming an increasingly adapted pedagogical approach. Most academics changing to the online format are using either audio over traditional Powerpoint slides or Kahn Academy style drawing screen capture videos. These approaches lose the human connection of a lecturer presenting the information. Finding new and cost-effective approaches to maintaining the lecturer presence in the online delivery of medical education is a new challenge.

Summary of Work: As part of a larger curriculum redesign project, the Sydney Medical Program moved to a flipped classroom model with approximately 900 short videos of 10 minute length delivered across the year 1 program. Almost 90% of the online videos were using the audio over Powerpoint video style. Our Discipline decided that we wanted Pharmacology content to have a different presentation style and chose the lightboard technique as an innovative method to present the conceptual links between physiology, pathophysiology and pharmacology.

Summary of Results: We adapted plans posted by various educators globally to create a 1.5 x 2m Perspex lightboard with LED lights. The lightboard allows the lecturer to combine “chalk and talk” drawing skills with newer student-centred, digital storytelling techniques. In the case of pharmacology content delivery, we have used concept drawings of physiological processes to illustrate the drug targets and define mechanisms of action and toxicity. To accompany these videos we used worksheets for students to complete to summarise the key messages. Faculty development has been facilitated by technical and storyboard meetings with educational designers. The student feedback from the method has been overwhelmingly and consistently positive.

Discussion and Conclusions: The lightboard is new format that can bridge the transition between the traditional lecture and online formats. Developing the storyboard and narrative style of the video is a skill that needs to be learnt, but has been welcomed by the academic staff.

Take-home Messages: We have used an innovative approach to transitioning to online video delivery in a traditional medical program using the a lightboard. This method allows for a human connection between the student and lecturer and uses concept mapping teaching with a student-focused digital narrative approach.

#SC11.6 - Short Communications: Teaching and Learning - Lectures/Flipped Classroom

#SC11.6.6 (6975)

“House vs. Prof” - a success model for student-centred and non-formal education in medical school

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ABSTRACT:

Background: The majority of lectures in medical schools in Austria are held in a formal and teacher-centred way. Due to strict timeframes and a very large syllabus, there is a lack of time for interactive discussions. “House MD” is a well-known international television series that covers rare diseases. It raises great interest for complex and unusual cases among students.

Summary of Work: Extracurricular courses are organized regularly (once/month) where a House MD episode is being dissected by a medical expert in the field. Key points are summarized for plausibility and ethical aspects (dealing with uncertainty, patient-doctor relationship etc.). Additional medical information is provided and false or unclear medical statements from each episode are explained by the professors. Students are able to ask questions and to put their thoughts up for discussion. A comprehensive online survey was conducted at the Medical University of Innsbruck after the first semester of this extracurricular activity. We analyzed students’ motivation and self-assessment compared to traditional lectures. Licenses for showing the episodes at the university were provided according to copyright law in Austria.

Summary of Results: “House vs. Prof” lectures are organized by the AMSA regularly and take place in all medical schools of Austria. 189 students (61.4% females) filled out the survey, of whom most were in their fourth (out of six) year of medical school. The general approving rate was 1.6 out of 5 (1=very good; 5=very bad). In total 94.7% of the students stated that they gained medical knowledge during the lectures. According to the survey students were more attentive and had a better understanding for the holistic clinical picture from anamnesis until the diagnosis by watching the episodes.

Discussion and Conclusions: “House vs. Prof.” is a popular extracurricular activity among medical students. Besides learning in a non-formal way about rare diseases, students had the opportunity to discuss ethical aspects of decision making within the series. Due to the positive feedback, we were able to implement this lecture as an official elective at one university.

Take-home Messages: These lectures are a good example for efficient problem-based learning and meaningful students’ involvement in curriculum designing.

#SC11.6 - Short Communications: Teaching and Learning - Lectures/Flipped Classroom

#SC11.6.7 (7118)

Effectiveness of the flipped classroom in learning/teaching histology - comparative study

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ABSTRACT:

Background: The flipped classroom is a pedagogical concept of education in which students study educational material during out-of-class-time (mainly by attending an accompanying online course) instead of the traditional review exercises. This form of teaching/learning opens up class time for different activities (collaborative testing, problem solving, open discussions etc). This pedagogical concept for the first time was applied on the Department of Histology of Belgrade School of Medicine during the 2018/19 school year. We had already had 15 years of experience in applying the concept of blended learning. The main objective of this comparative study was to determine student achievements depending on which form of histology course they had attended (flipped vs blended vs traditional).

Summary of Work: Total of 512 first-grade students took part in our research. Students were divided on three groups – blended learning group (BL - n=182) and flipped classroom group (FC – n=39) and one control group (C; n=291). All three groups took two MCQ tests, one midterm and one final test of knowledge retention. Midterm test (30 questions) was done at the beginning of second semester (February 2018), and covers topics from general histology, while the final test (30 questions) covered all topics and it was done at the end second semester (June 2018).

Summary of Results: Average grade on the midterm test of three groups (C, BL and FC) were 10.99±3.9, 12.56±4.2 and 15.83±4.9 out of 30, respectively. Average grade on the final test of three groups (C, BL and FC) were 12.53±4.2, 13.48±4.2 and 17.00±4.4, respectively. FC group highly outperformed two other groups on both tests ($p < 0.01$). In the same time BL group had statistically better results than Control group ($p < 0.01$ on the midterm and $p < 0,05$ on the final MCQ test).

Discussion and Conclusions: Students who had attended flipped histology class had achieved much better results on both tests. The flipped classroom allows the students to collaborate better with their peers and the professor, more interactive teaching, as well as deeper and meaningful learning and understanding of histology. The results have shown greater effectiveness and the benefits of flipped classroom concept.

Take-home Messages: Pedagogy first and foremost! Technology is merely an auxiliary didactic tool.

#SC11.6 - Short Communications: Teaching and Learning - Lectures/Flipped Classroom

#SC11.6.8 (5024)

Flip Lectures- Podcast Prescribing Project

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ABSTRACT:

Background: With a wide evidence base to suggest that junior doctors feel inadequately prepared to practice prescribing with current teaching modalities in Pharmacology and Therapeutics, there is a current pressing need to innovate medical education in this area. The concept of “flipping the classroom” whereby students attend teaching sessions having prepared using a lecture beforehand has been referred to by some experts in medical education as “the new frontier in medicine”. The use of technology helps support flip learning, allowing students to take a customised approach. A literature review of the use of podcasts in medical education showed that students perceived them to be more convenient than traditional lectures, making them an ideal resource for flipping. We believe viewpoints of both the doctor and pharmacist are pivotal in the formation of a safe prescriber - pharmacology flip lectures supplemented by cases jointly delivered by both therefore, formed the basis of our study.

Summary of Work: Prescribing podcasts were designed around the Birmingham Medical School Curriculum, covering major acute medical specialities. The podcasts were delivered by a consultant, junior trainee and a speciality pharmacist in a conversation. For the most common drugs in each system, indications, interactions, doses, monitoring, side effects and prescribing tips were discussed. They were sent to students and a week later a supplementary problem based small group teaching session was delivered by both a doctor and pharmacist.

Summary of Results: 80% of students liked the flip lecture design and found podcasts a useful resource in giving them time to understand complex concepts. 90 % found the cases relevant and useful, and enjoyed being able to use the session to practice prescribing. 100% of students felt more confident in prescribing after attending the sessions and 100 % of students felt that the sessions contribute to safer prescribing on the wards.

Discussion and Conclusions: Podcasts as a learning method are useful in the delivery of pharmacology flip lectures. A multidisciplinary, problem based session supplements work allowing for a simulation of prescribing.

Take-home Messages: A multidisciplinary teaching programme using pharmacology flip lectures allows for a robust, thorough and patient centred approach.

#SC11.7 - Short Communications: Teaching and Learning - Online/Games

#SC11.7.1 (7350)

Technology Enhanced Learning Environment for Self-Directed Learning: Identifying Critical Success Factors

AUTHOR(S):

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ABSTRACT:

Background: Technology enhanced learning environment (TELE) appears to have the potential to help the students become more self-directed in their learning and prepare them well to become competent healthcare professionals.

Summary of Work: This study aims to actively explore how to use technology to develop self-directed learners (SDL) and the challenges encountered. At our college we have been practicing TELE since past 6 years in various forms such as use of interactive lectures, blended learning, flipped classroom, mobile apps, LMS such as Moodle, etc in both synchronous and asynchronous learning for dental students. We adopted a mixed method design wherein pre and post SDL readiness was recorded. Additionally, qualitative data was gathered using semi-structured interviews from both students and faculty.

Summary of Results: Pre and post SDL readiness scores improved significantly. The critical factors for success that emerged from the qualitative data analysis were faculty development, student training and motivation, technical infrastructure, culture of innovation and academic leadership.

Discussion and Conclusions: However, no one factor in itself is sufficient for TELE to work well enough to develop SDL. Instead, the presence of all components increases the possibility of achieving SDL within the context of a TELE.

Take-home Messages: TELE helped to enhance the SDL amongst the dental students in our settings.

#SC11.7 - Short Communications: Teaching and Learning - Online/Games

#SC11.7.2 (5938)

A Cooperative Gaming Approach to Developing Insight

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ABSTRACT:

Background: Game-based learning is the use of a game to teach a particular skill or learning outcome (Pitt et al 2015) while gamification is “the craft of deriving all the fun and addicting elements found in games and applying them to real-world or productive activities” (Chou, 2012). Both approaches make learning interactive, engaging, fun and motivating. We report on the use of a cooperative game to assist participants in increasing insight into aspects of their interpersonal and communication skills and level of emotional activation.

Summary of Work: Participants played a cooperative game. We compared convergence of participants self-judgment of their level of emotional arousal and communication style vs. others. Participants were physicians/trainees referred for remediation secondary to professionalism lapses and poor communication. Arousal was measured with a rating scale (0-100) administered before, during, and after each of several rounds of play. Participants completed self and other ratings of communication style. Game facilitators completed participant ratings of arousal, communication style and collaboration. The sessions were videotaped, and participants reviewed footage of the sessions in a guided discussion.

Summary of Results: The research team conducted thematic and content review. The thematic review was based on an assessment of the participant’s interactional style which was judged by each member of the research team, individually, and then by the team as a whole. Arousal ratings were analyzed across sessions in a repeated measures framework utilizing JMP 14.3.0 SAS Institute, Cary, NCC. The analysis converged with the thematic analysis, a significant pattern across sessions was described with increased convergence between the individual participants’ assessment of their arousal and collaboration and others’ judgments.

Discussion and Conclusions: Trainees/physicians referred for remediation secondary to communication and professionalism lapses frequently have poor insight into their difficulties. Through participation in a collaborative game and debrief process participants gained insight into their levels of arousal, communication style and level of collaboration.

Take-home Messages: A collaborative game was a helpful educational tool that promoted insight in trainees/physicians with professionalism and communication difficulties. Findings suggest the potential benefit of collaborative games as a part of remediation efforts.

#SC11.7 - Short Communications: Teaching and Learning - Online/Games

#SC11.7.3 (4564)

Taboo – Effective gamification for anatomical clinical correlates with unspeakable fun!

AUTHOR(S):

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ABSTRACT:

Background: The popularity of serious games in medical education has grown due to high learner satisfaction and knowledge gains over traditional teaching practices. Specifically, serious games are highly interactive, employ constructive competition and increase positive affects of learning. Further, they have been shown to increase knowledge, self-confidence and long-term retention.

Summary of Work: To help solidify high-yield concepts, we developed a novel version of the card game, Taboo™, as a test review for anatomy. The objective of the original game is for a player to have their partners guess the word on the card without using the word itself or five additional words on the card. We modified this so that each card had one clinical condition and “buzzwords” related to that condition that were unspeakable. Students had to try to describe a clinical condition without using the typical “red herring” words often seen in clinical vignettes. The words they generated were recorded and provided to the class. Scores on exam questions were compared to the previous class and student input was gathered using a survey.

Summary of Results: A total of 224 first-year medical students participated in 4 sessions of Taboo™, each taking about 30-40 minutes. Of these 68% reported Taboo™ to be an effective review. Likability was most related to friendly competition, ability to work in small groups and its brevity as a review activity. 54% of students utilized the game or its resources after the activity to study. Interestingly, only 59% of the students felt the game helped them answer exam questions. However, students performed an average of 3.3 points higher per question compared to last year’s class on related clinical correlates.

Discussion and Conclusions: The incorporation of a novel game based off the card game, Taboo™, was effective for review of clinical correlates prior to anatomy exams. Students enjoyed the gamification and performed better on exams compared to previous classes. Therefore we propose gamification as a means to supplement or even replace traditional reviews.

Take-home Messages: Gamification using Taboo™ allowed students to deepen their understanding beyond straight memorization of topics, quickly review a large number of high yield clinical correlates and engage in friendly team competition.

#SC11.7 - Short Communications: Teaching and Learning - Online/Games

#SC11.7.4 (5664)

Quiz as an academic tool for teaching learning physiology in Indian medical students.

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ABSTRACT:

Background: In a changing World, education has become a priority. It has become need of the hour to explore more innovative ways of teaching effectively. Active teaching in the form of small group discussions and interactive activities like quiz are been explored to ensure healthy and competitive learning. Not many studies have been done in India and thus, this study was undertaken to assess the effectiveness of quiz as an academic tool.

Summary of Work: 96 First year medical undergraduates participated in quizzes on various topics of Physiology that were organized every 3-4 weeks. Each Quiz were conducted in 4 rounds. 3 teams (randomly selected students) participated in each topic quiz. Audience were also given chance to score during all quiz and scores which was added to their respective teams for selection in final round. At the end of the year, they were asked to give their feedback anonymously in a Likert scale that was duly analyzed.

Summary of Results: 49% students strongly liked the quiz, 40% liked it and only 1% of the students did not like it. Majority of the students liked various contents (57%) and organization of the quiz (50%). Most of the students liked the procedure of the quiz e.g. pattern of team formation (78%), weightage of topics (79%), frequency (88%), duration(75%), pattern of scoring (79%), time for answering questions (78%), contents, rounds, difficulty level (75%) and usefulness in study (89%).

Discussion and Conclusions: In our study maximum number of participants liked/strongly liked inclusion of quiz as an academic tool. Marden NY in 2013 found that majority of the students perceived online quizzes as a valuable learning tool. Also, performance in quizzes was significantly linked to end-of-course examination scores. It was also realized as an identification tool for students who need assistance, as those who could not perform well in quizzes also were more likely to fail the examination. Mehta B and Bhandari B in 2016 revealed that they were satisfied, motivated and confident of applying this learning and communication skills learned in quiz in future clinical practice.

Take-home Messages: Activities like quizzes are beneficial to the students and must be encouraged as a part of the curriculum.

#SC11.7 - Short Communications: Teaching and Learning - Online/Games

#SC11.7.5 (6186)

The use of head-mounted Virtual Reality in clinical scenario training in medical education: a focussed systematic review

AUTHOR(S):

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ABSTRACT:

Background: Advancements in virtual reality (VR) have led to more immersive and realistic programmes to aid learning. Our Trust purchased Oxford Medical Simulations VR Head-Mounted Device and software. Before delivery, we aim to explore how this form of VR can be applied in clinical scenario training and explore the evidence for its delivery from literature.

Summary of Work: Electronic searches were completed of Medline, Embase, CINAHL, Psycinfo and PubMed databases in November 2019. Studies describing the use of VR head-mounted devices in clinical scenario training in clinical education at any stage with or without other professionals were included if outcomes were reported on Kirkpatrick's hierarchy. 3883 citations were found after de-duplication. Citations were reviewed independently by two reviewers with any disagreement resolved by a third reviewer. 52 citations met the criteria and full papers screened. Papers were reviewed against the inclusion criteria by two reviewers independently with any disagreement resolved by a third reviewer. 4 papers met the criteria and data was subsequently extracted and reviewed with risk of bias and quality assessed.

Summary of Results: 3 of the 4 studies had medical students as the learner group; the other paper utilised ATLS Instructors and candidates as the learner group. All papers utilised VR major incident or traumatic emergency scenarios. One paper looked at single learner with other students observing, one utilised two distance learners working together, one used single learner followed by an expert video debrief and the final used an orientation video followed by single trail of scenario. All studies provided Level 1 outcomes of Kirkpatrick's hierarchy, with two providing level 2a, three level 2b and one level 4.

Discussion and Conclusions: With the potential to be more cost and time effective than traditional simulation, it is important that VR for clinical scenario training is researched and evaluated thoroughly to identify how best to deploy and integrate it with other elements of simulation learning, such as debrief and observation that are crucial for student learning.

Take-home Messages: There is a clear need for further research into the application and educational benefit of this form of VR in clinical scenario training to ensure that we maximise its potential learning and teaching opportunities.

#SC11.7 - Short Communications: Teaching and Learning - Online/Games

#SC11.7.6 (6679)

Psychological need satisfaction and frustration of medical students that learn in different MOOC integration settings

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ABSTRACT:

Background: It is unclear how Massive Open Online Courses (MOOCs) can be used optimally in regular campus teaching. However, recent research shows that self-regulated learning skills are needed to successfully learn in MOOCs¹ and autonomous motivation seems required to implement these skills. Autonomous motivation demands feeling autonomous, competent, and related to others. Hence, satisfaction and frustration of these feelings are important when optimizing MOOC integration settings.

Summary of Work: This study explores psychological need satisfaction and frustration of undergraduate medical students in two distinct settings at Leiden University Medical Center using a MOOC on Clinical Kidney Transplantation. In setting A the MOOC was used as preparation for a selection-based voluntary Summer School. In setting B, face-to-face lectures of a mandatory course were substituted with interactive MOOC materials. Afterwards students completed the Basic Psychological Need Satisfaction and Frustration Scale². Linear regression analyses were used to examine the relationship between the setting students attended and their psychological need satisfaction and frustration.

Summary of Results: In total, 19/20 (95%) and 239/355 (67,3%) students participated. Attending setting A was, also after adjusting for age and gender, related to a significant increase in autonomy ($\beta=.821, p=.000$), competence ($\beta=.500, p=.000$) and relatedness satisfaction ($\beta=.597, p=.002$) and a significant decrease in autonomy ($\beta=-.413, p=.029$) and relatedness frustration ($\beta=-.383, p=.016$). The decrease in competence frustration was no longer significant after adjustments ($\beta=-.267, p=.080$).

Discussion and Conclusions: This study shows that satisfaction and frustration of psychological needs are determined by the specific MOOC integration setting. To enhance autonomous motivation and thus use of self-regulated learning skills, high satisfaction and low frustration scores are desirable. In our study setting A is clearly favorable for successful MOOC learning. As both settings are real courses with different purposes they differ on multiple levels. These differences offer direction for future research to determine which aspects of a setting are related to high satisfaction and low frustration scores.

Take-home Messages: MOOC integration settings can substantially differ, and significantly influence satisfaction and frustration of psychological needs, affecting successful learning in MOOCs. ¹ Kizilcec et al. 2017. *Comput Educ.* 104:18–33. <https://doi.org/10.1016/j.compedu>.

#SC11.7 - Short Communications: Teaching and Learning - Online/Games

#SC11.7.7 (6808)

Can Social Media be used in OSCE teaching? Live Streaming Teaching engages medical students to learn clinical skills effectively.

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ABSTRACT:

Background: With the development of technology, medical education has begun to have a close connection with multimedia. In the past, from slides to videos, learning platforms appeared, and the threshold of learning was lowered through the Internet. Today, learners can easily access learning resources in social media and build learning groups. Especially, Live Streaming has made it easier for people to communicate and interact. Therefore, we utilized the characteristics of live streaming to develop a course which makes the learning of clinical skills more interesting and effective.

Summary of Work: We chose Facebook as a medium to form a Clinical Skills learning group. We used the Live Streaming to teach Physical examination (included Abdomen, Neurology and Chest / Heart), 20 procedures, and 3 reviews of OSCE. At the same time, learners can ask questions at any time and teachers can also respond to questions timely. In addition, we also provide skills stations to allow students to practice independently.

Summary of Results: A total of 222 undergraduates participated in this learning group. During the two-month course, there were a total of 24 videos. The average number of views for each video was 823. 100% of these students passed the national OSCE in Taiwan. In addition, we collected 169 questionnaires and 90% of the learners in the questionnaire thought that they met the skills requirements. In addition to asking questions during Live Streaming, it was convenient to watch and repeated learning.

Discussion and Conclusions: In our course, we found that Live Streaming through social media has greatly increased the accessibility of students learning. Besides, real-time questions can be more interactive and interesting than video teaching. We had also noticed students had begun to learn clinical skills on their own. With the integration of skills station, we can also reduce the number of faculty to achieve the goals of flipped classroom and self-directed learning.

Take-home Messages: Utilizing Live Streaming teaching can reduce the gap in clinical skills learning and increase learning opportunities and motivation, thereby achieving self-directed learning of clinical skills.

#SC11.7 - Short Communications: Teaching and Learning - Online/Games

#SC11.7.8 (7074)

Venomous animals serious game: have some serious fun in escape room and the board game.

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ABSTRACT:

Background: Venomous animals is not really a popular topic. It is also not commonly seen in the daily practice. However, it could be fatal sometimes. In order to enhance the students recognition and interest in venomous animals, we design escape room and board game as a learning activity at the end of the course. We believe that we could try different ways to enhance learning motivation and improve educational transfer.

Summary of Work: In the board game, our learning goal is familiarizing with individual venomous animals, including living habits, appearance, and poisoning symptoms. In the escape room, we focus on familiarizing treatment process, including first aid management, creature identification, differential diagnosis, and the treatment in the hospital. We form groups of 5 or 6 students. There is one table leader in the board game, and one non-player character in the escape room. They are the facilitator of the learning process. After the escape room, the lecturer will explain each puzzle and give the group some time to discuss. Also, the non-player character will share their observation. The lecturer could also have more information about the process, according to the answers from the background of the chatbot app.

Summary of Results: There are 39 trainees, including medical students, nurses, ER resident doctors, attending physicians, and other department physicians. Pretests and acceptance test are conducted in the course. The NPS score of class was 9.69. The feedback from participants show that the course is entertaining. They can not only to practice what they have learned in the previous lectures but also to improve motivation.

Discussion and Conclusions: Gamification could help students to engage, and also arouse their interests. The serious game can be an another choice but the paper exam. Practice and experiment from activities can not only to observe and practice teamwork but also to train problem solving skills.

Take-home Messages: Gamification course design, including room escape and board games, is an interesting and effective learning design. Which can be used to increase student motivation and engagement. It can also improve the team training, communication and cooperation. It provides a different perspective on learning, and could be one of the trends.

#SC11.7 - Short Communications: Teaching and Learning - Online/Games

#SC11.7.9 (7174)

MOOC for Faculty Development on Assessment

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ABSTRACT:

Background: Massive Open Online Courses (MOOCs) are offered over the internet and are open to anyone in the world at low cost. These are an alternative to reduce the cost compared to traditional training and therefore can increase the value of the same for the participant. The MOOCs are intended to expose students to new disciplines, stimulate new interests, learn ideas and realize a learning community (Engle, Mankoff and Carbrey, 2015).

Summary of Work: The content of the MOOC was designed and developed with the participation of 15 professors from three universities in Mexico. The course syllabus consists in 4 modules: 1) Medical education and evaluation, 2) Evaluation of patient-centered clinical competence, 3) Quality of evaluation in clinical settings, 4) Feedback in clinical evaluation. The clinician may learn how teaching develops in various clinical settings, from the point of view of the student and the teacher. Starting first with an overview of traditional medical education and how it has evolved over time. In this way, analyze what elements are important to consider in the evaluation of learning, what should be evaluated and why. The purpose was to measure the performance of a MOOC on learning assessment in clinical settings.

Summary of Results: The course has been launched in Coursera in January 2020 and currently has 502 registered users, which 32 have successfully completed the course (8.6%). The majority of the users are from Mexico, Brazil, Colombia and the United States between 25-45 years (70%) and are full-time teachers (80%).

Discussion and Conclusions: According to Sitzman, Jensen, and Chan (2016) a course is considered successful when it has a completion rate of 4 to 6%. The MOOC has shown to be an effective method to reach teachers of different institutions and regions to know the basics of clinical evaluation in an attractive format.

Take-home Messages: The MOOCs can be an effective way to create inexpensive, open, and interactive communities of learners where health care professionals, from different geographic regions, cultures, and professional backgrounds have opportunities to learn and share experiences.

#SC12 - Short Communications: Covid-19 - Learning at Distance

#SC12.1 (4753)

A report of Massive Open Online Courses for continuing professional development in Thailand

AUTHOR(S):

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ABSTRACT:

Background: Massive open online courses(MOOC) is a popular learning platform globally. There are some available courses in health and medicine, and most of them are in English. Chulalongkorn University has its MOOC called Chula MOOC, free-of-charge and open-registration online lessons in Thai, to serve the country variety of classes, and this is the first course in medicine. Trauma, especially traffic accident, is the leading cause of death in Thailand. Physicians, nurses and paramedics who work in the emergency department play a vital role to save these patients. We decided to create a course in Chula MOOC about basic trauma procedures for all healthcare professions who work there.

Summary of Work: We have created ten lessons about resuscitative trauma procedures using three-dimensional animation to explain the pathophysiology of injuries and procedural details. The course has been published on our platform since July 2019. We collected data from the forms those participants had to fill before they attended the lessons.

Summary of Results: Six months after we have launched the courses, there are 5,032 registered participants, and 1,274 of them (25.3 per cent) have completed all the lessons. Among these, 213 were physicians (16.7 per cent), 209 were medical students (16.4 per cent), 634 were nurses (49.8 per cent), and 218 (17.1 per cent) were paramedics.

Discussion and Conclusions: We developed lessons about basic trauma procedures in Thai and distributed them via our massive open online courses platform. More than five thousand healthcare professions have reached these lessons, and twenty-five per cent of them have completed the course. Completion rate of this course (25.3 per cent) is more than the average of other free MOOCs, which is nine per cent, and we believe that language barrier is one of the leading cause of dropout.

Take-home Messages: MOOC is an available option for continuing professional development. The animated video and native language in the lessons may increase engagement of participants.

#SC12 - Short Communications: Covid-19 - Learning at Distance

#SC12.2 (4393)

REAL-WORLD VIRTUAL PATIENT SIMULATION TO IMPROVE DIAGNOSTIC PERFORMANCE: A PROSPECTIVE CASE-CONTROL QUASI-EXPERIMENTAL PRETEST-POSTTEST STUDY

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ABSTRACT:

Background: Diagnostic errors represent a major public health problem. Clinical presentations with nonspecific symptoms are prone to diagnostic errors; dizziness may be the epitome of this conundrum. Central to improving diagnostic expertise is deliberate practice. Based on this conceptual framework, we hypothesized that novice clinicians could become proficient in diagnostic reasoning related to dizziness with training on virtual patients (VP) when compared to their senior colleagues with actual clinical practice.

Summary of Work: Real patient data and videotaped physical exams from a multi-centered clinical trial of patients with dizziness were incorporated into each VP case for maximal fidelity. The software simulates a real bedside encounter incentivizing a “least-moves” strategy to diagnosis with each item having associated virtual costs. Intervention (1st-year internal medicine interns) and control groups (senior internal medicine residents) completed pretest virtual cases. Next, the interns were exposed to 9 hours of deliberate practice with VP cases over 6 sessions. The residents were exposed to online content on dizziness alone. After 1 week, both groups were assigned posttest virtual cases. Asymmetric intervention groups allowed us to compare our curriculum to the cumulative clinical educational experience that internal medicine trainees are exposed to for dizziness. All virtual cases were different.

Summary of Results: A total of 40 learners volunteered for the study. On the pretest, there was no difference in median diagnostic accuracy score and median cost between both groups ($p>0.05$). On the posttest, the median diagnostic accuracy score was higher and the median cost was lower in the intern group compared to the resident group ($p<0.05$).

Discussion and Conclusions: Our curriculum was able to significantly improve the diagnostic approach of novice clinicians such that they were more accurate and chose tests more wisely than their senior colleagues. Conventional diagnostic teaching around complex presentations does not work well. Exposing learners to multiple cases with deliberate practice facilitates an appreciation of the subtleties of diagnostic reasoning.

Take-home Messages: Teaching diagnostic reasoning and high-value care with deliberate practice and VPs is more effective than traditional residency training. If the results shown here are generalizable across educational settings, VP-based simulation approaches might lead to re-imagining the teaching of diagnostic reasoning across the medical education continuum.

#SC12 - Short Communications: Covid-19 - Learning at Distance

#SC12.3 (4394)

The journey of developing the VIP: Virtual Integrated Patient and its integration in the medical school curriculum

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ABSTRACT:

Background: In the past two decades, medical education has placed increased reliance on simulation technologies, such as virtual patient (VP) simulations, to boost the growth of learner knowledge and to shape the acquisition of clinical skills for medical students and health professionals. Most of the VPs have, however, been narrative based, using a linear or menu-driven model with preselected options. We have designed a virtual patient platform called the virtual integrated patient (VIP;

www.virtualintegratedpatient.com) that allows a more natural and realistic way of interaction between students and the virtual integrated patient model. This paper details the user testing of VIP and an outcome study conducted to test the efficacy of VIP in medical students' performance in history taking.

Summary of Work: VIP generates realistic virtual patients which students can interact with using a free-text interface, through the process of interviewing, conducting a physical examination and ordering of investigations. The VIP was first introduced to small focus groups to evaluate its usability. We then piloted VIP in our second year medical school curriculum in the history taking module. We evaluated VIP's effect on students' history-taking performance and also their satisfaction in using it.

Summary of Results: The students rated all items positively in the both the User Experience Questionnaire and the System Usability Scale of the VIP. We then introduced the VIP in our medical school curriculum and 296 students were enrolled in the study. Data was collected on students' practice history taking scores during their tutorials and they were tracked on the number of virtual patients they clerked. Clerking more than 10 virtual patients was associated with a significant increase in scores (mean difference 1.70, 95% CI [1.59, 1.81], $p=0.001$).

Discussion and Conclusions: Our pilot study shows that our students are actively learning through the VIP platform and with increased in its usage, resulted in better scores in their history taking practice.

Take-home Messages: A well-designed VP must be easy and intuitive to use. This will help students to remain engaged with exploratory learning, and eventually improve disease understanding and clinical reasoning skills. With increased usage of VIP among our students, it resulted in better scores in their history taking practice.

#SC12 - Short Communications: Covid-19 - Learning at Distance

#SC12.4 (4839)

Home-based self-regulated training vs. centralised instructor-regulated training in laparoscopy: A randomised comparative trial

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ABSTRACT:

Background: Simulation-based surgical training improves trainees' operative skills without jeopardising patient safety. Proficiency-based training (PBT) is a mastery learning approach to skills training. The goal is to bring trainees to the same performance level while accommodating the ability of the individual. Studies of PBT in laparoscopy have shown promising results. However, PBT can be more time-consuming than traditional interval training. Furthermore, studies on the role of instructor feedback in surgical training have produced varying results with some studies even pointing towards negative outcomes of feedback. In line with these findings, recent studies have successfully applied theories of self-regulated learning (SRL) to simulation-based training.

Summary of Work: Based on experiences of PBT, SRL and the ambiguous role of the instructor, we have conducted a randomised study comparing home-based self-regulated training (HSRT) to centralised instructor-regulated training (CIRT) in basic laparoscopic skills. We included 46 first-year trainees in Surgery, Gynaecology and Urology. Trainees were randomly allocated to HSRT or CIRT. During the 6-week training program, the HSRT group trained at home guided by video tutorials and written instructions, while the CIRT group attended two training sessions instructed by surgical experts. Training in both groups was structured as PBT with validated tasks and protected training time. All participants trained on portable box trainers providing computerised summary feedback on metrics. Pre- and post-tests consisted of validated exercises in camera navigation, hand-eye and bi-manual coordination.

Summary of Results: Our preliminary analyses (n = 40) show an overall pass rate of 90% (95% HSRT, 86% CIRT). All trainees significantly improved in hand-eye and bi-manual coordination. Home-based training facilitated distributed practice. The preliminary findings reveal no significant inter-group differences in performance and training time.

Discussion and Conclusions: To our knowledge this is the first study to successfully apply evidence-based supports for SRL to home-based training in basic laparoscopic skills. At AMEE 2020, we will share the final results on performance and training patterns. We argue that home-based training in laparoscopy is feasible and effective given a well-designed training program with supports for SRL.

Take-home Messages: Home-based self-regulated training allows for time-consuming PBT, facilitates distributed practice, saves time and money, and reserves the use of supervisors for more advanced training.

#SC12 - Short Communications: Covid-19 - Learning at Distance

#SC12.5 (6386)

Identify knowledge gaps and provide personalized education programs among different health care workers for preventing 2019 novel coronavirus (2019-nCoV)

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ABSTRACT:

Background: Since Taiwan had the first case of atypical pneumonia caused by the 2019 novel coronavirus (2019-nCoV) on Jan. 21st and followed with another fifteen imported cases, all hospitals have set the temperature monitoring systems and follow the protocol for prompt recognition and isolation of patients presenting with fever or respiratory illness. Participating in infection prevention and control programs are required for health care workers in Taipei city hospital(TPECH). Only the department of education(DOE) knew the knowledge gaps among different health care workers for preventing 2019-nCoV so that we can provide personalized training programs for each healthcare professional.

Summary of Work: Although all medical staffs need to complete at least four hours of the continuing medical education(CME) courses focusing on infectious diseases, there is a lack of CME course focusing on the specific emerging infectious disease. Furthermore, for arranging personalized teaching courses of emerging infectious diseases for the different healthcare professional, we designed ten multiple-choice questions including the basic knowledge of 2019-nCoV, how and when to wash hands, how to put on and remove the protective equipment, the fever patient traffic flow in the hospital, and the criteria of reporting suspected cases to the Taiwan CDC.

Summary of Results: A total of 3440(58.24%) health care workers in TPECH finished the test in one day. Among those health care workers, 286(83.38%) doctors, 894(74.50%) nurses, 508(77.56%) medical personnel and 980(78.90%) administrative personnel passed(80% correct) the test($p < 0.05$). For those who did not answer 100% correct, the DOE provided the twenty-page online handout mentioned the important knowledge and information of 2019-nCoV and asked them to redo the test with 100% correct. Moreover, the DOE reviews the latest scientific papers discussing 2019-nCoV every day, summarizes the most important main points in the local language, and uploads to the e-learning system for colleagues to read.

Discussion and Conclusions: Although almost 80% of health care workers have passed the test, we provide the online material and ask everyone to finish the test with 100% correct for this epidemic-prone emerging infectious diseases. We also provide summary notes of the latest scientific papers for advanced readers.

Take-home Messages: Identify knowledge gaps and provide personalized education programs are important for preventing 2019-nCoV.

#SC12 - Short Communications: Covid-19 - Learning at Distance

#SC12.6 (6846)

Semio Game: a innovative hybrid simulator/board game to teaching and learning physical examination

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ABSTRACT:

Background: Background: The learning of physical examination is a challenge in medical teaching. To engage students in improving their knowledge and skills in semiology, professors developed “Semio Game”, a board game created to deepen and improve the learning of physical examination, which gives students the opportunity to learn in a fun and innovative way. Consisting of a hybrid board game with electronic interface and auscultation simulator, the game features 190 cards with clinical cases and semiology questions, effect cards and characters that can assist in the diagnosis of diseases. Through using the game, the students can test their knowledge while teaching and learning from each other.

Summary of Work: Summary of work: A multidisciplinary team formed by physicians, medical students, electrical engineers, game designers and architects of a University from Brazil developed a boardgame based on a medical routine from a team of medical residents in a hypothetical hospital. During the game, players diagnose patients through signs and symptoms found on physical examination. Players advance on the board with each hit, with difficulty levels that increase over time. The boardgame associates the game mechanics to simulation, strategy and fun to motivate learning.

Summary of Results: Summary of results: the board game was built with electronic interface and has an automatic system for reading cards data from radio frequency (RFID) as well automatic point count displays. The associated auscultation simulator allows the student to use his or her own stethoscope to diagnose the case of the round. The LCD screen shows images related to the signs found and anatomical location and guides players steps in game.

Discussion and Conclusions: Discussion&Conclusion: The use of serious games is an innovative tool to raise and promote commitment, motivation, creativity, team work skills and knowledge acquisition. The development of new learning tools, centered on students, with interactive strategies and immediate feedback can make this serious games a great option for teaching new generations of physicians.

Take-home Messages: Take-home messages: We always can increase motivation to teaching and learning with fun and creativity.

#SC12 - Short Communications: Covid-19 - Learning at Distance

#SC12.7 (7257)

Overcoming barriers for delivering useful procedural skills: innovating for teaching during the Chilean social crisis

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ABSTRACT:

Background: On October 18, 2019, Chile entered a state of turmoil as a result of a social crisis that triggered daily protests throughout the country. In this context, the educational institutions were forced to adapt their work schedules to guarantee the safety of their workers and students. Undergraduate courses in medicine were no exception and activities were suspended or postponed. One of these courses was the suturing workshop that medicine students have during their surgery rotation in the fourth year in the Pontificia Universidad Católica de Chile (PUC). However, our group has been developing a novel digital platform based on tele-simulation (C1DO1) for teaching procedural skills that allows students to train at their houses and been evaluated

Summary of Work: We obtained consent from the students to develop the suturing workshop using the C1DO1 platform and delivered them a training kit. C1DO1 allows students to access video tutorials and complementary study material on given procedures. Then, students are required to practice and upload a video of their training. Each video was reviewed by experienced teachers of PUC's Simulation Center, giving students personalized feedback via text, audio, drawings or videos. Formerly validated checklists or rating scales were applied, providing students a comprehensive overview of evaluation standards and their personal scores.

Summary of Results: The use of C1DO1 was overall well rated by the students with an emphasis on the good quality of the feedback provided by the teachers. 18 students registered into C1DO1 and uploaded at least one training video. All of them were given feedback on how to improve their technique.

Discussion and Conclusions: Our group had a previously positive experience with a remote feedback platform, allowing effective training of advanced laparoscopic techniques in 30 general surgery residents in remote Chilean centers. C1DO1 seems an useful and powerfull tool to deliver training through tele-simulation. The focus on remote feedback and the available audiovisual tools differentiate C1DO1 from eLearning platforms. This kind of platform and way of teaching may be useful to train people in remote places or in situations where free circulation has been compromised like the situation at Chile.

Take-home Messages: Tele-simulation through C1DO1 provides a safe way to deliver training.

#SC13 - Short Communications: Empathy

#SC13.1 (6598)

Empathy - feeling it, giving it and the problem with teaching it.

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ABSTRACT:

Background: Physician Associate (PA) students in the UK undergo a 2 year postgraduate medical model training, including communication teaching. Given the intensity of their training and the fact that they have more life experience than undergraduate medical students, PA students offer unique insights into the practice and teaching of empathy. There are no previous qualitative studies of PA student views on empathy.

Summary of Work: Two researchers (WL & MB) conducted semi-structured interviews with 19 PA students from Hull York Medical School (HYMS) and Sheffield University. Transcribed verbatim, interviews were independently coded by two researchers (WL & MB), using an inductive approach. Through an iterative process of discussion amongst all researchers, data were subject to thematic network analysis.

Summary of Results: Feeling empathy was easier when patients had major health problems or predicaments that students could relate to. It was more difficult if the clinician was rushed or the patient had an unhelpful agenda, e.g., drug-seeking behaviour. Giving empathy with feeling required attentive listening, eye contact, sincere empathic statements and finding helpful solutions. Clinicians were also observed giving empathy without feeling, seen as a solution to compassion fatigue and time constraints. Teaching of empathy established a dissonance between feeling it and giving it. Students were criticised in feedback for omitting to give empathic statements at times when they felt no impulse to do so.

Discussion and Conclusions: PA students recognise that empathy is practised both with and without true feeling – concepts already known as affective and cognitive empathy. Some researchers claim cognitive empathy is preferable for professional clinical practice, whilst others argue it is no kind of empathy at all given that empathy is derived from the Greek, meaning in feeling. The problem with medical communication training, as students see it, is that it sets them up to make empathic statements with no true sentiment. This pressure to say it without feeling it is the empathic dissonance at heart of modern medical teaching.

Take-home Messages: PA students describe a novel concept, empathic dissonance – the problem of being taught to make empathic statements despite an absence of true empathic feeling.

#SC13 - Short Communications: Empathy

#SC13.2 (6720)

Is there any difference between virtual and real-life empathy? A cross-sectional study among undergraduate students across five faculties in the UWI, Trinidad and Tobago

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ABSTRACT:

Background: Empathy is an emotional phenomenon in which an observer understands and transiently experiences the emotional state of another person. Both the experience and demonstration of empathy facilitate compassionate responses. A number of previous studies have demonstrated that interventions can enhance empathy skills, which benefit people working in all disciplines, even though students from some fields may have lower empathy levels. The importance of virtual empathy is increasing as online social and professional interactions become more pervasive. The important functions of empathy in the “real world,” are likely to obtain in the virtual world as well. The aim of this study was to explore empathy on social media and in the real world among undergraduates from five faculties (Law, Engineering, Medical Sciences, Humanities and Education, Science and Technology) at the UWI, St Augustine Campus, Trinidad and Tobago, West Indies.

Summary of Work: A descriptive, cross-sectional study design was used to measure real life empathy (RLE) using the Empathy Quotient (EQ; Baron-Cohen & Wheelwright, 2004) for adults and virtual empathy (VE) using an adapted version of the EQ. A convenience sample of 584 respondents from 5 faculties completed the questionnaires.

Summary of Results: Majorities of students were female (63.2%) and between 17-21 years (79.6%). Pluralities were of East Indian descent (44%) and from the Faculty of Science and Technology (24.1%). The mean RLE score (42.80) was higher than VE score (37.00), and positively correlated ($r=0.665$, $P<0.001$). Other findings include: female participants' RLE ($44.558\pm.494$) was higher than males' (39.795 ± 0.769), $t=5.44$, $p<0.001$; females' (38.793 ± 0.533) VE was higher than males' (33.953 ± 0.719), $t=5.43$, $p<0.001$; Engineering faculty had lower RLE than all other faculties ($F(4, 579)=6.978$, $p<0.001$) and lower VE than all other faculties ($F(4, 579)=8.825$, $p<0.001$); Year 3 students' VE ($33.944\pm.991$) was lower than Year 2's ($38.14\pm.979$), $p=0.045$; and RLE of mixed participants (44.223 ± 0.85) was higher than Afro-Trinidadians ($41.416\pm.75$, $p=0.044$).

Discussion and Conclusions: These results suggest that students may experience less empathy in virtual than in real-life social interactions.

Take-home Messages: Virtual interactions may impede the experience of empathy. Promoting empathy in the real world and online can prepare students to function better in future professional and social settings.

#SC13 - Short Communications: Empathy

#SC13.3 (4382)

Can we influence medical student education by understanding the underlying clinician perspectives of empathic practice?

AUTHOR(S):

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ABSTRACT:

Background: Benefits of empathy within medical practice are well documented . Despite this, numerous reports exist that claim it decreases with time over a medical degree course . Confounding these reports are demonstrations of multiple definitions of empathy, poor understanding of the underlying construct of empathy, and multiple tools for “teaching” empathy to medical students. All these elements have added confusion to the research of empathy in medical education and highlighted the need for clarity of a basic knowledge of the concept through new work.

Summary of Work: I performed 10 semi-structured interviews of clinicians, as part of a wider PhD study into understanding empathy. Within these interviews I explored topics including the understanding of empathy, the development of empathy, and the realities of empathy in practice. The interview review process was iterative allowing pursuit of new topics in subsequent interviews. The aim of the interviews was to generate new knowledge from practicing clinicians about the underlying context of empathy in practice and ascertain if these findings could be related back to medical student education.

Summary of Results: The interviews were audio recorded, transcribed and then coded thematically using NVivo. Analysis of the themes demonstrates how empathy in practice is an individualised process, and how its clinical utilisation requires a baseline understanding that changes with time and experience.

Furthermore, the underlying construct for empathic communication appears to develop within the grounds of patient contact. Finally, acknowledgement is made that there are situations where a clinician is unable to practice empathy, and how this occasional context specific scenario manifests as acceptable.

Discussion and Conclusions: By exploring how empathy is experienced and practiced in a clinical context we can generate important messages and learning points for the education of medical students. By giving students a grounded knowledge in the benefits, development and manifestations on empathy in clinical practice, including its links to professionalism we will provide future doctors with the means to utilise this important and protective tool in their own careers.

Take-home Messages: Empathy is protective to practice; Understanding and reflecting on observations is key to medical student education

#SC13 - Short Communications: Empathy

#SC13.4 (4453)

Empathy, resilience and self-compassion amongst doctors in postgraduate medical education

AUTHOR(S):

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ABSTRACT:

Background: The UK General Medical Council's National Trainee Survey 2019 shows that doctors in their first two years of postgraduate training, or Foundation Doctors (FDs), have the highest levels of burnout. Moreover, in 2018, only 37% of FDs transitioned directly into speciality training after their foundation years, down from 85% ten years earlier. The fact that these two phenomena may be linked is one reason why the issue of resilience is currently of such pressing concern in postgraduate medical education. There is, however, a lack of knowledge regarding how resilient FDs may be, how their resilience may change over the year and how that change may be related to FDs' levels of empathy or self-compassion.

Summary of Work: Longitudinal matched cohort study of FDs at six UK hospitals. Three validated self-reporting tools administered together with brief demographic survey. Repeat surveys will be carried out at six months and one year to assess changes during the year. Analysed in Excel with Xrealstats add-in; correlations using Spearman Rank; differences of the means using T-test.

Summary of Results: 189 FDs completed the initial surveys (response rate 96.4%). A positive correlation was demonstrated between resilience and self-compassion ($r=0.507$, $p<0.001$), providing good evidence of the linked nature of these attributes; and a statistically significant, albeit weak, positive correlation between empathy and resilience ($r=0.197$, $p<0.01$), suggesting that the traditional belief, that a stance of clinical detachment is protective against burnout, is unlikely to be correct.

Discussion and Conclusions: This is the first study we are aware of that demonstrates a positive correlation between empathy and resilience in UK doctors. Interventions that promote empathic behaviours may, therefore, not only be beneficial vis-à-vis patient care but might also have a positive impact on doctors' resilience. Furthermore, the positive correlation between resilience and self-compassion provides evidence for establishing interventions that focus on self-compassion to further increase doctors' resilience.

Take-home Messages: By investigating the impact postgraduate medical education has on doctors' resilience, empathy and self-compassion, we will be in a stronger position to design evidence-based interventions, and make adjustments to curricula, which aim to enhance doctors' wellbeing; further streamline postgraduate medical education; and, ultimately, improve patient care.

#SC13 - Short Communications: Empathy

#SC13.5 (4643)

Finding a safe haven; patient narratives of involvement in medical teaching

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ABSTRACT:

Background: To date, research on patient experiences of participating in medical teaching has illuminated collective perceptions on satisfaction rates, positive and negative aspects of involvement, and strategies of how and what patients feel is important to teach. However, limited literature exists on how individual patients embed their experiences of teaching within the wider context of their lives, specifically in relation to their illness journey.

Summary of Work: A narrative inquiry methodology explored ways patient volunteers made sense of regular and prolonged involvement within medical teaching. The Elicitation technique was used to interview 5 volunteer patients from a UK medical school programme that coordinates patient involvement within teaching. Patients had a broad range of chronic conditions. Clandinin and Connellys framework was employed to analyse the narratives.

Summary of Results: Participant narratives were conceptualised as “transitions” that each participant had undergone due to their involvement in teaching; “Feelings of worthlessness to finding purpose”, “Resignation of having reached stalemate to hope in relation to further treatment options”, “Concealing illness to keeping it real”, “Facing potential to feel exposed to having courage to be in a state of undress / listen to prognosis”, and “Denial of diagnosis to embracing diagnosis”.

Discussion and Conclusions: Trajectories of regular and prolonged patient involvement in medical teaching, whilst simultaneously coping with the demands of chronic illness, is complex and differs markedly between individuals. Yet these findings suggest that these patients, at specific stages of their life, have found regular volunteering helps foster healthy coping strategies and behaviours in relation to sense making of self and illness, and enhanced feelings of control and power. However, perceptions are fluid in relation to patient’s illness journey and wider lives as it is being lived and retold.

Take-home Messages: Findings suggest that some patients need to feel safe before being able to participate in teaching, and for others the teaching environment is perhaps either the road to feeling safe or indeed provides a safe haven where they can truly be supported, accepted and accepting of their illness and thus themselves. Therefore, this study advocates the importance for educators to consider person specific and contextualised aspects of illness when involving patients within medical education.

#SC13 - Short Communications: Empathy

#SC13.6 (4957)

Medical students' preclinical service-learning experience and its effects on their empathy and teamwork competency in clerkships

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ABSTRACT:

Background: Service learning (SL) in medical education is believed to have several advantages globally; however, few relevant empirical studies have been conducted thus far. This study evaluated medical students' preclinical SL experience and its relationship with their empathy and teamwork competencies in clerkships.

Summary of Work: A prospective survey was performed on 76 fifth-year medical students in Taiwan (average age, 23 years; 41 men and 35 women). Their preclinical experiences of SL were recorded, including SL types (i.e. in-class credits and extracurricular), frequency and hours, and reported self-efficacy of SL at the beginning of clerkships (assessed on a 5-point Likert scale) on September 2015. The participants then were administered a structured questionnaire including Jefferson Scale of Empathy (which measures "physicians' views from patients' perspectives", "physicians' understanding of patients' experiences and feelings", "physicians' ability to thinking like the patients", and "physician-patient/family emotional connection") and teamwork competency scale (which measured "planning and organising", "leading", and "controlling") after they had gone through the clerkship training for three months. Descriptive and factor analyses and multiple regressions were then performed.

Summary of Results: Our findings revealed that during clerkship, medical students' preclinical SL extracurriculars ($p < 0.05$) and SL self-efficacy ($p < 0.01$) were positively related to their empathy in the physician-patient/family emotional connection. In addition, medical students' SL self-efficacy from the preclinical school learning was positively related to their teamwork competency in planning and organisation in clerkships.

Discussion and Conclusions: Given that multiple empathy and teamwork dimensions are critical in the educational development of physician professionals, increased focus on SL extracurriculars (i.e., more dedicated hours) and high SL self-efficacy in the preclinical school stages had positive effects on the medical students' clinical workplace training for empathy and teamwork.

Take-home Messages: SL, particularly SL extracurriculars and self-efficacy, during medical students' preclinical school life was critical for their further clinical workplace training for empathy (physician-patient emotional connection) and teamwork (planning and organising)

#SC13 - Short Communications: Empathy

#SC13.7 (5044)

Does Empathy Change Always Change in Clinical Years?

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ABSTRACT:

Background: Empathy levels tend to decrease during the transition to the undergraduate clinical years, particularly in the Western countries. However, empathy has been observed to either remain similar or increase in many Asian medical schools. We investigated the longitudinal empathy profile of a medical school in Singapore.

Summary of Work: Two cohorts of medical students (maximum 600) who enrolled in 2013 and 2014 to the National University of Singapore were tracked for 5 years. The Jefferson Scale of Empathy - Student Version was administered each year and at the end of the course. SPSS ANOVA was used to analyse the mean of the empathy level and individual factors. Year-wise and gender comparison was conducted using student's t-test.

Summary of Results: Average response rates for Cohort 1 and 2 were 68.1% and 55.4% respectively. For both cohorts, there was no significant change across year of study for the mean empathy score. Average scores for both cohorts are 113.94 and 115.66. Though not significant, we observed higher empathy levels from Year 3 to Year 4 for both cohorts (113.77 to 114.48; 115.71 to 118.42). For cohort 2, empathy increased again at course completion after a drop in Year 5. Next, Cohort 2 had no difference by study year and gender for all three factors. The mean for Factor 1 (perspective taking) decreased from 61.00 (Year 1) to 59.00 (Year 5 end) ($F=3.266$, $p=0.006$) and 61.92 to 60.34 ($F=2.134$, $p=0.59$) for both cohorts. No significant difference was observed by year for Factor 2 mean (compassionate care) for both cohorts. Factor 3 (standing in patients' shoes) mean scores increased from 8.51 (Year 1) to 9.07 (Year 5 end) ($F=3.313$, $p=0.006$) and 8.62 to 8.65 ($F=0.911$, $p=0.473$).

Discussion and Conclusions: No significant change in empathy score was observed during the transition from pre-clinical to clinical years, unlike many Western and Far-Eastern studies. This might be due to the curriculum and the influence of the Asian values.

Take-home Messages: The results are in line with most Asian schools. A possible explanation may be culture differences, as Eastern cultures are more collectivist which promotes emotional behaviour towards others.

#SC13 - Short Communications: Empathy

#SC13.8 (6152)

Impact of burn-out on medical students empathy : a cross- national survey in Korea

AUTHOR(S):

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ABSTRACT:

Background: The decline in empathy throughout medical education has been reported in several medical schools, particularly, in the transition to clinical training. Emotional withdrawal, perfectionism, burnout-related distress have been suggested as reasons for the decline. The aim of this study was to examine which factors may be related to the decline of empathy of students.

Summary of Work: A newly validated Korean version of the Interpersonal Reactivity Index (NK-IRI) and the student version of the Jefferson Scale of Physician Empathy (NK-JSPES), and Maslach Burnout Inventory -Student Survey(NK-MBISS) were used. 1st-year, 3rd-year, and 5th-year medical students from the selected 15 medical schools in South Korea were invited to an online survey and a total of 1,293 medical students participated in the study. To examine the difference in empathy and burnout scores by years, one-way ANOVA was conducted. The multivariate analysis was conducted to explore what factors influential to the decline of empathy scores across the study years.

Summary of Results: Across the study years, the empathy scores measured by NK-JSPES were not significantly different. The NK-IRI scores of 5th-year medical students were significantly lower than those of 1st-year and 3rd-year ($p < .01$). In contrast, the scores of NK-MBISS were significantly increased in 3rd-year and 5th-year medical students ($p < .001$). Interestingly, burn-out scores were increased across the study years in both genders, but the NK-IRI scores of females students were not decreased even the senior years. NK-MBISS has three dimensions including EX(exhaustion), CY(Cynicism), and PF(professional efficacy). In multivariate analysis, the scores of NK-IRI was influenced by gender, study years, EX and EF of NK-MBISS. The four dimensions of NK-IRI were differently explained by gender, study years, and EX or EF of NK-MBISS.

Discussion and Conclusions: Empathy scores measured by the Jefferson Scale of Physician Empathy were stable across the study year. However, the IRI scores showed differently by gender; female students scores were stable but male students scores were declined across the years. Multivariate analysis showed gender and exhaustion and professional efficacy may be influential factors to explain empathy scores.

Take-home Messages: Medical students empathy scores seem to be influenced by the types of measurement tools, gender, and the level of burnout.

#SC13 - Short Communications: Empathy

#SC13.9 (6163)

The meaning of Hippocratic Oath for German and Colombian medical students

AUTHOR(S):

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ABSTRACT:

Background: Within the history of medicine, the Hippocratic Oath has represented the essence of medical practice and is one of the pillars of medical ethics. At present, some Universities around the world take the Oath, or versions of it, at different times of the medical training, but it is not a universal practice. Living the oath's principles is not always clear to the students.

Summary of Work: Due to the relevance of the meaning of the Oath, a study was carried out during 2018 and 2019, among final-year medical students at the Duisburg-Essen University and the University of Quindío in Germany and Colombia respectively. Focus groups semi-structured interviews and free text essays were conducted to answer the following questions: 1) what does the Oath mean to you, 2) what is your role as a doctor, 3) do doctors have to rethink their humanistic aspects during medical practice?

Summary of Results: A total of 26 students from the University of Duisburg-Essen (54% male, 46% female, 27% foreign), and 28 students from the University of Quindío (43% male, 57% female, 3.5% foreign) participated in the study. Collected data was classified by qualitative relevance and saturation. The German and Colombian students disagreed on issues regarding abortion and euthanasia. Both groups agreed on the technical and social responsibilities of their profession and the need to be educated from both a humanistic and medical perspective. All students highlighted the absence of humanistic and empathic perspective in the curriculum.

Discussion and Conclusions: The Hippocratic Oath was used as a tool for senior students, close to the internship year, to be confronted with the ethical and empathic principles of clinical practice. Despite cultural and curricular differences, all agreed on the need to include faculty and clinical colleagues in teaching students how to apply and live these principles beyond isolated medical knowledge.

Take-home Messages: The medical education must rethink empathic and humanistic aspects within the medical curriculum to generate reflective environments that bring teachers and students closer to their patients.

#SC13 - Short Communications: Empathy

#SC13.10 (6988)

Hogwarts School of Empathy and Wizardry : innovative empathy learning via reflections on Harry Potter

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ABSTRACT:

Background: empathy is an essential skill for health professionals , however studies consistently show its decline over medical school , making it imperative to include empathy in the formal curriculum in a way students can relate.

Summary of Work: First year medical students enrolled in the LEAP module ,were asked to revisit excerpts from their favorite Harry Potter books that showed empathy or a lack thereof and reflect on them in a journal, correlating it to medical school. They did this over the course of the first two years , with discussions during class. After taking consent, reflections were thematically analysed to look for indicators of empathy development, professional identity formation and how students related to them. Using these themes Role plays were staged on common empathy dilemmas. Students were interviewed in focus groups at the end of this intervention.

Summary of Results: the thematic analysis revealed that students thought Harry Potter books encouraged empathy by reducing fear of failure, encouraging diversity and mentor ship. They were able to identify how the Sorting Hat was a Professional Identity former particularly for students taking interest in different specialties, and how this affected empathy. The interviews analysed that reading and reflecting on the books helped develop schema for patient/ coworker dealing in the students minds while still remaining enchanted in Harry's world and the role plays and discussions helped put that in context of practical medical dilemmas of empathy.

Discussion and Conclusions: Our study shows how empathy is a skill we must learn to foster in our medical careers. Learning through well known piece of literature how to develop soft skills and feel in the patients shoes, appeared to be a successful intervention in changing the perception of a cohort of students and helped them to better understand factors which are causing empathy decline .

Take-home Messages: 1. Empathy is perhaps the most essential soft skill to be developed and it should be inculcated in students in ways which they will internalize and adapt organically, such as the unconventional use of popular literary works. 2. use role -plays as real life simulations so students can practice what they have learnt.

#SC14 - Short Communications: Honorary Fellowship

#SC14.1 (4501)

Pursuing excellence in medical education in China

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ABSTRACT:

Background: Since 2014, the First Affiliated Hospital of Sun Yat-sen University initiated a journey towards excellence in medical education for China. Through a supported and constructive faculty development programme, the hospital has achieved great success, key feature being the support shown by a strong leadership.

Summary of Work: An international team of world-class experts was established to support a faculty development through a series of ESME face-to face courses. Standardisation of the ESME courses achieved a necessary degree of consistency, whilst their face-to face approach, the accompanying educational clinics and the translation of the theory into practice improved their understanding and depth of learning. The success of the activities is drawn from the improved motivation within the faculty, their inter-course development of teaching skills and the response from the taught students.

Summary of Results: Specific parameters of development will be described during the presentation

Discussion and Conclusions: Leadership from all collaborating parties is crucial for the success of an international educational project, while continued internal motivational mechanisms are needed to ensure the ongoing development of this project.

Take-home Messages: Sun Yat-sen University's success can be a role model for the rest of the world regarding making a difference in medical education through international faculty development.

#SC14 - Short Communications: Honorary Fellowship

#SC14.2 (5211)

Tbilisi State Medical University – leader in medical education reform in Georgia

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ABSTRACT:

Background: Higher medical education history in Georgia accounting more than 100 years actually coincides with the history of Tbilisi State Medical University (TSMU) – the oldest, traditional and leading higher educational medical institution not only in Georgia but also in South Caucasus Region. Nowadays TSMU is considered as the most demanded higher medical schools in Georgia with more than 7000 undergraduate, Master’s and Doctoral students; of them there are more than oversee 2300 students from 68 countries. Almost all current achievements and progress in medical education both at TSMU and in Georgia are the result of close collaboration and support from international partners – first of all the result of collaboration with AMEE.

Summary of Work: We analyzed development of medical education led by TSMU during the last two decades within the context of main milestones main in modernizing outdated, Soviet-style methods of teaching, learning and assessment methodology. Virtually all these achievements were attained with support of our European partners we encountered after joining AMEE members in 1998.

Summary of Results: Results of our analysis showed the following dynamics of progress in modernizing medical education at TSMU and consequently in Georgia: In 2002-2003 TSMU was the first among higher medical institutions in Post-Soviet area which participated in EU project “SOCRATES”. In 2009-2011 TSMU participated in MEDINE 2. It should be noted that TSMU was the representative of Georgia – again the only non-EU post-Soviet country in this program. In 2011-2014, TSMU successfully participated in the EU-funded TEMPUS project MUMEENA (“Modernizing Undergraduate Medical Education in the EU Eastern Neighboring Area”) that was considered by the EC as one of the successful projects of that period. In 2012 Faculty Development Center was established at TSMU where regular trainings have been conducted in medical education methodology. And finally, in 2018 AMEE International Networking Center was opened at TSMU (the third center worldwide).

Discussion and Conclusions: Development of medical education in Georgia is highly related to achievements of TSMU concerning modernizing teaching, learning and assessment with support of AMEE and European partners.

Take-home Messages: TSMU has greatly contributed to the modernizing medical education in Georgia.

Patil Teaching Innovation Award

#PA1 (3810)

Medical Massive Open Online Course (MOOC) for Abdominal Ultrasound Education - A novel paradigm for continuous professional development in Thailand- A multicenter cross-sectional study

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ABSTRACT:

Background: Massive open online course (MOOC) is alternatively an effective learning tool, providing education for massive number. In Thailand, only few free platforms existed. Despite vast varieties of uploaded non-degree courses on these platforms, there is no free online MOOC for medical ultrasound education. In collaboration with faculty of Engineering, Chulalongkorn University, we piloted the first medical MOOC in Thailand on 02/01/2019 with 500 accounts for 3 months. The 4-month free-enrolment course was subsequently launched on website <https://www.mycourseville.com/?q=onlinecourse/store/2>, from 29/07/2019 with 5,000 available accounts.

Summary of Work: Six organ-based chapters (419mins VDOs in total)-including lectures of liver/biliary system, gallbladder, KUB, spleen, pancreas, and great vessels- conducted in Thai from experienced radiologists, were provided with adjunct learning documents and scanning protocols. Ultrasound knowledge used in medical, surgical, gynecology and emergency conditions along with Thailand's epidemic diseases- cholangiocarcinoma- were also delivered. MCQ pre-test and post-test, sub-categorised into sonographic anatomy, scanning technique, pathology and image recognition, were analysed evaluating effectiveness of learning. Satisfaction scores and attitude toward ultrasound practice were also assessed. Those who completed the individual course with post-test score of >70% of every lecture would receive a certificate of completion.

Summary of Results: A total 3,247 students were enrolled; including medical students, GPs, residents, fellows, and specialists from 24 of the total 25 medical schools in Thailand, with some from aboard. Of these, 154 students (4.7%) completed the course.

Discussion and Conclusions: Overall, eighty percent of students expressed both positive satisfaction scores utilising the Linkert scale in most modalities- content, lecturer, document, demonstrating pictures, and online system, and positive attitudes/perspectives, by comparing results before and after course enrolment concerning the importance of ultrasound, encouragement in performing the ultrasound, feeling certain in doing the ultrasound, and thinking that ultrasound is easy, toward ultrasound practice using questionnaires. Overall, a significant increase of post-test score is observed in comparison to the pre-test scores using paired t-test($p < 0.05$).

Take-Home Messages: MOOC is an effective learning platform to allow everyone regardless of their background and previous knowledge can access from anywhere, at any time, with the electronic device. The platform can be adapted to support further continuous professional development, i.e. to engage in more medical ultrasound training and practice.

Patil Teaching Innovation Award

#PA2 (4032)

Multidisciplinary Healthcare and First Aid Provider Training for In-Flight Medical Emergencies: A Crowdsourcing Session followed by an Airplane Simulation

AUTHOR(S):

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ABSTRACT:

Background: Is there a healthcare provider on board? Healthcare providers may be less confident for in-flight medical emergencies (IFME), as these situations are not part of usual curriculum or practice contexts (e.g. hospitals).

Summary of Work: The goal was to pilot a training session for healthcare and first aid providers to improve their confidence in navigating IFME. This session involved: i) an activity to crowdsource insights from multidisciplinary healthcare and first aid providers, followed by reviewing considerations of a CMAJ 2018 article on airplane emergencies, and ii) 2 airplane simulations (syncope and cardiac arrest). During crowdsourcing, 7 IFME learning objectives were explored: i) challenges, ii) solutions, iii) equipment, iv) taking vitals, v) general approach, vi) cardiac arrest approach, and vii) human resources / role-delegation. Knowledge and approaches extracted were then applied in simulations. Participants provided scores out of 7.00 for: i) satisfaction of crowdsourcing activity and simulation and ii) self-rated confidence on learning objectives at baseline, post-crowdsourcing activity, and post-simulation. Results were analyzed with repeated measures ANOVA with post-hoc Tukey.

Summary of Results: Participants rated the crowdsourcing activity (6.70/7.00, n=11) and simulation (6.50/7.00, n=11) positively. Confidence in the 7 topics improved from baseline (2.49/7.00) to post-crowdsourcing (5.23/7.00) to post-simulation (5.94/7.00). Significant differences ($p < 0.01$) between baseline and post-crowdsourcing, and between baseline and post-simulation were observed. There was no significant difference between post-crowdsourcing and post-simulation.

Discussion and Conclusions: Overall, self-confidence in topics of IFME improved after just one crowdsourcing session, facilitated through group discussions and mental rehearsal. It is unknown whether offering simulation alone, without a preceding crowdsourcing session, would improve self-confidence in IFME topics. Although not statistically significant (perhaps due to small sample size), adding simulations on top of a crowdsourcing activity demonstrated a trend towards improved self-confidence on IFME topics, likely through the promotion of memory retention through active learning and repetition.

Take-Home Messages: The strategy of crowdsourcing answers to targeted questions surrounding IFME topics is an effective facilitation tool for improving multi-disciplinary healthcare and first aid providers' self-confidence on these issues. A follow-up simulation helps maintain self-confidence and allows opportunity for practice and rehearsal.

Patil Teaching Innovation Award

#PA3 (4373)

Understanding why failure is productive

AUTHOR(S):

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ABSTRACT:

Background: Productive failure (PF) is an instructional approach that requires learners to struggle as they attempt to generate solutions to complex problems before receiving instruction. PF has been shown to prepare students for later learning of new, related knowledge. Given the effort required to design and engage students in activities at which they will ultimately fail, is the struggle really worth it? Does the act of generating failed solutions build conceptual understanding? Or is it sufficient that students review and compare incorrect answers with canonical answers? This study compared the effectiveness of PF instruction (requiring participants to generate solutions) with vicarious failure (VF – exposing participants to previously generated incorrect solutions) on a preparation for future learning assessment, immediately after learning and after a one week delay.

Summary of Work: Year one students (N=42) enrolled in the PharmD program at the University of Toronto were randomly assigned to a PF (generation) or a VF (exposure) learning condition. The problem of estimating renal function based on serum creatinine was described to participants in the PF learning condition, who were then asked to generate a solution. Participants in the VF condition learned about the same problem and were given incorrect solutions that other students had created, as well as the Cockcroft-Gault formula, and asked to compare and contrast the equations. Immediately thereafter all participants completed a series of tests designed to assess acquisition, application, and preparation for future learning. The tests were repeated after a one week delay.

Summary of Results: Participants in the PF condition outperformed those in the VF condition, both on the immediate assessment, and after a one week delay.

Discussion and Conclusions: These results emphasize the crucial role of struggle and generation in learning. When preparing novice students to learn new knowledge in the future, generating solutions to problems prior to instruction may be more effective than simply learning about someone else's failures and correct equations.

Take-Home Messages: Struggle and failure are most productive when experienced personally by a learner because it requires the learner to engage in generation, which deepens conceptual understanding.

Patil Teaching Innovation Award

#PA4 (4611)

A national pilot programme of home-based simulation using novel 3D hydrogel models for junior vascular trainees

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ABSTRACT:

Background: Simulation is becoming an increasingly important resource in modern surgical training, which can improve both technical skill and trainee confidence performing a range of vascular procedures. However, there is a clear need to provide more equitable access to regular practice with feedback. In addition, new technologies, such as 3D bio-fabrication, can help to create realistic, low-cost, biodegradable models to support skill acquisition.

Summary of Work: Novel 3D hydrogel models were validated for use in vascular simulation. A 4-month programme of simulation was then developed and delivered to all UK Vascular Speciality (Year 3: ST3) vascular trainees (residents). A website provided learning resources including step-by-step tutorial videos. Each trainee was asked to undertake tasks relating to open vascular anastomosis using a specially designed portable kit box. Trainees could practice each task multiple times before recording and uploading a video of their final performance to a file-sharing platform. Feedback was provided by a vascular consultant using a previously validated assessment matrix with free-text comments.

Summary of Results: Most vascular consultants and trainees (n=33) rated the models as “good” or “very good” and the majority (94%) agreed they were suitable for vascular anastomosis training. 24 trainees took part in the VASIMULATION programme. 13/24 (54%) completed Task One, 9/24 (38%) completed Task Two, 4/24 (17%) completed Task Three, 2/24 (8%) completed Task Four and 1/24 (4%) completed Task Five.

Discussion and Conclusions: New technologies encourage innovative formats for delivery of simulation training, which are successful, flexible and cost-effective. This pilot study is first of its kind to provide home-based open vascular simulation training in the UK. It demonstrates proof-of-concept although overall trainee engagement was sub-optimal. Previous studies have shown that it can take several years for a simulation programme to become established and it is often most effective as a mandatory part of the curriculum.

Take-Home Messages: • Home-based simulation can help to overcome geographical disparities in access to simulation • This could be adapted for low resource settings • Bio-fabrication offers an exciting opportunity to develop a range of models, including those with standardised pathologies • Further work is needed to evaluate how to maximise trainee engagement

Patil Teaching Innovation Award

#PA5 (4732)

Pioneering a medical education MOOC for universal enhancement of social learning and observational skills

AUTHOR(S):

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- Leonard Shapiro, University of Cape Town, South Africa
- Kathryn Bell, James Cook University Hospital, UK
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ABSTRACT:

Background: Recent educational research evidence underpinned by educational theory and theories of drawing has informed effective approaches for improving student observation, visualisation, haptic reasoning and visuospatial ability when integrating art-based learning methods. Such skills are crucial for anatomy learning, clinical observation, diagnosis and surgical training.

Summary of Work: Working as a multidisciplinary and multinational collaborative team of academics, artists and students, we have recently published a detailed and comprehensive guide for medical educators, describing an innovative multisensory 'Haptico-Visual Observation and Drawing' (HVOD) learning process. This art-based approach concerns the haptic and visual exploration of 3D objects in order to support student spatial understanding. The focus of the HVOD observational process involves graphite marks corresponding to the objects under investigation being simultaneously made on paper. Findings from our previous work indicate that HVOD can enhance perceptual understanding and memorisation of the three-dimensional form of observed anatomical structures. In order to determine the specific value of HVOD for learning, we have explored the pedagogic basis of multisensory observation and drawing through identifying medical educator experiences. Ethical approval was granted by Newcastle University.

Summary of Results: Themes arising from our phenomenological focus-group study indicate that HVOD is perceived as an engaging process of spatial exploration within a supportive social environment. However, educators identified limitations regarding the potential for effective integration into medical curricula. Consequently, we have improved HVOD through creation of an optimised 'ORDER Touch' process, based on the research-informed framework provided by our established Observe-Reflect-Draw-Edit-Repeat (ORDER) approach.

Discussion and Conclusions: Our experiences, research findings and systematic review of the relevant medical education literature has informed development of an ORDER Touch massive open online course (MOOC). This course will be delivered to a global audience of medical educators and students with the aim of supporting social learning, enhancing three-dimensional spatial understanding and improving knowledge of the anatomical basis of clinical examination.

Take-Home Messages: Our development and implementation of an innovative and universally accessible art-based medical education MOOC will have far-reaching significance. Our MOOC will support enhancement of clinically-relevant anatomy knowledge; development of transferable skills in observation, drawing, communication and collaboration; and widespread availability and flexible delivery of technology-enhanced and art-based learning in medical education.

Patil Teaching Innovation Award

#PA6 (4757)

The Global Health Equity Clinical Immersion (HECI); An Innovation in remote International Placements:

AUTHOR(S):

- **Peter Jones, Bond University, Australia***
- Neelam Maheshwari, Bond University, Australia
- Tracey Nielsen, Bond University, Australia
- Shannon Springer, Griffith University, Australia
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- Janie Smith, Bond University, Australia

ABSTRACT:

Background: Each year hundreds of medical students pursue electives in resource poor settings, globally. This “rite of passage” has been criticized as “Students practising on the poor”. At Bond University in Australia we developed a new multidisciplinary clinical placement model in Kira Kira, Solomon Islands in 2013; which has now been replicated in five resource poor settings internationally. It demonstrates how students from multiple disciplines can gain a transformational personal experience and have a positive impact on the host communities.

Summary of Work: We selected five sites where students can complete a HECI – Napranam and Port Hedland-Australia; Kira Kira- Solomon Islands; Gujarat-India and Cape Town- South Africa. Partnership agreements and regular visits by academics underpin each site. Comprehensive pre-departure preparation includes a global health module, 6 hours of tutorials providing site specific cultural, epidemiological and risk management knowledge. A new model of peer to peer supervision has been developed and successfully implemented as part of the HECI. A common case-based assessment for medical students is used to compare the health care systems, observe health equity issues and identify sustainable development goals.

Summary of Results: In 2020, sixty medical students from a cohort of 104 will complete a HECI at above sites, and thirty from Law, Urban Planning and Allied Health will complete a work integrated placement in Solomon Islands. Student evaluations demonstrate these placements as the highest rated and transformative personal experience their respective degree program. The program has achieved national recognition by winning the Australian University Award for Global Citizenship 2019; and resulted in 20 students attaining a publication.

Discussion and Conclusions: The overseas elective is an under-utilized curriculum opportunity for health professional students to gain a deep understanding of global health issues. The HECI model could be implementable by any health professional program at a range of sites.

Take-Home Messages: The HECI program is an innovative health care clinical immersion that has delivered sustained outcomes over seven years. The program inspires young graduates to consider a future where they might choose to help those communities most in need and thus make a sustainable difference, globally.

Patil Teaching Innovation Award

#PA7 (5340)

The use of Very Short Answer Questions (VSAQs) in Team Based Learning (TBL)

AUTHOR(S):

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ABSTRACT:

Background: Team Based Learning (TBL) relies on the use of Single Best Answer Questions (SBAQs) to enable provision of immediate feedback; a core aspect of TBL. Very Short Answer Questions (VSAQs) are a reliable and discriminatory assessment tool that encourage learners to use more authentic clinical reasoning strategies compared to SBAQs. However, the challenge of managing marking VSAQs has prevented their use in TBL thus far. We set out to examine the utility of VSAQs in a TBL setting using a newly developed online platform that allows for real time marking and immediate feedback on student responses.

Summary of Work: A TBL session developing an understanding of the differential diagnosis of headache was designed using an online TBL platform. Technology was developed to allow immediate marking of the VSAQs within the TBL session by the facilitator. 209 third year medical students at Imperial College London participated. As part of the readiness assurance process, they completed five VSAQs and five SBAQs; which were marked in real time providing immediate feedback.

Summary of Results: SBAQs were automatically machine marked. Facilitators were able to mark all VSAQs in real time during the Individual Readiness Assurance Test (iRAT) which facilitated provision of immediate feedback during the Team Readiness Assurance Test (tRAT). The mean time taken to mark VSAQs was 421 seconds (range 311 – 522 seconds). For VSAQs the number of attempts made by students to reach the correct answer ranged from 1-38, compared to 1-4 for SBAQs. 85.11% of students agreed that VSAQs are a better representation of how they would be expected to answer questions in clinical practice. 71.63% agreed that using VSAQs in TBL sessions help to emphasise group discussions.

Discussion and Conclusions: VSAQs can be used effectively in TBL setting using newly developed technology. The wide range of attempts at, and students' perspective of, VSAQs are suggestive of their positive impact on student discussion during TBL.

Take-Home Messages: VSAQs can be feasibly integrated into TBL sessions to enrich group discussions.

Patil Teaching Innovation Award

#PA8 (6428)

Medical Student Scholarly Concentrations Program: Student, Project, and Mentor Factors Associated with Student Publications

AUTHOR(S):

- *Stephen Sozio, Johns Hopkins University School of Medicine, USA**
- Jenny Park, Johns Hopkins University School of Medicine, USA
- Mary Catherine Beach, Johns Hopkins University School of Medicine, USA

ABSTRACT:

Background: Medical schools around the world have developed Scholarly Concentrations (SC) programs, which require students to conduct a mentored research project. The goals of SC programs are to foster curiosity, critical thinking, and future academic careers; perhaps the most common metric used to judge the success of these programs are student publications. Our study examined which were associated with publications—student, project, or mentor factors.

Summary of Work: With IRB approval, we studied graduating students (2013-2019) in the Johns Hopkins SC program. At baseline, students indicated their interest in research. After the course, students rated the quality of their mentor using a validated scale. We abstracted student and mentor publications from SCOPUS. The associations of student (baseline interest in research), project (type of scholarship), and mentor factors (H-index and student ratings of quality) with each outcome (total-publications, student-first-authored, publications-with-mentor, and citations-per-publication) were explored using multivariable-adjusted negative binomial or log-linear regression.

Summary of Results: 645 total students completed the SC Program; 40% began the course with definite interest in research. Most students conducted clinical research (45%); the remainder did public health (29%), medical humanism (14%) and basic science (11%). Mentor mean H-index was 31 (SD 23). In the four-year follow-up after the course, students published 2008 manuscripts; 802 were student-first-authored and 673 were published-with-mentor. Student baseline research interest was associated with all publication outcomes ($p < 0.002$) but not with citations-per-publication. Students doing clinical vs. other research had more publications ($p < 0.001$) but not more first-author-publications or citations-per-publication. Students working with higher H-index mentors had more with-mentor-publications ($p = 0.002$), without differences in total-publications, student-first-authored or citations-per-publication. Student ratings of mentor quality were associated only with publications-with-mentor ($p = 0.001$) and citations-per-publication ($p = 0.020$).

Discussion and Conclusions: Although student publications during medical school is strongly related to student characteristics at the start of the course, programs looking to increase degree to which students take primary ownership of a project (first-authored) and encourage higher impact publications (citations) should consider recruiting and training high-quality mentors.

Take-Home Messages: There are a complex set of factors that influence student publication, which must be taken into account when evaluating the success of SC programs.

Patil Teaching Innovation Award

#PA9 (6573)

“ECG and the rhythms of the heart”: Music as an active methodology to teach electrocardiography

AUTHOR(S):

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- Daniel Schubert, Medical Emergencies Department, Rio de Janeiro State University – UERJ – Rio de Janeiro, Brazil
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ABSTRACT:

Background: Teaching electrocardiography is still a challenge for medical educators, and most doctors conclude medical graduation without enough skills to identify potentially lethal arrhythmias on the ECG. Music has a metaphoric nature and promotes learning in less conventional ways. The correlation between music and heart rhythms can expand student’s perception and our hypothesis is that music can be an active tool to teach ECG.

Summary of Work: We designed the workshop: “ECG and the Rhythms of the Heart,” based on the similarity between cardiac arrhythmias and rhythmic components of selected songs. The purpose was to facilitate the recognition of arrhythmias on the ECG. We invited 86 pre-clinical students to access an online platform with theoretical content and a multiple-choice pre-test. During the workshop, students were divided into four groups and enrolled in gamified activity with 10 challenges. Each challenge consisted of a clinical case, followed by the presentation of an ECG strip together with a song with a similar rhythm. The groups answered questions about both the ECG and music. Written feedback and post-test evaluations were obtained.

Summary of Results: All students participated in the workshop. Group final scores ranged from 580 to 920 (maximum 1000 points). Post-test mean grades were higher than pre-test grades (9.42+0.96 vs 8.19+1.91; $p < 0,001$). The feedback was answered by 69.8% of the students and the majority (99.3%) approved music as a learning tool. The main codes on the answers were “dynamic”, “interactive”, “interesting” and “fun” and “rhythm identification” was a main categorie. Suggestions for future musical activities were included by 23.4% of students.

Discussion and Conclusions: This innovative methodology engaged students and improved their knowledge of electrocardiography. The results of this preliminary study are encouraging and more research in the use of music to teach ECG is required.

Take-Home Messages: The metaphorical and representational nature of music offers another perspective for the introduction of complex concepts or drastic situations, such as a cardiac arrest, to pre-clinical students.

Patil Teaching Innovation Award

#PA10 (7071)

Delivering high impact translational education: a model for continuing professional development

AUTHOR(S):

- *Mini Singh, University of Manchester, UK**
- Bradley Quinn, Health Innovation Manchester, UK
- Charlotte Welsh, University of Manchester, UK
- Luke Wookey, Salford Royal Foundation Trust, UK

ABSTRACT:

Background: Continuing professional development (CPD) activities are mandatory for healthcare professionals to evidence their clinical competence. Content is driven by curricular requirements, individual interests or industry sponsorship. Multiple teaching methods are employed with minimal evidence of change in practice or positive health economic outcomes. In an era of worldwide economic constraint and workforce shortage it is essential to design effective education that provides value for clinicians, the healthcare system and most importantly the population they serve.

Summary of Work: A novel CPD programme on skin lesions (an exemplar for cancer) for community practitioners was assessed for direct impact on health economic outcomes. Content was driven by population need (mixed method analysis of referral letters to specialists), consultation with learners and national healthcare policy. Blended learning, flipped classroom model underpinned by clinical reasoning theory informed design. Health economic outcomes were measured through a mixed method approach: quantitative data comparing skin cancer referrals and prescribing patterns six months pre and post programme completion with qualitative thematic analysis of case reflections.

Summary of Results: Ninety-eight clinicians (fifty-three general practices) from two clinical commissioning groups (CCG1 and CCG2) participated in the programme. CCG1 commissioned the programme for all 39 practices demonstrating a slowing of growth of cancer referrals from 20% to 6% (2017/18 pre-education vs 2019/20 post education). Whilst with CCG2 a slowing of growth of cancer referrals from 38% (non-participating practices, n= 18/ 32) compared with 10% (participating practices, n=14/32). Both CCGs have had a consistent 40% reduction in prescribing of inappropriate therapies for skin lesions during the post education period. Thematic analysis of 220 consultations identified significant behaviour change in the participants (improved accuracy in decision making, holistic care, service use and shared decision making).

Discussion and Conclusions: Results from this study indicate that CPD activities embedded in pedagogy, integrated with population need and healthcare policy can directly improve health economic outcomes. This CPD model could meet challenges in delivering effective healthcare education.

Take-Home Messages: We need to take a population-based translational approach to the design of CPD activities if we are to provide benefits to our patients, clinicians and as a consequence the healthcare system.

Patil Teaching Innovation Award

#PA11 (7077)

Neurophobia: Improving postgraduate confidence through a structured learning and teaching clinical carousel

AUTHOR(S):

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- Benjamin Hui, University Hospitals Birmingham NHS Foundation Trust, UK
- Jubeyr Ahmed, University Hospitals Birmingham NHS Foundation Trust, UK
- Jatinder Kaur, University Hospitals Birmingham NHS Foundation Trust, UK
- Hani Benamer, University of Birmingham, UK

ABSTRACT:

Background: Neurophobia affects both training physicians and medical students (1-3). Neurophobia, which is thought to relate to training (4), potentially contributes to reduced confidence in neurological patient management, increased referral burden, and decreased capacity for already-stretched neurologists to educate (4-6). Despite the acknowledged importance of addressing neurophobia in non-specialist and training physicians (4,5), less interventional evidence is available for postgraduates compared to undergraduates. We explored confidence in neurology among non-specialist junior doctors following their involvement in a neurology patient “carousel”-based teaching method employed in a UK medical school.

Summary of Work: Within the University of Birmingham teaching programme (part of their undergraduate neurology curriculum) called “Neuro-carousel”, voluntarily-recruited junior/non-specialist doctors are rotated around short clinical stations, reviewing individuals with stable neurological features, facilitated by a neurology specialist. This process is then repeated with medical students, where junior doctors play the specialist’s role. Confidence (various measured parameters) was assessed via post-session feedback forms implementing Likert-type scale questions (1=“not at all confidence” to 5=“very confident”). 32 responses were collected across 9 teaching sessions (data collection/sessions ongoing). Data was analysed with Microsoft Excel (parameters excluded: unavailable pre-/post data).

Summary of Results: Mean confidence significantly improved in all categories ($p < 0.000001$ respectively), including: “delivering teaching to medical students” from 3.17 (95%CI: 2.83-3.54) to 4.31 (95%CI: 4.08-4.54); “reviewing a patient with a likely neurological presentation” from 3.17 (95%CI: 2.86-3.48) to 4.20 (95%CI: 3.95-4.45); and “reviewing a neurology patient in postgraduate examinations” from 2.88 (95%CI: 2.51-3.24) to 4.03 (95%CI: 3.76-4.31).

Discussion and Conclusions: Postgraduate confidence improved using an educational model combining patient-assisted clinical-based learning, subsequently reinforced by teaching provided to medical students. This also provides evidence for the utility of activities that support the simultaneous development of postgraduate and undergraduate learners. Further work could explore whether repeated participation further improved confidence, whether confidence was long-lasting, and provided downstream changes in competence and behaviour, and whether postgraduate confidence improves within other educational programmes involving undergraduates.

Take-Home Messages: Neurophobia in postgraduates may be ameliorated through clinical educational programmes that involve both learning and teaching. This could be achieved by incorporating postgraduate learners in undergraduate educational programmes. (References viewable during presentation)

FR1 - AMEE Fringe 1

FR1.1 (6401)

How to grow a professional identity: a philosophical gardening demonstration.

AUTHOR(S):

Anne de la Croix, Amsterdam UMC, location VUmc, the Netherlands*

Sven Schaepkens, Erasmus MC, the Netherlands

Mario Veen, Erasmus MC, the Netherlands

ABSTRACT:

Summary: From zombies (2018), and beetles-in-boxes (2019), the final installment of our philosophical Fringe-trilogy turns to botany. We will come equipped with philosophy books and gardening tools. The development of a medical student to a competent health care provider can be compared to a growing tree. We select the best saplings that - in our educational environment and under our supervision - grow and develop into strong trees. Students acquire clearly distinguishable competencies along the way – the leafs of the CanMeds flower start showing as the student blossoms into a competent doctor. Against this hierarchical, linear tree-like way of thinking philosophers Deleuze and Guattari posit the rhizome: a creeping rootstalk that grows in all directions, forming a network of interconnected nodes, shoots and roots. This chaotic and unmeasurable way of developing might ring true, but is hard to operationalize in a curriculum. In this Fringe, we use botany metaphors to criticize what we see as a decontextualized way of thinking of becoming a doctor, that focuses on theoretical constructs and measurable observations rather than on what concerns trainees in the privacy of their everyday experience. Using real plants, earth, fertilisers, flowers, and sciccors on the stage, we aim to show the complexity of professional identity formation in the field of medical education. Make sure to bring your gardening tools!

FR1 - AMEE Fringe 1

FR1.2 (5713)

Lucky We Got These Cell Membranes!

AUTHOR(S):

*Gita Vita Soraya, Faculty of Medicine, Hasanuddin University, Indonesia**

Rina Masadah, Faculty of Medicine, Hasanuddin University, Indonesia

ABSTRACT:

Summary: The introductory biomedicine course at our medical school is often perceived as a long and daunting journey for freshly enrolled undergraduates. With surmountable amounts of core concepts in anatomy, physiology, histology, and biochemistry, information overload becomes a common issue burdening first-year students who are still figuring out their way in medical school. It is no doubt that when used appropriately, music can be an effective tool to teach and ensure that core concepts are easily retained. Musical approaches have been shown to enhance memorisation, act as a mnemonic device, and create a more relaxed teaching and learning environment. Furthermore, by choosing popular tunes, we are providing students with means of effortless conceptual recollection. Not to mention, biochemistry and cell biology are definitely much more fun when tunes are involved! Here we present a song to use in assisting students in grasping the concept of cell membranes and cell communication. We call it Lucky We Got These Cell Membranes since it is sung to the pop tune Lucky by Jason Mraz. But being the medical teacher, we also feel the need to show an accompanying video to make sure they don't miss out on the science behind the lyrics. In this session, we invite you to sing along to this laid-back tune and perhaps refresh your memory on the phospholipids? Who knows, you may even wish to suggest a line or two! Just don't blame us when you end up singing these lyrics instead of the original one next time you go karaoke!

FR1 - AMEE Fringe 1

FR1.3 (6558)

A Picture of Health: Using Graphic Medicine to teach professionalism and widen student perspectives at medical school

AUTHOR(S):

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ABSTRACT:

Summary: Professionalism is a fundamental focus of medical education. A crucial aspect of professionalism is how students perceive themselves as future doctors and the associated behaviour expected of them - termed “professional identity” – and this is associated with psychological wellbeing, social integration and career attainment. Visual aids, such as diagrams, mind maps or flow charts, are well-established implements in medical education; however, the utilisation of visual narrative remains in its early development. Comics, with a distinct combination of words and visuals, have significant potential to effectively communicate the complex impacts of health pathology and adversity. Even with recent proliferation of healthcare related graphic texts, known as “Graphic Medicine”, the stereotyped history of comics as mediocre childhood literacy dominated by superheroes has discouraged educators from utilising this rich field. Whilst professionalism is being increasingly incorporated into medical education, this is often approached didactically and focuses less on students’ own perceptions of professionalism and professional identity. This highly interactive presentation therefore seeks to determine if Graphic Medicine can provide a constructive avenue to cultivate professionalism and permit students to perceive and express challenges professionalism can create; ultimately alleviating stress and isolation within a demanding career. Experiences from a Graphic Medicine module at University of Glasgow delivered to 2nd and 3rd year medical students will be discussed alongside accompanying student artwork. The module takes an interdisciplinary approach that integrates nurses, doctors, cartoonists, art students and patients into teaching practices, and strives to widen student perspectives on urgent intersectional issues such as patriarchal structures, institutionalised racism and burnout. To explore this, delegates will be invited to draw their own short comics. Artistic prowess is not required. In summary, this presentation will examine how Graphic Medicine can be used as a creative, accessible pedagogical tool to understand, model and reflect on professionalism and professional identity.

FR1 - AMEE Fringe 1

FR1.4 (5403)

#HaiQs

AUTHOR(S):

*Assim Javaid, NHS, UK**

ABSTRACT:

Summary: Syllables arranged Carefully five-seven-five Make up a haiku A form that forces Precision and succinctness To the mind's forefront I have introduced A daily quiz on Twitter Using this metre Social media Allows participation With relative ease Light-hearted poems Undermine the trepidation Of public answers No need for unease When tests are framed as a game Delight masks mistakes If interest has Taken hold please enjoy the Example below "Dealt A Faulty Gene Found I've, oh, hatred for those Everlasting Coughs" Cystic fibrosis! You'll find the gene intertwined Throughout the poem Explaining answers Offers a chance for readers To learn something new A question takes shape "Would others enjoy writing Haikus of their own?" In this submission A unique approach to testing Will be presented Data from Twitter Can determine engagement Through careful study Perhaps this shall sway Some to see the merits of Poetic quizzes For those left unmoved Perhaps reading my work live Will bring enjoyment This; my proposal HaiQs for fun and learning At your conference

FR2 - AMEE Fringe 2

FR2.1 (7055)

Integrating Arts- and Theater-Based Curricula in the Traditional Medical School Curriculum: Opportunities for Success and Challenges Faced

AUTHOR(S):

*Alexis del Vecchio, University of South Carolina School of Medicine Greenville, USA**
Phillip Moschella, Prisma Health Upstate, USA

ABSTRACT:

Summary: Communication is a heavily prized skill for healthcare professionals, as exemplified through the emphasis on satisfaction surveys with questions asking patients to rate their healthcare providers skills of listening, courtesy, and respect. Unfortunately, and likely in part as a consequence of the emergence of the electronic medical record and new technologies, patients often comment that they feel their relationships with - especially younger - physicians and nurses have eroded and become more impersonal over time. A commonly heard complaint from medical educators across the healthcare professions spectrum is that the already crammed medical school curriculum hardly can accommodate increased communication and interpersonal skills training. Others confidently state that efficient, empathetic communication is an innate skill, that some are simply born with it, or, that is, that some physicians are merely gifted with better bedside manner. But what if there was a way, through short, economical, easily applied, hands-on exercises, for healthcare professionals to develop such skills in a supportive, approachable, and fun learning environment? Inspired by the professional acting work of one of the co-authors, we have facilitated acting and theater exercises to healthcare professionals of all stripes across a variety of practice settings to improve their interpersonal skills, which has been universally well received by participants. What we propose is a fundamental revolution of communication and interpersonal skills training across healthcare professions, with a vision to longitudinally integrate such exercises across the medical education continuum. To present our innovation, we will involve the audience in a selection of short bursts of acting exercises, which can be accommodated within the prescribed 15-minute time limit, and is amenable to any size audience, no matter how large or small. Because the presenter is a professional, trained theater and film actor, the tone of the presentation will be convivial, engaging, and highly performative. A safe setting for experimentation will be facilitated. No acting or performance background is expected from the audience. Note: The speaker will be a resident physician (MD) at the time of presentation, if accepted for this conference.

FR2 - AMEE Fringe 2

FR2.2 (4678)

Shall we dance? New moves for learning

AUTHOR(S):

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Michel Stockler, University of Campinas (UNICAMP), Brazil

Ugo Caramori, University of Campinas (UNICAMP), Brazil

Eliana Amaral, University of Campinas (UNICAMP), Brazil

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ABSTRACT:

Summary: Imagine it is your first class and in front you there are plenty of students with different learning styles. Although we see learning as an active process, how can we make it really active and meaningful? Have you ever thought that every student learns differently and part of good teaching is to recognize these differences and turn your classroom in a real place of sharing, where students can get in touch with their individual processes of learning. Stop doing Kolb tests and let's get out of the box! How can we make students experience their different learning styles? How about some art to get it through? Different music styles make your soul beat and body move in various ways, so close to how we are more likely to learn in our individual way. Let's get moving and in touch with old and new learning theories through a dancing-based experience with evidence-based medical education. Shall we dance?

FR2 - AMEE Fringe 2

FR2.3 (5744)

Music as an Analogy for Medicine

AUTHOR(S):

Wendy Stewart, *Dalhousie Medicine New Brunswick, Canada**

ABSTRACT:

Summary: Limited literature exists on the use of music in the art and practice of medicine, and yet there is a growing body of literature on how our brains and bodies are impacted by and respond to music. Our brains are designed to engage with music. Different areas of the brain respond to different aspects of music: special cells entrain to the beat, others respond to the meter, the melody and harmony, and the emotion in music. Listening and playing music impacts our blood pressure and heart rate, can enhance our wellbeing and reduce serum cortisol, improve reading and problem solving skills and increase IQ. Singing and playing music together can reduce stress, enhance collaboration and develop relationships with one another. Music can be used to define the quality of our days, utilizing different rhythms and tempos to change our physiological responses. Amidst growing concerns regarding health professional burnout and suicide, and the increasing demands of clinical care, we need to find meaning again in the practice of medicine and rediscover the excitement and passion that led us to enter the profession in the first place. This interactive performance will introduce the audience to different aspects of music and the role it could play in medicine. It will provide an understanding of how music is analogous to medicine, help them connect with the joy and passion of music in their own lives, and consider how it could be used to change our approach to caring for patients and each other.

#RP1 - Research Papers: Assessment

#RP1.1 (3724)

Ready, Willing and Able: A model to explain successful use of feedback

AUTHOR(S):

- Alexandria Garino, Yale School of Medicine Physician Associate Program, USA*

ABSTRACT:

Introduction: Effective feedback enhances motivation and achievement, and is fundamental for calibration of self-assessment. Feedback fosters adaptive learning traits. Best practice guidelines have been developed to guide delivery of feedback; however, some learners continue to struggle despite robust delivery routines. Despite advances, the complexity of the relationship between feedback and learning is still poorly understood. A model to explain how learners use feedback to change their practice and behavior is needed. This study strove to understand how third and fourth year medical (MD) students and second year physician assistant (PA) students at one academic health center in the northeastern part of the USA respond to, interpret, and learn from feedback.

Methods: MD and PA students in their clinical years sat for semi-structured interviews. Data were collected between August and December 2016. The interviewer summarized and paraphrased often, a technique that provided a form of member checking. Results were analyzed using grounded theory methods and a constructivist perspective. Gerund methodology was used during open coding and constant comparative methods used during focused coding. A reliability coder verified 3 excerpts for every code to ensure dependability of the coding structure. The coding hierarchy informed theory development. Participants were categorized into 2 groups: effective learners and struggling learners. Code frequency supported groupings. An overarching theory was developed to explain how participants respond to and successfully use feedback to learn. Interfering factors were identified. Memoing was used through all phases and supported reflexivity.

Results: Fifteen respondents were interviewed: eight PA and five MD students. Three participants were male (1 PA; 2 MD). Five major domains emerged from analysis: Affect, Understanding, Valuing, Applying, Assessment of Learning. Thematic saturation was achieved. Participants differed in their ability to use feedback to learn. Participants who successfully integrated feedback had several characteristics in common; they: (1) did not take feedback personally; (2) understood what was needed to change; (3) valued the preceptor and criticism; (4) created a positive narrative around the experience; (5) were motivated; (6) employed effective learning strategies; and (7) used internal benchmarking to judge if learning had occurred. A theoretical model was developed.

Discussion and Conclusions: Successful use of feedback requires a learner to be ready, willing and able to learn from feedback. Readiness required the learner to regulate emotion, to understand the message and to know how to implement the criticism. Willingness required a valuing process that resulted in positive meaning making about the experience. This process included judgments made about the messenger, the message and one's self-assessment. Learners' values and beliefs influenced the judgments made. Willingness also required motivation and a growth mindset. Able learners needed to utilize strategic and adaptive learning behaviors. Barriers to feedback use included emotional interference, which sometimes occurred before the encounter even began. Struggling learners were unable to understand the encounter as part of a larger context. The inability to create a positive narrative resulted in the learner discarding the criticism. Struggling learners also were unable to utilize adaptive learning strategies.

References: Garino, A. (2019). Ready, Willing and Able: A model to explain successful use of feedback. *Advances in Health Sciences Education Theory and Practice*. doi: 10.1007/s10459-019-09924-2 [Epub ahead of print] Hattie, J., & Timperley, H. (2007). The power of feedback. *Review of Educational Research*, 77, 81-112. Winstone, N. E., Nash, R. A., Rowntree, J., & Parker, M. (2017b). 'It'd be useful, but I wouldn't use it': Barriers to university students' feedback seeking and Recipience. *Studies in Higher Education*, 42, 2026-2041.

#RP1 - Research Papers: Assessment

#RP1.2 (3898)

Student Predictors of Exam and OSCE Performance in a Flipped Classroom Curriculum

AUTHOR(S):

- **Kayley Lyons, Monash University, Australia***
- Tina Brock, Monash University, Australia
- Dan Malone, Monash University, Australia
- Paul White, Monash University, Australia

ABSTRACT:

Introduction: Much of the research on flipped classrooms focus on whether these models are effective or which elements of these models are most effective[1]. However, there is a lack of research within and outside of health professions education that investigates which student factors predict success within flipped classrooms[1]. As flipped classrooms theoretically require more self-direction and self-regulated learning from students, student factors may become more important than ever before. To inform this, the authors examined the effects of student demographics, baseline factors, prior performance, course engagement, and student time management of pre-class online activities on student performance for course exams and objective structured clinical examinations (OSCEs) problem solving and communication scales. The investigation occurred in the context of an entirely “flipped” curriculum in which all of the courses followed an identical flipped classroom design.

Methods: Study participants were 159 pharmacy students (response rate 99%) enrolled in a five-year BPharm (Hons)/MPharm degree program at Monash Faculty of Pharmacy and Pharmaceutical Sciences. Three years of data were collected between 2017-2019 from twelve courses, the learning management system (LMS), and institutional databases. Explanatory variables included demographic student factors incorporating gender, international student designation, and student age. Baseline student factors included the incoming Diagnostic English Language Assessment (DELA) writing test score and incoming situational judgment test scores for teamwork, integrity, empathy, and critical thinking/problem solving scales[2]. Prior performance was represented by students’ incoming Australian Tertiary Academic Rank (ATAR). Course engagement factors included student proportion (%) of attendance in lectures, workshops, and a skills coaching program. Explanatory factors also included flipped classroom pre-class online activity completion (%) and student time management of these activities. For example, students were categorised as “Prepared” if they demonstrated in the LMS that they often completed pre-class activities before lectures. The outcome variables included a three year composite of OSCE communication scores, a three year composite of OSCE problem solving scores, and average year two end-of-course exam marks. Data were analysed using bivariate associations. Models were computed using multivariate linear regression to predict the outcome variables.

Results: Statistically significant positive predictors of OSCE communication performance included domestic (i.e., Australian) student designation, higher baseline written English proficiency, and pre-class online activity completion. This model explained 21.8% variance (adjusted R-square .165). Statistically significant positive predictors of OSCE problem solving included workshop attendance and low empathy as measured by a baseline situational judgment test (SJT). This model explained 17.3% variance (adjusted R-square .122). Statistically significant positive predictors of year two end-of-course exams included the Australian Tertiary Academic Rank, completing pre-class online activities prior to lectures, high integrity as measured by SJT, and the pre-class online activity completion. This model explained 30.3% variance (adjusted R-square .256). All other factors were not significant at the .05 level.

Discussion and Conclusions: Alternative sets of factors predicted the qualitatively different outcomes of OSCE communication, OSCE problem solving, and end-of-course exams. The results contribute to a growing body of flipped classroom research highlighting the importance of completing pre-class activities and timing the completion of pre-class activities before lectures. Since students, educators, and workplace leaders have a vested interest in understanding the factors that predict academic performance, this study will inform future research into additional contexts, explanatory factors, and outcome variables.

References: [1] van Alten DC, Phielix C, Janssen J, Kester L. 2019. Effects of flipping the classroom on learning outcomes and satisfaction: A meta-analysis. *Educ Res Rev* 28:100281. [2] Patterson F, Galbraith K, Flaxman C, Kirkpatrick CM. 2019. Evaluation of a situational judgement test to develop non-academic skills in pharmacy students. *Amer J of Pharm Educ*: ajpe7074.

#RP1 - Research Papers: Assessment

#RP1.3 (3755)

Physicians' learning in the workplace: use of informal feedback cues in daily practice

AUTHOR(S):

- **Carolyn Sehlbach, Maastricht University, the Netherlands***
- Pim Teunissen, Maastricht University, the Netherlands
- Erik Driessen, Maastricht University, the Netherlands
- Sharon Mitchell, World Heart Federation, Switzerland
- Gernot Rohde, University Hospital, Goethe University, Germany
- Frank Smeenk, Maastricht University, the Netherlands
- Marjan Govaerts, Maastricht University, the Netherlands

ABSTRACT:

Introduction: We expect physicians to be lifelong learners. Informal learning from clinical practice is an important source for continuing development. Informal learning can be deliberate when physicians consciously aim to improve performance by, for example, seeking feedback or reflecting on experiences from their clinical practice. Feedback-seeking behaviour along with ongoing reflection on performance and performance feedback for the purpose of learning are at the heart of deliberate practice; fundamental to the development of professionals' adaptive expertise (1,2). To support physicians in this process, a better understanding of how they recognize and use informal learning opportunities in everyday work is necessary. This study investigates how physicians use informal feedback as learning cues to adjust their communication from interactions with patients in the outpatient setting.

Methods: We combined non-participant ethnographic observations with semi-structured interviews, to understand physicians' recognition and use of informal feedback. We enrolled 10 respiratory physicians and observed 100 physician-patient interactions at one academic and one non-academic hospital in the Netherlands. Data collection and analysis were performed iteratively according to the principles of constructivist grounded theory. Our conceptual model describes how physicians select and use cues to reflect on and adjust their communication as well as to further develop their adaptive expertise.

Results: Along with significant variations within and across patient encounters, we observed recurring patterns in physicians' communication in reaction to specific cues. Physicians had learned to recognise and use different cues to adjust their communication in patient encounters. They established a 'communication repertoire' based on multiple patient interactions, which many saw as learning opportunities, contributing to development of adaptive expertise. Our findings show differences in physicians' sensitivity to recognise learning opportunities in daily practice which was further influenced by contextual, personal and interpersonal factors. Different factors, such as the atmosphere or goal of the consultation, workload and time pressure, as well as the relationship with a patient not only added complexity to communication in outpatient appointments, they also influenced physicians' ability or willingness to learn from informal performance feedback. Whereas some physicians reported to have little inclination to change, others used critical incidents to fine-tune their communication repertoire, and yet others constantly reshaped it, seeking and recognizing learning opportunities in their daily work.

Discussion and Conclusions: There is a large variation in how physicians use learning cues from daily practice. Their informal learning is influenced by contextual, personal and interpersonal factors, which might either promote or inhibit physicians' reflection and learning. This variation in physicians' use of work experiences for lifelong learning reflects previous findings on expertise development (2). Adaptive experts command a conceptual understanding of when to use their established communication repertoire and when to adapt their communication to different patients or non-routine situations. Our findings suggest that making physicians more aware of when and how they can learn from daily practice may enhance physicians' deliberate use of informal feedback for continuing development. Raising physicians' awareness of experiences as potential learning opportunities might enhance their development of adaptive expertise.

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#RP1 - Research Papers: Assessment

#RP1.4 (3878)

Learner Handover - Who is it really for?

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ABSTRACT:

Introduction: Learner handover (LH), also referred to as forward feeding or education handover, is the sharing of information about learners between faculty supervisors. In Competency Based Medical Education (CBME), assessment should be continuous and involve multiple low stakes assessments that are part of a longitudinal program of assessment. Longitudinal assessment, however, can be challenging in our current fragmented model of rotation-based training. LH is a potential solution to this challenge. Unfortunately, concerns have been raised about LH causing stigmatization or biasing future assessments. Despite these concerns, education handover is being implemented nationally to ease the transition between undergraduate and postgraduate training.^{1,2} Because successful implementation relies on a better understanding of existing practices and beliefs, our purpose was to explore how faculty perceive and enact LH.

Methods: Using constructivist grounded theory, we conducted 23 semi-structured interviews with faculty from two universities in Canada, asking participants to describe their LH practices. All participants were faculty members actively engaged in supervising residents in the workplace. We purposively sampled program directors, both junior and senior faculty, programs that had and had not implemented CBME, and surgical and non-surgical programs. We probed to understand why LH was used, its perceived benefits or risks, and the socio-cultural influences on faculty LH practices. Data were analyzed using the constant comparison approach customary in grounded theory.

Results: All participants advocated that LH was a valuable educational practice. LH was described in terms of both formal events, such as a formal exchange to complete end of rotation evaluations or in informal events, such as discussions at work-related events. LH for learner benefit and for patient safety were explicitly sanctioned and endorsed by faculty. LH was used to inform teaching and feedback and to identify and assist struggling learners, ensuring they were on the right path. Participants also saw LH as fulfilling their need to know which residents they could trust to have the knowledge, skills, honesty, and self-awareness to ask for help in order to provide safe and effective patient care. In addition to the sanctioned purposes of LH, faculty also described motivations more focused on their own needs. LH improved faculty efficiency in their teaching role by focusing attention on learners' needs and priming their feedback. It provided a chance to verify that their observations regarding learner evaluations were congruent with what other faculty were seeing. It also served as a "self-defence mechanism" when faculty were uncertain about a learner's competence and trustworthiness. LH also served social or therapeutic purposes when faculty used it to gossip, vent, or manage insecurities about their assessment of learner performance. Because of its multiple, sometimes unsanctioned purposes, participants advised being reflective about the motivation behind LH conversations.

Discussion and Conclusions: LH occurs both formally and informally and serves multiple purposes for the faculty, in addition to the learner. LH was seen to promote growth for the resident while also providing adequate supervision for both residents and patients. Faculty used LH to save time, manage their insecurities surrounding resident assessment and patient safety, and as a means to quell anxiety surrounding entrustment. Certain unsanctioned aspects of LH, such as gossip and venting were seen as detriments to the system by faculty. As formal LH tools are implemented, faculty needs addressed through informal LH should be considered.

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#RP1 - Research Papers: Assessment

#RP1.5 (3919)

Using video-stimulated interviews with students to evaluate teaching in medical education

AUTHOR(S):

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ABSTRACT:

Introduction: Evaluation of teaching is generally done using surveys. Although the purpose of evaluations is to improve education, survey questions are often preset (not allowing for personally relevant queries), students' answers are often only loosely related to specific teaching practices (limiting their use in future teaching situations), and survey outcomes average out individual perceptions. Ideally, Kirkpatrick and Kirkpatrick propose, "each student in the class could be interviewed and asked specific questions to dig deep and learn all that we wished to know" (2016). In our study, we approximated this ideal with video-stimulated interviews (VSIs), in which participants watch and respond to a recording. VSIs usually yield detailed participant responses that are closely linked to actual practice (Van Braak, De Groot, Veen, Welink, & Giroldi, 2018). Although its potential has been recognized in research context, the interview method also has yet unexplored uses for evaluation of teaching. We used VSIs with General Practitioner residents to evaluate a distinct part of their training program, obtaining insight into what kind of evaluations such interviews generate.

Methods: We recorded 31 VSIs with GP residents about recorded group reflection sessions who participated in those sessions. Residents were asked to pause the recording whenever they watched something that they experienced as negative or positive. The interviewer present would use minimal prompts to elicit evaluative reflections if necessary. All interviews were coded by the first author for negative and positive evaluations, coding every evaluation for its polarity (negative or positive), its object (what is evaluated), whether it was related to teacher behavior or other aspects of teaching (e.g. organizational conditions), and the mechanism (if present) used to account for the evaluation. Also, we coded evaluations for form features resulting from this type of video-stimulated interview. Every fifth interview was double coded by the second author and discussed for consensus before coding proceeded. After coding all interviews, codes were reduced into themes.

Results: Our question for positively or negatively experienced aspects of teaching in video-stimulated interviews resulted in interaction-specific evaluations about any aspect of teaching, accompanied by (sometimes rather elaborate) accounts for their evaluations. Residents evaluated teacher behavior (e.g., specific questions), other residents' behavior (e.g., their way of telling a story for reflection), organizational issues (e.g., group size), and the content of the sessions (e.g., interesting topics for reflection). Different residents could produce conflicting evaluations (e.g., a positive versus negative evaluation of the same teacher behavior). Their accompanying accounts for producing a negative or positive evaluation showed how the specific situation might contribute to a negative or positive evaluation (mechanism). Evaluations mostly concerned actual teaching behavior or aspects of teaching, yielding evaluations like 'this question works very well here, because...'.

Discussion and Conclusions: Video-stimulated interviews with residents yield evaluations that are closely tied to teacher practices as they were done. The specific nature of these evaluations can aid teachers in experimenting with and developing particular practices. The accompanying accounts allow for grounded decisions about whether or not the evaluated practices 'work' for the teachers' agenda in that specific teaching situation. After all, resembling survey evaluation results, video-stimulated evaluations represent individual subjective reflections – and therefore require professional consideration on the part of the teacher. Even despite their time-intensive use, VSI can be a powerful tool to evaluate teaching in a way that produces specific advice for teachers.

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#RP1 - Research Papers: Assessment

#RP1.6 (3939)

Are we generating more assessments without added value? Surgical trainees' perceptions of and receptiveness to cross-specialty assessment

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ABSTRACT:

Introduction: In competency-based medical education (CBME), receiving regular and timely feedback is critical if trainees are to attain the knowledge and skills required to care for an increasingly diverse patient population. Achieving this ideal, however, remains challenging within medicine's unique milieu. The clinical environment can be chaotic and unpredictable, raising concerns surrounding the feasibility of performing continuous workplace-based assessment in an environment where patient care remains the priority. Needing to utilize our existing faculty and resources most effectively, we trained a cadre of faculty to enact distinct assessor roles within a postgraduate Surgical Foundations (SF) training program. This paper focuses on trainees' perspectives concerning the value of "cross-specialty" assessment and the practicability of using outside (e.g. non-surgeon) assessors to provide formative feedback on procedural skills.

Methods: A case study approach was used for this study. 27 PGY-1 surgical trainees were formatively assessed on a basic laparoscopic surgical maneuver; assessments did not impact trainees' advancement. Eight faculty were recruited to act as assessors; all held appointments in a clinical department. Prior to completing assessments, faculty participated in a one-hour training session facilitated by a general surgeon. This formal training session enabled faculty to become oriented to the materials as well as the cognitive and technical requirements of the task. Within the broader study, collected data consisted of field observations, individual interviews with assessors, and focus group interviews with trainees. Interview data was analyzed using a thematic approach. Analysis unfolded inductively, meaning the themes identified were strongly rooted to the data. The interdisciplinary research team met regularly to discuss early analytical insights and mark ideas for coding that would be explored further in subsequent analytic phases.

Results: While a few trainees spoke positively about their experience, many were reluctant to embrace the notion that basic procedural skills could be appropriately assessed by faculty outsiders. Trainees' trepidation with using outside assessors appeared rooted in two areas: skepticism around assessor skill level and a perceived loss of nuance in the feedback they received. What trainees appeared to desire was in-the-moment coaching; someone who could call attention to their strengths and identify where improvements were necessary. Although assessments conducted in this innovation carried a formative intent, trainees felt they failed to adequately capture the tacit knowledge often embedded within surgical practice. Trainees looked to specialists not only to facilitate improvement in their procedural skills but also to hone that tacit knowledge.

Discussion and Conclusions: Recognizing the time constraints faculty are faced with, we introduced cross-specialty assessment to address a pragmatic concern: the increased assessment demands of CBME. The introduction of this novel approach, while a good idea in principle, did not appear an effective strategy for mitigating the potential assessment burden of CBME, nor was it received favorably by trainees. These findings tell us that accurate assessments alone, without accompanying credible and constructive feedback, are viewed as sorely lacking in value for learning. Our findings also add an additional layer of complication for those suggesting the need for multiple, dedicated assessors to counterbalance the time and resources necessary to sustain a CBME assessment program. Perhaps it is naïve to think we can separate different educational roles. We suggest shifting the focus to how we can develop clinicians to concurrently take on the role of assessor and coach without diminishing their ability to be effective. Understanding trainees' receptivity to new assessment approaches is crucial, otherwise training programs risk generating more assessments without added learner value.

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#RP1 - Research Papers: Assessment

#RP1.7 (3946)

Understanding expertise in performance-based assessment

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ABSTRACT:

Introduction: Much of the assessment literature in health professions education has focused on ensuring that assessments are valid and reliable. It has traditionally been assumed that the assessor poses the main threat to validity and reliability and efforts have, therefore, focused on approaches to mitigate assessor influence. More recently, this position has been challenged by the alternative view that the assessor should have an active role in enhancing assessment validity. The nature of this active role and expertise in informing assessment judgements and decision-making, however, is not yet sufficiently understood.

Methods: This study sought to understand assessment expertise and its role in performance-based assessments such as the objective structured clinical examination by conducting a hermeneutic literature review. A systematic search strategy was developed to identify articles relevant to assessor decision-making during performance-based assessments of medical doctors. Title and abstract screening of the initial search results (n = 1495) was conducted by two authors (SK and AS-W). Twenty-four articles were identified and underwent full text screening. Eight articles were excluded as they did not strictly meet the eligibility criteria. The resulting 16 articles were analysed against pre-determined questions relating to assessment expertise, decision-making, and training. As is consistent with a hermeneutic literature review, we expanded our dataset through purposive sampling until data saturation was reached and no new questions were generated. The findings were analysed thematically using situativity and complexity theory.

Results: Assessment expertise was ill-defined in the literature. Alternative measures were used as proxies for expertise, such as: assessment experience; reputation; scoring consistency; clinical experience; clinical expertise; and completion of training. These terms were used to support the assertion of assessors as 'experts'.

Concurrently, analysis of the literature argues that expertise is domain-specific such that a clinical expert will not necessarily possess assessment expertise. From a positivist perspective, assessment can be seen as an activity intended to assign a 'correct' score that reflects a candidate's performance. An alternative, interpretivist perspective recognises assessor idiosyncrasy in contributing meaningful perspectives to the observed performance. This view acknowledges the complex, contextual nature of assessment expertise, involving inter-related tasks such as observation, attention, narrative justification, confidence, and frame of reference. Furthermore, because judgement formation is complex, the literature suggests that variation is inevitable and can unfold unpredictably.

Discussion and Conclusions: Assessment expertise remains elusive; the concept is discussed in relation to domain specificity and clinical expertise. In both cases, situativity can help to explain this. In the former, assessment is considered the primary context and thus, expertise is tied to assessment. In the latter, expertise is specific to the clinical context and is, therefore, aligned to the assessment content. Additionally, this review highlights diverse views on the outcomes of assessor training. While training can facilitate the development of routine expertise, it is limited in supporting adaptive expertise development which requires agile responses to the unique, unanticipated, unscripted situations of performance-based assessment. Performance-based assessment is a complex process involving interactions between the assessor, candidate, and patient. While assessment tools have utility, assessors must still develop expertise to observe, interpret, frame and synthesise their judgements.

#RP1 - Research Papers: Assessment

#RP1.8 (3951)

Teachers Assessment Conceptualizations in Programmatic Assessment

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ABSTRACT:

Introduction: Programmatic assessment attempts to facilitate learning through individual assessments designed to be low-stakes and used only for high-stakes performance decisions when assessments are aggregated. In practice, low-stakes assessments have yet to reach their potential as catalysts for learning. The dual purpose of low-stakes assessment may challenge teachers' assessment conceptualisations and how they engage with learners in assessment relationships.

Methods: We used a constructivist grounded theory approach to explore teachers' assessment conceptualisations, assessment approaches, and engagement with learners in assessment relationships. We conducted 23 semi-structured interviews at two different graduate-entry medical training programs following a purposeful sampling approach. Data collection and analysis were done iteratively until theoretical sufficiency was reached. Themes were identified using a process of constant comparison.

Results: Teachers' low-stakes assessment conceptualisations involved three different purposes: to stimulate and facilitate learning, to prepare learners for the next step, and to use as feedback to gauge teachers' own effectiveness. When teachers' assessment conceptualizations were more focused on accounting purposes, this risked creating tension in the teacher-learner assessment relationship. Teachers intended to engage in and preserve safe, yet professional and productive working relationships with learners to enable assessment for learning while securing high-quality performance and achievement of standards. Furthermore, teachers struggled between taking control and allowing learners' independence, and conflicts could occur in relationships with struggling learners.

Discussion and Conclusions: Given the influence and importance of assessment in medical education, it is very tempting to use assessment to enhance learning. This study showed that teachers believe programmatic assessment can engender such an impact. However, teachers' low-stakes assessment conceptualizations are not solely focused on learning, which creates tensions in teachers' assessment practices and the teacher-learner relationship. Understanding teachers' assessment conceptualizations and how these influence teachers' assessment practices provide insights which can guide and inform programmatic assessment design.

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#RP1 - Research Papers: Assessment

#RP1.9 (3989)

Seeing but not believing: Insights into the intractability of failure to fail

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ABSTRACT:

Introduction: Inadequate documentation of trainee underperformance persists despite research-informed solutions targeting this failure-to-fail phenomenon. Documentation could be impeded if assessment language is misaligned with how supervisors conceptualize underperformance. Since frameworks tend to itemize competence while being vague about incompetence, assessment design may be improved by better understanding how supervisors experience being confronted with an underperforming trainee.

Methods: We used constructivist grounded theory methodology (CGT) to guide data collection and analysis because it allows for a focus on the social processes involved when physicians encounter underperformance while interacting within a supervisor-trainee relationship. From September 2018 to March 2019 we interviewed 22 physicians (17 female) with clinical supervision experience in family practice (13) and non-surgical specialties (9). Participants practised in rural, northern, and/or remote communities (11); or in large metropolitan cities (11). Following CGT methodology, interviews were conducted and analyzed iteratively using constant comparison. Analysis was stopped when no new concepts were being coded. We then studied the patterns between the focused codes to identify theoretical codes that are the basis of our results.

Results: An apparent social rule is that it is wrong to refer to trainees as incompetent. One physician's analogy captures the sentiment: ...just because somebody's not clever, you don't call them stupid. Physicians asserted that the terms "incompetent" and "incompetence" are rarely used in medical education. In fact, most participants reacted strongly and negatively to our use of these terms for trainees. The terms were described as "pejorative" and "derogatory", "too binary", "too absolute", not applicable to trainees who had never been deemed competent, and potentially harmful for trainees who were learning more slowly and needed more support. Physicians had an expectation: all trainees should be capable of progressing by applying learning to subsequent clinical experiences. Underperformance was therefore unexpected, and evoked disbelief in supervisors, who sought alternate explanations for the surprising evidence. Supervisors struggled to explain underperformance, often due to limited interaction time, and offered two main explanations: underperformance was being unable to engage with learning due to illness, life event, or learning disorders so that progression was stalling or stalled; or it was being unwilling to engage with learning due to lack of interest or insight. Once underperformance was identified, some physicians were compelled to flag stalled trainees to get them help and to flag disengaged trainees to protect patients and the profession.

Discussion and Conclusions: Physicians conceptualize underperformance as failed progression that cannot be recovered through supervision. We have identified a phase of disbelief that precedes classic failure to fail phenomenon. The disbelief phase is likely fueled by a form of cognitive dissonance called both disconfirmed expectancy or failed prophecy (1). During this phase, supervisors are unsure of what they are seeing. It is not a reluctance to see underperformance or a denial of underperformance. Instead, a shared belief that trainees should be able to learn makes it difficult to make sense of signs that a trainee is not learning. Supervisors find it challenging to determine what evidence is noteworthy and attributable to the trainee. It would be difficult to confidently document trainee performance during this phase. Although failure-to-fail tends to be framed as a reluctance to document identified underperformance, identification of underperformance may be hampered by brief, isolated supervisory relationships that do not allow sufficient interactions to dispel disbelief and make sense of unexpected trainee performance. The disbelief phase may help to explain why solutions targeting the lack of support to report, unwillingness to report, and limited ability to report underperformance have not eradicated failure to fail phenomenon.

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#RP2 - Research Papers: Clinical Teaching

#RP2.1 (3912)

Assessing communication skills: the intricacies of patient involvement

AUTHOR(S):

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ABSTRACT:

Introduction: The education of medical students includes much more than acquiring competence in knowledge and technical expertise. Communication skills form the foundation for a more positive patient-physician relationship, improve patient outcomes and increase patient satisfaction. Whilst the Calgary-Cambridge model [1] represents a blueprint for teaching and assessing communication skills, this model was developed without significant input from patients; this is potentially problematic as patients' views of good communication could differ from clinicians or academics. Governmental and professional policy initiatives [2] encourage the inclusion of patients within Medical Education, however, patient roles usually entail either being involved in curriculum delivery or being a simulated patient; rarely have patients been involved in assessment. Little research has explored patients' perceptions of medical students' communication skills, or how feedback provided by patients and examiners could potentially differ; this study aims to address this gap.

Methods: Ethics approval was granted from Keele University's ethical review panel. The study employed constructivist grounded theory methodology which included; theoretical sampling and saturation, synchronous data collection and analysis, systematic coding procedures, the constant comparative method and memo-writing. Fifteen participants (aged between 27 and 81 years old; 5 males, 10 females) were recruited from community groups in North Staffordshire, England and via snowball sampling methods. Cognitive stimulated interviews were used to collect the data, these entailed showing participants' three videos which depicted differing levels of student performances in communication focused OSCEs, for which we already had examiner scores and feedback. Participants were asked to describe their thoughts on the students' communication skills and feedback provided by the examiner. Participants were also asked to provide their own feedback for each performance. Interviews were conducted over a three month period, audio-recorded and transcribed verbatim.

Results: A number of main themes were identified which characterised the intricacies of patients assessing communication skills: 'The perceived importance of patient involvement' described the reasoning why participants believed patients should be involved in assessing medical students communication skills, for example, patients believed that they had a different perspective than clinicians which would enable students to be better prepared for practice; 'The subjectivity of judgements' described that participants commented and provided feedback on different aspects of students' performances and were potentially influenced by their own biases or experiences with healthcare services; 'Solutions to the challenges' described how the potential subjectivity of judgements could be overcome by careful selection of patients or by patient training; "Implications for assessment" describes how participants perceived the volume of feedback provided by the examiners as inadequate, differences between patient and examiner feedback and strategies in which patients could be integrated within the assessment of students' communication skills.

Discussion and Conclusions: Whilst this study described the complexities of involving patients in assessing communication skills, constructive feedback from patients regarding students' communication skills could be a valuable learning opportunity. Within the field of Medical Education, the inclusion of patients in assessment is in a state of liminality, for it to be accepted as a core concept, institutions need to be aware of the challenges of involving patients, and employ strategies to overcome these. This qualitative study lays the groundwork for future research to investigate how some of the identified strategies to include patients could work in assessment practice.

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#RP2 - Research Papers: Clinical Teaching

#RP2.2 (3867)

Developing a tool for patients to assess health care professional students in clinical training

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ABSTRACT:

Introduction: The bulk of health professional students' clinical training occurs in an apprenticeship model where they care for real patients under graduated supervision. Their clinical skills are typically assessed by primary supervisors within their discipline occasionally with additional input from other health professionals they interact with, however their patients typically do not take part in the formal assessment process. Real patient assessments are integral to regular practice reviews of physicians and other health care professionals as part of 360 degree evaluations, however little evidence or experience exists in using structured feedback from patients in the assessment of health care professional students in clinical training. This study aimed to develop and validate a patient tool to assess the non medical expert skills of diverse health professional students that they interact with in routine clinical care

Methods: The first draft of our patient assessment tool adhered to a grade 6 English reading level and completion within 10 minutes. The tool was then iteratively developed using the input of key stakeholders including two medical education experts, one patient education expert, and five health care professional students. In addition we conducted individual interviews with 5 patients employing a "think out loud" interview format. The tool pilot was planned for 30 students, 10 medical students, 10 nursing students and 10 other health care professional students. Students were entered into the study on a voluntary basis. The students' official clinical supervisors were tasked to find appropriate patients who could provide feedback and also obtained consent from the patients to participate. During the validation phase of the study, patients were asked for their feedback on their experience assessing the student through a short questionnaire. Consenting students were invited to complete a 30 minute semi structured exit interview to explore their thoughts on the content and process of the tool, and on patients providing structured formative feedback. Supervisors were also informally asked to provide feedback on the tool itself, the practical considerations of incorporating the tool into their formal student assessments and the value they place on patient feedback.

Results: The final assessment tool comprised of 6 questions focusing on how the student introduced themselves, if the student made patients feel comfortable, if they explained things well, if they answered their questions to their satisfaction, if they helped get the care they needed, and if they valued patient input. Between January 1, 2018 and December 31 2018 a total of 37 students volunteered, ultimately only 18 students; 7 medical students, 5 nursing students and 6 other health professional students completed the study. The majority were on inpatient rotations, only 4 were training in an outpatient clinical environment. Patient participants ranged in age from 32 to 94 (median= 70). Ten indicated that they completed college or university, 6 high school and 2 grade 8 or junior school. English was not the first language of two patients. All patients felt the survey questions were clear, and they were comfortable filling out the survey. The majority felt the tool was comprehensive and an important feedback mechanism. Supervisors agreed the tool was easy to use and that patient assessments provide valuable information. Student reflections fell into 4 main categories; patient selection process with attention to patient anonymity; the importance of patient feedback as a catalyst to self reflection; that patients are an underused and important source of feedback and that the tool developed was a valuable method for collecting patient feedback. Both supervisors and students felt that multiple patient assessments are necessary for optimal feedback.

Discussion and Conclusions: We developed and piloted an easy to administer tool for patients to provide feedback to health professionals in training. Supervisors, students and patients all felt the tool was a valid, and provides important data for learner clinical assessments. To use the tool formally, multiple patient assessments would be deal, with emphasis on patient anonymity and guidance to supervisors as to selection of patients and types of encounters.

#RP2 - Research Papers: Clinical Teaching

#RP2.3 (3968)

High-fidelity 3G simulation and virtual reality: an evaluation of non-naïve medical students' experiences including analysis of perceived skills acquisition

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ABSTRACT:

Introduction: Simulation is used to facilitate teaching throughout medical education, using diverse resources to support the variety of skills to be acquired. High-fidelity patient simulators, such as SimMan3G®, can be considered a 'gold standard' in acute care simulation. Recently, technologies, such as virtual reality (VR), have been marketed as an evolving immersive simulation experience. A traditional simulation suite provides the participant with an immediately familiar environment designed to emulate a clinical scenario. VR uses audio and visual computer technology to create a clinical scenario with avatars for the patient and nurse. VR is immersive but unlikely, with current technology, to fully replicate the skills acquisition gained in current high-fidelity acute care clinical simulation. Employing a non-inferiority design, VR simulation was compared to traditional simulation (SimMan3G®), using matched acute care scenarios.

Methods: 40 participants volunteered for involvement in the research. We conducted a mixed methods cross-over study. Students were randomised into two groups: Group A and Group B. Students in Group A completed an individual simulation scenario using the Oxford Medical Simulation virtual reality (OMSVR) technology first, whilst students in Group B completed an individual scenario using the SimMan3G®. Participants then completed a matched scenario using the alternative technology. Students subsequently completed a questionnaire about their experiences of the technology. Non-parametric statistical analysis was utilised to compare the technologies based on individual Likert item scores. A thematic analysis was performed to explore the qualitative feedback. The high-fidelity SimMan3G® was regarded as the established, 'gold standard' technology against which the newer VR technology was compared.

Results: Feedback from 39 participant questionnaires was included in the analysis; one questionnaire was excluded due to missing data. There was no statistically significant difference between the scores of the technologies regarding 'enjoyment', 'immersivity', 'ease of use' and the 'ability to request and interpret investigations'. However, the well-established 'gold standard' technology (SimMan3G®) scored more highly than the OMSVR technology in several domains: 'increased confidence in patient assessment' ($p < 0.001$), 'providing a useful learning experience' ($p < 0.001$), 'realism' ($p < 0.001$), 'having appropriate prompting' ($p < 0.001$), 'developing team-working' ($p < 0.001$) and 'developing clinical reasoning skills' ($p = 0.004$). High-fidelity simulation (SimMan3G®) also achieved higher scores in 'focused history taking' ($p < 0.001$), 'detection of clinical findings' ($p < 0.001$), 'drug management' ($p = 0.028$) and 'practising patient handover' ($p < 0.001$) in comparison to the OMSVR technology.

Discussion and Conclusions: Both technologies offer different simulation experiences for students practising acute care scenarios. As hypothesised, the 'gold standard' SimMan3G® appears to provide a more familiar contextual environment within which they perceived improving team-working, history taking and patient handover skills. This was anticipated given that this technology allows students to physically assess and speak to the mannequin, work with a nurse and perform a handover. The OMSVR technology focuses on creating an immersive environment, as evidenced by no significant differences between the technologies with regards to the scores for 'enjoyment', 'immersivity', 'ease of use' and 'use of investigations'. Interestingly, students felt they gained maximal benefit from completing the more relaxed, guided scenarios within the OMSVR interface first, before doing a matched scenario with the SimMan3G®. Final year medical students found simulation using SimMan3G® more effective in achieving outcomes such as team-working, handover skills and history taking; OMSVR technology is equally valid for immersivity, interpretation of clinical investigations and enjoyment. These technologies appear complimentary and potentially synergistic.

#RP2 - Research Papers: Clinical Teaching

#RP2.4 (3723)

Electronic consultation systems promote learning across the primary-specialty care interface

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ABSTRACT:

Introduction: In many healthcare systems in Canada, the USA and Europe, electronic consultation (“eConsult”) services are being used to improve access to, and efficiency of, specialty care. eConsult systems allow primary care providers (PCPs) to request patient-specific advice from specialists, sometimes eliminating the need for an in-person specialty appointment. eConsult systems can dramatically improve access to specialty care, particularly in resource-limited settings (1). Because eConsult systems facilitate and enhance iterative communication between primary and specialty care (2), there is strong potential for interdisciplinary learning. However, whether and how such learning occurs is unclear. A targeted program to promote interdisciplinary learning through eConsult exchanges could strengthen the primary-specialty care interface, enhance provider knowledge, and reduce healthcare costs by minimizing unnecessary specialty care visits. We designed, developed and piloted a pair of “Reflective Learning Tools” (RLTs) to assess and promote interdisciplinary learning between PCPs and specialists using eConsult systems.

Methods: We performed a 4-phase mixed methods study recruiting PCPs and specialists from public health systems in Ottawa (Canada) and San Francisco (USA). In phase 1, subject matter experts developed preliminary RLTs for PCPs and specialists. In phase 2, a 3-phase Delphi survey among 20 PCPs and 16 specialists led to consensus on items for each RLT. In phase 3, we performed cognitive interviews with 3 PCPs and 5 specialists as they used the RLTs and then made further modifications. In phase 4, 10 PCPs and 14 specialists completed one or more RLTs following actual eConsult exchanges; 3 PCPs and 9 specialists then participated in semi-structured interviews. We performed inductive thematic analysis of the transcripts. Here we report results of phase 4, focusing on whether and how participants perceived the RLTs to promote learning.

Results: Participants completed 180 RLTs (60 by PCPs, 120 by specialists). PCPs perceived they learned from 51.7% of the RLTs, most often clinical information communicated directly within the specialist’s response (example: “CT is better imaging for pancreatitis”). PCPs further reported feeling motivated to pursue additional learning beyond the eConsult exchange in 23.3% of RLTs. Specialists perceived learning from 26.1% of RLTs, particularly when they reviewed the literature in order to answer a PCP’s question (example: “I reviewed [clinical] guidelines and recommended a catheterized specimen given complexity of the situation”). Thematic analysis revealed five themes (in capitalized font) related to teaching and learning in eConsult systems. Specialists were described as KNOWLEDGE TRANSLATORS who over time could SCAFFOLD PCP MANAGEMENT of disease, promoting greater PCP ownership of complex disease. eConsult systems promoted COMMUNITIES OF PRACTICE wherein PCPs and specialists developed virtual relationships that led to mutual trust. PCPs and specialists alike perceived that eConsult systems provided opportunities for SELF-DIRECTED LEARNING wherein they were motivated to investigate topics further through the course of eConsult exchanges. Finally, the RLT itself was perceived to CRITICAL REFLECTION among both PCPs and specialists regarding their knowledge and practice habits.

Discussion and Conclusions: eConsult programs are crucial components of modern healthcare that facilitate communication between PCPs and specialists and provide opportunities for interdisciplinary learning. The RLTs we developed were considered by participants to promote critical reflection and learning and could be used for quality improvement and continuing professional development and learning among licensed providers. Additionally, they could be further studied as tools to teach eConsult practices to both graduate and undergraduate medical education learners.

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#RP2 - Research Papers: Clinical Teaching

#RP2.5 (3761)

Making Sense of Negative Interpersonal Interactions in the Clinical Learning Environment: What counts as mistreatment and what must we simply tolerate?

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ABSTRACT:

Introduction: Global meta-analyses indicate that 2/3 of medical learners are exposed to routine mistreatment and abuse (Fnais et al, 2014). The consequences of mistreatment are severe, with evidence that it is associated with depression, suicidality, substance abuse, burnout, a lack of clinical confidence and attrition from the profession. Definitions of mistreatment in research and policy literature are wide-ranging and diverse but tend to focus on identifying and measuring discrete categories of behaviour. Previous research from our group and others indicates that these clear categorizations may not reflect the experiences of many learners, who report a spectrum of “grey area” experiences (Gan & Snell, 2014). This established definitional ambiguity may exacerbate low levels of reporting, prevent help-seeking, obviate opportunities for professional development and lead to mismatched expectations between learners and teachers. We sought to determine the ways in which medical learners and educators understand less-than-collegial interactions with colleagues and supervisors in the clinical learning environment, seeking to describe how they made sense of their experiences, and which factors influenced their perception of the encounter.

Methods: Using Thornes methodology of Interpretive Description, we conducted interviews with 49 Canadian medical learners (31) and educators (18) at varying points in their careers. Using a semi-structured interview guide, we solicited the personal experiences of participants with mistreatment, abuse, and unprofessional behaviour. We asked participants for stories of encounters that they judged to be clearly mistreatment, those they were not sure about, and instances where they knew of disagreement as to whether the interaction constituted mistreatment. Participant stories were further explored through prompts to explore the factors individuals used to make their judgments about what counted as mistreatment and abuse, and what factors would magnify or mitigate their judgments of severity.

Results: Our data affirms previous findings that learners and educators conceptualize negative interpersonal interactions on a spectrum. There was little consistency in the ways individuals labelled very similar behaviour as either mistreatment or not. However, we did identify consistency in the elements of the situation that individuals considered to make these decisions. The ways in which learners and educators make sense of their experiences can be understood through the metaphor of the prism, which refracts a spectrum of white light into various component parts. The quality and features of the light which exits the prism is dependent on the material, angle, and relationship between each element of the prism. We use this metaphor to conceptualize the ways in which participants use interaction-specific factors (content, context, target), initiator factors (relationships, perceptions of intent), and recipient factors (identity features, impacts, past experiences) to make sense of the spectrum of behaviors they encounter.

Discussion and Conclusions: Our findings highlight the challenge of using standardized definitions of mistreatment and abuse for educational policy. Individuals interpret their experiences in highly contextual ways, forming an assessment based on multiple factors relevant to the interaction, the initiator and the recipient. Our analysis emphasizes the importance of organizational and professional culture in normalizing behaviour and creating standards for interaction. This research highlights the challenge of conceptualizing an objective threshold for defining mistreatment, which poses difficulties for institutional accreditation, discipline and remediation. We discuss important implications for educators, highlighting common types of interactions which may be interpreted as mistreatment and offering concrete suggestions for mitigating this potential.

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#RP2 - Research Papers: Clinical Teaching

#RP2.6 (3969)

Trainee-stakeholder interactions and responses to learning opportunities in the clinical setting; an ethnographic field study

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ABSTRACT:

Introduction: Within the complexity of workplace learning, trainees must consciously recognize and choose between learning opportunities. In order to learn in the workplace, trainees must intently pursue different opportunities for both individual and interactive reflection with supervisors. However, supervisors external support and goal-setting may not reflect the values possessed by other stakeholders, such as patients, nurses and supporting staff, or may fail to capitalize upon the learning opportunities that arise during interactions with these stakeholder groups including conflicts, arising from diverging demands from different stakeholders. In particular, insight is lacking into how trainees spontaneously seek out learning opportunities with various stakeholders during their clinical encounters. This gap may be key to gaining insight into how to improve work-based learning in the clinical setting. In this study explored how learning opportunities arise from clinical encounters and, in turn, how trainees respond to these opportunities during clinical training.

Methods: We conducted a social constructivist qualitative study in 2018 using ethnographic field observations to explore the nature and potential learning content of trainees' interactions with stakeholders. We used an inductive-deductive approach to analyze transcripts from field observations, including both conventional content analysis and theoretical directed analyses informed by Eraut's conceptual model for informal learning. A key characteristic of Eraut's approach to work-based learning is that it occurs in a continuum from the most unintended and invisible learning to planned and structured efforts to improve competence during work (Michael Eraut, 2004). We used Eraut's continuum of "awareness" as a framework during observations and analysis and as we were not able to examine trainees' cognitive processes during their clinical work, we modified the continuum to describe trainees' observable behavior.

Results: During patient encounters, trainees interacted with multiple stakeholders besides the patient, including supervisors, peers, nurses, pharmacists, secretaries and relatives of the patient. These interactions were primarily initiated by a service focus, circumstance or clinical uncertainty. Explicit learning goals rarely prompted interactions. While a wide range of learning opportunities arose within the observed interactions, trainees only responded explicitly to a selected few, revealing a notable emphasis on a narrow scope of core clinical activities, such as performing clinical assessment and plans for patients, structuring conversations with supervisors, or recognizing critical diagnoses. However, most learning opportunities remained unaddressed or had no explicit learning outcome. Deliberative learning was observed in a few cases as trainees discussed or planned learning before an interaction. Although trainees initiated deliberative learning, we found that this process was rarely completed, as trainees often failed to discuss or review their learning after an interaction or encounter, which resulted in unclear learning outcomes.

Discussion and Conclusions: Clinical encounters and related interactions induce important learning opportunities for trainees. However, trainees' interactions are rarely prompted by explicit learning goals and most learning remains implicit during patient encounters. The predominance of implicit learning over explicit learning can be problematic during work-based learning because trainees and supervisors are less aware of and exert less control over what is learned. Our findings emphasize the need for continuous attention to the conflict between the spontaneous and implicit nature of most learning opportunities in the workplace and the need for planning direct observations, supervision, and assessments. Increasing awareness, as well as the engagement of more stakeholders, can promote competency development in areas of competence that traditionally have received less attention in clinical settings, such as communication, patient-centeredness, and professional identity formation.

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#RP2 - Research Papers: Clinical Teaching

#RP2.7 (4002)

A meta-ethnographic literature review on the professional identity formation of minoritized physicians

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ABSTRACT:

Introduction: Meta-ethnographies are literature reviews that analyze a body of literature to identify key concepts, gaps in the research, and sources of evidence. The goal of meta-ethnographies is to construct new interpretations that can be used to establish a research agenda. This meta-ethnography took a critical review of medical education's literature on professional identity formation (PIF) to assess its suitability in studying ethnically/racially minoritized physicians. This literature was analyzed through post-colonial theory to consider the ways in which PIF research supports Western/Euro-centric ways of studying PIF and ways that could be used to study minoritized populations.

Methods: Six journals in medical education were searched: Medical Education, Medical Teacher, Perspectives on Medical Education, Teaching and Learning in Medicine, Academic Medicine, Advances in Medical Education using "professional identity*" as a search term in titles, keywords, abstracts, and subheadings. The initial search produced 189 articles. However, given the surge in published PIF articles in 2013, the date range was limited to 2012-2017. All non-relevant abstracts were removed, including commentaries, conceptual papers, quantitative articles, and mixed methods studies. The initial reduction left 48 articles, which was further reduced when only those articles that focused on participants' PIF experiences as learners were included. Twenty nine articles were included in the final data set. A team of researchers translated the studied into one another to identify similarities and differences across the articles and subsequently analyzed them through the lens of post-colonial theory.

Results: In translating studies into one another, four conceptual categories were identified as impacting PIF: Individual vs Sociocultural Influences; Formal vs Hidden Curriculum; Institutional vs Societal Values, and Negotiation of Identity vs Dissonance in Identity. Our analysis revealed a major gap in the research literature. Namely, although the majority of the articles have elements that would be suitable for studying minoritized populations, not a single study explored the experiences of PIF in minoritized physicians. Additionally, there was a complete absence of a critical stance in the articles suggesting that researchers build on existing Western/Euro-centric theories without questioning their validity in studying minoritized physicians.

Discussion and Conclusions: From a post-colonial perspective, the findings in this review of medical education literature in 2012-1-2017 are problematic because race/ethnicity was absent, invisible or considered irrelevant within PIF research. Yet, outside of medical education, research on minoritized professionals during this same time period indicates their race/ethnicity is intimately intertwined with their professional identity. Therefore, a new line of inquiry into this topic is needed, one that uses alternate frameworks that account for the unique social positions of minoritized physicians. This new line of research should consider employing critical lenses used in the social sciences to study how power and domination influence minoritized physicians' professional identity[1,2]. Race/ethnicity is absent in PIF research in medical education. Future research agendas should foreground how larger socio-historical issues influence and shape the identity of minoritized physicians.

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#RP3 - Research Papers: CPD

#RP3.1 (3685)

How aware are you about your teaching skills? Developing an instrument to measure self-awareness of teaching skills of medical teachers

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ABSTRACT:

Introduction: Medical teachers may not be aware of their teaching skills due to lack of quantifiable ways to measure their self-awareness about their teaching. Moreover, there is no valid and reliable instrument measuring the level of self-awareness of teaching skills of medical teacher in the literature. Hence, the aim of this study is to develop and validate a tool to measure the level of self-awareness of teaching skills of medical teachers.

Methods: This was a mixed methods study, to develop an instrument, with sequential qualitative and quantitative components. Brookfield's four lens theory for developing self-awareness as teachers was used. The study was done in eight phases following the guidelines for instrument development given in the AMEE Guide 87. A focus group of seven members from medical faculty was selected to develop micro scenarios for preliminary draft. The preliminary instrument was validated using two rounds of modified Delphi technique. Items were sent to twenty experts in round one. Among those, thirteen experts provided responses. This round determined content validity of the instrument through experts' consensus on items relevance. Participants were requested to comment on clarity of items construct. Instrument after revision was emailed to thirteen participants in round two, who gave response in the round one. A total of eleven experts responded for second round. Based on responses received in round two, content validity ratio of the tool was calculated. Cognitive pretesting was done with ten faculty members. Pilot testing was done with sample of 500 medical teachers (425 responded). Construct validity of the instrument was established through confirmatory factor analysis. Reliability of the questionnaire was determined through Cronbach's Alpha. Standard setting of the instrument using contrasting group method was carried out through a panel of five experts.

Results: Four themes of theory were followed that is; self, student, peers and scholarship. Thematic analysis was done to develop micro scenarios from the focus group. A 26-items preliminary draft instrument was developed by combining results of literature review and focus group discussion. The first round resulted in removal of five items having Content Validity ≤ 0.78 and addition of one item based on experts feedback. Content Validity Scale was 0.92 and Content Validity Universal Agreement was 0.61. By the end of second round, three items with Content Validity Ratio of less than 0.60 were also removed and seven items having Content Validity Ratio between 0.60-0.80 were revised. Items with Content Validity Ratio of more than 0.80 were retained for the next round. Content validation of both rounds resulted in removal of total of seven items and addition of one item. Cognitive pretesting was done on 20-items resulting in modification of seven items. Confirmatory analysis was done, resulting in removal of one item with poor factor loading of ≤ 0.50 , thus retaining 19-items in the final version. The reliability was calculated using Cronbach's Alpha $\alpha = 0.85$. Standard setting of the instrument was done using contrasting group method. The cut off value for excellent self-awareness was 79%, 70% for good, 59% for average and 53% for poor level of self-awareness.

Discussion and Conclusions: Medical teachers can use this instrument to measure the level of self-awareness of their teaching skills.

#RP3 - Research Papers: CPD

#RP3.2 (3717)

Family doctor, educator and learner: Managing professional identities in an international blended education program for faculty development

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ABSTRACT:

Introduction: Clinical teachers perform multiple and overlapping tasks in clinical work and education. They are therefore expected to juggle many professional identities such as educator, clinician, and even learner when they are enrolled in faculty development programs. While professional identity has attracted much attention from medical education scholars over the past two decades, little is still known about how clinical teachers manage and make sense of their multiple professional identities. The present research aimed to explore the lived experiences of clinical teachers to understand how they negotiate their professional identities in the context of a faculty development program.

Methods: This study employed interpretative phenomenological analysis (IPA), which is a methodological approach that enables an in-depth examination of how people conceptualize their personal and social worlds while adopting an insider's perspective. Six teachers in family medicine attending an international faculty development program were purposively sampled. In-depth semi-structured individual interviews were conducted through a video-conference software and were analyzed using the thematic analysis approach of IPA studies. Six identity diagrams were then created with the aid of the emergent themes to depict the relationship between the identities that each participant had identified.

Results: Participants went through diverse lived experiences and sense-making processes. Each identity diagram reflected the uniqueness of each clinical teacher. However, commonalities across the diagrams and participants' accounts were identified. All identity diagrams reflected that participants recognized one identity, which was labelled as 'embedding identity,' containing other identities and roles. Participants developed and integrated their professional identities in agreement with their personal identities, values, and beliefs, striving thus for identity consonance. Participants also understood their craft as a relational process by which they weave themselves into their context and intertwine their experience with that of others. For instance, the faculty development program was regarded as an opportunity to understand a collective identity and recognize a community of practice. Participants, however, diverged when recognizing their peers; while some named a single group (family physicians), others had a more comprehensive view and included healthcare professionals, students, and even patients. Finally, participants identified time constraints and lower prestige of family medicine as a medical discipline vis-à-vis other specialties as challenges posed by their contexts.

Discussion and Conclusions: This research introduces the empirically grounded notion of embedding identity as a strategy to make sense of many professional identities. An embedding identity embraces others, without necessarily creating a hierarchy of identities. Having an embedding identity allowed participants to meaningfully reconcile the different demands from their overlapping professional identities and collaborate with others. Variability in the embedding identities depicted in this investigation suggests the fluid and contextualized character of professional identity development. Thus, clinical teachers in this research made sense of their professional identities by pondering individual internal elements as well as external elements through a process of constant negotiation with themselves and others in their situated time and context. Internally, they negotiated their multifaceted identities by recognizing an embedding identity and looked for common points between the identities it contained. Externally, how participants saw themselves influenced how they behaved and interacted with others accordingly. Understanding clinical teacher identity development enriches current perspectives of what it is like to be one of these medical professionals. Faculty development programs ought to consider these perspectives to better support clinical teachers in meeting the overlapping demands in education and patient care.

#RP3 - Research Papers: CPD

#RP3.3 (3796)

Conceptualizing teacher expertise in medical education in six tasks and three dimensions for expertise development: A systematic review and synthesis of 46 teaching frameworks

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ABSTRACT:

Introduction: What makes a good medical teacher? This question is central to a multitude of publications from both research and practice contexts, but there is a lack of consensus about the answer. In this study we therefore investigate international common ground about what constitutes teacher expertise by conducting a systematic review of 46 teaching frameworks. We synthesized these frameworks from a task-based perspective. In expertise research, both in general [1] as well as in medical education [2] there has been a movement toward this perspective over the last decades. The reason for this development is that tasks can be defined, observed and assessed, and are directly connected to what happens in practice.

Methods: We conducted a systematic review of teaching development-, qualification-, and career frameworks originating from both research and practice contexts. Our search for frameworks in six (scientific) electronic databases (e.g. Pubmed and Scopus) initially yielded 1278 results. After screening and full-text reviews of these results, backward and forward reference searching, and expert consultation, a total of 46 frameworks were identified and included. The majority were from medical education (n=26) but to be optimally comprehensive we also included frameworks from higher education in general (n=18). To determine teacher tasks we qualitatively analyzed the frameworks using an iterative coding process which combined literature-informed and in vivo codes. The quality of the analysis was checked using interrater reliability analysis. Interrater reliability was good: Cohen's Kappa .80 at task level and ranging from .79-.90 at subtask level. During the analysis of the frameworks we encountered different dimensions of expertise development. These dimensions were included as an additional finding, because they extend the conceptualization of teacher expertise.

Results: Our analysis resulted in a task structure with six tasks and twenty-nine subtasks, as well as an additional category for non-task related excerpts. The six tasks are 'teaching and support of learning', 'educational design', 'assessment and feedback', 'educational leadership and management', 'educational scholarship and research', and 'reflection and professional development'. Non-task related excerpts could be divided into two subcategories: subject area expertise and personal attributes. Three dimensions of expertise development were found: better task execution, executing a wider range of tasks, and executing tasks with a larger sphere of influence. Results are summarized in the University Teacher Expertise (UNITE) conceptualization.

Discussion and Conclusions: The UNITE conceptualization that comes from this review gives insight into the multifaceted nature of teacher expertise in medical education: medical teachers execute multiple tasks and there seem to be various dimensions of expertise development. This insight has relevance for several stakeholders. Individual teachers may use the UNITE conceptualization to reflect on their professional development with regard to current teaching tasks and future ambitions. Faculty developers may use it to create professional development activities and programs for teachers at different career stages. Policy makers may use the conceptualization as a foundation for assessment and reward of teaching in medical education institutes. Finally, the conceptualization is also relevant for researchers, because it provides a sound basis for investigation of faculty development. In particular, we suggest that further research focuses on validating the conceptualization, on exploring if and how expertise development in different teacher tasks is interrelated, and on investigating how tools and interventions can support expertise development of medical teachers in their different tasks.

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#RP3 - Research Papers: CPD

#RP3.4 (3935)

Applying a social theory of learning to explain the impacts of interactive continuing professional development programs

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ABSTRACT:

Introduction: Continuing professional development (CPD) is the backbone of life-long learning for all health professionals. It facilitates updates in knowledge and skills, changes attitudes, and plays an important role in the development of one's professional identity, career development and networks. However, existing literature takes a narrow perspective when assessing the impacts of CPD programs. This study explored the range of impacts that are possible as a result of attending CPD programs that focus on promoting interaction, creating engagement and are based on pedagogical theory. It also applied Wenger's social theory of learning (1) to explore why these impacts occur.

Methods: The research used an epistemology in line with social constructivism where the researchers sought to construct socially negotiated meaning through the interaction with others. Twenty semi-structured in-depth interviews were conducted with past scholars from two exemplar CPD institutes. An interpretive approach employing Braun and Clark's (2) thematic analysis was used to analyse the data.

Results: Five themes were identified that illustrated the broad impacts of attending CPD programs that focus on promoting interaction, creating engagement and are based on pedagogical theory; 1) growing and utilising a network of like-minded individuals, ii) forming stronger identities, iii) applying learnings to practice, iv) obtaining achievements and recognition, and v) going beyond the scholar. Participants described experiencing both immediate impacts as a result of attending the courses, and sustained medium and long term impacts.

Discussion and Conclusions: Wenger's social learning theory helps us understand why these impacts occur. The CPD courses that are the focus of this research can be considered as a community of practice. When participants first attend the courses they are peripheral members, lacking insight into shared understandings and negotiated meanings that the community are developing. As they engage with peers, returning scholars and the faculty during the courses they become part of negotiating meaning and gain insight into the shared understandings held by the community, gaining knowledge, skills and new perspectives through this process. By engaging with the community and gaining these new learnings participants move away from their peripheral membership towards full membership (or remain as peripheral members through non-participation). The development of identities is part of this process, including identifying oneself as something, identifying with something and being identified as something. Being recognised by others helped participants strengthen their position in their own institutional community of practice. The community of practice continues to exist once the courses are finished, with individuals remaining engaged to varying degrees. Those who remained engaged continued to see benefits of their involvement. Participants were able to apply their new learnings to their own settings and share them with their colleagues, learners, patients and institutions. This is described through the concept of multimembership which refers to belonging to multiple communities of practice. It allows participants to be brokers with their other communities, introducing elements of one practice into another. Social learning and ongoing engagement appear important in generating the range of impacts described in this research. The results from this study suggest that a range of sustained impacts are possible as a result of attending CPD programs, but an ongoing social process of learning is crucial to achieving these impacts. These findings should be considered in the design of future CPD programs to ensure that interaction and ongoing engagement are fostered, and therefore that sustained impacts occur.

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#RP4 - Research Papers: Curriculum

#RP4.1 (3941)

Emotion management: a fundamental aspect of contemporary healthcare professionalism

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ABSTRACT:

Introduction: Professionalism is a substantive and sustained theme of research in health professions education and has been examined through many lenses. Emotion management has not traditionally been identified as a key feature of professionalism, yet has implications for how professionalism is both understood and embodied in university curricula and workplace learning environments. In contemporary contexts, health professionals' emotion management (of self and in interaction with others) is part of professionalism and contributes to public safety and effective healthcare practice.

Methods: This research is situated within an interpretivist paradigm, using a methodology of constructionist qualitative inquiry. Semi-structured individual and group interviews were conducted with three participant groups – 51 academics, 28 practitioners and 21 final year students. Sampling was guided using maximum variation, alongside the concept of information power¹. Framework analysis² is the key data analysis approach.

Results: This novel research presents findings from 42 interviews including one hundred participants across 17 Australian and New Zealand universities and a range of workplace settings (large tertiary hospitals, community and public health settings, the private sector etc.). Participants shared diverse perspectives and experiences of professionalism. Emotion management is identified throughout the data as a key sub-theme across four broad over-arching themes of analysis: 1. Understandings of professionalism 2. Socialisation, culture and professional identity 3. Approaches to teaching, learning and assessing professionalism and 4. Professionalism dilemmas.

Findings from this research indicate that emotion management encompasses self-awareness and insight, empathy, resilience and self-regulation. It relates to emotion management of self (practicing with self-awareness, insight and reflexivity) and working with others (peers, healthcare team members, patients/clients etc.). It also encompasses self-care and management of ones' own health and wellbeing including stress management, and physical and mental health.

Discussion and Conclusions: Emotion management has a key role to play when considering professionalism for the modern healthcare professional. This has interesting implications when considered in the context of navigating the myriad of relationships and hierarchies that exist within healthcare including student-supervisor and student-patient/client relationships. These findings also highlight a need for consideration from academics, educators and practitioners when planning and designing curriculum and teaching and learning opportunities for health professional students to include explicit teaching around emotion management. Observing role modelling of emotion management and engaging in critical discussion around emotion management supports positive outcomes in learning to becoming professional. This novel research within the health professions education literature, presents interesting insights into the role of emotion management in healthcare professionalism. There are implications for curriculum designers, educators, practitioners and learners. A comprehensive and reflexive understanding of self and our interactions with others supports professionalism in the contemporary healthcare context and serves to benefit the public.

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#RP4 - Research Papers: Curriculum

#RP4.2 (3852)

Can concept mapping support the quality of reflections made by medical bachelor students? A mixed method study

AUTHOR(S):

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ABSTRACT:

Introduction: Training medical students to become reflective, lifelong learning professionals is not easy. Students perceive reflective writing assignments (in the context of portfolios) as difficult. In addition, obligatory topics and format requirements are considered a hurdle. Concept mapping may be an alternative format, which provides support, while allowing students to freely shape their own line of reasoning. Assuming that concept mapping may support both reflection training and flexibility in creating meaningful portfolios, we examined the effect of concept mapping on the quality of reflections made by undergraduate medical students. Specific research questions were: (1) What is the quality of reflection in an e-portfolio with reflective concept maps (denoted as “experience maps”) created by medical students during the first year of their curriculum? (2) How do students perceive concept mapping as a technique for reflection?

Methods: This study was performed within the undergraduate medical curriculum of Maastricht University, the Netherlands, which includes an integrated e-portfolio and mentoring system. In this mixed methods study, quantitative and qualitative methods of data collection and analysis were applied: (1) A quantitative analysis of the quality of reflection was performed on 245 experience maps from 40 first-year medical students’ portfolios. Quality of reflection in the maps was assessed by 2 raters using an existing two-dimensional framework (Leijen et al. 2012) including breadth of reflection (with categories technical / practical / sensitising) and depth of reflection (with levels description / justification / critique / discussion). (2) Semi-structured interviews were performed with 22 out of the 40 participating students to explore perceptions of the effectiveness and meaningfulness of reflective concept mapping (qualitative analysis).

Results: In the majority of concept maps breadth of reflection varied between a technical and practical stance. Regarding depth of reflection, 82% of experience maps reached at least the level of critique, which is a necessary minimum to draw lessons from the experience that is being analysed. From the interviews three factors appeared to affect the perceived effectiveness and meaningfulness of concept mapping as a tool for reflection: (1) experience map structure; (2) alertness to meaningful experiences and (3) learning by doing.

Discussion and Conclusions: The findings from this study indicate that concept mapping may be a useful approach to teach first-year medical students the basics of meaningful reflection. The analysis of actual maps showed that concept mapping helped building a step-by-step line of reasoning, from description of the situation, through justification-level elaborations, to reflections at the level of critique or discussion. In the interviews students acknowledged the supportive features of concept mapping. However, they also pointed out the dilemma between the need for support in structuring their reflections and the need for flexibility to freely shape their own lines of thoughts. Moreover, the concept mapping approach did not agree with every student’s personal learning or reflection preferences. Students argued that effective and meaningful reflection – as defined by the students themselves - was only reached if they learned to recognise relevant experiences as topics for their experience maps and when practising with the first maps helped them overcome an indiscernible “threshold” to engage in genuine reflection. To conclude, the key to meaningful implementation of reflective concept mapping seems to be finding the right balance between providing scaffolding on the one hand and trusting in learner creativity and freedom on the other.

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#RP4 - Research Papers: Curriculum

#RP4.3 (3938)

A scoping review on the uses of the arts and humanities in medical education

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- Nancy Adams, Pennsylvania State University, USA
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ABSTRACT:

Introduction: Research increasingly suggests that learning experiences that integrate arts and humanities (A&H) within curricula may lead to important learning outcomes, including skills-based outcomes such as honing observation and interpretation skills, relational outcomes such as empathy, communication, and teamwork, and transformational outcomes related to professional identity formation and advocacy. The range of A&H that can inform medical learning and, ultimately, patient care is vast—from literature and reflective writing to visual arts and philosophy. We conducted a scoping review to identify how and why the A&H are being used to educate physicians and interprofessional learners across the developmental spectrum.

Methods: We followed Arksey & O'Malley's (2005) five scoping review stages and included the sixth stage of stakeholder consultations suggested by Levac (2010). We developed a search strategy to identify literature on the use of arts and humanities in medical education. One author, a health sciences librarian, implemented the strategy across seven databases in May and June 2019, locating 21,988 citations. Five authors independently screened titles and abstracts. Full-text screening followed by five authors and one research assistant (n=4,652). At both stages, each record was screened by two trained reviewers, and discrepancies were resolved by a third reviewer. In the end, 772 citations met inclusion criteria. Ultimately, only literature published in English from 1991 onwards was identified for inclusion in the final dataset, and empirical works about medical education contexts outside North America were excluded. We collected demographic data and then performed conceptual and discursive analyses using frameworks by Dennhardt et al (2016).

Results: The literature is diverse and dominated by conceptual works (n=297) that either call for the use of A&H in medical education generally or critically engage with its ideas and methods, followed by works that describe specific uses of A&H for medical education (n=255) such as describing an entire program or individual course. Empirical works (n=169) are predominantly qualitative studies (n=77) that evaluate A&H-based pedagogical strategies, notably the uses of literary arts. Absent in the literature are the voices of medical students and artist- and community-based educators, as well as robust engagement with A&H in interprofessional, pre-medical, and continuing medical education contexts. Conceptual analysis of epistemic function demonstrates that A&H function foremost as a means for learners to either develop a type of skill or expertise (n=164) or to engage in perspective-taking and relationship building (n=158)—and, sometimes, both simultaneously (n=102). Qualitative analysis of the epistemic function 'A&H as expression and transformation: personal growth and activism' suggests distinct literatures around the use of A&H for 'expression/personal growth' and its use for 'transformation/activism.' In the discursive analysis, the relationship between the A&H and medicine is often constructed as additive—a way to supplement medicine with new perspectives and knowledge.

Discussion and Conclusions: The literature is complex and reflects different learning domains for how the A&H are used in medical education, including communication; empathy; and equity, diversity, and inclusion. Such domains can be taught at one or more levels across the continuum from content- to process-oriented uses (or epistemic functions) of the A&H in medical education. This scoping review further advances the framework by Dennhardt et al. (2016) by conceptualizing the function of A&H for expression/personal growth as distinct from, yet a precursor along the continuum to, its use for transformation/activism. These results can inform national and institutional discussions regarding the use of A&H in medical education.

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#RP5 - Research Papers: Patient Safety

#RP5.1 (3712)

PERFORM: Performance Enhancing Routines for Optimising Readiness using Metacognition For the Management of Acutely Unwell Patients

AUTHOR(S):

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ABSTRACT:

Introduction: The stress experienced by healthcare professionals during complex, time-critical clinical encounters can impair clinical performance and produces suboptimal patient care. This is particularly true for junior doctors when managing acutely unwell patients. In sport, athletes minimize the impact of similar performance-related stress using Pre-Performance Routines (PPR), such as visualization (Cotterill, 2010). The use of a single PPR limits their contextual flexibility and impact, but sport psychologists suggest that coaching athletes to use metacognition would allow them to dynamically alter their individually preferred Performance Enhancing Routine (PER) to personalize their approach throughout the changing demands of complex situations (MacIntyre et al 2014). We developed the PERFORM (Performance Enhancing Routines for Optimising Readiness using Metacognition) model as an individualized coaching approach to apply MacIntyre' et al's (2014) theory to the medical context. This research aimed to explore the potential usability and efficacy of the application of the PERFORM model for the management of acutely unwell patients by junior doctors.

Methods: The three-phase study used a mixed-methods action research method. The Exploratory phase included an international scoping literature review of educational interventions in acute patient management. The Pilot phase explored the feasibility of coaching the individualized PERFORM model to junior doctors. The Full Intervention phase incorporated a multiple-case study of 12 doctors across two hospital sites to explore the application of the PERFORM model in both simulation and real patient encounters through the use of reflective logs, semi-structured interviews, Think-Aloud commentary and self-efficacy scores. Within- and between-case analyses were performed to investigate the variables of work-place (central teaching or district hospital) and stage of training (first or second year post-graduate).

Results: The scoping review yielded no previous studies utilising personalized PER and the coaching approach of the PERFORM model was considered useful and applicable to junior doctors. The application of the PERFORM model during an acutely unwell patient in situ simulation significantly improved self-efficacy to control stress ($p=0.003$). The PERFORM model was applied by 11 junior doctors during clinical practice, including non-acute and non-clinical scenarios, and many developed their own personalised PERs. Qualitative data demonstrated the positive aspects of using the PERFORM model in three domains; the doctor themselves, their supportive relationships with colleagues, and on patient care. The doctors most valued their increased awareness of stress associated emotions and behaviours in the workplace.

Discussion and Conclusions: Discussion The application of the PERFORM model created a sense of 'control' over the clinically complex environment for junior doctors when experiencing stress in the management of the acutely unwell patient. The study also demonstrated the practicality and usefulness of an individualizable educational intervention which can be adapted to different scenarios through both reflection in-action and reflection on-action. Conclusion Our study of the innovative PERFORM model is the first to demonstrate that the application of individualized PERs by junior doctors can minimize the impact of stress during acutely unwell patient management. The findings suggest that coaching of the PERFORM model could improve clinical performance during complex and time-critical clinical encounters and further research with larger numbers of junior doctors and other healthcare professionals is recommended to explore this potential impact. References Cotterill, S. (2010) Pre- performance routines in sport: current understanding and future directions. *International Review of Sport and Exercise Psychology*. 3(2): 132-153. MacIntyre TE, Igou ER, Campbell MJ, Moran AP, Matthews J.(2014) Metacognition and action: a new pathway to understanding social and cognitive aspects of expertise in sport .*Frontiers in psychology*. 5: 1155.

#RP5 - Research Papers: Patient Safety

#RP5.2 (3790)

It sounds like a good handover but can I trust it?

AUTHOR(S):

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ABSTRACT:

Introduction: Introduction Clinical handover is increasingly important as safer working hours increase hospital transitions of care. As an Entrustable Professional Activity (EPA), handover training is often prioritised in medical undergraduate and pre-vocational training. Various handover frameworks are taught across jurisdictions and specialties using acronyms including ISBAR and I-PASS. There is a need for methods of handover assessment and feedback as well as tools to assist making work-based entrustment decisions. Much handover assessment has occurred in the research setting where handover quality and accuracy can be measured against known patient details. In the work-based setting, receiving clinicians make judgements about quality but can only assess accuracy against a subsequent assessment of the patient. A handover might be given in an acceptable format, with confidence and apparent high quality, but the information might be inaccurate and the reasoning and recommendations might be faulty or unsafe. The research question arises: what is the correlation between a handover's perceived quality and its accuracy? The Clinical Handover Assessment Tool (CHAT) was developed for work-based assessment and training¹. It contains checklist items, based on the elements of ISBAR, and a global rating based on the assessor's confidence in the accuracy of handover. This 'confidence' might depend on several factors, including previous experience of the giver or their style, reputation and clinical knowledge. This study addresses the research question by asking assessors to assess the patient, after receiving handover, and rate handover accuracy and safety.

Methods: Methods A cohort of medical students, at the end of their long-term rural training, was assessed by clinical supervisors on five handovers, using the CHAT. The tool asked supervisors to rate the accuracy and safety of the handover after they had, subsequently, assessed the patient. Global assessment, accuracy and safety were all scored 0,1,2 or 3. Scores were analysed to identify the correlation between CHAT scores and handover accuracy and safety, using the Cramer's V correlation coefficient.

Results: Results 22 students gave 110 handovers, 101 without missing data were analysed. The 101 global assessment (GA) scores were 1 (N=2), 2 (N=41), 3 (N=58). Of the 41 GA scores of 2, accuracy scores were 2 (N=16) and 3 (N=25). Of the 58 GA scores of 3, accuracy scores were 2 (N=3) and 3 (N=55). In total, 80/101 handovers scored 3 for accuracy. The Cramer's V correlation coefficient for global score and accuracy was 0.586. The complexity of handover cases was rated by assessors as low (N=19), medium (N=41) and high (N=16).

Discussion and Conclusions: Discussion & conclusion The correlation between global assessment and accuracy in this study (Cramer's V=0.586) is a large effect (Cramer's V>0.35)². Only 3/58 GA scores of 3 scored <3 for accuracy. However, 60.0% (25/41) of GAs scoring 2 scored 3 for accuracy: assessors identified deficiencies in handover quality that didn't impact on accuracy. This study examined medical students who might be expected to present more inaccurate handovers. However, students in this study scored highly on global assessment and accuracy. They had spent a year on rural placement, receiving frequent handover feedback. While some assessors may have marked leniently, they made discriminating assessments of accuracy. Perceived handover quality correlates closely with accuracy in this study, giving confidence that 'good' handovers can be trusted. More study in high acuity and less trained participants will provide further clarification of this association.

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#RP5 - Research Papers: Patient Safety

#RP5.3 (3871)

Measuring Cognitive Load Types during Handovers: Evidence for Validity

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ABSTRACT:

Introduction: Patient handovers remain a significant patient safety challenge. During patient handovers, the sending and receiving clinicians must simultaneously apply and integrate clinical, communication, and systems-based practice skills into a time-limited and highly constrained activity. Information distortion and loss are common and can lead to communication error and patient harm. Improved instructional strategies could remediate this situation. Cognitive load theory (CLT) focuses on the implications of limited working memory (WM) for learning. Unlike sensory and long-term memory, which are infinite, WM can actively process (i.e. organize, compare, and contrast) only two to four elements at any given moment. When the cognitive load associated with a task exceeds working memory capacity, learning suffers. Researchers have differentiated overall cognitive load into three types: intrinsic load (information processing essential to learning the skill), extraneous load (information processing induced by sub-optimal design of the task or the physical environment), and germane load (information processing imposed by the learner's deliberate use of cognitive strategies to refine existing schemata and enhance storage in long-term memory). Handover learning and performance could be enhanced by designing strategies and protocols that effectively address the different cognitive load types. However, researchers lack the ability to study such strategies due to the absence of a measure that differentiates cognitive load types.

Methods: To address this gap, the authors developed the Cognitive Load Inventory for Handovers (CLIH) using a multi-step process, including review of prior published instruments, initial item development/adaptation, pilot testing with 12 residents, external review from seven experts in CLT and handovers to enhance content validity evidence, and cognitive interviews with 14 residents from three specialties to optimize response process validity. Researchers revised the items after each step. The final version had 27 items, a larger number than we expected to retain in order to minimize construct under-representation. Respondents rated each item on an eleven point scale. During January to March, 2019, the authors surveyed 1,807 residents and fellows from a large health system in the USA. Participants completed the CLIH following a handover. We performed exploratory factor analysis to determine the most parsimonious factor structure; factors with Eigen values > 1.0 were selected. Confirmatory factor analysis assessed model fit using several indices: comparative fit index (CFI, >0.90), root mean square error of approximation (RMSEA, <0.08) and standardised root mean square residual (SRMR, <0.08). Internal consistency was examined using Cronbach's alpha. Composite measures of intrinsic, extraneous, and germane load were compared across years of training using Spearman's rank order correlation.

Results: Participants included 693 trainees (38.4%) (228 in the exploratory study and 465 in the confirmatory study). Eleven items were removed during exploratory factor analysis. The most parsimonious factor structure identified three factors reflecting the three types of cognitive load and explaining 52% of the variance. Confirmatory factor analysis of the 16 remaining items (5 intrinsic load, 7 extraneous load, and 4 germane load) met criteria for good model fit: CFI was 0.93, RMSEA was 0.074, and SRMR was 0.07. All factor loadings were well above 0.35 and statistically significant. Cronbach's alpha was 0.91 for Intrinsic, 0.91 for extraneous and 0.94 for germane load. Intrinsic, extraneous, and germane load correlated as expected with year in training. **Discussion and Conclusions:** This study indicates that trainees can self-report on the three types of cognitive load experienced during a handover. The researchers generated validity evidence for content, response process, internal structure, and correlation with other variables. This instrument allows researchers to assess effectiveness of strategies aimed at matching intrinsic load to the developmental stage of the learner, reducing extraneous load, and optimizing germane load.

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#RP5 - Research Papers: Patient Safety

#RP5.4 (3875)

Why Medical Residents Do (and Don't) Speak Up About Organizational Barriers and Opportunities to Improve the Quality of Care

AUTHOR(S):

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ABSTRACT:

Introduction: Medical residents are valuable sources of information about the quality of frontline service delivery, but if they do not speak up, their ideas, opinions, and suggestions for improving their work practices cannot be considered. However, speaking up can be difficult for residents. Therefore, the authors have explored both what helps residents speak up about organizational barriers and opportunities to improve the quality of their work and what hinders them from doing so.

Methods: The authors conducted an exploratory qualitative interview study with 27 Dutch medical residents in the Netherlands in 2016. They used the critical incident technique for data collection and the constant comparison method of the Qualitative Analysis Guide of Leuven for data analysis.

Results: Three types of incidents in which residents considered speaking up are described. The authors identified two main considerations that influenced residents' decisions about speaking up: Is it safe to speak up, and is speaking up likely to be effective? Residents' decisions were influenced by personal, team, and organizational aspects of their situations, such as supervisors' open attitudes, hierarchy, duration of clinical rotations, organization size, and experiences (either vicarious or their own).

Discussion and Conclusions: Findings from this study indicate that residents tend to be silent when they encounter organizational barriers or opportunities to improve the quality of their work. Perceived effectiveness and safety are important forces that drive and constrain speaking up. The authors provide important starting points to empower medical residents to speak up about their suggestions for change.

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#RP6 - Research Papers: Postgraduate

#RP6.1 (3769)

Identities in transition: Creating safe reflexive spaces through occupying liminality

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ABSTRACT:

Introduction: Doctors and other healthcare professionals experience numerous transitions during their careers. From a social constructionist viewpoint, transitions can be defined as ongoing processes of psychological, social and educational adaptations over time due to changes in context, interpersonal relationships and identity.¹ During times of transitions, doctors will use identity work to cope with changes in multiple domains (e.g. psychological, social, etc.). Accompanied with this identity work are dynamic liminal phases. Current literature on liminality denotes a state of betwixt and between which can either: disrupt a sense of self where individuals use identity work to move through and out of liminality i.e. temporary liminality; or where temporary workers (e.g. locum doctors) or those in dual roles (e.g. clinician-managers) experience perpetual liminality, using identity work to make themselves contextually-relevant.² Current healthcare education literature conceptualises liminality as a linear process; not aligning with current notions of transitions depicting multiple, complex and non-linear views. Using identity work as a lens for our analysis, this study explored how doctors experience liminality during the trainee-trained doctor transition by asking: (1) what liminal experiences do doctors narrate as they move through trainee-trained transitions and what identity work is narrated within those liminal experiences; and (2) how do these liminal experiences change over time during trainee-trained transitions?

Methods: Underpinned by social constructionism, we undertook longitudinal narrative inquiry employing audio-diaries. In three phases, we: (1) interviewed twenty doctors about their trainee-trained transitions; (2) collected longitudinal audio-diaries from seventeen doctors for 6-9 months; and (3) undertook exit interviews with these seventeen doctors. Data were analysed inductively, using identity work theory as a lens for analysis.

Results: All study participants experienced liminality as they moved from trainee to trained doctor. Our data analysis enabled us to identify temporary and perpetual liminality in participants' experiences. Fine-grained analysis of participants' identity talk enabled us to identify points in some participants' journeys where they rejected identity grants associated with their trained status; instead preferring to remain in and thus occupy liminality (such as neither trainee nor trained doctor). To address research question 1, data will be presented to describe multiple participants' different experiences of liminality and their associated identity work; to address question 2, data will be presented from the multiple liminal experiences and associated identity work of one participant over time.

Discussion and Conclusions: In addition to temporary and perpetual liminal experiences, we suggest that some individuals actively choose to be liminars, thereby exerting agency and control over their transitions. Our analysis also revealed that conceptualizations of liminality as a linear progression from one professional identity (e.g. trainee doctor) to another (e.g. trained doctor) is overly simplistic. Our data analysis suggests that liminal spaces can represent safe places in which individuals can dwell and respond to complex experiences associated with transitions through reflection and planning. This paper is the first to longitudinally explore the liminal experiences of doctors during trainee-trained transitions. Our findings also make conceptual contributions to the wider healthcare literature on liminality through introducing the notion of occupying liminality. Finally, our findings emphasise the need to prioritise personalised approaches to supporting transitions: acceptance by trainees and trainers alike that doctors will experience liminality during career journeys could help facilitate supportive discussions about how these liminal experiences can be seen as safe spaces for reflexivity.

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#RP6 - Research Papers: Postgraduate

#RP6.2 (3877)

How do trainees come to trust a supervisor?

AUTHOR(S):

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ABSTRACT:

Introduction: Trainees in postgraduate medical education face the challenge of both learning and working, which involves navigating a complex social environment while seeking to establish themselves as competent learners and ultimately as independent practitioners. The emphasis on entrustment of trainees as a mechanism for recognising trainee movement along their learning trajectory has provoked renewed interest in the concept of trust in medical education. While trust is a two-way street (1), we know little about how trainees come to trust their supervisors. If we knew more, we could guide supervisors to better engender trainee trust, decrease the emotional work of trainees and improve trainees learning experience. Hence, we have asked, how do postgraduate anaesthesia trainees come to trust their supervisors?

Methods: The context for this study was postgraduate anaesthesia training in Australia and New Zealand. We used a constructivist grounded theory approach with communities of practice theory (2) as a sensitising concept. We conducted a qualitative survey (n=56) followed by semi-structured interviews (n = 16) to generate data. We purposively sampled all years of training across both countries and incorporated theoretical sampling as our analysis progressed. We used the processes of open and focused coding, memo writing and comparison of cases to generate theoretical categories which we used to develop our model.

Results: Trainees conceived trust as a balance of risk and benefit when managing vulnerability. Trainees seldom consciously calculated this equation but instead acted more intuitively. Trainees assumed initial trust in supervisors based on accreditation, reputation, and a belief that supervisors were constrained by their role to act in a trustworthy way. With experience, trainees subsequently developed a dynamic evidence-based trust that evolved with time. Trainees reported shared interests or characteristics, supervisor practice they aspired to emulate, or supervisor credibility as teachers contributed to increased trust in supervisors. Where trust was low, trainees described a burden of emotional work required to maintain a harmonious relationship. Conversely, trainees felt secure where trust was high and reported less need to monitor their own performance to align with supervisor requirements. Supervisor commitment to the trainees development, demonstrated by concern for the trainee as a person or altruistic actions to support trainee learning, deepened trainee trust. Some senior trainees, but not all, reported examples of collegial relationships with a high level of trust characterised by bi-directional learning, honest appraisal and shared vulnerability that reinforced their confidence in their capability.

Discussion and Conclusions: Trainees will have multiple relationships at any time with varying degrees of trust in various stages of evolution. Trainees who experience more vulnerability when their place in the community of practice is more peripheral(2), for instance early in their learning trajectory or if their competence is questioned, must attend more conscientiously to their degree of trust in supervisors. As enhanced levels of trust decrease their need to continually prove their competence, trainees may have more emotional and cognitive resources to devote to patient care and learning when working with trusted supervisors. Trusting relationships may enhance trainee resilience by providing refuge for trainees when difficulties arise. By engendering trainee trust, supervisors strengthen the credibility of their feedback and their effectiveness as teachers. Given the work required by both parties to develop trust, and the positive affordances of trust for trainees, designing training programs to foster long-term relationship development should enhance learning experiences.

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#RP6 - Research Papers: Postgraduate

#RP6.3 (3894)

Student to clinician. Identity development within the GP supervisory relationship

AUTHOR(S):

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- Debra Nestel, Monash University, Australia
- Tim Dornan, Queens University, UK
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ABSTRACT:

Introduction: A core task of postgraduate clinical training is for the trainee to develop the identity of a clinician. This development occurs over time in the context of supervisory relationships. Therefore, in order to support this identity development, it is necessary to understand how it occurs within the supervisory relationship. We aimed to explore clinical trainee identity development, as it occurs over time in supervised practice, using naturalistic data. Our overarching purpose was to develop a conceptualisation of identity development in this context to better support clinical trainee identity formation in general practice (GP). To this end, we asked two questions: 1. What shapes the clinical trainee's identity in the context of supervised practice? 2. How does the clinical trainee's identity change over time in the context of supervised practice?

Methods: We took a critical realist approach using case study design and Holland et al's theorising on cultural worlds as a conceptual frame (1). Each case comprised a GP trainee and a supervisor. Our main data was weekly audio-recordings of interactions of the trainee, supervisor and a patient over 12-weeks. We also collected post-interaction reflections and undertook sequential interviews during the placements. All audio-recordings were transcribed. An interpretivist approach was taken for analysing the data using Sullivan's dialogic methods with the focus on the doing of language and the cultural Discourses expressed (2). Human Research Ethics approval was granted.

Results: We identified three social Discourses which were: the Discourse of clinical responsibility; the Discourse of ownership of clinical knowledge; and, the Discourse of the measure of trainee competency. Versions of these Discourses defined four trainee/supervisor relational arrangements within which supervisor and trainee assumed reciprocal identities. We labelled these relational arrangements as: student assistant/expert clinician; apprentice/master coach; co-clinicians; and, trainee as lead clinician/supervisor as advisor. We found a trajectory across the identity arrangements that occurred over time. This trajectory was facilitated by particular features of the supervisory pair. These were: invitation of a clinician identity by the supervisor to the trainee; readiness on the part of the trainee to accept this invitation; sufficient time for a transition to occur; supervisor safety netting of the trainee during the transition; congruence between the way the supervisor and trainee positioned each other; and, mutual respect and good will.

Discussion and Conclusions: In the supervisory relationship, trainee and supervisor adopt reciprocal identities. In order for the trainee to progress to the identity of lead clinician, the supervisor needs to invite the trainee into this space and vacate it themselves. Congruence between supervisor positioning of the trainee and trainee authoring of themselves is important. Congruence is aided by explicit dialogue and common purpose. We offer a model and language for trainees, supervisors and faculty to facilitate this.

References: 1. Holland D. Identity and agency in cultural worlds: Harvard University Press; 2001. 2. Sullivan P. Qualitative Data Analysis. Using a Dialogical Approach. London: Sage; 2012.

#RP6 - Research Papers: Postgraduate

#RP6.4 (3906)

Identifying Registrars in difficulty in General Practice Training and their subsequent exam performance

AUTHOR(S):

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ABSTRACT:

Introduction: Flagging is an approach whereby learners perceived not to be meeting minimum expectations are identified, and assistance mechanisms implemented. It has been proposed that a useful outcome to evaluate the effectiveness of flagging is exam outcomes. As part of an Education Research Grant from the Royal Australian College of General Practitioners (RACGP), we aimed to produce an overview of flagging systems across General Practice (GP) training in Australia.

Methods: Meta-analytic techniques were used to pool data from Regional Training Organisations (RTOs), examining the relationship between flagging and RACGP exam performance. Participants' exam performance and flagging data was collected for GP registrars who sat RACGP exams in 2018. Qualitative data was pooled from interviews and focus groups with registrars, supervisors and medical educators, and interviews were conducted with key medical educator personnel involved in flagging procedures from RTOs, in order to better understand their flagging protocols. These results were triangulated to identify flagging systems throughout Australia.

Results: RTOs have diverse flagging systems, but each has been adapted to the local context. Stakeholders were concerned about at-risk registrars not being identified, and emphasised the importance of processes being in place in order to facilitate early flagging. A major theme that emerged was the issue of 'failure to fail', where registrars who should be flagged are not being flagged, often because of the relationship with the assessor. The meta-analysis supported this; registrars flagged later in training were significantly more likely to fail exams. Diagnostic processes and graded flags have been identified as predictors of better exam performance. Timing of flagging is very critical, with participants flagged in their final semester much more likely to fail their exams. RTOs where remediation was done by a medical educator who was assigned to the registrar for their whole training, had better RACGP exam outcomes.

Discussion and Conclusions: Registrars who were flagged early were more likely to pass their exams if they were in an RTO with a formal diagnostic process, and whose remediation was undertaken by a medical educator with whom they had a good relationship. In other circumstances, flagging predicts exam failure, providing RTOs with an additional tool for interventions. Furthermore, potentially useful features of flagging systems have been identified and should be explored in future research. Conclusion Flagging has been identified in this study as a predictor of RACGP exam performance in registrars. The importance of early flagging has been reinforced and strategies for better identifying registrars at risk and improving the remediation process were identified.

#RP7 - Research Papers: Selection

#RP7.1 (3902)

Tolerance for uncertainty, personality traits and specialty choice among medical students

AUTHOR(S):

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ABSTRACT:

Introduction: Medical decision-making deals with incomplete and ambiguous information, with tolerance for uncertainty being a necessary skill among competent physicians. The objective was to explore the tolerance for uncertainty in its different aspects (risk, ambiguity and complexity) in medical students at different times of their careers, and to relate tolerance with their personality traits and specialty choices. A secondary objective was to build a hypothetical model aimed to explain the potential interdependence relationships between gender, personality traits, tolerance for uncertainty and specialty choice using a structural equation modeling (SEM) analysis.

Methods: A prospective cross-sectional study including medical students at Year-2 (n=155) and Year-6 (n=157) was performed during 2017 at Buenos Aires Medical University. Students completed measures assessing tolerance for different types of uncertainty: 1) complexity (arising from features of information difficult to comprehend); 2) risk (arising from the indeterminacy of future outcomes); and 3) ambiguity (arising from limitations in the reliability, credibility, or adequacy of information). These measures were included into three questionnaires: Tolerance for Ambiguity (TFA) scale that focuses on uncertainty arising from complexity; Pearson Risk Attitude (PRA) scale that measures tolerance for risk; and Ambiguity Aversion in Medicine (AA-Med) scale that assesses aversion for ambiguity. Individual information on age and gender, and specialty choice in sixth-year medical students was included, plus the Big Five Inventory-10 (BFI-10) personality test outcomes.

Results: Mean age of Year-2 students was 19.6 (SD 1.59) years and 63.9% were female; while mean age of Year-6 students was 26.2 (SD 3.12) years and 62.4% were female. Globally, personality traits based on the BFI-10 categories were proportionally: extraversion 37.8%, openness 16.9%, conscientiousness 14.5%, agreeableness 18.6%, and neuroticism 12.2%. Specialty selection between sixth-year students (n=157) was divided into surgical 21.7%, clinical 61.1%, and does not know 17.2%. Correlation between questionnaires was low (TFA-PRA $r=-0.156$, TFA-AA-Med $r=0.154$, and PRA-AA-Med $r=-0.071$), indicating that each questionnaire was measuring different aspects of uncertainty. Reliability values were 0.59, 0.53 and 0.67 for TFA, PRA and AA-Med. Outliers analysis demonstrated that 1.0%, 1.3%, and 1.6% of individuals showed an atypical extreme low tolerance for complexity, risk and ambiguity, respectively. Sixth-year medical students showed lower scores than Year-2 students at tolerance for complexity ($p=0.0003$) and ambiguity ($p=0.008$). Based on the correspondence analyses, Sixth-year students choosing a surgical specialty were associated to a low tolerance for risk and ambiguity, and a moderate tolerance for complexity. Conversely, students choosing a clinical specialty were related with high tolerance for risk, moderate tolerance for ambiguity, and low tolerance for complexity. Logistic regression analysis including the uncertainty questionnaires plus the BFI-10 categories demonstrated that only the neuroticism personality trait was independently associated with a surgical specialty choice (OR: 1.31, 95%CI: 1.03-1.67); nevertheless, this factor only explained 5.8% of the variance ($R^2=0.058$). The final SEM that best represented the data showed good fit statistics: chi-square ($p=0.108$), and RMSEA (0.047).

Discussion and Conclusions: Tolerance for uncertainty in its different dimensions was associated to personality traits and specialty choice among medical students. A SEM analysis could satisfactorily explain the hypothetical relationships of dependency between those variables. Given the relevance of tolerance for uncertainty, it should be directly addressed by medical education, to help students to deal with it and to continue with research to clarify the remaining gaps.

References: -Geller G. (2013) Tolerance for ambiguity: an ethics-based criterion for medical student selection. *Academic Medicine*;88:581-584. -Han PK, Klein WM, Arora NK. (2011) Varieties of uncertainty in health care: a conceptual taxonomy. *Medical Decision Making*; 31: 828-838.

#RP7 - Research Papers: Selection

#RP7.2 (3914)

Work Experience Requirements at UK Medical Schools: A Scoping Review and Analysis of the Impact on Widening Participation

AUTHOR(S):

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ABSTRACT:

Introduction: Students from lower socio-economic status (SES) backgrounds face challenges to medical school entry, including limited academic support, reduced funding and difficulty accessing relevant work experience. Whilst strategies such as contextual admissions, “widening participation” initiatives, and bursary schemes aim to tackle these issues, there remains a significant disparity between the ability of lower SES students and their more affluent counterparts to secure medically-relevant work experience (1). Our preliminary work indicated that ‘work experience’ is ambiguously defined in this context. We therefore aimed firstly to develop a standard from the literature by which to assess work experience requirements, and secondly to apply this standard to evaluate the information given to applicants by all UK medical schools.

Methods: We searched PubMed to develop a framework to assess the diversity of work experience requirements, using the following search strategy with no date or language restrictions: (((UK OR United Kingdom OR Scotland OR Northern Ireland OR Wales) AND (Medical School) AND (Volunteering OR Work Experience OR Community) AND (Standard* OR Requirements OR Competenc* OR Hours))). All requirements were sourced from the medical school’s council website with the type of work experience referenced (hospital, primary care, community or other) recorded.

Results: From 2473 records, 17 full-text articles were identified and used to develop five criteria for the assessment of work experience requirements in UK medical schools (length, clinical experience, paid work, setting and clear aim). Across all 39 UK medical schools, none of the medical schools fulfilled all five criteria. Five schools met three of the criteria (12.8%), whilst seven met none of the criteria (17.9%). Two criteria met was the modal result (35.9%). The modal criterion met was clear aim (56.4%), the least met criterion was length (2.6%). 19 medical schools made direct reference to community (48.7%) and five to primary care (12.8%) in their work experience requirements.

Discussion and Conclusions: According to our five criteria, there is a wide range of work experience requirements in UK medical schools. This is consistent with previous work suggesting that work experience is both a particular challenge to lower SES applicants, relative to applicants from private schools (1), and a key reason why applicants are rejected before interview (2). The lack of direct reference to community and primary care placements could contribute to this observation. We identify a potential link between the inconsistency of work experience requirements and the particular difficulty lower SES applicants face in securing work experience. Given the lack of direct reference to primary care and community placements, it is possible these forms of work experience are being “devalued”. Future stakeholder analysis of work experience requirements will be important in continuing to widen access for lower SES students.

References: 1. Wright S. Medical school personal statements: a measure of motivation or proxy for cultural privilege? *Adv Health Sci Educ Theory Pract.* 2015;20(3):627-43. 2. Turner R, Nicholson S. Reasons selectors give for accepting and rejecting medical applicants before interview. *Med Educ.* 2011;45(3):298-307.

#RP7 - Research Papers: Selection

#RP7.3 (3988)

Gaming the Medical School Application System: Revealing the Coaching Effect Size of a Constructed Response Situational Judgment Test

AUTHOR(S):

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ABSTRACT:

Introduction: Situational judgment tests (SJTs) are increasingly used for medical trainee selection, precipitating commercial test prep market development, with limited understanding of potential coaching effect and its potential socially regressive impact. Data interpretation is complicated by the multiplicity of contributors to test-retest score changes - coaching effect, practice effect, construct-relevant skill enhancement (i.e. student maturation over time), and range restriction (high test-scorers being admitted to medical school, and low test-scorers realizing their non-competitiveness and preferentially self-excluding from retesting). There is less concern about practice effect when practice is equally available and used, due to its diminishing returns[1], while any retest score analysis must consciously control for range restriction. Rather, the greatest retest score change concern is coaching effect, as it threatens score enhancement driven by construct irrelevant factors like response distortion and test-wiseness; “[t]est coaching firms will typically focus more heavily on the test-related approaches over skill/knowledge development because such approaches might yield more immediate effects”[2]. For cognitive testing, coaching effect, when separated from practice effect, demonstrates minimal impact (0.06 standard deviations)[1] in a meta-analysis; differences of up to 0.5 SD are found with selected-response SJTs[2]. For constructed-response SJTs, coaching effect remains unknown. This study sought to examine the role of coaching effects in SJT performance in medical school admissions.

Methods: We sent a survey to all medical school applicants who completed a constructed response SJT (CASPer) in the 2018-19 application cycle, asking respondents to indicate whether or not they used any of the following preparation strategies: read the tips for applicants on the test website, completed the free practice test on the test website, participated in a commercial test preparation course, studied potential questions based on the assessment competencies, rehearsed responses with technology, and rehearsed responses without technology. Applicants were aware individual results would not be sent to schools. We coded each variable dichotomously (1 = used strategy, 0 = did not use strategy). We then conducted a multiple regression analysis to compare the effect of each preparation method on SJT scores, holding all other preparation methods constant.

Results: Approximately 7% of SJT test takers completed the survey (n = 2800). Of the six preparation strategies, only completing the free practice test on the test website (b = 0.16, p < .001), studying potential questions based on the assessment competencies (b = 0.13, p = 0.02), and rehearsing responses with technology (b = 0.18, p < .001) provided significant additive benefit to test scores over and above other methods. Test preparation method only accounted for 2% of the overall variance in test scores (R² = 0.02, F(6,2887) = 14.44, p < .001).

Discussion and Conclusions: This first study of coaching on constructed response SJT scores suggests that practice effect is small and coaching effect is extremely small. These results highlight the importance of ensuring equitable access to practice tests, and relieves concerns over potential socially regressive impact of commercial test preparation. Future research should explore the ways in which freely accessible practice can be most equitably provided.

References: 1. Hausknecht JP, Halpert JA, Di Paolo NT, Moriarty Gerrard MO. Retesting in selection: a meta-analysis of practice effects for tests of cognitive ability. *J Appl Psychol*, 2007; 92: 373-85 2. Lievens F, Buyse T, Sackett PR, Connelly BS. The effects of coaching on situational judgment tests in high-stakes selection. *International Journal of Selection and Assessment*, 2012; 20(3): 272-82

#RP8 - Research Papers: Teaching and Learning

#RP8.1 (3731)

'Nearly there but not quite': Embedding practice-based IPE in placement culture

AUTHOR(S):

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ABSTRACT:

Introduction: Practice-based interprofessional education (IPE) is a key feature in developing a collaboration-ready workforce (World Health Organisation, 2010). Challenges to establishing practice-based IPE include entrenched uniprofessional placement models and placement site shortages. Few studies have explicitly considered how practice-based IPE becomes embedded and sustained in healthcare education programmes. Thus, this study used a theoretically informed approach to (1) synthesise perspectives of educators relating to practice-based IPE and (2) make recommendations focused on developing sustainable practice-based IPE.

Methods: This ethnographic case study was underpinned by a critical realist paradigm and informed by sociomaterial and sociological theories. Data was collected at a school of allied health within a university, and included observations (n=7), interviews (n=11) and document review (including placement handbooks and standards of practice). Reflexive thematic analysis, guided by Complexity Theory, Normalization Process Theory and Negotiated Order Theory established four key findings.

Results: Four key findings are discussed using a construction metaphor. First we found that 'turning the sod' by taking deliberate steps to begin building an environment of practice-based IPE was necessary. Applying constructs of Normalization Process Theory, participants felt developing practice-based IPE was a legitimate aspect of their role and would benefit students and service-users. Secondly, the stability of early foundations was challenged by a lack of clarity regarding the ultimate aim for practice-based IPE at the site. Limited attention had been given to developing a coherent and collective agenda. From the perspective of Complexity Theory, changes in the ecological system, e.g. professional regulation and staff turnover, also impacted the stability of practice-based IPE. Thirdly, stymied progress led to a period of revising the blueprint, by redefining site aims for practice-based IPE. Negotiated order theory highlighted instances of non-negotiated decision-making, leading to individual as opposed to group action. Our fourth finding reflected the need for appropriate tools if practice-based IPE is to be embedded into the curriculum. A recurring challenge for staff was how to capture IP activity to meaningfully reflect the activities occurring at clinical sites.

Discussion and Conclusions: Practice-based IPE is a complex, multi-faceted endeavour requiring local, national and global level support. As has been the experience in this school, local level commitment and initiatives are a necessary starting point. Having a collective site agenda for embedding practice-based IPE in the curriculum increases the likelihood of success. However, this needs to be matched with "top down" level support, such as inclusion in national workforce planning and government policy, if practice-based IPE is to truly become embedded in placement culture. Nationally the development of suitably flexible assessment tools may be helpful in tracking and capturing practice-based IPE. Globally, there are increasing calls for regulators to publish joint IPE outcomes and standards, which would support greater integration of practice-based IPE into professional training (Steven et al., 2017). This paper provides a unique insight into the steps taken and challenges encountered at a school seeking to develop a sustainable model of practice-based IPE. Theoretically informed findings underpin system-wide recommendations for addressing these challenges. As practice-based IPE is a key aspect of collaborative work preparation, this research has applicability to educators, regulators and employers.

References: Steven, K., Howden, S., Mires, G., Rowe, I., Lafferty, N., Arnold, A., & Strath, A. (2017). Toward interprofessional learning and education: Mapping common outcomes for prequalifying healthcare professional programs in the United Kingdom. *Medical Teacher*, 39(7), 720-744. doi:10.1080/0142159X.2017.1309372 World Health Organisation. (2010). Framework for Action on interprofessional Education & Collaborative Practice. Geneva.

#RP8 - Research Papers: Teaching and Learning

#RP8.2 (3760)

Applying the Theory of Gendered Organizations to the Lived Experience of Women with Established Careers in Academic Medicine

AUTHOR(S):

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ABSTRACT:

Introduction: The number of women who enter medical school has been on par with the number of men for almost 20 years, but parity in training has not translated to equity in professional life. In academic medicine, research describes the problem of gender inequity but typically lacks theoretical grounding that could illuminate a way forward. In gender studies, the Theory of Gendered Organizations (1, 2) argues that gender inequity is inherent in organizations. In light of this theory, the perspective of women faculty with established careers in academic medicine may be particularly insightful for understanding the persistence of gender inequity. With the Theory of Gendered Organizations as an analytic lens, we asked, “How have women with established careers in academic medicine experienced a gendered academic medical organization?”

Methods: For this illustrative case study (3), we recruited women faculty at one large, urban academic medical center in the USA based on purposeful sample (self-identified as being later stage by virtue of attending a workshop on envisioning later stage careers) and snowball sampling (peers identified by workshop attendees). In summer/fall 2018, we conducted in-depth interviews with 30 women (typically full professors, age 60-70 years, representing 5 departments). We iteratively collected and analyzed data, constructing codes from important concepts in the data and revising codes in a constant comparison fashion (4). As analysis progressed, we reviewed organizational documents and clustered coded data into categories sensitized by constructs from the Theory of Gendered Organizations: formal expectations (i.e., policies) and informal interactions experienced by women in the workplace.

Results: As their experiences of inequity accumulated over the course of their careers, women attributed inequity to “the way things are stacked” within the organization. They came to this understanding after overcoming self-doubt (“Is it me?”). Women consistently recalled the “lip service” paid to policies that espoused gender neutrality when, in fact, they experienced informal interactions that privileged men. The disjuncture between policies and informal interactions frequently occurred around issues of academic promotion and salary. Policies for both espoused gender neutrality. Nonetheless, women experienced informal interactions related to promotion and salary as being (a) treated differently than men (“Her promotion letter talked about what a lovely woman she was and how many children she had, not her 50 first author papers”) or (b) stereotyped as the subordinate gender (“How much does your husband make?”). Nonetheless, women did not only experience inequity: they navigated this gendered organization in the later stages of their careers by advocating for themselves (“I had to confront my department chair”) and for younger women faculty (“One of the first things I did as chair was give this woman associate professor a big raise”).

Discussion and Conclusions: In this case study, the disjuncture between policies intended by the organization to be gender-neutral and informal interactions that advantaged men demonstrated how the academic medical center functioned as a gendered organization. Women came to recognize, later in their careers, that gender inequity was embedded in the organization. We leveraged The Theory of Gendered Organizations from gender studies and begin to elucidate mechanisms that maintain and reproduce gender inequity in academic medicine. Future research using this theory can inform efforts to dismantle inequity in at multiple levels of the academic medical organization and thus respond to recent calls for organizational change (5).

References: 1. Acker J. Hierarchies, jobs, bodies: a theory of gendered organizations. *Gender and Society*. 1990;4(2):139-158. 2. Britton DM. The epistemology of the gendered organization. *Gender and Society*. 2000;14(3):418-434. 3. Cheek C, Hays R, Smith J, Allen P. Improving case study research in medical education: a systematized review. *Medical Education*. 2018;52(5):480-487. 4. Merriam SB. *Qualitative Research and Case Study Applications in Education*. San Francisco, CA: Jossey-Bass; 1998. 5. Kang SK, Kaplan SA. Working toward gender diversity and inclusion in medicine: myths and solutions. *Lancet*. 2019;393(Feb 9 2019):579-586.

#RP8 - Research Papers: Teaching and Learning

#RP8.3 (3815)

A good start is half the battle: the effect of motivation for research at the start of medical training on actual research involvement

AUTHOR(S):

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ABSTRACT:

Introduction: The medical field is currently facing a physician-scientist shortage, which poses a serious concern for academic medicine. Physician-scientists are actively involved in both research and clinical practice and thereby of crucial importance to develop new knowledge and bridge the gap between research and practice. A mentioned solution starts in medical training already: stimulating student involvement in and motivation for research could help to develop, and counteract the decline in, physician-scientists [1, 2]. Many motivational theories, like Self-Determination Theory (SDT), describe how to motivate students and previous studies seem to focus on motivation for research as the ultimate outcome measure [1]. The question arises if it is legitimate to pose motivation for research as a key parameter of success and if students act upon their motivation for research. Within the medical field, it has not yet been investigated if student motivation for research results in actual research involvement. Therefore, the aim of this study is to investigate to what extent intrinsic (IMR) and extrinsic motivation (EMR) for research among first-year medical students influence actual involvement in research.

Methods: Within this prospective cohort study, first-year medical students were surveyed at the start of their medical training to measure IMR and EMR. The questionnaire consisted of validated scales adjusted to the medical education field and the context of conducting research [2]. As part of a longitudinal study, students are followed through medical training and involvement in research was investigated in the second year. Logistic regression analyses were used to examine the influence of IMR and EMR on research involvement. This relation is tested both univariate, as well as multivariate adjusting for gender, age, self-efficacy beliefs, perceptions of research and curiosity (also measured in the questionnaire).

Results: In total, 315/316 first-year medical students participated in our study (99.7%), of whom 55 (17.5%) were identified as involved in research in their second year. Higher levels of IMR are related to research involvement (OR = 3.4, 95%CI = 2.07-5.58), also after adjusting for gender, age, self-efficacy beliefs, perceptions and curiosity (OR = 2.5, 95%CI = 1.34-4.76). There was a crude effect of EMR on research involvement (OR = 1.4, 95%CI = .96-2.1), however this effect disappeared in the multivariate model (OR = 1.04, 95%CI = .67-1.63). Furthermore, the effect of IMR remained after adjusting for EMR (OR = 3.4, 95%CI = 2.01-5.7), while the effect of EMR disappeared after adjusting for IMR (OR = 1.01, 95%CI = .67-1.55).

Discussion and Conclusions: IMR at the start of medical training influences research involvement in the second year. EMR does not contribute on top of IMR. Our findings are in line with SDT, which states that IMR is of better quality and should be stimulated. Our results suggest that IMR should be targeted to stimulate research involvement during medical training. As research involvement during medical training has proven to be related to conducting research during future professional practice [2], it seems that a good start is indeed half the battle and IMR could be seen as a first step in developing future generations of physician-scientists.

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#RP8 - Research Papers: Teaching and Learning

#RP8.4 (3958)

Building a multi-professional framework for interpreting undergraduate students' experiences of learning decision-making in medicine, pharmacy, and physiotherapy

AUTHOR(S):

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- Hanna Olson, University of Otago, New Zealand
- Ciara Lee, University of Otago, New Zealand
- Daniel Wright, University of Otago, New Zealand
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ABSTRACT:

Introduction: This study adds to the growing health professional education literature about how students learn to make decisions about providing patient care. The multi-professional perspective of this study offers an original and enriching perspective for clinical educators to understand how they teach and how students learn to make decisions in health professional programmes. Clinical educators may find the themes useful for understanding why some of their students may struggle to develop and integrate the expected knowledge, skills, and attitudes involved with clinical decision-making. Findings may also provide educators with new insights about the challenges students may face when they are learning how to participate productively in interprofessional education exercises. The next phase of the study will include nursing and dental students in order to add their experiences to this multi-professional decision-making framework for educators to use when planning learning opportunities and designing assessment tools for their students.

Results: This qualitative study was conducted using one-to-one interviews with 60 undergraduate students at the University of Otago in New Zealand. Participants included approximately equal numbers of second- and final-year students in medicine, pharmacy, and physiotherapy programmes. Interview data were analysed thematically then findings were compared among professions and year-levels using the frameworks for decision-making in the students' curricula.

Doctoral Reports

#DR1 (3913)

Creating a framework for the remediation of professionalism lapses in medical students

AUTHOR(S):

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ABSTRACT:

Introduction: The work of Papadakis (2005) linked medical student professionalism lapses with later misconduct. Medical educators have become increasingly concerned with identification and remediation of unprofessional behaviour, though there is little evidence for any remediation strategy. Existing evidence, including a pilot study as part of this doctoral research, demonstrates that medical schools vary in their approaches to addressing unprofessional behaviour and medical educators feel uncertain about how to approach remediation. While research concerned with professionalism lapses focusses on behaviour, this is out-of-step with the wider literature on the subject of professionalism, which emphasises the need to develop a professional identity in order to become professional. This study seeks to understand the emerging professional identity of students labelled as ‘unprofessional’ to develop an empirically grounded and theoretically-informed framework for remediation.

Methods: Identities can be understood as multiple and constructed through cultural norms and social interactions. As identities are socially-enacted through the stories we tell about ourselves, I employed a narrative inquiry approach. I interviewed seven students from four UK medical schools, asking a question intended to elicit participants’ stories of becoming a doctor. These narratives were then subject to two layers of analysis: a positioning analysis and a narrative-focused thematic analysis. Identity positions are the roles and characters individuals take within their own story and give insights into how a narrator views their identity. A narrative-focussed thematic analysis focuses not only on the content of stories but how this content is employed by the narrator in order to make sense of their lived experiences. The identity positions and themes were then reformed into new stories to communicate the nuance of participants’ narratives whilst preserving their anonymity. These stories were shared at stakeholder engagement workshops as a method of resonance-checking and developing ideas for remediation. The stakeholder views were incorporated into a proposed remediation framework.

Results: There were six identity positions that arose in multiple participants’ stories: ‘The Medic’, ‘Explicitly at Odds’, ‘The Victim of Fate’, ‘The Self-made (Wo)man’, ‘The Maverick’ and ‘The Lucky One’. In addition, five narrative themes emerged: ‘I think being a doctor is what I am supposed to be’; ‘I am not sure where I fit’; ‘I am not like the rest of them’; ‘it feels like the world against me’; and ‘it is not what it looks like’.

Discussion and Conclusions: Participants were in liminal phase of developing their professional identity: they were working to form identities as both medical students and future doctors. These identities came into conflict with other identities, leading to identity dissonance (Costello 2005). Identity dissonance is associated with an increased cognitive and emotional burden, leading to higher rates of academic failure (ibid.). In this context, identity dissonance was associated with risk of professionalism lapses, and such lapses and their remediation acted as further identity challenges. This cycle left ‘unprofessional’ students feeling further removed from their peers and at risk of repeated lapses. Stakeholders identified challenges to regional and national medical education policies in light of these findings and recommended changes that could be made to local practices in order to more effectively support students following professionalism lapses. Though remediation remains challenging, this research aids in understanding the ‘unprofessional’ student. This allows critical reflection on current remediation practices and we have developed a framework to scaffold future directions in this field.

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Doctoral Reports

#DR2 (3696)

Resident-Sensitive Quality Measures: Defining the Future of Patient-Centered Assessment

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ABSTRACT:

Introduction: Despite increasing calls to link educational and patient care outcomes, a core tenet of competency-based medical education, current gaps in quality improvement training and resident performance assessment hinder efforts to achieve this goal. Patient-centered performance assessment, using a framework of entrustable professional activities (EPAs) as well as resident-sensitive quality measures (RSQMs), provide a way to overcome these barriers. This thesis set out to: 1) develop a model for identifying and utilizing RSQMs in performance assessment, and 2) explore the association between performance on RSQMs and entrustment decisions.

Methods: Development of RSQMs focused on three acute illnesses commonly presenting to the pediatric emergency department: acute asthma exacerbation, bronchiolitis, and closed head injury. This development began by engaging pediatric residents and pediatric emergency medicine supervisors in consensus group methods (nominal group technique followed by Delphi) to generate and prioritize possible measures meeting two criteria: 1) importance of measure to the illness, and 2) likelihood that a resident, and not another member of the team or the team collectively, completes the measure. Pediatric residents were subsequently assessed using RSQMs for acute asthma exacerbation (21 RSQMs), bronchiolitis (23), and closed head injury (19). To determine the proportion of individual RSQMs correctly performed out of total possible RSQMs that could have been performed, a composite score for each encounter was generated. To measure the association between RSQM composite scores and entrustment decisions, mixed models were used to account for observations nested within residents. Finally, using constructivist grounded theory, we explored how individual clinical competency committee (CCC) members interpret, use, and prioritize RSQM data when inserted into their usual review processes.

Results: Prioritized RSQMs often fell into one of three categories: 1) appropriate medication use, 2) documentation, and 3) information provided at patient discharge. Of encounters included in the implementation study, 83 residents cared for 110 patients with asthma, 112 with bronchiolitis, and 77 with closed head injury. While residents had the opportunity to meet most RSQMs in encounters, the frequency with which measures were met was broad, with only one RSQM met in all encounters. RSQM composite scores also demonstrated notable range and variation: asthma mean: 0.81 (SD: 0.11); bronchiolitis mean: 0.62 (SD: 0.12); closed head injury mean: 0.63 (SD: 0.10). Entrustment decisions were modestly associated with asthma RSQM composite scores (beta-coefficient 0.03; $p = 0.0004$), but there was no significant association for bronchiolitis or closed head injury. Most CCC members used RSQMs to some extent to inform entrustment decisions.

Discussion and Conclusions: RSQMs developed through consensus group methodology largely reflect the performance of residents, and that performance varies widely across encounters. The association between RSQMs and entrustment decisions made about residents also varied. Unlike supervisor entrustment decisions, RSQMs are objective measures of performance. Therefore, they may help to inform and improve the veracity of entrustment decisions. Finding that CCCs use RSQMs supports their inclusion with resident assessment data used to make entrustment decisions.

Doctoral Reports

#DR3 (3713)

Performance Enhancing Routines for Optimising Readiness using Metacognition For the Management of Acutely Unwell Patients (PERFORM)

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ABSTRACT:

Introduction: The stress experienced by healthcare professionals during complex, time-critical clinical encounters can impair clinical performance and produces suboptimal patient care. This is particularly true for junior doctors when managing acutely unwell patients. In sport, athletes minimize the impact of similar performance-related stress using Pre-Performance Routines (PPR), such as visualization (Cotterill, 2010). The use of a single PPR limits their contextual flexibility and impact, but sport psychologists suggest that coaching athletes to use metacognition would allow them to dynamically alter their individually preferred Performance Enhancing Routine (PER) to personalize their approach throughout the changing demands of complex situations (MacIntyre et al 2014). We developed the PERFORM (Performance Enhancing Routines for Optimising Readiness using Metacognition) model as an individualized coaching approach to apply MacIntyre' et al's (2014) theory to the medical context. This research aimed to explore the potential usability and efficacy of the application of the PERFORM model for the management of acutely unwell patients by junior doctors.

Methods: The three-phase study used a mixed-methods action research method. The Exploratory phase included an international scoping literature review of educational interventions in acute patient management. The Pilot phase explored the feasibility of coaching the individualized PERFORM model to junior doctors. The Full Intervention phase incorporated a multiple-case study of 12 doctors across two hospital sites to explore the application of the PERFORM model in both simulation and real patient encounters through the use of reflective logs, semi-structured interviews, Think-Aloud commentary and self-efficacy scores. Within- and between-case analyses were performed to investigate the variables of work-place (central teaching or district hospital) and stage of training (first or second year post-graduate).

Results: The scoping review yielded no previous studies utilising personalized PER and the coaching approach of the PERFORM model was considered useful and applicable to junior doctors. The application of the PERFORM model during an acutely unwell patient in situ simulation significantly improved self-efficacy to control stress ($p=0.003$). The PERFORM model was applied by 11 junior doctors during clinical practice, including non-acute and non-clinical scenarios, and many developed their own personalised PERs. Qualitative data demonstrated the positive aspects of using the PERFORM model in three domains; the doctor themselves, their supportive relationships with colleagues, and on patient care. The doctors most valued their increased awareness of stress associated emotions and behaviours in the workplace.

Discussion and Conclusions: Discussion The application of the PERFORM model created a sense of 'control' over the clinically complex environment for junior doctors when experiencing stress in the management of the acutely unwell patient. The study also demonstrated the practicality and usefulness of an individualizable educational intervention which can be adapted to different scenarios through both reflection in-action and reflection on-action. Conclusion Our study of the innovative PERFORM model is the first to demonstrate that the application of individualized PERs by junior doctors can minimize the impact of stress during acutely unwell patient management. The findings suggest that coaching of the PERFORM model could improve clinical performance during complex and time-critical clinical encounters and further research with larger numbers of junior doctors and other healthcare professionals is recommended to explore this potential impact. References Cotterill, S. (2010) Pre- performance routines in sport: current understanding and future directions. *International Review of Sport and Exercise Psychology*. 3(2): 132-153. MacIntyre TE, Igou ER, Campbell MJ, Moran AP, Matthews J.(2014) Metacognition and action: a new pathway to understanding social and cognitive aspects of expertise in sport .*Frontiers in psychology*. 5: 1155.

Doctoral Reports

#DR4 (3962)

Disrupting standardisation and accountability in OSCEs using Institutional Ethnography

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ABSTRACT:

Introduction: Objective Structured Clinical Examinations (OSCEs) have enjoyed dominance over the last forty years, in health professions education (HPE). There has followed an abundance of OSCE related literature, focusing mainly on enhancing the psychometric precision of this form of assessment. In the critical literature, concerns have been expressed about some of the unintended but undesirable consequences of OSCEs. (1) In the UK (UK), the regulatory body for doctors is introducing a national licensing examination in 2023, bringing the process of how doctors are deemed 'competent' for graduation closer to other parts of the world. As part of this, OSCE or OSCE like assessments in the individual medical schools will be subject to increased regulation. In this PhD, I explored the organising forces around regulation in graduating medical OSCEs, within the dominant discourses of standardisation and accountability.

Methods: This PhD research used the innovative theory/method Institutional Ethnography (IE), an approach that is only emerging in the field of HPE related research. A recent publication discusses why we feel that IE could be a very informative approach in the current challenges faced in HPE. (2) Data was collected over an academic year through ethnographic observation, formal and informal interviews, and analysis of the texts that these people used in this work. The aim was to explicate the 'on the ground' work of those responsible for graduating OSCEs and those directly involved in OSCEs, such as students, examiners and simulated patients. In line with IE, the analysis then moved to how and where this work was organised to happen as it did, in an iterative fashion. A strong commitment to reflexivity was required throughout data collection and analysis due the competing insider positionings of the research team within HPE.

Results: The dominating need to standardise was a visible thematic throughout this process; the need for standardisation in assessment led to standardisation of all aspects of the assessment. Standardisation was textually represented the locally produced texts such as the mark-sheet. The mark-sheet came to subsume the individuality of the patient in the OSCE. This attendance to standardisation was brought about by the need to be accountable to and by the regulatory body. In this research, I traced how this accountability agenda was carried through texts and language of regulation and summarised these connections in what IE calls an accountability circuit. The important message of this research is that such dominance of standardisation and accountability in graduating OSCEs removes students from clinical practice, and from patients, at the important point of when they are granted a license to practice, potentially further adding to feelings of being less prepared for their work as doctors.

Discussion and Conclusions: The supremacy of standardisation in OSCEs rescinds commitment to people-centredness within HPE, instead advocating for accountability-centred practitioners. The lines of action from this research broadly involve the new knowledge of an empirically based, alternative account of OSCEs, based on 'on the ground' knowledge. It problematises how OSCEs have been operationalised, removing students from clinical practice and non-standardised patients and offers some practical advice about how and why to disrupt the standardisation. In addition, this PhD contributes a pioneering example of where IE can be used as an approach to explore tensions in HPE, in order to bring about meaningful change

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Doctoral Reports

#DR5 (4027)

Longitudinal contribution of the global health experience to the continuous professional development of health professionals

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ABSTRACT:

Introduction: The central theme of this thesis concerns the longitudinal contribution of the global health experience. Globalization has accorded undergraduate students and health professionals the opportunity to conduct clinical practice and avail educational support in other countries. Through global health experiences, undergraduate students and health professionals can become aware of the phenomena they did not previously notice and also improve their interactions with others. Extant studies have found that global health experiences may offer transformative learning possibilities as they immerse health professionals into cross-cultural settings that can strengthen and challenge their professional identities. However, it is unclear how these experiences contribute to the continuous professional development (CPD) of health professionals. This thesis addressed three primary research questions: 1. How do the global health experiences of health professionals contribute to their CPD? 2. What are the differences of CPD through global health experiences among health professionals (nurses, dentists, and physicians)? 3. How do global health experiences gained during undergraduate studies contribute to the CPD of health professionals?

Methods: This research comprised two descriptive qualitative studies using the thematic analysis method from the social constructivist paradigm perspective. The first study explored the contribution of global health experiences to the CPD of health professionals and the differences observed in their CPD. Face-to-face interviews were conducted with 20 health professionals (mean age 40.0 years; range 29–57 years) including 5 nurses, 5 dentists, and 10 physicians who had participated in short-term global health projects. The second study evaluated the contribution of global health experiences attained during undergraduate studies to the CPD of health professionals. Face-to-face interviews were conducted with 23 health professionals (mean age 36.4 years; range 33–42 years) who had global health experiences during their undergraduate years.

Results: The first study demonstrated that the global health experiences of health professionals contribute to the development of leadership competencies: leadership concepts, team building, direction setting, communication, business skills, working with others, and self-development. The CPD of health professionals is based on the idea of cross-cultural understanding emanating from their global health experiences. There were differences in CPD among health professionals: nurses particularly reflected on their communication skills toward patients, dentists cogitated on their business skills, and physicians reflected on leadership concepts and team building. Meanwhile, the second study evinced that global health experiences obtained during undergraduate education contribute to the development of the socialization factors of health professionals such as perspective transformation, career design, self-development, diversity of values, contribution to others, and leadership. The interviewed health professionals were encouraged to pursue specialized courses and academic or non-academic work abroad using their global health experiences.

Discussion and Conclusions: The findings of the two studies revealed that the cross-cultural understanding of health professionals was strengthened through their global health experiences. Consequently, global health experiences promoted the reflective self-relativization and inner motivation of health professionals, and thus led to their future CPD. While the global health experiences gained during undergraduate studies were considered “acquisition of foundational abilities,” these experiences were regarded to “intensify learning through challenging experiences.” These findings can offer some guidance to health professionals who are considering the undertaking of global health experiences in the future, and to mentors who coordinate global health training for health professionals.

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Doctoral Reports

#DR6 (4049)

Doing diversity: Unsettling the Self-Other binary. Cultural diversity in Dutch academic health care

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ABSTRACT:

Introduction: Internationally, academic hospitals give increasing attention to diversity and this mostly concerns policy and training aimed at linking up with diverse patient groups. Traditionally, academic hospitals are hierarchical, exclusive and monocultural, and currently, diversity of professionals receives little attention. However, studies point to experiences of exclusion and racism among underrepresented medical students and staff with a minority background. Within the Netherlands, were up to 25% of the medical students has a migrant background and professionals with a migrant background are underrepresented especially in leading positions, studies on their experiences are strikingly absent. Insight into the experiences of (future) professionals with a migrant background in academic health care and into how all (future) professionals deal with diversity, is necessary in order to learn how to benefit from the (intercultural) knowledge of (future) professionals with a migrant background, to support equal access of students into medical practice and to sustain the well-being of the work force -also necessary to secure quality of care for all.

Methods: Following an ethnographic, responsive and critical design, we conducted interviews (n=126) and focus groups (21 participants) with students and (leading) professionals with and without a migrant background in medicine, care and supportive disciplines, and did participant observations (approx. 130 hours) in a Dutch medical school and academic hospital.

Results: Firstly, cultural diversity is perceived as being about other people and interactions and situations different from normal daily practice. Specifically, cultural diversity is seen as being about the Other, and it were (future) professionals with a migrant background who were recognized as such and they experienced exclusion on a day-to-day basis, i.e. it created a particular dichotomization and hierarchization between (future) professionals. Secondly, the professional is presented as neutral and professionalism as a neutral and objectifiable quality. This makes it hard to acknowledge experiences of exclusion and racism. Thirdly, an ideal worker norm exists that is normalized by the two other findings. The ideal worker norm on who is a (good) professional, creates a hierarchy between generally white (future) professionals with a majority background that are perceived as 'same' and qualify as normal, good professionals, and those generally black or of colour with a minority background that are easily perceived as not competent because of their 'difference'. The resulting unequal, racialized distribution of privilege and disadvantage is normalized via everyday routines, structures and discourse by all (future) professionals. Gradually, the researcher recognized how she was 'white innocent' and 'white fragile' and reproduced the diversity-is-the-Other- and the neutral-professional-norms, and added to normalization of exclusion and racism.

Discussion and Conclusions: To enable transformation towards inclusive, equitable and safe education, work and care practices for all in academic health care, we, as (future) professionals and researchers, need to stop 'fixing the Other' and start 'fixing the Self'. This means that we ask ourselves what and who we value and include, what and who we by this exclude and devalue and what this implies about our social and professional norms and ingrained hierarchies. This means that academic hospitals parallelly diversify the (future) work force and critically review the organization structure and practice on its inclusivity and critically review the knowledge base of these structures and practices. This requires that we acknowledge that we are all complicit in normalization and learn to talk about racism, white innocence and white fragility.

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Doctoral Reports

#DR7 (4053)

To be continued ... Supporting physicians' lifelong learning

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ABSTRACT:

Introduction: This thesis investigates the role of recertification systems in assessment of and for physicians' learning. We explored if and how different recertification systems work, and how the interaction between individuals and work environment affect the systems' effectiveness. We investigated physicians' lifelong learning and performance assessment, by addressing four main research questions from a social constructivist perspective: 1. How is recertification organized in different countries and how are performance assessment criteria incorporated in recertification? 2. How and to what extent do recertification systems support physicians' lifelong learning? 3. How do physicians informally learn in and from the workplace, and how can formal recertification systems support informal learning? 4. Which role can patients play in physician performance assessment and lifelong learning?

Methods: This thesis consists of four empirical, international studies including three different perspectives: an organisational and regulatory perspective, physician perspectives and patient perspectives. We examined various types of recertification systems across Europe, their use and incorporation of assessment quality criteria through document analysis and semi-structured interviews (Study 1). Using a constructivist grounded-theory approach, we explored physicians' perceptions regarding the goal and effectiveness of different recertification systems by investigating how these systems support competence assessment for purposes of lifelong learning (Study 2). We combined non-participant ethnographic observations with semi-structured interviews to research how physicians learn from informal feedback in and from daily practice. We specifically focused on how they developed their communication repertoire, and how formal recertification systems can aid in this learning and development (Study 3). In Study 4, a qualitative study, we delved into patient perceptions regarding their role within assessment of and for physicians' learning.

Results: The first study portrays a great variety between national recertification systems in terms of assessment formats used, targeting cognition, competence and/or performance. Whereas some systems exclusively rely on doctors' self-assessment, others involve multiple stakeholders but rarely include patients in assessment of doctors' professional competence. Study 2 reports factors that influence physicians' acceptance and perceived effectiveness of recertification. We found a misalignment between recertification requirements and physicians' daily practice. Physicians' beliefs about learning, perceived autonomy and organizational support determined physicians' trust in and acceptance of the system. Building on how physicians learn from work, study 3 reveals differences in physicians' sensitivity to recognising learning opportunities in daily practice influenced by contextual, personal and interpersonal factors. In study 4, we unearth three predominant patient perspectives that differed in terms of perceived power dynamics within the doctor-patient relationship, patients' perceived self-efficacy and willingness to provide feedback and evaluate their physician's performance. Not all patients were equally willing to play a role in physician performance evaluation.

Discussion and Conclusions: Most recertification systems balance between regulating and supporting professional development, aiming to both identify and bridge gaps between actual and required performance. Considering the perceived misalignment of current recertification systems and physicians' daily practice as well as the importance and opportunities of informal learning, we plea for a change towards a culture that values assessment for learning, fosters a growth mind-set and embraces collaborative practice-based learning. Moreover, we argue that high quality recertification calls for increased patient involvement.

Doctoral Reports

#DR8 (4054)

Knowing How and Knowing Why: Integrating Conceptual Knowledge in Simulation-Based Procedural Skills Training to Support Learning Transfer

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ABSTRACT:

Introduction: In health professions education (HPE), simulation technologies are used to imitate aspects of real-life clinical skills and scenarios with goal of preparing clinical professionals for real-world practice. Though much effort has gone into incorporating simulation into HPE curricula, questions remain about simulation-based instruction can be designed to support trainees' ability to transfer skills learned in simulation to novel contexts. Instructional designs that promote trainees' conceptual understanding have shown to enhance their ability to transfer across a variety of domains but has yet to be operationalized the context of healthcare simulation.

Methods: In this dissertation, I investigate the relationship between instructional design, conceptual understanding, and skill retention and transfer in the context of simulation-based procedural skills training with novice medical trainees. Building on research in education, cognitive psychology, and clinical reasoning, this work assesses the impact of instructional designs that seek to integrate two types of knowledge that underlie procedural flexibility and expertise: conceptual knowledge (i.e., knowing why) and procedural knowledge (i.e., knowing how). In three randomized, controlled experiments, I test the cognitive mechanisms of effective integration of conceptual and procedural knowledge by manipulating the availability and presentation of these knowledges in instructional material.

Results: Results show the integrated instruction increases in trainees' conceptual knowledge, which in turn mediates improvements in trainees' skill retention and transfer. Study 1 establishes the benefits of video-based instruction that integrates conceptual knowledge (in addition to procedural knowledge) for trainee's skill retention and transfer (Cheung et al., 2018). Study 2 demonstrates that video-based integration is most effective when it encourages trainees to create causal linkages between procedural and conceptual knowledges at the level of cognition, a process called cognitive integration (Cheung et al., 2019). In Study 3, we replicate previous findings and attempted to bolster cognitive integration by designing simulators that make the causal relationships between procedural and conceptual knowledge visible and interactive.

Discussion and Conclusions: Taken together, the dissertation operationalizes cognitive integration in simulation-based procedural skills training and provides evidence that integrated instruction can enhance simulation-based skill retention and transfer. Hence, lower fidelity training that emphasizes developing an integrated understanding of procedural and conceptual knowledge may be superior to repeated practice with more realistic simulations.

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<https://doi.org/10.1007/s11606-019-04959-y>

Doctoral Reports

#DR9 (4075)

Pursuing High-Value, Cost-Conscious Care: the Role of Medical Education.

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ABSTRACT:

Introduction: Training medical students, residents and physicians for the delivery of high-value, cost-conscious care has been high on the medical educational agenda. Unfortunately, little is known how medical education can support this training by means of educational interventions or within the workplace environment. This doctoral report addresses the following research questions: 1) How and under what circumstances may educational interventions help practicing physicians, residents in training and medical students to provide high-value, cost-conscious care 2) How do residents learn to provide high-value, cost-conscious care in the workplace setting? 3) How do supervisors aim to prepare residents to deliver high-value, cost-conscious care? 4) How is the workplace setting related to residents high-value, cost-conscious care delivery?

Methods: A systematic review is combined with multiple qualitative methods, all using a constructivist approach. Data-collection entailed 6 focus groups with residents from 6 different post-graduate training programs; dermatology, general surgery, family medicine, elderly care, orthopaedic surgery and internal medicine. We conducted 12 semi-structured interviews with supervisors from 6 different residency training programs, hospital and non-hospital oriented, surgical and non-surgical oriented. 175 hours of non-participatory observations were collected at an academic centre in the Netherlands. Observations included consultations, deliveries, surgeries, educational sessions, patient handovers and multidisciplinary meetings. All residents (n=21) participated. The doctoral report ends with tips for both residents, clinical supervisors and training programs to support the training of high-value, cost-conscious care.

Results: Knowledge transmission and reflective practice are essential for the training of high-value, cost-conscious care.(1) Knowledge transmission should focus on general health care economics, patient preferences, and scientific knowledge. Reflective practice is effective when supporting data is discussed in an open and tolerant environment, in which the focus lies on the appropriateness of care instead of the volume/costs of health care services. Nevertheless, when these elements are not supported, demonstrated and carried out by the workplace-based setting in which future physicians spend the majority of their time, its effect is limited. In the workplace-based setting supervisors struggle to deliver of HV3C themselves, since insight in their own practice behaviour is often absent, and knowledge regarding health care costs is lacking. Residents deal with HV3C based on their personal approaches and tend to seek supervisors who are likely to agree with their proposed plan.

Discussion and Conclusions: In this research we aim to unravel the role of medical education in training future physicians the delivery of high-value, cost-conscious care. In order to support the training of medical students and residents, it is important that the workplace-based setting emphasizes the importance of high-value, cost-conscious care. Residents and supervisors should engage in discussions regarding their personal approach towards high-value, cost-conscious care delivery and how this influences learning. Workplace based settings can use discussion regarding daily care delivery to increase knowledge and gain insight into high-value, cost-conscious care related items. Additionally, the responsibility of medical education to incorporate societal needs into training programs will be debated, together with the urge for an update of our health professions' belief system.(2)

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Doctoral Reports

#DR10 (4078)

Body of Knowledge; an interpretive inquiry into touch in medical education

AUTHOR(S):

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ABSTRACT:

Introduction: Touch is inherent to clinical practice. Doctors examine and perform procedures on patients' bodies. They also communicate by means of touch, offering solace by gently patting the arm of a distressed patient. Yet research on touch in medicine is limited.(1) The aim of this thesis was to describe and interpret physicians' experiences of touch and derive novel pedagogical insights for educating physicians.

Methods: I used philosophically-grounded methodology - hermeneutic phenomenology - to render the phenomenon of touch in medicine researchable. Phenomenology is the study of human experience with a view to understanding how we perceive and understand our world. Hermeneutics is the study of interpretation. This approach pays particular attention to reflexivity, which I explored using narrative and digital story-telling. It also emphasizes the role of embodiment, how we experience with and through our bodies, which I examined drawing on the work of Merleau-Ponty.(2) I applied these approaches to three studies. In the first study I interviewed 16 family physicians about their experiences of touch through physical examination. The second study involved interviews with a broader range of specialists (medicine, surgery, pediatrics, radiology, psychiatry, n=16) about touch as a form of non-verbal communication. The third study was a longitudinal qualitative study, with 6 physicians, over three years, using collaborative inquiry methodology, which explored experiences of teaching and learning touch. I situated the findings of these studies in the framework of 'body pedagogics'. This allowed me to draw on sociological, anthropological and philosophical notions of embodiment, and consider implications for medical education.

Results: In addition to its widely acknowledged 'gnostic' role (diagnostic touch), touch was 'pathic', expressing human connection (empathic touch). Gnostic touch was an embodied form of expertise, which allowed physicians to make diagnoses or sense 'something wrong'. Physicians described 'habits of practice' which became incorporated as patterns of embodied knowledge, allowing them to make decisions 'without thinking'. Pathic touch was important in emotionally charged consultations such as breaking bad news, when words were insufficient. Touch established connection and expressed empathy. Physicians pronounced touch as 'powerful but fragile'. Gender, culture, social status, prior history of both physician and patient influenced the experience of touch. These were negotiated on a case-by-case basis, often read 'in the moment' by the body of the physician rather than verbally. Participants reflected on their experiences of touch but had difficulty recalling formal instruction. They modeled their personal style of touch on that of role models, including family members. Their sensitivity to social constructs such as culture and gender left them feeling unsure how to address touch with learners.

Discussion and Conclusions: This research presents three key themes of theoretical and practical relevance for medical educators, clinicians and learners. First, it challenges Cartesian approaches to learning, which give primacy to cognition. My findings indicate the physical, embodied nature of learning and show how sensory experience translates into embodied expertise. Secondly, this research reports qualitative, theoretically embedded findings on physician empathy addressing a gap previously identified in medicine, where literature has been dominated by quantitative measures. Finally, rather than polarizing objective and subjective experiences, this thesis presents the need for further attention to experience as an intersubjective phenomenon. Physicians and patient, according to my findings, co-construct experience in moments of time. This denies standardization and calls for a more authentic, interrelational engagement between physician and patient.

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Doctoral Reports

#DR11 (4092)

Unraveling the complexities of enacting change in undergraduate medical curricula

AUTHOR(S):

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ABSTRACT:

Introduction: Significantly revising an undergraduate medical curriculum has become a frequently recurring process. In practice and research, we tend to spend considerable time on the content and pedagogical designs of our medical curricula, while often neglecting the important organizational change processes. Although overviews of important factors for curriculum change are available, empirical evidence of what undergraduate medical curriculum change processes look like in practice, is still scarce. In order to support future change processes, this thesis focuses on better understanding the complexities of enacting change in undergraduate medical curricula. We explored this topic from different stakeholder perspectives and at different levels. The following research questions were addressed: 1) How do curriculum change leaders conceive of the process of enacting change, and what strategies do they rely on to succeed in their efforts? 2) How do change leaders of a major curriculum change process represent and talk about educational scientists? 3) What is the role of governance in the process of translating the original goals, outlines and philosophies of the curriculum into institutionalized curriculum change at micro-level? 4) What are the contextual aspects impacting the adoption of newly developed learning modules, in health professions curricula in different countries?

Methods: Suiting our exploratory research, we used in-depth, face-to-face, one-on-one interviews for data collection. In addition, we used visual eliciting tools such as ‘briefing (photo) cards’ and ‘rich pictures’. By doing so, we enriched not only the interviews, but also the medical educational research domain, with two relatively new methods. Furthermore, various analytical methods were used; qualitative descriptive content analysis, template analysis, and a new method in medical education research: membership categorization analysis. To enhance credibility and create a comprehensive set of findings, we collected data in multiple institutes, in the Netherlands, as well as in several European countries, from the perspective of various stakeholders.

Results: The results showed that change leaders experienced the curriculum change processes to be highly dynamic and complex, in which the necessary involvement of a large and diverse group of stakeholders plays an important part (1). One of these stakeholders, the educational scientists, were differently portrayed in the interviews. This group does not always seem to be optimally engaged in curriculum change processes which is inconvenient in the light of utilization of available resources (2). Furthermore, we observed that the ways in which governance is structured influences how the change process proceeds, and how well the organization succeeds in achieving the desired changes. Finally, the last study showed that each educational context has different needs and possibilities and asks for different approaches to make implementation of learning modules happen.

Discussion and Conclusions: The four empirical studies in this thesis contribute to our understanding of curriculum change processes in practice, and raises awareness about the various aspects that make bringing about change in medical education a complex process. Participants experienced strong differences between the educational and healthcare ‘world’, which makes understanding each other and functioning as curriculum change teams challenging. Therefore, the emphasis should be more on the formation of teams in the organization, as the new curriculum needs to grow out of these interactions. Future research could study the support that is helpful for change leaders and the various stakeholders and teams involved in curriculum change processes.

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Doctoral Reports

#DR12 (3855)

Exploring performance-based assessment in physiotherapy practice education and identifying key stakeholders' preferences towards its development

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ABSTRACT:

Introduction: Performance-based assessment (PBA) describes the assessment process that occurs in the clinical workplace and determines health professional students' readiness for independent clinical practice. Within the discipline of physiotherapy, limited evidence exists regarding PBA, specifically in relation to its challenges and facilitators. Stakeholder input would provide valuable insight regarding these, thus helping to inform the development of PBA. The overall aim of this doctoral thesis was to explore the PBA process employed in practice education within the discipline of physiotherapy. This was completed in order to identify stakeholders' perceptions of the challenges and facilitators of the process and thus identify priorities for its development. While this doctoral research was conducted in the Republic of Ireland, its findings will be of interest to other physiotherapy programmes globally, due to identified similarities in these PBA processes highlighted by findings of the systematic review undertaken (O'Connor et al., 2017).

Methods: A mixed methods approach was employed. Firstly, a critical appraisal exploring the assumptions underlying the use of observation-based methods in PBA was conducted. This was followed by a systematic review of the literature to identify and synthesise evidence related to the psychometric and edumetric properties of PBA tools used in physiotherapy practice education globally. Secondly, focus group interviews were conducted nationally with three stakeholder groups; physiotherapy students, clinical educators (physiotherapy clinicians) and practice tutors (physiotherapists with dedicated educational roles in the clinical workplace) to determine the challenges and facilitators of the current PBA process (n=79). This data informed a national Discrete Choice Experiment (DCE) survey which identified these three stakeholder groups' priorities towards development of the assessment process (n=245).

Results: Findings from the systematic review identified inconsistent reporting of psychometric and edumetric properties of PBA tools used in physiotherapy practice education globally. It also identified several similarities across PBA processes employed globally in physiotherapy practice education highlighting the potential transferability of findings from the main study. Focus group interviews with national stakeholders identified challenges related to assessors, the current PBA tool, grading mechanisms and student feedback mechanisms, but also highlighted the value of a dedicated educational role (practice tutor) in the PBA process. DCE findings identified common priorities across stakeholders, including the mandatory involvement of two assessors in the PBA process and refinement of the PBA tool.

Discussion and Conclusions: Discussion This study provides compelling evidence supporting the need for development of the PBA process employed in physiotherapy practice education. The common priorities highlighted by stakeholders including the mandatory inclusion of two assessors in the process and refinement of the PBA tool highlighting the need for greater support for clinical educators and students in the workplace and greater transparency of the PBA process. Further exploration of the practice tutor role and consideration of PBA in a wider health professional context is recommended nationally and internationally to address these findings and effect change in education policy and practice. Conclusion This study has enabled the translation of a myriad of challenges related to PBA in physiotherapy education in Ireland into a prioritised guide of stakeholder-informed preferences for its development. These priorities highlight the need for greater transparency and robustness of the current PBA process. Further collaborative discussion with a wider body of physiotherapy stakeholders will enable translation of these findings into educational policy and practice nationally but may also influence development of this assessment process within physiotherapy and other allied health professions globally.

References: O'Connor, A., McGarr, O., Cantillon, P., McCurtin, A. and Clifford, A. (2017) 'Clinical performance assessment tools in physiotherapy practice education: a systematic review', *Physiotherapy*, 104(1), 46-53.

#EP2.1 - ePosters: Assessment - Clinical/OSCE

#EP2.1.1 (5818)

Assessing clinical skills in the Simulation Laboratory: Evaluation of three different instruments and three different teachers profiles. A single center experimental study, 2019

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ABSTRACT:

Background: The use of clinical skills training through simulation into medical school curricula has been a major innovation for education, enabling students to train in a safe environment without risk to patients. Few studies have compared teachers and assessment scales reliability. Objective: To describe how different clinical skill assessment scales and different teachers profiles interfere with assessment reliability.

Summary of Work: Methodology: 28 third year and 20 sixth year medical students from a Brazilian Medical School were recruited. Students performed a practical skills test on newborn anthropometry in the simulation laboratory. They were filmed for further assessment using three scales: Training Level Rating Scale (TL), Global Rating Scale (EG); and checklist (CL). Nine teachers assessed the students: three pediatricians with no experience in teaching skills, three pediatricians with experience in teaching clinical skills, and three physicians with at least 2 years of experience in clinical skills teaching who were not pediatricians. One teacher from each profile used only one of the three scales. The total score for each of the scales was calculated, with a possible total of 9 points (total score), divided in: 6 points for the maneuvers (isolated score) and 3 points for anthropometric measurements (weight, height and cephalic perimeter). ANOVA, linear regression and Cronbach alpha test (CA) were used for statistical analysis.

Summary of Results: Results: Multivariate analysis showed that TL isolated score ($p=0.346$) and total score ($p=0.407$) was the only scale that was not influenced by the teacher profile. Only TL had good reliability: $CA=0,739$ (isolated score) and $CA=0,839$ (total score). The addition of anthropometric measurements increased the reliability of all scales and teachers profiles.

Discussion and Conclusions: Conclusion: there is a difference in reliability between the scales. TL plus anthropometric measurements was the most reliable scale. The teacher profile directly affected the reliability of the scales, but the expert teachers showed acceptable reliability when anthropometric measurements were added to the scales. Only TL was able to correctly discriminate the two groups and was not influenced by teacher profile.

Take-home Messages: The training level scale maybe used for the assessment of clinical skills among medical students The use of objective data, as measurements, increases reliability of the scales.

#EP2.1 - ePosters: Assessment - Clinical/OSCE

#EP2.1.2 (3814)

Establish the formative longcase examination: combined standardize patients and MEQ examination to improve the clinical reasoning among medical students

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ABSTRACT:

Background: Clinical reasoning is corner stone for correct diagnosis and treatment among clinician. There are many assessment methods to emphasize and persuade medical students to using clinical reasoning. We aimed to use the formative longcase examination; creating the combination between standardized patients (SP) and MEQ examination and evaluate the benefit of this method.

Summary of Work: We set up the longcase examination in 4-6th year medical student at 2017. The key item for this exam composes of 2 parts: interview and examine the SP present with symptoms that we created follow by MEQ examination designed base on the symptoms of SP. Each year of medical student will be scheduled to have 1-2 examination in different symptoms (4th year medical students: symptom of fever, 5th year medical students: symptoms of back pain and abdominal pain and 6th year medical student: symptom of syncope and joint pain). The assessment consists of mean score of the SP part and MEQ part and evaluate the benefit toward reflection of each student.

Summary of Results: Total 139 medical students were enrolled (38, 47 and 54 in 4 to 6th year). The mean score in SP part are quite fair as mean score are above 50 % while the MEQ score varied from 35 to 67.5 from total 100. The self reflection of students showed that 97.73% of them had positive attitude toward this formative evaluation. Deep focus interview showed that students thought this examination can guided them to notice what is the weak and strong point of their clinical reasoning and made them want to improve themselves.

Discussion and Conclusions: This longcase examination has a great impact to feedback to medical student regarding to their clinical reasoning skill. The result of score in history and physical examination is quite good while there are wide range of different in MEQ score which may be explained by the difficult of MEQ part. However, the reflection of medical students showed that this exam has a benefit to them.

Take-home Messages: The longcase examination using SP and MEQ exam have positive effect toward clinical reasoning among medical students.

#EP2.1 - ePosters: Assessment - Clinical/OSCE

#EP2.1.3 (4829)

Rater Scoring Variability Assessed By Video-Recorded Long Case Objective Structured Clinical Examination

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ABSTRACT:

Background: Whenever multiple observers provide ratings, even of the same performance, inter-rater variation was prevalent. Long case objective structured clinical examination (OSCE) had many limitations and poses challenges for how we could adequately analyse performance assessment ratings.

Summary of Work: In this study, we explored rater variability using video-recorded clinical performances and test reliability of long case assessment form. Nineteen physician raters viewed 2 video-recorded clinical performances and provided ratings through our long case OSCE assessment form dividing in 7 learning outcome categories. Inter-raters scoring variability was tested. In addition, reliability of assessment form was done.

Summary of Results: In our study, rating-score variability were 11.8%, 16.8%, 14.1%, 15.0%, 15.6%, 13.4%, and 12.4%, in according to the part of method of history taking (Hx) and physical examination (PE), the results of Hx and PE, clinical assessment, laboratory interpretation, plan of management, communication skill, and attitude of examinee respectively. Raters scoring were homogeneity (Levene test = 0.771, $p = 0.730$). Assessment of both between groups and within groups variability were not significant ($F = 1.117$, $p = 0.345$). Our long case assessment form was reliability (Cronbach's alpha = 0.784).

Discussion and Conclusions: This was the first video-recorded clinical performances for evaluating inter-rater variability in our military medical college. Our raters scoring were homogeneity and long case assessment form were also reliable. Further video-recorded clinical performance study might be helpful in standardization long case OSCE and development of standard case scenarios for raters practice simulation.

Take-home Messages: Video-recorded long case OSCE might be a beneficial tool for improvement of rater scoring variability.

#EP2.1 - ePosters: Assessment - Clinical/OSCE

#EP2.1.5 (4930)

Self-assessment perception in OSCE using check list as a beneficial tool for constructive retro-feedback between students and teachers

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ABSTRACT:

Background: OSCE (Objective Structured Clinical Examination) is considered one of the most reliable methods for assessing students clinical skills, as well as for professional certification and assessment of medical professionals. The aim of this work was to compare the examiners assessment and students self-assessment perception.

Summary of Work: Three evaluations were carried out on the OSCE model at the end of the 5th academic year. At the end of the formal evaluation from the teacher, the same checklist of the evaluation was given to each student in order to evaluate himself. After that, examiners and students checklists were compared. For statistical analysis, Paired T Test was used.

Summary of Results: 80 students participated in the OSCE. 62.5% were female. Although there were not statistically significant difference when we analyzed professors evaluation and the students self-assessment in the area of Pediatrics 4.9 ± 2.1 and 4.5 ± 1.98 respectively ($p=0.147$);, Surgery 7.09 ± 2.04 and 7.26 ± 2.19 ($p=0.331$); Public Health 6.64 ± 2.31 , and 6.7 ± 2.19 , ($p = 0.774$) and Internal Medicine, 7.14 ± 1.49 and 7.08 ± 1.52 ($p = 0.734$), in Gynecology and Obstetrics there was an overestimated self-perception on the part of the student 6.84 ± 1.94 and while teacher's mean evaluation was 5.83 ± 1.69 ($p < 0.0001$). In general, underestimation in self-assessment was greater among females.

Discussion and Conclusions: Self-assessment using the same teacher's check list is an interesting tool to evaluate the assessment process. It allows medical students and teachers to identify different perceptions. When both participants agree with the same evaluation degree, that means the station effectiveness. However, in Gynecology and Obstetrics station, there was an overestimated self-perception on the part of the student, and this result may be related to the skills that was requested in the tests: a medical conduct, communication skills with the patient and students ability to make a clinical diagnosis. In this case, a carefully analysis of the station should be performed. Female underestimation perception is a common finding around the world, even nowadays when female empowerment is so discussed.

Take-home Messages: Self-assessment is a valid tool to apply interactive assessment in active methodology and avoid unnecessary student stress.

#EP2.1 - ePosters: Assessment - Clinical/OSCE

#EP2.1.6 (6388)

Needs Assessment for Standardized Patient Trainer

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ABSTRACT:

Background: Standardized Patient (SP) plays an important role in Objective Structured Clinical Examination (OSCE). They strength students' clinical adaptability, communication skills, and empathy. In order to strengthen students' interpersonal and communicating ability, SP has been widely used in the extreme circumstances, such as encounter swearing or drunk patients in the ER. Along with growing needs for SP and simulation education, the needs for Standardized Patient Trainer (SPT) also increase. SPT are mostly medical staff, who spend most of time in their main job at clinical practice with less time training SP. Therefore, this research aims to find out what are the necessary core competences a SPT should hold, in addition to create SPT training courses for getting senior SP ready trained as a SPT.

Summary of Work: This descriptive qualitative research study used semi-structured in-depth interviews for data collection. We included 15 SPT in the Interview. Including SPTs' experiences on training, challenges their have encountered, and training course SPT needs in advance. The interview guide and the Collazzi's method of data analysis was used in this research.

Summary of Results: Four major subjects of being a SPT revealed from the research. First, we clarified the core competence SPT should hold. Also, they need to be familiar with the training plan, principles and content. It is also crucial that SPT should be medical staff. Lastly, they need to develop leadership skill for leading SP.

Discussion and Conclusions: The main outcome of this research is that it provides a new guideline for SPT training material. The argument of "SPT should be medical staff" has been discussed a lot. There would not be any disagreement for non-medical experienced SPT if the lesson is about medical history inquiry, communication, patient education, medical condition interpretation. Yet, when the lesson is about physical examination, it would be difficult for SPT without clinical experiences to demonstrate corresponding response. Therefore, we recommend training program with two levels, beginner and advanced courses, trained by different SPT. Physical examination is included in the advanced one.

Take-home Messages: For future needs on SPT training, senior SP with no medical background or clinical experiences could be trained as SPT to assist medical education.

#EP2.1 - ePosters: Assessment - Clinical/OSCE

#EP2.1.7 (4681)

Integrated Clinical Simulation Assessment

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ABSTRACT:

Background: Currently, medical schools are concerned in providing learning environments that enable students to develop competencies required for effective professional practice. Students must develop abilities, knowledge, behavior and XX throughout their training in order to be able to help their patients' health needs. Competence assessment is complex, as this requires new tools for both learning and evaluation. Simulation provides a safe environment for students to develop clinical competencies. Clinical simulation is useful for developing soft and disciplinary competencies.

Summary of Work: Key points for assessment were identified, which were divided in three sections. The first includes medical history and physical exam, identification of specific clinical problems, understanding normal and abnormal lab results for the patient and identification of therapy for a specific diagnosis. The second section verses on the key actions to the clinical case: main diagnosis, main therapy and pathophysiology explanation to the patient. The third section includes the overall student's performance assessment.

Summary of Results: The sample consisted of 51 students taking an endocrine pathophysiology course. They formed groups of 4-5 members. They participated in a clinical case simulation with a high-fidelity mannequin. They could explore the patient and ask questions for H&P. They could order several tests as well. We used three assessment tools: a specific-element checklist (interrogation, clinical problems, labs, diagnosis, and therapy), a Key-action scale; and a Global scoring scale. The teams were assessed by a tutor, simulated nurse and a third party.

Discussion and Conclusions: Simulation assessment can be improved with the use of varied tools. An integrated assessment method gives valuable performance information that can lead debriefing session. Multiple assessors improve objective evaluation.

Take-home Messages: Learning processes in clinical simulation improve with an integrated assessment system. Debriefing entails a strong tool for identifying the mechanisms for students' actions and clinical decisions. Integrated assessment improves feedback sessions. We can assess multiple and diverse competencies in an integrated system. Clinical simulation assessment is challenging. Multiple agent assessment reduces bias. Combined-tool assessment allows a better evaluation of professional competencies.

#EP2.1 - ePosters: Assessment - Clinical/OSCE

#EP2.1.8 (4881)

Running a mock OSCE in a changing curriculum - overcoming challenges

AUTHOR(S):

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ABSTRACT:

Background: Traditionally, students prefer peer-led clinical skills teaching where senior students tutor. This requires consistent curriculum content. However, due to advancements in healthcare, medical education experiences inevitable reform. In 2016, the pre-clinical phase of the curriculum at Leicester Medical School (LMS) was shortened to two years. Therefore, student-led revision societies had to adapt their approach in delivering content. This recounts our experience of tackling these challenges, by bridging the gap between staff and students through mock OSCE delivery.

Summary of Work: The End of Year 3 mock OSCE was conducted over one weekend, two weeks prior to the 2019 summative examinations. Tutors, recruited from upper-years, used mark schemes provided by LMS. Following handover from the previous executive committee, we amended necessary components to reflect curriculum changes. Through close email correspondence, we coordinated efforts between various departments within LMS including finance, operation management and assessment team. Feedback was collected from attendees and tutors.

Summary of Results: Attendee and examiner feedback demonstrated the continuing utility in running the mock OSCE - it increased perceived preparedness for the summative examinations. Prominent barriers encountered during the planning process were: 1) Last-minute adaptation of OSCE station content due to changes in curriculum. 2) Recruitment of examiners and models. 3) Power differences between students and staff. The first impacted the validity of our station content due to slow correspondence with the LMS assessment team, from whom we required guidance. However, poor recruitment proved more challenging to overcome. This led to closure of circuits and therefore reduction in station quantity per student. Nonetheless, we mitigated this through the creation of a bespoke circuit to accommodate all registered attendees.

Discussion and Conclusions: We realised leaving sufficient time prior to the event, especially for validation of station content is crucial. Liaising with LMS and instructing their staff inverted the usual student-staff relationships, which raised its own challenges. Awareness of this potential hurdle was also necessary for a successful event. These barriers could present in any university undergoing curriculum reform, our methods can be reproduced to allow smoother transition during this change.

Take-home Messages: Effective communication and transparency between the assessment team and the student-led society is key to a successful event.

#EP2.1 - ePosters: Assessment - Clinical/OSCE

#EP2.1.9 (6977)

Lack of emergency skills in non-medical environment within the MD students

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ABSTRACT:

Background: Accident and Emergencies is an unpredictable situation where most people are unaware of dealing with such circumstances. In spite of having a medical or a non- medical background many of them do not lend a hand either because of lack of skills, confidence or proper training since in medical schools such skills are not practiced in a non-medical environment. The aim of the study was conducting OSCE with clinical scenarios structured on more common and realistic emergency cases that are encountered in day to day life outside the hospital setting.

Summary of Work: The OSCE was conducted at European University which comprised of four stations themed at different emergency plots. 40 medical students from semester 4th, 5th, 6th, and 9th participated in the research, 10 students from each semester. Informed consent was obtained from them before the activity. 4 OSCE stations were prepared: 1. Heart attack and syncope of an elderly in a house, 2. Choking in a restaurant, 3. Electrocutation on a street, 4. Car accident including bleeding and fracture. No previous training was provided to them. Each station was assessed on a 5-point scaling system. Specific hints were left which is commonly found outside medical care to test their thinking abilities in a controlled five-minute duration. Feedbacks based on open questions were taken after the study.

Summary of Results: Observation demonstrated that in the 1st and 4th stations competence and appropriate manipulations gradually improved in the ascending order of the semester. In 2nd and 3rd Stations 5th (Mean=61%), 6th (Mean=64.5%) or 9th (Mean=68%) semester the performance was comparable but 4th (Mean=42.5%) semester students had baseline performance.

Discussion and Conclusions: As in the feedback forms, most of the participants noted that they could not perform clinical and decision-making skills as good as in regular OSCE for the clinical subjects they suggested that more of such practice in the non-medical environment would increase their competence in emergencies. Students found it more challenging to use other alternatives in place of definitive medical equipment as such is the case outside hospitals.

Take-home Messages: MD students would like to have more practice in emergencies in a non-medical environment.

#EP2.1 - ePosters: Assessment - Clinical/OSCE

#EP2.1.10 (7013)

A comparative assessment of examiners' behavior during first time organized dental MINI OSCE. A questionnaire based experimental study.

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ABSTRACT:

Background: In dentistry manual skills are especially important and shall be evaluated before graduation in an Objective Structured Clinical Examination (OSCE). During the exam students go through a series of stations where the examiners observe and assess candidates competencies. In this work we analyzed the behavior of trained, but OSCE unexperienced examiners playing their role during the first time organized exam of that kind at MUL.

Summary of Work: Examiners appointed for the dental MINI OSCE at the Medical University of Lodz, Poland as well as 102 examinees were asked to anonymously fill in the questionnaires. The examiners assessed themselves and their own performance being asked about their role and action throughout the exam. The students evaluated the examiners in terms of their behavior, nonverbal communication, being helpful and overall atmosphere during the examination. Additionally the observer rated each examiner in a scale from 1 to 10 for his/her performance in 1 minute time during the exam. The obtained data were compared and statistically analyzed.

Summary of Results: Comparative analysis revealed no spectacular differences between opinions in both groups of respondents. Self-assessment data of the examiners showed that the examiners were prepared for their role and that they knew the principles of the examination. None of the examiners asked additional question throughout the OSCE only observing students. According to both groups, the atmosphere created by the examiners was helpful and favorable.

Discussion and Conclusions: Examiners' performance was formatively assessed by the students and the experienced observer. The majority of participants were satisfied with the examiners who were the faculty members. It correlated with the positive assessment of an observer. The examiners as well as students were actively engaged in providing peer- feedback.

Take-home Messages: A good training for a role model OSCE examiner increases the objectivity and reliability of the exam. Although a good management and preparation of unexperienced educators to their function is challenging, it is essential and needs to be obtained. Analysis of examiners' behavior is a valuable tool for their future training and the development of the qualified faculty members' core competencies in OSCE for future dental professionals.

#EP3 - ePosters: CPD

#EP3.1 (5729)

“I can usually talk myself out of being upset.” How do medical specialists cope with stressors through fulfillment of basic psychological needs.

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ABSTRACT:

Background: Medical specialists workenvironment is increasingly more fragmented and efficiency-minded. The need to keep up demands continuous professional development (CPD). This study used basic psychological needs, autonomy, competence and relatedness and Self-determination theory as framework. The aim was understanding how specialists cope with stressors hampering their motivation for work and CPD by examining the link between stressfactors, and coping through basic psychological needs fulfillment.

Summary of Work: A qualitative study was conducted among 14 specialists, from several disciplines in a hospital in Boston. Before each specialist was shadowed by a sociologist for 2 days, a standard validated questionnaire (Multidimensional-Work-Motivation Questionnaire) was filled out for triangulation of the qualitative data. During the observation days fieldnotes were written up. and afterwards interviews were conducted. Transcribed data were open coded in a constant comparative manner independently by two researchers. Through selective coding and iterative discussion the research team came to a consensus.

Summary of Results: Specialists construct different narratives to cope with stressfactors that hamper motivation and CPD. First, the narrative of acceptance about autonomy-fulfillment was found where specialists do not see themselves as having an active role in changing the situation or system. Stressors are seen as established fact; they are accepted as part of professional reality. Secondly, the narrative of reinstating autonomy also about autonomy-fulfillment shows specialists actively trying to gain autonomy over their tasks and scheduel to also fit in CPD by trying to balance all tasks. The third narrative of togetherness about relatedness-fulfillment shows a need for support and relatedness at work. Now, specialists private relationships provide some resilience to cope with stressors in their work. No narrative for competence was found.

Discussion and Conclusions: Autonomy and relatedness act as coping mechanisms to deal with stressfactors. Constructing these narratives enables specialists to cope with stressors, which enables them to maintain daily work and CPD. These coping mechanisms ensure, consciously or unconsciously, that issues are palatable in the moment and, that motivation for and engagement in medical practice and CPD can remain high, which can improve quality of care.

Take-home Messages: Autonomy and relatedness need to be supported in specialists workenvironment. In turn their motivation for work and CPD is supported.

#EP3 - ePosters: CPD

#EP3.2 (4526)

Preventing suicide by primary care clinicians: a novel needs assessment using the Theory of Planned Behavior

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ABSTRACT:

Background: Suicide is a serious health threat. According to the World Health Organization, almost 800,000 people die by suicide yearly (10.6 per 100,000) and is the second-leading cause of death among 15-29 year olds worldwide. Innovative teaching methods are needed to improve primary care providers' (PCPs) ability to identify those at risk of suicide, because they are often the first point of contact for patients who are experiencing suicidal ideation and behavior. In the United States and other European countries, physician assistants/associates (PAs) are increasingly fulfilling the role of primary care clinicians.

Summary of Work: Using the Theory of Planned Behavior (TPB) as a guiding framework, we conducted a cross-sectional, mixed-methods questionnaire for an educational needs assessment for PAs in the United States regarding suicide risk assessments. Quantitative items were answered using 7-point bipolar semantic differential scaling. Items were adapted from previous TPB-based items, and measured current suicide risk screening practices. Cronbach's alpha and Pearson correlation were used to analyze quantitative data. Open and axial coding of qualitative data were conducted by two authors.

Summary of Results: There were usable data on 43 PAs. The majority of respondents were female (78.6%, n=33), and white (74.4%, n=32). A plurality practiced in primary care (41.9%, n=18). Internal consistency for behavioral attitudes, norm referents, control beliefs, and intention to screen for suicide risk were: $\alpha=0.54$, $\alpha=0.57$, $\alpha=0.64$, and $\alpha=0.86$, respectively. Intention to screen for suicide risk was significantly related to norm referents ($r=0.60$, $p<0.0001$) and control beliefs ($r=0.69$, $p<0.0001$). Based on provider responses, major educational needs included: (1) time management; (2) provider-patient communication; and (3) identification of resources for referral and care.

Discussion and Conclusions: Clinicians identified significant educational needs that should be addressed to increase rates of suicide risk assessments. Educators can use the TPB to guide interventions to improve clinicians' and learners' intention to conduct these assessments.

Take-home Messages: Suicide is a major threat to public health; it is critical to educate providers at all stages to identify patients at risk earlier. Future research is needed to better understand the prevention needs and practices among primary care providers in other countries.

#EP3 - ePosters: CPD

#EP3.3 (4785)

Perception of Doctors on Teaching and Learning Methods on Continued Professional Development Program in Myanmar

AUTHOR(S):

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ABSTRACT:

Background: Myanmar Medical Association(MMA) is major provider of Continued Professional Development (CPD) activities in Myanmar to improve knowledge, change behaviors, and positively impact patient outcomes. Currently CPD activities are mainly conducted in teacher centered instruction rather than learner centered instruction. MMA is planning to develop national CPD accreditation system to be able to renew doctors license of practice. Assessing perception of doctors on teaching and learning methods on CPD activities would be of great importance to inform planning for CPD accreditation system

Summary of Work: We conducted a cross-sectional study of all participants at one of MMA CME courses. A questionnaire for assessing the perceived teaching and learning methods among doctors was developed and distributed among attendee of the course. Responses were collected and the data were analyzed for this research.

Summary of Results: The analysis revealed descriptions of teaching and learning methods preferred by Myanmar doctors. Participants enjoyed voicing their views and valued to share ideas about future CPD initiatives for MMA.

Discussion and Conclusions: Structured post graduate residency program is the preferred teaching and learning methods to improve quality of care and patient outcomes. Hand on Simulation session, Hand of patients, Conferences, Seminar, Symposium, electronics learning, mobile learning (m-learning), Case Base Learning are additional choices for teaching learning methods of CPD. Myanmar doctors enjoy in person session than online counterpart as they can see, listen, ask and one to one interaction with speakers and others doctors. Developing structured CPD curricula in response to resident workplace priorities and situating education directly in the workplace setting implementation is necessary.

Take-home Messages: The conducted perception on CPD teaching and learning methods represents a step that should be built-upon to have a national CPD accreditation system for all doctors in Myanmar to ensure behavior change, improvements in quality of population health and patient outcomes.

#EP3 - ePosters: CPD

#EP3.4 (6835)

Reducing communication errors in the recovery room via high fidelity in-situ simulation

AUTHOR(S):

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ABSTRACT:

Background: Research has shown recovery room incidents after Surgery to approach 5%. Of these, human factors, including error of judgement and communication failure were the major contributing factors(1). We are currently implementing a high fidelity multidisciplinary simulation program at Barking, Havering and Redbridge University Hospitals which has been successful in addressing human factor errors in the post recovery period.

Summary of Work: 8 doctors and 15 nurses have so far been through high fidelity simulation training. Scenarios include common post anaesthetic incidents such as Morphine overdose and Major haemorrhage. These start with the recovery nurse assessing the patient and eventual escalation to the anaesthetics team, who further assess and treat appropriately. A 15 minute de-brief is conducted after the scenario.

Qualitative and Quantitative feedback is received through questionnaires, with focus on human factors.

Summary of Results: 100% of participants felt more confident in dealing with crisis situations after the simulation. 100% of nurses felt more knowledgeable about communicating through an SBAR approach and escalating earlier, an important human factor. 100% of doctors felt the training useful in helping them communicate with the recovery team.

Discussion and Conclusions: High fidelity simulation has shown to significantly improve communication within recovery during adverse events in both doctors and nurses. By practicing these situations in a safe environment, errors in communication have been addressed, potentially leading to improvements in patient safety. Further sessions and long term follow-up is needed to observe whether high fidelity simulation has lasting effects in improving major causes of human factor errors in recovery rooms.

Take-home Messages: In-situ simulation is highly effective in reducing communication errors within the recovery room. This potentially could have bigger implications on patient safety considering the major contribution of communication lapses to recovery room error.

#EP3 - ePosters: CPD

#EP3.5 (4677)

Charting Pediatrics: How a podcast became a catalyst for clinical education

AUTHOR(S):

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ABSTRACT:

Background: It is crucial for General Pediatricians to have access to current, evidence-based medical education content in an on-demand format. At Children’s Hospital Colorado, faculty serve the pediatric medical needs of patients in a 7-state catchment area. The ask for in-person clinical education for community providers has outpaced the ability of the faculty to travel to these distant locations.

Summary of Work: Launched in August 2017, “Charting Pediatrics” is a novel podcast that fosters knowledge application and clinical reasoning skills through case-based and topic-based instruction in a relaxed conversational atmosphere. Each week one of three physician hosts interviews a pediatric faculty expert on a wide variety of clinical topics, yielding a 25-30 minute podcast episode. The content is based upon the 25 pediatric board domains and requested clinical topics that fulfill listening learner requests. The episodes can be downloaded on myriad platforms convenient for listeners. A webpage provides an overview of the podcast topics, bios of the hosts, and links to library of episodes, and listeners email feedback.

Summary of Results: The Charting Pediatrics podcast has grown its listener base from 1,800 to 33,000 unique downloads per month in just two years, with listeners from 136 countries on all 7 continents. There have been 103 released episodes to date and 280,402 total downloads. A pediatrician in Guam commented: “I listen to a few episodes a week, and without a doubt you have helped me improve the care I deliver to kids out here without any local pediatric specialists.” All podcast episodes are free. We are exploring offering an optional continuing medical education credit. Plans for program evaluation include listener base surveys and formulating a quality improvement process within our team.

Discussion and Conclusions: The delivery of high-quality clinical care requires practitioners to have access to real-time education from faculty experts. Leveraging the accessibility of the podcast platform, meaningful clinical education can be delivered cross-culturally to local and global learners, ranging from primary and academic care providers to those delivering care to underserved populations with limited access to continuing medical education (CME).

Take-home Messages: Podcasts provide a scalable CME outreach platform to meet the learning needs of local and global primary care providers.

#EP3 - ePosters: CPD

#EP3.6 (5598)

What else should be promoted in emergency care education: reflection on a high-fidelity simulation-based airway intubation training program

AUTHOR(S):

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ABSTRACT:

Background: Endotracheal intubation is crucial in emergency medical care. Traditional training emphasized on speed and accuracy. Our study employed a high-fidelity simulator to gain insights into invisible risks, such as force applied on incisor and tongue. We explored the differences between novice and senior physicians, and generate predictions about speed-force trade-off for resigning educational intervention.

Summary of Work: We examined n=52 subjects' performance across undergraduate students (UGY), postgraduate trainees (PGY), residents (R), and attending physicians (VS). Each participant performed 12 intubations (i.e. 3 tools x 4 scenarios) on a high-fidelity simulator. Main outcome measures included success rate, time of intubation, and applied force on incisor and tongue.

Summary of Results: There was a significant difference between intubation tools and scenarios on success rate $F \geq 13.18$, $p < .001$, $\eta^2 \geq .22$ but not seniorities. In term of intubation duration, UGY and PGY completed with a significantly longer duration than R and VS in difficult scenarios $F(6.32, 96.9) = 2.42$, $p < .05$, $\eta^2 = .14$. For the applied force measures, the most senior physician applied the most force on the incisor on average or at a single moment $F \geq 3.11$, $p < .05$, $\eta^2 \geq .17$ but no difference identified on the tongue.

Discussion and Conclusions: Our results suggest that for difficult scenarios, there was a speed-force trade-off: novice physicians focused on precision at a slower pace whereas senior physicians emphasized on speed with a conditioning accuracy. A high-fidelity simulator could serve as an instant feedback tool for their performance. By understanding the common lapse and failures in different seniorities, we could design a possible educational intervention to junior and senior training program separately.

Take-home Messages: Speed and accuracy are essential for emergency care. A high fidelity simulation is a valuable tool for educating junior physicians, as it emphasizes practice and efficiency. It also contributes to the updates of senior physicians' knowledge and competences by providing instant feedback on their performance. These fine-grained feedbacks could serve as a complement to traditional training and provides a sustainable learning model for medical education.

#EP3 - ePosters: CPD

#EP3.7 (6632)

Strategies for Success: Five Years in Review of CME/CPD Achievements

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ABSTRACT:

Background: The Division of Continuing Professional Development (CPD) at Weill Cornell Medicine-Qatar (WCM-Q) continually strives to meet its mission of providing high quality professional development opportunities for physicians and other healthcare professionals based on identified needs and the latest scientific and medical developments that will increase competence, enhance performance in practice and lead to improved healthcare for patients.

Summary of Work: In 2014 we established a CME/CPD program at an International site of a US medical school. Over the past 5 years we achieved the following: (1) attained recognition as accredited providers locally by the Qatar Council for Healthcare Practitioners (QCHP) and internationally by the Accreditation Council for Continuing Medical Education (ACCME) (2) instituted several recurring activities such as multi-disciplinary grand rounds, and a law and medicine series (3) launched an integrated data management portal for the accreditation, registration and management of CME/CPD activities (4) expanded our Oversight and Grand Rounds Committee members to support meeting our vision and mission and (5) collaborated with partners to meet the needs of our healthcare practitioners.

Summary of Results: We have increased the depth and breadth of our activities and attained accreditation with Commendation from the ACCME. We attracted a large number of multidisciplinary healthcare practitioners from Qatar and the region. We recently established a regional hub in collaboration with the ACGME on Assessment in Competency Based Medical Education and introduced blended learning activities. Since 2014, we developed and delivered more than 200 activities, issued up to 45,000 AMA PRA Category 1 CreditsTM and welcomed more than 10,000 attendees.

Discussion and Conclusions: We achieved a lot in 5 years through the establishment of our CME/CPD program. The main strategies that impacted the outcomes were to engage the stakeholders in the development of our programs, enhance our infrastructure on the physical and technical levels, amend the policies, forms and procedures and develop new guidelines to support our faculty and administrators.

Take-home Messages: A CME/CPD program can be successfully established in an undergraduate medical school to meet the needs of diverse healthcare practitioners.

#EP3 - ePosters: CPD

#EP3.8 (5757)

The Core Categories of a High-Level Prescriber - A Documentary Analysis

AUTHOR(S):

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ABSTRACT:

Background: In recent years, the authority to prescribe medications in medical practice has expanded to include pharmacists, nurses and Allied Healthcare Professionals (AHPs), collectively known as Non-Medical Prescribers (NMPs). Subsequently, the quantity of guidelines describing appropriate prescribing practice has increased. However despite this, the literature notes a lack of consensus regarding the overall qualities of a good prescriber. The aim of this study, therefore, was to attempt to define what would make a model prescriber in medical practice, regardless of professional background.

Summary of Work: We conducted a documentary analysis of UK-based and international prescribing practice guidelines. These guidelines were obtained through internet searches. Data analysis was conducted through a constructivist grounded theory approach to allow for concepts to emerge from the data itself without the use of a pre-defined categories. Sentences and phrases were coded based on any description pertaining to active prescribing practice or improvement of it.

Summary of Results: A total of 13 guideline documents, were analysed. Overall, four core categories of a model prescriber in practice were identified: - Knowledgeable: including that of disease, drug properties and mechanism of actions - Safe: in relation to appropriate drug quantities, appropriate prescription-writing, appropriate treatment-monitoring; and adherence to protocols; - Communicative: with both patients encountered in practice and with colleagues who are part of the wider prescribing team; - Maintaining Development: through enhancing knowledge and skills, being able to think critically when evaluating knowledge-bases and adapting to technological advancements aimed at improving prescribing practice.

Discussion and Conclusions: Prescribing practice guidelines are applicable to all prescribers, regardless of country of origin and professional background. As these four categories were created through analysing prescribing guidelines across different countries and professional backgrounds, they can serve as a definition of a high-level prescriber. Thus, they could be used as an additional tool by prescribing educators to evaluate the extent to which their curriculum develops the core qualities needed by their students to be high-level prescribers in practice.

Take-home Messages: - In all professional backgrounds, a high-level prescriber must be knowledgeable, safe, communicative and constantly be working to develop themselves.

- Prescribing education curricula should train their students to excel in all four of these categories

#EP3 - ePosters: CPD

#EP3.9 (6057)

The process of self-regulated learning in the clinical environment- looking behind the veil

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ABSTRACT:

Background: Notwithstanding the accentuated importance of and a growing interest in self-regulated learning (SRL) in the clinical environment, empirical research is still very limited. Also, most often, offline cross-sectional self-report techniques are used to measure SRL retrospectively. This study aims to disentangle which SRL-strategies come out in the clinical environment (RQ1) and contribute to the empirical understanding of the dynamic nature of the process of SRL as it unfolds in time during and in relation to daily practice (RQ2).

Summary of Work: A longitudinal multiple case-study design was used including 13 physicians of different specialties in Flanders (Dutch speaking part of Belgium). Ethical approval was obtained. A multi-method approach was applied combining long-term observations offering evidence on overt SRL-strategies. Physicians' observed behaviors served as cues for in loco stimulated recall interviews (SRI), asking about covert SRL-strategies. Field notes and audiotaped SRI were transcribed verbatim and integrated in a longitudinal database. Content analysis and grounded theory principles were applied to analyse the transcripts using Nvivo 12.

Summary of Results: Results show a variety of SRL-strategies. Metacognitive strategies not included in contemporary frameworks on SRL are indicated. Exemplary, awareness of learning needs is reported. Overt and covert strategies for learning often originate in performance-goals. Overt learning strategies used to tackle difficulties during job-performance are for example consulting colleagues and guidelines. Metacognitive awareness is difficult to extract and medical specialists often report not to know how to monitor their learning. Reflection and evaluation can hardly be deduced from the data. Results show that SRL in the clinical environment is found as an interrelated, dynamic process unfolding in time with feedback loops between different SRL-strategies. Performance is found to play a leading role in driving SRL.

Discussion and Conclusions: This study contributes empirically to the conceptual understanding of the process of SRL in the clinical environment clinical practice. Insights from this longitudinal, situated study offer important handles for tailored in loco interventions to advance SRL during internships.

Take-home Messages: In particular covert, metacognitive SRL-strategies focusing on the progression of learning such as for example monitoring, and reflection should be facilitated with cautiousness of educators for not externally taking over regulation of the learning process.

#EP3 - ePosters: CPD

#EP3.10 (7076)

Prevalence of anxiety among medical doctors in South Brazil

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ABSTRACT:

Background: Depression and anxiety among medical doctors are risk factors for success in medical career and patient safety. Anxiety as common and debilitating as depression has garnered less attention in studies and is often underdetected and undertreated.

Summary of Work: Physicians Health Committee of the Regional Council of Medicine of Paraná (CRM-PR, Brazil) conducted a survey to assess sociodemographic characteristics and prevalence of anxiety among medical doctors in South Brazil. Data collection was in October 2019 by online sociodemographic questionnaire and State-Trait Anxiety Inventory.

Summary of Results: 187 medical doctors, among them 1254 (57.3%) females and 926 (42.3%) males answered the survey voluntarily. Mean age was 42.8 ± 13.7 (21-92). Marital status distribution was 1436 (65.7%) married or stable union, 740 (33.8%) single, divorced and widowed. Weekly working hours distribution was 121 (5.7%) up to 20h, 697 (32.7%) 20h-40h, 861 (40.4%) 40h-60h, 452 (21.2%) >60h. The state-anxiety prevalence was 46.5 ± 10.0 (20-80), with 1030 (47.1%) medium and 887 (40.6%) high intensity of symptoms. The trait-anxiety prevalence was 43.2 ± 12.9 (20-80), with 1003 (45.9%) medium and 681 (31.1%) high frequency of symptoms. State and trait-anxiety symptoms were positively associated with single, divorced and widowed marital status, chronic disease and weekly working hours. The percentage of medical doctors who affirmed to need professional help was estimated at 31.6% (with 95% confidence interval given by 29.6% to 33.5%), with a positive association with single, divorced and widowed marital status and chronic disease. The three most frequent chronic diseases was 235 (24.7%) arterial hypertension, 128 (13.55) thyroid disease and 127 (13.4%) depression.

Discussion and Conclusions: Anxiety prevalence among medical doctors in South Brazil was high and the main factors associated were marital status, chronic diseases and weekly working hours. A significant percentage affirmed to need help. Mental health of medical doctors is individual and institutional responsibility of educational programs, regulatory counsels and health organizations.

Take-home Messages: The results of the study suggest for awareness actions related to anxiety prevalence and associated factors as chronic disease and weekly working hours among medical doctors.

#EP3 - ePosters: CPD

#EP3.11 (6085)

Home is where the mold grows: Using Unannounced Standardized Patients to understand clinical reasoning and social determinants of health

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ABSTRACT:

Background: The importance of addressing patients' social determinants of health (SDoH) is widely recognized, but less is known about how trainees specifically elicit, respond to, and document these determinants. We sought to assess medicine resident clinical reasoning when caring for a patient whose SDoH is integral to accurate diagnosis and treatment using Unannounced Standardized Patients (USPs).

Summary of Work: USPs were used (n=68) to assess how medicine residents responded to a patient with asthma exacerbation and concern that her living situation (moldy, dilapidated housing) might be contributing to her symptoms. USPs, or "secret shoppers", were sent to two urban, safety-net hospitals. Resident practices were assessed by the USP during a post-visit behaviorally-anchored checklist (7 items) and through a systematic chart review (3 items). Checklist items included whether or not a provider explored and fully elicited the USPs concerns, how they responded to their patient once information was shared, and what the provider actually did in response. Chart review items included whether or not a provider documented their patient's housing concerns in the history of present illness (HPI), problem list, or through use of medicine codes indicating social factors impacting health.

Summary of Results: 65% (44/68) of residents elicited the patient's housing SDoH and of those, 75% (33/44) responded by acknowledging/exploring and providing resources. Of the thirty-three who acknowledged and shared information, 30% (10/33) provided specific community resources or a direct referral for social work. Less than half of the thirty-three (14/33; 42%) documented appropriately in the EMR, and none documented in the problem list. More than half (55%) of the forty-four residents who elicited housing information connected the mold to the patient's asthma exacerbation as a possible trigger.

Discussion and Conclusions: Our study identifies practice gaps at all stages – adequately collecting information, understanding clinical/treatment consequences, effectively responding to needs, and in documentation. Future research should further explore trainee reasoning and action within the context of the clinical microsystem (e.g., screening tools, available resources, and workflows).

Take-home Messages: Using USPs to directly observe resident clinical reasoning and practice is the first piece of the puzzle needed to better understand education and training that adequately prepares trainees to address SDoH.

#EP3 - ePosters: CPD

#EP3.12 (5701)

An inter-professional education point of care (IPE-POC) simulation resuscitation activity at a tertiary hospital: barriers and facilitators.

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ABSTRACT:

Background: Healthcare providers are required to manage patients as a team, however undergraduate training is delivered in a discipline-specific manner. The use of interprofessional education (IPE) to facilitate effective teamwork in healthcare is becoming increasingly important. Exploring the facilitators and barriers to implementing an IPE-POC simulation activity for health care professionals in a tertiary hospital could provide important insights. The aim of the study is to explore the facilitators and barriers to implementing an IPE- POC simulation activity for health care workers in a tertiary hospital in Cape Town.

Summary of Work: The study used a qualitative approach design and comprised of three focus group discussions with healthcare professions and one semi-structured interview with a clinical educator. The healthcare professionals participated in an IPE-POC simulation and afterwards were invited to participate in a focus group discussion. A total of seventeen healthcare professionals which included medical doctors, nursing staff, and a clinical technician participated in the focus group discussions. The data from the focus group discussions and a semi-structured interview were analysed using thematic analysis.

Summary of Results: Health care professions identified shortages of staff, poor communication, lack of available time, and unfamiliarity to the simulation equipment as potential barriers to implementing an IPE-POC simulation activity. Having good relationships with the hospital management, having scheduled training time, and good communication between the various stakeholders were identified as potential facilitators to implementing an IPE-POC. The healthcare professionals also felt that participating in the IPE-POC simulation activity had the potential to improve their knowledge and confidence, improve teamwork amongst the various professions, and empowered the nursing staff.

Discussion and Conclusions: despite encountering significant barriers, the implementation of an IPE-POC simulation activity presented many potential benefits to the healthcare team and healthcare organization alike.

Take-home Messages: Good communication between the various professions as well as the necessary knowledge and skills and the availability of equipment is crucial to ensure successful implementation of an IPE-POC.

#EP3 - ePosters: CPD

#EP3.13 (5464)

An exploration of stress and resilience amongst emergency physicians: an interpretative phenomenological analysis

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ABSTRACT:

Background: Medical education research has demonstrated the long-term and detrimental impact of stress on healthcare professionals. Amongst emergency physicians (EPs), the inimical effects of stress have been associated with burnout, poor job satisfaction and attrition. Our research sought to explore the experiences and perceptions of stress and resilience amongst EPs to better understand what it means for EPs to encounter and respond to stress.

Summary of Work: A qualitative research design was used to explore how EPs perceive work-related stress and resilience. Data derives from five focus group discussions (81 - 111 minutes) that took place across three hospitals; thirty-five EPs participated. EPs shared perceptions of work-related stress and stress management by recounting personal experiences. Interpretative phenomenological analysis (IPA) - which draws on hermeneutics, phenomenology and idiography - was deployed to analyze the data because it centers the subjective experiences of participants. An inductive approach to uncover emerging themes was utilized.

Summary of Results: Preliminary findings suggest four superordinate themes: 1) working under uncertainty with subthemes, uncontrollable environment, immediate demands and litigation; 2) informal benchmarks with subthemes, personal evaluation, peer comparison and clinician who can teach and research; 3) lack of recognition with subthemes, sociocultural context, inappropriate patient expectations, and institutional conflict; and 4) responding to stress with subthemes, community, meaningful personal life and cognitive strategies.

Discussion and Conclusions: By applying IPA, a contextual exploration of stress and resilience in the emergency department is offered. Our research demonstrates that meeting and failing informal benchmarks impacts EPs', of varying levels of experience, self-esteem, which affects their sense of stress. The findings also demonstrate a source of stress that is typically overlooked: the impact of poor public and institutional understanding of medical specialty. Understanding how EPs experience and manage stress provides important insight into existing stress research. These findings also impact the development of initiatives or department wide policy changes aimed at stress management.

Take-home Messages: Stress and resilience are not fixed concepts. Interrogating perceptions of stress and resilience amongst EPs offers a better understanding of the type of challenges that EPs face. Finally, this exploration has important implications for how wellness and stress reduction curriculum might be developed.

#EP4.1 - ePosters: Curriculum - CBME/OBE

#EP4.1.1 (7294)

Utilizing a Change Management Framework to Implement Competency-Based Medical Education in Emergency Medicine Training Programs

AUTHOR(S):

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ABSTRACT:

Background: Residency program directors have increasingly expressed concerns that many medical school graduates are not prepared for the patient care responsibilities expected of them upon entering residency. In response, medical education systems around the world have moved toward a competency-based approach to training students and residents. While many agree that competency-based medical education (CBME) is the way of the future and makes intuitive sense as an outcomes framework that will produce higher quality physicians to meet the needs of society, implementing CBME has remained a daunting task for many key stakeholders.

Summary of Work: In order to gain the necessary stakeholder support and truly implement CBME within emergency medicine residency training programs in the United States, we adopted Kotter's Eight-Step Process for Leading Change. This framework includes creating a sense of urgency, building a guiding coalition, forming a strategic vision and initiatives, enlisting a volunteer army, enabling action by removing barriers, generating short-term wins, sustaining acceleration, and instituting change.

Summary of Results: While the sense of urgency has long been recognized, the remaining steps required operationalization. Our team built a coalition of key stakeholders representative of the whole of emergency medicine to address the key components of CBME including building a framework, individualizing training, and implementing programmatic assessment. These stakeholders united behind a vision of a tiered EPA framework of outcomes, technology driven assessment, and the development of individualized learning plans for all residency trainees from the transition into residency through the commencement of independent practice. Stakeholders across all sites have been recruited to support this effort and barriers removed by the coalition and specialty societies.

Discussion and Conclusions: An organized approach utilizing a change management framework is required in order to form a coalition, gain traction, maintain momentum, and truly succeed in actualizing the full vision of CBME set forth now many years ago. At this stage, we are generating small wins and anticipate the ability to sustain acceleration to truly implement CBME across all emergency medicine residency programs in the United States.

Take-home Messages: Future results will provide a roadmap for others regarding how to utilize change management principles to move toward a competency-based approach across all training programs.

#EP4.1 - ePosters: Curriculum - CBME/OBE

#EP4.1.2 (4380)

How to teach future doctors? Research on the attitudes of teachers, students and patients towards the learning outcomes in medical education

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ABSTRACT:

Background: The change from teacher to learner centred medical education and satisfying the needs of students and patients are key factors of these years. To have a detailed view, we aimed to examine the attitudes of teachers, students and patients towards the learning outcomes.

Summary of Work: Data collection through self-reported questionnaire in online form in the four Hungarian higher education institutions offering medical education and in accredited practice places was carried out in November 2017 and August 2019. Altogether 3058 questionnaires (students: 1505, teachers: 439, patients: 1115) were processed and for data analysis crosstabs, Chi-squares, Anova tests, Gap analysis matrices were performed. In-depth interviews are in progress to complete our research.

Summary of Results: We used GAP matrices to represent the correspondences of the satisfaction and importance of the learning outcomes. Out of the 16 learning outcomes only patients rated one (respecting individual speciality during patient care - e.g. familiar background, emotional state, sexual orientation -) less important, than its satisfaction rate. In all other factors all respondents rated the outcomes very important, but they were not satisfied with their delivery and use during everyday work of a doctor.

Discussion and Conclusions: The gaps between perceptions of the importance and satisfaction of the learning outcomes among teachers, students and patients may have serious impact on changing the attitude towards medical education. The need for a pedagogical and professional development and transformation of medical education seems to be a key issue based on our results, so that the dissatisfaction of the respondents.

Take-home Messages: There were perceptual differences in the opinions of the respondents regarding learning outcomes of medical education. The study resulted in the necessity of transition and paradigm shift from profession to practice and patient oriented teaching methods in medical education.

#EP4.1 - ePosters: Curriculum - CBME/OBE

#EP4.1.3 (4834)

Evaluate Competency-Based Medical Education by Critical Policy Analysis Lens

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ABSTRACT:

Background: Medical education policies greatly influence medical education practice, but a policy may have a positive or negative impact on the educational environment. Analysing medical education policies helps educational researchers provide policymakers with direction for future development. In the last two decades, medical education accreditation agencies have influenced medical education by requiring competency-based medical education (CBME). Although CBME has attracted several criticisms, these CBME frameworks unquestionably work as a policy tool to design and evaluate medical curriculum. However, the extent to which the CBME framework aligns with societal health needs and existing health resources or addresses these parameters during implementation has been poorly investigated. Thus, Critical policy analysis (CPA), provides a rigorous methodological lens to critique educational policy (both apparent and 'hidden'), and an ideal vehicle to examine the broader impact of CBME frameworks.

Summary of Work: Saudi Medical Education Directives (SaudiMEDs) (2011, 2017) is a new competency framework that aims to enhance the quality of Saudi medical graduates. CPA was applied to SaudiMEDs as a case study to interrogate this educational policy further. The use of Foucauldian post-structural philosophy, a 'What's the Problem Represented to be?' (WPR) six questions framework by Bacchi and Goodwin (2016) facilitated a comprehensive critique to determine the subject, object and problems within the SaudiMEDs policy.

Summary of Results: There is neither a systematic nor any rigorous approach to the evaluation of Saudi medical education challenges. The analysis revealed only a weak link between this framework and societal health need. WPR highlighted many hidden problems, including insufficient teaching hospitals numbers, the inclusivity absence, inadequate faculty development, digital literacy deficiency, and the lack of health professions' education governance. While SaudiMEDs emphasises a new educational approach, there is insufficient evidence regarding its effectiveness.

Discussion and Conclusions: WPR uncover the aspects kept silenced and the disconnection between policy and practice in SaudiMEDs. A critical analysis of the SaudiMEDs offers Saudi medical education community with a critical review of the policy from different angels.

Take-home Messages: WPR is a useful tool for reviewing and developing medical education policy. There should be regular, frequent reviews of all medical education policies to fulfil societal health care needs.

#EP4.1 - ePosters: Curriculum - CBME/OBE

#EP4.1.4 (6366)

Planning versus reality: Students perspective on learning objectives

AUTHOR(S):

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ABSTRACT:

Background: The new bachelor in medicine at ETH Zurich has started in 2017 as part of a nationwide initiative. In order to plan an integrated curriculum and map it accordingly we have adopted a web-based interface “Learning Opportunities, Objectives and Outcome Platform” (LOOOP) (Goldhahn et al., 2018). In order to evaluate whether the planned curriculum reflects what is actually taught during the lectures, we conducted a student survey in LOOOP.

Summary of Work: We introduced the students of the first semester to the mapping platform and asked them for their feedback about a) whether the learning objectives are comprehensible and b) to what extend the learning objectives are covered during the respective lectures. For the coverage, we implemented a scale with six possible answers: never/very rarely/rarely/occasionally/frequently/always. As a pilot project, we assessed three modules: musculoskeletal system, patient history and nervous system.

Summary of Results: 22 students (of 100) took part in the survey. The number of responses per student varied between a minimum of four to a maximum of 435. The overall result indicates that 99 % of 1’238 assessed learning objectives are formulated comprehensibly. Concerning the coverage, the overall results show that 57 % of 1’229 rated learning objectives were covered “always”, while the percentage for the individual modules vary from 45 % (Nervous system) to 82 % (Patient history). 17 % of all rated learning objectives were covered “frequently” and 13 % “occasionally”.

Discussion and Conclusions: Based on the high comprehensibility, the formulation of the learning objectives is suitable for the intended purpose. Although the learning objectives of the curriculum planning cover the topic of the lectures quite well, there is still room for improvement. Good coverage of the learning objective during lectures is a prerequisite for constructive alignment and thus highly recommended. For the next survey, a higher response rate of participants would help to provide a profounder student feedback of learning objectives.

Take-home Messages: Detailed student feedback about learning objectives is feasible and strongly recommended to validate curriculum mapping and enhance constructive alignment.

#EP4.2 - ePosters: Curriculum - Community Oriented / Social Accountability

#EP4.2.1 (5710)

GP residents perspectives on Professional Identity Formation

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ABSTRACT:

Background: GP specialty training assists the GP residents to think, feel and act as a GP; the process of 'Professional Identity Formation' (PIF). Research on PIF in GP residency is scarce. Therefore, this study aims to investigate PIF, through the eyes of the beholders: GP residents, in order to inform GP training programs, aiming to support the PIF of tomorrows of GPs.

Summary of Work: Twelve focus group interviews about PIF were conducted among 92 GP last year residents in the postgraduate specialty GP training programmes across five Dutch GP university training institutes. A semi-structured interview guide was used, based on the prevailing literature, especially the PIF-model of Cruess (1), which summarises all factors, currently thought to be significant in PIF. The interviews were recorded, transcribed verbatim, and coded iteratively, in a constant comparative approach. Subsequent axial coding (during which Cruess' PIF-factors served as sensitising concepts) and selective coding was a joint effort of the entire research group and continued until consensus was reached.

Summary of Results: How professional identities relate to personal identities is a very important theme, both while considering a career as GP and during the GP training itself, expressed by the residents in terms of guarding boundaries and self-care. Other main themes in PIF of GP residents included; learning to deal with uncertainty through (non)clinical experiences; developing independence, through growing entrustment; and the changing attitude and treatment by the community of practice including patients, which results in increasing work pleasure. These PIF-themes were found to be in line with the PIF-factors described by Cruess (1). Clinical supervisors have a pivotal role in supporting residents in these challenges.

Discussion and Conclusions: The themes in residents' narratives about their PIF are expressed mainly in the workplace and point to a central role for the clinical supervisors. The clinical supervisor can assist dealing with uncertainty, can increasingly entrust, and can guide reflections on PIF.

Take-home Messages: By explicitly addressing PIF in GP training, through making tacit factors in PIF explicit and discussing PIF-themes explicitly, the process of PIF is hoped to be made more effective and more efficient.

#EP4.2 - ePosters: Curriculum - Community Oriented / Social Accountability

#EP4.2.2 (4938)

How much contact do medical students in the Eastern Mediterranean Region have with Family Medicine?

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ABSTRACT:

Background: Primary Health Care is vital to health systems and for achieving Universal Health Coverage. Yet medical students gain little understanding of what Family Medicine (FM) doctors do unless they are exposed to FM while training. Medical education has been slow to address this. The International Federation of Medical Students' Associations (IFMSA) aimed to establish an overview of FM in medical schools in the EMR.

Summary of Work: Out of 234 medical schools in the region, we established contacts from 108 schools from 18 countries. IFMSA developed a survey with the World Organization of Family Doctors (WONCA) and shared it with these contacts. Questions centered on the curricula and details about FM rotations if present.

Summary of Results: We received 92 responses (85.2%). 19 responses were duplicated/insufficient and were excluded. Of the remaining 73, 64 reported FM rotations (87.7%). The duration was <1 month in 31 schools (48.4%). 20 (31.2%) had 1-3 month rotations, and 13 (20.3%) had >3 month rotations. 45 schools (70.3%) offered rotations in clinical years only. 37 schools (57.8%) reported that <50% of the rotation is focused in a community setting. 80% of the curricula covered basic FM principles, 73.4% Public Health, 64% Preventive Medicine, 42% Occupational Health, and 53% Ethics. Most (87.5%) schools use lectures, and clinical practice (64.1%) as teaching methods. Only 43.8% use community outreach. Less than 2% utilize online resources. 65.6% institutions assess with written exams. 37.5% integrate FM topics with other subjects, 34.4% use OSCEs, and 5% have no assessments.

Discussion and Conclusions: Although most institutions have FM rotations, most are <1 month, and students spend more than half of their time within hospitals and not in community settings. There is a high variability on what is covered and how it is delivered. There is a need for a clear standardized approach to teaching FM. Learning should take place in community-centered settings. Students need longer exposure to FM to understand its crucial role in health care.

Take-home Messages: Most EMR medical schools have FM rotations of limited duration often delivered in the hospital setting not in FM and community settings There is no unified approach to teaching FM

#EP4.2 - ePosters: Curriculum - Community Oriented / Social Accountability

#EP4.2.3 (6295)

Strengthening social accountability in medical schools

AUTHOR(S):

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ABSTRACT:

Background: The World Health Organization has defined the Social Accountability of medical schools as “the obligation to direct their education, research and service activities towards addressing the priority health concerns of the community, region, and/or nation they have the mandate to serve. The priority health concerns are to be identified jointly by governments, health care organizations, health professionals and the public” This implies that medical schools should not only be involved in the improvement of their community healthcare system but that they should also produce graduates that have been educated with the training, skills, and knowledge to work in their community and have a positive impact on people’s health status. To this end, all medical schools are required to have programs for accountability to the community with regard to education, research, and services.

Summary of Work: International Federation of Medical Students’ Association (IFMSA) has recently created a toolkit in conjunction with Training for Health Equity Network (THEnet) a global movement advocating for socially accountable transformative health workforce education to enable medical students to assess social accountability in their medical schools using the assessment tool in the toolkit. This was used to assess social accountability in my medical school.

Summary of Results: According to the assessment tool, my medical school, Bowen University College of Health Sciences in Nigeria, scored 30 of 36. From the Scoring implication, “27-36: Your school has a strong foundation in social accountability, advocate for continued growth and leadership in social accountability”.

Discussion and Conclusions: The strong foundation in social accountability is attributed to the need to rise to action and take charge of giving back to the communities around since the problem of inequality is a major one in my country, Nigeria. Future plans for social accountability in my school and country will involve designing activities around social accountabilities in medical schools, conducting an assessment of the respective medical faculties and advocating for more socially accountable medical schools through students’ led campaigns.

Take-home Messages: There is a need for increased advocacy for social accountability in Medical Schools, putting priorities and concerns of society on the organizational and country’s vision and goals, and planning appropriate action to address them.

#EP4.2 - ePosters: Curriculum - Community Oriented / Social Accountability

#EP4.2.4 (6514)

The expectations for future workplaces of Thai medical students

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ABSTRACT:

Background: Thailand's medical students in the Collaborative Project to Increase Production of Rural Doctor (CPIRD) have to work in rural hospitals after graduation. New generation doctors are less committed and prefer work-life balance. The knowledge of their attitudes toward future workplaces is important for planning to increase the retention of doctors in rural areas. We studied students' expectations for future workplaces and also examined factors associated with their expectations.

Summary of Work: During the academic year 2017-2018, 1,349 fourth-sixth year students from 34 rural teaching hospitals responded to a questionnaire about their gender, year of study, size of teaching hospitals, a domicile of origin, parental occupation, family income and the expectation for future workplaces. Factors associated with their expectations examined using Pearson chi-square and Fischer's exact test.

Summary of Results: Of 1,349 medical students, 809 (60%) were female, 914 (68%) had adequate family income, 519 (38%) had a domicile of origin in rural areas, 247 (18%) had parental being health professionals. The top four their expectation for future workplaces were near the domicile of origin (25%), receive knowledge and experience from working (20%), support for specialist training (15%) and supply adequate work-life balance (13%). Gender is the only factor associated with medical student's expectations for future workplaces ($p=0.044$). Female students prefer workplaces near the domicile of origin more than male students ($p=0.041$). Male students prefer workplaces with higher incomes than female students ($p=0.047$).

Discussion and Conclusions: The rural hospitals in Thailand should know about students' expectations and adapt workplaces to support the retention of doctors in rural areas. Gender is an important factor to be considered. Female's students prefer to work in their hometown but male's students more prefer about incomes. The future workplaces with near the domicile of origin, support of knowledge and good practices with adequate incomes, supply their work-life balance and had chances for specialist training are the expectation of medical students and may enhance the likelihood that they would intend to start and remain working in rural health services.

Take-home Messages: The adaptation of future workplaces to support future doctors and the consideration of gender may help to increase the retention of doctors in rural areas.

#EP4.2 - ePosters: Curriculum - Community Oriented / Social Accountability

#EP4.2.5 (6762)

“Community retention rate and motivation in New Tract Doctor, Naresuan University, Thailand”

AUTHOR(S):

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ABSTRACT:

Background: Background: Shortage of rural doctors is one of community-public health problems in Thailand. Thai students usually enter medical schools after graduate from high schools and lasts 6 years of study. The “New Track” doctor production program was established in 2003 at Naresuan University aiming to increase rural doctors. This program required the applicants to have a health-related bachelor’s degree with 2 years working experience and lasts 5 years of study. Previous study showed significant higher community retention rate in new tract doctors compared with regular tract.

Summary of Work: The primary aims were to find community retention rate in new tract doctors and their motivations to work in rural area. The secondary aim was to find factors influencing higher community retention rate in new tract doctors. Cross sectional analytic study was conducted at Phrae medical education center, Naresuan University, Thailand. The questionnaires were sent to fourth year to sixth year (extern) new tract medical students from three medical education centers. All data were recorded and analyzed.

Summary of Results: A total of 100 new tract medical students were enrolled. 57 % of them lived in rural area. The community retention rate in this study was 86%. Most of them (99 %) chose to work in public hospital. The most reason for working in rural area was their aim to take care family (74%), the other reasons were to develop public health system and help patients in their community area. There was significant correlation between community retention rate and their reason for studying in medical school, which because of helping patients in their community area (p-value 0.025) but no correlation between community retention rate and their domicile, year in medical school and sex.

Discussion and Conclusions: There was high community retention rate (86%) in new tract doctors. The motivation to work in rural area because they aimed to take care their family and help patients in their community area.

Take-home Messages: Motivation for working as rural doctors is essential in terms of increase number of rural doctors which can improve community-public health system in rural area.

#EP4.2 - ePosters: Curriculum - Community Oriented / Social Accountability

#EP4.2.6 (4625)

144 Community-based health promotion projects by medical students; A 6-year experience

AUTHOR(S):

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ABSTRACT:

Background: Under cooperation with clinical departments, the department of community medicine developed community medicine courses that integrated clinical knowledge and skills with public health, community health, and preventive medicine content. In 2012, we implemented a curriculum that focuses on community-based health promotion. Fourth-year medical students were assigned to practice a community-based health promotion project during their 5-week community medicine.

Summary of Work: In the first week of our course, we introduced a concept and key action areas in health promotion together with a review of biostatistics, quantitative and qualitative methods, and problem-solving skills. Later, students were divided into a group of 7-8 students per community. Incorporate with community health providers, they empathized with people in the community and identified their problems, either health problems or social determinants of health issues. Then, they collaborated with associated sectors and people in the community to do health promotion projects under close supervision by our faculty. All projects were evaluated and feedback by our faculty and community health providers. All students were assigned to write self-reflection in the final week, and students satisfaction was collected.

Summary of Results: From 2012 to 2017, one hundred and forty-four community-based health promotion projects were done by our medical students. Forty-two projects were environmental issues. Thirty-nine projects focused on child health. Twenty-nine projects were about NCDs problems. Nine projects were about infectious disease prevention. The others were focused on elderly health, tobacco and alcohol consumption, and mental health. Their reflection was proud and happy with their projects. A survey of students satisfaction shown 79.24% answered satisfaction and very satisfaction.

Discussion and Conclusions: Although the community-based health promotion course is concise compared with other courses in the undergraduate medical curriculum, an amount and a variety of projects, also students satisfaction shown the success of the course.

Take-home Messages: A community-based health promotion course allows medical students to use their potential to make a change.

#EP4.2 - ePosters: Curriculum - Community Oriented / Social Accountability

#EP4.2.7 (7051)

Developing a Health Disparities Curriculum at a Rural Independent Academic Internal Medicine Residency Program

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ABSTRACT:

Background: Health disparities (HD) refer to differences in disease burden, life expectancy, and opportunities to achieve optimal health that exist among populations due to many demographic factors. The impact of these disparities motivated accreditation councils to require HD education during medical training. Despite this mandate, literature describing the development and implementation of disparities curricula is sparse, and nearly absent for smaller, rural graduate medical education programs. Billings Clinic is a rural independent academic medical center in Montana. The need for a dedicated curriculum to prepare residents for addressing disparities is crucial as opportunities for experiential learning with diverse groups is more limited.

Summary of Work: We reviewed the literature on HD education at graduate medical education programs. The majority of described curricula exist at large or urban academic medical centers. Unique barriers to developing and implementing such curricula at a rural program were identified: limited exposure to diverse populations (compared to national demographics), scheduling constraints due to smaller number of residents, and dearth of applicable literature to guide the process. We employed the Kern six-step model of curriculum development to frame our work. High-yield HD topics and specific population groups were identified for educational content.

Summary of Results: Program leadership supported our recommendation for formal HD training. We are developing a didactic series including Native American health, LGBTQ medicine, addiction medicine, homeless health, global health, and advocacy. To evaluate our curriculum we will assess our residents' comfort level, competence, and knowledge. We plan to include interactive learning opportunities and OSCEs.

Discussion and Conclusions: There are challenges to developing and implementing HD training in rural settings. Our project addresses a unique niche in the literature, and we plan to continue developing and studying our curriculum.

Take-home Messages: HD curricula improve medical trainees' comfort and competency with diverse populations but have not been well studied at small, rural programs. Our curriculum will address this gap in literature while better preparing our residents to serve all patients.

#EP4.3 - ePosters: Curriculum - Educational Strategies

#EP4.3.1 (5755)

The Feedback Experience of Saudi Arabian Medical Students in PBL Medical Curricula: A Mixed Method Study

AUTHOR(S):

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ABSTRACT:

Background: Problem Based Learning (PBL) focuses on the presentation of problems in small groups as a way to stimulate student learning. Even though there is extensive literature about good practice in feedback, there is very little research investigating what influences quality feedback within PBL settings. Especially within Saudi Arabian educational environments, there are unique considerations such as segregated learning environments for males and females; and a tutor-centred approach to learning.

Summary of Work: Research Question: 'How do different medical schools in Saudi Arabia experience the PBL feedback process?'; focusing on modes of feedback (i.e. written vs face to face), on sources (i.e. tutor vs peer) and purposes of feedback. A mixed methods approach was adopted. First, 856 students from eleven medical schools completed a survey. Then, in four schools, twelve student focus groups (6-8 in each) and eleven tutor semi-structured interviews were conducted to further understand the survey conclusions.

Summary of Results: The data were triangulated. Most of the student participants (96.5%) receive feedback; however, they were not always satisfied by its quality. Verbal feedback was reported to be the most effective and multi-source feedback was discussed as the most comprehensive source of feedback. The key factors that influence student perceptions of quality in feedback included credibility of feedback giver and receiver, authenticity of the feedback, relationship and culture, learning environment, feedback mode being a factor of quality, and feedback source. There were gender related differences: for example, in need for feedback and quality of feedback offered. Furthermore, there were differences in how feedback is communicated and this influenced self-reported self-regulation.

Discussion and Conclusions: Most student participants receive feedback. The data suggests opportunities to improve feedback quality and insight into how learner characteristics may impact on feedback perceptions; in the Saudi Arabian context.

Take-home Messages: Currently, feedback experience in the PBL based medical schools in Saudi Arabia may be variable. Effective feedback practice in PBL does not happen automatically but requires deliberate focused efforts. An immediate priority for Saudi Arabian Medical schools is to develop a framework that will ensure quality in the feedback provided during PBL.

#EP4.3 - ePosters: Curriculum - Educational Strategies

#EP4.3.2 (5914)

Reflective practice and feedback: medical student perspective in Thailand

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ABSTRACT:

Background: Reflective practice is learning through and from experience towards gaining new insight into self and practice. Feedback from instructors enhances students by directing them toward achieving their goal. This study aims to determine the student perspective toward self-reflection practice and the feedback process.

Summary of Work: Self-administered questionnaires were conducted in fourth-year and fifth-year medical students after consent was obtained (n = 90). Data collected from the questionnaire included perspectives towards the feedback process and self-reflection writing in clinical clerkship and general information such as gender, years of age, and grade point average (GPAX). The data was analyzed to assess relations between the perspective of self-reflection and feedback with each factor.

Summary of Results: The majority of participants have agreed that they benefit from self-reflection reports (74%) and receiving feedback from mentors (76.2%). According to the students' perspectives, mentors should have comprehensive feedback skills, provide opportunities for students to ask questions, and help the students to develop critical-thinking skills in self-reflection (83.8%, 83.4%, and 80.4%, respectively). Participants in the low academic performance group significantly agreed that mentors should provide students with self-evaluation before the feedback process, that the personality characteristics of the mentors are linked with qualities of mentoring process, and that self-reflective practice should be implemented throughout the entire course of study ($P < 0.05$).

Discussion and Conclusions: Self-reflection practice is key in improving student performance and learning. Reflective writing can be used as a tool to enhance reflective capacity. Feedback is a crucial element in the self-reflection process. Mentors play an important role in enhancing student growth and development and help students maximize education experiences, improve their clinical decision-making skills and enhance academic performance. Self-reflection and feedback enhance learning and critical-thinking skills. Experienced mentors can facilitate student learning and improve student academic performance.

Take-home Messages: Each educational institution should assess the self-reflection and feedback of their students for the benefit of learning and self-development.

#EP4.3 - ePosters: Curriculum - Educational Strategies

#EP4.3.3 (4143)

Current Literature Search Techniques of Japanese Medical Students and the Effects of a Brief Lecture During Clinical Clerkship

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ABSTRACT:

Background: Medical students have to use literature searches to resolve clinical questions during their clinical clerkship (CC). However, how students practice this skill is ambiguous. Therefore, we conducted a questionnaire survey on students' literature searches and whether this skill improved after a lecture on conducting searches.

Summary of Work: This study ran from May to December 2019. Medical students rotated in groups of 5–6 every two weeks. The questionnaire survey on literature searches was followed by a 90-minute lecture combining information and relevant activities. The questionnaire included students' self-evaluation of their literature searching abilities, and the references from the students' medical summaries/reports were compared to similar students' work from a 2018 group (n=80) who did not take the lecture.

Summary of Results: Sixty-seven students participated in the questionnaire survey and subsequent lecture. The most frequent search tool was PubMed (83.6%). The most frequent types of literature were Japanese textbooks (79.1%), medical guidelines issued by Japanese medical societies (77.6%), and English-language medical journals (65.7%). The two major difficulties in conducting searches were an inability to critically appraise the literature (74.6%) and inadequate English reading skills (74.6%). The students' satisfaction level for the lecture was acceptable (4.59±0.71 on a 5-point Likert scale). After the lecture, students' self-evaluation of their literature searching abilities improved significantly, from 3.13±1.13 to 4.21±1.24 on a 7-point Likert scale. Furthermore, compared to a 2018 group, the number of references in students' summaries/reports increased. Additionally, the number of English-language medical journal articles cited in reports in 2019 was higher than that in 2018.

Discussion and Conclusions: While CC students could use specialized search engines such as PubMed to search English-language articles, they often used Japanese-language textbooks and guidelines. Students enjoyed the lectures in CC, which increased the number of references that students used as well as changing the types of references. These findings suggest that the lecture could improve students' skills and motivation for searching literature.

Take-home Messages: Although Japanese CC students can conduct literature searches, they struggle with critical appraisal and English-language reading. Interventions such as lectures may be effective for improving literature searches during CC.

#EP4.3 - ePosters: Curriculum - Educational Strategies

#EP4.3.4 (4641)

Implementation of social media LINE to facilitate small group problem-based learning in pediatric hematology sessions

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ABSTRACT:

Background: Studies have demonstrated that problem-based learning (PBL) promotes deep learning and communication skills but have varying degrees of applicability and relevancy to real-life experiences. One of the major problems is the manner of constant assessment of the students' performances and systemic organization throughout the process. To solve this problem, we designed an innovative PBL curriculum using social media, LINE, to help students in studying pediatric hematology.

Summary of Work: Postgraduate year (PGY) students and residents that rotated to the pediatrics hematology department participated in this study. Each group consisted of one teacher and 2-3 students. The PBL context were based on cases in real-life scenarios in the pediatric ward. Adequate patient history, physical examination results, laboratory data, and images were presented orderly in the LINE group, without revealing patient's identity. Students have to analyze the case and discuss the challenges presented by the problem. An online survey consisting of 10 questions were administered to measure the impact of the social media model in PBL learning. Students' perceptions were recorded using a feedback questionnaire on a 5-point Likert scale.

Summary of Results: There were 10 PGYs and 4 residents (M:F=5:9) enrolled in our pediatric hematology LINE groups. The teachers suggestions and instant feedback showed major improvement when compared to traditional PBL. Regarding the effectiveness of LINE in our PBL module, the overall results of traditional lecture deficiency complementation, self-learning ability enhancement, increase in learning engagement and interactivity, and critical knowledge acquisition had the highest ratings, with total scores ranging between 4.8 and 5.

Discussion and Conclusions: Implementing social media LINE as an educational tool to enhance PBL was generally approved by students. With the use of LINE, students can collaborate, share resources and discuss their problems. Furthermore, as the learning process is recorded in LINE, the teacher can provide instant feedback and monitor the students' performances in acquiring the right breadth of knowledge in the field of pediatric hematology.

Take-home Messages: New technological innovations by integrating social media in the PBL module was very effective and well received by the students. We believe that implementing social media LINE in the PBL model has potential in improving the efficacy of learning and teaching.

#EP4.3 - ePosters: Curriculum - Educational Strategies

#EP4.3.5 (4706)

“From Textbooks to Clinical Practice!” Case-Based Learning Fills the Gap and Improves Pharmacists’ confidence in Therapeutic Drug Monitoring Evaluation

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ABSTRACT:

Background: Therapeutic drug monitoring (TDM) is critical in clinical pharmacy practice. It helps us to optimize dosing regimen for patients either to improve efficacy or to reduce toxicity. However, we noticed that there is a gap between textbook knowledge and clinical application. To address this situation, we conducted a series of case-based learning (CBL) courses aim at helping our pharmacists familiarize with clinical cases and improving their confidence in clinical practice.

Summary of Work: A total of 18 participants were involved in this program from Mar. 2019 to Jan. 2020. The topic of courses were sorted by drugs, and every topic was designed into 2 stages. Senior clinical pharmacists were invited to guide participants. They gave a general introduction on the topics and shared their practicing experience at first stage. Participants then presented actual cases they encountered while clinical practicing for discussion in second stage. To evaluate the effect of this program, pre-test and post-test were done in every course for professional knowledge assessment. A five-point Likert scale questionnaire designed to know participant’s satisfaction about the program and their confidence level in clinical practice was delivered to participants at the end of the program. The results were compared by using a two-sided Student’s t-test.

Summary of Results: We observed a significant improvement in professional knowledge test scores (46.9% to 94.6%, $p < 0.001$). All the responses from the final questionnaire were positive between agree and strongly agree points for positive opinions on this CBL program. Participants’ confidence level for clinical practice on TDM enhanced significantly after the program ($p < 0.001$). Vast majority of participants agree that this program improved their professionalism while providing pharmacist suggestions.

Discussion and Conclusions: CBL courses help to fill the gap between textbook knowledge and clinical practice. Our study has shown significant enhancements in professionalism and confidence scores. In the future, sustainable educational programs are needed to provide continuous improvements for our pharmacists. Some barriers we may encounter including lack of teaching staff, difficulties to arrange times that suit everyone, and lack of institutional support.

Take-home Messages: On-the-job training is essential for pharmacists to improve clinical skills.

#EP4.3 - ePosters: Curriculum - Educational Strategies

#EP4.3.6 (5113)

Usage of learning activities in the learning management system in a blended course in anatomy and physiology and the correlation to final exam scores.

AUTHOR(S):

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ABSTRACT:

Background: Previous studies indicating that students' use of the learning management system (LMS) can predict student performance. We have developed a blended course in anatomy and physiology and from the course evaluations we know that the students appreciate the activities in the LMS, but we have not analyzed how much they are used. Therefore, we studied the use of activities in the LMS and correlated it to the result of the final exams.

Summary of Work: A 9 weeks course in anatomy and physiology was studied. For each section of the course, the students have time for reading and self-studies. For this there are activities in the LMS such as recorded lectures and self-tests. The course has two written exams. Directly after the course, analytics from the LMS was extracted with information about the number of views of lectures and number of clicks on self-tests were analyzed. This was correlated to the total score of the two exams.

Summary of Results: The activities in the LMS were highly used by the students. The average number of views on the recorded lectures were 106 per student, which corresponds to 6 views per lecture. The average number of clicks on the self-tests were 124 per student, which corresponds to 10 clicks on each self-test. There was a correlation of the use of self-tests and the total score on the final exam and a trend towards more views of the lectures and higher score.

Discussion and Conclusions: We found a high usage of the activities with an average viewing of 6 times for each lecture per student and that the students in average took each self-test 10 times. There seem to be a correlation between use of activities and the scores on the exam. This will be presented for the new students starting the course which might inspire them to use the activities even more to increase their knowledge.

Take-home Messages: The students use the learning activities provided in the LMS a lot. More use of the learning activities seems to correlate to higher scores on the exams and can promote learning.

#EP4.3 - ePosters: Curriculum - Educational Strategies

#EP4.3.7 (5164)

International medical placements: Student perspectives on motivating factors and experiences

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ABSTRACT:

Background: International medical placements offer a unique and popular experience for medical students. Thus far, studies of student experiences mostly represent travel from high-income to low-income countries. The Imperial College London (ICL) Collaborative Partnerships Office offers bespoke transnational placements to two institutions - the Lee Kong Chian School of Medicine, Singapore (LKC), a joint university collaboration between ICL and Nanyang Technological University; and the Armed Forces College of Medicine, Egypt (AFCM). To improve ICLs offering and contribute to the literature on placements to high-income countries, this study explored student motivations for and perceptions of international placements.

Summary of Work: AFCM and LKC students undertaking ICL placements between July and October 2019 completed anonymous questionnaires (n=33) and semi-structured interviews (n=14) for descriptive and thematic analysis. Future data is to be incorporated from ICL students with placements in April 2019 and 2020.

Summary of Results: The three main themes concerned motivations, expectations and experience. Student motivations included potential medical and cultural experiences, host reputation and the logistics of placement organisation. Students anticipated academic and personal development, as well as integration into the healthcare team. Observing different cultures of medicine through different healthcare systems seemingly invoked both positive and negative comparisons, thence inspiring some to enact local change in future. Similarly in the questionnaire, students appeared to most value experiencing a different system and personal development, with institution reputation and administrative support key factors. Varied placements providing greater breadth of exposure were preferred to single-specialty placements.

Discussion and Conclusions: Determining student motivations and expectations is useful in improving placements. For example, the desire to experience a different system reported in this study and the literature indicates value in varied placements offering a holistic view of healthcare services. Inter-university partnerships may also enhance placements as students receive more structured programs and logistical support. It is anticipated this study will contribute to a future wider investigation into student perceptions on the various models of international placements offered at ICL.

Take-home Messages: It is important institutions understand what students consider positive placement features, such as varied experiences and adequate support. As inter-university partnerships enable better tailored placements, student experiences may be enriched by home and host institution collaboration.

#EP4.3 - ePosters: Curriculum - Educational Strategies

#EP4.3.8 (5249)

The effects of reflection and Real-time feedback on improving consultation skills for pharmacy students

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ABSTRACT:

Background: To perform drug phone consultation independently is a great challenge for pharmacy students. The key components of consultation skills include consultation operation process, background information collection, application and searching for appropriate references, and professionalism. We had established a training curriculum for pharmacy students, which significantly improved the capacity of consultation operation process. In this study, we modified the training processes and evaluate the effects of the novel curriculum on the students' capacities of background information collection, application and searching for appropriate references, and professionalism.

Summary of Work: We had reported the previously training processes with the order of literature review and application of evidence database, first simulation activity, introduction of drug information consultation skill, case practice, consultation skill re-enforcement, and second simulation activity. In the modified curriculum, we added real-time feedback and reflection after case practice. Two independent instructors evaluate the performances of pharmacy students in first and second simulation activities according to the performance checklist. The performance difference of first and second simulation activities, and the comparison of the outcome between the novel and previous curriculums were examined by t-test p-value less than 0.05 is considered significant.

Summary of Results: We found that compared with the first simulation activity, all the consultation skills of the students significantly improved in the second simulation activity in both curriculums. Moreover, compared with previous curriculum, the application of reflection and real-time feedback significantly enhanced the capacities of application and searching for appropriate references with the trend to increase the capacities of background information collection and professionalism.

Discussion and Conclusions: Our results indicated the beneficial effects of deliberate learning, reflection, and real-time feedback on the improvement of phone drug consultation skills to pharmacy students. The application of reflection and real-time feedback may help students recognize their knowledge weak points and enhance their multi-dimensional thinking which contribute to the improvement of the capacities of application and searching for appropriate references.

Take-home Messages: Application of reflection and real-time feedback strategy in addition to deliberate learning enhance the phone consultation skills to pharmacy students.

#EP4.3 - ePosters: Curriculum - Educational Strategies

#EP4.3.9 (5300)

The Effectiveness and Experience of Clinical Training with Problem Based Learning combined Thinking Aloud.

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ABSTRACT:

Background: PBL (Problem-Based Learning) is a learner-centered teaching model in clinical medical education. Thinking Aloud was used in clinical education to invite students to clearly explain each step of problem solving. That could not only strengthen the ability of in-depth analysis but also help teacher to understand whether students really grasp the core of problem, thereby lead students to reflect further. Reflection was an important point that triggers students' self-directed learning. The aim of this study would explore the effectiveness of thinking aloud in case-based clinical training with PBL.

Summary of Work: The PBL clinical scenario was be written. The teaching activity was a case-based discussion by thinking aloud. The activity procedure included 4 phases, trainee pre-test, conference of thinking aloud, post-test, and interactive/ feedback. The reaction evaluation was trainees' feedback. The learning evaluation was the result of a pre- and post-test written examination, differences were considered statistically significant when $P < 0.05$.

Summary of Results: The overall result of learning evaluation showed statistically significant improvement, ($31.9 \pm 19.6\%$ vs. $71.5 \pm 18.7\%$, $p < 0.05$). The feedback from students indicated that the teaching activity with PBL clinical scenario helps them to find problems, learn flexibly, increase peer discussions, and transform knowledge into clinical applications. The problem-solving process in thinking aloud method could help them understand their deficiencies, strengthen their ability of deep analysis and further trigger them to reflect.

Discussion and Conclusions: The design of the PBL clinical scenarios which be carried out using thinking aloud should be real clinical situations and based on ill-structured clinical problems in order to have high open-ended and complexity. However, the ill-structured problem would make teacher feel insecure and deepen the difficulty of writing teacher-guided clinical scenarios. Therefore, teacher training was an important issue for such activity. The conclusion of this study was clinical PBL training by thinking aloud could not only effectively transform knowledge into clinical applications, but also strengthen in-depth analysis and stimulate reflection.

Take-home Messages: Medical education with PBL clinical scenarios which be carried out by Thinking Aloud could increase the ability of in-depth analysis and stimulate reflection, and expect to further strengthen the autonomy of learning.

#EP4.3 - ePosters: Curriculum - Educational Strategies

#EP4.3.10 (5350)

Attitudes toward early clinical exposure in preclinical year medical students.

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ABSTRACT:

Background: Early clinical exposure was introduced in preclinical year medical students as an educational strategy to provide an opportunity for students to be acquainted with a future clinical practice. The curriculum was designed to improve students' ability to determine critical information and promote the integration of basic sciences and clinical practices. Therefore, this study aims to explore the attitudes toward early clinical exposure in preclinical year students in Faculty of Medicine, Srinakharinwirot University.

Summary of Work: This study was invented to explore the students' attitudes toward early clinical exposure. During the course, the first-year undergraduate medical students of Srinakharinwirot University were arranged in groups and were assigned with a clinical case study. The case study required students to identify and approach some symptoms by searching clinical information along with a group discussion. Online questionnaires were used to collect feedback and perspectives at the end of the session.

Summary of Results: Most students stated that early clinical exposure improves their ability to attain clinical information (81.5%), encourages them to think critically (82.1%), gain familiarity toward the role of basic sciences in clinical practices. The majority of students (71.5%) also suggested that early clinical exposure promotes self-directing learning skills through the process of analyzing and synthesizing data. Moreover, students (89.4%) develop some teamwork skills and listening skills (91.4%) during the group discussion. Also, some students (65.6%) mentioned that the course gained their self-confidence in the upcoming clinical years.

Discussion and Conclusions: Early clinical exposure was found helpful in terms of developing teamwork and leadership skills, promoting professionalism, and gaining familiarity toward clinical practices. Early clinical exposure provides the opportunity to gain more experience and enthusiasm which may benefit the upcoming clinical setting. In conclusion, this study proved that this curriculum should be continued as a foundation of clinical year.

Take-home Messages: Early clinical exposure is considered as a strategy for preclinical year medical students to gain clinical experience. Further steps such as design of classroom setting, arranging activities to promote enthusiasm, and supporting the process of student learning would be recommended.

#EP4.3 - ePosters: Curriculum - Educational Strategies

#EP4.3.11 (6001)

Is “7” better than “6”? – An analysis from the postgraduate year (PGY) doctor enrollment examination in a medical center in Taiwan

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ABSTRACT:

Background: The medical education system in Taiwan has been transitioned from the 7-year to the 6-year curriculum since 2013. Whether there is a substantial difference in terms of educational outcomes between the two curricula is unknown. The last batch of 7-year course and the first batch of 6-year course medical students in Taiwan both graduated in 2019. All graduate students had to apply subsequent postgraduate training for general medicine (PGY doctor training).

Summary of Work: MacKay Memorial Hospital (MMH) is among the top hospitals in terms of the number of PGY doctors enrolled. To investigate if two different systems would lead to distinct educational outcomes, all PGY doctor applicants were subjected to the same writing test regarding general medical knowledge. To avoid biases, students graduating from MacKay Medical College who had already been trained in the same hospital for 2-3 years were excluded from this analysis.

Summary of Results: Totally 299 7-year course (7YMS) and 242 6-year course medical students (6YMS) graduated from 11 medical schools in Taiwan and applied MMH PGY doctors were included. There was a substantial difference in scores among medical schools either for 7YMS or 6YMS (ANOVA, $F=2.31$, $P=0.013$ and $F=2.82$, $P=0.003$, respectively). Compared with 6YMS, 7YMS had a trend to have higher scores with borderline significance (60.0 ± 8.6 vs. 58.7 ± 9.0 , $P=0.084$). Among 11 medical schools, the 7YMS in one medical school had significantly higher scores than its 6YMS (58.6 ± 9.7 vs. 53.9 ± 8.3 , $P=0.012$), with another one show the similar trend (66.3 ± 5.3 vs. 59.2 ± 8.1 , $P=0.077$). The scores in the other 9 medical schools showed no significant difference between their 7YMS and 6YMS (all $P > 0.1$).

Discussion and Conclusions: When transitioning from 7-year to 6-year curriculum, each medical school in Taiwan had made every effort to improve curricular design to keep 6YMS as equivalent as 7YMS in terms of educational outcome. Indeed, our national physician board exam had shown equivalent pass rates between overall 7YMS and 6YMS. However, individual medical schools may still have rooms to improve their curricula and learning efficiency.

Take-home Messages: 6YMS are generally speaking equivalent to 7YMS in terms of medical knowledge.

#EP4.3 - ePosters: Curriculum - Educational Strategies

#EP4.3.12 (6508)

A Meta-Analysis of Students' Readiness Assurance Test Performance with Team-Based Learning

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ABSTRACT:

Background: Team-based learning (TBL) is commonly used in medical education to engage students in small group discussion. Concept mapping is an effective teaching and assessment tool and is widely used in the fields of medical and nursing education. We combined both methods to teach medical students about the topic "Limb Weakness". This study aimed at investigating correlation between students' individual and collective performances.

Summary of Work: 153 year-4 medical students were recruited in this study. This TBL course comprised two sections namely readiness assurance test (RAT) and application. RAT section included individual RAT (IRAT), group RAT (GRAT) and essay questions (EQs). The application section included group concept mapping and final exam. IRAT and final exam were multiple-choice questions and belonged to individual performances. GRAT, EQs and group concept mapping were belonged to collective performances. GRAT were also multiple-choice questions. EQs and group concept mapping were scored by experts. The Data for I-&GRAT scores, performance in group concept mapping and in EQs, and final exam scores were collected for investigating their Pearson correlation coefficient and paired t-test.

Summary of Results: According to Pearson correlation coefficient, participants' GRAT score were significantly correlated to scores of EQs ($r=0.470$, $p<0.005$), and to group concept mapping scores ($r=-0.193$, $p<0.005$). There was no significant correlation among other variables. Results of paired t-test revealed that participants had significant higher scores in final exam ($M=58.23$, $SD=15.558$) than in IRAT ($M=48.57$, $SD=14.477$, $t=-5.599$, $p<0.001$).

Discussion and Conclusions: All collective learning performances had significant correlation. Group concept mapping scores were negatively correlated to other two collective learning performances, because students who were aware of their lower achievement in RAT section gave more efforts in application section namely drawing group concept. No correlation between IRAT scores and final exam scores indicated that only a few students who performed better in final exam belonged to the higher achievement group in IRAT. Despite that participants had significant improvement after TBL, many high-achieved students in RAT were lacking of perseverance.

Take-home Messages: Students' initial performance in TBL is not necessary predictable to their final learning achievement.

#EP4.3 - ePosters: Curriculum - Educational Strategies

#EP4.3.13 (6882)

Self-directed learning for Health Systems Sciences in a First Year Anatomy Course

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ABSTRACT:

Background: Health System Sciences (HSS) refers to the critical competencies that are necessary for delivery of the highest quality value-based health care in a manner that is both patient and population centered. In the post-Flexner era, this has become an important ever-growing thread within medical school curricula. Moreover, given the continuous advances and changes within health care delivery, it is important for future physicians to develop the skills necessary for lifelong learning.

Summary of Work: To encourage synthesis of HSS into foundational and clinical sciences we employed a self-directed learning (SDL) assignment around real patient cases. Students were exposed to the medical stories of a living anatomical donor, through an online module then an in class discussion. Subsequently, students engaged in a purposeful reflection of a component of HSS as it related to the case as well as an assignment that focused on the prescribed steps of SDL (assess their own learning needs, gather information to address those needs, analyze the credibility of their sources and receive feedback on the information retrieval and synthesis processes). The assignment culminated in the students creating a short video addressing their question and what they learned.

Summary of Results: A total of 151 first-year medical students participated. Students were assigned to one of four cases that included vertebral compression fracture, myocardial infarction, cholecystectomy and post-operative blindness. All students completed an SDL worksheet and a video. Research librarians gave feedback on research process & source analysis. Course faculty gave on the overall assignment and video. The span of questions, resource utilization, and feedback will be presented. Implementation best practices will also be discussed.

Discussion and Conclusions: The incorporation of a novel SDL activity around HSS, not only served as an accreditation requirement, but also introduced students to the process of SDL while exposing the complexity of HSS.

Take-home Messages: Incorporation of HSS through an SDL project in the first semester of medical school allows for early exposure and lays the foundation for longitudinal integration and better preparation to ultimately, as residents, meet the Triple Aim of health care.

#EP4.3 - ePosters: Curriculum - Educational Strategies

#EP4.3.14 (6919)

Could students retain their knowledge of dystocia topic up to 12th month through only one class of POL plus CBL teaching method?

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ABSTRACT:

Background: Dystocia is a complex issue in OB&GYN which has many challenges for medical students in terms of case management. Previously, students attended in a lecture-based class and we found that students had difficulty in managing the patients in their real practice. Therefore, we changed this class into an active learning. The new teaching methods included problem-oriented learning (POL) plus case-based learning (CBL) were applied in teaching this topic.

Summary of Work: 5th year medical students that were in OB&GYN rotation attended the new teaching method. Two weeks before the class, students had completed the pretest and received the study guide that assigned them to do a self-study. In the class, during the first hour students discussed content that they learned from a self-study and applied their knowledge to discuss a given scenario in the later hour of the class. Instructor facilitated the learning process through feedback and summary the key points. This new method was assessed by the students' immediate knowledge posttest and knowledge retention posttest at 1st, 3rd, 6th and 12th month after the rotation. Score over 9 was considered as minimal passing level (MPL)

Summary of Results: Forty-seven students completed this new teaching method. The score of immediate posttest was higher than pretest significantly (13.4 ± 0.9 vs. 7.4 ± 1.7 , $p < 0.001$). The scores at 1st, 3rd, 6th and 12th month were 12.9 ± 0.8 , 10.6 ± 1.2 , 10.2 ± 1.1 , and 10.0 ± 0.8 , respectively which were higher than pretest significantly at $p < 0.001$.

Discussion and Conclusions: POL plus CBL is an effective active learning method for dystocia topic. Students can retain their knowledge which higher than MPL in this topic up to 12th month after completing the class. In addition, the learning atmosphere of these two methods facilitates the learning environment more than lecture-based teaching. Students have a chance to share and discuss this topic where the instructor can immediately correct their missing points and summarize the imperative issues.

Take-home Messages: POL plus CBL encourages and facilitates students' learning environment and proves to retain students' knowledge for 12th month for dystocia topic.

#EP4.3 - ePosters: Curriculum - Educational Strategies

#EP4.3.15 (7003)

Using threshold concepts to facilitate integration and application of biomedical science knowledge in healthcare professions

AUTHOR(S):

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ABSTRACT:

Background: Biomedical science instruction typically precedes clinical training in healthcare professions. Segregation of biomedical science theory from clinical training can limit opportunities to apply scientific knowledge to real-life problems. As such, students may not perceive science as relevant to future practice, undermining engagement and motivation for learning. Threshold concepts (TCs) have been described as jewels in the curriculum, once mastered reveal new ways of thinking and practicing within a discipline. TCs are integrative, go beyond content and, as such, are not explicitly taught.

Summary of Work: TCs for biomedical sciences were identified. A conceptual framework was developed as a resource to help reveal how student's scientific knowledge can be integrated and applied to understanding the molecular basis of health, disease and therapeutics. First year dental students (n=80) received a lecture to introduce TCs and the framework. A virtual laboratory was used to provide students opportunity to apply TCs in a new context. To determine whether students possessed prerequisite knowledge a pre-lecture MCQ was implemented. Learning gains were assessed by means of a post-lecture MCQ. A pre and post-simulation survey measured student's self-efficacy for learning biomedical sciences.

Summary of Results: 30 students completed the pre-lecture quiz, results revealed that students scored highly on questions assessing content knowledge (87-96% correct), scores were lower for questions assessing conceptual understanding (37-80% correct). 22 students completed the post-lecture quiz, results revealed a statistically significant increase in conceptual understanding (p=0.017). Post-simulation survey revealed 80% of students agreed the framework helped them integrate their scientific knowledge, 70% of students agreed the TCs helped them apply knowledge in new contexts.

Discussion and Conclusions: Traditional instructional methods, as measured using the pre-lecture quiz, revealed students possessed knowledge of key concepts underpinning the TCs but lacked the conceptual understanding required to apply that knowledge. Explicit reference to the TCs and the framework enhanced student's conceptual understanding. Survey data suggested overall student's agreed the TCs and framework helped them understand how their existing knowledge could be integrated and applied in new contexts.

Take-home Messages: The TCs and conceptual framework have potential to represent a framework for enhancing integration and application of biomedical science knowledge in healthcare professions

#EP4.3 - ePosters: Curriculum - Educational Strategies

#EP4.3.16 (7146)

'Patient Journey' Workshops in Undergraduate Medical Education: Combining the Best of Both Worlds

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ABSTRACT:

Background: Experiential learning is pivotal in the education of clinicians. A common source of anxiety for final year medical students is the transition from traditional learning methods into the more "on-the-job" style learning they will experience post-qualification. We addressed this need through the development of a series of novel 'Patient Journey' workshops which combined traditional teaching modalities with aspects of simulation and role-play.

Summary of Work: We divided 18 final year medical students from the University of Birmingham into two groups and undertook a series of seven 'Patient Journey' workshops, following an in-depth exploration of acute medical and surgical presentations. Each two-hour workshop followed the narrative of a patient from admission to completion of their journey, through a variety of clinical settings. Two faculty members were required, and each workshop included theory, role-play, practical exercises and debrief. We collected electronic feedback using Likert scale questions and free text.

Summary of Results: All participants thought the workshops were an effective way to prepare them for foundation practice (18/18 rated strongly agree). Students gave positive feedback concerning the format, session length, realism, role-play and topic coverage. The linking of different competencies through the sessions and comprehensive exploration of each case was felt to be a favourable adjunct to the traditional curriculum and higher fidelity simulation exposure. A more substantial evaluation is being implemented.

Discussion and Conclusions: These workshops provided students with an appreciation of realistic challenges and pitfalls that occur throughout a patients' journey in a secondary-care setting. Theory, role-play and non-technical skills brought authenticity to the classroom. We applied established experiential learning theory to design, deliver and evaluate deeper learning; there was no requirement for high-fidelity simulation equipment, and it presents an additional educational tool for undergraduates which complements more traditional teaching modalities. We are making the 'Patient Journey' materials available as open-access to other educators and would value their personal experience of implementing these sessions.

Take-home Messages: 'Patient Journey' workshops offer a novel format for engaging final-year undergraduate medical students, who are fast approaching clinical practice, in active experiential learning of managing acute clinical presentations in a controlled environment with the opportunity for immediate feedback on clinical and non-technical skills.

#EP4.3 - ePosters: Curriculum - Educational Strategies

#EP4.3.17 (7234)

Incorporation of master adaptive learner into didactic courses places students at threshold for clinical experience entrustable professional activities.

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ABSTRACT:

Background: In an age of healthcare where advancements are made on a daily basis, curricular spearheads must implement frameworks to support the critical thinking of tomorrow. The master adaptive learner (MAL) framework utilizes an approach to self-regulated learning that eventually leads to adaptive expertise. Through metacognition and self-regulated, students are equipped to plan and implement strategies to improve clinical reasoning skills which is mission critical in the ever-advancing world of healthcare. The Accreditation Council of Pharmacy Education in the USA requires tracking students across the curriculum. Through didactic and clinical experience (CE) courses, students are evaluated on similar scales in order to assess if they are meeting the appropriate threshold.

Summary of Work: The MAL framework was implemented into a three course series focusing on integrated pharmacotherapy with the goal of reinforcing entrustable professional activities (EPA), especially clinical reasoning. The hypothesis of the study is that incorporation of MAL into the didactic course series will place students at or above the threshold of expectation in both didactic and CE settings. Students enrolled in two cohorts were included and assessed across the course series and experiential placements. EPA levels were set for experiences CE₂, CE₃, and advanced CE at 2, 2, and 3, respectively; didactic thresholds mirrored CEs.

Summary of Results: Participants were included in the evaluation for two cohorts (n₁=143, n₂=144). Three didactic courses were included for the first cohort and two didactic courses for the second cohort. All didactic and CEs met the level of expectation with the exception of the first didactic course of the second cohort.

Discussion and Conclusions: Students are meeting desired expectations. This comparison provides guidance for administrators to identify students in danger of remediation when students are consistently lower than expectations. Through the MAL framework, participants met the desired level of expectation in both didactic and CE. The instance of not meeting expectation allows for administrators to provide additional assistance to participants prior to the next iteration.

Take-home Messages: Having similar expectation levels between didactic learning and CE learning is a guide to aid in curricular changes and interventions. It is important to strive to identify success predictors in student performance, in order to enhance programmatic needs.

#EP4.3 - ePosters: Curriculum - Educational Strategies

#EP4.3.18 (4967)

Progression of Self-Directed Learning in Medical Students – a one year follow up data

AUTHOR(S):

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ABSTRACT:

Background: Self-directed learning (SDL) is important in medical education. Only one-third of our students were ready for SDL from earlier study. We evaluated SDL readiness in our students one year apart to follow the progression and questioned them regarding to their understanding about SDL.

Summary of Work: Fifth and 6th year students were asked to take part in this study. The SDL readiness scale (SDLRS) questionnaire which included a 5-point Likert scale of 40 items was answered. The SDLRS of > 150 was considered as high readiness for SDL. The mean score and proportion of students who demonstrate high readiness will be compared between this year and their last year data. The questionnaire also included their attitude and understanding toward SDL.

Summary of Results: Response rate was 80% (62/77). Overall mean SDLRS was 147.6 (± 22.6). The mean SDLRS score of 6th and 5th-year students compared to their last year score showed no statistically significant, 152.6 (± 22.8) vs 147.1 (± 25.7) ($p=0.68$) and 143.1 (± 21.9) vs 140.7 (± 15.3) ($p=0.10$), respectively. The proportion of students who were ready for SDL was significantly higher in 6th-year students compared to their data from last year, 66.7% (20/30) vs 42.9% (13/33) ($p=0.04$) but not in 5th-year students, 32.3% (10/32) vs 28.6% (10/35) ($p=1.00$). Interestingly, 74 % of them were not sure what SDL really was. Lack of guidance from teachers was the main obstacle in SDL development (71%).

Discussion and Conclusions: Students showed significant improvement in SDL skills from 5th to 6th academic year, but not statistically significant in 4th to 5th academic year. Sixth year medical students' activities were indeed different from other years. This might affect their improvement in SDL skills. Apart from not knowing what SDL was, 2/3 of them still developed this skill.

Take-home Messages: SDL "seem" simple for us teachers, but frankly difficult for our students. Much more work is still needed.

#EP4.3 - ePosters: Curriculum - Educational Strategies

#EP4.3.19 (6853)

A Formative Playground: Student experiences from a student-run outpatient clinic in dermatology

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ABSTRACT:

Background: Clinical teaching during medical school is regarded as an important arena for practicing clinical skills and applying theoretical knowledge to practical situations. In Fall 2019, the Department of Dermatology at St. Olavs Hospital in Trondheim, Norway, implemented a student-run outpatient clinic in dermatology for eight medical students attending the longitudinal integrated clerkship program at the Norwegian University of Science and Technology. In this study their experiences regarding learning and motivation was explored through a qualitative research method.

Summary of Work: Individual semi-structured interviews were conducted with eight fourth-year medical students who attended the clerkship program and experienced the student-run dermatology clinic. The focus of the interviews was on the students' experiences from the teaching sessions at the clinic, and especially regarding their learning and motivation. A conventional content analytic approach was utilized to analyze the transcripts with a second-coder approach to ensure rigour of the analysis.

Summary of Results: The results of this study suggest that a playground for learning, formative learning and authentic learning were three main themes describing what the students regarded as important for their learning and motivation during clinical teaching. A playground for learning describes the students' positive experience of being given the freedom to assess patients on their own within safe frames. Formative assessment through quizzing and feedback from the preceptor was reported by students as important for learning. An authentic setting where the students got to meet many patients was described by the students as a valuable experience for later clinical practice.

Discussion and Conclusions: More responsibility within safe frames, an authentic learning environment and formative assessment were three main themes describing what students reported to be important for their learning and motivation during clinical teaching sessions in dermatology. The results from this study about students' experiences from clinical teaching can be valuable for further development of this teaching arena by giving insight into which teaching methods that elicit better and more effective learning.

Take-home Messages: Independent work within safe frames, formative assessment and authentic learning in seemed to be important for medical students' motivation and learning during clinical teaching sessions.

#EP4.3 - ePosters: Curriculum - Educational Strategies

#EP4.3.20 (5608)

PBL in primary health care: enhancing the system-based practice

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ABSTRACT:

Background: Although PBL is widely used for cognitive learning in the classroom sessions, there is little experience regarding its use in public health practice. This investigation aims to assess undergraduate medical students perceptions of PBL in primary care settings.

Summary of Work: University of Ribeirão Preto established a partnership with the Local Public Health Administration implementing a system-based practice in medical course. In 2016, PBL approach in primary care was implemented to prepare medical students for the clinical practice in the Brazilian National Health System. The first PBL session is based on the students report regarding the student-patient encounter in the primary care setting. In a second session, after the self-direct learning, the discussion resulted in a patient care planning, translating the learned subject in clinical practice. In 2018, a semi-structured questionnaire combining the Dundee Ready Educational Environment Measure (DREEM) and open-ended questions was applied to evaluate the students' perceptions.

Summary of Results: 374 students from first to fourth year of medical school filled in the questionnaire. The total DREEM score was 122.6. According to the students, the activity was student-centred (2.53), developed problem-solving skills (2.54), and relevant competencies to the healthcare career (2.80). Teachers provided constructive feedback (2.72) and adopted the patient-centred approach (3.27). The questionnaire showed good reliability (Cronbach's alpha=0.92). In content analysis of open-ended questions, five themes emerged from the students' perceptions: articulation between theoretical and practical activities; development of critical thinking; qualification of patient-centred care; infrastructure of clinical settings; and faculty development.

Discussion and Conclusions: PBL principles applied in a system-based practice in the primary care were well accepted by the medical students. According them, this methodology promoted contextualized learning and enhanced the acquisition of medical and social competence. Nevertheless, medical students pointed out aspects to be improved: clinical learning environments, supervisor qualification, and faculty development. These comments highlighted the necessary adjustment in this activity.

Take-home Messages: PBL in the primary care settings is feasible. Adapting PBL to public health provides a critical, reflective, and contextualized undergraduate medical training. It promotes the social accountability and involves a partnership between Medical School and Public Health Administration.

#EP4.3 - ePosters: Curriculum - Educational Strategies

#EP4.3.21 (6530)

Investigating Correlation among Individual and Collective Performances in Team-based Learning

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ABSTRACT:

Background: Team-based learning (TBL) is commonly used in medical education to engage students in small group discussion. Concept mapping is an effective teaching and assessment tool and is widely used in the fields of medical and nursing education. We combined both methods to teach medical students about the topic “Limb Weakness”. This study aimed at investigating correlation between students’ individual and collective performances.

Summary of Work: 153 year-4 medical students were recruited in this study. This TBL course comprised two sections namely readiness assurance test (RAT) and application. RAT section included individual RAT (IRAT), group RAT (GRAT) and essay questions (EQs). The application section included group concept mapping and final exam. IRAT and final exam were multiple-choice questions and belonged to individual performances. GRAT, EQs and group concept mapping were belonged to collective performances. GRAT were also multiple-choice questions. EQs and group concept mapping were scored by experts. The Data for I-&GRAT scores, performance in group concept mapping and in EQs, and final exam scores were collected for investigating their Pearson correlation coefficient and paired t-test.

Summary of Results: According to Pearson correlation coefficient, participants’ GRAT score were significantly correlated to scores of EQs ($r=0.470$, $p<0.005$), and to group concept mapping scores ($r=-0.193$, $p<0.005$). There was no significant correlation among other variables. Results of paired t-test revealed that participants had significant higher scores in final exam ($M=58.23$, $SD=15.558$) than in IRAT ($M=48.57$, $SD=14.477$, $t=-5.599$, $p<0.001$).

Discussion and Conclusions: All collective learning performances had significant correlation. Group concept mapping scores were negatively correlated to other two collective learning performances, because students who were aware of their lower achievement in RAT section gave more efforts in application section namely drawing group concept. No correlation between IRAT scores and final exam scores indicated that only a few students who performed better in final exam belonged to the higher achievement group in IRAT. Despite that participants had significant improvement after TBL, many high-achieved students in RAT were lacking of perseverance.

Take-home Messages: Students’ initial performance in TBL is not necessary predictable to their final learning achievement.

#EP4.5 - ePosters: Curriculum - EPA

#EP4.5.1 (4203)

Use of end-of-undergraduate training EPAs for the study progress evaluation of a medical program

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ABSTRACT:

Background: The concept of Entrustable Professional Activities (EPAs) has been employed to define the overarching outcomes to be achieved by the end of undergraduate medical training. These outcomes provide a tangible framework for teaching, learning and assessment. In this study, we examine the idea that end-of-undergraduate training EPAs may also serve well for the evaluation of study progress during the course of a medical program.

Summary of Work: In a voluntary across-semester survey, students at the Charité – Universitätsmedizin Berlin rated their degree of confidence in performing a set of 16 previously defined end-of-undergraduate medical training EPAs at our institution (Holzhausen et al., 2019) without direct supervision. In addition, students reported their study entry criterion (high school grade, combined admission test score [HAM-Nat] and high school grade, or waiting time; the waiting time group is characterized by a high proportion of students with prior experience in the medical field).

Summary of Results: Students from semesters 1 to 10 (N = 1019; response rate 34.3%) participated in the survey. Results show a continuously increasing confidence in carrying out the EPAs during the course of the studies ($p < .001$), with variations between the EPAs reflecting the respective contents covered so far. Students from the waiting time group reported higher confidence at the start of studies and in general compared to the two other groups ($p < .001$). At the end of training, all three groups reported a similar level of confidence across all EPAs.

Discussion and Conclusions: The continuously increasing confidence in performing the EPAs during the course of studies and the plausible variation between the EPAs and between the entry criteria add to the validity of using end-of-training EPAs for the study progress evaluation of a medical program. In addition, the data support this study's across-semester student survey as a very feasible approach.

Take-home Messages: End-of-undergraduate training EPAs allow a feasible and meaningful approach to the study progress evaluation of a medical program.

#EP4.5 - ePosters: Curriculum - EPA

#EP4.5.2 (4581)

EPAs, LEAN and QI; using quality improvement principles to develop entrustable professional activities for GP Training in Ireland

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ABSTRACT:

Background: GP Training in Ireland is underpinned by an extensive curriculum comprising 800 learning outcomes and case vignettes.¹ Feedback gathered during a process to introduce formative assessment tools revealed that the integration of this curriculum was a significant challenge in busy clinical practice. We therefore embarked on a project to develop a framework of Entrustable Professional Activities. This project was conducted with resource limitations; we chose a novel approach to an efficient development process, integrating IHI-Quality Improvement and LEAN process principles.

Summary of Work: Using principles of IHI-QI and borrowing from LEAN strategies, we developed a user-design approach. We defined our 'aim' (integrate the training curriculum; improve feedback to trainees; develop a culture of low-stakes assessment); considered measures of success (improved, regular, learner-centred feedback) and implemented a Plan-Do-Study-Act approach. We developed and executed a design plan and we are currently in the study phase (pilot) that will inform a national implementation plan ('act'). Consistent with EPA design internationally, we established an expert working group to develop an initial set of EPAs that was subsequently disseminated to the entire GP training community via a three-round Delphi study approved by the College's Research Ethics Committee.

Summary of Results: The expert group met for a one-day workshop and a set of 23 EPAs emerged. The Delphi study resulted in a set of 16 EPAs agreed (80% consensus) by a national cohort to be 'the important and essential tasks of a practising GP'. The set was further refined by discussion and agreement among the expert group to a final set of 18 EPAs. Descriptions of each EPA and their competencies were completed using a modified template for EPAs for Internship in Ireland.

Discussion and Conclusions: Limited by funding and time constraints, we developed a novel approach to this large-scale task. While the project was designed efficiently, we also placed an emphasis on rigour within these constraints. Engagement with our training community at all stages of the project was a high priority in delivering this user need.

Take-home Messages: Healthcare quality improvement methods offer practical, efficient processes that can be modified and adapted to health professions education.

#EP4.5 - ePosters: Curriculum - EPA

#EP4.5.3 (5800)

Implementing Competency-based medical education using Entrustable Professional Activities in undergraduate curriculum: Example of a Department focused experience in limited Human resources environment

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ABSTRACT:

Background: Using EPAs in undergraduate curriculum has increased in the last decade. However, there is little data for curriculum developers with a department-level focus and in a human resources- limited environment. The aim of our work is to report the experience of our department in the development of such a curriculum.

Summary of Work: The Endocrinology department is a young university hospital based unit, with a teaching team comprising 2 full time professors who ensure teaching, services and research. Every 6weeks, a group of 15undergraduate students rotate in the department. In order to improve the teaching experience, 5 broad EPAs were developed, and mapped to Endocrinology specific undergraduate objectives, resulting in 19department-focused EPAs. To overcome the lack of resources, Endocrinology volunteer residents benefited from workshops and simulation sessions to prepare them for workplace supervision, and reporting students' progress to clinical competency committee CCC.

Summary of Results: The implementation of developed EPAs started in November 2019; 2groups of 15students went through the experience, 13residents supervised students, mentored them on a one-to-one model, and reported weekly on their progression during CCC meetings. Supervision time per/EPA varied between 15-30min. The average number of validated EPAs per/student was 10. 4students in difficulty were identified during CCC meeting and remedial plan in the form of professor-student meeting was established.

Discussion and Conclusions: The EPA framework was subject to multiple modifications. Many issues arose from the experience: residents'time allocation taking over other tasks; covering all 19 EPAs limited by length of clerkship, availability of patient cases, and residents' limited time; the need for an E-portfolio for enhanced progression follow-up; strengthening of remediation mechanisms. However, the experience is a good example for curriculum developers with faculty restricted environment and could be used as a template for the design of EPAs in undergraduate training at the department-level.

Take-home Messages: Implementing EPAs in a department focused fashion, with human resource-limitations comes with challenges and the need for creativity and optimisation of resources. Residents can be adequately trained to supervise students performing EPAs, and time-management should be part oftheir training. Future studies might bring answers to our limitations.

#EP4.5 - ePosters: Curriculum - EPA

#EP4.5.4 (6493)

New horizons and height to apply EPAs (Entrustable Professional Activities) in Pediatric training

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ABSTRACT:

Background: An EPA (Entrustable Professional Activity) is a key strategy of a discipline (i.e. specialty or subspecialty) that an individual can be trusted to perform in a given health care context. Another one, milestone, by comparison, is an observable marker of an individual's ability. In pediatric training to achieve the purpose to get the mature EPAs, it's a relatively difficult and challengeable mission. Our specific aims are to gain more pediatric training efficiency through considerate and delicate designs of EPA assessments.

Summary of Work: As supervisors and trainers, we observe trainees as they perform an EPA multiple times and each time we coach the trainees to improve their performance. We design and package more considerate and plentiful assessments of EPA. First, learning from flip classroom, selecting some pediatric related EPA domains, video-recording the approach process at beside, then assessing the EPAs, connecting the report of 360-degree evaluation, finally inviting colleagues and medical staffs to host and join the feedback meeting. We expect the single to multiple times application of EPAs assessments to titrate more learning efficiency in pediatric training-program.

Summary of Results: In pediatric training elements, there are more communicational and educational materials between doctors and family. In our results, we focus on real performance of EPAs via video-recorder replaying and strengthen the assessment of EPAs via 360-degree report and feedback of colleagues and staffs. Trainees could get more qualitative and quantitative feedbacks to gradually sketch much better learning curve.

Discussion and Conclusions: Pediatric care medicine involves the medical care of infants, children, and adolescents. There are more difficult barriers to apply EPAs assessments in pediatric care. We add on more learning preparations (Flip classroom application), video-recorder replaying to evaluate the EPAs and specific learning domains of communication and health-education to family from feedbacks of colleagues and staffs in pediatric fields to titrate and train trainees with more EPAs. We could achieve the training purposes of more pediatric traits trusted by children and their families beyond the professions.

Take-home Messages: Package and designs of Flip-Video-360-feedbacks in EPAs assessments of pediatric care, we carry out and titrate a new horizons and height to apply EPAs (entrustable professional activities) strategy in pediatric training-programs.

#EP4.6 - ePosters: Curriculum - Evaluation

#EP4.6.1 (6043)

Evaluation of the Pharmacology Discipline during the First Year in Clinical Clerkships in a Distributive Undergraduate Veterinary Medical Curriculum.

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ABSTRACT:

Background: Student performance and curricular outcomes are often tied to Entrustable Professional Activities (EPAs) during the clinical years of undergraduate medical education. Multiple stakeholders identified a deficit in student performance in EPAs focused on the development of patient treatment plans and assumed this behavior reflected a deficit in pre-clinical curricular pharmacology preparation. When a review of the pre-clinical discipline did not identify a clear reason for the deficit in student performance, a systematic evaluation of the pharmacology discipline throughout the clinical years in the curriculum was conducted.

Summary of Work: Student performance data was only available at the competency and EPA levels. Therefore, a triangulated cognitive framework for clinical instructors' evaluation of the pharmacology discipline and survey data were used to identify discipline specific criteria for student assessment in pharmacology. This data, along with course, year, and curriculum pharmacology objectives were compared for overlap in topic and theme.

Summary of Results: Significant gaps were identified between discipline specific course learning objectives, year benchmarks and curricular outcomes. The greatest alignment was between clinical instructor expectations and discipline benchmarks. Students overestimated expectations for student performance during the first year of clinical clerkships. Some deficiencies attributed to pharmacology gaps were identified as gaps in complementary disciplines such as microbiology or communication.

Discussion and Conclusions: Since EPAs are the culmination of multiple competencies and domains, deficiencies at the EPA level may or may not reflect gaps within the most obvious discipline. The identified gaps in this study can be explained by instructor and student ignorance of curricular and discipline specific benchmarks and the lack of bridging between basic and clinical pharmacology. Unreasonable expectations, as identified here, can negatively contribute to student self-efficacy and intrinsic motivation; leading to poor performance and a self-perpetuating cycle of underachievement. Targeted reviews of complementary disciplines may also contribute to further interventions and curricular improvements.

Take-home Messages: A basic science discipline level evaluation during clinical clerkships can identify gaps in alignment of expectations and objectives as well as deficiencies in complementary domains. Our evaluation informed targeted interventions in both pre-clinical and clinical courses and provided a framework for further outcome evaluation.

#EP4.6 - ePosters: Curriculum - Evaluation

#EP4.6.2 (5569)

Tutors' perceptions regarding newly-graduates' competences – are students being adequately prepared by Medical Schools?

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ABSTRACT:

Background: A systematic evaluation of newly-graduates' competences on the setting of clinical practice is crucial to allow for monitoring of the effectiveness of undergraduate training and to inform curricular changes. Tutors' perceptions are useful for that end. In Portugal, all but one medical school have not systematically appraised the clinical quality of their alumni; existing literature deals exclusively with newly-graduates' self-perceptions.

Summary of Work: This study, the first on the topic, aimed at identifying tutors' perceptions concerning the competences of Portuguese newly-graduates' as well as gathering suggestions to improve curricula. A validated-anonymous-online-questionnaire based on the 'Tuning-Project Learning Outcomes/Competences for Undergraduate Medical Education in Europe' framework was presented to tutors of 2016 and 2017 first-year residents.

Summary of Results: Respondents counted 54 tutors from 22 hospitals (est. 9% response-rate). The average aggregate competence was 3,1 (1-6). Items regarding 'practical procedures', 'drug prescription', 'medical emergencies' and 'legal principles' were rated less than sufficient (3) whereas 'ethical principles' and 'information/technology/science' showed the highest results, with good (4) level of competence. In 14 of the 70 items appraised, the majority of tutors considered residents' competence insufficient or inexistent. About 67% of respondents suggested areas for improvement, namely 'urgent/emergent care', 'practical procedures', 'prescribing' and 'more clinical practice'.

Discussion and Conclusions: Despite response-rate limitation, results indicate that, according to tutors, residents are not well prepared in key areas of practice. These results are worse than those obtained with the same questionnaire in a 2015 study on Portuguese newly-graduates' self-perceptions, thus supporting the need for more feedback on residents' performance. An investment in systematic evaluation of undergraduate training is pivotal to identify critical areas for curricular improvement. Thereto the existence of a common and practicable framework is essential, as is the creation of a central-comprehensive-database with linked information on interns and their medical schools, postgraduation venues and tutors.

Take-home Messages: Systematic monitoring of undergraduate training is essential to continuously improve the quality of medical education. Both self-perception of graduates and perceptions of tutors can be used for this purpose. A national consensus on a framework of competences for graduates is a major requisite to accomplish this goal

#EP4.6 - ePosters: Curriculum - Evaluation

#EP4.6.3 (6003)

Applying Quality Improvement to Undergraduate Medical Education

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ABSTRACT:

Background: The Royal Free London NHS Foundation Trust has adopted Quality Improvement (QI), specifically the Model for Improvement, as its preferred approach to enhancing outcomes and performance in healthcare. This methodology has been applied to undergraduate medical education in order to improve student experience during clinical placements. During the 2018/19 academic year the overall student satisfaction score reported for Trauma and Orthopaedics (T&O) ranged from 38% to 73%, indicating a need for review and development.

Summary of Work: We adopted QI tools and methodologies to improve student experience during their 6-week placement in T&O. A multidisciplinary project team was established, including project leads and sponsors from medical education and T&O. A SMART aim and outcome measure was developed: 90% of all MBBS students to report a positive experience - score of 4 (above average), 5 (good), or 6 (excellent) out of 6 - by the end of 2019/20 academic year. We created a driver diagram incorporating innovative change ideas identified through student feedback sessions. Change ideas were implemented as soon as feasible and reviewed on a 3-weekly basis using a modified approach to the Plan-Do-Study-Act cycle. To monitor progress we used student reported satisfaction scores for our outcome and process measures, and qualitative student feedback.

Summary of Results: The overall student satisfaction score increased from 52% in Term 1 of the 2019/20 academic year to 100% in Term 2. Process measures for teaching and curriculum alignment demonstrated high satisfaction. Comparing the average satisfaction scores pre and post implementation of change ideas, marked improvements were noted in placement structure and organisation (38% vs 86%), and department communication and engagement (69% vs 100%).

Discussion and Conclusions: The majority of change ideas were implemented in Term 2. The results suggest that QI can be adapted successfully to improve undergraduate medical education.

Take-home Messages: QI provides project structure and an opportunity to be creative and innovative with change. The process promotes multidisciplinary team involvement and engagement, the voicing of new ideas and encourages reflection through multiple lenses. We believe this is a recipe for success in any system, department or organisation.

#EP4.6 - ePosters: Curriculum - Evaluation

#EP4.6.4 (6522)

Compare the three methods of teaching to 2nd year medical undergraduates

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ABSTRACT:

Background: To explore better teaching methods, we compared the recognition of second-year medical undergraduates on PBL, CBL and role play and their final scores.

Summary of Work: Three classes were randomly selected from the second-year medical undergraduates to adopt the teaching methods of CBL, PBL and Role play in the curriculum of general practice medicine. All the students were given the same syllabus 14 days before class. Then, teacher assisted them grouping and gave them the cases and problems required by PBL, typical cases of CBL, role-playing scripts respectively and guided literature review. After the end of the course, a questionnaire was given to investigate students approval of the teaching method, and the answers were given according to the degree: whether it can enhance their interest in learning; improve the motivation of active learning; enhance the ability of self-thinking and self-analysis, summary and problem solving; improve self-verbal and non-verbal expression skills; enhance the ability of theory and practice, and expand the scope of knowledge; enhance learning efficiency and teamwork ability. At the same time, the research team made a unified proposition according to the syllabus, and made a statistical analysis of the assessment results of the three classes.

Summary of Results: CBL is higher than PBL and Role play in improving learning interest; PBL is higher than CBL and Role play in improving the ability of self-thinking and teamwork but most time consuming; Role-playing is the best way to liven up the classroom atmosphere. The final average score of PBL class is the best.

Discussion and Conclusions: Different teaching methods have different advantages and disadvantages. We can try to adopt a comprehensive method in medical undergraduate teaching.

Take-home Messages: As a facilitator, the most important thing for teacher is to cultivate students active learning and teamwork ability.

#EP4.6 - ePosters: Curriculum - Evaluation

#EP4.6.5 (6625)

Nursing students' experiences of learning activities during their clinical placements - experience sampling uncovers what the students don't remember themselves

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ABSTRACT:

Background: Clinical placements are essential to nursing education but there are few studies about students' experiences outside traditional hospital settings, such as nursing homes. Most studies about clinical placements ask participants to generalize about their clinical experiences in retrospect. Few studies have investigated students' experiences in context. Understanding the specific challenges encountered by nursing students is crucial for being able to develop and improve clinical placements and to provide adequate supervision.

Summary of Work: The aim was to explore nursing students' experiences of health care activities during clinical placements. An experience sampling method was chosen in combination with retrospective interviews. Participants were second and sixth semester nursing students during their five-week clinical placements. During two weeks, the participants used a smartphone app several times daily to respond to queries about the health care activity they were currently involved in as well as experienced levels of challenge, competence, awareness of scientific evidence for the activity, actual compliance to scientific evidence, participation (involvement).

Summary of Results: 575 responses were obtained from 26 students at several different nursing homes. Students' levels of competence increased over time ($P < 0.001$). Sixth semester students rated their levels of competence higher and their levels of challenge lower than the second semester students ($P < 0.001$). The experiences of the second-semester students were quite evenly distributed into flow, boredom and anxiety whereas 74,8% of the sixth semester students' experiences were categorized as belonging to boredom or apathy. Interviews confirmed that sixth semester students felt under-stimulated. Analysis of the responses made during the placements also revealed that there were several activities which had been experienced as challenging by the sixth semester students that they did not mention afterwards.

Discussion and Conclusions: An appropriate balance needs to be maintained between challenges and skills. The sixth semester students reported being under-stimulated and unchallenged. Analyses of the students' responses during the placement periods revealed that there were tasks which the sixth semester students had experienced as challenging but which may not have been remembered afterwards and which may be valuable for nurse educators.

Take-home Messages: Experience-sampling methods can capture important details of participants' experiences during clinical placements in a way that would be difficult using conventional retrospective studies.

#EP4.7 - ePosters: Curriculum - General

#EP4.7.1 (6120)

Training Resident Learners in Science and Clinical Education Through Dual Professional Identity Formation: Early Outcomes of the Pediatrician-Scientist Training & Development Program

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ABSTRACT:

Background: The Pediatrician-Scientist Training & Development Program strives to cultivate the development of pediatrician-scientist through grounding immersion in both clinical and scientific practice environments through a unique parallel curriculum. We report early outcomes since implementation in 2014.

Summary of Work: In an effort to strengthen physician-scientist career, Baylor College of Medicine (BCM) and Texas Children's Hospital (TCH) implemented the Pediatrician-Scientist Training & Development Program (PSTDP). Using ABP-IRP guidelines, the BCM PSTDP has developed a programmatic structure that is founded upon a well-established conceptual framework of Professional Identity Formation (PIF) uniquely designed for combining distinct pediatrician and scientist professional identities. Embedded in the mission of the PSTDP is development of research-oriented scholars who cultivate excellent clinical and research training through the tenets of mentorship, alternative didactic training, and interdisciplinary reflective experiences.

Summary of Results: To carry forth the mission, a conceptual framework of Pediatrician-Scientist Professional Identity Formation (PSPIF) and novel curriculum were implemented. Based on findings from Drs. Norman Rosenblum and Herminia Ibarra in which development of the pediatrician-scientist occurs through the merger model for professional identity development. Two separate domains of a clinician and scientist are blended to allow for "domain synergy". Upon matriculating into the BCM PSTDP, residents begin transforming from a novice medical student to an expert pediatrician-scientist. Such transformation entails continuously creating and refining "provisional selves" through interdisciplinary programmatic experiences. The PSTDP offers a year-specific curriculum which includes clinical case report writing (year 1), a pilot grants program (year 2) and pediatrician-scientist identify formation reflection (year 3).

Discussion and Conclusions: As the program is now midway through the third year, short-term goals have been achieved of increasing matriculation of MD/ Ph.D. residents that apply and matriculate into the BCM residency by four-fold along with 75% of the first PSTDP class matching into TCH for subspecialty training.

Take-home Messages: The BCM PSTDP offers a unique program of pediatrician-scientist development through combining immersive career development through a tailored three-year curriculum in the context of professional identity formation and provides a unique model of training residents interested in a career as a scientist and a clinician.

#EP4.7 - ePosters: Curriculum - General

#EP4.7.2 (6432)

Examining Medical Data Misuse: Attitude of Physicians vs. Medical Students through a Deterrence Lens

AUTHOR(S):

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ABSTRACT:

Background: With the increased adoption of information and communication technologies in the healthcare environment in the form of electronic health records, personal electronics devices, and social networks, comes an increased risk of medical data misuse. Prior research indicates that institutional insiders perpetrate a sizeable number of medical data breaches. Given that healthcare institutions are subject to stiff penalties for medical data misuse, it is imperative to understand how to reduce such behavior. This research adopts deterrence theory, relying on security countermeasures and institutional sanctions to deter individuals' misuse behaviors, and voluntary reporting of misuse by increasing the perceived threat of punishment. Also we added two influential factors affecting deterrence, social norms, and morality.

Summary of Work: We proposed a study model posited that knowledge about information security and institution's monitoring system decrease medical data misuse through two mediators: perceived certainty of sanctions and perceived severity of sanctions; and social norms and morality have direct effect on decreasing medical data misuse and increasing misuse report. The model was tested through a questionnaire with 169 final-year medical students and 71 physicians.

Summary of Results: The results suggested that perceived severity of sanctions has a stronger effect reducing medical data misuse than perceived certainty of sanctions. In addition, institution's monitoring system influences perceived severity and certainty of sanctions more strongly. Perceived severity of sanctions has a strong influence on medical data misuse and misuse report.

Discussion and Conclusions: Physicians and medical students would realize about information security if they perceived the punishment and foresee the process of detecting medical data misuse of their institution. The institution that provides information security knowledge should rethink about the delivery mode to their medical staffs and students that only security trainings and lectures are not enough. It should include a workshop or site visit that shows the institution's misuse monitoring system.

Take-home Messages: Deterrence is necessary in shaping medical personnel's behaviors. Knowledge about information security is not enough if it is not coupled with an institution's monitoring system along with punishment.

#EP4.7 - ePosters: Curriculum - General

#EP4.7.3 (7100)

Is one seminar enough? Intercultural communication seminar for 3rd year medical students

AUTHOR(S):

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ABSTRACT:

Background: As the variety of patients with different ethnical and cultural background as well as spoken languages grows medical curricula need to address the development of intercultural communication skills. Awareness, knowledge and skills self-assessment can contribute to identify students training needs. In order to develop students communication skills a mandatory course of Patient-centred communication was added to the curriculum for 3rd year medical students including a seminar on the topic of intercultural communication. The Aim of the study was to find out if one seminar on the topic of intercultural communication could make a difference in students self-assessed awareness, knowledge and skills regarding intercultural communication

Summary of Work: For self-assessment Cultural Competence Self-assessment Checklist by Central Vancouver Island Multicultural Society was used. The self-assessment checklist was asked to fill out twice in semester – once approximately 1 week prior to the seminar and afterwards in the end of semester approximately 4 weeks after the seminar. Participation was voluntary. Altogether 95 3rd year medical students participated divided into 6 groups.

Summary of Results: Pre-seminar checklist was filled by 35 students (37%) and follow-up by 24 students (25%). A difference on all areas – awareness, knowledge and skills – were acquired, none of the differences were statistically significant.

Discussion and Conclusions: Spreading awareness and developing intercultural communication skills is important for preparing students for future challenges in multiethnic and multilingual patient population. According to our small study one seminar is not enough to create a significantly important difference in awareness, knowledge and skills of intercultural communication based on student self-assessment.

Take-home Messages: Development of intercultural communication skills need to be addressed in the curriculum more than once to make a difference.

#EP4.7 - ePosters: Curriculum - General

#EP4.7.4 (6229)

Example-Based Learning: A Guide to Revising a Peer-Reviewed Manuscript

AUTHOR(S):

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ABSTRACT:

Background: Publishing medical research has become an increasingly daunting task for medical students. One critical step in this process is revising a manuscript with editorial team feedback. Here, we provide an example-based guide for novice researchers to revise a peer-reviewed manuscript.

Summary of Work: In 2019, we successfully drafted, revised, and published a medical education manuscript and hosted a research symposium at the Warren Alpert Medical School of Brown University (Providence, RI) to share our work and experiences. We used this background to develop a guide for medical students to revise their peer-reviewed manuscripts. We also emphasize an example-based learning approach by curating and placing each iteration of our recently published manuscript – with responses to the respective reviewer comments – in a public digital repository for students to access.

Summary of Results: We formulated 12 key steps to revising a peer-reviewed manuscript in response to reviewer feedback. These steps included formulating and adhering to timelines, utilizing an active citation manager, constructing a detailed response letter, ensuring prompt and professional correspondence with editorial staff, and maintaining focus on a central research question. Each recommendation correlates with an example from our recently published manuscript to ground these steps in a real-world setting. The examples are available and referenced in the Brown Digital Repository (https://repository.library.brown.edu/studio/collections/id_910/).

Discussion and Conclusions: Example-based learning theory has been validated across numerous educational fields. Our guide utilized this model to provide students with a systematic approach to revising a peer-reviewed manuscript.

Take-home Messages: Our guide uses example-based learning to offer medical students practical insights on how to revise a peer-reviewed manuscript.

#EP4.7 - ePosters: Curriculum - General

#EP4.7.5 (6727)

Evidence-based medicine: A survey of practices among clinical year medical students of Suranaree University of Technology, Thailand

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ABSTRACT:

Background: Evidence-based medicine (EBM) is taught to pre-clinical years at Institute of Medicine, Suranaree University of Technology. However, we are concerned that there might be variations in applying EBM in clinical practices. This study aims to assess the current practices of EBM among clinical year medical students.

Summary of Work: A survey was conducted during January, 2020. All medical students in 3 teaching hospitals were asked to complete questionnaires. The questions focused on five-steps of EBM practices in last 6 months (formulate question and PICO, literature search, critical appraise for the evidence, apply results to patient care, and assess EBM performance), teaching activities that promoted for and barriers to EBM practices in clinical years. There were 4 scales of EBM practices (not at all, rarely, some, frequently). Descriptive statistics was used as percentage and chi-square was used for testing difference between categorical variables.

Summary of Results: Among 241 medical students, 111(46.1%) were male and 130(53.9%) were female. Of the 5 Steps, they frequently practiced literature search (34.4%), while the other 4 steps were infrequently practiced. There were statistical differences in practicing EBM among medical students between the teaching hospitals ($P < 0.05$). To find literatures, they used Up-to-date (41.5%), ClinicalKey (30.7%) and Access Medicine (22.8%) more frequently than other databases. Teaching activities in clinical years that promoted for EBM practices were research project assignment (32.4%), ward round/IPD practice/bedside teaching (29.5%) and journal club (15.4%). Barriers to EBM practices were lack of skills for formulating clinical question (18.7%), interpretation statistical value (14.9%), appraising scientific articles (13.3%), reading English (12.9%) and not aware of the important of applying EBM in clinical years (11.6%).

Discussion and Conclusions: Our findings revealed a low level of EBM practices from the fundamental five steps. In order to encourage implementation of EBM in clinical years, there should be focus on improvement of the students' skills and systematic integration of EBM teaching in clinical practices. The variations between teaching hospitals should be deeply explored and strengthened.

Take-home Messages: EBM teaching should be integrated in various activities of clinical practices to raise medical students' awareness and to help them practicing EBM daily.

#EP4.7 - ePosters: Curriculum - General

#EP4.7.6 (5003)

Constructing communication skills for healthcare through integrated health literacy curriculum module among clinical medical students

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ABSTRACT:

Background: As health literacy is one of the essential factors influencing health care outcomes, educational efforts are necessary to prepare medical students to interact effectively with patients with limited health literacy. Although many medical schools have some curricula to teach health literacy for medical students, the average amount of time spent on health literacy is still small.

Summary of Work: To enhance the clinical medical students communication skills and their ability to transmit health care information effectively, the School of Medicine, Tzu Chi University, integrated a four-week curriculum module into Family Medicine clerkship courses since Sep. 2019. The content of module including introducing the concept of health literacy, to familiar with the health information friendly medical environment, to practice the health literate oral communication and to create and assess the health educating materials. We conducted pre- and post-survey to determine the differences of knowledge, attitude, and communication self-efficacy of students after the curriculum. Wilcoxon signed-rank test applied to examine the mean difference.

Summary of Results: There were 22 clerkship students aged between 22 and 25 years old who completed the training curriculum, 40.9% are female. Statistically significant improvement was reported on items of knowledge (Mean = 4.0 ± 2.4 vs. 7.8 ± 1.5) and attitude (Mean = 7.6 ± 1.5 vs. 8.5 ± 1.2) about health literacy. A similar change also found in items of communication self-efficacy. The mean scores were 3.3 ± 0.5 in pre-survey and 4.17 ± 3.8 in post-survey ($Z = -4.02$, $p < 0.05$). Generally, students responded that the curriculum met their needs in clinical practice and reported very high scores in satisfaction surveys (Mean = 9.1 ± 0.9).

Discussion and Conclusions: Through the curriculum, we can provide references for students to adjust themselves to improve the self-efficacy within health care communication. Thus we can enable our students to further understand the meaning of whole-person care with a holistic view.

Take-home Messages: Through the implementation of the integrated health literacy curriculum module in clinical practice, it can help medical students to improve patient-centered communication skills and thus reduce the effect of lower health literacy of patients.

#EP4.7 - ePosters: Curriculum - General

#EP4.7.7 (7198)

Factors associated with establishing a sustainable longitudinal integrated clerkship

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ABSTRACT:

Background: In 2018 Seoul National University launched an innovative longitudinal integrated clerkships (LIC) to the new curriculum in parallel with traditional block rotation clerkships. Third-year medical students were allocated into small groups of 8 students each. Faculties assigned eight patients to one group. There are regular meetings with faculties at 7 times a year. During several meetings, the students discussed main themes; clinical course, patient-physician relationships, clinical decision making, team approach, medical ethics, care and palliative care. In 2019 an e-portfolio system was developed to enhance feedback of LIC program. The purpose of this study is to analyse the program evaluation results of LIC program and to identify factors related to the successful implementation of the program.

Summary of Work: Questionnaire for course evaluation was completed by third-year medical students. The questionnaire included 28 items covering five domains; patients (characteristics and continuity), peers (cooperation and communication), faculties (feedback and moderator), satisfaction from each theme, and comparisons with traditional clerkships. The survey was measured on a 5-point scale. First, frequency analysis of response on the items was conducted to find out the key features. Second, we used factor analysis to identify the association with positive learning experiences.

Summary of Results: In 2019, 149 students participated in the LIC program. 144 valid questionnaires were returned. Logistic regression analysis was used to find associated factors and to adjust the confounding factors. Relevant feedback in regular meetings (adjusted odds ratio [AOR]=5.07, $P<0.0001$), motivation by e-portfolio (AOR=1.79, $P=0.026$) and frequency of e-portfolio feedback (AOR=1.81, $P=0.012$) predicted a greater likelihood of understanding the continuity of patients medical experience. Feedback in meetings and frequency of e-portfolio feedback also predict a greater likelihood of understanding the concept of patient-centred care. Survey's internal consistency: Cronbach's Alpha 0.877.

Discussion and Conclusions: Feedback in group discussion class and e-portfolio are positively associated with the achievement of core competencies in the LIC. Further effort is needed to give frequent and relevant feedback and to evaluate the program.

Take-home Messages: Proper feedback of faculty is an important factor for the LIC.

#EP4.7 - ePosters: Curriculum - General

#EP4.7.8 (4322)

How To Be A Medical Student: A Novel Teaching Course

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ABSTRACT:

Background: The transition from non-clinical to clinical years at medical school is a marked challenge. Many students haven't developed the appropriate professional skills needed to learn effectively in a clinical environment. Professional skills can be promoted through reflecting on real experiences with a supportive mentor. We explore whether this mentorship can be provided in combination with teaching practical skills, in order to better engage medical students and to put practical skills into a clinical context.

Summary of Work: We created a 10-week small-group teaching course for medical students during their first clinical placement, delivered by junior doctors. The course had two components; practical skills (e.g. respiratory examination) alongside relevant personal and professional development (e.g. choosing and consenting patients to be examined and seeking opportunities to present their findings). We encouraged the students to set achievable weekly goals to practice both components over their 10-week placement. Each week, the students reflected on their progress in both of these components and we discussed practical solutions to the challenges they faced.

Summary of Results: Preliminary results (n=4) show that before the course, participating students felt unfamiliar with the clinical environment and unprepared for their placement. After the course, the students reported increased confidence in both the practical and professional skills covered. Students felt the most useful part of the course was receiving mentoring, support and leadership. They highlighted that we addressed topics that had not been covered in formal teaching, that we put skills into context and that we improved their understanding of their role as medical students. Successive cohorts are currently participating for continuous evaluation.

Discussion and Conclusions: Students need the confidence to assume an active role as clinical learners, rather than passively waiting for educational opportunities. Our course combined essential practical and professional skills in a format which was well-received and supportive to medical students. Courses of this kind are easy to provide as junior doctors often seek teaching opportunities for their career portfolios.

Take-home Messages: Our course provides a feasible way to teach both the practical and professional skills needed for medical students to become effective learners in an unfamiliar clinical environment.

#EP4.7 - ePosters: Curriculum - General

#EP4.7.9 (4458)

21TH CENTURY SKILLS, MEDICAL EDUCATION IN 2020 AND VOLUNTARY COMMUNITY SERVICES AMONG MEDICAL CADETS, PHRAMONGKUTKLAO COLLEGE OF MEDICINE

AUTHOR(S):

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ABSTRACT:

Background: Medicine is a service-oriented profession which requires professional attitudes and a sense of empathy and caring. Participation in voluntary community service (VCS) among medical students is associated with numerous positive outcomes that essential for 21th century skills and medical education in 2020, such as promoting empathy, enhancing leadership qualities, good collaboration, social responsibility and ease in communication.

Summary of Work: This study aim to examine the motivations and obstacles among medical cadets in Phramongkutklao College of Medicine (PCM) from participating in VCS. This mixed method of cross-sectional study and qualitative study was conducted among medical cadets at PCM in October 2019. An anonymous online survey was designed to assess demographic data, perceptions, motivations and obstacles towards com VCS activity.

Summary of Results: Of 600 students enrolled in the 2019 academic year, 197 (32.8%) responded the online survey, where males constituted (60.9%). Of these, 63.4% had participated in VCS while 80.2% expressed their interest in participating in these activities in the medical school. Motivations to participate in VCS include past-positive VCS experience and compassion. Students reported higher empathy levels, improved communication, organization, decision-making, interpersonal, and leadership skills. In the other hands, the obstacles include difficulties in recruiting and managing volunteers and attaining recognition for the project to acquire funding and resources.

Discussion and Conclusions: Beyond the command of knowledge and facts the core competencies for medical students in 21th century must include social and emotional skills such as empathy, leadership, communication and collaboration. Participating in VCS in medical school enriches medical students by bringing about improved self-reported outcomes, leadership skills, and interpersonal skills. Obstacles that make medical student not decided to do VCS are unmatched free-time, curriculum overload, hard work and lack of companion.

Take-home Messages: VCS has allowed medical students to gain 21st century skills, the information from this study should take into account for educational planner of medical education in 2020 in term of initiation and support programs for medical students to participate in VCS.

#EP4.7 - ePosters: Curriculum - General

#EP4.7.10 (4406)

Competency-based Bedside Teaching during Alternating Clinical Placements Resulted in Better Satisfaction and Higher Scores among Fourth-year Medical Students

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ABSTRACT:

Background: Curriculum reform is underway in Sun Yat-sen University. A most recent development is an integrated design in teaching Internal Medicine in which lectures on certain diseases across different specialties are immediately followed by clinical placements of the students to see these cases at the bedside. It is uncertain whether such arrangements are enough to bring about optimal learning experiences and outcomes. We conducted this study to examine the educational effect of such arrangements during which bedside teaching was performed with an additional emphasis on core competencies.

Summary of Work: A convenient sample of 41 students was randomly assigned to competency-based approach group (n=21), in which knowledge application, self-learning, and patient communication were expressly taught at the bedside during clinical placements, and traditional approach group (n=20), in which students were merely shown clinical cases. Data on course satisfaction (Kirkpatrick level 1) and summative assessment scores (Kirkpatrick level 2) were collected.

Summary of Results: Among competency-based approach group, 100% students gave a five-star rating on overall satisfaction; 100% reported improvement on patient communication skills; 94.74% reported improvement on mastery of clinical knowledge; 42.11% reported improvement on literature review. In addition, 57.89% students expressed that these experiences inspired their future career choice and professional development. As for summative assessment results, final scores for students in competency-based approach group and traditional approach group were 78.00 and 74.80, respectively ($P < 0.0001$ for Wilcoxon rank-sum test). Of note, none failed in competency-based approach group, whereas two students in traditional approach group did not pass.

Discussion and Conclusions: In the background of alternating clinical placements, bedside teaching that focuses on cultivating core competencies among fourth-year medical students in the Chinese context appeared to bring out, on the one hand, better course satisfaction and more enjoyable learning experiences, and on the other, better overall performances on summative assessments. Students in competency-based approach group generally seemed to be more adept in knowledge application, more motivated for self-study, and more empathic during patient communication.

Take-home Messages: Curriculum reform that merely addresses content arrangements may not be sufficient to bring out the best educational impact. Our study reiterated the importance of cultivating core competencies during bedside teaching.

#EP4.7 - ePosters: Curriculum - General

#EP4.7.11 (4738)

Perceptions of Health Professions Educators and Clinicians in a Continuing Professional Development Series to Advance Health Equity

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ABSTRACT:

Background: During a curricular retreat to strengthen interprofessional education, faculty representing 34 health professions programs identified health equity as a shared priority. A workgroup then developed educational activities (seminars, workshops, courses) suitable for adoption by undergraduate and graduate training programs. Topics were prioritized and implementation barriers were considered. Gaps in faculty preparedness to facilitate and evaluate health equity curricula surfaced. Subsequently, a member of the workgroup designed and led a five-part professional development series to facilitate a shared understanding of health equity for teaching, practice, and research.

Summary of Work: Over 5 months, the series convened subject matter experts, community participants and faculty. Focus was placed on building foundational knowledge across key themes: health equity principles; health disparities; root causes of health inequity in teaching and research; and discussing race, power, and privilege. The series concluded with facilitated hands-on activities to translate health equity principles into action for education or research. Participants evaluated each activity using a 3-point level of agreement scale and provided qualitative feedback about impactful elements, planned changes to their curriculum/practice, and implementation barriers. Demographic data was collected.

Summary of Results: Respondents (n=90) included faculty and clinical providers across diverse fields. Content analysis of qualitative feedback revealed several consistent themes related to anticipated practice changes and implementation barriers, such as: social determinants of health and structural aspects of healthcare delivery; being attuned to the language and framing of health equity; changing research approaches to engage and protect vulnerable populations; time and transportation barriers for community members; and comfort discussing race/racism. All respondents agreed the sessions were valuable.

Discussion and Conclusions: Faculty identified health equity as a priority but felt unprepared to integrate it into curricula. The interprofessional series provided a supportive environment for participants to overcome assumptions, apply a framework, and design action plans for tackling sensitive issues.

Take-home Messages: Addressing health equity is a global issue. Successful professional development in health equity should empower participants to make change, involve a diverse group, demonstrate incremental steps matter, illustrate effective models, leverage regional data, and enlist support of institutional leadership.

#EP4.7 - ePosters: Curriculum - General

#EP4.7.12 (4905)

Assessing medical students competency in cross-culture lifestyle modification counseling: a video analysis of real patient encounter in OSCE

AUTHOR(S):

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ABSTRACT:

Background: Research has shown that cross-cultural education should start in undergraduate studies where medical students learn to recognize diversity and attend to the perception and needs of patients. Like many other countries, Taiwan also has a diversity of cultures. Therefore, cross-culture communication was included in the undergraduate curriculum to address such need in health care delivery. The study aims to assess the competency of medical students in providing cross-culture lifestyle modification counseling with patient-centered approach.

Summary of Work: Cross-culture communication was taught in the fifth year as part of a spiral curriculum of professionalism in Buddhist Tzu Chi University in Taiwan. Medical students were assessed by a single OSCE station on cross-cultural communication during their rotation in the family medicine block. The standardized patients are experienced real patients who are ethnic minorities. Our study retrospectively reviewed 112 medical students interactions with standardized patients from 2018 to 2019. The recorded video was analyzed by three researchers on verbal and non-verbal performance. Selected samples were transcribed, followed by discourse analysis and coding.

Summary of Results: Analysis of the content showed that there was variation in individual competence. Most students were able to show empathy and provide some dietary counseling; however, advice given showed a discrepancy in understanding the patients economic and cultural background. A majority of students showed engaged body language. A few students adopted an authoritative style when they faced resistance from patients.

Discussion and Conclusions: Despite teaching of cross-cultural communication, students had difficulty in providing patient-centered counselling tailored to individual need. Perhaps this could be attributed to limited social experience and exposure to population from different socioeconomic status among medical students. Feedback from students showed that they were more motivated to learn and reflect after interaction with real patients. Perhaps cross-cultural competence could be enhanced if students were placed in the learning context which enhances realism, such as involving patients from different cultural backgrounds as patient educators.

Take-home Messages: Curriculum on cross-cultural communication should take into consideration of medical students' exposure to social experience and address the local context and culture.

#EP4.7 - ePosters: Curriculum - General

#EP4.7.13 (5898)

Comparison of problem-based learning and team-based learning in basic-medical education

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ABSTRACT:

Background: Problem-based learning (PBL) and team-based learning (TBL) have been two popular teaching approaches in basic-medical education. In some teaching contexts, PBL and TBL are eclectically applied, or even misused with one another. However, few study compares the effects of these two approaches on basic-medical education to provide specific guidance for curriculum design. This study aimed to compare the differences of PBL and TBL on student active learning and academic scores in basic medical learning so as to identify the advantages of these approaches.

Summary of Work: In the homeostasis module at Shantou University Medical College (SUMC), TBL was used in Grade 2015 and PBL was used in Grade 2016. After finishing the homeostasis module, students' feedback were obtained through a questionnaire, and their final examination scores were obtained, which were compared with other students in the same grade using lecture-based learning (LBL). Each grade used the same final examination paper, including questions involving memorization such as basic knowledge questions and clinical applications such as clinical-cases-analyzing questions. Quantitative data were analyzed by t- and nonparametric tests.

Summary of Results: 10 students in Grade 2015 and 13 in Grade 2016 completed the questionnaire. Students both in PBL and TBL thought the teaching approach they used to be good for training their clinical thinking, but PBL required more time and imposed a greater study burden on students. Regarding clinical application questions, students in PBL received higher scores than those in LBL ($p < 0.05$), whereas there were no significant differences between TBL and LBL in final academic scores ($p > 0.05$).

Discussion and Conclusions: PBL is more effective in training clinical thinking, while during TBL students spend less time and the teachers can provide more help to students. Both approaches motivate students to learn, but it is suggested that both merits and challenges brought about by the approaches should be considered in medical curriculum design.

Take-home Messages: We compared the different effects of both approaches on students' learning in the homeostasis module and found that PBL is more effective in training clinical thinking, while during TBL students spend less time and the teachers in this approach can provide more help to students.

#EP4.7 - ePosters: Curriculum - General

#EP4.7.14 (5995)

Patient Safety Awareness among Fourth Year and Sixth Year Medical Students

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ABSTRACT:

Background: The World Health Organization has emphasised the importance of patient safety education in order to minimise errors caused by healthcare workers. With the lack of evidence, the effectiveness of patient safety education could not be concluded as no earlier studies have been conducted at different levels of experience within the same profession. This study aims to evaluate the awareness of patient safety among fourth year and sixth year medical students who undergoes the current patient safety program training to explore potential improvements in patient safety education in the future.

Summary of Work: This comparative study was conducted among fourth year and sixth year medical students at HRH Princess Maha Chakri Sirindhorn Medical Center. Participants were asked to complete a translated version of the APSQ-IV questionnaire regarding the level of confidence and knowledge of patient safety ranked on a 7-point Likert scale. The differences in scores between the two groups were analysed using t-test through SPSS version 26.

Summary of Results: A total of 159 participants, 76 fourth year and 83 sixth year medical students took part in the study. The differences in the total score among the two groups were not statistically significant ($p = 0.380$). However, when questions regarding confidence were analyzed separately by domain, some domains were statistically significant. Sixth year medical students scored higher in the “work duration” domain ($p = 0.013$) and “error inevitability” domain ($p = 0.037$) compared to fourth year medical students. The differences in scores on knowledge regarding patient safety were not significant between the two groups ($p = 0.648$).

Discussion and Conclusions: The results show that patient safety awareness among medical students does not increase regardless of the level of education and clinical experiences received during the training process. This suggests that the current patient safety education program training is not successful and further adjustments in the curriculum must be made.

Take-home Messages: It is crucial to provide a versatile patient safety education curriculum for each clinical year in order to create a milestone in patient safety education as medical students proceed through their medical course.

#EP4.7 - ePosters: Curriculum - General

#EP4.7.15 (4469)

Identifying and articulating the student learning experience in the Medical curriculum Enrichment Year

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ABSTRACT:

Background: The Enrichment Year (EY) is a new, mandatory, credit-bearing curriculum held in Year 3 of the six-year MBBS programme at the University of Hong Kong. Students have an opportunity for substantive engagement in a personal area of interest including (i) research; (ii) service/ humanitarian work; (iii) intercalation/ university exchange. This study aimed to explore the barriers, enablers, and overall student learning experiences from the first cohort of EY students (2018-19) to inform its future development.

Summary of Work: Three focus group interviews were conducted (6-7 students per group). Students were purposively recruited based on their gender, area-of-interest representativeness, and financial and scholarship background to maximize diversity of opinions. Semi-structured interview guides were used. A conventional thematic analysis was employed.

Summary of Results: Students perceived the EY as an opportunity to boost self-confidence, maturity and independence, transforming them into more mentally resilient individuals in confronting challenges and planning their future. Many students had been initially uncertain about the value of having the EY but changed their perceptions after experiencing the year. A few students shared an enhanced sense of belonging to their motherland after overseas activities. One negative perception identified was regarding the choice of EY activities, with discrepancies between what the students initially believed were possible and what was eventually feasible. Potential enabler suggested by students included providing more Faculty-initiated options, better financial support, enhancing the efficiency for information exchange, fewer meaningless assignments, and reduction in the amount of tasks needed to prepare for the EY.

Discussion and Conclusions: Our findings identified similar barriers and enablers with other voluntary-based enrichment curricula. The most concerning barrier was financial limitations which could result in educational inequality. This could be addressed with better access to scholarships for those in need. Student learning outcomes were predominantly related to personal growth rather than hardcore knowledge.

Take-home Messages: Despite many logistical barriers the EY appears to have produced positive learning outcomes which supplement the conventional medical curriculum, namely personal growth and resilience. Students expectations for what is feasible could be better addressed by Faculty.

#EP4.8 - ePosters: Curriculum - IPE

#EP4.8.1 (5539)

Talking the talk in junior interprofessional education: jargon or healthcare language?

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ABSTRACT:

Background: Background: Use of jargon and complex clinical terminology has been identified as a potential barrier to interprofessional education (IPE). Healthcare terminology can be separated into two categories: inclusive terminology shared across different professions, and exclusive terminology unique to one profession. Through our study, we seek to understand how complex terminology is perceived and valued by junior learners in an IPE setting.

Summary of Work: Summary of Work: We conducted a mixed methods study involving medical, nursing, and physician assistant students attending IPE simulation workshops on handover and working collaboratively. Students first reviewed scenarios used in the IPE workshops and identified terms they considered “inclusive” versus “exclusive” terminology. Then, students participated in semi-structured focus group discussions regarding attitudes/perceptions towards healthcare terminology and jargon. We conducted an iterative thematic analysis based on a verbatim transcript.

Summary of Results: Summary of Results: 11 students analyzed 14 cases, identifying an average of 19 words per case as healthcare terminology, representing 13% of the overall word count. Of the 273 words identified, 124 words were classified as healthcare terminology, 51 as inclusive and 17 as exclusive by more than half of the students. The most frequently identified inclusive terms were diagnoses (e.g. cellulitis) and measurements (e.g. oxygen saturation), whereas the most frequent exclusive terms were abbreviations (e.g. s/p ex lap) and procedures (e.g. splenectomy). Qualitative thematic analysis of focus group transcripts yielded 4 themes: abbreviations were commonly perceived as complex terminology, unfamiliarity with terminology was often attributed to being early in training even if exclusionary, simulation was perceived as a safe space for learning, and learning terminology was a valued objective in early IPE.

Discussion and Conclusions: Discussion and Conclusions: Students perceive a substantial amount of healthcare terminology in learning materials, which is recognized as a valuable learning objective but also a challenge. Categorization of healthcare language is not consistent among students and may reflect individual differences in prior clinical experiences.

Take-home Messages: Take-Home Messages: Junior healthcare trainees find value in introducing complex healthcare terminology in early IPE experiences. It seems that while profession-specific language can be a significant barrier to IPE, use of inclusive language prompts students to learn from, with and about one another.

#EP4.8 - ePosters: Curriculum - IPE

#EP4.8.2 (5735)

Introduction of interprofessional education (IPE) for medical and dental students

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ABSTRACT:

Background: With aging societies, issues of age-related physiological changes and the number of comorbid systemic conditions endanger the oral status of the elderly. Tokyo Medical and Dental University (TMDU) started a new undergraduate medical and dental integrated curriculum in 2012 and the goal of our curriculum is improving interprofessional collaboration and patient care.

Summary of Work: Under our integrated curriculum, students of both schools learn together for common competencies such as relevant basic and clinical sciences, and social medicine. To develop and add a new component in clinical years to the integrated curriculum, we interviewed faculty staff of two schools in an attempt to accurately grasp barriers for coordination and collaboration between medical and dental professionals.

Summary of Results: Interview revealed that the lack of interest and insufficient understanding of the practice of other profession were identified as barriers. In order to overcome this, we developed and added a new component to the integrated curriculum which brings students of both schools during their clinical years to attend rounds in Palliative Care Unit and Outpatient Dental Clinics and teach each other after rounds with the help of supervising faculty staff. Analysis of the post-participation questionnaires written by students revealed that this program brought about desirable effects such as realizing the roles and responsibilities of ones own profession, broadening ones perspectives in patient care.

Discussion and Conclusions: Impression of both schools' students for this curriculum was favorable, and we noticed they learned the differences in professional fields and the need for respectful collaboration. They seemed to recognize factors to promote IPW by understanding "mutual complement", "importance of mutual understanding, consideration" and "importance of communication". Our new undergraduate curriculum that integrates medical and dental education to train healthcare professionals may effectively help students acquire the IPE competencies. Cultivating self-affirmation within a profession prior to the IPE workshop would be necessary for better learning.

Take-home Messages: Undergraduate medical and dental integrated curriculum may better prepare medical and dental students for coordination and collaboration which are needed in aging societies.

#EP4.8 - ePosters: Curriculum - IPE

#EP4.8.3 (5363)

Teaching Inter-professionalism: an Introductory Session for Clinical Year Students

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ABSTRACT:

Background: Medical students will work alongside professionals from other healthcare-related field for the first time in their Clinical year. Poor understanding of the responsibilities of different professions makes inter-professional environment daunting to students. Previously, the Introduction to Clinical Year session are taught solely by a lecturer; this study evaluates how the involvement of professionals from other fields in the session impacts students' adaptation to the Clinical Year.

Summary of Work: This cross-sectional study is based on responses from pre- and post- introduction session questionnaire, anonymously filled by fourth-year medical students at Sawanpracharak hospital's. The results are processed with SPSS. The Introduction to Clinic Session are divided into four sections. The first section clarifies the curriculum and grading system of the upcoming year. The second section is discussions with other professionals they will be working with in Clinical year, which are nurses in Operating room, Labor room and Intensive care unit. Nurses explain their duties, experience, obstacles working with medical students in the past, and potential solutions. During the third session, externs shares their experience regarding MEQ and OSCE examinations transition to the Clinical Year. The final section is conclusion and feedback.

Summary of Results: Out of the 31 participants, half of them are concerned to work with nurse prior to the session. After the session, 81.42% of the participants regard nurses' as crucial in the Clinical Year. 90.33% of participants gain a better understanding of nurses' duties. Following discussions with externs, 80.66% of medical students gain holistic understanding of their responsibilities in the Clinical Year. Overall, 41.93% of students believed that the session helps them adapt into the Clinical year and all participants believe introduction to Clinical Year sessions should continue to involve professionals from other healthcare-related field in the future.

Discussion and Conclusions: Involvement of nurses and externs in Introduction to Clinical Year sessions improves participants' understanding of duties of each disciplines, confidence in transitioning into the Clinical Year and attitude towards inter-professionalism.

Take-home Messages: Involving professionals from different health-related fields in the Clinical year improves student's understanding and value of inter-professionalism.

#EP4.8 - ePosters: Curriculum - IPE

#EP4.8.4 (6013)

Medical and paramedical students benefit from interprofessional simulation training

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ABSTRACT:

Background: Simulation training has been an increasingly used method in health care education. The interprofessional simulations may improve students' own professional progressing and help them understand other professions.

Summary of Work: We evaluated students' experience and opinion on interprofessional learning and their skills to act in emergency situations. 120 final year medical students and 34 third year (studies take four years to complete) paramedical students participated in high fidelity interprofessional simulations focused on internal medicine emergencies and resuscitation of a child and adult. The questionnaire measuring experience and opinion on interprofessional training and skills to act in emergency situations was sent to the students before and after interprofessional simulations.

Summary of Results: The pre-questionnaire was answered by 140 (91 %) students and the post-questionnaire by 132 (86 %). The students' mean age was 27 (21-41) years. The medical students had participated to approximately 10 simulation sessions and the paramedical students approximately 25 simulation sessions before this interprofessional simulation. The students have few earlier experiences of interprofessional training. The interprofessional simulations received high ratings from students. The students (both medical and paramedical) reported that simulations increased their trust and positive attitudes towards other student groups. They also emphasized the importance of precisely considered learning goals and relevant scenarios for all participating students. Interprofessional simulations were found very beneficial and there was a desire for more interprofessional simulations. The students also reported that interprofessional education increased their competence to act in emergency situations (internal medicine emergencies and resuscitation of a child and adult; combined in results). At baseline six students (2 %) considered their skill to act in emergency situations poor, 115 (27 %) moderate, 268 (64 %) good and 31 (7 %) excellent. The respective numbers after the simulations were 0 (0 %), 19 (5 %), 304 (77 %) and 73 (18 %). The most significant change was detected in resuscitation skills.

Discussion and Conclusions: Medical and paramedical students considered interprofessional simulations very beneficial and there was a clear desire for more interprofessional simulations. The students also reported that interprofessional education increased their competence in emergency situations.

Take-home Messages: Interprofessional simulations improve collaboration between health care students.

#EP4.8 - ePosters: Curriculum - IPE

#EP4.8.5 (6115)

Advanced Practice Credentialing: Comparison of the Royal Pharmaceutical Society Advanced Pharmacy Framework and Health Education England Multi-Professional Advanced Clinical Practitioner Frameworks

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ABSTRACT:

Background: Multi-professional Advanced Clinical Practitioners support the delivery of new models of care in England. In 2017, Health Education England (HEE) launched a multi-professional Advanced Clinical Practice Framework (ACPF), describing a national standard for multi-professional Advanced Clinical Practice (ACP). The Royal Pharmaceutical Society (RPS) has set out national standards for advanced pharmacy practice through an Advanced Pharmacy Framework (APF) 2 and credentialing system.

Summary of Work: To compare the HEE ACPF and RPS APF to determine areas of alignment, and whether it is valid to recognise pharmacists credentialed as advanced practitioners using the APF as of an equivalent standard to professions credentialed using the ACPF. Three independent reviewers completed an iterative comparison of the frameworks, including domain headings and competencies. These were reviewed against the APF staging descriptors. Final outputs were independently reviewed by a validation panel of 12 experts with expertise in competency framework development, education and use of frameworks in clinical practice. Consensus was defined as > 65% agreement. Items where < 65% agreement was achieved were further reviewed by 2 experts until consensus. Qualitative feedback was categorized.

Summary of Results: 181 competency mappings were identified, including behaviours. All HEE ACPF domains aligned to the RPS APF. All ACPF competencies had an equivalent APF mapping. Two APF competencies did not have an ACPF equivalent.

Discussion and Conclusions: The ACPF showed relevance only for clinical roles whereas the APF defined all areas of pharmacy practice. Advanced practice was generally defined in the ACPF as clinical complexity and autonomy within a service or organization. APF staging and advancement mostly related to practitioners' impact on a wider scale (e.g. local vs national). There was less emphasis on performance management, project management and formal education and training in the ACPF in comparison to the APF.

Take-home Messages: This review showed strong alignment between the ACPF and APF. It highlighted a distinction between ACP and Advanced Pharmacy Practice, with ACP being one possible scope of expert practice for a pharmacist. This suggests that pharmacists credentialed using the APF with ACP curriculum defining the expert practice domain could be deemed equivalent to an ACPF credential.

#EP4.8 - ePosters: Curriculum - IPE

#EP4.8.6 (6563)

Inter-professional teaching - doctors teaching paediatrics to the new generation of physician associate students

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ABSTRACT:

Background: Physician associate's (PA) are rapidly expanding within the NHS. Their training requires a minimum of 1,400 clinical hours under doctor supervision, including 90 hours of paediatrics. Within University Hospitals Bristol NHS Foundation Trust (UH Bristol) this is overseen by a team of clinical education fellows (CEF's) and the current paediatric PA programme is in its second year. Whilst a curriculum exists for PA training, those delivering the clinical content may be uncertain regarding the levels to be attained during their paediatric placement. This study aims to investigate and further understand how best to facilitate doctors involved in training PA students during their paediatric attachment.

Summary of Work: As a pilot study, semi-structured interviews were held with 4 paediatric CEF's within UH Bristol. They train 5 pairs of PA students during a 3 week paediatric placement across the academic year 2019-2020. Key questions surrounding their initial approach to topic choice, teaching style, breadth and depth of knowledge expected of PA students and any unexpected challenges or positives of teaching a different professional group to their own were explored. Following this successful pilot, the study will continue extending to other doctors involved in PA student paediatric teaching within the Trust. The interviews will be transcribed and analysed using an inductive approach to establish key themes and findings.

Summary of Results: Emergent themes of the pilot included uncertainty amongst doctors regarding the expected level of clinical knowledge and clinical skills of PA students. There was a tendency to compare PA students to medical students and use this as a basis of expected standards for the depth and scope of knowledge. Positive comments regarding teaching included an overall enthusiastic, mature and proactive attitude toward learning that participants felt was related to the postgraduate design of the course.

Discussion and Conclusions: Additional information regarding the level of paediatric training required for PA's would benefit their hospital training and increase confidence of doctors training them. The work between PA's and doctors involved in PA training will be presented.

Take-home Messages: The inter-professional nature of doctors teaching PA students presents certain challenges that would be overcome with an increased understanding of the paediatric training requirements for PA's.

#EP4.8 - ePosters: Curriculum - IPE

#EP4.8.7 (4031)

Student and Community Insights on Student-Directed Interprofessional Health Promotion Initiatives and Community Engagement

AUTHOR(S):

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ABSTRACT:

Background: Interprofessional education (IPE) has been identified as a key learning strategy to enhance the ability of health and social care students/practitioners to work together to support collaborative patient care. Expanding the scope of IPE to include non-clinical settings such as not-for-profit community organizations may expand collaborative learning opportunities and increase IPE placement sites. The goal of my research is to understand the experiences of participants involved in a community-based interprofessional education series for pre-licensure and post-graduate students at the Northern Ontario School of Medicine (NOSM). Preparing students to intervene on behalf of underserved communities may increase awareness of the knowledge, skills and attitudes required to develop the collaborative leadership, empathy and practice skills necessary to address underserved populations.

Summary of Work: This poster presentation will outline my PhD mixed methods study, including the details of the IPE program, community outreach with not-for-profit organizations as well as a the quantitative results from undergraduate and graduate students.

Summary of Results: A summary of results will include: i) participant responses to the Interprofessional Collaborative Competency Attainment Survey (ICCAS); ii) anonymous student written reflections based on their experiences in a 6-part IPE program. Students who use the ICCAS are required to reflect and self-assess their change in level of competency following completion of an IPE experience or intervention.

Discussion and Conclusions: The ICCAS tool will support the study in understanding students' self-assessment of personal change in their level of competency following completion of the IPE program. The results can locate recommendations in relation to curriculum, community engagement and professional development when working with priority populations and diverse healthcare teams in the North.

Take-home Messages: Interprofessional education has the capacity to increase students understanding of how collaborative community centred care can increase knowledge and sensitivity of working with priority populations. Anecdotally, students have identified that this form of interprofessional community-based learning has supported their communication skills and learning in a real-time, non-hierarchical manner. Students have stated that their formal curriculum would have been unlikely to provide this form of extensive interprofessional learning that focuses on the impacts of social determinants of health for priority populations.

#EP4.8 - ePosters: Curriculum - IPE

#EP4.8.8 (4222)

An Interprofessional Education Experience: Seen By - A virtual reality ward round from a patient perspective

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ABSTRACT:

Background: The MBBS course at the School of Medicine has interprofessional education (IPE) embedded from year 1. This allows the student experience to build toward learning with other professional learners in the later years (J McLachlan 2017, personal communication, 18 July). Virtual reality simulators have been found to be a beneficial educational tool in allowing learners to interact with 3D environments and people in real time. The impact of this modality in helping learners to achieve specific learning outcomes in clinical environments has been recognised (Kyaw et al., 2019). We have developed an in-house virtual reality simulation that allows users to experience the dynamic interactions of a ward round from the patient perspective.

Summary of Work: The session was designed around patient experiences in a ward environment. The script highlights behaviours within common ward activities such as: meal times, audible conversations and a bedside ward round. The 4-minute video was filmed using a 360-degree camera, positioned above the patient's head to provide the patients' perspective. Faculty were recruited to play the multi-professional roles. The video was structured to be viewed on ClassVR headsets. A teaching session was developed exploring the three main elements of the video: patient experience, patient safety and management strategies within dysfunctional teams. Students from nursing, medicine and physician associates attended a 90-minute workshop where the VR was experienced and analysed through a multi professional lens.

Summary of Results: Student feedback was collated. Students reported positive outcomes in the following themes: • Immersive experience • Patient Perspective • Working with colleagues

Discussion and Conclusions: Virtual reality videos are a beneficial way of allowing students to view a perspective that they may have not experienced themselves through sensory immersion from the patient's viewpoint. We conclude that more research is needed to see how virtual reality can be used and its benefits as a teaching modality.

Take-home Messages: Virtual Reality is an innovative way of providing simulation-based learning.

#EP4.8 - ePosters: Curriculum - IPE

#EP4.8.9 (4348)

Impact of Interprofessional Teamwork Training on Teamwork in Clinical Education of Medical and Nursing Curricula

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ABSTRACT:

Background: Effective teamwork is crucial for patient safety. The notions of interprofessional teamwork training obtained widespread acceptance at healthcare workplace. This is the first pilot study to develop and evaluate an interprofessional simulation-based Crew Resource Management (CRM) training on teamwork of medical, nursing and pharmacy students in Hong Kong.

Summary of Work: Two scenarios were developed. Students were asked to study online materials of CRM before participating a 2-hour simulation session. They were assessed by Human Factors Attitude Survey, Team-Based Learning Student Assessment Instrument and the Ottawa global rating scale. Four post-intervention focus group interviews were conducted with a semi-structured interview guide. Thematic analysis of the transcribed focus groups was conducted via coding and then categorizations.

Summary of Results: A total of 47 students participated. After the simulation, there was an increase in the attitudes on teamwork, however, there was no significant difference on increasing positive attitudes between Blended TBL plus simulation and simulation only groups (estimate = 1.76, 95% CI [-8.59, 5.06], p-value = 0.61). In both groups, student were satisfied with the simulation activities and felt accountable to their learning. Compared with Simulation Only group, students in Blended TBL plus simulation preferred team-based learning to lecture (p-value = 0.04). Regarding the teamwork performance, it was noted that these teams all improved in teamwork behavior (Blended TBL+ Simulation group with mean change = 8.33, SD = 6.62 and Simulation Only group with mean change = 10.67, SD = 1.63). However, the difference in performance between Blended TBL + Simulation and Simulation-only groups were not statistically significant (p-value = 0.42). For the qualitative findings, four themes emerged were: (1) reconsidering professional roles in managing patients; (2) embodying the experience to share responsibility and complement each other; (3) realizing the importance of trust and communication; and (4) engaging to achieve the mission within limited time.

Discussion and Conclusions: This study provided evidence of the effect of inter-professional simulation on teamwork education. Participants displayed extensive understanding on fundamental teamwork principles.

Take-home Messages: Further research on the design of incorporating inter-professional education in clinical education curriculum via simulation as the pedagogy is needed.

#EP4.8 - ePosters: Curriculum - IPE

#EP4.8.10 (4557)

Development of a new interprofessional health education program in an Academic Family Medicine Practice: Moving towards the Patient's Medical Home Model

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ABSTRACT:

Background: Models of collaborative team-based care, such as the patient medical home, are the vision for primary care in Canada. Unfortunately, opportunities for the development of interprofessional competencies necessary for the implementation of these models can only be found in acute care settings in our province. To facilitate interprofessional competency development in primary care, an academic family practice unit in St. John's, Newfoundland and Labrador, Canada recently began to integrate students from a variety of health disciplines into their primary care team.

Summary of Work: This novel interprofessional opportunity was created by key stakeholders at Memorial University of Newfoundland. Learners from pharmacy, nursing, medicine, social work, occupational therapy and physiotherapy rotate through the Ross Family Medicine Clinic under the supervision of clinical leaders. Guided by the Interprofessional Competency Framework, students engage with learners in other health disciplines in a primary care setting, fostering role clarification, team functioning, collaborative leadership and team conflict skills.

Summary of Results: To date, learners from social work, pharmacy, nursing, family medicine, occupational therapy, and physiotherapy have participated. Over 200 patients have benefited, particularly those with complex and chronic conditions. Both learners and clinic staff agree that these interprofessional interactions have fostered better understanding of the scope of practice and expertise of the various disciplines, and a sense of providing more comprehensive patient-focused care. These findings continue to shape the core activities of the program, with additions including case-based transdisciplinary knowledge sharing scenarios, the creation of team-based rounds, and the development of consultation guidelines for each discipline.

Discussion and Conclusions: The development and implementation of a novel clinical education program aimed at enhancing interprofessional competencies in primary care has been met with enthusiasm and innovation by all involved. Future work will focus on a mixed methods program evaluation with a focus on learner and patient outcomes.

Take-home Messages: Learning and providing primary care services together in a family practice enhances interprofessional competencies of both students and clinical staff. Student and patient outcomes resulting from this novel clinical education program will demonstrate the value of an interprofessional approach for funders, administrators, faculty, learners, and patients alike.

#EP4.8 - ePosters: Curriculum - IPE

#EP4.8.11 (4591)

Mass Casualty Events: How Providers Can Learn from Military Care Teams

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ABSTRACT:

Background: Interprofessional healthcare teams (IHTs) are facing a new reality—responding to mass casualty events. Be it school shootings or terrorist activities in city streets, our IHTs must be ready to save lives in chaotic, high volume situations. How can we prepare our IHTs to meet these demands? To date, teams with the most relevant experience in dealing with these situations were military interprofessional healthcare teams (MIHTs). However, research into what makes MIHTs uniquely prepared to respond to such events is sparse. If we are to better prepare civilian IHTs to safely and effectively offer care in similar situations, we should investigate how MIHTs secure a 92% survival rate in wartime situations. To address this gap, we conducted a qualitative study of military healthcare professionals, asking: What characteristics are important for ensuring MIHT success?

Summary of Work: Relying on Glaser and Strauss’s conceptualization of Grounded Theory, we conducted 3 cycles of 10 interviews with a purposive sample of military healthcare professionals across professions, ranks, and deployment experiences. By iteratively collecting and analyzing data, we developed themes describing characteristics that enabled MIHT success.

Summary of Results: We identified 5 characteristics of successful MIHTs that are also important to civilian IHTs: (1) clinically competent, (2) communication skills, (3) interprofessional integration, (4) professionalism, and (5) right/full team composition. However, we also identified 11 characteristics unique to MIHT success. These are: (1) adaptability, (2) confidence in competent team members, (3) esprit de corps, (4) ethical bearing, (5) leadership with followership, (6) freedom to engage your entire skill set, (7) mission focus, (8) resilience/perseverance, (9) the personal is professional, (10) negotiation across multiple hierarchies, and (11) situational awareness.

Discussion and Conclusions: Given the dramatic increase in domestic terrorism and mass shootings, MIHTs are uniquely positioned to offer insight to civilian IHTs. The lessons learned from MIHTs can help prepare healthcare providers to face the challenges unique to care in these contexts.

Take-home Messages: Findings from our research inform our understanding of the abilities and experiences that can save lives in mass casualty events—events that are occurring more frequently every year.

#EP4.8 - ePosters: Curriculum - IPE

#EP4.8.12 (4694)

Our experience in Developing an Interprofessional Ward Round Training Program for Diverse Stakeholders in Singapore

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ABSTRACT:

Background: The use of interprofessional education (IPE) ward rounds as routine clinical practice is in its infancy in Singapore. The Readiness for Interprofessional Learning Scales (RIPLS) survey in our Institution showed that while our healthcare professionals were keen for collaborative learning, they did not have a clear understanding of each other's professional in patient care. We needed an IPE training program which took into consideration the different needs of the stakeholders, with the following goal (1) overcoming the strong workplace hierarchical relationships, (2) providing a secure environment for speaking up, and (3) formulating a common learning framework

Summary of Work: The education foundations of the program were based on the basis of constructive, contextual, and collaborative learning. We adopted the ADDIE (analysis, design, develop, implement, evaluate) model to guide our development in an iterative manner. There were 4 modules in the half day workshop: (1) Introduction to a common PRISTINE framework, (2) tailored instructional techniques (one minute perception, multilevel teaching), and communications skill training, (3) intra and interprofessional sharing of roles in IPE Case discussion, and (4) IPE experiential management on actual challenging clinical cases

Summary of Results: The participants agreed that the tailored program and IPE experiential discussions allowed all stakeholders equal opportunities to share their expertise and concerns in the care of the patients and their family. The tailored module 2 catered to the specific learning needs and gaps experience by the diverse stakeholders. Positive experiences included (1) understanding of professional roles and challenges, (2) strong engagement of the IPE members in decision making, (3) formulation of patient care plans in single coordinated settings, (4) improved patient safety and (5) team based learning and support.

Discussion and Conclusions: IPE training which took into consideration the different needs of the stakeholders was particularly helpful in bringing the team together to conduct IPE rounds. All participants achieved Kirkpatrick level 3 in learning outcome.

Take-home Messages: IPE training which is constructive and contextual to a diversity of stakeholders is important to promote collaborative ward round

#EP4.8 - ePosters: Curriculum - IPE

#EP4.8.13 (4733)

Medical students attitudes towards interprofessional collaboration - a mixed methods exploration

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ABSTRACT:

Background: Interprofessional education (IPE) in medical schools aims to improve students' attitudes towards teamwork, collaboration, and improved patient care upon graduation. However, the appropriate timing to introduce IPE is unclear, and the reasons for early or late curriculum introduction are debatable.

Summary of Work: A sequential quantitative-qualitative mixed-methods design based on a sequential explanatory model was applied. Six hundred and eighty-three medical students from all the 6 years of medical studies (age: 23,1+/-2,9 years, 66,2% females) at the Bern University, Switzerland replied to an online survey (SurveyMonkey®) about attitudes towards interprofessional learning using an interprofessional attitudes scale recently validated for German-speakers (G-IPAS). Thirty-one medical students (age: 22,4+/-2,9 years) took part in 9 semi-structured 1-h interviews to reveal their experience in interprofessional learning and the possible impact such learning might have on their own professional development. Quantitative data were analysed descriptively (SPSS v23.) with sub-group analysis per year of studies. Chi-square and Students t-tests analysed categorical variables (p was defined as significant <0,05). MaxQDA software was used for qualitative data analysis (data reduction with deductive coding; verification of codes and categories was attained through sequential peer-debrief).

Summary of Results: GIPAS overall results showed a high degree of positive attitudes towards IPE. Women show better attitudes towards interprofessionalism overall years of medical studies (p=0,007). Interestingly, medical students showed more positive attitudes towards IPE in pre-clinical years (p=0,011). In semi-structured interviews, students could correctly define IPE and enumerate all its core dimensions (Values & Ethics, Roles & Responsibilities, IP Communication, and Teamwork). Most would appreciate more organised IPE interventions, starting in pre-clinical years and appearing throughout the curriculum. Students were aware of the relevance of IPE for their future professional performance.

Discussion and Conclusions: Our findings support the early introduction of IPE in a medical curriculum. Although students realise that interprofessional collaboration, learning, and relationships are key to high-quality patient care, there are still stereotypes and obstacles to overcome. We are aware that these results derive from a single university and may not be generalisable.

Take-home Messages: Medical students, especially women, showed more positive attitudes towards IPE in pre-clinical years.

#EP4.8 - ePosters: Curriculum - IPE

#EP4.8.14 (4853)

Interprofessional learning for educational programs in health and medical care – a university strategy

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ABSTRACT:

Background: The medical research, health and healthcare organizations are becoming increasingly specialized, complex and integrated with other activities in municipalities, society and the business sector. The need for interprofessional skills will thus increase. In addition, there is an increasing need for competence in working preventively, cost-effectively, with patient safety as a priority.

Summary of Work: The overall goal for all twelve undergraduate educational programs at Karolinska Institutet (KI) is to provide the best possible conditions for working within, leading and continuously developing activities in collaboration with other professions. KI has therefore appointed two coordinators for interprofessional learning (IPL) who work in close collaboration with the programs, pedagogical units and with various groups within Region Stockholm. KI has also established three common intended learning outcomes for IPL as well as an action plan with six strategies for achieving best possible interprofessional competence among students and faculty.

Summary of Results: As part of the action plan, a compulsory IPL Day for all beginner students takes place each semester since 2019 where 750 students are introduced to the significance of interprofessional teamwork. The theme is Health, and it includes morning activities with inspiring and interactive lectures, and an afternoon of interactive learning activities in interprofessional student groups of 25 students, led by two facilitators representing different educational programs. Evaluations show that both students (n=1200) and facilitators (n=70) appreciate meeting students and colleagues from other educational programs and to learn about, with and from each other. Students specifically express that they have learnt about the competency and skills of other's professions as well as about the importance of future collaboration.

Discussion and Conclusions: Engaging students in IPL early in their studies is an explicit strategy at KI, where both students and faculty get the possibility to learn about, from and with each other. The IPL-day is followed by several IPL activities throughout the educational programs and an IPL portfolio is established for students' progression in developing IPL competences.

Take-home Messages: Early engagement in IPL as well as a distinct plan for developing IPL competences are crucial in providing the best possible conditions for patient safety and quality of care in future work life.

#EP4.8 - ePosters: Curriculum - IPE

#EP4.8.15 (4880)

Readiness for IPE: assessment survey's predictive value through correlation of its results with objectively measured IPE competencies during an IPE ICU bedside rounding course

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ABSTRACT:

Background: Modern healthcare occurs in a dynamic and complex environment that requires providers to work together, collaborate, and quickly adapt to the continuously changing work environment. According to constructivist theory of learning, readiness to accept or reject given concepts determines the learning outcome. The USD SSOM researchers have performed a survey-based institution-wide assessment of readiness of healthcare students to participate in IPE activities. The researchers assessed students' clinical skills and IPE competencies. They developed and piloted a simulation-based IPE ICU bedside rounding curriculum, the IIBR, (AMEE 2019). During the curriculum, students' IPE competencies were objectively assessed by clinical faculty.

Summary of Work: Study of 2018 – 2019 identified trends in students' development of the IPE competencies. They were similar in medical, nursing, and other healthcare programs. Second iteration of the IIBR of 2020 starts in February 2020 and will take place over 10 months. The researchers are interested in investigating for possible correlation between students' subjective self-assessment (survey data) and objective assessment (faculty grades) of their IPE competencies during IIBR. If correlation between self-assessment and objective performance measure is established, it would allow for proper design of other IPE activities using survey results as a guidance. Multiple regression analysis will be used to assess correlation.

Summary of Results: This project is a merger of two projects: survey-based assessment for readiness for IPE and a I ICU IPE bedside rounding. Both projects have produced rich data presented at several international symposia. Survey results suggested that students from all professions demonstrated higher interest in IPE toward the beginning and the end of their curricula. Using this prediction, the IPE ICU course was designed and implemented and showed positive educational outcomes. Using its data as a dependent variable, we would like to evaluate the predictive value of the readiness of IPE survey.

Discussion and Conclusions: This study would allow for developing better IPE activities that build on prior experiences and prevent transient decline of the interest in IPE during the middle of the curriculum.

Take-home Messages: Educational experiences must be delivered when learners are most receptive. Readiness for IPE can be assessed with surveys so that IPE is delivered in the optimal time and manner.

#EP4.8 - ePosters: Curriculum - IPE

#EP4.8.16 (4970)

The Effectiveness of Inter-professional Education with TeamSTEPPS: Post-Graduate Year Rehabilitation Therapists

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ABSTRACT:

Background: 'Early intervention' is a family-centered, proactive and multi-professional team service for children with developmental delay. This service focuses on consistent comprehensive care and is integrated by Team Strategies and Tool to Enhance Performance and Patient Safety (TeamSTEPPS). The utilization of TeamSTEPPS enables post-graduate year (PGY) therapists to develop skills required for effective treatment. The purpose of this study is to explore the effectiveness of inter-professional education (IPE) for PGY therapists utilizing TeamSTEPPS.

Summary of Work: The study was conducted by a cross-sectional study and was based on convenience sampling. The PGY therapists in the rehabilitation department of a teaching hospital in central Taiwan were used as research subjects. Through the early-intervention holistic care conferences during March 2018 to March 2019, clinical teachers led PGY to participate in and used TeamSTEPPS for discussion and teaching. This mode included pre-course teaching, during-course inter-professional and post-course teaching discussions. Self-made feedback questionnaires were collected after each conference and were measured by The Five-point Likert Scale. The data was analyzed to obtain the percentage of learning satisfaction.

Summary of Results: The study consisted of 13 PGY therapists, including 6 speech and language therapists, 3 physical therapists, and 4 occupational therapists. A total of 104 feedback questionnaires were collected in 8 conferences. Results indicate the majority of PGY were strongly satisfied with 'communication content of the team meeting' (91.34%) and 'communication with patient and family'(94.23%). Furthermore, 95.19% were strongly satisfied with 'analysis and discussion of the medical problem' while 93.27% were strongly satisfied with 'The use of empathy'. Last but not least, 96.15% agreed that TeamSTEPPS helped them combine learning and clinical practice.

Discussion and Conclusions: The early-intervention holistic care conference with TeamSTEPPS is highly effective for inter-professional education. The TeamSTEPPS allows PGY therapists to acquire various skills and to reach the goal of 'learning at work'.

Take-home Messages: The PGY therapists were satisfied and agreed that they can grow and develop at work and continually improve the quality of medical care. IPE with TeamSTEPPS enables them to take patients as the focal point by paying attention to their physical, mental, spiritual, and social aspects.

#EP4.8 - ePosters: Curriculum - IPE

#EP4.8.17 (5076)

Applying the Behaviour Change Wheel Framework to Promoting Interprofessional Collaborative Practice in Health Professional's Satisfaction, Interdisciplinary Education Perception, and Behavioural Chang

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ABSTRACT:

Background: As patients' illness severity increases, it is important for health care professional to promote interprofessional collaborative practice (IPCP) to achieve holistic care. We designed the IPCP based on the behavior change wheel (BCW) framework, and have implemented the IPCP since 2014. The BCW framework is a suitable tool for analyzing intervention of promoting IPCP including 7 policies, 9 interventions, and 3 sources of behaviours. The survey purpose is to examine the effects of BCW-IPCP strategies on health team members' interprofessional education (IPE) Satisfaction, Interdisciplinary Education Perception (IEP), and Behavioural Change.

Summary of Work: This is a retrospective survey to follow up health care team members' IPE Satisfaction, IEP, hours attending IPE, and IPE participation rate at a Tertiary Hospital in Taiwan. Convenience sampling was used to recruit all the participants in IPE. The IPE satisfaction was measured using five-point likert scale, the education perception using IEP scale, the behavior change measured by counting number of hours. The BCW-IPCP strategies include: Education: self-learning platform; Persuasion: using slogan to induce positive feelings; Incentivisation: praise and awards; Coercion: monitor participation; Training: OSCE and workshop; Restriction: setting participation rules; Environmental Restructuring: using badges and poster; Modelling: IPCP conference; Enablement: reflection and critical thinking.

Summary of Results: The survey suggests that the health care team members' IPE Satisfaction continuously increases from 88 to 92.4 points. For the education perception, the score of the IEP scale improves from 5.46 to 5.61. The health care team members' hours attending IPE increase 8 hours every year. More professional teams attend the IPCP from 6 to 14 disciplines.

Discussion and Conclusions: The innovative BCW-IPCP strategies are implemented in clinical field through the IPE. Through the BCW-IPCP strategies, the health team members could learn with, from, about each other in knowledge, skills, and attitudes, and administer the holistic care including the patients physiological, psychological, social, and spiritual care. The holistic care starts from the patients, and extends to the whole team, whole course, whole family, and whole community.

Take-home Messages: The BCW-IPCP strategies could provide the other hospitals to develop their policies and interventions to bolster health workers who will collaborate effectively and improve patient health outcomes.

#EP4.8 - ePosters: Curriculum - IPE

#EP4.8.18 (5266)

Teamwork development through Escape Rooms for inter professional education of the first year students

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ABSTRACT:

Background: Scott Nicholson defines escape games as “live-action team-based games where players discover clues, solve puzzles, and accomplish tasks in one or more rooms in order to accomplish a specific goal (usually escaping from the room) in a limited amount of time.” Interprofessional education (IPE) has been introduced across the schools of medicine, nursing, and pharmacy at Keio University. IPE at Keio University for first year students of the three schools is a half-day workshop for approximately 360 students. During 2013-2014, in the workshop, students did groupwork after the lecture (workshop A). During 2015-2018, in the workshop, students did groupwork after Escape game (workshop B). This study aims to reveal the effect of escape games on teamwork development in IPE of the first year students.

Summary of Work: Escape game was made originally by senior students. That is composed of approximately 10 puzzle, which is not require medical knowledge. 40 minutes was assigned for Escape game. To investigate the effect of the Escape game on the readiness of students for IPE, the Japanese version of the Readiness for Interprofessional Learning Scale (RIPLS) Questionnaire was taken before and after the programs.

Summary of Results: RIPLS score are compared between workshop A not using escape game and workshop B using escape game. Total score of RIPLS before workshops was not different between workshops (A: 75.6, B: 76.2), but total score after workshop was increased more in workshop B (A: 80.1, B: 81.6). RIPLS score is consisted of three subscales; teamwork and collaboration, IPE opportunities, and uniqueness of professional. Difference in total score between workshops mainly comes from teamwork and collaboration. There is no difference among medical, nursing, pharmacy schools.

Discussion and Conclusions: Escape game is effective for teambuilding for beginner such as the first year students who do not have their own special knowledge.

Take-home Messages: Escape game is effective for teambuilding for beginner such as the first year students who do not have their own special knowledge.

#EP4.8 - ePosters: Curriculum - IPE

#EP4.8.19 (5430)

Sharing Ideas and Collaborating with other professionals in Rational Drug Use: IPL does better

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ABSTRACT:

Background: Public Health Ministry of Thailand concerns about appropriate medical drug use and has announced National Policy “Rational Drug Use” (RDU) since 2011. Udonthani Medical school has implemented RDU program for medical students by lecture class and interprofessional learning (IPL) which allows students to share and learn with and from other professionals. Both teaching techniques are proven to be effective. We aimed to evaluate students’ satisfaction and perception of the teaching techniques.

Summary of Work: We designed an RDU-lecture class for 6th year medical students before the RDU-IPL class which grouped in a team including 1- 2 medical staff, 1-2 pharmacists and 4-6 medical students rotated and freely discussed a scenario case for 30 minutes in each station for 5 stations. After the class, their satisfaction and perception were surveyed.

Summary of Results: There were 30 medical students attended the RDU class. The IPL class was more satisfied compared with the lecture class with the distribution were 56.7 %, 33.3% and 10% in favor the IPL, satisfied both techniques and favor the lecture, respectively. The reasons of satisfaction in the IPL-favored group, were more practical (82.4%), free to share idea and experience with others (76.5%), joyful (70.6 %), enhanced understanding and memory (58.8%) and interesting /not boring (47.1%). All of them satisfied the RDU class using IPL technique which 86.7% recognized the importance of RDU, 63.3% agreed that IPL/RDU class helps them to work better with other professionals, 60% agreed with the policy and curriculum, 60% concerned with cost and effectiveness and 53.3% had more confidence in their prescription.

Discussion and Conclusions: The study showed that IPL is effective in teaching RDU for medical students. It provides more satisfaction due to more practical, interactive learning and more interesting than the lecture technique. Moreover, it helps them to understand and respect other professionals. This should be a good teaching technique for RDU or the other topics that need team work to learn more than knowledge.

Take-home Messages: IPL is an effective and favorable teaching technique in RDU topic for medical students.

#EP4.8 - ePosters: Curriculum - IPE

#EP4.8.20 (5437)

Top up Inter-professional Learning After Conventional Lecture Class for Rational Drug Use Does Not Increase Knowledge but Provides More

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ABSTRACT:

Background: Rational drug use (RDU) has been the national drug policy and strategy since 2011 by the National Drug System Development Board. There are 3 important characteristics including knowledge, skills and attitudes in creating RDU-concept in healthcare personnels. RDU lecture class provides knowledge but not skills and attitudes. Inter-professional teamwork which use their individual expertises in collaborative manner to achieve the patient-centered goal. Inter-professional learning (IPL) allows medical students to share their ideas and learn with other professionals which may provide more understanding and knowledge of the RDU and improve their teamwork skill.

Summary of Work: After formal RDU lecture class, we setup IPL in RDU topic class for 6th year medical students consisted of 35 healthcare professionals divided into 5 groups ,each group consisted of 2 medical staff, 1-2 pharmacists and 3-4 medical students who rotated 5 stations of case scenario discussion for 30 minutes per station, their knowledge was assessed by multiple-choice questions (MCQ) after lecture and IPL class and analyzed by using Paired Sample t-Test. Their attitude about both teaching methods were collected by questionnaires.

Summary of Results: There were 17 medical students attended the class. Their knowledge scores ranged from 50-80% with an average of 68.4% and 55-80% with an average of 68.8% after the RDU-lecture and RDU-IPL class respectively; no statistical significance between both teaching methods. For attitudes; 88.2% of the students perceived that they had more understanding and 82.4% had more confidence in clinical practice and were familiar with multidisciplinary team working than lecture class.

Discussion and Conclusions: RDU-IPL class for undergraduate medical students did not increase knowledge comparing with conventional lecture but provided more understanding, practical confidence and multidisciplinary teamwork skills .Good inter-professional collaboration can fill service gaps, enhance communication leading to better patient care. However we need further study of long-term impacts of undergraduate IPL in RDU.

Take-home Messages: Top up IPL after lecture provides teamwork skill benefit.

#EP4.8 - ePosters: Curriculum - IPE

#EP4.8.21 (5612)

Creative Nursing Process of Four Panel Comics

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ABSTRACT:

Background: Nursing process is a systematic scientific problem solving method, and its also the basic principle of nursing care. Passive listening and learning in classrooms make clinical inapplicable. Therefore, apply the steps of the nursing process to provide appropriate nursing activities is important in the nursing practice. The aims of this study was to explore the effects of the four panel comics in nursing process.

Summary of Work: This objects of this study were community health nursing students, and guided students to present the nursing process in four panel comics. The content needed to be discussed with the trainee teacher and primary care nurse, and after achieving consensus with the family members, creative work will be designed and evaluated during the process to decide whether it could be continued, modified or discontinued. Finally, we use open questionnaires to understand students point of views at the actual operation in the nursing process.

Summary of Results: 7 intern students were divided into 3 groups, and 2 groups completed their creative works to improve case care issues and received positive feedback from the family. Qualitative feedback of students from this study are understanding the meaning of the nursing process, discussing with the family members, intervening in individual nursing care that meets the needs of cases, and continuing to use the work to achieve continuous care. One group didn't complete the creative work due to the conditions of the family. But they said: the four panel comics could make the concept of nursing process clear. Using the existed health education tools, they could actually apply the nursing process to the family.

Discussion and Conclusions: Before the internship of students, the study of nursing process mostly only involved narrative and reading. In this study the texts are converted into images, and we emphasized academic basis, team discussion, the actual needs of the clients, and appropriate nursing interventions are provided.

Take-home Messages: Using four panel comics to convert nursing process into visualization, creative works are value-added. In the future, different nursing sciences may use visualization to guide student's learning. We expect that students can think creatively and logically to make learning is more effective.

#EP4.8 - ePosters: Curriculum - IPE

#EP4.8.22 (5732)

Interprofessional Learning Through Simulation

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ABSTRACT:

Background: Interprofessional learning (IPL) has formed an essential aspect of most health education curricula over the last twenty years. A key aspect of IPL is group work that draws on individual professional knowledge to develop enhanced understanding of other roles and responsibilities. It is commonly used to bring together students from a range of health disciplines irrespective of their final roles. In the field of radiation oncology, few robust studies have been performed into oncology-specific IPL initiatives.

Summary of Work: This pilot project aimed to develop and evaluate an innovative inter-professional simulation experience based in the field of radiotherapy involving trainee clinicians, medical physicists and therapeutic radiographers. A range of scenarios were developed that utilised simulation equipment and expert patients across the full range of activities within the radiotherapy pathway including patient consultation, patient positioning and immobilisation, CT scanning, radiotherapy planning, radiotherapy treatment, radiotherapy QA, on-treatment review and error management. Evaluation utilised the well-validated “Readiness for Interprofessional Learning Scale” (RIPLS) before and after the intervention to measure impact. In addition, a post-event survey gathered feedback from participants relating to their experience of the IPL simulation.

Summary of Results: There was a statistically significant 3% increase of overall RIPLS score following the simulation. Most of the respondents (23 out of 26) enjoyed the event, felt they had learned skills, gained understanding of other roles and desired more simulation events in the future. These findings triangulated well with the qualitative data where respondents valued the opportunity to work alongside clinically relevant personnel in a challenging, yet fun environment.

Discussion and Conclusions: The simulated scenarios proved to be challenging, particularly within the tight timeframe. It was clear that the respondents found the experience to be enjoyable and useful. They reported increase in technical and interpersonal skills as well as improved awareness of aspects of each other’s roles. Future iterations of this event will need to allow increased time per scenario and include a wider range of clinical oncology professionals.

Take-home Messages: • Ensure that IPL activities include professionally relevant staff only. • Simulated scenarios involving multiple professions not only improve skills but also increase awareness of other roles within clinical oncology.

#EP4.8 - ePosters: Curriculum - IPE

#EP4.8.23 (5926)

The optimal time to introduce an Interprofessional Education intervention in the Medical school curriculum: a systematic review

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ABSTRACT:

Background: There is an agreement among educators and professional bodies that Interprofessional Education (IPE) needs to be implemented at the undergraduate level. However, the optimal timing for IPE interventions in medical school curricula remains to be determined. We performed a systematic review to gain a better understanding of the current literature on interprofessional learning interventions in undergraduate students across all medical years.

Summary of Work: A systematic literature research was performed using PubMed, PsycINFO, EThOS, EMBASE, PEDro and SCOPUS. Search terms were composed of interprofession*, Interprofessional education, inter professional, inter professionally, IPE, and medical student. Inclusion criteria were the use of a validated scale for assessment of attitudes towards IPE and results for more than 35 medical students, peer-reviewed articles in English and German, articles including medical students, reporting evaluative results of IPE interventions, published after 2011 (since the IPEC report publication). Primarily, 3974 articles were identified and screened. After the elimination of duplicates or non-relevant topics, 278 articles remained as potentially relevant for full-text manual assessment. After selection, we used a data extraction form including study designs, training methods, participant data, assessment measures, results and medical year of participants for each study.

Summary of Results: This systematic review includes 25 articles, 84% (n=21) included a pretest-posttest design. Interventions varied in their type and topic. Duration of interventions varied from 2h to 4 months, interprofessional groups ranged from 2 to 8 students. Eleven studies (44%) reported data from 1st-year medical students, 20% (n=5) from 2nd-Year, 24% (n=6) from 3rd-year and 16% (n=4) for 4th and 6th-year students. The most frequently used assessment method was the Readiness for InterProfessional Learning Scale (RIPLS) (7 studies, 28%). Most study outcomes (n=16, 64%) showed a significant increase in positive attitudes towards IP after interventions across all medical years.

Discussion and Conclusions: This systematic review revealed evidence of the effectiveness of a post-intervention IPE effect across all medical years studied but no clear picture was found when IPE interventions should be spread out across the medical curriculum.

Take-home Messages: Current data support the value of IPE but the evidence is too heterogenous to derive the best timing to introduce IPE in the medical curriculum.

#EP4.8 - ePosters: Curriculum - IPE

#EP4.8.24 (6049)

High-fidelity Simulation Stands Out: The Interprofessional Education Experience In a Tertiary Medical Center In Taipei, Taiwan

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ABSTRACT:

Background: Simulation is an effective teaching method for interprofessional education (IPE). On Oct 18 2019, we conducted a high-fidelity simulation IPE, including scenario-simulated film, role-playing with a pre-writing script, interprofessional table exercise, and recording the patient's feedback videos, in the Tri-Service General Hospital in Taipei, Taiwan. This study aims to analyze the case and compared the outcome with other session holds in 2019.

Summary of Work: The participants were required to complete the Interdisciplinary Education Perception Scale (IEPS) and a 5-question quiz before and after the class via the online interactive app Zuvio. The data was then programmed in SPSS 20 for demographics, pair t-test, and Wilcoxon sign rank test. Professions, levels of the profession, previous IPE experience, clinical working experience, and gender were stratified for the outcome. The results were then compared with other sessions in 2019. The significance of 5% ($p < 0.05$) is adopted in this study.

Summary of Results: Totally 177 participants completed the real-time pre-post test. Based on the Kirkpatrick model, the level 1, 2a and 2b outcome of the Oct session showed the greatest average satisfaction (10/10), IEPS and quiz improvement rate (2 % and 13%) compared with other months. After stratified with the demographics, the Nursing profession, males, previous IPE experience over 3 times and clinical working experience 2 to 4 years had better improvement.

Discussion and Conclusions: This case study shows the effectiveness of high-fidelity simulation IPE among the healthcare students. The quality response from the audience also affirms its value. Further implementation of high-fidelity simulation in IPE should be promoted to other teaching teams in TSGH to provide better IPE and patient care.

Take-home Messages: The high-fidelity simulation IPE in TSGH had a statistically significant positive impact on the audience compared with non-simulated courses based on our case study. More work should be focused on the promotion of implementation the simulation in IPE.

#EP4.8 - ePosters: Curriculum - IPE

#EP4.8.25 (6097)

Teaching the Nutrition Focused Physical Exam to Medical Students Using an Interdisciplinary Approach

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ABSTRACT:

Background: Physicians often counsel patients about making lifestyle changes to improve and prevent chronic disease. However, dissatisfaction with the nutrition education they have received in medical school often results in physicians feeling unprepared to offer nutritional counseling. Thus, there is clearly a need to enhance the nutrition curriculum in medical education to improve patient care.

Summary of Work: To enhance the nutrition curriculum for first year medical students at Case Western Reserve University, we developed a workshop to teach nutrition knowledge, improve skills and improve attitudes about nutrition counseling. The workshop was created by Registered Dietitian Nutritionists (RDNs) and consisted of a large interactive group session that taught them about the role of registered dietitians, how to identify malnutrition using the Nutrition Focused Physical Exam (NFPE) and how to perform the NFPE. In small groups students had the opportunity to further explore NPFE using case studies related to adult and geriatric nutrition and practice the NFPE. To assess nutritional knowledge a pre-test and post-test were given before and after the workshop. Included in the assessment were statements about perceptions of malnutrition in the hospital and the role of dietitian as part of the interdisciplinary team.

Summary of Results: The pre-test and post-test were analyzed using paired Student t-tests. We found an increase of knowledge about malnutrition and nutrition after the workshop ($P < 0.05$). The statements about students' perceptions were ranked on a Likert scale (1=strongly disagree to 5=Strongly Agree). The understanding of the role of a dietitian and the willingness to collaborate with a dietician increased to 5 (strongly agree) after the workshop.

Discussion and Conclusions: The NPFE is normally taught to dietetic students since they perform this exam routinely in the clinical setting. We are the first medical school to use an inter-professional approach to teach medical students about malnutrition using the NFPE.

Take-home Messages: Medical school curriculum initiatives are being developed to enhance nutrition education internationally. This is critical to improve physician confidence when counseling patients about lifestyle changes. In this study, we have used a novel inter-professional approach to enhance medical student knowledge and skills.

#EP4.8 - ePosters: Curriculum - IPE

#EP4.8.26 (6437)

Undergraduate social and health-care students find it important to learn interprofessionally

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ABSTRACT:

Background: Although studies on interprofessional learning report positive outcomes of teaching undergraduate social and health-care students further scholarly work is needed (1,2). To develop interprofessional education is one of the main objectives in the Finnish undergraduate medical education according to The Finnish Education Evaluation Centre (FINEEC) (3).

Summary of Work: The Interprofessional assessment of functional ability and rehabilitation course was voluntary in November 2019 and 65 students took part in it. 25 of them were the 6th annual course medical students, 21 were the 4th annual course physiotherapy students and 19 were the advanced students of social work. We evaluated the readiness and attitudes of these students for interprofessional learning with RIPLS questionnaire (4), it's modified version RIPLScore (5) before and after the course.

Summary of Results: The most (93.5%-92.9%) of students agreed that team-working skills are essential for all health-care students to learn. Small part of students (1.3%-3.7%) thought that it is not necessary for undergraduate health-care students to learn together. Students agreed (62.3%-67.9%) that shared learning will help to clarify the nature of patient problems.

Discussion and Conclusions: The readiness and attitudes were good already before the interprofessional course, which may be due to the voluntary participation. However, they gave us positive feedback to continue. So in November 2020 all the 6th annual course medical students, the 4th annual course physiotherapy students and those advanced students of social work that study in Kuopio campus will participate which means that about 300 students are learning interprofessionally. Although good, some results worsen a bit and we have to analyze them and make modifications, which are important also because of larger volume of students.

Take-home Messages: Undergraduate social and health-care students recognize the importance of interprofessional learning. We must continue to develop interprofessional courses and further study their outcomes.

#EP4.8 - ePosters: Curriculum - IPE

#EP4.8.27 (6486)

Interdisciplinary Team Training for Medical and Nursing Students

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ABSTRACT:

Background: Interdisciplinary collaboration offers tremendous challenges for teams with varying theoretical and practical backgrounds. Areas like pediatric oncology are challenging starting at the first day of work. Team-based training rarely starts that early. Therefore, we initiated a workshop-based program to tackle this deficit by bringing together nursing students and medical students in a simulation scenario prior to working together in the hospital setting.

Summary of Work: Based on an established German multidisciplinary workshop series for healthcare professionals working in pediatric oncology and following a needs analysis, we developed a training for nursing trainees and medical students focusing on practical skills needed for daily work.

Summary of Results: 24 nursing trainees and 24 medical students participated in four workshops in 2019. 40 participants were female and 8 male. Participants were in between 20 and 27 years of age (average 23 years). The application was voluntary. Number of participants per training was limited to 12. The one-day program focused on simulation of challenging communication scenarios such as breaking bad news, hands on training (lumbar and bone marrow puncture), appropriate pain management, and drug prescriptions (sources of errors). 100% of the participants stated that they would recommend the interdisciplinary training to fellow students. All participants rated the interdisciplinary workshop climate as pleasant. Overall workshop rating was 1 (=‘very good’ on a 6-point-Likert-scale).

Discussion and Conclusions: Although the need for interdisciplinary training is evident, training sessions with nursing trainees and medical students preparing both for the real life setting are rare. Early interactive training proved suitable to raise the awareness for interdisciplinary needs, elements of effective communication, and progress through early interaction. Small group sizes are required for intensive training.

Take-home Messages: Nurses and doctors work together but their education follows different rules. Misunderstandings and prejudices are frequent, but rarely addressed. Our workshop aims at bringing these important teams together before they meet in the stressful daily work routine. The interaction creates room for a shared development resulting in higher satisfaction with the job and increased patient safety. Further studies are planned with the focus on the trainings influence on post-graduate inter-professional interactions.

#EP4.8 - ePosters: Curriculum - IPE

#EP4.8.28 (6519)

Students' experiences of an interprofessional learning activity during clinical placement in primary healthcare: a qualitative analysis

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ABSTRACT:

Background: The number of students in clinical placement in primary health care is increasing in Sweden. Simultaneously, the population with multimorbidity and complex needs is growing, and with it, the need for interprofessional collaboration. It is therefore important to train students in team-based, interprofessional care. Sweden requires a coordinated individual plan (CIP) for each patient with complex needs. CIPs are standardized tools for person-centered collaboration. They are thus a suitable basis for an interprofessional learning (IPL) activity for students in clinical placement. In IPL, students learn with, about, and from each other.

Summary of Work: At Hässelby Academic Primary Health Care Center between 2018 and 2019, students participated in an IPL activity that simulated creating CIPs for anonymized authentic patients. Students training to be nurses (including district, community health, and pediatric nurses), assistant nurses, physicians, midwives, physiotherapists, medical secretaries, social workers, chiropractors, naprapaths, and occupational therapists participated. Each student took part in one of 12 learning seminars (5–15 students per seminar) supervised by adjunct clinical instructors. Following the seminars, 80 students provided anonymous written evaluations of new insights resulting from the seminar and what they liked best about the seminar. We used qualitative content analysis to analyze the evaluations.

Summary of Results: Our findings indicated one theme: Interprofessional collaboration without hierarchy, focused on the patient, creates new knowledge about one's own and others' professional identities. The theme consisted of five categories: 1) patients in the center/focus, 2) one's own professional identity, 3) professional identities of others, 4) team and collaboration, and 5) no hierarchy/equal position.

Discussion and Conclusions: The students perceived CIP meetings as a highly relevant IPL activity. Our results are in agreement with the dimensions of the Interprofessional Collaborative Competencies Attainment Survey (ICCAS): communication, collaboration, roles/responsibilities, collaborative Patient/Family-centered Approach, and Team functioning. However, a novel finding of this study was the students' experience of creating new knowledge about one's own professional identity. This finding may merit additional investigation.

Take-home Messages: Students found the simulated CIP activity meaningful. The activity promoted the development of the students' professional identities.

#EP4.8 - ePosters: Curriculum - IPE

#EP4.8.29 (6782)

The effect of shadowing-based curriculum on IPE attitude in nurse students understand the importance of radiological examination of the relevant patient

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ABSTRACT:

Background: Current IPE training model is case-based discussions and simulation-based team learning train for healthcare students learning with, from, and about one another in classrooms, simulation labs, and increasingly through online environments. Shadowing model, in which healthcare students or participants from different professionals observe others at work, can make an excellence contribution to interprofessional collaboration. Few studies used shadowing-based curriculum to develop IPE attitude in medical clerkship. Thus, the purpose of this study aimed to exam the effect of the shadowing-based curriculum on IPE in medical clerkship in a teaching hospital of Northern Taiwan.

Summary of Work: We developed the Shadowing-Modeled Inter-Professional Education (SMIPE) project for nursing clinical students in Taipei Medical University in 2019. The 12-week shadowing project involved 2 healthcare providers, including nurses, Radiographer, case managers of discharge preparing, members of hospice term and social workers. Participants (N=48) were grouped as small groups (8 to 10 students/group) and separately participated 1-hours shadowing with one Medical Radiation Technologist professional every registration day afternoon and to actually visit each examination room. Each shadowing section consisted of 4 phases including the explanation of learning purpose, the observation toward preceptors, the discussion at the end of each section, and the reflective assignments. They finished a satisfaction questionnaire (range 1 to 5) after this project. To understanding the learning of this project, the categorial of the reflective assignment was performed by content analysis.

Summary of Results: It found that nursing students can enhance teamwork IPE after the cross-cutting radiologists clinical education learning Students reported a positive attitude in IPE after the course, with mean score more than 4.5 in RIPLS ($t=5.67$, $p<0.001$, mean difference=0.18). They represented strong beliefs on two dimensions of RIPLS including the team-work/ collaboration and the professional identity (with mean score significantly more than 5, $t=6.5$, $p<0.001$, mean difference=0.66).

Discussion and Conclusions: Findings of this study showed that Interdisciplinary Learning might have the effectiveness on IPE attitude in medical clerkship. They enhanced their belief that they learned team-work and positive relationship with other patient care providers

Take-home Messages: We will monitor the collaborating behavior on those nurse students after this course to determine whether this course impacts them on behavior aspect.

#EP4.8 - ePosters: Curriculum - IPE

#EP4.8.30 (7139)

A Geriatric Clinical Experience bolstered by Community Based Interprofessional Education

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ABSTRACT:

Background: We sought to design an engaging hands-on approach that incorporated geriatric clinical skills training with working in an interprofessional team environment. The goals in designing this program were to provide interaction opportunity with community dwelling older adults, achieve IPEC defined competencies (roles and responsibilities, teamwork, communication and values and ethics), and for the program to be applicable across practice settings and a number of health professions.

Summary of Work: The program was built to assess the attitudes of students towards older adults as they engage with and assess older adults' social and physical well-being and strengthening and building interprofessional competencies of communication and interprofessional values. The "Healthy Aging" wellness home visit program with a 100 teams. Each team has 3-students, a second year medical student, a final year social worker student, and a third health profession student. The team must collaborate in order to provide the older adult with a wellness and health check involving fall risk assessment, and screening for social well-being, alcohol use, depression, vision, hearing along with oral and foot health. Following this the students completed a geriatrics attitudes and IPAS survey. The senior client evaluated the students for their engagement, professionalism, team work and communication.

Summary of Results: Over 85% of students agreed that the experience had a positive impact on their learning for the IPEC competencies and reported a positive interaction with seniors. Based on feedback from both the students and older adults, the home visit program seemed to provide a successful way of incorporating interprofessional education competencies into real a world clinical scenario. The students reported respect and understanding of the elders health issues and wellbeing that should not be ignored.

Discussion and Conclusions: Providing engaging, clinically-appropriate, immersive geriatric training experience in an interprofessional team can be a successful way to learning roles and responsibilities, teamwork, communication and values and ethics.

Take-home Messages: Combining a geriatric exposure and interprofessional team building experience lead to a rewarding social responsibility teaching experience for the learner.

#EP4.8 - ePosters: Curriculum - IPE

#EP4.8.31 (5560)

Code Blue: An Interprofessional Simulation-Based Workshop for Junior Learners

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ABSTRACT:

Background: Simulation-based Code Blue team training is an effective intervention to improve team function and confidence among physicians and nurses. There is growing interest in applying this type of simulation-based training for undergraduate interprofessional education. In this study, we describe a novel simulation-based interprofessional Code Blue workshop for undergraduate healthcare trainees.

Summary of Work: Medical and nursing students attended a 2-hour simulation-based workshop. Students rotated through four stations breaking down the skills involved in a Code Blue (calling for help, CPR, bag-valve mask and defibrillation). Students then participated in a high-fidelity simulated Code Blue in interprofessional teams, followed by a facilitator-led debrief. Students rated their pre and post-workshop understanding of interprofessional roles in a Code Blue team and level of comfort responding to a Code Blue. They described barriers that may have prevented them from participating in a Code Blue as learners. We analyzed changes in role understanding and perceived confidence, and conducted a thematic analysis of barriers to participation.

Summary of Results: Ten 1st and 2nd year medical students and 7 senior nursing students participated in the workshop. Students' self-rated understanding of their role within an interprofessional Code Blue team increased from 2.5 to 4.3 on a 5-point scale ($p = .0014$). Students' self-reported confidence in initiating and participating in a Code Blue response also increased from 1.8 to 4.0 on a 5-point scale ($p < 0.00001$). Three themes emerged as barriers to participating in an in-hospital Code Blue: fear of making a mistake, lack of understanding of their roles within the interprofessional team, and lack of clinical knowledge or experience. Students identified hands-on practice and the integrative team-based simulation as the most helpful elements of the workshop.

Discussion and Conclusions: Simulation-based training improves interprofessional role clarification and level of comfort participating in a Code Blue for junior learners. Fear of making a mistake in a Code Blue scenario is a prominent obstacle for learners and may reflect an area of intervention for pre-clinical simulation-based education.

Take-home Messages: Simulation-based resuscitation team training can improve understanding of team roles and confidence among junior healthcare trainees.

#EP4.9 - ePosters - Curriculum - Subjects

#EP4.9.1 (4506)

“Perceptions of the Clinical Learning Environment Among Nursing Students”

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ABSTRACT:

Background: It is widely acknowledged that learning environment (CLE) influence students’ possibilities to achieve learning outcomes and impact the development of their professional behaviors and attitudes. CLE involves areas where students apply theory to practice to gain knowledge about skills, attitudes and decision-making. Abilities necessary to achieve learning outcomes needed to become a competent health care practitioner. Previous research has shown that health professions students have high levels of stress and anxiety in the clinical learning environment which may affect academic performance and wellbeing. We have explored nursing students’ perceptions of the CLE to be able to better support their learning and development of their professional identity.

Summary of Work: A cross-sectional questionnaire study. The students were e-mailed an on-line questionnaire comprising 6 sections, of which the Undergraduate Clinical Education Environment Measure (UCEEM) was one. UCEEM investigates students’ perceptions of the invitational, organizational and pedagogical quality of the clinical learning environment in hospitals.

Summary of Results: 72 of 298 (24%) nursing students returned the questionnaire. The mean UCEEM score was 97.9 (range 26-130) which is considered good. Following items were rated high: Possibility to ask their supervisors questions (mean 4.1), Received in a positive way by the staff (mean 4.0), and Treated equally regardless culture and gender (mean 4.1 and 4.2, respectively). The lowest rating was given for Opportunity to learn with others (mean 3.1), Supervisor’s familiarity with the learning objectives and Preparedness for supervising (mean 3.2 and 3.6, respectively).

Discussion and Conclusions: Low scores for the supervisor’s familiarity with the learning objectives is troublesome since it is crucial that supervisors are well informed and prepared for supervising to enable learning activities in which students can apply knowledge and reflect teaching. Low scores for the opportunity to learn with others is equally worrying, interprofessional teams are essential in today’s health care.

Take-home Messages: Make sure the clinical supervisors know the learning outcomes and give students opportunities to learn with others.

#EP4.9 - ePosters - Curriculum - Subjects

#EP4.9.2 (6327)

Relationship between Quality of Life and Medical Professionalism in Medical Students

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ABSTRACT:

Background: Medical professionalism and good quality of life are essential goals for the production of medical graduates. A recent study showed that quality of life might be related to medical professionalism. This research aimed to study the relationship between quality of life and medical professionalism in medical students. The result of this study may help promote the effectiveness of the production of medical graduates.

Summary of Work: A cross-sectional descriptive survey was conducted in 2nd to 6th-year medical students of Princess of Naradhiwas University. The data were collected using an anonymous questionnaire consisting of 58 items, including part general information, part quality of life and part medical professionalism. The content validity of the questionnaire was checked by experts. The data were analyzed using descriptive statistics, Pearson correlation and simple linear regression analysis.

Summary of Results: Totally, 84 from 131 (64%) of 2nd to 6th year medical students completed the questionnaire. Participants were predominantly female (59.5%) with a mean age of 21.83 ± 1.61 years. Overall, quality of life was at a high level, with an average of 95.75 ± 12.21 scores. An average of medical professionalism was 161.08 ± 16.03 from 192 scores. Pearson correlation showed a significant moderate positive relationship between quality of life and medical professionalism ($p < 0.01$). The quality of life could also predict the degree of medical professionalism by the following equation: Score of Medical professionalism = $0.524 \times$ (Score of Quality of life), which can significantly explain 26.6% of the variance ($p < 0.001$).

Discussion and Conclusions: Quality of life is a moderate decisive factor for medical professionals and it can predict the degree of medical professionalism.

Take-home Messages: Improve medical students quality of life result in promoting their medical professionalism

#EP4.9 - ePosters - Curriculum - Subjects

#EP4.9.3 (4984)

Enhancing Student Cost-conscious Attitude and Perception in medical Education: Can you ESCAPE?

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ABSTRACT:

Background: Cost-conscious medicine is at the core of the standards for undergraduate medical education. Medical students have limited knowledge of healthcare costs for medical tests and procedures. Teaching about cost-conscious care to medical students is difficult. Institutions must develop expertise and build curricula while students must also be able to see the subject as relevant to a future career as physicians. Consequently, graduates may lack confidence in this area.

Summary of Work: We created an escape room, a serious game to empower medical students to integrate cost-conscious care into their decision-making during the critical thinking process, in one group rotation of the fourth-year in internal medicine clerkship. Students' attitudes and perceptions related to cost-consciousness and towards their medical curriculum were tested using multiple-choice, Likert-type questions.

Summary of Results: The response rate was 93%. Most of the students praised the escape room's interactivity and rated it highly for gaining new knowledge and skills and for increasing confidence to apply cost-consciousness concepts to future work. Almost all students (80%) agreed that trying to contain costs was their responsibility and that there is currently too much emphasis on the costs of tests and procedures (76%). A majority of respondents (63%) disagreed with statements that doctors are too busy to worry about costs and that the cost of a medication is only important if the patient has to pay for it out-of-pocket (53%). Notably, 72% of students felt that they had received too little training on cost-consciousness medicine and wished that their school would include more formal teaching. Seventy-four percent of students felt that it was important to their future careers as physicians.

Discussion and Conclusions: Escape room plays a role as constructivist instructional teaching strategies that can shape learning more powerfully than conventional teaching methods. They help learners understand the value of seeing problems from different perspectives, expose them to collaborative teamwork, promote engagement and persistence on task, strengthen social relationships, activate team spirit, and facilitate benefits of deep learning through group discussion.

Take-home Messages: An escape room can provide an enjoyable experience that engages students as active learners in the educational environment.

#EP4.9 - ePosters - Curriculum - Subjects

#EP4.9.4 (7114)

How does medical training change students' attitudes towards dementia?

AUTHOR(S):

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ABSTRACT:

Background: The world's population is ageing and the prevalence of dementia increasing. All doctors must be equipped to care for patients with this condition. Undergraduate medical teaching on dementia is variable. There have been limited studies into how the attitudes of medical students towards people with dementia change during training. This study explores how attitudes towards people with dementia differ between students at the start and end of undergraduate medical training.

Summary of Work: Questionnaires were completed by 133 first year and 106 final year students at a postgraduate entry medical school. Questionnaires included demographics and a previously validated Dementia Attitude Scale (DAS); a 20 item Likert scale. Items are combined to give a total DAS score and subdivided into two subdomains; knowledge and comfort. Semi-structured interviews were conducted with 5 final year students to explore how they felt their attitudes had changed during medical training.

Summary of Results: First year medical students achieved significantly higher scores in 6 of the 20 DAS items, the comfort subdomain ($p = 0.001$) and total DAS scores ($p = 0.017$). Thematic analysis of interview transcripts highlighted 6 themes, including; limited knowledge prior to medical school, interactions with people with dementia and positive role models improved attitudes, that further teaching was needed on communication skills and promoting positive attitudes and that despite training there was still negativity associated with dementia and geriatrics in general.

Discussion and Conclusions: The less positive attitude scores achieved by final year students may be influenced by exposure to a 'hidden curriculum'; the informal learning of attitudes through influence of role models and the clinical environment. Teaching that focuses on developing a positive learning environment for students e.g. by assignment of positive clinical role models and more interactions with people with dementia, either clinically or through more novel arts based interventions, may be beneficial in encouraging positive attitudes.

Take-home Messages: Attitude scores towards people with dementia were less positive in students finishing their medical training. Exposure to a 'hidden curriculum' during clinical placements may have a negative impact on students' attitudes.

#EP4.9 - ePosters - Curriculum - Subjects

#EP4.9.5 (5038)

Undergraduate training in Palliative Care: the effect of specialized and non-specialized rotations upon medical students' Thanatophobia and Self-efficacy in Palliative Care

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ABSTRACT:

Background: Internationally, chronic diseases have become the main cause of death and all doctors should be able to provide good palliative (PC) and end of life care. Although PC has been progressively included in the medical curricula of some medical schools, most of the students still do not have access to PC training. Including discussions of palliative care during clinical experiences, even without specialized supervision, may offer learning opportunities for senior medical students. We therefore evaluated medical students' self-efficacy in palliative care and thanatophobia levels as outcomes of PC education.

Summary of Work: We conducted an observational prospective study with two different cohorts of sixth-year medical students from two Brazilian medical schools. At medical school 1 (MS1; n=78), students care for end-of-life patients during the emergency medicine rotation for two months. Differently, at medical school 2 (MS2; n=56), students have lectures and a week of training in a PC outpatient clinic during their 3-week anesthesiology placement. We therefore assessed students' development, using the Self-Efficacy in Palliative Care (SEPC; range: 0-2300) and the Thanatophobia (TS; range: 7-49) Scales before and after their clinical placements.

Summary of Results: In both schools, the pre and post-test results of SEPC and TS showed difference in paired t-test ($p < 0.001$), with increase of students' self-efficacy (MS1: 525.59; MS2: 302.26) and decrease of students' thanatophobia (MS1: -5.00; MS2: -1.62) after their rotations. A comparative analysis between MS1 and MS2 students showed larger effect size in MS1 students considering 2 SEPC's domains (communication and patient management) and in TS.

Discussion and Conclusions: Our research results suggest that PC could be included in different clinical placements and bring benefits to students PC training, even in non-specialized rotations.

Take-home Messages: Palliative care should be included in different clinical placements, even without specialized PC services. It is possible to reach the Brazilian need in PC and prepare future doctors using our current health services if we make efforts to include PC principles during their training.

#EP4.9 - ePosters - Curriculum - Subjects

#EP4.9.6 (5911)

Perception Towards Different Skills of Good Communication of Clinical-year Medical Students at Srinakharinwirot University in Comparison to Their Academics

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ABSTRACT:

Background: Communication skills are one of the core clinical skills in medicine. While different communication skills are scatteredly integrated into lessons, it has yet to be established which skills are perceived to be the most essential in clinical practice. This research aims to assess the perception of clinical-year medical students and qualified-physicians (academics) of Srinakharinwirot university on the significance of different verbal and non-verbal communication skills.

Summary of Work: Two sets of questionnaires were constructed from literature review regarding good communication skills, one assessing the perception towards verbal communication skills and the other assessing the perception towards non-verbal skills, using Likert scale ranging from 1 to 5. 83 students and 30 academics were selected via convenience sampling.

Summary of Results: Both students and academics agreed that the most essential aspects of verbal communication included avoidance of using medical jargon and abbreviations (4.61 ± 0.58 vs 4.9 ± 0.31 respectively), providing moral support (4.54 ± 0.70 vs 4.83 ± 0.46 respectively) and detailed explanation of the patient's disease (4.61 ± 0.58 vs 4.73 ± 0.45 respectively). Regarding non-verbal communication, both students and academics concurred that maintaining eye contact (4.60 ± 0.60 vs 4.83 ± 0.38 respectively) and using appropriate facial expressions (4.69 ± 0.54 vs 4.8 ± 0.41 respectively) were the most significant modalities. On the other hand, medical students perceived that the least important verbal skill was occasionally laughing and joking while conversing with a patient (3.80 ± 0.99), while the least important non-verbal skill was the use of universal hand signs (3.63 ± 1.07). These perceptions were similarly reflected among academics (4.13 ± 0.94 and 3.47 ± 1.11 respectively).

Discussion and Conclusions: Students' good perception towards communication skills, in concordance with those of academics', were present before entering clinical phase. Hence, the emphasis should be on developing their skills in real clinical context and maintaining it throughout their clinical years. Considering this, the medical curriculum should integrate a course that specifically teaches essential communication skills, especially those highly-perceived by students and academics alike.

Take-home Messages: Correct perceptions toward communication skills were well-established in medical students before their clinical years. Training of such skills should be the main focus in their clinical years, where a well-organised communication skills course can be integrated into the medical curriculum.

#EP4.9 - ePosters - Curriculum - Subjects

#EP4.9.7 (4436)

Cadaveric anatomy teaching: An essential tool for reinforcing anatomical knowledge

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ABSTRACT:

Background: The position of cadaveric teaching within modern medical curricula has been under increasing scrutiny in recent years especially following the release of the GMC guidance, 'Tomorrow's Doctors' in 2009. The response of various medical schools following this was to lessen the time devoted to basic sciences, including anatomy. These changes have been linked to a reduction in trainee confidence and knowledge in key anatomical themes, with recent studies indicating that more than half of newly qualified doctors feel their anatomical understanding to be deficient.

Summary of Work: An anatomical teaching course was devised by dedicated anatomy staff from a UK medical school for recently qualified junior doctors using a traditional blend of cadaveric prosections. Eleven doctors were allocated into small groups, and rotated through themed stations; intended to encompass core anatomical knowledge. Each group received fifteen minutes of interactive teaching per station and progressed through a total of ten stations. Questionnaires pertaining to students' confidence in their anatomical understanding were distributed at the beginning and end of the course. The students' also undertook an anatomy 'spotter' examination before and after teaching delivery, to formally assess for improvement in their knowledge.

Summary of Results: The results suggested that both the students' confidence and their exam performance significantly improved after teaching delivery. Pre- and post-course spotter results revealed a 13.3% ($p < 0.0005$) increase in performance, whilst, internal student confidence and confidence in relation to colleagues at the same grade were increased by 63.1% ($p < 0.002$) and 68.2% ($p < 0.0002$) respectively.

Discussion and Conclusions: The results reported here underline the essential role that traditional cadaveric-based teaching holds in anatomical education. There was a statistically significant improvement in both anatomical understanding and confidence following one day of interactive cadaveric teaching. This data indicates that a move towards utilising cadaveric-based anatomical postgraduate teaching would bolster the confidence of newly qualified doctors in this crucial field.

Take-home Messages: Interactive, applied, cadaveric-based anatomy teaching can significantly increase newly qualified doctors' confidence and understanding in core anatomical concepts.

#EP4.9 - ePosters - Curriculum - Subjects

#EP4.9.8 (5488)

Introducing Fourth-Year Medical Students to Evidence-Based Medicine and Journal Club through an Online Elective: a Pilot Study

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ABSTRACT:

Background: Evidence-based medicine (EBM) is increasingly incorporated into undergraduate medical program curriculums; however, methods of teaching are varied and there continue to be challenges in teaching and applying EBM. In residency, journal club is the primary opportunity for residents to practice EBM, but at our institution there was no formal course in either EBM or journal club. We therefore sought to create an elective for fourth-year medical students that would introduce them to the principles of EBM as well as journal club.

Summary of Work: The curriculum was designed for fourth-year medical students using the GNOME Model. The course was four weeks long and took place online, aside from an in-person journal club session at the end of the course. A variety of teaching methods and assessments were used to achieve learning outcomes. Curriculum evaluation was determined using the Berlin questionnaire (a validated instrument for assessing knowledge and skills in EBM), student self-assessments, and satisfaction surveys.

Summary of Results: 50 students enrolled over 6 sections. All participants completed the self-assessment, reporting improved comfort performing various EBM-related tasks. The Berlin questionnaire also demonstrated higher scores on average. The satisfaction survey demonstrated high satisfaction with the individual components of the course and the overall instruction. Students appreciated the relevancy of the material and also found the online format to be conducive to their busy schedules. All students reported they would recommend the course to others.

Discussion and Conclusions: Based on performance exams and satisfaction surveys, this course appears to be informative and useful to students. It may be used as an example for successful teaching of EBM in a time-limited environment. Further studies are needed to determine if the material may be appropriate for other levels of education.

Take-home Messages: Students are interested in learning EBM and participating in journal club, and they value the flexibility afforded by online courses.

#EP4.9 - ePosters - Curriculum - Subjects

#EP4.9.9 (6751)

Effectiveness of Evidence-Based Nursing Training Program on Nurses Knowledge and Skills

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ABSTRACT:

Background: Evidence-based clinical care decision making is an important trend in modern medicine. The use of evidence-based care can improve the quality of patient care and meet the needs of the public for medical care, and can reduce the cost of medical care. Evidence-based nursing education has not yet become common in Taiwan. So it is expected to improve the ability of nurses through an effective teaching model. The main purpose of this research is to conduct evidence-based nursing training program of nurses by the integration of theory and practice, teaching and implementation, and goal-oriented learning methods, and to evaluate its effectiveness.

Summary of Work: The study subjects are nurses of in a public regional teaching hospital in Taipei. 24 trainees are selected by recommendation by the directors of various units and those who are interested in participating in the training courses. With training content designed diversely, integrating courses, implementation, oral and written reports, etc., to guide nurses to improve their knowledge and skills of evidence-based health care, and use semi-structured questionnaires to evaluate results through an anonymous approach.

Summary of Results: A total of 24 participants participated in the evidence-based nursing training program and completed the questionnaires. The average age of subjects was 34 years old. The results show that this training mode can improve cognition and skill, all groups completed oral and written reading reports, and the results were published in professional seminars.

Discussion and Conclusions: The research results affirmed that the teaching content designed by this evidence-based nursing training course not only allowed students to have coherent learning, but also achieved the results expected for this study. Therefore, it is recommended to continue the evidence-based support plan, continue to coach and track the evidence-based development, and develop habits in nurses to actively search for problems and verify with literature, so that it is possible to truly develop and implement evidence-based care.

Take-home Messages: Through training courses, nurses can effectively improve their cognition and skill of evidence-based nursing, and also enhance their ability to ask evidence-based nursing questions, data search, rigorous review of literature, and result presentation.

#EP4.9 - ePosters - Curriculum - Subjects

#EP4.9.10 (5081)

Barriers toward evidence-based medicine practice among medical learners: a systematic review

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ABSTRACT:

Background: Although the concept of evidence-base medicine (EBM) has been widely accepted in healthcare professions, the promotion of EBM still faces a lot of barriers in clinical and educational settings. This study aims to review the recent studies concerning the barriers of practicing and learning EBM among medical learners.

Summary of Work: A systematic review of fifty-two articles was conducted. Articles in English or Mandarin reporting the barriers medical learners had encountered while applying EBM, and coming up with solutions to those barriers identified were included. The following six electronic databases were searched: MEDLINE, PubMed, Embase, ERIC, SCOPUS, and Web of Science, between 1999 and 2019.

Summary of Results: Forty-two original articles, composed of 30 quantitative studies, 11 qualitative studies and 1 mixed study, and 10 review studies were included. The results were divided into two parts: 1) medical learners' attitude, and knowledge toward EBM, and 2) the barriers they faced with. The barriers were categorized into 4 parts: evidence, the medical learners' preferences and expertise, the patient's situation, and the medical learners' setting.

Discussion and Conclusions: Most available studies focus on doctors. Despite the increase in recent 5 years, there is less study about medical students. Besides, most are done in Asia. Many studies show medical learners have positive attitudes and belief. However, there are barriers stop them from practicing EBM. The barriers mentioned most include: evidence, and the medical learners' setting. Lack of time, skills and resources and the difficulties of application are the main concerned. Despite the positive attitude and belief toward EBM, the barriers of EBM practicing, such as lack of time, skills or resources and the difficulties of application remain to be overcome. However, few applicable solutions to the known barriers are raised. Besides, whether those solutions could be adopted worldwide remains further studies.

Take-home Messages: The barriers toward EBM practice among medical learners are categorized into 4 parts: evidence, the medical learners setting, the medical learners' preferences and expertise, and the patient's situation. The barriers mentioned most belongs to the former two parts. We suggest interventions that help overcome the known barriers are needed.

#EP4.9 - ePosters - Curriculum - Subjects

#EP4.9.11 (5573)

Using critical incident reports to assess pre-clinical students' cognition and anxieties about ethical issues in medicine

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ABSTRACT:

Background: Critical incident reports (CIR) have been effectively used to assess the understanding of ethical problems by students of various healthcare professions during their practicum. In this study, we evaluated their application to pre-clinical students in Taiwan.

Summary of Work: Fourth year students (out of a six-year medical education program) taking the compulsory Medical Jurisprudence course were required to select an incident from the media to rewrite as a structured CIR for their term paper. We used content analysis to assess the ethical dilemma presented and the students' ethical beliefs, emotional responses, and action intent.

Summary of Results: In the 88 effective reports, the main ethical dilemmas presented were "doctors' neglect of duty" (34%) and "doctors' professionalism clashing with the beliefs of patients and/or their family" (34%), while the biomedical ethics principle most commonly reflected was that of respect for autonomy (57%). Concerning students' ethical beliefs, "doctors should possess professionalism" (57%) and "medical decisions should be patient-centered" (52%) emerged most. In terms of emotional responses, most students felt empathy for the patients (72%) and helplessness towards the family (47%) and the doctors (65%). As for their intention for action, students mostly viewed the incidents as reminders to themselves about ethical issues they might encounter later on in practice (52%).

Discussion and Conclusions: Despite their lack of personal experience as shown in the rates of blank responses about their emotions towards patients, their family, doctors, and themselves (from 23 to 88%), pre-clinical students demonstrated basic knowledge and competence in dealing with ethical issues after the course. Through this exercise, we also discovered our students' preferences for choosing certain topics in medical ethics (which reflected their anxieties about medical litigations in their future career) and some of their shared ethical beliefs. We found that the incidents students chose focused least on the principle of justice (20%) and it may reflect an inadequacy of the course content. Despite so, we believe that this exercise would be valuable for students later on when they encounter ethical issues in their clinical training and practice.

Take-home Messages: Critical incident reports are useful for pre-clinical students to consolidate and apply their understanding of basic medical ethical principles.

#EP4.9 - ePosters - Curriculum - Subjects

#EP4.9.12 (5538)

Medicine and Humanities International Program: an experience of teaching Humanities in Medicine

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ABSTRACT:

Background: The Medicine and Humanities International Program (MHIP) brings together the teachings of Medical Humanities in different cultures and contexts. It is a cooperation program involving medical students of four universities: the University of Lyon (France), the University of Ottawa (Canada), the Jiao Tong University of Shanghai, and the University of Traditional Chinese Medicine of Shanghai (SHUTCM) (China). The University of Lyon organized the program's second summer school in 2018.

Summary of Work: The MHIP summer school is organized annually by one of the partner universities and lasts two weeks. All students were undergraduates. Almost all students spoke English, and French was spoken by 85% of the students. Activities were conducted in French, with simultaneous translation in Chinese. Courses included history, communication, psychology, haptonomy, art, botany, and were dispatched in workshops, lessons, round tables, and visits. An assessment booklet was given to the students, who were asked to complete it as they went along. We evaluated student satisfaction and explored how language, culture, and teaching format affected learning.

Summary of Results: Students enjoyed the course, with variation depending on university of origin: students from Jiao Tong gave the most positive assessments of the summer school. Students from SHUTCM reported translation problems, more so in the lessons than the workshops. Ottawa students rated the summer school well but with more critical comments. The best rated form of teaching was the workshops, which allowed maximum student interaction and translation by peers. The most enjoyed and best rated courses for usefulness and knowledge progress were those that developed collaboration and team dynamics.

Discussion and Conclusions: Several issues of medical education were emphasized in this program: relevance in different health systems, activities in different languages, individualization and feedback in foreign countries. More initiatives are needed to develop humanities teaching in medical schools.

Take-home Messages: If you want your international humanities course to be a success, include your students! Make them collaborate, seek workshops and small group sessions and be creative.

#EP4.9 - ePosters - Curriculum - Subjects

#EP4.9.13 (4843)

What impact does ultrasound teaching in the undergraduate curriculum have on medical student's learning? A Literature Review

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ABSTRACT:

Background: Ultrasound teaching (UST) has been successfully integrated in to the undergraduate medical curriculum internationally, acting as an effective teaching adjunct to improve student's anatomical and physiological knowledge and support practical skills development. However, there is insufficient evidence supporting the beneficial claims of UST, and logistical complications and high costs risk out-weighting potential benefits. To our knowledge, the University of Leeds medical school is the first in the UK to introduce UST throughout its undergraduate curriculum. The aim of the review is to assess the literature evaluating the integration of UST in the undergraduate curriculum.

Summary of Work: The databases used: OVID, AMED, CAB abstracts, Embase, OVID Medline and Leeds university Library Journals & books. The search terms ('ultrasound teaching AND undergraduate OR medical students', 'ultrasound AND pocus AND hands-on AND medical students') yielded 43 papers. Relevant studies were extracted from the first 4 pages of a Google Scholar search. Papers were excluded if they were conference abstracts, focused on ultrasound theory or included postgraduate education.

Summary of Results: Three broad themes were uncovered; (a) enhanced anatomical understanding, (b) supporting clinical skills development and (c) other wider benefits (including improved diagnostic skills, and knowledge of physiology). The effect of UST on anatomy teaching was largely positive, with students scoring up to 96% higher in anatomy tests(2). Students scored highly on clinical skill examinations (average 8.71/10, n=136)(3) and demonstrated improved examination technique(4). Students described UST as 'useful' (98%, n=330)(5), that it had 'increased [their] confidence performing invasive procedures' ((92%, n=109)(6) and was considered 'important for future clinical practice' (79%, n=18)(3).

Discussion and Conclusions: Both anatomy and clinical skills teaching appeared to yield the greatest benefit from UST, particularly for teaching cardiac(1) and reproductive anatomy(2),. However, there was a general overreliance on subjective assessments, making the findings difficult to verify. Additionally, traditional methods outperformed UST in objective MCQ examinations during MSK teaching(7). Consistently, studies showed that students valued the addition.

Take-home Messages: UST can act as a positive adjunct to anatomy and clinical skills teaching. However, benefits are limited to the teaching of some systems over others. More work needs to be done to investigate impact on knowledge retention and skills performance.

#EP4.9 - ePosters - Curriculum - Subjects

#EP4.9.14 (6135)

Leadership in the undergraduate curriculum: the knowledge and skills of undergraduates from different professional programmes.

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ABSTRACT:

Background: Healthcare requires distributed leadership and in the UK, there is a National Health Service Leadership Academy open to all practitioners. St George's University of London is a specialist healthcare university, with undergraduate programmes in many healthcare professions. We undertook a review of the content of all healthcare undergraduate degrees for embedded leadership content and ran focus groups with undergraduates exploring their leadership competencies and views of leadership teaching.

Summary of Work: All healthcare undergraduate curricula documentation were scoped and mapped to the five competencies of the Medical Leadership Competency Framework (MLCF). Scenarios were developed to testing each of the MLCF competencies. Undergraduates from all Courses were invited to focus groups. 25 undergraduate participants in three focus groups were invited to respond to the scenarios, asked about the leadership teaching they had encountered, and their views on leadership skill development. The focus group output was thematically analysed.

Summary of Results: Across the eight courses, curriculum mapping showed significant teaching and experience of some competencies within all courses: particularly 'demonstrating personal qualities', 'teamworking'; with minimal content in 'managing services', 'setting direction' or higher order skills e.g. advocating change. Identified leadership content was rarely signposted to students. The students struggled with scenarios focused on competencies with minimal content teaching. Themes from the focus groups included: ambivalence about leadership teaching for undergraduate courses and identity; desire for integrated theoretical, reflective and experiential learning; a desire for interprofessional learning; need for a leadership vision and uncertainty as to whether leadership can be 'taught'.

Discussion and Conclusions: Distributed models of leadership for the delivery of high-quality healthcare requires junior healthcare practitioners from all disciplines to be aware of, and develop, all leadership competencies, but this is challenging given the limited role of students in delivering health care. Leadership development needs to be articulated, taught in an integrated fashion on all healthcare courses, and ideally would be interprofessional.

Take-home Messages: Undergraduate healthcare students are taught some leadership competencies but do not recognise them as such Undergraduate healthcare students are ambivalent as a group about leadership development in curricula and whether it can be taught. Undergraduates would like interprofessional, experiential, and integrated teaching and learning on leadership competencies.

#EP4.9 - ePosters - Curriculum - Subjects

#EP4.9.15 (6499)

Conducting an Environmental Scan to Support the Development of a National Undergraduate Curriculum on Pain Management, Addictions and Substance Use Disorder

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ABSTRACT:

Background: The Association of Faculties of Medicine of Canada (AFMC) undertook a substantive initiative, supported by Health Canada titled the “AFMC Response to the Opioid Crisis” aimed at developing a national, online curriculum for future physicians in pain medicine and substance use. This curriculum will support Canadian medical schools in meeting their social accountability mandates, and will contribute to improving clinical practice for patients in pain and addressing the opioid crisis across Canada.

Summary of Work: To identify the gaps in current curricula offered by Canadian medical schools, two Environmental Scans were conducted to compile a comprehensive list of educational offerings in pain medicine, substance use and addictions. The first scan contained UGME, PGME, and CPD coursework from the 17 Canadian medical schools. A second independently-conducted scan extended to national and international programming, public health and patient organizations, and literature. Additional analysis and synthesis of Canadian UGME, nursing and pharmacy curricula completed the scan.

Summary of Results: The scan analysed 78 programs and produced 5 key findings: a methodological framework to identify programs with the most comprehensive offerings aligned to the planned curriculum mandate; a competency model that best fits the mandate; variables to set scope for the curriculum; a list of best practices in pain program outcomes, and, validated tools that could be used to provide standardized metrics for analysing evaluation data.

Discussion and Conclusions: Environmental scan methodology is a rigorous approach to identify best practices and gaps in educational programming, and provides robust evidence for stakeholders to guide the development of a comprehensive, standardized curriculum. Integration of results of the environmental scan have been translated into the developing curriculum.

Take-home Messages: Knowledge translation from environmental scan to curriculum is an important step in curriculum development

#EP4.9 - ePosters - Curriculum - Subjects

#EP4.9.16 (6983)

Professional year at FMUL: students and residents perceived autonomy in achieving learning outcomes - curricular implications

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ABSTRACT:

Background: Medical schools through their curricula play a major role in the success of the newly graduated doctors, being socially responsible for offering the best opportunities for students to develop the knowledge, skills and attitudes expected from a highly professional doctor. At FMUL, the sixth-final-year is a professional year with well-defined transversal and specific competences to be acquired in all rotations (Surgery/Medicine/Paediatrics/Obstetrics-Gynaecology/Family-Medicine/Mental-Health), being a decisive medical education milestone mainly in preparing to the transition from the academic years to professional practice. The objectives of the study are: to identify the perceptions from 2018/2019 final-year students and first-year residents on their autonomy (scale: 0=null/1=low/2=medium/3=high) concerning the curricular competences requiring the highest degree of autonomy, number of opportunities to practice them, reasons for insufficient practice and suggestions for improvement.

Summary of Work: The 118 competences requiring the highest degree of autonomy were identified. An anonymous online-survey was sent to all participants (n=724) inquiring about their perception on study objectives. Response rate was ≈13%.

Summary of Results: Higher autonomy was reported on the transversal competences common to all rotations (1.9) and Paediatrics (1.7), while Medicine (1) and Surgery (0.9) were the rotations with lower perception of autonomy. Paediatrics is the rotation offering more practice per competence (average=5.6), with Mental-Health, Medicine and Surgery being the rotations with fewer opportunities (average=2.9-2.9-2.6). A very high correlation ($r^2 \approx 95$) was found between perceived autonomy and opportunities to practice. Regarding the reasons for insufficient practice, 89% answered that they had no contact with the required competency. Participants also suggested 10 competences to be introduced/removed and alerted for 28 competences not clearly defined.

Discussion and Conclusions: Despite the low response-rate, a study limitation, the very high correlation seems to indicate the insufficient practice as a major factor for a low perception of autonomy. According to this result, improvement is needed in order that rotations can guarantee the necessary practice to allow students to achieve the expected autonomy.

Take-home Messages: It is essential to: • increase practice opportunities • review the curriculum – relevance, clarity and missing competences

#EP4.9 - ePosters - Curriculum - Subjects

#EP4.9.17 (5583)

Teaching palliative care through active methodology at a Brazilian medical university

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ABSTRACT:

Background: Palliative Care is a set of measures that shall be provided by a multidisciplinary team aiming to improve the quality of life for a sick person and their relatives, alleviating and preventing suffering in the face of a severe illness.

Summary of Work: Teaching palliative care competences are important for medical student's experience, but not well exercised during medical formation. For this reason is necessary to introduce to the medical curriculum the palliative care reinforcing the importance of the theme by reflecting the good care of a patient, covering global pain, physical, spiritual, socially and emotionally of a seriously ill patient and her families. For this reason an active method was implemented to improve this important theme in the university.

Summary of Results: The active method was establish by using different clinical cases that involved palliative care and simulation to improve and train skills in clinical practice using the ability of communication, empathy and logic by using actors as patients and as family members. The class was divided in four stations with five students in each one. The cases were: 1-Pediatric patient with neuromuscular disease 2-Adult patient with terminal cancer 3-Neonatal patient with Edwards Syndrome with major heart disease 4- Elderly patient with Alzheimer disease.

Discussion and Conclusions: During the simulated cases, the students should have taken the attitudes of the doctor, aiming not only diagnosis or treatment but mainly palliative care principles conducts with multidisciplinary team for the patient and familiars. Check lists were discussed to certify the learning of the content. To conclude the class, all the students are gathered for debriefing where the game "cards on the table" (Go Wish®) used by the Brazilian Society of Geriatrics and Gerontology, through Permanent Palliative Care Commission, where they could promote the dialogue about death and what are the perceptions and expectations that people have regarding the perspective of the end of life. The feedback was very positive, evolving self experiences, new perceptions and attitudes that needed to be changed.

Take-home Messages: -Palliative care should be introduced into the curriculum at medical universities
-Simulation and thinking about the end of life as a methodology seems to be effective for learning palliative care

#EP4.9 - ePosters - Curriculum - Subjects

#EP4.9.18 (5312)

Research interest among residents at the University Medical Center

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ABSTRACT:

Background: Research projects are not a requirement in residency training standards in Kazakhstan. Since September 2018, a research project became part of University Medical Center (UMC) residency program. The aim of this study was to understand residents' attitudes and their perceived barriers towards research during the residency program at the UMC.

Summary of Work: In January 2020, we surveyed anonymously 1st to 3rd year residents at UMC about their engagement and interest in research activities. The survey was mainly based on questionnaire used in the study by Stockfelt et al. (Research interest and activity among medical students in Gothenburg, Sweden, a cross-sectional study, 2016) with authors' permission.

Summary of Results: Out of 67 residents registered with UMC residency program, 60 residents completed the questionnaire, corresponding to a response rate of 89.6%. 76.8% of respondents were female, the median age was 26 years (age range – 24 to 30). Average resident score for research interest on a scale from 1 (little interest) to 10 (greater interest) was 7.6. Of the respondents, 35.0% were conducting research, 56.7% - interested in conducting research, 8.3% - not interested in conducting research. Major incentives for residents engaged in research were an interest in scientific problems, personal development and acquiring new skills. The most reported barrier among residents who did not conduct but were interested in research was lack of time (71.9%), followed by lack of information (40.6%), insufficient financial compensation (37.5%) and shortcomings in clinical environment such as lack of research labs, supervisors (34.4%). A majority of 93.1% residents reported that they would like to receive more training on research methodology and biostatistics during the residency program. 60% of residents considered pursuing doctoral studies in the future.

Discussion and Conclusions: The study shows that residents at UMC have positive attitude towards research activities. The results suggest that providing information on research opportunities, filling the core skills gap and building strong connections between residents and scientific communities can contribute to higher scholarly engagement among residents.

Take-home Messages: Addressing barriers at the institutional level is important to driving research during residency and preparing clinician researchers for the future.

#EP4.9 - ePosters - Curriculum - Subjects

#EP4.9.19 (6108)

What stops me from doing quality research as an Ibadan Medical Student?

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ABSTRACT:

Background: Early introduction of research training into medical school curriculum is a proposed solution to the current shortage of physician-scientist in healthcare. While the medical curriculum at the University of Ibadan encourages research involvement among medical students, participation is not compulsory and publication is not required. We evaluated the experience and barriers to research among medical students at a time the curriculum is being reviewed.

Summary of Work: Non-final year (second to fifth year) medical students were recruited into this study. The students were asked questions on their research experience and barriers to research. 8 items on a 5-point Likert-type scale were used to evaluate research skills acquired from their research experience. 9 items on a 5-point Likert-type scale were used to assess barriers to research.

Summary of Results: 343 medical students (response rate 53.8%) took part in this survey. Majority (139, 40.6%) of them read journal articles once in a while and 126 (36.8%) almost never read journal articles. Only 93 (27.1%) students have been involved in a research project. The research experience of these students taught them how to formulate research questions (94.6%), analyze data (83.9%), critically review existing literature (93.5%), and prepare a manuscript (74.2%). 84.9% of these students are motivated to pursue further research. Only 20 (5.8%) students have any research publications (total of 24). Only 12 (3.5%) students have made presentations (total of 15) at scientific conferences. The barriers to research among the students include inadequate curriculum training on research (97.9%), inadequate research skills (96.8%), lack of time (96.5%), difficulty finding mentors (96.2%), and lack of research self-efficacy (92.7%).

Discussion and Conclusions: There is low research participation among non-final medical students at the University of Ibadan and only a few of those involved in research publish or present their findings. However, those with research involvement reported acquisition of important research skills and are motivated to do further research.

Take-home Messages: Medical schools curricula should make research participation mandatory for medical students and faculty mentorship and support should be provided. Measures should be implemented to mitigate the barriers to research participation among medical students.

#EP4.9 - ePosters - Curriculum - Subjects

#EP4.9.20 (4496)

THE APPLICATION OF AN ULTRASOUND EDUCATIONAL AND SIMULATION PROGRAM INTO PRECLINICAL UNDERGRADUATE MEDICAL EDUCATION CURRICULUM TO DEVELOP DIAGNOSTIC AND CLINICAL REASONING SKILLS

AUTHOR(S):

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ABSTRACT:

Background: POCUS (Point-of-care ultrasound) is quickly becoming the most useful diagnostic technology at the bedside. We instituted a novel ultrasound curriculum during basic sciences education to prepare undergraduate medical students for careers in clinical medicine. Early introduction to healthcare technology such as ultrasound can equip students with an advantage during diagnostic workup in a clinical setting.

Summary of Work: We created a workshop that focused on the clinical applications of the FAST exam (Focused Assessment with Sonography in Trauma), indications/contraindications of this diagnostic study, and how to interpret results. Vimidex and SimMan3G were used and we created a post-mono-nucleosis splenic rupture case where a FAST exam is indicated. Faculty development, live feedback, and video review were used to collect data. We measured appropriate ordering of test, length of time taken to order, and student's ability to identify free fluid on the results. Student knowledge of ultrasound was assessed using MCQ in a pre-activity quiz.

Summary of Results: Our first workshop cohort had 25 students. 21/26 students who attended the workshop answered all pre-quiz questions correctly compared to 6/43 students in the control group. During simulation 5 randomized groups ordered and positively identified free fluid, each had at least one workshop participant. Three control groups ordered FAST correctly but were unable to identify free fluid. There were no workshop participants in these groups.

Discussion and Conclusions: Studies indicate a need for national standards to guide the integration of ultrasound education into U.S. medical school curricula. Our study offers a new educational model on how to implement ultrasound into an existing curriculum and tests its' own effectiveness through multiple modalities. We now provide FAST, abdominal ultrasound, and echo workshops for basic science students at our institution. In the spring, a new cohort of >140 students will enroll in the mandatory medical simulation and provide expanded results of our workshops effectiveness.

Take-home Messages: Ultrasound as a diagnostic tool is being integrated into curricula throughout the US and internationally. Introducing this clinical-based skill in the pre-clinical curriculum has many positive effects for medical students and allows them to apply medical and clinical knowledge with technology. This can create a positive impact for patient care during clinical encounters.

#EP4.9 - ePosters - Curriculum - Subjects

#EP4.9.21 (7210)

Integration of 3D CT images in pre-clinical anatomy teaching: How can we maximise the use of diagnostic imaging tools today?

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ABSTRACT:

Background: Understanding anatomy is central to medical and veterinary education. Teaching anatomy is rapidly evolving mainly due to: reduced contact time, teaching spaces and limited access to cadavers. In new curricula, integration of clinically relevant material in preclinical years is essential to understand anatomical structures and their appearance radiographically. The advancement of digital technologies (photometry, CT and MRI imaging) and their increased availability within institutes are modalities for anatomy teaching to be more interactive. The aims of this project were to: i. Expose preclinical students to CT images/scan data, allowing greater appreciation of normal anatomy and acquisition of interpretation skills; ii. compare the learning impact of 3D CT imaging techniques with traditional 2D radiography; iii. investigate the correlation between the students' utilisation of CT scan/images and their learning performances. iv. determine whether integration of CT scan/radiology contents in preclinical years changes students attitudes and knowledge of radiology in clinical years.

Summary of Work: We have created an interactive virtual library of 3D constructed models of body parts using CT-scans of cadavers and live animals using RadiAnt DICOM Viewer 5.1.1. This pilot project, focused on augmentation of 3D anatomical models for use via our VLE platform. Feedback from students was recorded at the end of the course via anonymised questionnaire using Likert-type scale and open-ended questions.

Summary of Results: Initial feedback indicated that provision of interactive virtual 3D models in anatomy teaching enabled students to gain more control and effectively work in a collaborative manner. Student feedback is mainly positive, appreciating this resource as a valuable addition to existing teaching methods.

Discussion and Conclusions: Whilst it is possible to create a high-quality virtual library of 3D models from CT-scan, there are challenges dealing with such data and we offer solutions. Students found this resource more interactive and effective learning experience and would like to see more 3D models available. Additional longitudinal studies over multiple cohorts are required to establish statistically significant results and develop this resource further.

Take-home Messages: Combined with latest software, modern diagnostic modalities can be used innovatively to create useful learning resources to augment with dissections and dry practical in modern curricula.

#EP4.9 - ePosters - Curriculum - Subjects

#EP4.9.22 (7087)

Are students accepting of formative digital anatomy assessments? Evaluation of a pilot intervention supplementing physical cadaveric spotters with digital cadaveric spotters

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ABSTRACT:

Background: Anatomy education is more than teaching delivery. It incorporates assessment, where formative assessment can provide learners with useful feedback to guide learning and summative assessment with overall accountability. Practical assessments - formative and summative anatomy spotters - are widely utilised as assessment tools, and there is a need to critically evaluate whether technology-enhanced assessment modalities enhances this area of anatomy education. We set out to perform the early phases of such a critical evaluation, grounding it in student experience and making no assumptions of the superiority of technological enhancements over 'traditional' methods. We sought student acceptability of the new assessment format to start the iterative process of developing existing cadaveric sessions.

Summary of Work: During 2020, first-year dental and oral dental hygiene students' physical cadaveric spotters were supplemented with formative digital spotters. Grounded in evidence-base from a literature review, and utilising Kirkpatrick's evaluation model for medical education and elements of Van der Vleuten's Utility of Assessment framework, the acceptability of digital spotters was evaluated through a pilot cross-over study, free-text questionnaire responses and focus group discussions.

Summary of Results: Provisional thematic analysis of data indicates that students were broadly accepting of the digital format, where it was possible to proceed through the spotter at one's own pace, zoom into images and utilise digital resources to supplement knowledge. Physical cadaverics anatomy features in summative spotters; consequently, students value the multidimensional aspect of these spotters, where it is possible to utilise all senses in the dissecting room.

Discussion and Conclusions: Previous exposure to solely cadaveric anatomy spotters enabled students to provide insightful comments on the newer digital spotter format. Conflicting views among educators about technological interventions in anatomy education necessitate evaluating digital assessment interventions before their widespread integration into curricula. The 'test effect', whereby assessment drives student learning, underscores the need to create assessments reflecting the teaching environment, particularly when teaching methods incorporate technological enhancements but subsequent assessments do not.

Take-home Messages: • Students are mostly accepting of formative digital anatomy spotters. • Digital spotters require considerable investment to make them acceptable to students. • Students continue to value several aspects of physical cadaveric spotters.

#EP4.9 - ePosters - Curriculum - Subjects

#EP4.9.23 (4836)

Identification and Proposal of a Threshold Concept in Anatomy Learning

AUTHOR(S):

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ABSTRACT:

Background: The subject of anatomy is fundamental for both medical and veterinary professionals, it is a corner stone of both disciplines and a sound understanding is important for practitioners. However, anatomy is a difficult subject to understand and the challenges of the 3D nature of anatomy have been researched in relation to a learner's spatial ability. Threshold concepts are a relatively new area of research and describe aspects of a topic which once understood carry a student over an irreversible threshold of understanding. So far, no specific anatomy threshold concepts have been described.

Summary of Work: To investigate students' views on the learning of anatomy in relation to spatial ability, two cohorts of UK first-year undergraduate veterinary students each received a 2D or 3D teaching method and focus groups were conducted at the end of teaching. The transcripts of the focus groups were thematically analysed to identify semantic themes with an essentialist/realist epistemological view. The primary aim of the focus groups was to investigate student views specifically of spatial ability and its relationship to anatomy.

Summary of Results: The main themes identified by the researcher from the thematic analysis were 'thinking spatially and having a 3D sense of anatomy is difficult and challenging', '2D helps for knowledge, not for figuring out anatomy', and '2D helps for knowledge and memorisation'. Interestingly from the outcome of these discussions a threshold concept was identified primarily on the challenge's students faced when asked to think of anatomy in a 3D format during an assessment, but once realised students voiced an irreversible turning point in their learning.

Discussion and Conclusions: Currently, there is no known method for identifying threshold concepts, although, there are guidelines on what constitutes a threshold concept (transformative, irreversible, integrative, bounded, and troublesome). The findings from this research led to the proposal that the spatial, 3D thinking of anatomy is a threshold concept.

Take-home Messages: The learning of anatomy is difficult and challenging due to its 3D nature, however once a learner has unlocked exactly what thinking spatially about anatomy means, they cross a one-way threshold that transforms their thinking.

#EP4.9 - ePosters - Curriculum - Subjects

#EP4.9.24 (5983)

Doctors understanding of patient safety reporting systems - education can improve engagement.

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ABSTRACT:

Background: Incident reporting is integral to improving patient safety within healthcare. Healthcare professionals' engagement and attitude to reporting varies and one group, junior doctors, have been found to report less than others. Explanations suggested include: fear of blame, the inevitability of error, suspicion of management, and reporting not being a doctor's job.

Summary of Work: To encourage positive attitudes to reporting, a lecture, aligned to postgraduate medical curriculums, focussed on patient safety, incident reporting and investigations, was designed and delivered. Understanding and knowledge of the topic was assessed before and after the lecture, using a Likert scale questionnaire.

Summary of Results: The lecture was delivered on three occasions as part of teaching organised across a large London NHS foundation trust. Participants included Foundation year 1 and 2 grades, Core and Specialty trainees, and Junior and Senior clinical fellows. 34 pre-course and 26 post-course questionnaires were completed. 9/34 (26.5%) strongly agreed that they understood why submitting Datix reports was important pre-lecture, 13/26 (50%) strongly agreed post-lecture. 9/34 (26.5%) did not know how to complete a Datix form pre-lecture, 24/26 (92.3%) stated they did post-lecture. 22/34 (64.7%) of participants did not understand the Serious Incident investigation process beforehand, 24/26 (92.3%) indicated they did post-lecture.

Discussion and Conclusions: This work demonstrates gaps in junior doctors' knowledge of reporting systems and clinical governance processes. This echoes findings elsewhere. The NHS Patient Safety Syllabus, published in July 2020, acknowledges that the safety of patients is integral to individual practice, but formal education in this subject is scarce. This document provides a syllabus to inform formal education training offers, and improve this knowledge. Our work supports this view. Limitations include a lack of long-term follow-up. We do not have evidence of changes in reporting rates after the lecture. In addition, the nature of junior doctor work-schedules makes it difficult to deliver this teaching to all trainees. However, by continuing to provide the lecture we will improve education on the process.

Take-home Messages: 1. There is a gap in the formal education of junior doctors in reporting systems and clinical governance processes 2. Lecture based teaching is effective in improving understanding and knowledge in this area

#EP4.9 - ePosters - Curriculum - Subjects

#EP4.9.25 (6405)

Nutrition Education: a neglected topic in the GP curriculum?

AUTHOR(S):

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ABSTRACT:

Background: In an age when obesity, chronic diseases influenced by dietary choices and issues with food form a significant area of patient management, learning about diet and nutrition is key to enable GPs to give patients accurate information and health advice. It was therefore concerning to discover that final year GP trainees reported having received little or no training about nutrition during their undergraduate and postgraduate education (13/18 (72%) had not received any). They felt ill-equipped to advise some patient groups (menopausal, renal failure, individuals observing Ramadan), and time /lack of detailed knowledge were seen as barriers to this aspect of care. A clear learning gap was identified.

Summary of Work: To address this, we planned a session using a carousel format covering three common areas: basic diets for managing chronic diseases such as diabetes and coeliac; weight loss advice and how to give it to promote behaviour change; Integrative Medicine approaches that are useful in everyday general practice. Health promotion and wellbeing advice is an important aspect of clinical practice for GPs in order to promote a healthy lifestyle to patients. This poster describes an educational session to support GP trainees in being confident in doing this.

Summary of Results: After the session, the registrars completed a survey to reflect on their learning and future needs. They reported improved confidence in advising specific patient groups, in engaging in such conversations and awareness of resources.

Discussion and Conclusions: The pre-session survey revealed a range of aspects of learning about nutrition that registrars found challenging. Knowledge acquisition and having the interpersonal skills to broach this topic were the result of the education session. Future development of the session could see the development of scenarios /consultation simulation.

Take-home Messages: Nutrition is an important area of education for GP trainees to ensure they are equipped to promote wellbeing and wholistic healthcare advice.

#EP4.9 - ePosters - Curriculum - Subjects

#EP4.9.26 (6054)

Leading for Improvement: a pilot teaching intervention for leadership development in undergraduate medical students

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ABSTRACT:

Background: The United Kingdom National Health Service recognises the need for Systems of Improvement, and the critical role of effective clinical leadership. The General Medical Council requires newly qualified doctors to recognise their role in 'contributing to the management and leadership of the health service' and 'promoting activity to improve the quality and safety of patient care', though Junior Doctors reported often feeling unprepared for this aspect of their job. We created a teaching intervention, aimed at final year medical students enabling development of core leadership skills and behaviours.

Summary of Work: The course was designed around the Faculty of Medical Leadership and Management's 'Indicative Undergraduate Curriculum' and run as a pilot with volunteer students. It was a brief intervention comprising of i. pre-session content focussed on the 'Personal Qualities' competencies including self-directed learning and reflection, and ii. a face-to-face session employing simulation and team-based exercises focussing on the competencies 'Improving Services' and 'Setting Direction'. Evaluations looked for improvement at all levels of the Kirkpatrick Model, gathered at baseline and post-intervention.

Summary of Results: The pilot was run on 3 occasions with 21 students in total, rating the course 'Great' or 'Excellent' (58%), as having achieved the pre-defined learning objectives (86%) and better equipping them to take on more leadership roles (77%). Average scores from the Quiz were greater in those taken after the course (+7.72, +17%). Self-reflections done after the course showed on average an increase in self-ratings of their ability in 9 of the 10 areas questioned.

Discussion and Conclusions: Overall the pilots demonstrated positive change in the knowledge, skills and attitudes of students towards Leadership in Medicine. Students found the format of the teaching engaging and effective with the majority describing take home messages in keeping with our objectives in designing this course. This teaching course will be rolled out to a full cohort of final year medical students in the coming academic year.

Take-home Messages: Pilot interventions of the 'Leading for Improvement' course have received good feedback and shown promise in changing the attitudes of, and stimulating the development of leadership qualities, in undergraduate students

#EP4.10 - ePosters: Curriculum - Planning

#EP4.10.1 (4216)

Pilot study of a longitudinal integrated disaster and military medicine education program for undergraduate medical students

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ABSTRACT:

Background: Modern health systems have to respond to a wide variety of catastrophic scenarios. Disaster medicine education in medical curricula is scarce and frequently absent. It is reasonable to initiate educational approaches for physicians in this field at the medical school level, particularly in a military medical school. An understanding of disaster medicine and the health care system during massive casualty incidents is vital to a successful disaster response and has been recommended as an integral part of the medical curriculum in the United States and Germany.

Summary of Work: We aimed to develop and evaluate the reformed longitudinal disaster and military medical education program in undergraduate medical students in a military medical school. The goal of the reformed curriculum was to develop a longitudinal integrated disaster and military medicine education program that extended from the first year to the sixth year, based on the previously separated clinical and military medicine topics. Emergency medicine physicians, an internist, an intensivist, surgeons, military emergency medical technicians and Tactical Combat Casualty Care instructors formed an interprofessional faculty group and designed a learning curriculum.

Summary of Results: A total of 230 medical students participated in the reformed disaster preparedness curriculum. Survey response rates were high for satisfaction (201/230, 87.4%). The students' ratings regarding overall satisfaction with the course, literature, and subjective knowledge gain generally indicated satisfaction. Overall, students were satisfied with the whole curriculum. Most of the free-text comments to the program were highly appreciative. The students considered the teaching hours for the whole program to be adequate. The students showed significant improvements in knowledge and judgment regarding disaster medicine after the program, even though the scores were not satisfactory.

Discussion and Conclusions: We found that medical students were highly interested, were appreciative of and actively participated in this longitudinal integrated disaster and military medicine education program, and gaps existed between the students scores and the educators expectations. It was the educators view that the students needed more knowledge and skill for disaster preparedness.

Take-home Messages: The longitudinal integrated disaster and military medicine education program is feasible and able to serve as a prototype for undergraduate disaster medicine education.

#EP4.10 - ePosters: Curriculum - Planning

#EP4.10.2 (4405)

Stimulating career choices for community care with a redesigned nursing curriculum

AUTHOR(S):

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ABSTRACT:

Background: Despite the extramuralisation of healthcare, most nursing students focus on a career in the hospital, leading to labour market shortages in community care (CC). Due to stereotypes and misconceptions, students are unaware of the challenges CC offers. A more community-orientated curriculum may lead to more positive perceptions and other career choices.

Summary of Work: A new four-year integrative baccalaureate nursing curriculum was designed based on lecturers influence, positive placement experiences, and new theory content. A quasi-experimental quantitative survey study with a historic control group (n=477; study cohorts graduating 2015/2016/2017) and an intervention group that followed the curriculum-redesign (n=170; graduating 2018) was performed in the Netherlands. Students perceptions were assessed with the validated Scale on Community Care Perceptions (SCOPE). Multiple regression analysis was used to determine the effect of the total curriculum on students' perceptions and placement preferences. A second longitudinal study explored if/how separate curriculum interventions were of influence.

Summary of Results: The curriculum-redesign did not affect students perceptions of CC ($R^2 < .001$). However, the demographics 'working in CC' and 'belonging to a church/religious group' were significant predictors of positive perceptions. The longitudinal study revealed that students' perceptions of CC show a slight decrease between year 1 and 4 while, in contrast, the preference for placement increased (2.6%/year 1 vs. 8.2%/year 4); the hospital remained most popular (79.8%/year 1 vs. 76.5%/year 4). At the individual level, placement preferences often fluctuate, although preference for the hospital is more constant. Students' perceptions of CC are quite stable: an intensive short theoretical CC-programme was only temporarily influential, and a CC-placement did not have a positive influence; students experienced a high workload and few advancement opportunities.

Discussion and Conclusions: While interest for CC-placement increased substantially in the intervention cohort, curriculum element(s) stimulating this interest could not be identified. The lack of positive influence of placement in CC may already be caused by labour market shortages.

Take-home Messages: Educational and care institutions must engage in a dialogue to enhance positive placement experiences. Other educational tracks for more mature students/nurses with a vocational training may be an alternative option for solving labour market problems in CC.

#EP4.10 - ePosters: Curriculum - Planning

#EP4.10.3 (4810)

“We’re in this together:” Qualitative Evaluation of Medical Student Reflection Groups During the Core Clerkship Year

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ABSTRACT:

Background: Medical students’ well-being deteriorates throughout medical school but research suggests that reflective practice can ameliorate distress. The core clerkship year is particularly stressful for students as challenging clinical experiences occur alongside increasing academic demands. Little is known regarding the benefits of group reflection during this time. At our medical school, students participate in 20 reflection groups during the clerkship year. We sought to better understand students’ experiences participating in these groups, including engagement and impact on their overall clerkship experience.

Summary of Work: We recruited medical students who participated in clerkship reflection groups through email, and scheduled group or individual interviews based on availability. Sampling for maximum diversity of experience considered racial identity and variation in clerkship assignment (order, group). Semi-structured group and individual interviews were audio-recorded, transcribed, and analyzed. Three readers (MD, medical student, social science graduate student) read and coded the transcripts independently and met to iteratively finalize codes. Data collection (currently ongoing) has neared thematic saturation and will conclude with member checking.

Summary of Results: 2 group interviews (total 7 students) and 3 individual interviews were performed to date. Identities represented included: male, female, Latinx, African American, multiracial (including Caucasian, South Asian), LGBTQI. From 78 independent codes emerged 4 major themes related to impact and engagement (1) the clinical culture experienced outside groups, (2) relationships within the groups, (3) individual aptitudes of group members (including facilitator) and (4) structural or logistic factors.

Discussion and Conclusions: A diverse group of clinical medical students shared perspectives surrounding group reflections during clerkship year, elucidating critical factors that influenced their engagement in the groups and positively impacted intra- and interpersonal aspects of their clerkship experiences. Attention to the 4 identified themes can help create a safe space for reflection and social connection during the clerkship year.

Take-home Messages: 1) Regularly scheduled reflection groups for clinical medical students can positively impact student experiences of clerkship rotations by creating a safe space for reflection and deepened social connection. 2) Engagement in reflection groups is influenced by many factors including structural logistics, individual aptitudes, group relationships, and clinical culture.

#EP4.10 - ePosters: Curriculum - Planning

#EP4.10.4 (5064)

The potentially favorable effect of early identification of and timely support to medical students with low-performance trajectories on succeeding academic performance

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ABSTRACT:

Background: Previous research has suggested that examining students' academic performance as a trajectory instead of a score measured at a single time point can offer insight to meet unmet needs and allocate finite resources to support academic success among medical students. The study aims to apply group-based trajectory modeling (GBTM) to examine the relationship between students' academic trajectory patterns during an early stage in medical education and successive academic performance.

Summary of Work: The study sample consisted of 420 medical students attending Tokyo Medical and Dental University from 2016 to 2019, who newly attended the 2nd year curriculum. Throughout the human anatomy education from Apr to July each year, anatomical terminology tests were conducted at twelve consecutive time-points. When the score was below 60%, encouragement by the instructor was individually offered. GBTM was used to categorize students into different trajectory patterns of the tests. Besides, student scores in histology, physiology, and neurophysiology, which succeeded human anatomy, were compared by their assigned trajectory groups.

Summary of Results: Trajectory analysis revealed five distinct trajectories: 1 Constant High (24%), 2 Slight Decrease (35%), 3 Modest Decrease (25%), 4 Middle and Modest Decrease (10%), and 5 Rapid Increase (5%). Compared with group 5, the mean scores of participants of group 4 at the final anatomy examination were lower by 3.1 (95% CI: -9.3, 3.1). Regarding scores in succeeding subjects, no apparent differences in odds of failure were observed between group 4 and 5 despite the marked difference in the scores of initial terminology test and trajectories.

Discussion and Conclusions: This study suggests that early educational trajectories were associated with educational outcomes afterward among medical students. It also establishes GBTM as an effective method for analyzing the educational progress, with the particular advantage that it allows educators to find groups that would benefit the most from educational interventions.

Take-home Messages: Applying GBTM to the educational progress can facilitate to evaluate both current and future curriculum regarding students' educational progress. Educational support/intervention based on the concept of "proportionate universalism" (i.e., providing necessary support/intervention in proportion to the need) can be considered given the limited resources available for medical education and differential trajectories.

#EP4.10 - ePosters: Curriculum - Planning

#EP4.10.5 (5489)

Training undergraduate students in forensic science through an immersion lab

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ABSTRACT:

Background: To deal with uncertainty, to solve crimes and to find justice, experts in forensic sciences and auxiliary disciplines must integrate disciplinary knowledge and the processes that the Justice system determines. To do so, they need to be able to critically analyze, conceptualize, and synthesize information reaching conclusions with unclear information. Traditional medical education on forensics still focuses on the transmission of highly specific knowledge through reading books, classroom-based activities, and task repetition to achieve mastery. However, to achieve skill development, a transition is needed in a more real and authentic setting.

Summary of Work: An educational experience was designed for students to develop boundary-crossing skills to integrate knowledge and actions in forensic science that would be unlikely by traditional means. A weeklong immersive learning experience integrates areas, processes, infrastructure, and equipment used for a forensic expert investigation.

Summary of Results: Sixty-nine students from the medical, psychology, marketing, and law programs completed the experience. The participants visited the Forensic Medical Service, Institute of Criminalistics, and Expert Services of the Attorney Generals Justice Office of the State. During the activity, the students received lectures by experts in Forensic Sciences and auxiliary disciplines, they worked in multidisciplinary teams analyzing evidence in simulated cases, and more importantly, they proposed improvements for different processes on forensic sciences.

Discussion and Conclusions: The participants highlighted the activities contributed to learning new concepts in an engaging way, while also being able to apply previous knowledge. Though the activity was an intellectual challenge for the group, self-regulation was an important outcome of this immersion. The defining moments for self-reflection on the individual tasks were valued spaces to assess the contribution of each member's role in the forensics team.

Take-home Messages: Skills do not develop spontaneously; there is a need for specific support and intended learning tasks for the students to experience the integration of the areas, processes, infrastructure, and equipment used in professional practice. Immersive experiences, such as this project, provide a transition to a more real and authentic setting.

#EP4.10 - ePosters: Curriculum - Planning

#EP4.10.6 (5646)

Importance of school social capital on learning medicine in Japanese medical students

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ABSTRACT:

Background: School social capital (social support that students can receive from other students and professors) has been linked to significant academic achievement. Historically, the human anatomy has been one of the first courses learned in medical schools. Developing effective study style in the early years of medical school is crucial for students' later academic success. The study objective was to examine the effects of social capital measured in human anatomy course on human anatomy grades as well as on other subjects.

Summary of Work: The data included 55 medical students who answered the survey before and after the human anatomy course in 2019 in Tokyo Medical and Dental University, Japan. Before and after the course, students were asked about school social capital using standard questionnaire as well as the number of friends inside and outside of the university. A logistic regression model was fit to examine the association between exposures (e.g., the increase in the total score of the students' social capital scale and the number of friends after the course) and the outcome (the students passing grade of courses).

Summary of Results: One point increase in social capital was significantly associated with the higher odds of passing grades in Human Anatomy. One unit increase in the number of friends outside of the university was significantly associated with higher odds of passing grades in human anatomy by 1.25. In addition, one point increase in social capital was positively associated with grades in other courses scheduled in the same week as anatomy such as Introductory Neurophysiology.

Discussion and Conclusions: An increase in social capital was associated with the passing grades of multiple courses including Human Anatomy. An increase in friends had positive relationship with passing grades of Human anatomy course. Our results suggest that building a relationship of trust and connection with others in the university and acquiring a wide range of sociability would lead to greater students' academic performance.

Take-home Messages: An increase in social capital was associated with higher likelihood of passing grades in human anatomy course, which would be essential to develop an effective study style in early years of medical school and students' greater academic achievement.

#EP4.10 - ePosters: Curriculum - Planning

#EP4.10.7 (5662)

Language Discordance Between Students and Patients: Impact on Clinical Learning

AUTHOR(S):

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ABSTRACT:

Background: The clinical education of medical students relies on having direct patient experiences, which can be challenging when the patient population speaks multiple languages, such as Singapore, where the language of instruction is English, but students regularly encounter patients who may speak Mandarin or one of the Chinese dialects (e.g. Hokkien/Teochew, or Cantonese). Therefore, the purpose of this study was to examine the role of student-patient language discordance on students' clinical education experience.

Summary of Work: We report here on an ongoing sequential mixed-methods study of medical students who have completed at least one year of clinical education at the Duke-NUS Medical School in Singapore. Students were asked to complete an online survey to obtain their self-reported language proficiency in local languages, experiences interacting with patients who do not speak English, and perceptions of the impact on clinical learning. A follow-up interview with selected participants is currently in progress. Respondents were grouped into English-only, English & Mandarin, or English, Mandarin, and Chinese dialect. We compared responses related to experiences, impact, and clinical performance between groups.

Summary of Results: Overall, 35.9% of eligible students responded. Respondents did not differ by gender, nationality, or academic performance as measured by pre-matriculation MCAT scores and two summative clinical examinations. Respondents who were English-only reported that learning medicine in a multilingual environment negatively impacts clinical learning due to significantly more frequent challenges to clerking patients and feeling hindered from learning from doctors due to language barriers. There was, however, no difference in the performance on clinical exams of the three groups.

Discussion and Conclusions: Despite student concerns of the impact of learning in a multilingual environment, the actual impact may be low as language skills did not appear to effect student performance on clinical exams. Follow-up interviews will better understand how students felt impacted and their approach to overcoming challenges of learning in a multilingual environment.

Take-home Messages: Although a multilingual clinical environment does not appear to impact students' clinical performance, it is perceived by students to be a disadvantage towards their education.

#EP4.10 - ePosters: Curriculum - Planning

#EP4.10.8 (5832)

An innovative education approach for operation room new nurses

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ABSTRACT:

Background: The new nurses need a pre-work education and simulation practice before they devote to the clinical practice. Yet due to the limits of manpower and time, the training is always not enough. Especially in the operation room (OR), new nurses need to learn the variety of operating tools and procedures, with various surgeons' operating habits. This study aims to explore the current situation and develop a practical, useful and sustainable means for new OR nurses.

Summary of Work: The setting is in the operation room at a university affiliated hospital in northern Taiwan. The qualitative interviews with 6 OR nurses were conducted to understand their anxiety, knowledge and confidence in assisting operations. Three senior OR nurses and three new OR nurses were face-to-face deeply interviewed twice in 2018 for identifying the problem and in 2019 for the response of adopting the innovative education approach, i.e., the new handbook redesigned based on the interviews in 2018.

Summary of Results: Both the new and senior OR nurses were very satisfied to have the redesigned education handbook with easy-use, detailed information with the friendly designed format, and also the customized "open notes" space for them to keep their own notes for different surgeons' habits. Both the feedbacks of senior and new OR nurses were very positive toward this practical, useful and meaningful for OR training. They reported that they saved 2 hours pre day and more convenience as well as increasing effective of learning new practice by using and previewing this handbook. Also, they felt a reducing level of anxiety (33%) after using this handbook.

Discussion and Conclusions: By learning the professional knowledge of surgery in this innovative means in advance, the new OR nurses could integrate into the workplace more efficiently and effectively, which benefits both new nurses and also senior nurses.

Take-home Messages: We will exam the different effectiveness of this innovative means between new OR nurses and senior OR nurses.

#EP4.10 - ePosters: Curriculum - Planning

#EP4.10.9 (4360)

Medical students' research skills in Greek Medical Schools

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ABSTRACT:

Background: Research is an integral part of a healthcare professional's education. According to the GMC's Generic Professional Capabilities Framework, a physician should have capabilities in research and scholarship, such as knowledge of quantitative and qualitative methods and appropriate usage of clinical guidelines. However, students in medical schools in Greece may not have the chance to develop these skills as part of their education.

Summary of Work: We conducted a curriculum mapping of the courses and their learning objectives offered to medical students. After this, a survey was designed and validated by a team of experts in order to assess the students' involvement in research at their Medical School. The survey was distributed to students to fill it in during June 2019. The target group was final year medical students, who had already completed all of their courses and they were about to graduate.

Summary of Results: From the mapping of the curriculum, it was shown that only 3 out of 7 Medical Schools offer courses that help students get more skills about research methodology. The survey was filled by 104 students and highlighted that 82,7% of them think they don't have the qualifications to perform any kind of research. They were also asked to report the reasons for that and most of them indicated the lack of opportunities during their studies. Overall, the participants think that research is very important and 76% want to perform some research in the future.

Discussion and Conclusions: Most medical students are interested in research, especially in clinical settings, and doctors with research knowledge can produce better patient outcomes. Designing and implementing student-led research projects can offer students knowledge and skills in a creative way. However, it is the responsibility of the Medical School to support these efforts. The results of the survey could be used from committees at the schools in order to implement changes in the curriculum that will offer a broader perspective about medicine and its fields.

Take-home Messages: Research knowledge and skills are needed for all healthcare professionals and this field should be integrated more in Medical Schools in Greece.

#EP4.10 - ePosters: Curriculum - Planning

#EP4.10.10 (5184)

Using design thinking process to create a health promotion project for medical students

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ABSTRACT:

Background: Design thinking (DT) is widely used in the business sector to create solutions for complex problems by understanding human needs. We used it in our medical school's health promotion course to create a project to solve our medical students' health issues during their clinical years. The human-centered design approach allowed us to address the root causes of problems through the guiding principle of "do fast, fail fast, and learn fast".

Summary of Work: As we ourselves were parts of the target population, we brainstormed and chose the highest voted health problem which is the physical inactivity. We "empathized" with 61 students by using observation, immersion, and engagement including Google forms questionnaire and in-depth interviews. We "defined" the problem by forming the end-user's point of view statement and "how might we" question, and used them to inform ideas. For "ideation", we brainstormed ideas and used the affinity map to group the ideas together then arranged them into a prioritization map. We created an initial "prototype" from the high yield and yet practical ideas. We tested this prototype with the end-users by assessing user satisfaction and changes in attitude and behavior via surveys. Our successful prototype was a mock-up application that can be used to promote physical activity among medical students.

Summary of Results: All participants (n=63) were interested in using the prototype and encouraged us to transform this prototype to a real product. After trying the prototype, over 90% of the participants reported they intended to change their exercise behaviors.

Discussion and Conclusions: Applying design thinking process to a health promotion project allows us to generate diverse and highly creative project ideas. Gaining deep understanding of what the users truly need through this human-centered design principles is the key to solving a complex problem. The limitations of our project are a short timeline and limited resources to operate an actual application.

Take-home Messages: Incorporating design thinking process into health promotion is the vital key to create successful and sustainable health promotion project.

#EP4.10 - ePosters: Curriculum - Planning

#EP4.10.11 (5460)

Mapping an existing medical curriculum to a new national competency framework

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ABSTRACT:

Background: Curriculum mapping is a process that links all elements of a curriculum to obtain a comprehensive and interactive map. The objective is to « make the curriculum more transparent to all the stakeholders » (Harden 2001). At the medical faculty of the University of Geneva, the introduction of PROFILES , a new national competency framework adopted in 2018, brings a paradigm shift by introducing Entrustable Professional Activities (EPA). To ensure alignment of the medical training with EPAs, there is a need for a comprehensive view of the curriculum, accessible to leaders, curriculum directors, faculty, students, and administrative staff. We share our experience of mapping our existing curriculum to the new competency framework.

Summary of Work: LOOOP (Learning opportunities, outcomes and objectives platform) is a web-based curriculum mapping interface developed at the Charité Universitätsmedizin Berlin (Balzer 2016). We started the mapping process in Mai 2019, importing existing curricular data into LOOOP. On the platform, each learning objective was linked with the objectives of the 3 chapters of the PROFILES framework (CanMEDs Roles, EPAs, SSPs = Situations as starting points) and tagged with MeSH terms.

Summary of Results: Thirty-six learning units across three preclinical and three clinical years with a total of around 1000 learning activities and 5000 learning objectives have been mapped over one year.

Discussion and Conclusions: The practical challenges for mapping were to harmonize terms across all disciplines and programs and to make visible and map the longitudinal programs integrated into the curriculum across the study years. Making a pedagogically relevant transition from discipline centered educational objectives to the EPAs of the new framework was another challenging task. Communication on the introduction of the competency framework, on the mapping process, on the sustainability of the LOOOP platform and on its coordination with other teaching tools was essential.

Take-home Messages: The curriculum mapping process was an opportunity to enhance communication, collaboration and reflection on the medical curriculum at the university of Geneva, and to assess its alignment with the new national competency framework.

#EP5.1 - ePosters - Education Management - Faculty Development

#EP5.1.1 (5177)

Co-construction of assessment policies for undergraduate courses in a Health Sciences university: Can faculty development be fostered by collective policy making?

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ABSTRACT:

Background: We report on the engagement of faculty in a dialogic process of designing assessment policies for the undergraduate courses of a Health Sciences university in Brazil. For a year, faculty members were actively engaged in the critical appraisal of assessment policies presented to them by the Coordination of Assessment Processes (CAP) on behalf of the university administration.

Summary of Work: Along the year, the policies in progress were made available to faculty five times - and in different formats - for critical reading, collective writing, and face to face debate. Legal counseling on the policies was also pursued as a faculty demand. Each time a new version of the policies was presented, it contained the aspects brought about by faculty in the previous consultation along with the rationale behind the acceptance or refusal of each contribution. Faculty also asked several questions on assessment principles, which were addressed any time there was a new consultation.

Summary of Results: Within the collective writing process, the topics debated by faculty were: a) why assess; b) who should assess; c) how to assess; and, mainly, d) how to give feedback on assessment. Besides faculty, undergraduate students and staff also vigorously participated in the process.

Discussion and Conclusions: Throughout, faculty had its views on assessment refreshed and challenged. Some assessment principles underlying the policies were revisited whereas others were new to some members. We thus claim that the engagement of faculty in the making of assessment policies foster faculty development as it necessarily brings about assessment principles that should later support the assessment of learning. Having to reflect upon the policies they believe should guide the assessment of academic achievement, faculty is inevitably confronted with theoretical backgrounds that underlie the understanding of learning, and which, in turn, provide the guidelines for future teaching and assessment methodologies.

Take-home Messages: Our experience of engaging faculty in the co-construction of assessment policies for undergraduate courses has shown that this may turn out to be a great opportunity to foster faculty development whose learning outcomes are not only long-lasting, but also provide the grounds for a positive washback effect (Walderson, 1993) in the assessment of academic achievement in undergraduate classrooms.

#EP5.1 - ePosters - Education Management - Faculty Development

#EP5.1.2 (4178)

Online faculty development for educational practice improvement in the health professions: A scoping review

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ABSTRACT:

Background: Faculty development for educational practice improvement is becoming a fundamental quality aspect in healthcare education. However, the particular demands, tight schedules, and heavy workload of healthcare educators represent important obstacles. A plausible solution is the incorporation of online learning methods, yet these present many challenges for faculty developers. This review aims to identify and analyse the evidence on barriers and facilitators, acceptability and perceptions, and effective approaches to delivering online faculty development for educational practice improvement in the health professions so to inform faculty developers' future decision-making.

Summary of Work: A scoping review and narrative synthesis were conducted following the PRISMA-ScR and STORIES guidelines. Searches were conducted across six databases, twenty-one journals, grey literature, and experts' profiles. Retrieved records were exported to the systematic review software RayyanQCRI®. After removing duplicates and irrelevant titles, two authors screened abstracts and remaining full-texts using predefined inclusion-exclusion criteria. After an ancestry search, a thematic analysis was conducted using the Nvivo® software and a specific charting form for the review.

Summary of Results: Forty-nine records were included (out of 3583). The majority came from the USA, Australia, and Canada (1996-2019). These included a mix of blended and fully-online programmes, with educators coming from different disciplines. Participants found that online learning was feasible, acceptable, and positively impacted their educational practices. Six themes emerged regarding barriers and facilitators: instructor role and availability; healthcare-contextual and work-integrated learning and assessment activities; relevance and integration of online components; networking, interactivity, and peer-working; educator-practitioner adaptation; and needs-based. Studies reported a combination of synchronous-asynchronous activities.

Discussion and Conclusions: Online faculty development for educational improvement offers a feasible way to overcome the obstacles of traditional face-to-face instruction and develop healthcare educators in the fundamentals of pedagogy while giving busy clinician-educators flexible alternatives. This method expands the options for faculty development and it is becoming increasingly important considering the high responsibility of educational institutions in providing society with the most competent and well-trained healthcare professionals.

Take-home Messages: Healthcare practitioners can benefit and develop as educators through online learning if faculty developers tailor programme designs to their needs and context, provide the appropriate time and support, and design learning and assessment activities through a learner-centred approach.

#EP5.1 - ePosters - Education Management - Faculty Development

#EP5.1.3 (5136)

A novel mentorship system to enhance student support for undergraduate medical students

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ABSTRACT:

Background: Nowadays, medical students are under great stress and burn out due to heavy study loading and peer pressure. Previous mentorship focused on short-term mentoring. Five to six classmates were assigned to one mentor. In our six-year school system, the first to fourth year medical students were assigned to a basic teacher as a mentor, while the fifth and sixth year medical students were assigned to a clinical teacher. To provide a more comprehensive support, curriculum tutoring, and future career planning, we established a medical family mentorship system and evaluated the outcome of the novel system.

Summary of Work: Since the year of 2019, all the medical students in National Defense Medical Center were divided into 60 groups. Each group includes a clinical teacher and a basic teacher as mentors, and two to three students from each year. They communicate by using some sorts of social media apps, such as line. Moreover, every week, the mentors provided fixed time slot for their mentees. A family gathering is held every semester to enhance mental support and relationship. Students of different years can share their experiences of learning in the family group. A questionnaire regarding the novel mentorship system, which includes the overall stratification and qualitative feedback, was delivered to the students.

Summary of Results: A total of 397 questionnaires were collected. The overall satisfaction score is 8.01 out of 10. Approximately 60% of students scored more than 8 out of 10. The influence and amiability of mentors significantly increased in the novel mentorship system. Although 8.3% students preferred previous system, most students suggested the novel system provides better support and long-term relationship between mentors and mentees compared with previous system.

Discussion and Conclusions: Our novel mentorship system provides greater backup to mentees, which is widely accepted by the students. Combination of basic and clinical teachers as mentors provide longitudinal guide and support, which enhance relationship among the family as time goes by.

Take-home Messages: A novel medical family mentorship system with basic and clinical mentors and different year mentees as a group improves the support of mentoring.

#EP5.1 - ePosters - Education Management - Faculty Development

#EP5.1.4 (5255)

An International simulation faculty development fellowship in Hawaii

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ABSTRACT:

Background: Cultural context is relevant to contemporary faculty development (FD). Simulation FD fellowships aim to improve simulation-educator skills. Cultural context issues during international simulation fellowships have been incompletely characterized.

Summary of Work: The University of Hawaii, John A Burns School of Medicine (JABSOM) SimTiki Simulation Center, has conducted an innovative international simulation FD postgraduate fellowship since 2007. In the last 12 years, the program has enrolled and graduated 27 postgraduate healthcare professionals from Japan, South Korea, and Thailand. In 2020, the 8 international fellows newly enrolled. This research aimed to find out why this program has been culturally context-based simulation fellowship. We conducted a web-based survey of graduates, and an interview with two directors of this program.

Summary of Results: A 2019 fellowship graduate e-survey response rate was 51.9% (14/27). Results: 92.9% (13/14) indicated this program was aware of participant cultural contexts, and 78.6% (11/14) answered the contents they learned in this program were very useful in their cultural context. Among curriculum contents, 4 (28.6%) chose debriefing, and 3 (21.5%) chose simulation operations and educational theory as a most useful domain in their cultural contexts. In the interview, 3 main findings emerged as reasons why this program has been culturally context-based fellowship. 1) Systematic curriculum directly address's cultural context, and project-based learning focused on home-country education models. Individual learning needs assessment is conducted with matriculating fellows allowing fellowship curriculum to be tailored. 2) Faculty international experience allow this fellowship provide culturally aligned training needs, ranging from creation of advanced simulation courses to simulation-based educational research. 3) JABSOM history, mission, and geography influences content and instructional methods of the fellowship. JABSOM adopted a Problem Based Learning (PBL) curriculum over 30 years ago. Hawaii's diverse cultural and ethnic population contributes to rich faculty experience of culturally sensitive practices. These features lower the threshold for explicit academic fellowship dialogue regarding cultural differences.

Discussion and Conclusions: This program was successfully conducted providing tailored curriculum for multicultural participants. This program hopes to grow and research characteristics and best practices in a culturally context-based simulation fellowship.

Take-home Messages: Tailored curriculum contents, faculty international experience, and institutional background are important aspects to provide culturally context-based simulation fellowship.

#EP5.1 - ePosters - Education Management - Faculty Development

#EP5.1.5 (5279)

Physician teachers perception of general medicine teacher cultivation program

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ABSTRACT:

Background: Its very important to train post-graduate year doctors to learn holistic care abilities in general medicine. Therefore, the physician teachers need to have at least a 47 hrs general medicine teacher cultivation program to improve their teaching abilities so as to reach the goal in Taiwan. However, the helpfulness and quality of the program from the physician teachers perception has not been analyzed. We investigated the trained physician teachers perception to improve the cultivation program.

Summary of Work: The teacher cultivation program includes six-core competencies, inpatient and outpatient teaching, teaching instruction discussion, learning assessment, learning effect evaluation and feedback. We applied Kirkpatrick evaluation model to understand the level of reaction, learning and behavior of the trained physician teachers. The survey composed of three parts: Kirkpatrick level I-satisfactory survey; Kirkpatrick level II-pre and post-class questionnaire; Kirkpatrick level III-quantitative and qualitative questionnaire. A total of 43 trained physician teachers involved in this study.

Summary of Results: The result of the program satisfaction survey is highly to 98.7%. There is increase in all aspects of knowledge, skills and attitude for the trained physician teachers. After 4 months of completing the program, 31.6% and 23.7% teachers suggested it is more difficult to instruct the professionalism and interpersonal and communication skills about six-core competencies of ACGME. 42.1% teachers perceived assessment class is the most helpful when they teach. 60.5% teachers agreed it is necessary and they are willing to have one-hour continuing class of general medicine every year.

Discussion and Conclusions: Our results indicated that nearly all teachers satisfied with the cultivation program. There are still some difficulties when they are back on the job after this program. They need complete teaching system to decrease their heavy workloads. Its a problem to transform what they have learned in the cultivation program into clinical teaching.

Take-home Messages: 1.Design and hold practical workshop and experience-sharing program. 2.Open the on-site teaching observation. 3.Choose leaders of medical education who engage in medical education development.

#EP5.1 - ePosters - Education Management - Faculty Development

#EP5.1.6 (6818)

Building effective mentoring program for problem-based learning

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ABSTRACT:

Background: Problem-based learning (PBL) is a pedagogy that was designed to help students learn by exploring open-ended questions. But without proper guidance, students may experience prolonged struggle and dysthymia. In order to avoid this, we tried to develop a mentoring program to assist 3rd grade medical students. In this program, we also incorporated Stephen Coveys seven habits to help students learn more efficiently and effectively.

Summary of Work: Between 2019 November and December, a PBL combined mentoring program was held in Fu Jen Catholic University. Students were divided into 7 groups. Each group consisted of 4~6 students, and was led by a senior mentor. The program consisted of group discussion session, individual coaching session and on-line consultation. Unlike most PBL teachers who tried to inspire students by giving challenges, the program mentors provided warm supports, useful strategies/resources and clear guidance to assist students overcome difficulties. We also introduced Stephen Coveys seven habits to help students with goal setting, time management, and self-renewal/self-care. To ensure the mentoring quality and objectives were consistent, the program mentors were trained in advance.

Summary of Results: With the program, students reported multi-facet skill set enhancements as following: 87.5% for learning blueprint and prioritization; 75.0% for goal setting; 68.8% for evidence-based medicine; 59.4% time management; 50% presentation skills; 50% self-renewal/self-care and resilience. Furthermore, 75.0% and 71.9% of the students felt less anxious or depressed with mentor's support. The overall program satisfaction was 81.3%. And 90.6% of the students stated that they would recommend this program to their junior peers.

Discussion and Conclusions: Problem-based learning aims to help students develop problem solving ability. However, it also comes with stress and suffering. On top of knowledge and skill training, a well-designed mentoring program may help students overcome stress and learn more efficaciously.

Take-home Messages: Problem-based learning when not properly guided can create stress and frustrations for students. A well-designed mentoring program may reduce student stress and help them learn more effectively.

#EP5.1 - ePosters - Education Management - Faculty Development

#EP5.1.7 (6907)

Priorities of junior doctors versus medical students in a society-led formal mentoring programme: a preliminary study

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ABSTRACT:

Background: Structured mentoring programme has been increasingly utilised due to the immense benefits for both mentors and mentees in enhancing academic performance, career planning and overall satisfaction. All final-year Imperial MBBS students are required to sit several examinations including Practical Assessment of Clinical Evaluation Skills (PACES), written papers, Prescribing Safety Assessment and Situational Judgement Test (SJT). We aimed to compare the expectations among final-year students and junior doctors as to what should be covered within the mentoring sessions.

Summary of Work: Final-year MBBS students (mentees) and junior doctors (mentors) were invited to voluntarily participate in the mentoring programme via online sign-up forms. All forms included a free-text response to collect what mentors would recommend students to cover with their mentors. All mentees were also asked to submit which areas to focus with their mentors. Keywords from each submitted response were retrospectively identified and common themes categorised. Statistical differences were analysed using Fisher's exact test.

Summary of Results: 115 final-year students and 56 foundation trainee doctors enrolled in the programme. Analysis of the free-text responses yielded 124 and 41 entries from mentees and mentors respectively. All responses fell into 5 distinct categories. There was a significantly higher proportion of mentees than mentors who suggested preparation for PACES as the main priority (85% versus 34% $p < 0.0001$). On the other hand, there was a significantly higher percentage of mentors who included preparation for working as a foundation doctor, prescribing and taking the SJT (22% versus 7%, $p < 0.05$; 20% versus 2%, $p = 0.0002$ and 17% versus 0%, $p < 0.0001$ respectively). There were no significant differences between both group of respondents in expressing interest in preparing for portfolio and job applications.

Discussion and Conclusions: Preparation for PACES exam was regarded as the priority by mentees, while mentors regarded preparation for working life as a foundation doctor and prescribing as important teaching aspects. This highlights a crucial need to inform both parties to avoid incongruent expectations whilst gaining requisite knowledge and skills to pass final examinations and excel as a foundation doctor.

Take-home Messages: Different expectations exist between mentees and mentors as to what should be covered in the mentoring programme.

#EP5.1 - ePosters - Education Management - Faculty Development

#EP5.1.8 (5067)

Monterrey Mentoring Program: How We Built It

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ABSTRACT:

Background: While there are informal coaching programs in Mexico, there is no structured mentoring program with a formal faculty development plan that can serve as a model for other Mexican medical schools. Leaders from Tecnológico de Monterrey (TM) aimed to plan, design and implement a mentoring program spanning undergraduate and graduate medical training.

Summary of Work: A three-day faculty development workshop was organized by TM' leaders to be facilitated by international experts linked to the Foundation for Advancement of International Medical Education and Research (FAIMER). Two U.S.-based medical education and project management experts from this community of practice were invited to co-design and conduct the workshop. Appreciative Inquiry, a positive psychological and strategic planning framework, was used by the workshop facilitators to walk participants through four steps (discovery, dream, design and destiny) to design their own mentoring program. This last activity was interspersed with informative content related to best mentoring practices. Difficult conversations between mentors and mentees regarding career choice, communication skills, anxiety/depression, academic integrity and gender issues, were represented in a role play activity. Finally, participants presented the vision and implementation phases of their program.

Summary of Results: Forty-one clinical and basic-science faculty attended the workshop. They completed a pre- and post-workshop survey where they self-evaluate their understanding of successful mentoring elements; qualities of good mentors and mentees; characteristics of successful and failed mentoring relationships; alignment of mentors and mentee expectations; positive, strengths-based change; crucial conversations in a mentoring relationship; sexual harassment policies; concepts related to implicit bias, and mental health issues with a 5-point Likert scale (1: No knowledge; 5: Proficient). A statistically significant difference ($p < 0.0001$) was noted for all categories. Participants were highly satisfied with the workshop.

Discussion and Conclusions: Faculty reported a better understanding regarding mentoring topics at the end of the workshop. Launching a mentoring program at TM exposed faculty to strategic planning activities for the improvement of current education practices.

Take-home Messages: Involving faculty in the creation of their own mentoring program along with having expert facilitators in the process can lead to increase acquisition of mentoring skills.

#EP5.1 - ePosters - Education Management - Faculty Development

#EP5.1.9 (4607)

“To what extent can a mentorship program for international students help them negotiate the opportunities and challenges faced in new culture and new health care system?”

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ABSTRACT:

Background: Relatively small numbers of students coming to the UK and to East Kent Hospitals University NHS Foundation Trust (EKHUFT) from a medical school in the Caribbean. Some are from the Caribbean themselves but others are from other countries e.g. Sudan, Nigeria. It was evident that these students needed additional support given that they are new to the country, new to the NHS, new to EKHUFT. This study evaluates how these support help them in their holistic development.

Summary of Work: A mentorship programme was established to provide 1 on 1 support. This consisted of – teaching programme, ad hoc teaching and support at the students’ request plus two 1 on 1 mentoring sessions. Their challenges were evaluated through detail interviews and the survey from the educators in different rotations. Support were tailored on their challenges. The mentoring sessions were focused on 5 key areas of challenges: Personal; Social; Academic; Cultural; and Mental well-being. Achievement throughout the period are monitored and their perceived development is surveyed at the end.

Summary of Results: Challenges they faced are similar within the group despite different geographical origin. Students reported that after the mentorship programme they experience positive changes in their development. Despite the universally positive response to the programme, it was clear that some students are still experiencing challenges in some or all of the areas in which support was offered. There were many contributory factors which included lack of insight, personality, financial background, family pressure which present both generic and specific (in relation to these students rather than UK-trained students) challenges.

Discussion and Conclusions: Students from foreign medical schools who are unfamiliar with the UK and the NHS can experience specific and extremely challenging issues and they require additional support. A tailor-made programme plus 1 on 1 mentoring can provide benefits across different areas of development. However, there is more work to be done in exploring how best to support them.

Take-home Messages: The challenges and developmental needs for international students can be different from native students even in the same training. Mentor-ship program help them adjust those challenges and transform into opportunities that they encountered in new learning environment and health care system.

#EP5.1 - ePosters - Education Management - Faculty Development

#EP5.1.10 (4769)

Development of a Personalised Near-Peer Mentoring Programme for Final Year Medical Students with Residents as Mentors – an interim analysis

AUTHOR(S):

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ABSTRACT:

Background: Near-peer mentoring is a process where a mentor is close to the social, professional, or age level of the mentee. Near-peer mentors are better able to interact with and understand the struggles of students. The mentoring process also helps mentors improve their teaching and communication skills which are essential competencies for junior doctors.

Summary of Work: Following a needs analysis of final year medical students in Duke-NUS Graduate Medical School, a near-peer mentoring programme was designed using peer assisted learning framework. Incorporating the values of social and cognitive congruence in mentoring, trained Internal Medicine junior residents were assigned to students who were grouped based on the examination domains they needed improvement in. Pre-intervention data on students' confidence in the exam and in each of the examination domains using a 5-point Likert scale (1:Not confident at all, 5:Very confident), and their stress levels over final exams using a 3-point Likert scale (1:Not stressed out at all, 3:Extremely stressed out) were collected. Interim qualitative feedback on the programme were also obtained.

Summary of Results: Forty-four students were enrolled. Twenty-eight (63.6%) students reported scores of $\leq 2/5$ in at least one examination domain. Of the 28 students, 21.4% felt they would fail the final exams, 17.9% failed the mock exam, 100% reported scores of $\geq 2/3$ (3 being extremely stressed out) over the final exams. Interim feedback from the students have been positive, appreciating individualised feedback given by mentors. Concerns from the students surrounding the examination format and areas they were not confident in have also been highlighted to the faculty members.

Discussion and Conclusions: Using the pre-intervention data, trained near-peer mentors were able to tailor their teaching to focus on the examination domains students were weak in. Through individual assessments, students were given valuable individualized feedback which was lacking in their clinical clerkships. This programme also serves as a channel to help Residents identify and address concerns of students.

Take-home Messages: Understanding the needs of mentees would enable mentors to individualize clinical teaching and facilitate more effective learning, at the same time enabling Residents to hone their skills as mentors.

#EP5.1 - ePosters - Education Management - Faculty Development

#EP5.1.11 (5033)

Construct of Nursing Faculty Competency

AUTHOR(S):

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ABSTRACT:

Background: Nursing school faculty must continually strive to improve their competencies in order to provide high-quality education that will foster the knowledge, skills, and attitudes that students need to become effective nurses. To ensure the quality and credibility of nursing education, the construct of nursing faculty should be clarified. Therefore, this study examined this construct based on a literature review and questionnaire survey.

Summary of Work: The PubMed and Japan Medical Abstracts Society databases were searched using the terms “nurse,” “faculty,” and “competency” from the year 2007 to 2017. In total, 1,003 articles were retrieved, and screening identified 25 articles for thematic analysis. A survey using the self-administered questionnaires to assess nursing faculty’s competency based on this literature review was conducted involving nursing faculty working at universities in Japan. We invited 277 nursing universities to participate in the survey and to provide academic nursing faculty with information about the research. In total, the data of 367 nursing faculty were analyzed.

Summary of Results: Selected articles suggested that nursing faculty competency must include “facilitation of learning,” “curriculum design,” “nursing practice,” “communication, collaboration, and partnership,” “ethical principles,” “interpersonal relationships,” and “self-improvement in teaching and research.” Then, based on the questionnaire survey, an exploratory analysis yielded five competency factors: “facilitating active learning,” “engaging in academic research activities,” “participating in university management,” “undertaking self-directed learning based on professional ethics,” and “practicing education autonomously.”

Discussion and Conclusions: The five factors extracted from an exploratory analysis are in line with the constructs which relevant literatures suggested. Nursing faculty must not only acquire teaching and nursing practice skills, but also gain competencies to create better psychosocial educational environments and get involved in university management. They also have to make great efforts with self-improvement. Further studies are expected to investigate the competencies according to nursing faculty’s positions or the unique characteristics of each university.

Take-home Messages: Ladders of each competency that are necessary to advance academic positions should be established so that nursing educators can use them as indicators of their competency development. In addition, multidimensional support must be provided so that they can improve their competencies.

#EP5.1 - ePosters - Education Management - Faculty Development

#EP5.1.12 (7271)

Becoming a Gynaecology Teaching Associate: the woman's experience after 8 years

AUTHOR(S):

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ABSTRACT:

Background: Within Cardiff University we use Clinical Teaching Associates to provide intimate examination teaching to our 3rd year students. In year 3 the CTAs teach pelvic examination as Gynae Teaching Associates. The GTAs are lay-women with no medical experience but use their bodies to teach pelvic examinations. Each session is taught by 2 GTAs and 4 students. The session begins with a demonstration of a role-play consultation of a routine women's health appointment and then demonstrate examination. The CTAs alternate roles as either the practitioner or patient and one GTA examines the other. The students take it in turn to perform the consultation and examine the GTA. Savage K (2013) completed a study to understand how the CTAs viewed their roles as GTAs and how they developed into this role and to explore their new professional identities. In 2020 three members of the original cohort of GTAs are continuing in their roles teaching intimate examinations to the medical students. A study to mirror the original study was completed to evaluate how the women feel their confidence and skills have developed and changed over the time.

Summary of Work: A Focus group was held with the GTAs to reflect on their experiences over the time and how they have developed and teaching assistants.

Summary of Results: Preliminary analyses show that the GTAs' confidence grew exponentially as they are now expert in their own field. They also found their knowledge grew in other health related areas as the role of the clinical teaching associate has expanded into Breast Teaching Associate (BTA). They continue to see themselves as advocates for women's health. They have now become confident in teaching new member of their team the role.

Discussion and Conclusions: The changing Clinical teachers role that has evolved and now offers expanding education opportunities for the medical students. By gaining a fuller understanding of the transformation of lay women to professional educators as GTAs enables us to appreciate the importance of their role and the contribution made to medical education.

Take-home Messages: The clinical teaching associate offers an exciting insight into intimate examination and the development of these women as individuals into teachers needs to be commended.

#EP5.1 - ePosters - Education Management - Faculty Development

#EP5.1.13 (6350)

Good clinical teachers in pediatrics: The perspective of pediatricians in Japan

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ABSTRACT:

Background: The purpose of this study was to identify the attributes of good clinical teachers in pediatrics (CTPs) in Japan and to elucidate pediatricians and pediatric trainees' perceptions of these attributes.

Summary of Work: The participants included board-certified pediatricians and pediatric trainees. The attributes of good CTPs were identified qualitatively by conducting a thematic analysis of a first questionnaire asking what they thought were the attributes of a good clinical teacher in pediatrics, answered by 117 pediatricians and 32 trainees. The attributes identified were rated by 187 pediatricians and 50 trainees, a large number of participants in both groups, using a second questionnaire with a 5-point Likert scale (5; complete agreement). The Mann-Whitney U test was employed to analyze the comparisons in both groups. To correct for multiple testing, the data were analyzed using the Benjamini-Hochberg correction. This research was approved by the Research Ethics Committee of Gifu University Graduate School of Medicine, Gifu, Japan. (23-202).

Summary of Results: Forty-eight individual attributes of good CTPs were identified, which were classified into three domains: personal, pediatrician, and teacher. The three domains and most of the attributes were consistent with previous studies. However, a few additional attributes, including "is kind/thoughtful toward others", "defends trainees" and "reprimands or criticizes trainees effectively", which may be unique to pediatricians in Japan, were identified. Significant differences in the pediatricians' and trainees' perceptions of these attributes were elucidated: The differences were most noticeable for teacher attributes and least for personal attributes.

Discussion and Conclusions: Although most of the identified attributes of good CTPs in our study appear to be universal, there were significant differences in the pediatricians' and trainees' perceptions of good CTPs, especially in relation to teacher attributes.

Take-home Messages: Clarifying the attributes of CTPs will contribute to an excellent pediatric residency program and to the development of pediatricians and the enhancement of pediatric care.

#EP5.1 - ePosters - Education Management - Faculty Development

#EP5.1.14 (5188)

Exploring Job Characteristics that Enrich and Motivate Clinician Educators and Education Leaders

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ABSTRACT:

Background: Clinician educators (CEs) play a vital role in helping academic institutions achieve the missions of patient care, education and research. While there are some data on job satisfaction among CEs, very little is known about the driving forces that motivate CEs, particularly education leaders, to endure in professional growth and personal satisfaction.

Summary of Work: We conducted a survey to investigate factors that support CEs in sustaining their academic commitments. Using the Job Characteristics Model by Hackman and Oldham as a framework, a Job Diagnostic Survey and global job satisfaction data were collected from self-identified CEs through online recruitment. Job characteristics in the core dimensions of meaningfulness (skill variety, task identity, and significance), autonomy, and performance feedback were analyzed for each respondent. Using a step-wise regression, we determined job core dimensions associated with job satisfaction and sustainability as a CE.

Summary of Results: A total of 121 CEs completed the survey. According to multiple regression analysis, well-defined work, performance feedback, and years of experience were associated with higher job satisfaction, $F(7, 105) = 7.15, p < .0001, R^2 = .32$. Internal and external feedback accounted for the largest contribution to the regression, beta weights ($\beta = .28, p = .0015$; $\beta = .21, p = .0227$). Of the total respondents, 35 (28.9%) were education leaders. These leaders had higher job satisfaction with scholarly activities than non-leader CEs (3.6 ± 0.93 vs $3.2 \pm 0.86, p = .023$). No other dimensions were associated with job satisfaction, and none predicted sustainability/longevity.

Discussion and Conclusions: We used a theory informed survey to help characterize the CE workforce and gain insight into the factors that motivate CEs and education leaders. Our results indicate that a significant portion of job satisfaction can be explained by task identity and feedback. The critical importance of acquiring both internal and external feedback to job satisfaction is highlighted.

Take-home Messages: Exploring the dimensions of job satisfaction of CEs is the first step to understanding and establishing a sustainable career as a CE.

#EP5.1 - ePosters - Education Management - Faculty Development

#EP5.1.15 (6603)

The Teacher's Roles: What do Students Expect?

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ABSTRACT:

Background: Over the past few decades, the expectations of medical students about their studies and their teachers have greatly changed. Establishing an effective teacher-student relationship may affect the quality of learning. Such a complex human relationship may be influenced by various factors on the one hand, as it can affect the entire educational process and the future of the health system on the other hand.

Summary of Work: A cross-sectional survey was conducted in the seven medical schools of Morocco, from July to September 2018, using an electronic questionnaire. 2515 students answered questions about their current perception of the teacher's roles and their main expectations from their professors and teachers at med-school. The 12 roles of the teacher, as established in the AMEE guide 20, were used as a reference. We also interviewed 36 professors about their opinion on how the best medical student should be.

Summary of Results: Each of the 12 roles of the teacher was evaluated by the students as being important (score > 3/5), with 48% of the students giving the utmost priority to the role of Facilitator and 20% to the role of "Model". On the other hand, teachers thought that the students should mainly be studious and hardworking (58%), and also respectful towards their teachers (25%).

Discussion and Conclusions: The findings indicated that today's students are no longer expecting their teachers to be mere information providers, which is still unfortunately the major role occupied by professors in Moroccan medical schools. Students need more to be guided through active learning and to be shown the way to success and excellence. Therefore, improving the interaction of teachers and students by adopting a balanced approach of the main roles of the teacher is a matter of great necessity.

Take-home Messages: -Students expectations from their teachers have changes

-Teachers should make efforts to meet those expectations in order to enhance the learning processes.

#EP5.2 - ePosters: Education Management - General

#EP5.2.1 (6933)

Adventures in Accreditation: A case study of the experience of preparing the medical education program of a transnational site for accreditation using the WFME Global Standards for Quality Improvement

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ABSTRACT:

Background: Transnational medical education presents many challenges and opportunities; one of which is ensuring the quality standards of the 'home' country are adhered to in the 'host' country. Weill Cornell Medicine-Qatar; an international site of Cornell University, delivers a transnational medical education program comparable to that of Weill Cornell Medicine in New York. Following the edict of the Education Commission for Foreign Medical Graduates (ECFMG), that by 2023 all international medical graduates applying for ECFMG certification must have attended an appropriately accredited medical school, and as the Liaison Committee on Medical Education (LCME) does not accredit programs outside of US borders, Weill Cornell Medicine-Qatar set about the process of accrediting its medical program using the global standards developed by the World Federation for Medical Education (WFME).

Summary of Work: The poster will set out the step-by-step process used by one school to ready itself for accreditation and explore challenges along the way, from identifying and engaging an accrediting body recognized by WFME, to interpreting and addressing standards written for an 'international' setting which are not necessarily aligned to the school's particular context. It explores the mechanisms used by the host country to connect with the school in the home country including the continuous examination of how the quality of medical education can be assured in transnational settings.

Summary of Results: The work is currently in progress.

Discussion and Conclusions: As medical schools around the world respond to the ECFMG's requirement, we hope this case study will be of interest to other schools, particularly those operating in transnational settings, who may have embarked or be about to embark on their own accreditation or quality assurance processes.

Take-home Messages: International accreditation is one of a range of tools that schools operating in transnational settings may use as part of their quality assurance processes.

#EP5.2 - ePosters: Education Management - General

#EP5.2.2 (6968)

Institutional Quality Assurance as a Lever for Faculty Engagement and Quality Improvement

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ABSTRACT:

Background: Increasingly, health professions schools are being held accountable not only to the national accrediting bodies but also to other external Quality Assurance (QA) processes that influence their academic and budgetary decisions. Yet, Quality Assurance is often linked with accountability, control, and compliance (Harvey & Newton, 2007) and less so with improvement (Openo et al, 2017). These different goals of accountability, control, and compliance on the one hand and improvement on the other, can be complementary when health care programs use their review processes as an opportunity for self-renewal and quality enhancement.

Summary of Work: Since 2010, the Ontario Universities Quality Assurance Council has mandated QA processes to monitor the quality of academic programs. Three schools in the Faculty of Health Sciences at a mid-size Canadian institution participated in a longitudinal project, 2016 to 2018, that consisted of analyzing 39 QA self-study documents and conducting 10 focus groups. The purpose was to explore the implementation of the institutional Quality Assurance process. In the first phase, a thematic analysis (Boyatzis, 1998; Nowell et al., 2017) of all self-studies was completed. In the second phase, we drew on Braun and Clarke (2006) reflexive approach that involved a six-step analysis process which was applied to the focus groups.

Summary of Results: The following four themes emerged from the focus groups and the analysis of the self-study documents: (1) making teaching and learning transparent, (2) curriculum revisions, (3) resource allocation and strategic planning, and (4) identity, collegiality, and collaboration.

Discussion and Conclusions: The schools approached the QA process in a reflective, critical, and forward-looking manner, as the primary responsibility for quality rested with the faculty itself. That said, some challenges were identified and considerations were developed to address those concerns.

Take-home Messages: From analyzing the findings, it has become apparent that the QA is beneficial in encouraging schools to examine and reflect on the quality and purposefulness of their programs. Future work seeks to explore how the institutional QA process complements or perhaps increases the burden of other accountability measures such as national accreditation.

#EP5.2 - ePosters: Education Management - General

#EP5.2.3 (6913)

The sources of funding tuition and effect of increase in tuition on mental health of medical students at University of Ibadan, Nigeria

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ABSTRACT:

Background: The recent decline in funding support by the government and the increase in cost of medical education in Nigeria might have shifted more burden of the cost on students. However, there is a paucity of knowledge on the effect of this development on the mental health status of students in the literature. We, therefore, evaluated the effect of this increased cost, as a potential stressor, on the mental health of medical students at the University of Ibadan, Nigeria.

Summary of Work: Self-administered questionnaires with questions on demography and mental health were distributed to the fourth-year medical students of the University. The General Health Questionnaire-12 (GHQ-12), which has 6 negative and 6 positive questions was used to assess the mental health of the students. The positive questions were scored inversely with a total score of 0–12. A score of four or more was defined as a case of psychological distress.

Summary of Results: 87 medical students (response rate 53.0%) with 54 (62.1%) males participated in this study. The mean age of the respondents was 21.75 years (1.93 SD). Some 57 (76%) medical students had a total GHQ-12 score of 4 or more. The mean total GHQ-12 score was 5.51±2.48 SD and 4.88±2.69 SD for males and females respectively. There was no relationship between personal data (age, sex, monthly family income, number of sleep hours) and total GHQ-12 score. Only 29.7% of students received additional financial aids. Some 44.2%, 83.3%, and 64.9% of these students are willing to take students loan, perform paid research assistant's jobs, and obtain other available financial aids respectively to offset the burden of the cost of their medical education.

Discussion and Conclusions: A large number of medical students met the criteria for case definition for psychological distress. Many of these students are willing to pursue alternative sources of funding medical education if available on favourable terms.

Take-home Messages: Medical schools should offer counselling services to all students for their optimum mental health. Therapy should be provided for those with mental health problems. Alternative sources of funding medical education should be made available for medical students.

#EP5.2 - ePosters: Education Management - General

#EP5.2.4 (5048)

Learner perspectives of diversity in higher education faculty: A scoping review

AUTHOR(S):

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ABSTRACT:

Background: Principles of equity, diversity, and inclusion (EDI) have received increased attention across university campuses in recent years. Student perspectives regarding diversity issues have been inadequately examined in the literature. In health professions education programs, there is discussion regarding whether programs are training health professionals that adequately represent the diversity found in the patient populations we serve. We wanted to explore the literature regarding student perspectives of faculty diversity in general, and within health professions education programs in particular.

Summary of Work: This scoping review explores student perspectives on faculty diversity in higher education. We further examined the literature pertaining to health professional students and their perceptions of faculty diversity. The Joanna Briggs Institute (2015) methodology for conducting scoping reviews was used. A systematic search across six databases yielded 2,336 initial articles. Thirty four articles were included in the final thematic analysis. Nine articles focused on health professional student perspectives.

Summary of Results: Three themes were identified: 1) the lack of diversity in faculty; 2) the impact on the student learning experience; 3) the impact of the students' own identities on perceptions of diversity in faculty. In a subgroup analysis of the 9 health professional student studies, a common theme expressed by nursing students and medical residents was the lack of faculty diversity in their programs. Furthermore, students expressed the need for diverse role models to provide mentorship and professional guidance.

Discussion and Conclusions: The scoping review highlighted student perspectives on faculty diversity in higher education. The learning experience positively impacted by faculty diversity and health professional students also stressed the importance of increased mentorship and role modelling when diverse faculty were present. The converse was also true in that both students and faculty described negative experiences and discrimination when there was a lack of faculty diversity. Further studies aim to explore the role of intersectionality, both from faculty and student perspectives, and the nuances intersectionality introduces to the EDI discourse.

Take-home Messages: The lack of faculty diversity in health professional programs has been identified in the literature. Medical residents and nursing students need mentorship from diverse faculty and diverse faculty are needed to provide role modelling and professional guidance to trainees.

#EP5.2 - ePosters: Education Management - General

#EP5.2.5 (7289)

Learning from Lived Experience: Development Of A Trans Health Education Workshop

AUTHOR(S):

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ABSTRACT:

Background: Gender reassignment is a protected characteristic under the Equality Act 2010 (1). Trans people in the UK face significant challenges in accessing equal healthcare, without fear of discrimination (2). The aim of this work is to develop an educational workshop that improves the experiences of trans people accessing healthcare by attempting to change the beliefs and attitudes of the staff treating them.

Summary of Work: To develop initial workshop content, a literature review was conducted on two topics: health and wellbeing of trans people in the UK, and methods used to deliver and assess trans health education worldwide. Transformative learning theory (3) and intergroup contact theory (4) were identified as being appropriate to inform the development of this workshop. Trans people were involved in reviewing and contributing to the development of workshop content and have been invited to take part in workshops with undergraduate medical students. To assess whether the intervention is successful in its aims, paired data will be collected using the validated LGBT-DOCSS tool (5) before and after the workshop.

Summary of Results: It is expected that this workshop will be successful in its aims of improving students' knowledge of, and attitudes towards trans people in healthcare. There are plans to further develop the workshop into a continuing professional development resource that can be delivered to postgraduate medical and allied healthcare professionals.

Discussion and Conclusions: There is evidence that interpersonal contact with trans people results in immediate reductions in transphobic attitudes. (6) Similar approaches to trans health education have been taken by others (7) but the literature search conducted at the outset of this project did not reveal any approaches to trans health education that explicitly use transformative learning; as such, it is a novel innovation in the developing field of trans healthcare and trans health education.

Take-home Messages: This workshop aims to improve the experiences of trans people accessing healthcare by using transformative learning theory and intergroup contact theory to give students an insight into how their actions might affect trans patients, and how they can improve this.

#EP5.2 - ePosters: Education Management - General

#EP5.2.6 (5147)

Recipe for sustainability: The ingredients required to deliver a sustainable Simulation-based Education curriculum across a Faculty of Health, Social Care & Medicine. The first steps in the journey.

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ABSTRACT:

Background: Simulation-based education (SBE) has become widespread and valued as a training and educational modality within health professions education. It is however a vastly expensive form of learning and without adopting standards or guidance in design or delivery can lead to issues with regards to the quality and value of the simulation experience. This poster will showcase the journey that one Faculty of Health, Social Care and Medicine has taken in a year in working towards creating sustainable simulation across its undergraduate and postgraduate programmes.

Summary of Work: Having identified a need for a purpose-built Centre a significant investment was made to support the development of the use of simulation across the faculty. The Clinical Skills & Simulation Centre became operational in September 2019 facilitated by a small simulation and skills education team. A simulation strategy, including a SWOT analysis, was written which established key target areas. These included: recruiting a core team of staff, educating the academic staff on SBE, encouraging the use of simulation by offering regular faculty development sessions including holding a faculty wide staff study day, observing all current simulation sessions run by the faculty and having a facilitator work alongside in developing the material. Mapping where skills and simulation are occurring across all programmes was carried out to identify areas where interprofessional opportunities could be developed and where gaps were in using SBE. Guidance and policies were written involving all skills and simulation leads across the faculty ensuring a consistent and standardised approach in the use of SBE.

Summary of Results: Student evaluations and staff feedback from questionnaires will be presented.

Discussion and Conclusions: Clear benefits are seen in terms of staff knowledge and willingness in using SBE and in the positive student evaluations. There are still many challenges including the requirement to become more cost effective e.g. reviewing consumables expenditure.

Take-home Messages: Importance of creating guidance and standards; having a core team of staff and regularly reviewing all processes to become more efficient and cost effective.

#EP5.2 - ePosters: Education Management - General

#EP5.2.7 (4781)

Class size impact on medical education: in-depth interviews

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ABSTRACT:

Background: To establish the impact of class size on the educational process and outcome in medical university we divided our study into two stages: multicentered qualitative study via in-depth interview and subsequent multicentered prospective randomized control study in classes with a different number of students.

Summary of Work: Fourteen interviewees were recruited at Sechenov University and Privolzhsky Research Medical University among teaching staff of Internal, Occupational Medicine and Rheumatology, Chemistry, and Biology departments. We developed an interview survey guide, which included questions on the initial attitude, problem issues, final attitude etc. The in-depth interviews were conducted as a private conversation, in a calm environment with no external stimuli. Conversations were recorded, transcribed and analysed. All the interviewees were informed about the purposes and design of the study and given a short questionnaire to fill in about their background.

Summary of Results: The majority of respondents specialized in basic science (78.6%) and worked at Sechenov university (71.4%). Most of them (57.1%) worked in medical education for over 10 years. All participants complained about the increase of class sizes by 50% at the last 5 years: from 12 students to 18. They qualified the class size of 10 ± 3 as an optimal. Noteworthy, the declared optimal class size coincided with interviewees' student-years class sizes. All concluded that the main difficulties on the way to the increase of class size are activities aimed at practical skills development and assessment. However, some respondents suggested implementing simulation technologies, since it may optimize the education and increase cost-effectiveness.

Discussion and Conclusions: Generally, the interviewed faculty expressed a unanimous opinion about optimal class size and voiced concerns that class size does adversely impact education. This opinion is strongly influenced by interviewees' own student-years' experience, thus is biased.

Take-home Messages: Further investigations are needed to elucidate the actual optimal class size. The future multicenter prospective randomized control study is supposed to elaborate quantitative correlations between class size and educational outcomes which will guide later class size management.

#EP5.2 - ePosters: Education Management - General

#EP5.2.8 (5483)

Addressing the Pediatric Rheumatology Workforce Shortage: Is Early Exposure Enough?

AUTHOR(S):

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ABSTRACT:

Background: The United States is facing a physician shortage in many areas of medicine, including pediatric rheumatology, with the supply exceeding the demand by 33%. We have previously demonstrated that medical student exposure to pediatric rheumatology increased interest in pursuing pediatric rheumatology, but little has been done to determine long term effects of this exposure on career preference. This study aimed to 1) follow up the effects of early exposure on medical student career preference and 2) serve as a pilot for understanding the reasons why medical students do or do not continue to express interest in pediatric rheumatology.

Summary of Work: Thirty-six University of Cincinnati medical students in their third or fourth year participated in a rheumatology elective at Cincinnati Children's Hospital Medical Center between July 2018 and November 2019. Immediately following their elective, they completed a survey regarding their experience. A cross sectional study of participants was conducted in December 2019 via a follow-up survey asking about the Rheumatology experience and influences of that experience on career choice.

Summary of Results: 13/34 (38%) of learners responded. 11/13 (85%) of respondents participated in the rheumatology elective their third year of medical school. 2/11 (18%) of students returned for a second elective as a fourth year medical student, citing the patient/physician relationship, disease pathology, research opportunity, and mentorship guidance as reasons why they returned. 13/13 (100%) of learners indicated they are not interested in becoming a pediatric rheumatologist.

Discussion and Conclusions: In our initial study, 64% of responders reported that an elective in pediatric rheumatology increased their interest in pursuing pediatric rheumatology. However, 13/13 (100%) of follow-up survey responses indicated a lack of desire to pursue pediatric rheumatology, indicating that that initial interest may not be maintained over time. It is unclear how or why their interest changed. Further evaluation, such as qualitative interviews or evaluation of the effects of mentorship and research opportunities, might help provide further insights regarding career discernments.

Take-home Messages: Early exposure may be important for capturing medical student interest in a field, but may not be enough to maintain that interest over time.

#EP5.2 - ePosters: Education Management - General

#EP5.2.9 (6156)

Funding for Health Sciences Students: What are the fundamental issues- students' perspectives.

AUTHOR(S):

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- Byron Ter Morshuizen, University of Witwatersrand, South Africa

ABSTRACT:

Background: Background: South African students experience significant financial challenges. There is a great paucity of research that has been done with the aim of understanding the financial constraints experienced by medical students. Moreover, examination of the literature also reveals little on how medical students make sense of their financial difficulties and the suggestions on regarding sharing study costs.

Summary of Work: Methods: This study was framed within the qualitative research approach. An intrinsic case study design was selected as suitable research design to focus the study on students with financial concerns. The sample consisted of six medical students in the third and fourth year of study. Three were graduate entrants and three had been admitted directly from school. The interviews lasted between 24 to 53 minutes. Each individual interview was recorded, transcribed and analysed using a thematic method.

Summary of Results: Results: Four data grounded themes were inductively developed, namely burning issues, shared responsibility, and the passport is a burden and my financial status fights with my passion. The findings reveal complex financial constraints which pose a threat to the academic success of the participants.

Discussion and Conclusions: Discussion: The South African government post the apartheid era tried to bridge the inequality gap between different races by increasing education opportunities in universities for the previously disadvantaged groups. The shortage of state funding propelled universities to increase study fees and that have culminated in the national fees must fall campaigns in the institutions of higher education (Parker, 2016). This study was conducted in 2016 after the Fees-Must Fall campaign, which was the direct outcome of the insufficient funding of higher education against the backdrop of the growing population of new students who requires financial assistance (Bosch, 2016). Conclusion: The findings painted a bleak future for the participants who have financial problems because there are possibilities that the financial problems may compel them to drop out of the university.

Take-home Messages: Notwithstanding the financial problems, the participants demonstrated viable cost management strategies they are using to cover their tuition fees.

#EP5.2 - ePosters: Education Management - General

#EP5.2.10 (7250)

The Learning Hospital: regulatory drivers in health facility design

AUTHOR(S):

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ABSTRACT:

Background: Building, repurposing, maintaining and refurbishing health facilities is a costly enterprise. Patient-centred design is becoming an important part of this enterprise, but it appears consideration is often little or belated regarding learners, education and training. Work-integrated learning is essential to all medical and health professional learning. Regulations such as hospital, education and training program accreditation provide drivers for change. This may include learner-centred design. Guides or regulations about health facility design may include consideration of learners. The 2018 Macy Foundation report *Improving Environments for Learning in the Health Profession* includes a section 'Creating Physical and Virtual Spaces for Learning' and recommends 'Those in positions of responsibility for learning environments in health professions education and health care organizations should ensure appropriate, flexible, and safe spaces (physical and virtual) for learning'.

Summary of Work: Accreditation documentation and standards in Australia were reviewed. International examples and the current literature were explored. The Australian Medical Council, prevocational training bodies for medical graduates, specialist training colleges all have available documents. These were examined, through careful reading and electronic searching, for material that may influence health facility design to provide for learners. One major design and building guideline is currently available in Australia for health facilities. Similar examples were found in a number of other countries.

Summary of Results: All accreditation documents include mention of appropriate safe spaces for working and learning, but detail was minimal. Little information is provided that may guide planners in designing spaces for effective work-integrated learning. Building guidelines refer only to meeting rooms.

Discussion and Conclusions: There is minimal evidence that accreditation and building guidelines support learner-centred design for integrated learning in health care facilities.

Take-home Messages: Opportunities exist to improve accreditation and planning as drivers for design of the Learning Hospital.

#EP5.2 - ePosters: Education Management - General

#EP5.2.11 (7213)

MinhoMD: transforming the curriculum for the 2050 physician

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ABSTRACT:

Background: Medical education must adapt to successive changes in healthcare professions and societal needs. Recent advances in medical knowledge and technology prompt medical schools to adapt their curricula to this transforming landscape. Thus, School of Medicine of University of Minho (EMED/UM), initiated a curricular reform, maintaining the premise that it is an innovative and creative school, since its creation.

Summary of Work: In 2017, EMED/UM members (faculty, staff, students) reflected on what would be expected from a doctor in 2050. It was established that physicians of the future, need to be humane, communicative, flexible, managers and competent (phase 1). Planning of a new curriculum (MinhoMD) started January 2018, involving the community of EMED/UM (teachers, current and former students and staff). MinhoMD is based in 4 pillars, namely, Foundational Science, Clinical Science, Health System Science and Humanities with 7 running threads namely, Foundations of Medicine, Clinical Competence, Health Systems Science, Technology applied to medicine, Community Health and Preventive Medicine, Research and Evidence based medicine, Ethics, professionalism and humanities. The curriculum is structured in two years of Biomedical and Clinical Sciences, a year of electives and a professionalizing year. (phase 2) In phase 3, the assessment methodologies, class content, faculty and schedule were defined. A faculty development program was implemented highlighting the new methodologies of learning and assessment.

Summary of Results: MinhoMD is a flexible curriculum tailored to each student. Learning methodology is outcome oriented and patient-centered based on case and symptom-based learning. Assessment methodology includes formative assessment, emphasizing on feedback and remediation, progress test, portfolio, OSCE-type exams, WBA and self and peer assessment. Students will have the possibility to complete a major or two minors in complementary areas (health economics, health management, data analysis, biomedical research and POCUS).

Discussion and Conclusions: The community of EMED/UM was involve all the process. Due to this, we were able to create a curriculum headed to future needs and that considers every perspective, with the engagement of all the community.

Take-home Messages: When creating MinhoMD, we are innovating medical education and breaking up installed paradigms.

#EP5.2 - ePosters: Education Management - General

#EP5.2.12 (7160)

Situating the Backpack: Surveying the Symbolic Landscape of Canadian Undergraduate Medical Education

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ABSTRACT:

Background: For more than twenty years, the Canadian Medical Association (CMA) has given first year medical students across Canada a knapsack, co-sponsored by their provincial medical association and (in previous years) by a Canadian financial services provider. The backpack is ubiquitous in hospitals and on medical campuses and has become a pan-Canadian signifier of medical learners, the cornerstone of a hash-tagged marketing campaign, and part of a much anticipated rite of passage for new students. Its meanings and implications, however, remains, as yet, untheorized.

Summary of Work: The present study locates the backpack in relation to other important symbolically charged artefacts of medical education - namely, the white coat and the stethoscope - and synthesises perspectives from the literature addressing how these material objects work to shape the performance of a nascent professional identity during medical school.

Summary of Results: Much like donning a white coat or a stethoscope, wearing the backpack is an act of public identification with medicine that is selectively legible to the insiders and bystanders of the Canadian medical milieu. Akin to these other markers of medical identity, the backpack signifies more than membership in the medical profession: it speaks of access to new realms of social and cultural capital, as well as new worlds of privilege, in the hospital and beyond

Discussion and Conclusions: In a Canadian context, the backpack is a material marker of status that carries significant implications for how learners understand what it means to be a member of the medical profession. Further work is necessary to continue parsing these meanings; one future avenue of investigation will be discussed.

Take-home Messages: Material markers of medical professional identity play an important role in shaping how learners understand what it means to be, and to become, a physician.

#EP5.2 - ePosters: Education Management - General

#EP5.2.13 (4609)

ASPIRE Recognition of Excellence in Social Accountability (SA): a mobilizing process of all the actors at the Faculté de médecine de l' Université de Montréal.

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ABSTRACT:

Background: In August 2019, the Faculté de médecine de l'Université de Montréal (FMUdeM) received this ASPIRE Recognition of Excellence in Social accountability. We report the approach that has been taken at the Faculty.

Summary of Work: After reviewing the ASPIRE requirements, the internal ASPIRE committee define an accurate portrait of the work to be done targeting the necessary collaborators, the final documents to be structured, the information to be collected and the drafting modalities. Our strategy was to involve faculty leaders and students in order to have a picture of the situation as broad as possible. Meetings of the internal ASPIRE committee members were planned with the Dean, the Faculty Steering Committee, the leaders of the 23 Faculty sectors, as well as students. The committee has proceeded with an inventory of concrete and well-described achievements illustrating SA within the Faculty, within preformatted appendices.

Summary of Results: This inventory made it possible to write a clear and illustrative summary of the importance of SA initiatives within the Faculty and this, in a global perspective according to the ASPIRE requirements. We believe our Faculty demonstrates a true institutional leadership in social accountability (SA) through innovative projects that have had major impacts. More than 150 projects and/or actions related to SA have been collected. For example, we mentioned the creation of the delocalized campus in Mauricie, the actions of the Direction of Collaboration and Patient Partnership, a project on access to Indigenous health education based on a public consultation approach, the PRESENCE Center....

Discussion and Conclusions: All these achievements and upcoming efforts, show that the FMUdeM has made Social Accountability one of its priorities. The process undertaken for the ASPIRE Recognition of Excellence in SA has led to the mobilization of all faculty stakeholders, from the Office of the Dean to the student body, and to the reinforcement of a momentum around SA that, we are certain, will have very positive impacts in the years to come.

Take-home Messages: The mobilization of all the actors of the faculty (teachers and learners) is an essential step to inculcate the culture of Social Accountability in our tripartite mission of education, research and clinical care.

#EP5.2 - ePosters: Education Management - General

#EP5.2.14 (4612)

Cross-border Post-Graduate Medical Education; Contextualising the Irish GP Training Curriculum for Malaysia. Irish College of General Practitioners.

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ABSTRACT:

Background: The demand for General Practitioners (GPs) in Malaysia is currently outstripping demand, a situation acknowledged by the Ministry of Health. Therefore, the Malaysia-Ireland Training Programme for Family Medicine (MInT-FM) was established, based upon Irish GP training practices and experience. This programme was a joint effort in conjunction with the Irish College of General Practitioners (ICGP), Royal College of Surgeons of Ireland and University College Dublin Malaysia Campus (RUMC) and the online learning system provider iHeed. This cross-border initiative reflects the wider globalisation of education in recent decades. Central to this cross-border contextualisation was ensuring that the curriculum was fit for local learning needs in Malaysia.

Summary of Work: The ICGP curriculum, consists of primarily learning outcomes (LO) which are sub-segmented into 34 chapters. Within each chapter non-learning outcomes (NLO) materials have been included since 2016. The process of contextualising the curriculum involved two concurrent workflows; a modified Delphi process was implemented for the LOs and the NLO materials of each chapter were rewritten by Malaysian GPs working in pairs. For the modified Delphi process the existing ICGP LOs were appraised for local needs by an expert group consisting of 18 Malaysian GPs via open and closed questions on online surveys. The results of each round were collated by the ICGP based in Ireland, with changes guided by Malaysia GPs. Concordance was set at $\geq 80\%$ agreeance. Between April and October of 2019 numerous Delphi rounds were completed; 34 first rounds, 24 second rounds and 7 third rounds.

Summary of Results: Overall the existing 1763 LOs were deemed suitable for Malaysia for the vast majority of cases with only 3.1% requiring modification (n=55), 0.51% requiring deletion (n=9) and 0.45% new LOs needed (n=8). Concurrently, 163 and 37 Malaysian specific resources and references were added respectively.

Discussion and Conclusions: The ICGP curriculum, for the vast majority of learning outcomes, was suitable for Malaysian primary care specialist training. However, key and necessary changes were made by local Malaysian GPs to ensure local needs were fully met.

Take-home Messages: This process illustrates one possible methodology to complete a core component of any cross border educational initiative – the contextualisation of curriculum.

#EP5.2 - ePosters: Education Management - General

#EP5.2.15 (5280)

Constructing Disease's Social-Culture Contexts by Multicultural Group: Using TB as an Example

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ABSTRACT:

Background: The School of Medicine for International Students of I-Shou University in Taiwan is a four-year M.D. program (taught in English for Bachelors degree) that aims to cultivate international medical professionals for home countries. We aimed to teach students medical knowledge embedded in social-culture context of their home country.

Summary of Work: The 40 second-grade students from 15 countries and 4 faculties were enrolled to compose a multicultural group improving students' understanding of disease's social-culture context. This group was composed of cross-cultural students and faculties with biomedical and medical humanities background. Two medical humanities faculties designed reflection questions for specific disease, and the other two biomedical experts raised the questions for students' discussion after biomedical knowledge class. The reflection reports by students were collected and analyzed to form teaching materials adopted in other medical humanities related courses.

Summary of Results: Using pulmonary tuberculosis (TB) as discussion example, some meaningful social-cultural factors were identified may affect caring process as: 1. Patients seek help from traditional healers at first, western style physicians are their second choice. 2. AIDS, patients with TB has cough symptom will delay to visit physicians to avoid the AIDS stigma. 3. The extended family or polygamy family living crowded in limited space. 4. The factories and public traffic vehicle close windows to keep warm. 5. The border of country is difficult to do epidemic prevention for heavy traffic of workers and pasturing activities. 6. Labors ask for sick leave is difficult. 7. Women are vulnerable group. 8. Big festivities worsen the epidemic situation.

Discussion and Conclusions: Composing groups of diverse cultural background to establish social-cultural context of diseases can soon simulate student's future clinical situation. Such model could help medical humanities insight immerse to the program, enhance the depth and width of medical education, cultivate the knowledge for all professors with different backgrounds. Adding discussion topics about social-cultural context of diseases can also benefit students' satisfaction for biomedical courses.

Take-home Messages: Constructing the social-cultural context of specific disease by group composed of multicultural students and faculties with different expertise can strength teaching consequence of medical humanities education.

#EP5.2 - ePosters: Education Management - General

#EP5.2.16 (7157)

Benefits of Japanese medical students studying global medicine through intercultural exchange

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ABSTRACT:

Background: In Japan, the population is aging but declining birthrate. In spite of the increasing number of workers recruited from abroad to support the economy. There are many things to be done for them to use medical facilities. With the expectation that English will be used more frequently in Healthcare, universities are setting up medical English as a subject. Overseas clinical study provides an opportunity to learn about the medical system in the country where the host university is located, as well as to consider medical treatment based on a cross-cultural background, such as treatment plans based on the background of local patients, relations with the community, and awareness of illness and medical care.

Summary of Work: Overseas clinical training at the Chiba University School of Medicine was set up in the past 10 years with the aim of traveling abroad to gain a birds-eye view and experience globalization as a career formation for medical students. However, how to perceive more ethnic and cultural diversity within Japan is shifting to the future challenges of the Japanese as a single ethnic group. The understanding of cross-cultures is also required in the future of medical treatment in Japan. In addition, we investigate how the practical experience at medical facilities overseas has influenced the career development of students, and construct an evaluation method to incorporating it into the curriculum in the future.

Summary of Results: A report was prepared on the contents of learning at each study abroad and learning about them by students. Based on this report, qualitative analysis was conducted to improve medical English education. The effects of studying abroad between students who have attended medical English for four years and students who have not attended medical English are described.

Discussion and Conclusions: Although it is clear that the experience of studying abroad after studying abroad in a medical education field in Japan can lead to personal confidence, it is not enough to focus on cross-cultures. It is necessary to consider a specific curriculum that learns the importance of intercultural exchange between students and patient background

Take-home Messages: Overseas clinical training at medical universities and facilities is a useful experience for Japanese medical students.

#EP5.3 - ePosters: Education Management - AMEE International Networking Centres

#EP5.3.1 (4956)

A Cost-effective, Reproducible, Home-made Training Model for Suprapubic Cystostomy and Catheter Insertion

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ABSTRACT:

Background: Suprapubic cystostomy and catheter insertion (SPC), an invasive alternative for the patients in emergency situation who are unsuitable for urethral catheterization, is a core competence that must be achieved by all surgical and urological residents. SPC skill training is difficult due to lack of available simulation models. The study aims to develop an innovative simulation model for SPC training on surgical and urological residents, followed by evaluation of its effectiveness.

Summary of Work: Researchers in this study developed a new model, which includes a bladder (a plastic bottle with a water-filled rubber glove inside) and an abdomen (a plastic container with a suture pad on top), the bladder being placed in the middle of the container and surrounded by spongy cushion. Trainees were allowed to perform the simulating SPC procedure using this model. The process includes positioning the puncture point with or without ultrasound guidance, disinfection, local anesthesia, skin incision, puncture with the SPC kit and insertion and fixation of the catheter. Trainees were allocated into two groups randomly. All of the trainees received a tutorial course with procedure delineation and video demonstration, while the intervention group was provided simulation practice on the model.

Summary of Results: The model was evaluated by senior urologists in four domains (general, anatomy, sensory feedback and urine outflow). Urologists evaluated the model with general satisfactory score being 8.75 out of 10. The trainees confidence of this procedure in intervention group was higher than control group ($P < 0.05$). The overall performance score of this procedure was significantly improved compared to study group ($P < 0.05$).

Discussion and Conclusions: The innovative simulation model shows great potential in cost-effectiveness in SPC training and practice. This model helps the trainees understand the procedure and provides the pre-clinical hands-on experience for the trainees to be prepared for practice on real patients.

Take-home Messages: The innovative simulation model for resident training with suprapubic cystostomy and catheter insertion is feasible, cost-effective, and reproducible and worth spreading. Further research is needed to test its limitations and long-term effect on learning.

#EP5.3 - ePosters: Education Management - AMEE International Networking Centres

#EP5.3.2 (5208)

AMEE International Networking Center in Georgia: ongoing activities and challenges

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ABSTRACT:

Background: AMEE International Networking Center was established in May 23, 2019 at Tbilisi State Medical University (TSMU), Georgia that has been considered as the most important event on the way of enhancement medical education. TSMU as a venue was chosen as it is considered as the leading medical institution in Georgia and due to significant achievements in modernising teaching and learning.

Summary of Work: The main goals of AMEE International Networking Center are to improve of medical education methodology in higher medical institutions in Georgia and whole South Caucasus region through conducting training in medical education methodology (ESME courses) on regular basis, facilitation of engagement of medical educators from South Caucasus in AMEE activities, publishing digests of “Medical Teacher” in Georgian language. After successful completion of four ESME courses, participants will be awarded AMEE Specialist Certificate.

Summary of Results: The first achievements of AMEE International Networking Center in Georgia are as follows: since the opening of the Center two five-day courses have been already run: In May, 2019 the first ESME course “Essential Skills in Medical Education” was successfully held. A total of 46 academics from Georgian medical schools attended the course, of them 29 were TSMU professors and 19 – from 10 Georgian medical schools. After submission the course assignment (reflection letter) 40 (87%) participants were awarded the ESME Certificate in Medical Education on completion of the course. The second five-day course ESMEA – “Essential Skills in Medical Education – Assessment” was conducted in October 2019. This time training was attended by 40 professors: 22 from TSMU and 18 from 10 Georgian medical schools. Of them 75% participants will get ESME certificates. Both courses were led by AMEE president, Professor Trevor Gibbs. As the demand on ESME courses are extremely high, the new cycle of the courses for the beginners have been already scheduled in 2020.

Discussion and Conclusions: Establishment of AMEE International Networking Center has been the main achievement for modernizing medical education in Georgia.

Take-home Messages: Opening of AMEE Center in Georgia is the most significant trigger for the improvement of medical education in the country and in whole South Caucasus region.

#EP5.3 - ePosters: Education Management - AMEE International Networking Centres

#EP5.3.3 (5225)

The Role of Humanities in Medical Education – Seven Years' Experience in the American MD Program at Tbilisi State Medical University

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ABSTRACT:

Background: Growing evidence suggests integration of humanities within curricula lead to important learning outcomes, i.e. interpretation skills, empathy, communication, teamwork, critical thinking and work-life balance. Humanities subjects including arts, literature, anthropology and other cultural disciplines are a significant part of the first year curriculum, integrated around the axis of History of Civilisations. Students attend 30 three-hour humanities sessions. During their 5th and 6th years they attend 5 two-hour medical humanities sessions.

Summary of Work: This study examines first and sixth year students' perceptions (engagement, enthusiasm and satisfaction) of the humanities curriculum using on-line questionnaires.

Summary of Results: There is a positive perspective of humanities subjects being included in the medical education. Results show that students' views are changing positively over time with senior students valuing the importance and relevance of medical humanities in their medical training more than first year students.

Discussion and Conclusions: The curriculum helps develop students' holistic approach to a patient as a human being and part of society rather than focusing solely on their medical problems.

Take-home Messages: 1. Humanities as a core component of medical program is an excellent tool to improve clinical, interpersonal and communications skills of the future doctors. 2. Continuous integration is an effective approach to expose medical students to the humanities.

#EP5.3 - ePosters: Education Management - AMEE International Networking Centres

#EP5.3.4 (5355)

A pediatric interns training through peer role-play on informed consent to motivate learning

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ABSTRACT:

Background: Comprehensive medical knowledge is required to provide adequate information for informed consent, an essential component of optimal patient care. This study aims to explore the effectiveness of pediatric interns training through peer role-play on seeking informed consent with preterm infant parents.

Summary of Work: Thirty-two interns who went through a pediatric clinical practice rotation were randomized into intervention group (n=16) and control group (n=16). They all participated in a workshop about preterm infant care. The intervention group received additional training through peer role-play on seeking informed consent with preterm infant parents during the workshop. Two outcome measures were used: a quiz (5-point scale) and a questionnaire on interns' feedback.

Summary of Results: The quiz scores of the intervention group (4.12 ± 0.88) were higher than that of control group (3.44 ± 0.89) ($P < 0.05$). Fifteen interns (93.75%) in the intervention group, 9 (56.25%) in the control group agreed strongly the workshop was helpful in improving preterm infant care ($P < 0.05$). Fourteen interns (87.50%) in the intervention group, 7 (43.75%) in the control group agreed strongly the workshop encouraged and motivated learning on preterm infant ($P < 0.05$).

Discussion and Conclusions: Comprehensive knowledge on neonatology is required in the informed consent of preterm infant parent talks. During the informed consent process to preterm infant' parent, the physician needed to explain preterm infants' possible complications, proposed procedure and prognosis. Motivation is connected to goals. The peer role-play informed consent talks training might discover the interns' knowledge gap, which increases their desire to learn. Motivation is a major determinant of effect of learning and success. The pediatric interns who received peer role-play informed consent of preterm infant parent talks training were motivated to learn and gained better performance.

Take-home Messages: Training through peer role-play on informed consent talks is beneficial to motivate interns' learning and relevant performance.

#EP5.3 - ePosters: Education Management - AMEE International Networking Centres

#EP5.3.5 (5391)

The Formative Assessment plus 5 Micro skills in Training Communication Skills for Chinese Residents in ICU department

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ABSTRACT:

Background: It is challenging for residents to achieve effective communication with ICU patients due to information asymmetry between doctors and patients, with relatives involved in most cases in China. Out-of-pocket medical expenses together with trust crisis against Chinese doctors created more obstacles for communication .

Summary of Work: A pilot study was conducted using the formative assessment plus the 5 micro skills to promote the residents' competence of communication in critical cases. Residents were observed and scored during their conversation with ICU patients' relatives and received feedback from observers. Interview for both relatives and residents were carried out and questionnaire of residents was followed.

Summary of Results: 10 residents were included in the study, while 7 ICU patients' relatives were interviewed. The residents' overall performance in communication with ICU patients and their relatives kept improving along training. The items of attitude and manner improved promptly after training. Systematic and logic explanation, including finding out willingness and seeking for permission for further treatment were big challenges for almost all residents and their performance fluctuated with different cases. However, their analyzing skills were generally improved thanks to one-on-one feedback. According to the result of interviewing ICU patients' relatives, verbal and non-verbal communication were both highlighted, in addition to explanations on patients' current condition, prognosis, etiology, treatment plan and medical expense. Some patients' relatives also required doctors to be more supportive by showing empathy and respect towards their decisions of next steps. Residents realized the importance of communicational skills for critical cases and thus improved themselves accordingly through the training, while originally 80% of the participants pay no attention to relevant skills training or self learning.

Discussion and Conclusions: The formative assessment plus 5 micro skills is an effective way to find out gaps in residents' competence of communication for improvement. Together with adequate practice, it improves residents' communication in clarity, professionalism as well as humanism, which are crucial for critical cases in ICU.

Take-home Messages: 1) The formative assessment plus 5 micro skills facilitates effective and timely communication. 2) Deliberate practice is necessary for significant improvement of relevant competence.

#EP5.3 - ePosters: Education Management - AMEE International Networking Centres

#EP5.3.6 (5611)

Application of simulated clinical scenarios in the training of basic obstetric procedure can help improve medical students' performance

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ABSTRACT:

Background: Scene simulation in medical skill training can provide trainees with exposure to various clinical scenes, techniques and procedures which are critical for real clinical practice. Adding “scene simulation training” in medical training program can integrate theory learning, technical skill practice and communication skill training. Our study aims to evaluate the effect of adding simulated clinical scenarios into skill training course of basic obstetric procedure among Chinese medical students.

Summary of Work: From November 2018 to June 2019, a total of 190 fourth-year medical students who did their obstetrics rotation in our hospital participated in this study. Students were divided into two groups, study group and control group, according to the odd and even number of their student IDs. All students received the basic obstetric procedure training course by lecture. The intervention group received an added scene simulation workshop. They were asked to role play as doctors and patients to simulate different clinical scenarios, such as GDM patient with macrosomia, hypertension with fetal growth retardation, funnel pelvis consulting for vagina delivery etc. Students should complete the inquire, obstetrical examination on the simulation model and make diagnosis by themselves in the workshop. End-of-rotation evaluation scores were compared.

Summary of Results: Students receiving simulation training were significantly more confident in their ability to perform basic obstetrical procedures than those who did not receive the simulation training ($P < 0.05$). Compared with lecture-only students, simulation students scored significantly higher in their final skill evaluation ($P < 0.05$) while the scores of their written examination were comparable.

Discussion and Conclusions: Scene simulation gives a better training experience for medical students. It helps improve students' understanding and appliance of the basic obstetrical procedure. They performed better in their final clinical skill evaluation after intervention. Their clinical reasoning capacity and communication skills were significantly different.

Take-home Messages: Application of simulated obstetrical clinical scenarios can improve students' self-reported comfort with the basic procedures and their final performance in clinical skill assessment.

#EP5.3 - ePosters: Education Management - AMEE International Networking Centres

#EP5.3.7 (5781)

Medical students training in scientific discovery in a research resource-poor country

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ABSTRACT:

Background: In low resource countries, the direction of medical research has to align with health priorities. To accomplish this aim future physicians must be trained in research methods to enable comprehension of the medical literature. However, it is difficult to provide basic or translational science experience in the absence of extensive research infrastructure which tends to limit research to observational studies and qualitative research methods.

Summary of Work: We have developed a “Discovery” course, based on prerequisites in biostatistics and epidemiology, to teach modern approaches and basic principles of different types of medical research, to understand ethical and governance issues of medical research, practical skills to develop a research project, and to provide engagement with clinical research programs and research communities. Workshops cover key concepts and acquisition of practical skills in each topic, and students develop individual research projects. Methods include PBL and CBL, demonstrations, analysis and synthesis of relevant materials, and E-learning. Evaluation comprises performance at the workshops (40 points), midterm quiz (10 points), performance at individual meetings with faculty (10 points), and written and oral presentation of individual research projects (40 points) including external faculty reviews. Students obtain two certifications: Good Clinical Practice (National Drug Abuse Treatment Clinical Trials Network) and a Certificate in Biostatistics and SPSS usage.

Summary of Results: 20 students have taken the course in their final year. 19 students passed the final exam. 20% of the students obtained excellent or very good evaluations (>80 points out of 100 60% were good (71-80 points out of 100), and 20% were satisfactory (>61 points out of 100). Several students focused on unusual cases from their clinical practice.

Discussion and Conclusions: As expected, students used observational study designs. However, they used mainly quantitative research methods. Faculty development in the application of mixed research methods and data analyses systems is necessary.

Take-home Messages: Regular communication of research findings with their supervisors, project instructors and peers help medical students develop critical thinking in relevant topics of medical research that match national priorities.

#EP5.3 - ePosters: Education Management - AMEE International Networking Centres

#EP5.3.8 (6920)

Effective redundancy of taught Histology Course materials as a way to motivate the student's interest and knowledge

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ABSTRACT:

Background: The progress of medical science forces academic teachers to include the constantly increasing amount of information in the educational process. The volume of the material that student should be prepared for increases. This may cause the loss of motivation because of the complexity in the interconnections between course components.

Summary of Work: The aim was to compare the level of motivation and academic performance of the students studying Histology Course according to the whole curriculum program (Group 1) and the students who got an amount of information covering the most basic topics (Group 2). After attending the Course, all the students answered an MCQ tests and a problem task with a graded evaluation. The scale of the overall opinion about the course was included, ranging from 0 (I did not enjoy the course) to 10 (this course inspired and motivated me a lot). The results were analyzed with the parametric and non-parametric statistics methods using Origin (OriginLab Corp, USA). The factors included in the analysis were gender and the educational background. All of our students (n=140) were in the 1st year of the undergraduate program (17-19 years).

Summary of Results: In Group 1, 28.6% of students did not pass the test and mentioned that they were not motivated by it, while in the Group 2, only 8.6% of the students did not pass the final test but were much closer to the 51% pass grade. The number of students that obtained excellent marks in the first group was higher than in the second (15.7% to 10%).

Discussion and Conclusions: The analysis demonstrated that female students were more motivated in the first group of this study, while in the second group male students proved to be more encouraged. In general, the students of Group 1 were less motivated than the students in Group 2.

Take-home Messages: The entrance assessment of knowledge helps to understand the level of student preparation and motivation. Effective redundancy of course materials in the educational process of fundamental medical disciplines is an important way to increase an interest of studying for less motivated students while the excellently studying students should not limit themselves in basic part of subject.

#EP5.3 - ePosters: Education Management - AMEE International Networking Centres

#EP5.3.9 (5006)

“It’s stress... I guess...”: Should Medical Biochemistry Students be Taught About Coping Strategies?

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ABSTRACT:

Background: There’s ample evidence that high levels of stress are associated with negative mental and physical health effects. Stressed medical students usually demonstrate poor academic performance, which may have harmful consequences. Despite large number of studies on stress in this population, little attention has been paid to students who’ll have little to no patient care.

Summary of Work: Existing tools for stress levels assessment generally require validation when used in another cultural context and may produce discrepant data. Therefore, an anonymous online survey was designed and carried out among undergraduate Medical Biochemistry students of Sechenov University in order to investigate subjective stress perception and identify major coping strategies. The survey included four free response questions regarding levels of stress experienced during study at the University, manifestation of stress, stress-inducing factors, and stress coping strategies. Population-related data were also recorded. Survey results were subjected to independent inductive content analysis by two reviewers who grouped responses to each questions into themes, followed by cross-reviewing.

Summary of Results: A total of 79 students responded to the survey. Generally, senior students reported higher levels of stress; major manifestations included anxiety, insomnia, and agitation. Respondents stated several external factors that contribute to stress, including demanding cognitive load, exam anxiety, class schedule, and commute-related factors. The most popular coping strategies were comfort food (9.8%), sleeping/resting and spending time with friends/relatives (8.1% each), and sports (6.5%). Despite reporting subjectively high stress levels, about 15% of students described no specific coping strategy.

Discussion and Conclusions: The results showed that self-reported stress levels increased with the year of study. Healthy stress coping strategies prevailed among respondents. However, the number of students that have no knowledge about coping with stress calls out for preventive measures. Academic stress might be reduced via correction of institutional factors (e.g., adjusted schedule) or by introducing effective coping strategies training. The inductive nature of our study suggests the need for more in-depth research on the matter.

Take-home Messages: Students who’ll have limited or no patient contact also require teaching about effective, healthy ways of coping with stress in academic and professional environment.

#EP5.3 - ePosters: Education Management - AMEE International Networking Centres

#EP5.3.10 (5215)

Renewal of Undergraduate Stomatology Curriculum at Tbilisi State Medical University

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ABSTRACT:

Background: Nowadays there is the increasing demand on integrated dental education to prepare graduates for provision integrated care of patients. Until recently School of Stomatology at Tbilisi State Medical University (TSMU) ran traditional undergraduate curriculum (subject based, outdated methods of teaching and learning).

Summary of Work: Task Force was set at Tbilisi State Medical University to modernise existing curriculum and related methods of teaching and assessment. Task Force was composed by members of Curriculum Committee, main stakeholders and students representatives. Based on the results of wide consultations and profile of undergraduate dental education in Europe set by the Association for Dental Education in Europe (2017), innovated curriculum for undergraduate dental education at TSMU was developed.

Summary of Results: The following main competencies have been set by Task Force: Professionalism, Diagnostic and Communication skills, Patient-oriented Care, Attitudes toward patient and society, corresponding to the relevant learning outcomes. As a result, novel partly integrated undergraduate curriculum (with elements of horizontal and vertical integration) was developed for stomatology. The following integrated modules have been introduced in the innovated curriculum: Clinical Integration Course in Oral and Maxillofacial surgery in Children and Adolescents, Maxillofacial surgery and Implantology, Clinical Operative odontology and clinical endodontics, Clinical Periodontology and Oral Diseases in Children, Allergology and Clinical Immunology, Cytology and general histology and embryology. Special emphasis has been placed on teaching Clinical and Communication skills as well as on Research Skills. Relevant assessment methods, in particular OSCE (both for formative and summative assessment) have been strictly defined for most of clinical modules.

Discussion and Conclusions: Renewal of undergraduate stomatology curriculum at TSMU has been an important step towards harmonization with European (ADEE) standards and for the improvement of quality of teaching, learning and assessment at the University.

Take-home Messages: Renewed, revised curriculum in stomatology with more integration, matching local and international requirements was developed confirming need for permanent innovation of undergraduate dental education.

#EP5.3 - ePosters: Education Management - AMEE International Networking Centres

#EP5.3.11 (5643)

Results of a Flipped Classroom Teaching Approach in Dental Students

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ABSTRACT:

Background: The flipped classroom approach with pre-class educational content is becoming an international trend in medical education. The study aimed to assess dental students' learning and academic performance between traditional and flipped classrooms.

Summary of Work: This was a pilot prospective mixed-method study included 33 third-year dental students from Sechenov University, Center for International Education in two academic years. An "Internal Diseases" module was chosen for the comparison. Traditional group (TG; 2018, n=17) with a grade-point average (GPA) 4.5 attended didactic lectures and completed after-lecture homework. Flipped group (FG; 2019, n=16) with GPA 4.3 was introduced to the learning materials before class using Google classroom platform. FG used in-class session for case discussion and think-pair-share activity. Pre-, post-tests and end-of-course assessment in a form of the oral exam were used to evaluate academic outcomes. Feedback questionnaires were collected to compare students' perspectives on the teaching approach and to assess their interest in internal diseases.

Summary of Results: Of 33 enrolled students, 15 from TG, and 14 from FG completed all tests and a final exam. A majority of FG-students noticed that flipped classroom method helped them to increase learning motivation, improve understanding of internal diseases and promote their clinical thinking ($p < 0.05$). Ability to use materials at any time and have student-teacher online communication was determined as extra-positive aspects. FG performed better on the pre- and post-tests when compared to TG. The final exam points showed that FG-students had slightly higher scores than traditional ones: 4.6 ± 0.6 and 4.3 ± 0.8 , respectively. However, these points were significantly higher than previous GPA in a flipped group.

Discussion and Conclusions: Learning outcomes of flipped and traditional classrooms were similar on this study. However, active learning significantly increased students' motivation and engagement, their critical thinking and module understanding.

Take-home Messages: Flipped method can be an alternative to traditional one but further research is needed to determine optimal flipping techniques.

#EP5.3 - ePosters: Education Management - AMEE International Networking Centres

#EP5.3.12 (4281)

Flipped classroom and attendance of the Internal Medicine course. Are traditional lectures truly gone?

AUTHOR(S):

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ABSTRACT:

Background: Internal medicine course is delivered through traditional lectures followed by practical classes at Sechenov University. Practical classes are short and demotivate students to attend the course. An experimental flipped classroom model of teaching with international students was first evaluated at our University. The primary goal of the experimental pilot study was to find if there was an association between flipped classroom and students' motivation to attend the classes. The second goal was to evaluate students' learning preferences for a new method of teaching versus traditional one.

Summary of Work: Two groups of students with a total number of 20 were enrolled in the experiment. The first term of a 4-month Internal Medicine course was taught through the traditional classroom model once a week, while the last term of a month course was taught through the flipped classroom model 3 times a week. A questionnaire was designed to evaluate both strong and weak sides of the course, along with both student's and teacher's self-assessment role in preparation for the lesson. Answers were rank-ordered from strongly agree to strongly disagree.

Summary of Results: All 20 students favored flipped classroom model, stating it would "Fuse in them researchers rather than passive recipients of the facts". In the meantime 5 students out of 20 (25%) would prefer flipped classes to be supported by more engaging short lectures, showing individual preferences for learning. 6-8 students out of 20 (30-40%) would miss one or more classes during the traditional classroom teaching. Major reasons included lecture and lecturer specifics, health and personal issues. 2-3 students (10-15%) out of 20 would miss one or more classes during the flipped classroom teaching. Major reasons for absenteeism were "unfriendly schedule".

Discussion and Conclusions: Internal Medicine course should be properly scheduled and designed. Attendance can be affected by multiple reasons.

Take-home Messages: Although flipped classroom was a success, traditional lectures should not be discarded, but rather be modified. Faculty should develop a blended methodology of teaching based on students' aptitudes for learning.

#EP5.3 - ePosters: Education Management - AMEE International Networking Centres

#EP5.3.13 (4369)

Communication skills training: top five reasons to be included in the curriculum

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ABSTRACT:

Background: Patient-doctor effective communication is essential for good medical practice. In the meantime, communication skills courses are not included in the curriculum at Sechenov University. The main goal of this paper was to identify the importance of such training programs.

Summary of Work: 39 trainings on professional communication skills and 35 assessment procedures were held among 371 participants at the Sechenov Simulation Centre: 71 of them were trained, others were only evaluated by OSCE. The trainings included groupwork, and practice with simulated patients which were videotaped. A questionnaire was designed to evaluate both prior knowledge and feedback from the trainees.

Summary of Results: We identified five following reasons why the communication skills courses are essential in medical curriculum: 1. Raising awareness Based on the answers we identified significant knowledge gaps. Only 20% (74 respondents out of 371) of participants chose open questions to start the conversation. Moreover, 43% (160/371) considered acceptable to interrupt patients; 2. Learning through mistakes Multiple practices during training programs provide the opportunity to learn by making mistakes and “replaying” the scenario that cannot be done with real patients. 61,5% of respondents noted that they needed more practice for the acquired skills development (48/71); 3. Getting feedback Receiving feedback from a teacher, a simulated patient and a group is an integral part of the training, yet hard to implement in real clinical practice. 42% (30/71) participants would like to continue trainings, and other 49% (35/70) would like to train more with simulated patients; 4. Teamwork Working as a team helps trainees grasp the nuances of communication through observation, discussion, explanation, and feedback; 5. Self-evaluation Watching videos and looking at yourself from aside are unique self-reflective tools of the training programs.

Discussion and Conclusions: Communication skills trainings shape culture, value, and medical ethics in more confident, trustworthy doctor-patient relationship.

Take-home Messages: Communication skills should be taught and integrated in medical curriculum in order to provide a better care for patients in clinical practice.

#EP5.3 - ePosters: Education Management - AMEE International Networking Centres

#EP5.3.14 (4471)

Experimental study assessing students' and teachers' preferences for traditional and interactive study forms.

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ABSTRACT:

Background: One of the main tasks in higher school is improving the quality of studying and creativity potential. It requires improvement of traditional and/or interactive methods of studying. Experimental study was aimed at identifying if the age could be considered as variable correlating to preference towards interactive and traditional teaching method on discipline Pharmacology based on the analysis of pedagogical studies.

Summary of Work: We conducted an experimental study, using elements of qualitative and quantitative methods: the study of literature, observation, performance analysis, questionnaires and testing. In particular, 100 students' and 67 teachers' attitude towards the similar topics delivered in consecutive way through traditional and interactive forms of education was revealed. The preference to teaching methods, its correspondence to age of teachers and students, learning outcomes (test control of knowledge) was analyzed.

Summary of Results: The traditional form of education was chosen by 23% and interactive by 77% of students. Following estimates obtained: • traditional form "5"-20%; "4"-26%, "3"-40%, "2"-14%. • Interactive form 5-34%; 4-42%, 3-14%, 2-10%. Teachers age was taken into account in the questionnaire. Among aged 55+(35 teachers): • 87%-chose traditional teaching form, • 13%-interactive teaching form
Among aged under 55(32 teachers): • 91%-chose interactive form • 9%-traditional form

Discussion and Conclusions: Experimental study revealed that an interactive form of training is preferable for majority (77%) of students that was reflected in and confirmed by knowledge test control. 91% of teachers under 55 years also prefer delivering material through interactive form. At the same time, traditional education form is preferable for majority (87%) of teachers aged 55+ and by minority (23%) of students. If we assume age as variable for assessing preferences to traditional or interactive form of studying, then age 55 looks as threshold. Further studies on bigger sample size are needed to identify if the age may be considered as variable correlating to preference towards interactive and traditional teaching and learning method.

Take-home Messages: It can be argued that age and generation gap in education matter. The study found disparity between the teachers wants regarding teaching and learning methods and the students needs. This gap to be taken in account when planning initiatives towards improving quality of education.

#EP5.3 - ePosters: Education Management - AMEE International Networking Centres

#EP5.3.15 (4686)

How can College of Basic Surgery make a difference in longitudinal competence progression

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ABSTRACT:

Background: Despite the diversity of competence acquired by different specialties in Surgery, there remains a commitment to junior surgeons' core competence which is common to all surgical practice, produced by core surgical training. To further promote such core competence through exclusive enhanced training, the First Affiliated Hospital, Sun Yat-sen University established the College of Basic Surgery (CBS) since 2015.

Summary of Work: Compulsory Core Surgery Training was uncoupled from Specialty training as the prerequisite of daily organization of CBS. Core competences were then defined through Delphi methods within the tertiary hospital in alignment with other elite hospitals in China, based on a needs assessment among junior doctors. Hands-on practice is highlighted in each phase of the training regardless of any specialty choice made later on. Syllabus was revised in 2017 to guarantee the update of relevant needs of different key stakeholders. Robust assessment process was guaranteed. Junior surgeons are holistically trained and assessed in all area covering knowledge, skills and attitude. Core faculties are structurally trained by AMEE experts in advance, equipped with modernized educational concepts and practice. Multisource constructive feedback, as well as summative assessment and workplace based assessment, is implemented to foster development of competence. Learning resources were provided to enhance directed-self-learning.

Summary of Results: Detailed results of the development will be specified during the presentation.

Discussion and Conclusions: Standardized curriculum and defined criteria underpinned by discreet assessment process has ensured progression of junior doctors' competence and proved welcomed by the multidisciplinary surgical team in the context of tertiary hospital. In line with solid foundation achieved by CBS activities, further development in higher specialty training, highlighting hands-on practice, needs to be planned accordingly.

Take-home Messages: The model of College of Basic Surgery can make a difference in longitudinal competence progression of junior surgeons and is worthwhile spreading. Further research on the transferability of the CBS model might be needed, in order to test the homogeneity of standardized training in different context, which is crucial for China as a country rich in diversity.

#EP5.3 - ePosters: Education Management - AMEE International Networking Centres

#EP5.3.16 (4850)

Feedback with our Pharmacy students: are we getting it right and how can we change

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ABSTRACT:

Background: Assessment is an integral part of the learning process and, when combined with feedback, it helps to identify and address knowledge gaps, motivates students to learn, promotes a better understanding of what is being learned, and improves the quality of education. The purpose of this study was to assess students' perceptions and feelings regarding the present state of feedback and assessment methodology, as well as their thoughts regarding possible changes.

Summary of Work: The research was conducted in 2018 at the Sechenov University using mixed methods of sociological research with the participation of 423 students. The several focus groups of 8-12 people were used to give detailed answers, describe students' perception of the existing assessment system and feedback, and hear the reactions of colleagues. The survey helped to quantify the existing advantages and weaknesses of assessment and feedback. It was based on a questionnaire designed by the authors and validated through initial pilot testing.

Summary of Results: Feedback featured highly in students reflections, but describes difficulties in what faculty considered as feedback and what the students needed. The main advantage of using feedback is its ability to have a positive impact on the effectiveness of the educational process, increasing the availability of learning materials and motivation of students to learn. The identified difficulties were divided into the main areas: time, subjectivity of assessment, fear of criticism and communication.

Discussion and Conclusions: The results of the research will now help in planning appropriate assessment processes and provide effective feedback as part of the implementation of new educational approaches based on the needs of the students.

Take-home Messages: Feedback has a positive impact on the learning process. One of the main barriers to receiving feedback is high workload and the consequent lack of time for either student or teacher. The possible way to solve this is to use online forms to get feedback at a convenient time.

#EP5.4 - ePosters: Education Management - Leadership

#EP5.4.1 (5307)

Management skills to prevent hospital violence: Head nurses' perspectives

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ABSTRACT:

Background: Workplace violence faced by health care professional poses serious threats to their well-beings. Countries around the world have paid attention to this issue. The leadership of clinical supervisors plays a critical role to prevent workplace violence. Thus, it is important to strengthen clinical supervisors' competencies in supporting unit staff to prevent violence at work, and creating a safety climate that promotes zero tolerance for violence. The aim of this study is to identify clinical supervisors' management skills which can effectively prevent workplace violence. These skills will subsequently be incorporated into a training program to strengthen clinical supervisors' competencies to prevent violence at work.

Summary of Work: We purposively recruited 11 head nurses from two public hospitals in Taipei City, Northern Taiwan. They have had experience in dealing with patient/ family or internal violence toward their staff. We developed an interview guide and conducted individual interviews. The interview data were first transcribed verbatim. After that, meaningful units were identified and classified to multiple sub-categories, which were later formed into major categories.

Summary of Results: The head nurses identified five categories of effective management skills for dealing with patient/ internal violence toward nurses, which were 1. communication and interpersonal interaction skills (e.g., verbal communication, negotiation and empathy skills), 2. skills to identify risk factors of workplace violence (e.g., identifying high-risk groups of workplace violence), 3. problem solving skills (e.g., proposing strategies to resolve violent incidents, separating nurses from perpetrators), 4. skills to provide support (e.g., giving feedback and emotional support to nurses), and 5. providing resources to conduct nurses' violence prevention training.

Discussion and Conclusions: To reduce workplace violence toward nurses, this study identified five categories of effective supervisor skills. The results will be applied to develop a training program that promotes clinical supervisors' management skills.

Take-home Messages: The main contribution of the study is to identify five critical management skills to decrease workplace violence faced by unit staff.

#EP5.4 - ePosters: Education Management - Leadership

#EP5.4.2 (5521)

Foundation doctors as leaders in maximising educational opportunities for undergraduate medical students at East Lancashire Hospitals NHS Trust (ELHT)

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ABSTRACT:

Background: The Undergraduate Teaching Committee (UTC) at ELHT is an 18-member committee comprising of FY2 Doctors, that coordinates and delivers extra-curricular teaching to clinical year medical students from three different medical schools. Our aim is to enhance student learning through consolidation of clinical knowledge, whilst providing opportunities for foundation doctors to develop leadership and teaching skills for their professional practice.

Summary of Work: The UTC programme includes interactive clinical lectures, case discussions and simulated clinical scenarios aimed at improving the clinical confidence of students. Its structure is overseen by the director of medical education to maintain quality assurance, with sessions being designed, organised and delivered by foundation doctors. Furthermore, written evaluation from students is used to create a streamlined system to drive quality improvement strategies and provide tutors with valuable feedback. 16 sessions over an 8 week period have been completed, with a second block in progress and a third in development.

Summary of Results: From October to December 2019, all students agreed that extracurricular sessions were helpful to their learning and improved their confidence and knowledge of clinical topics (75.8% and 77.6% strongly agreed, respectively). After teaching with UTC, tutors rated an average confidence of 8.5 out of 10, compared to 6.9 prior to teaching. 81.8% of tutors rated their experience of tutoring with UTC as ≥ 8 out of 10. Similarly, 90.9% of tutors rated the likelihood of tutoring again with UTC as ≥ 9 out of 10.

Discussion and Conclusions: The first UTC teaching block of the 2019-20 academic year produced strong results in terms of student attendance, with feedback indicating high student and tutor satisfaction. The overwhelmingly positive responses highlighted the use of interactive delivery methods, and the relevance and appropriateness of clinical topics. The feedback from tutors confirmed that delivering teaching sessions improved speaker confidence. Quality improvement strategies identified for future sessions include the incorporation of exam-focussed teaching using multiple-choice questions and OSCE-specific modules, to assess student knowledge and performance.

Take-home Messages: 1. Supplementary extra-curricular teaching symbiotically benefits undergraduate students and foundation doctors 2. Teaching committees can provide excellent leadership and teaching opportunities for Foundation doctors

#EP5.4 - ePosters: Education Management - Leadership

#EP5.4.3 (6081)

PREPARING TODAY'S LEARNERS FOR TOMORROW'S PRACTICE: THE GEORGIAN USMD EXPERIENCE

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ABSTRACT:

Background: We at Emory University School of Medicine (EUSOM) and Tbilisi State Medical University (TSMU) have collaborated to implement at TSMU a modern MD program, the USMD program. The aim is to produce a new kind of Georgian physician specifically trained in skills necessary for the future practice of medicine in that country and who will be future leaders of medicine in Georgia and abroad.

Summary of Work: Novel features are a coordinated syllabus in sciences, humanities, and social sciences to prepare students who matriculate straight from high school for their future role as physician; integrated foundational medical science; US-style clerkship training (previously nonexistent in Georgia); training in research methods to enable graduates to use primary data and to participate in public health research necessary for healthcare improvement in the country; and a continuous program of training and professional identity formation in small groups with trained faculty mentors. This latter curriculum addresses issues of lifelong learning, interprofessional activity and leadership that are not commonly practiced in Georgia.

Summary of Results: The first class graduated in June 2019 completing a six-year curriculum. There are currently more than 300 students in the program with students drawn from Georgia, India, Israel, Sri Lanka, Syria, Iran, Pakistan, Canada, Lithuania, USA, Iraq and Portugal. Scores on USMLE Step1 are comparable to those of students at the Emory University School of Medicine.

Discussion and Conclusions: Unique challenges are the translation of culture, expectations and language in the classroom and the clinic, and the implementation of clerkship teaching. There are no residents who can carry out clinical teaching so the burden falls on the attending physicians. Solutions to these challenges will be presented

Take-home Messages: The keys to future engagement and development include a program of continuous quality improvement, ongoing faculty development in all aspects of the program and the implementation of student affairs programs, such as career advising. Benefits have been evident for both of our institutions in the cross fertilization of ideas.

#EP5.4 - ePosters: Education Management - Leadership

#EP5.4.4 (6850)

Critical success factors in medical education leadership

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ABSTRACT:

Background: Leadership is a critical element in the outcome(s) of any organization, with these outcomes often dependent on the leader's skills, knowledge, abilities and competencies. However, medical education leadership has not always been at the forefront of leadership research and the critical success factors (CSFs) for effective leadership in this context is underdeveloped. The purpose of this study was to identify CSFs for effective medical education leadership.

Summary of Work: Survey data was collected from 67 senior physician leaders (34 female) from across Canada. Participants were asked to respond to open-ended questions about factors which they believed to contribute to effective leadership in their role, along with specific tasks they had performed (with both successful and unsuccessful outcomes) and associated factors which contributed to these outcomes. Responses were analyzed using NVIVO; content analysis was used to generate emergent themes from the data.

Summary of Results: Three critical success factors for effective medical education leadership were identified: quality relations (e.g., communication, collaboration), holding oneself accountable (e.g., preparedness, organization, task engagement), and reflective leadership (e.g., being present, continuous learning, seeking feedback). Participants also identified both intrinsic (e.g. emotional intelligence, having certain intellectual skills and personality traits) and extrinsic factors (e.g. experience/training, intra-organizational support, effective teams, relationships) as contributing to their success in their leadership roles. Participants reported a variety of tasks (e.g. accreditation, program development, general leadership/management) which resulted in both successful and unsuccessful outcomes; contributing to these outcomes were factors related to the leader (self), their constituents, and the organization.

Discussion and Conclusions: Effective medical education leadership requires deliberate attention to the CSFs in strategic, operational and individual domains. Individual leadership practices and leadership development programs would benefit by addressing these CSFs.

Take-home Messages: Effective medical education leadership requires being aware of the challenges and success factors in personal/interpersonal, organizational and inter-organizational domains and overcoming or addressing these proactively. Individual leadership practices and leadership development programs would benefit from practical application of these findings.

#EP5.5 - ePosters: Education Management - Selection

#EP5.5.1 (4822)

Widening the SES gap: An unintended adverse impact of selecting medical students into pilot programs in China

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ABSTRACT:

Background: Programs of excellence have been piloted since 2012 at all levels of undergraduate medical education institutions (UMEIs) in China. Governments have mobilized resources to support pilot programs of excellence (PPEs). High-stake exam based (e.g., College Entrance Examination, CEE) and comprehensive interview based (COM) selections are two general selection modes for PPEs in UMEIs. Diversity in health professions workforce promotes health equity, and UMEIs keep the first door to diversity. This study examines: 1) whether PPEs in China embrace lower socio-economic medical students, and 2) which mode of selection is more socio-economic status (SES) friendly.

Summary of Work: National Center for Health Professions Education Development conducted China Medical Student Survey in June, 2019 among 10062 fresh graduates in clinical medicine across 33 UMEIs. 4427 graduates in all 20 UMEIs that offer PPEs constitute the sample for analysis. Indicators for SES included family location (rural/urban), parental levels of education, parental occupations (ISEI), and family economic status. Outcome variables of interest are whether in PPEs (through CEE or COM). Comparison of means, logistic regression, and Shapley decomposition are conducted using STATA 15. Demographic characteristics, prior academic achievement, motivation, and institutional characteristics are controlled.

Summary of Results: 22% of graduates in clinical medicine were from PPEs, and among them 40% were selected through COM modes. Graduates from PPEs have superior SES characteristics than their counterparts in traditional programs, and among graduates from PPEs, those through COM are with higher SES. Logistic regressions indicate that SES characteristics only influence the probability of being selected into PPEs through COM. Shapley decompositions indicate that SES bears a higher degree of contribution in selection mode of COM (21.83%) than in CEE (2.47%).

Discussion and Conclusions: UMEIs in China have selected medical students with higher socio-economic backgrounds into PPEs. Selection mode of COM favors medical students with higher SES. China's PPEs may bring unintended adverse impact on medical student diversity.

Take-home Messages: To be truly excellent, excellence programs widely piloted at UMEIs in China should also consider student diversity.

#EP5.5 - ePosters: Education Management - Selection

#EP5.5.2 (7228)

A regression model to predict academic risk in first year medical students, a cohort study at Universidad Andrés Bello, Viña del Mar Chile.

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ABSTRACT:

Background: Early detection of academic risk contributes to prevent future delays in curricular advancement and/or desertion. In 2019, cohorts from all of Universidad Andrés Bello's medical campuses were included. Objective: To develop an academic risk predictive model for first year students for UNAB's Medical School.

Summary of Work: A cohort prospective study was conducted (n189). Informed consent obtained and Ethics Committee approved. Independent quantitative variables were Math (MUSC), Language (LUSC) and Science (SUSC) University Selection Scores, Ranking Score, High School Final Mean. Independent qualitative variables were results on the following tests: Kolb's Learning Styles, Learning Strategies; Burnout Syndrome; Emotional Intelligence (EQI-short); Attention; MSLQ (Motivation and Strategies), and a Sociodemographic questionnaire. Dependent variable: first semester grades mean. Regression trees, were used, ($p > 0.05$).

Summary of Results: The first academic risk discrimination level of the classification tree, is SUSC, divided in students who obtained < 731 and > 731 points respectively. Group < 731 , has a second discrimination level in MSLQ strategies, ≥ 5.3 and < 5.3 . In the ≥ 5.3 group, students who score ≥ 5.7 on motivation are at risk. In the same level, those students who score < 5.7 and score ≥ 736 on LUSC, present risk LUSC < 736 , subdivides into: those who live alone or with grandparents who are at risk, and those who live with parents or others, are at risk if they have an EQ1-short score < 87 . Still at group < 731 , a second discrimination level is MUSC, with students obtaining < 700 at risk. In the group > 731 , a second discrimination level is family pressure, when positive discriminates for risk, and when negative, a second discrimination level for SUCS arises in students with > 763 , and with strategies average ≥ 5.6 who are at risk. (Sensitivity 80% and specificity 81%).

Discussion and Conclusions: SUCS discriminates academic risk with greater predictive value. Learning strategies, mathematical knowledge and family pressure are second level discrimination categories guiding interventions and curriculum planning.

Take-home Messages: Results may help simplify propaedeutic week for incoming first year students, since less amounts of testing can be done to predict academic risk. A tool that will allow to identify and incorporate at risk students into a follow up program.

#EP5.5 - ePosters: Education Management - Selection

#EP5.5.3 (6087)

An innovative approach to medical education in a Scottish primary school?

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ABSTRACT:

Background: Science, technology, engineering and mathematics (STEM) careers contribute to the increasing economic prosperity of Scotland and early exposure of these careers can inspire younger people to consider a future career in STEM. For our second-year student selected component (SSC), we delivered an SSC in Science Communication designed by Dr. Saeeda Bhatti in a local primary school. The SSC covered key components of the medical school curriculum, including genetics and haematology, to tie into the biological systems module from the Scottish Curriculum of Excellence, covered in the later stages of primary school.

Summary of Work: Over five weeks, four medical students focused on the topic of blood physiology and disease, in which a creative and experiential approach was used to portray these topics to a very young audience. A variety of easily purchased teaching tools were used, including plasticine and crafts, to assist communication of complex topics. The setting of this SSC was Gorbals-based Blackfriars Primary School and the students worked with a class of nineteen children in primary six (aged nine to eleven years old). Subjects covered included blood physiology and blood conditions such as sickle cell disease, iron and B12/folate deficiency.

Summary of Results: A variety of approaches to teaching these usually abstract and complex topics led to more engagement to new scientific concepts from younger children, a greater inquisitiveness and encouragement to pursue a career in STEM and medicine. These approaches included hands on experiments, the creative arts and consolidating newly acquired knowledge through presentations with quizzes.

Discussion and Conclusions: The children continued to engage with the material until the end of the SSC and they described they had a growing interest in a career in STEM. Medical students had the benefit of developing further skills in communication, multitasking and creativity, while encouraging deep thinking around the taught subject.

Take-home Messages: Early medical education and contact with current medical students may influence more primary school age children from a variety of backgrounds to consider a career in STEM and medicine. Students placed in schools may benefit as it is an opportunity to further develop professional skills that are key to excelling as a doctor in the National Health Service.

#EP5.5 - ePosters: Education Management - Selection

#EP5.5.4 (6342)

Medical students Personality type in the CPIRD project with the Myers- Briggs Type Indicator (MBTI) tool

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ABSTRACT:

Background: One of the goals of the Collaborative Project to Increase Production of Rural Doctor (CPIRD) is to increase the number of doctors working in rural areas and help them meet the standards of the Medical Council. The aim is to study the personalities of medical students in the CPIRD project to create a guideline for medical graduates.

Summary of Work: The research was descriptive, cross-sectional. The data was collected from 166 first to sixth-year medical students registered in 2019 at Sawanpracharak Medical Education Center, Thailand, using a questionnaire. It consisted of 2 parts: general information and the MBTI test. The students were classified as guardians (SJ), adventurers (SP), relationship builders (NF), and thinkers (NT).

Summary of Results: Out of the 166 participants, 77 students (46.4%) had a personality of guardian (SJ), 42 students (25.3%) were adventurers (SP), 33 students (19.9%) were relationship builders (NF) and 14 students (8.4%) were thinkers (NT). A majority of them were guardians, with the highest number in the sixth-year students. The first-year students ranked first in being adventurers at 40.0%. 32.0% of the third-year students were relationship builders. The highest percentage of thinkers was found in the second-year students at 23.1%.

Discussion and Conclusions: The majority of medical students had a personality of guardians (SJ). The highest number of adventurers was seen in the first-year medical students because of the transition from high school to university. For the third and fourth-year medical students, they were relationship builders (NF), compared to other levels as they ended the preclinical phase and began their stressful clinical phase. There were more thinkers in second-year students than students of other years because they focused on medical knowledge.

Take-home Messages: The MBTI test is a tool that helps people explore and understand themselves. The majority of medical students had the personality of a guardian, which was in line with their profession. However, their personalities may change in various situations. Understanding personality types may be useful for the selection of medical specialty in the future.

#EP5.5 - ePosters: Education Management - Selection

#EP5.5.5 (6691)

An admission process using portfolio review and MMIs for selecting students to enter a medical research programme

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ABSTRACT:

Background: Medical research is a key to develop medical science knowledge which will be applied to find a novel diagnosis tool and treatment for patients. MD PhD doctors are in need to conduct translational research linking between basic medical science and clinical practice.

Summary of Work: Here, we searched for young talents who have experience in conducting research in their high school and applied directly to our medical school for this research programme. First, we reviewed student portfolios consisted of previous science projects, achievements and awards. 33 students were shortlisted for interview. A comprehensive interview was then conducted using 7 stations of Multiple Mini Interviews (MMIs) by 14 doctors and scientists. The last 22 candidates were offered their places to study medicine degree alongside with the medical research curriculum.

Summary of Results: In the portfolio review, we found that most of the candidates had a decent knowledge of how to carry out science experiments. Some candidates stood out because of their ability to explain their projects using scientific approaches. The scores of this review does not correlate with the assessment of research skills in the MMIs. However, it correlates with the ethical thinking that was evaluated from a case-based interview, $r=0.40$ (95% CI= 0.06 to 0.65). Interestingly, top 12 candidates who did well in the interviews (total scores > 75% of all MMIs), they also had outstanding portfolios which can be observed in a correlation of their scores in both selection steps, $r=0.72$ (95% CI=0.16 to 0.93).

Discussion and Conclusions: More than half of the selected students had strong portfolios and could perform well in all the MMIs, suggesting this double-steps admission method is valid and reliable. Students who have experience in science research during their previous education can apply their scientific and critical thinking to solve problems effectively and more likely to be accepted to study in the research programme.

Take-home Messages: In the outstanding students, the scores from MMIs correlate with portfolio review. This may impact the number of places we offer to study in this programme next year.

#EP5.5 - ePosters: Education Management - Selection

#EP5.5.6 (6783)

Engaging community in medical school admission: a novel approach to enhance diversity, equity and inclusion

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ABSTRACT:

Background: Prince of Songkla University (PSU) has developed a new medical education program in implementation science and population health. The program goal is to produce physicians as a ‘change agent’ equipped with knowledge skills and attitude to implement changes that address urgent healthcare needs in rural areas. We established the new admission procedure to recruit students and achieve dual goals to optimize diversity, equity and inclusion and recruit students qualifications that align with the program missions.

Summary of Work: High schools in three targeted provinces submitted one candidate per school for selection. The selection committee comprising 15 PSU faculty and 6 community representatives. The evaluation of student candidates included 2 parts: community-based project and 5 MMI stations. Candidates conducted a field study, identify community issues, developed and executed a project to solve the issues. MMI was designed to address PSU 9 competencies. PSU faculty scored MMI performances. Community panels assessed candidates based on direct observation while conducting the community project. The scores were combined to derive final decision on the selection.

Summary of Results: There were 28 candidates participated the selection procedure. We selected 10 candidates of highest score ranking. There was concordance between PSU faculty ranking and final decision, kappa 0.73 and $p=0.002$; community ranking and final decision, kappa at 0.73 and $p=0.002$. Surprisingly, subjective consensus of community panels corresponded MMI scoring from PSU faculty.

Discussion and Conclusions: This results suggested that the selection process might be effective to select the community-oriented candidates. However, there were some feedbacks receiving from community representatives included lacking of assessment training and no prior experiences of student selection. This feedback could be used to develop the student selection process in order to obtain more reliability in the future.

Take-home Messages: These community engagement would be benefit for selecting “desired doctor” to serve in rural area with collaborative actions. This program has led to mutual benefit and the real benefit goes to people and future medical students.

#EP5.5 - ePosters: Education Management - Selection

#EP5.5.7 (6868)

Predictive Validity of the Hamburg Situational Judgement Test for Medical School Admission: Effect of Different Scoring Methods

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ABSTRACT:

Background: Situational Judgement Tests (SJTs) are considered a cost-efficient method to assess social competencies in applicants to medical school. However, there are various possibilities to design and score an SJT. Research has demonstrated that internal consistency as well as relationships between an SJT and measures of personality constructs vary depending on the scoring method. The goal of this work is to analyse the impact of different scoring methods of an SJT designed for undergraduate admission to medical school on the predictive validity.

Summary of Work: In the 2016 admission cycle of Hamburg medical school, 1,096 applicants voluntarily filled out a 66-item SJT. Applicants rated the appropriateness of each response option on a four-point Likert scale. We calculated four SJT-scores using raw vs. intraindividually z-standardized applicant responses and their absolute vs. squared differences from expert mean ratings (N = 20). Intraindividual z-standardization has been proposed to account for applicant response styles. Squared deviations will weight high deviations from the expert standard more negatively. Based on the data of 161 students who were admitted, we analysed the correlation of the different SJT scores with overall OSCE performance in the second year of medical school.

Summary of Results: All four SJT-scores significantly ($p < .05$) correlated with overall OSCE performance. Absolute ($r = .34$) and squared ($r = .33$) deviations from expert ratings based on intraindividually z-standardized responses yielded stronger correlations than scores based on non-standardized responses (absolute: $r = .17$; squared: $r = .20$).

Discussion and Conclusions: Our results suggest that accounting for individual response styles by using standardized values has a positive impact on the predictive validity of our SJT. This result adds to previous reports of stronger correlations between SJT performance and measures of personality when responses were standardized. Once responses are standardized, using absolute vs. squared deviations does not seem to make a difference with regard to the predictive validity. Strategies for dealing with missing values as well as implications for using this type of SJT scoring for subsequent selection decisions will be discussed.

Take-home Messages: Intraindividual z-standardization of responses to SJT items can improve the validity of an SJT score.

#EP6 - ePosters: Learning from Failure

#EP6.1 (6754)

Do Error Based Virtual Scenarios enhance Learning in PBL sessions?

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ABSTRACT:

Background: In feedback, students had indicated that having to make decisions in problem-based learning (PBL) scenarios and experiencing the consequences led to memorable learning. Given that tools such as virtual patients (VPs) are increasingly being used to develop clinical reasoning skills amongst learners we wanted to explore if facing choice and experiencing consequences within a virtual scenario measurably affected learning from the sessions.

Summary of Work: Undergraduate medical students at 5 institutions were exposed to one of three interventions in a problem-based learning setting: VPs including branched decision-making elements, VPs that followed a linear path, or lecture-based teaching as a control group. Six VPs were used – identical apart from the branched/linear elements. All students completed the same single best answer assessment 4-6 months after the VP. Questions were in 3 groups: those directly related to the events in the VPs at the branch point, in the same topic area as the case but not directly related to information referenced at the branch point, and in a similar subject area of medicine but far-removed from the case.

Summary of Results: Students learning with VPs of either format significantly outperformed those who received lecture-based teaching only for the first two groups of questions, but all students performed similarly with the questions only in the same subject area. Those who received the decision-making VPs performed significantly better than those using linear VPs when the questions were directly related to the branching points of the case.

Discussion and Conclusions: Our results demonstrate that if students focus on a topic they will learn it better, but it also confirms our students' impression that making choices and experiencing the consequence enhances learning further. This experience derives from the VP design, so these findings have implications for design of PBL cases and virtual scenarios. They also prompt further work into understanding cognitive processes occurring during PBL and interactions with VPs.

Take-home Messages: We can specifically target improved student learning within specific areas of a curriculum by providing virtual patient resources which allow relevant decisions to be rehearsed.

#EP6 - ePosters: Learning from Failure

#EP6.2 (4780)

The art of saying sorry: what our students can learn from failure

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ABSTRACT:

Background: It is likely that physicians will make medical errors in their career. Consequences of medical errors can be far-reaching and costly to patients, medical institutions and physicians themselves. Saying sorry helps: literature shows that patients are less likely to litigate when medical errors are disclosed and apologized for. Apologies also reduce negative reactions from patients and improve physician-patient relationships. Moreover, it helps physicians to cope after making a medical mistake. Nevertheless, physicians experience barriers that keep them from disclosing and apologizing.

Summary of Work: Medical students from the Amsterdam UMC, location VUmc, receive a disclosure training. In the second master year all medical students participate in a small-group training together with midwifery students, learning in an interprofessional team. The programme consists of a team meeting about a fictive case in which suboptimal obstetric care was provided, followed by a role play with the 'patient' (a professional actor) who was affected by this error. The training focuses on dealing with this error as a team and on how to handle the conversation: what topics should be addressed? Who takes the lead? How do you apologize without acknowledging liability? What are the needs of the patient?

Summary of Results: Evaluations show a high level of student appreciation for the training. Mean scores are 4.42 (SD = 0.50) for "discussing incidents is useful" and 4.22 (SD = 0.57) for "quality of classes" on a 5-point Likert scale. Students report that it is "very beneficial to practice this with a professional actor", "pleasant to prepare this as a team" and they value "honesty" and "authenticity" in the communication.

Discussion and Conclusions: The disclosure training is a good start for awareness of what works in communication with a patient after a medical error is made. Follow-up training should be offered in postgraduate education, focusing on handling one's own medical errors.

Take-home Messages: Train your students in disclosing and apologizing. It helps them lower the threshold to engage in such difficult conversations. It will be beneficial for future physicians and their patients who might have to deal with a medical error.

#EP6 - ePosters: Learning from Failure

#EP6.3 (5894)

Dealing with failing? How can the medical student overcome the hard time?

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ABSTRACT:

Background: Studying medicine is very stressful and intense, a lot of learning activities and lacking free time could cause stress and may result in psychological problems. Maladaptation to study and lack in work-life balance were the major cause of stress and followed by failing course examination. Our interest is to study coping strategies in medical student who fail to pass course examination.

Summary of Work: A qualitative research in pre-clinical medical students at Medical Education Center of Sawanpracharak Hospital who fail in 2019, Nine medical students were in-depth interviewed. Data were analyzed by content analysis.

Summary of Results: Medical students dealt with failing through the following strategies: (1) Self-analysis (identify strengths, weaknesses, opportunities, and threats related to passing exam); (2) creating a positive attitude towards the exam, including 1) believed to become successful 2) accepted the mistake and determined to change; (3) use facilities and social support, including 1) encouragement by the family 2) review lessons with peers 3) counsel staff early and 4) use academic facilities on pre-recorded lesson that can be watched later; (4) push the limit of oneself, including 1) set goal and priority 2) manage time 3) practice self-regulation skills 4) practice learning skills.

Discussion and Conclusions: The way in dealing with failing are understanding of oneself and situation to find a solution, including personal SWOT analysis and using self-development methods, including self-regulation to waking up early, abandon lazy habits, time management skills and practice effective learning skills. In addition, external factors that contribute to the test, including family support, tutoring in peer groups, academic mentors. Medical students who failed to pass examination at pre-clinical level overcame the hard time by understanding oneself and situation, using self-development methods and using social support and academic facilities.

Take-home Messages: Educational institutions should encourage students to understand themselves and situations that fail the examination to develop oneself to have more potential to pass the exam.

#EP6 - ePosters: Learning from Failure

#EP6.4 (4484)

Role of grit in medical students' clinical training stress and burnout during clerkships

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ABSTRACT:

Background: Grit refers to the perseverance and passion required to pursue and accomplish a long-term goal, and specifically to the ability to endure difficulties and work industriously toward said goal. Given the stress medical students experience during workplace training and their burnout during clerkships, this study investigated whether medical students' grit could play a protective role in such contexts.

Summary of Work: This 1-year prospective cohort web-based questionnaire study included one cohort of medical students in their fifth year of clerkships at a medical school in Taiwan between September 2017 and July 2018. Web-based, validated, and structured self-administered questionnaires were used. Medical students' demographics (e.g., sex and age) and grit (represented as perseverance and passion) were measured at the beginning of their clerkships. Their perceived training stress (i.e., physical and psychological demands) and burnout at each specialty rotation were routinely measured. A total of 93 medical students who responded to our routine surveys at least three times during the clerkship (total responses = 1,073) were included, and hierarchical regressions were performed.

Summary of Results: Under the construct of grit, on average, medical students' perseverance and passion were measured as 3.451 and 3.222, respectively. Medical students' perseverance could shield them from burnout caused by the negative effects of the perceived physical demands of their work, and their passion could shield them from burnout caused by the negative effects of the perceived psychological demands of their work. Moreover, older medical students exhibited lower burnout rates than younger ones.

Discussion and Conclusions: Medical students' grit had unique effects on their clinical training stress during clerkships. Grit among medical students could be further explored to determine the degree to which it is a product of nature versus nurture.

Take-home Messages: Given the stress that medical students experience during workplace training and their burnout during clerkships, grit as perseverance and passion had protective effects on medical students' perceived physical and psychological demands, respectively, during clerkship training. Future research on grit could further explore its value and use in medical student selection and identify opportunities for fostering grit in medical students.

#EP6 - ePosters: Learning from Failure

#EP6.5 (5034)

We all get promoted to our level of incompetence: teaching Orientation to Paediatrics using video narratives of mistakes made

AUTHOR(S):

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ABSTRACT:

Background: Residents and registrars commencing their first hospital paediatric rotation, repeatedly describe the high level of anxiety they have about managing paediatric patients. This includes newborn resuscitation; caring for the unstable child; missing critical diagnoses; addressing parent's concerns. Universally, current orientation to the paediatric term is time constrained and resource intensive. As for all other hospital residency orientations – departments use online manuals and face-to-face instruction to prepare incoming staff for their duties. Interactive video instruction, using examples of clinical practice imperfections or failures, are a teaching innovation - presenting behavioural malpractices we want doctors to experience and learn from.

Summary of Work: We recorded video scenarios of junior doctors describing clinical challenges they faced, including perceived practice failures (e.g. medication prescribing errors, communicating bad news mishaps, poorly coordinated resuscitations), when dealing with the unfamiliar clinical skills needed for paediatrics. The programme of instruction has been called 'SQiF CLiPS: Situation, Question, Interaction, Feedback for Clinical Learning in Paediatric Skills'. To assess what value-adding this new type of clinical instruction provided (if any), we developed an 'Orientation survey instrument' to comprehensively assess 'regular orientation', as well as those exposed to additional 'video instruction' modules.

Summary of Results: We are currently piloting the survey, as well as the online training modules amongst the new cohort of paediatric residents and registrars for 2020. We expect to be presenting our findings for discussion.

Discussion and Conclusions: Preliminary feedback from staff involved in the pilot was that the video E-learning was engaging and provocative, and unlike other types of E-learning they had experienced. The clinical reflections on errors made was humbling and the wisdom presented was compelling.

Take-home Messages: Each Orientation module comprises 5 related clinical vignettes and each in turn has 5 learning objectives (totalling 25 learning objectives per module). We developed 7 Paediatric Orientation modules for a generic Video orientation to the Paediatric term – comprising 175 key points to be taught and learned in total. For each take home message described, learners are able to easily navigate back to the corresponding vignette where each key point was featured, within the SQiF CLiPS programme of E-learning Video orientation to Paediatrics.

#EP6 - ePosters: Learning from Failure

#EP6.6 (6570)

Why do they Fail? A Retrospective Cohort Study of Medical Students' Academic Performance in Morocco

AUTHOR(S):

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ABSTRACT:

Background: Academic failure in medical studies has become a worrying phenomenon in Morocco, as it affects a large number of students. It is experienced negatively by both the student and their families, and reflects the failure of an entire university system that is very costly to the community. The aim of the present study was to analyze the different academic profiles of students, in a Moroccan Medical School and identify factors associated to good and poor academic performances.

Summary of Work: This is a retrospective cohort study that included 960 medical students who were enrolled in 4 consecutive years (2010-2014). The demographic and academic data of medical students who completed their first and second cycles of medical studies were collected and analyzed using SPSS 20 Software.

Summary of Results: Only 17% of students were able to graduate from med school without retaking any module or term, while 19% of all students had to retake at least one year. Experiences of failure were more frequent in the first year than in subsequent years with an increased risk of late failure among those who failed in the first year. Several socio-demographic factors were found to be significantly associated with both early and late failure, namely, higher age at admission, male gender, foreign nationality and lower grades in High school.

Discussion and Conclusions: This study was able to identify the socio-demographic and academic characteristics of a population at risk of failure in medical studies, which must be targeted by accompanying and supportive educational interventions in order to minimize failure rates and its destroying consequences.

Take-home Messages: -Failure in medical studies influences the wellbeing of students and their ability to succeed again

-Some demographic and academic factors are associated with failure and can be used to define the population at risk of failure.

-Population of medical students at high risk of failure should be considered for tailored supporting programs.

#EP6 - ePosters: Learning from Failure

#EP6.7 (6621)

Traumatic Experiences In Medical Student Training (TEIMS-T Study)

AUTHOR(S):

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ABSTRACT:

Background: (45 words) It is acknowledged medical students will experience significant events that may be considered as traumatic. Awareness is generally from word of mouth or personal experience. This study aims to raise the profile of the difficulties medical students face and to help develop support for students.

Summary of Work: (38 words) All medical students from Cardiff University's School of Medicine were invited to complete a voluntary online survey. This survey required students to recount their experiences. Ethical approval was obtained from the School's ethical research committee. Research is ongoing.

Summary of Results: (93 words) 47.5% reported having a traumatic experience. The majority of these occurred when students were in their third year. The perceived severity of these experiences increased with each academic year except for the first year. The most severe events were inappropriate staff behaviour to students (mean severity 9.7) and clinical examinations (mean severity 9). However, the most frequent experiences were patient death (mean severity 5.3) and cardiac arrest (mean severity 5.6). When these experiences occurred, 73% of students sought further support, most frequently discussions with friends (70%). Only 18.9% sought support from clinical staff.

Discussion and Conclusions: (100 words) The key points in a student's education appear to be; entering medical school, examinations and increasing clinical exposure. The accumulative affect of education increases a student's likelihood of seeing a critical clinical incident. It was hypothesised that frequent events did not rank higher of student awareness that some events are common in medicine, e.g. through media. Perceived severe events appeared to be associated with those not anticipated by students eg severe traumatic injury or post-partum haemorrhage. The school strives to improve student awareness of different clinical experiences, how to report them and the processes by which they can seek support.

Take-home Messages: (57 words) Medical students may anticipate their clinical experiences through media but there are still experiences that schools should prepare students for. Unprofessional behaviour by staff continues to affect student's wellbeing. Medical schools have a responsibility to provide the best learning experiences for students but also, to equip them with the tools to protect and maintain their own wellbeing.

#EP6 - ePosters: Learning from Failure

#EP6.8 (5068)

Using Workshops and Scenarios for Trainings in Mediation of Medical Disputes

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ABSTRACT:

Background: Mediation is a common alternative to the resolution of medical disputes. In Taiwan, a system whereby two mediators – one medical and one legal – work together to resolve medical disputes was initiated in 2012 and expanded in 2017. However, a complete training program was lacking. Hence the purpose of this study was to design a training course on medical mediation and to evaluate its outcome.

Summary of Work: A team of researchers first collected information, reviewed the literature, and drafted a training program for medical mediation. Five experts (2 doctors, 2 lawyers, and 1 judge) then convened to finalize the details, including the methods (workshops that include scenarios), duration (4 hours), trainers (a doctor and a lawyer/judge each), and content. The latter comprised of Part I (2.5 hours) that included six topics: introduction, procedure, roles of the two mediators, principles and techniques of mediation, dispute arrangement (including practice), and issue analysis (including practice), and Part II (1.5 hours) that is case-based exercises.

Summary of Results: 104 questionnaires were collected (response rate 77.6%) from participants whose background was medicine (56%), law (16%), and administration or others (28%). About half the respondents had no or less than one year of experience while 22% had more than ten years of experience in medical mediation. Participants with medical backgrounds performed better in the law and regulations and the roles of different mediators while those with legal trainings did better in analyzing issues. Participants with administrative and other backgrounds were better in the principles of writing professional opinion. All respondents thought that the topics in Part I were helpful while 95.8% (except one with administrative or other background) felt the same about Part II.

Discussion and Conclusions: This set of training materials on mediation of medical disputes was designed by an interdisciplinary team of researchers and experts from literature review and indigenous experiences, and incorporated real scenarios for practice. It could be used in the training of medical mediation committee members, management of medical disputes in hospitals, and continued medical education.

Take-home Messages: Scenario exercises and workshops are ideal for medical mediation training courses as these teaching materials allow participants to learn from failure.

#EP7.1 - ePosters: Postgraduate - General

#EP7.1.1 (4100)

Psyched Up or Psyched Out? Perspectives on Psychiatry Recruitment in Canada

AUTHOR(S):

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ABSTRACT:

Background: Psychiatry recruitment is a national issue in Canada. Previous research has found that many medical students ultimately commit psychiatry as a career during medical school. We postulated that medical schools with a greater number of mandatory encounters (MCEs) in their clerkship psychiatry block would be associated with higher rates of psychiatry recruitment among their students.

Summary of Work: 2011-2019 data from the Canadian Residency Matching Service (CaRMS) were examined from 25,558 students. The average psychiatry matching percentage was calculated for the 17 medical schools and nationally. 95% Confidence Intervals (95%CI) and trends from the highest and lowest recruiting rates were determined. Data were also obtained on Psychiatry Clerkship Rotation MCEs from each school. The MCEs were analyzed for required diagnoses, amount of exposures, & flexibility of completion in other rotations. These data, as well as data pertaining to integrated clerkship programs, were compared to the recruitment rates calculated above to elicit potential patterns.

Summary of Results: The 2011-2019 national recruiting average was 5.23% (95%CI = 4.85%-5.73%), and is trending upward ($R^2=0.88$). Schools above the upper 95%CI include Calgary(6.8%), Sherbrooke(6.3%), Laval(6.5%), and Northern Ontario School of Medicine(6.8%). McGill(3.4%), Western(4.0%), Queen's(4.1%), and Saskatchewan(4.5%) were below the lower 95%CI, having the worst recruitment rates. 88.9% of schools below the national average allow their MCE's to be completed in other specialties; 71% of these universities offered an integrated clerkship for students. 8 schools required MCE's to be completed within a psychiatry rotation; 87.5% of these schools recruited above the national average.

Discussion and Conclusions: Despite significant differences in MCE's for core psychiatry clerkship, there was no concrete association between quantity of exposures and recruitment. However, a clear correlation exists between flexibility of completing MCE's in other rotations and recruitment: schools with lower recruitment offered flexibility regarding where students could complete their psychiatry-specific MCE's. A similar trend was noted for schools offering integrated streams. This may suggest that students from these rotations may have less exposure to psychiatrists, decreasing potential interest in this field. Further research exploring the quality of teaching for these students could be fruitful.

Take-home Messages: Schools with lower recruitment had MORE MCEs and allow their completion in different specialties or integrated programs.

#EP7.1 - ePosters: Postgraduate - General

#EP7.1.2 (4763)

The Irish Structured Anaesthesiology Training (SAT) 2025 training program: a cross-sectional pilot study of self-efficacy, coping, and learning preferences in trainees.

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ABSTRACT:

Background: There are limited research data available on the nature of the relationship between postgraduate medical training and psychological factors. Physicians have an increased prevalence of mental health problems as compared to the general population, in particular during training. 1 During higher training in Ireland² and elsewhere, they may have excessive levels of stress (82% Irish medical trainees self-report stress in the workplace). Self-efficacy and certain coping strategies may buffer the effects of stressors on mental health. We examined potential associations between predefined trainee characteristics in a cross-sectional Phase 1 pilot study.

Summary of Work: We have conducted interviews with doctors who were commencing as trainees in the specialty of anaesthesiology in July 2019. Participants completed measures of general self-efficacy (GSE), perception of control (POC), coping styles (COPE) and learning preferences (VARK). We used descriptive and inferential analysis including factor analysis, and linear regression.

Summary of Results: Results Forty doctors (aged between 25 and 35) took part in the study. The mean GSE score (31.5) was higher than the recorded population norms and significantly associated with POC and COPE. Factor analysis revealed that giving up/avoidance and emotion/support were negatively associated, and active/cognitive; positively associated with GSE and POC. In learning styles, 71% had a clear single preference ; Read/write (R, 47%), Kinesthetic (K,28%), Visual(V,15%), and Aural(A,10%). Linear regression showed that Kinesthetic (K) was most strongly associated with multimodal preference (77%).

Discussion and Conclusions: Conclusions These associations may help to understand some aspects of success in the participants' future medical career and may inform person-specific supports that could be put in place to optimize outcomes. A longitudinal phase 2 study has now started to predefined trainee characteristics and outcomes for potential association(s) in order to improve training programme quality.

References. 1. JAMA. 2015 December 8; 314(22): 2373–2383. 2. Hayes B, et al. BMJ Open 2019;9:e025433

Take-home Messages: Those starting the SAT 2025 program differ from the general population and vary in their coping skills and perceived self-efficacy. This may help them manage the stress of the training process, and we will follow them longitudinally to assess this hypothesis.

#EP7.1 - ePosters: Postgraduate - General

#EP7.1.3 (5265)

Characteristics of Good Clinical Teachers in Thai Residents' Perception: A Qualitative Study

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ABSTRACT:

Background: Good clinical teachers enhance trainee's performance. Studies have identified favorable clinical teacher attributes consisting of both cognitive and non-cognitive characteristics. However, culture differences have been shown to involve in several aspects of medical education. Perception of residents on ideal teacher characteristics was also influenced by cultures. Therefore, this study was conducted to answer the research question: what are the good teacher characteristics in Thai residents' perception?.

Summary of Work: We invited 45 residents from 5 departments (Pediatrics, Anesthesiology, Family Medicine, Surgery, and Rehabilitation Medicine) participating in 6 semi-structured focus group interviews. Using content analysis, the interview transcripts were iteratively analyzed and coded by 2 independent researchers. The data was collected until theoretical saturation was reached. The themes were deductively defined with agreement of the researchers according to Sutkin's framework: teacher, physician, and human characteristics.

Summary of Results: A total of 252 descriptions categorized into 3 domains including teacher (126), human (93), and physician (33) characteristics. The most commonly mentioned themes were "supporting good learning climates", "teaching excellency", and "providing good learner assessment and feedback", which were in the teaching characteristics category. In human characteristics domain, residents valued "compassion and empathy", "others' perspective consideration", and "being personable". Physician characteristics included demonstrating clinical skills, professionalism, and medical knowledge.

Discussion and Conclusions: Thai residents perceived that good clinical teachers should possess all 3 categories of Sutkin's teacher characteristics. In contrast, Japanese residents did not value human characteristics for good clinical teachers. Thai residents emphasized on some certain teaching characteristics over the others. In high power distance index country, Thai residents asked for teachers who "supporting good learning climates" and having "compassion and empathy" helping them to learn more effectively. These findings may reflect the influence of culture specific on teacher-learner relationship.

Take-home Messages: Characteristics of good clinical teachers should be explored in each specific context in order to appropriately strengthen faculty's competency and performance.

#EP7.1 - ePosters: Postgraduate - General

#EP7.1.4 (4338)

Ethically Challenged: The Development of a Junior Doctors' Medical Ethics Forum at The Great Western Hospital Swindon

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ABSTRACT:

Background: Junior doctors face unique, ethical and complex decision making during their clinical work. The “Junior Doctors’ Medical Ethics Forum” is a structured monthly teaching program for Foundation Year doctors with the primary aim of improving confidence in complex decision making regarding clinical ethical dilemmas whilst also providing education in medical ethics and law. It aims to be an ethics resource and support for junior doctors in the hospital to discuss cases they have been involved in.

Summary of Work: A baseline survey conducted among junior doctors showed that 35% of respondents did not feel supported tackling ethical dilemmas in their duties while 70% stated they would benefit from a regular ethics-based teaching session. Forum meetings are based around a central theme such as “Death and Dying”. Doctors submit cases they have been involved in. A teaching is delivered on the ethical and legal principles involved before allowing for discussion and debate facilitated by senior consultants. Pre- and post teaching surveys are then completed.

Summary of Results: Confidence at making complex ethical decision increased from 9% to 27% while confidence holding discussions with patients about resuscitation status increased from 36% to 45%. Confidence in knowing where to look for help increased from 27% to 81%. Other areas that improved - confidence at engaging with team members about ethically challenging issues.

Discussion and Conclusions: While the increase in confidence levels may seem unpromising, it most likely reflects the fact that having conversations about ethically challenging issues is a difficult thing to do as a junior doctor. We would expect junior doctors to recognise this and retain some uncertainty; reflecting their inexperience and acknowledgement that these issues are challenging. The most encouraging result is the increased confidence junior doctors felt in knowing where to find help in making decisions. This reflects that this forum provided good support to young doctors, acting as a useful signposting system.

Take-home Messages: As this program is still in its infancy, we plan to collect more data on how it impacts junior doctors’ working lives and practice. We have several sessions scheduled based on requested topics and we hope to show a larger increase in confidence around ethical issues.

#EP7.1 - ePosters: Postgraduate - General

#EP7.1.5 (4867)

Are there differences between those doctors who apply for a training post in Foundation Year 2 and those who take time out of the training pathway? A UK multi-cohort study

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ABSTRACT:

Background: Knowledge about the career decisions of doctors in relation to specialty (residency) training is essential in terms of UK workforce planning. However, little is known about which doctors elect to progress directly from Foundation Year 2 (F2) into core/specialty/general practice training, and those who instead opt for an alternative next career step.

Summary of Work: This was a longitudinal, cohort study of “home” students who graduated from UK medical schools between 2010 and 2015 and completed the Foundation Programme (FP) between 2012 and 2017. We used the UK Medical Education Database (UKMED) to access linked data from different sources, including sociodemographic background, medical school performance, specialty training applications, and career preferences. Multivariable regression analyses were used to predict the odds of taking time out of training based on various socio-demographic factors.

Summary of Results: 18380/38905 (47.2%) of F2 doctors applied for, and accepted, a training post offer immediately after completing F2. The most common pattern in doctors taking time out of the training pathway after the FP was to have a one-year (7155: 38.8%) or a two-year break (2605: 14.0%) from training. The odds of not proceeding directly into core or specialty training were higher for those who were: male, White, entered medical school as (high) school leavers, and whose parents were educated to degree level. Doctors from areas of low participation in higher education were significantly more likely to proceed directly into core or specialty training.

Discussion and Conclusions: The data suggest that UK doctors from higher socio-economic groups are less likely to choose to progress directly from the FP into specialty training. The data suggest that widening access and encouraging more socio-economic diversity in our medical students may be helpful in terms of attracting F2s into core/specialty training posts. The findings provide insight into which doctors are more or less likely to take time out of the training pathway post-F2.

Take-home Messages: It is time to acknowledge that the norm for postgraduate training is not to progress from F2 to specialty training without a break, and we must consider systems changes accordingly.

#EP7.1 - ePosters: Postgraduate - General

#EP7.1.6 (4605)

Virtual Reality Curriculum Increases Pediatric Residents' Knowledge About Congenital Heart Defects: A Multi-institutional Study

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ABSTRACT:

Background: Virtual reality (VR) is a unique learning modality which may more effectively teach cardiovascular physiology, anatomy, and surgical considerations of congenital heart lesions. However, incorporation of VR curricula has been limited. We describe a multicenter effort to develop, implement and evaluate efficacy of a VR curriculum for pediatric residents participating in pediatric cardiology rotations.

Summary of Work: A VR software program ("Stanford Virtual Heart") was utilized as a platform for curricular development. Users are placed "inside the heart" and explore non-traditional views of the anatomy. Modules for six congenital heart lesions, allowing for navigation within the VR heart guided by narrative scripts, were created by pediatric cardiologists and fellows from 4 institutions. A prospective case-control study was performed involving 3 large pediatric residency programs. From July 2018 to June 2019, trainees enrolled in an outpatient cardiology rotation completed a 27-question, validated pediatric cardiology assessment tool developed by our group. Beginning July 2019, trainees completed the VR curriculum and the validated assessment tool. Qualitative feedback on the VR experience was gathered. No trainees in the intervention group had previously used the VR program nor seen the assessment tool. Intervention group performance between July 2019 and December 2019 was compared with control group performance using univariate analyses.

Summary of Results: There were 80 trainees in the control group and 52 in the intervention group. Trainees in the intervention group performed better on the assessment (20.2 ± 3.4 vs 18.8 ± 3.8 out of 27 questions answered correctly, $p=0.03$). Analysis of individual questions showed significant improvement in the intervention group for several questions testing visuospatial concepts. 100% of users recommended integration of the program into the residency curriculum.

Discussion and Conclusions: Trainees participating in the VR curriculum performed better on a validated pediatric cardiology assessment tool compared to controls. Comparison of specific questions indicates better performance with VR learning, especially with questions assessing visuospatial concepts.

Take-home Messages: VR is an effective and well-received adjunct to clinical curricula for pediatric residents participating in pediatric cardiology rotations. Our results support continued VR use and expansion to include other lesions and groups of trainees.

#EP7.1 - ePosters: Postgraduate - General

#EP7.1.7 (6904)

The impact of workplace culture and resilience in educational reform

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ABSTRACT:

Background: Organizational culture can be defined as the shared beliefs, values and practices of a group. This is linked to resilience which is an organization's ability to anticipate, prepare for, respond and adapt to incremental change and sudden disruptions in order to prosper. The purpose of this project was to explore how culture and resilience impacts the implementation of an organizational change initiative such as Competence by Design (CBD).

Summary of Work: An on-line survey was distributed to individuals in two programs who had transitioned to CBD (n=38). The survey measured cultural norms, values, organizational resilience, and retrospective pre – post program changes for four key areas of CBD. Descriptive statistics, within group comparisons, and correlations were carried out. Document analysis of accreditation reports, CBD readiness, and learning environment survey results were used to help establish the setting/culture of the programs prior to CBD implementation.

Summary of Results: Prior to CBD implementation both programs were fully accredited, identified strengths included leadership, administrative support, teaching, collaborative initiatives, and learning environment. Participants in both programs reported high levels of resilience. Significant positive relationships ($p < .001$) between resilience and various cultural norms (e.g., teamwork, morale, involvement, supervision) and values (e.g., support, goal, innovation, rules) emerged. T-tests showed positive change post-CBD within the programs for learner empowerment and time as a resource ($p < .05$).

Discussion and Conclusions: These results highlight existing aspects of a culture that are supportive to organizational change and the importance of resilient individuals within that culture during organizational change initiatives.

Take-home Messages: Postgraduate medical education in Canada has been undergoing rapid restructuring. The success of such large-scale organizational change will depend on both organizational culture and resilience. Results from this project will elucidate cultural and resilience factors of both success and resistance to organizational change.

#EP7.1 - ePosters: Postgraduate - General

#EP7.1.8 (4248)

Out of our Comfort Zone: Do Foundation Year 1 Doctors lack confidence in managing Mental Health Problems?

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ABSTRACT:

Background: The prevalence of Mental Health Problems in medical inpatients is as high as 38.7%. Anecdotally, many Junior Doctors feel they lack the skills to assess and treat this patient group. This study aims to explore self-perceived preparedness of Foundation Year 1 Doctors (FY1) to care for this group of patients on commencing their new role and the degree of confidence gained in the first four months of clinical practice.

Summary of Work: In September 2019 a survey was sent to all new FY1s. Two questions were included to gauge preparedness to manage mental health patients, with respondents asked to grade agreement on a 5-point scale from strongly agree to strongly disagree. Preparedness to complete practical procedures was also assessed. Four months later participants were re-surveyed.

Summary of Results: There were 1299 respondents to the initial survey. 16.55%(n=215) strongly agreed or agreed that they felt 'confident looking after patients with acute mental health problems'. 43.26% (n=562) strongly agreed or agreed that they felt 'confident looking after patients with chronic mental health problems'. 70.82% (n=920) of respondents strongly agreed or agreed that they felt 'adequately prepared in practical procedures'. There were 652 respondents to the follow-up survey. 26.07%(n=170) strongly agreed or agreed that they felt 'competent looking after patients with acute mental health problems'. 36.04% (n=235) strongly agreed or agreed that they felt 'competent looking after patients with chronic mental health problems'. 77.76% (n=507) of respondents strongly agreed or agreed that they felt 'competent at performing practical procedures'.

Discussion and Conclusions: There is a marked difference between the confidence levels of FY1s in dealing with mental health problems compared with other core skills. More worryingly, there is no significant improvement in confidence after 4 months in-post, with FY1s actually feeling less confident managing chronic mental health conditions. This implies that there is likely a need for more focus on the practical management of mental health patients amongst medical students, as well as continuation training amongst FY1s to ensure that this knowledge gap is addressed.

Take-home Messages: - Foundation Doctors in the UK lack confidence in managing mental health issues when compared with other core skills, indicating a need for further training.

#EP7.1 - ePosters: Postgraduate - General

#EP7.1.9 (5711)

Factors influencing distress levels in PhD students from the Graduate School of Medical Sciences

AUTHOR(S):

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ABSTRACT:

Background: The recent literature shows that the prevalence of distress among PhD students (PhDs) is high, also in the medical sciences. The current study aims to explore the experiences of medical PhDs with distress and aims to identify factors that either elicit or buffer against distress.

Summary of Work: First, all PhDs of the Graduate School of Medical Sciences of the University Medical Center Groningen, the Netherlands, received a brief screening questionnaire (GHQ-12). Second, a random sample of PhDs with either high levels of distress (≥ 4 symptoms on the GHQ-12) or no distress (0 symptoms), stratified for gender and nationality, were invited for an interview.

Summary of Results: 1521 PhDs received the screening questionnaire and 597 completed it (completion rate 39.3%), of whom 40.5% reported high levels of distress and 26.6% no distress. The interviews with 22 highly distressed and 21 non-distressed PhDs showed several influential factors which could be categorized within the following four themes: 1) PhDs themselves (e.g. perfectionism), 2) the supervisor (e.g. availability), 3) the work environment (e.g. competitive among colleagues), and 4) working in an international setting (e.g. differences in cultural norms). Within these themes, there were factors that either elicited or buffered against distress (e.g. an available supervisor could buffer against distress, whereas an unavailable supervisor could elicit distress).

Discussion and Conclusions: Over 40% of PhDs experienced high levels of distress and causes of this distress could clearly not be attributed to the PhDs alone; it seems to be a broader academic problem. It was not possible to pinpoint one factor that distinguished PhDs who fare well from those who are highly distressed, it was more an (in)balance between buffering and eliciting factors that distinguished the distressed from the non-distressed PhDs. A next step is to raise awareness among PhDs and graduate schools about factors influencing distress levels and develop policy and education to reduce distress.

Take-home Messages: The experienced distress in PhDs is a broad academic problem, in which only addressing distress in PhDs is not sufficient. Policy and education focused on bringing change at a system's level is also required.

#EP7.1 - ePosters: Postgraduate - General

#EP7.1.10 (6142)

New Forest Integrated Community Care Placement Re-Evaluation

AUTHOR(S):

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ABSTRACT:

Background: Integrated training posts (ITPs) have been shown to provide relevant training and experience for GPs, supporting them to meet curriculum learning outcomes. A novel ITP comprising 4 months in integrated community care (ICC) was introduced in the New Forest 5 years ago. Trainees spend 3 days a week rotating through community based secondary care placements in musculoskeletal medicine, respiratory, pain, diabetes and frailty with the remaining 2 days in general practice. Since being introduced, the ICC posts have become established and growing numbers of trainees complete these rotations each year.

Summary of Work: We re-evaluated the ICC posts with the aims of ascertaining whether they provided a positive educational experience; identifying their strengths in preparing trainees for future practice; and establishing areas for future development. We conducted qualitative questionnaires for trainees who had completed an ICC post within the last year; GP trainers; and consultants in the community specialties. We also ran a focus group with trainees to build on responses in the questionnaire.

Summary of Results: Overall trainees, trainers and consultants felt that the ICC posts were positive learning experiences. Several themes were highlighted by all groups: the varied and relevant clinical exposure; familiarity with referral pathways; and quality of 1:1 training in community posts. They also identified transferable skills gained during the placement including teamworking, and building of future relationships between services. 88% of trainees rated the posts very good or excellent in terms of training and overall satisfaction. Areas for future focus were continuity of care and administration issues including rotas and timetabling, as well as integration into a team.

Discussion and Conclusions: The ICC posts provide a valuable experience with varied exposure to develop wider range of relevant knowledge and skills for future career in GP. Trainees felt that they had better exposure than on the wards, learning more than their peers in hospital jobs.

Take-home Messages: The ICC posts provide positive educational experiences, and should continue, with a focus on resolving administrative issues to ensure trainees are able to get the most out of them.

#EP7.1 - ePosters: Postgraduate - General

#EP7.1.11 (6497)

Needs Assessment of a City-wide Faculty Development Curriculum for Clinical Residency Training Programs in China

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ABSTRACT:

Background: Residency training for physicians became mandatory nationally in China since 2015. Attentions were being brought to regarding the heterogeneity of the training outcomes from different programs. Faculty development (FD) courses obtained much focus. However, the content and the quality of the these FD courses also varies. Here in the city where our study is focused on, the current situation is similar. Therefore, a systemic approach to identify the needs of the content and delivery format regarding the FD courses becomes a necessity.

Summary of Work: A 24-item survey regarding the content, delivery format and priority of different FD components was developed; survey items generated from national and provincial criteria and the written suggestions of clinical faculty training experts in China. Categories of contents for FD covering improving medical humanities, educational theories, instructional skills, assessment methods, research skills. All physicians with teaching and training duties of residents in the city were asked to complete the survey.

Summary of Results: 1. Six-hundred twenty-five physicians in the city participated in the survey, covering all residency training programs and disciplines; 2. 429 out of 625 (68.6%) were interested in courses focusing on instructional skills and 312 out of 625 (49.9%) were interested in courses that could improve medical humanities; 3. Hands-on workshop was the most preferred delivery format for all FD contents, didactic lectures and online learning are acceptable delivery formats.

Discussion and Conclusions: 1. Needs assessment is essential regarding how faculties think towards what they should learn to improve themselves as physician teachers; 2. Instructional skills are what many of the faculty are enthusiastic about, while attentions should be made regarding training physician on how to improve professionalisms and how to teach medical humanities; 3. Such survey results can be used to inform stake-holders to make adjustment to residency training policies.

Take-home Messages: 1. A curriculum for FD framework could be developed after the implementation of such city-wide survey, as the survey results revealed the actual needs from the frontline physician-as-faculty members 2. Regional (city-level) needs of faculty members may vary from the overall requirements on the national and provincial level, governmental policy should allow flexibility to adapt and meet local needs.

#EP7.1 - ePosters: Postgraduate - General

#EP7.1.12 (4181)

Differential Satisfaction of General Practice Trainees in Secondary Care in South London

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ABSTRACT:

Background: In England general practice (GP) training lasts 3 years, 18 months of which is carried out in secondary care. It is imperative that these secondary care posts are relevant to the learning needs of these trainees and their future careers.

Summary of Work: All trainee doctors in England complete the National Training Survey (NTS) annually so that the quality of their training can be monitored across 17 domains. We used the 2019 NTS to analyse results from all GP training posts in secondary care in the South London deanery (35 posts) and compared these to their colleagues in specialty and foundation training.

Summary of Results: Overall satisfaction of GP trainees ranged from 41.0 to 90.7 (all scores out of 100). Overall satisfaction of GP trainees by specialty were; Emergency Medicine 76.1 (posts=6, range 71.3-80.7), Medicine 74.2 (posts=9, range 61.9-88.6), Paediatrics 77.1 (posts=6, range 62.4-90.7), Obstetrics & Gynaecology 69.1 (posts=6, range 48.7-87.3), Psychiatry 76.6 (posts=6, range 63.4-87.0), General Surgery 53.0 (posts=2, range 41.0-65.0). The differential in overall satisfaction between GP trainees and their Speciality colleagues in the same job post ranged from; Emergency Medicine +7.9 to -14.2, Medicine +26.4 to -10.1, Paediatrics +9.3 to -19.1, Obstetrics & Gynaecology +10.7 to -41.7, Psychiatry +1.3 to -24.8, General Surgery -18.0 to -39.8.

Discussion and Conclusions: GP trainees were on average less satisfied than other trainees in the same post. We found a wide disparity in the overall satisfaction of GP trainees within the same specialties, and between GP trainees and their specialty/foundation colleagues working in the same department. We are carrying out a thematic analysis involving trainees and programme leads in order to explore these disparities and discover best practice so it can be shared among hospital trusts.

Take-home Messages: The time spent by GP trainees in secondary care is short but can be formative in their future careers. The learning needs of these trainees is, in aspects, unique when compared to their colleagues in other training pathways. By understanding these similarities and differences better we can ensure that all trainees learning needs are met.

#EP7.1 - ePosters: Postgraduate - General

#EP7.1.13 (4215)

Modernising the UKs Radiology Training Curriculum

AUTHOR(S):

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ABSTRACT:

Background: There has been a global movement towards Competency Based Medical Education (CBME) in postgraduate medical training. In the United Kingdom (UK) the General Medical Council (GMC) has stipulated all speciality curricula need to incorporate generic professional capabilities by 2020. The Royal College of Radiologists (RCR) harnessed this as an opportunity to rewrite the Clinical Radiology Curriculum. Competency based curricula are written with the end outcome in mind. This research aims to define the capabilities required of a consultant radiologist working in the National Health Service (NHS) to inform the rewriting of the RCR Clinical Radiology Training Curriculum.

Summary of Work: Policy analysis provided a sound understanding of the drivers for curricula change. Literature review substantiated the need for modern and UK based research. Evaluation of existing global radiology curricula further supported the need for original research to explore the capabilities required of a consultant radiologist working in the NHS. Qualitative methods were used to explore the question “What are the capabilities required of a consultant radiologist?”. This included: focus group discussions with trainers and trainees followed by interviews with leaders in radiology education, radiology management and referrer groups (including primary and secondary care).

Summary of Results: Focus groups data was mapped directly to the GMCs “Generic Professional Capabilities (GPC) framework” to kickstart the curriculum rewrite project. Interview data informed the distillation of twelve high level competencies in practice that form the core of the new RCR Clinical Radiology curriculum.

Discussion and Conclusions: This work is the first to formally explore the capabilities required of a radiology consultant working in the NHS. The results have guided and shaped the development of an outcomes-based curriculum for radiology training in the UK. Competency-based training promises to de-emphasise time-based training and promote greater flexibility. As a Less than Full Time trainee, the main author would like to substantiate whether this promise is delivered.

Take-home Messages: All speciality training curricula need to incorporate generic professional capabilities by 2020. The Royal College of Radiologists (RCR) harnessed this as an opportunity to rewrite and create an outcomes based curriculum.

#EP7.1 - ePosters: Postgraduate - General

#EP7.1.14 (4465)

Professional Identity Formation in Becoming a GP Trainer

AUTHOR(S):

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ABSTRACT:

Background: The focus of this research concerns itself with the professional identity (PI) development of the general practitioner (GP) as a teacher (trainer). It concentrates on teacher development and professional learning by examining the PI formation that emerges when a GP chooses to become a GP trainer. It arises from a case study (Yin, 2014) that is theoretically underpinned by the principles of Symbolic Interactionism (SSI, 2019).

Summary of Work: I have adopted an interpretive, naturalistic method of enquiry, theorising the PI formation of the GP trainer within a bounded system and conducted a qualitative case study (Yin, 2014). The main research methods employed were semi-structured interviews combined with policy analysis respective to GP trainer development. Thematic analysis (Braun and Clarke 2012) uncovered three main themes.

Summary of Results: Qualitative interviews drawn from 16 participants (695minutes) combined with policy analysis (80 documentary sources) were synthesised. Three predominant themes with sixteen sub-themes emerged: Becoming a Doctor (Friends and Family, Internal Drivers, Secondary Education), Becoming a GP (External Influences, Making Mind Up, MRCP, GP Role, Self, Work/Life Balance, Variety) and Becoming a GP Trainer (Self, The Practice, Trainer Role, External Influences, Time, Trainee Relationship).

Discussion and Conclusions: Wass et al. (2016) have already clearly highlighted the importance of the first two of these themes, articulating a number of approaches situated within the formal, informal and hidden curricula (Hafferty et al. 2015) that require attention to address the serious tensions that exist within medical schools. Less well established are the processes and attitudes that are required in order for the GP to become a GP trainer (Waters and Wall 2007, 2008). This study sets itself from others in not only bring together all three areas of the transitioning professional identity of the GP trainer in one place; but doing so specifically via the lens of symbolic interactionism (Society for Symbolic Interaction 2019), something novel to the literature in this area.

Take-home Messages: This work is a timely reminder of the challenges that exist for various agencies as they call to train more GPs. These conclusions might well have transferability to similar contexts out with Scotland and indeed the UK, depending on GP trainer constructs.

#EP7.1 - ePosters: Postgraduate - General

#EP7.1.15 (4507)

Is environment specific simulation required for outpatient based scenarios?

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ABSTRACT:

Background: Simulation is well recognised as an integral part of medical training across specialities, as a method of blended learning by Royal College curricular. However, simulation in niche outpatient specialties, such as Ophthalmology, are limited to either specific skill simulation, or non-mandatory generic medical emergency scenarios, which may be less realistic for the type of work performed.

Summary of Work: In literature we only found one other example of environment specific training of medical emergencies. Given an ever-aging population, with comorbidities, we postulate that specific outpatient based scenarios of acute emergencies is required for such specialties. We ran a pilot simulation of a deteriorating patient (anaphylaxis), whilst replicating an outpatient clinic environment, incorporating difficulties of space in a modern day quintessential clinic. All grades of Ophthalmic doctor were invited and 7 members, including 2 consultants, 2 middle grades and 3 juniors participated with the aide of faculty staff. The remaining members subsequently participated, as they would in real life and others watched via live stream.

Summary of Results: Feedback was obtained during debrief session and via questionnaires. 100% of participants thought the scenario realistically emulated their work context. 2/7 middle grades felt a heightened sense of nerves whilst trying to manage the patient, which was in part thanks to the close to life setup. This brought about interesting discussions about local protocols, guideline aides, and resources. 100% of participants found this to be a valuable learning tool which improved confidence in management of such patients.

Discussion and Conclusions: Around 7million patients receive Ophthalmic out patient appointments a year across the UK, a number of them are elderly with multiple co-morbidities. An unrecorded number of collapses occur in such settings each year. We ran a successful pilot despite timetable constraints of outpatient based staff. Participants agree that such simulation is essential for the safety of attending patients, in line with GMC guidance. Further expansion to include other scenarios and, members of clinical staff, is required before considering the course as part of mandatory training in outpatient based specialties.

Take-home Messages: We should be looking towards training in medical education which is tailored to the specific ever changing challenges in clinical practice.

#EP7.1 - ePosters: Postgraduate - General

#EP7.1.16 (4988)

Competence and Confidence on Electrocardiogram (ECG) Interpretation among Postgraduate Physicians.

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ABSTRACT:

Background: As a vital diagnostic tool of electrocardiogram (ECG) for cardiac emergency condition, the accuracy for interpreting ECG required both scientific knowledge and clinical experience. In Thailand, the 1st- year postgraduate physicians (PGY-1), internal medicine rotation in tertiary hospital might improve proficiency for ECG interpretation. For the 2nd- and 3rd - year postgraduate physicians (PGY-2, PGY-3) work as general practitioner in community hospital, years in clinical practice could expertise ECG reading. Aim to ameliorating ECG learning program in graduated physician require to evaluate competency and factors influencing ECG interpretation skill.

Summary of Work: A cross-sectional study by online questionnaire covers baseline clinical experiences, 10 diagnostic 12-lead ECG quiz and suggestive methods for enhancing ECG interpretation skill among 1st- 3rd year postgraduate physicians in Chiangrai, Thailand.

Summary of Results: 82 responders by 15(18.3%) PGY-1 who completed internal medicine rotation, 15(18.3%) PGY-1 without internal medicine rotation, 34(41.4%) PGY-2 and 18(22%) PGY-3. The overall ECG interpretation score was 5.35 ± 1.49 ; comparing by PGY-1 group and PGY-2 combined with PGY-3 group was 4.87 ± 0.29 and 5.63 ± 0.19 , P value = 0.023, respectively. The average confidence for ECG reading was 50-70% which not correlated to accuracy (P=0.47). Two most solving ECG problems were friends and staff consultation, while two most suggestive methods were lecture essential ECG and teleconference for physicians at rural hospital.

Discussion and Conclusions: The competency in ECG interpretation were significant higher in PGY-2 with PGY-3 group than PGY-1 group that could from experiencing in their clinical years collaborated with learning from consultation which make ability to recognize ECG signs and expertise skills. However, average score for ECG interpretation was moderate, ECG education through medical student time could be an important basis for improving skill. Because post-graduated physicians were mostly consult their friends, conference with expert based on cases should be considered. In conclusion, ECG interpretation skills are determined by knowledge incorporated with clinical experiences. The postgraduate physicians enhance this skill by keep on learning through practicum.

Take-home Messages: The improvement for ECG interpretation skill should be implement since medical student and can be polishing by proficiency of clinical practice.

#EP7.1 - ePosters: Postgraduate - General

#EP7.1.17 (5011)

The Consult Cognitive Load Instrument: Development and Validity Evidence

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ABSTRACT:

Background: Effective inpatient consultation is essential for training and patient care. However, our limited understanding of learning during consults fails our inpatient trainees. Cognitive load (CL) describes the mental effort required to complete a complex task such as a consult. When CL can be measured, learning can be optimized. A CL measure is needed to improve consult learning and, consequently, patient care. We aimed to measure CL during consults.

Summary of Work: We developed the Consult Cognitive Load (CCL) instrument using Wilson's item response modeling approach. We developed construct maps representing three CL dimensions. We selected and refined 12 items by reviewing the literature, discussing findings with experts, and conducting cognitive interviews. We included questions about likely CL predictors for use in latent regression analysis. We developed scoring guides to relate responses to construct map levels. After a pilot (N=33), we requested participation from internal medicine subspecialty fellowship and psychiatry program directors at five University of California campuses. Between March and September 2019, we distributed the CCL to all rotating fellows and residents in participating programs. Trainees completed the CCL once within 24 hours of their most recent new consult. For analysis, we used the Rasch Partial Credit Model.

Summary of Results: Of 326 trainees, 142 (44%) responded during busy inpatient rotations. All items had good fit. Wright maps showed appropriate banding of thresholds and increase in mean respondent positions, supporting construct validity. Reliability was 0.8 or higher across all CL dimensions. Latent regression highlighted significant CL predictors including consult difficulty and prior consult experience.

Discussion and Conclusions: We developed and calibrated an instrument to measure trainee CL during inpatient consults and provided validity evidence. The CCL can now be used to answer research questions about consult learning, address institution-specific questions about trainee CL, track CL formatively for assessment, and determine appropriate trainee consult volume, which may impact rotation structure.

Take-home Messages: Inpatient consultation constitutes a rich, yet understudied, postgraduate learning environment. We developed an instrument to measure CL during inpatient consultation. This instrument can improve understanding of learning during consults through research, assessment, and program evaluation.

#EP7.1 - ePosters: Postgraduate - General

#EP7.1.18 (5095)

“I Feel the Lack of Midwifery Autonomy”. Assessment of a One-Year Post-Nursing Midwifery Curriculum in Japan: A Qualitative Interview Study

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ABSTRACT:

Background: In 2019, WHO announced the impact of midwifery education, showing improved clinical outcomes. Furthermore, the International Confederation of Midwives suggests that basic midwifery post-nursing programs be at least 18 months long “to allow sufficient opportunity for the learner to acquire and demonstrate all the midwifery core competencies” (ICM, 2012). However, 81.2% of midwifery programs in Japan are 12 months long. This study explores the problem of 12-month midwifery courses in Japan.

Summary of Work: Qualitative semi-structured interviews were administered to graduates of the one-year post-nursing midwifery program between January and March 2019. Substantively, this program provides 10 months of learning; 6 months on campus and 4 months of clinical practice. Interviews were conducted face-to-face by mutual agreement of the researcher and participant. Data analysis was performed using Steps for Coding and Theorization.

Summary of Results: Three interviews were conducted with five participants; two were 10 months after graduation and one was 2 years after graduation. All participants felt a gap between clinical experience and basic education about learning postpartum. In particular, they felt unqualified to diagnosis preterm neonates as high risk. They recognized a lack of autonomic midwifery diagnosis, meaning their acquired competency level was related to knowledge acquisition alone, although active thinking is required in clinical situations. Additionally, they confused the textbook and clinical situations regarding infant-feeding support. Further, there was lack of learning about administrative collaboration between health agencies in communities and hospitals. They desired to acquire competence regarding the perspective of continuing care from the hospital to the community.

Discussion and Conclusions: These results suggest that midwifery students who graduate from 12-month midwifery education programs believe their competences are insufficient. Competency-Based Curricula need to be developed in midwifery programs in Japan.

Take-home Messages: Japanese graduates of a one-year post-nursing midwifery program felt a gap between clinical experiences and their learning. They especially feel a lack of competence regarding autonomic preterm neonates’ diagnoses and community collaboration.

#EP7.1 - ePosters: Postgraduate - General

#EP7.1.19 (5371)

Does giving medical students out of hours opportunities enhance their learning?

AUTHOR(S):

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ABSTRACT:

Background: Foundation doctors in the UK spend a large proportion of their time working out of hours (OOH). The literature demonstrates that medical students and foundation doctors worry about having to look after unwell patients by themselves, plus decision making and prescribing. Given the frequency of out of hours work, it is therefore surprising it does not play more of a role in undergraduate education.

Summary of Work: University of Aberdeen 4th and 5th year medical students based in Inverness were invited to attend optional out of hours evening shadowing of the medical registrar. Each shift is different, but students are invariably seeing unwell patients, plus demonstration of non-technical skills such as prioritisation. Students are then invited to complete an online survey.

Summary of Results: Several themes have emerged from the survey. 1. Perception of the medical registrar job- students commented it seemed less overwhelming and more interesting than they thought. 2. Reasons for attending - students wanted to understand how the hospital functions out of hours, plus how the workload is different. 3. Exposure. Students see things out of hours they may not during the day. For example, breaking bad news and discussions about resuscitation- 'usually don't see because senior team members deal with them'. They all found it useful and some have attended more than once.

Discussion and Conclusions: Offering medical students out of hours shadowing experience has been well received and well attended. The students are having exposure to procedures and conversations that they are not likely to see during ordinary placement. They have all found it useful and some students have attended more than once. The author plans to carry out focus group interviews to explore their perceptions in more detail, but it could be argued that this work contributes to a growing body of thought that medical students should be spending more time out of hours to help transition them into their foundation years. Exposing them to senior roles as an undergraduate may also have long term implications on recruitment to higher training.

Take-home Messages: We should offer more out of hours experience in the undergraduate curriculum

#EP7.1 - ePosters: Postgraduate - General

#EP7.1.20 (5546)

Perception and Attitude among the new junior residents toward the junior orientation workshop in ACGME-I pediatric residency program, in Qatar

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ABSTRACT:

Background: Starting the residency program is challenging for the new residents. Many factors have a huge impact on the residents' performance: non-familiarity with the system, work environment, lack of experience, different background and cultures. Formal orientation for the new junior residents might familiarize them with their new role and environment. Our aim was to study the current perception among the new residents regarding receiving formal orientation sessions before starting their residency and to explore the topics needed in the junior residents' orientation workshop.

Summary of Work: Cross-sectional prospective study conducted among pediatric junior residents at Sidra medicine in Qatar July 2019. The evaluation survey was paper based pre and post junior workshop orientation. It included details of demographics, their perception about training before starting their residency the important topics covered in the orientation and its beneficial.

Summary of Results: 21/27 (78%) of the new residents attend the workshop. The pre-workshop survey showed 44% were oriented to the junior residents' daily routine prior to the orientation. 85% of the new residents find that the workshop beneficial in term of understanding their daily routine. 52% of the residents attended the workshop think that it helps them in early sepsis recognition. 31% were oriented about the rules of documentation and supervision policy prior the workshop, while after the workshop 100% of the new residents believe that the workshop is very beneficial with this regard. The pre-workshop showed 43% trained about SOAP presentation in the morning round; which improved 100% after the workshop. 47.6% of the new residents believe the workshop cover the important topics they need as a junior and 95% of the new residents found the workshop was organized.

Discussion and Conclusions: Our study showed that a proper workshop orientation delivered to the new junior residents can work on enhancing their understanding and make them familiar with their new role. other topics needed to be addressed might help residents to cope their residency in future orientations like stress management, and residents wellness.

Take-home Messages: Organized orientation before starting the residency training will easiness the new residents life.

#EP7.1 - ePosters: Postgraduate - General

#EP7.1.21 (5559)

Virtual Reality Simulation for Foundation Trainees in East of England

AUTHOR(S):

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ABSTRACT:

Background: East of England Foundation School has introduced Virtual Reality (VR) simulation for all Foundation Trainees (FTs) since August 2019. VR can bridge the gap between theory and practice by immersing the learner in a realistic, dynamic, complex setting. The benefits of this learning modality are less simulation facility (e.g. high-fidelity simulation lab, consumables, etc) and faculty are required; learning takes place in safe environment with high flexibility. We would like to share our experience on initiating this programme; feedback from learners and facilitators on VR across our region.

Summary of Work: From August 2019, we have recommended 2 different ways to utilise VR for the FTs: 1) Individual learning - scenarios are practiced and repeated individually by FTs during protected education time, enhancing psychological safety and deliberate practice. 2) Small group learning with a facilitator. We collected feedback from 93 FTs (49 F1 and 44 F2) and 10 facilitators (DME, FTPD, Sim Lead) from across the region between October 2019 to February 2020.

Summary of Results: Thirty-six FTs used VR individually, 39 had facilitated sessions, 16 had both. Twenty-four percent found scenarios easy, 64% moderate, and 12% found them difficult (8 of 11 were F1s); 79% found VR enjoyable; 83% felt VR is a useful educational tool; 80.6% learners would recommend VR for FTs. Learners find VR immersive, interactive, there was 'no fear of judgement' and less 'anxiety induced' than high-fidelity simulation. They find facilitator sessions are beneficial; and some scenarios can be pitched at a more challenging level. Eighty percent of facilitator found VR a useful educational tool; 70% recommend the use of VR in FTs.

Discussion and Conclusions: Feedback from learner and trainer-group are extremely positive and demonstrates that VR is an enjoyable, flexible and effective learning tool for FTs. We will continue providing VR for our FTs and consider increasing the level of challenge in some scenarios, especially for more senior learners.

Take-home Messages: VR is a novel, enjoyable and effective educational tool that is highly valued by learners and trainers. There is great potential for VR simulation to expand into a wider cohort in both undergraduate and postgraduate medical education.

#EP7.1 - ePosters: Postgraduate - General

#EP7.1.22 (5589)

Implementation of a Simulation Program to Support Assessment in a New Competence-Based Postgraduate Medical Training Curriculum in Emergency Medicine

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ABSTRACT:

Background: In Canada, specialty postgraduate training programs in Emergency Medicine transitioned to a Competence Based Medical Education (CBME) structure in July of 2018. Within the CBME curriculum trainees at each stage are expected to collect assessments of competence on a number of Entrustable Professional Activities (EPAs) before transitioning to the next stage. To ensure that trainees had sufficient opportunity to attain competence for all EPAs (particularly those involving care of critically ill patients), we developed a simulation program to supplement clinical learning opportunities.

Summary of Work: During the first two years of the program a total of 41 simulation sessions were conducted for trainees in the first two years of post-graduate training, with an average of 2-3 participants per session. Simulated cases generally focused on critical yet infrequent learning opportunities (including cardiac arrest, cardiac dysrhythmias, respiratory distress, altered level of consciousness and shock) using a high-fidelity simulation mannequin. Faculty from our teaching hospital were recruited to facilitate the sessions. Simulation sessions were conducted with the intent of providing an educational opportunity, but trainees could choose to use the simulation to be assessed on an EPA at their discretion.

Summary of Results: In the first 18 months of the program five CBME-based trainees participated in the simulations, and a total of 110 EPA assessments were completed during simulation (9.2% of all assessments), ranging from 7 to 23 per resident. For the three EPAs addressing resuscitation of critically ill patients, 80/184 (43.4%) were completed during simulation, and 12/352 (3.4%) of procedural EPAs were assessed in simulation.

Discussion and Conclusions: Although EPA assessment was optional for trainees during the simulation sessions, trainees chose to complete a large number of their resuscitation EPAs in the simulation setting. Without these simulation-assessed EPAs, trainees would not have met the minimum number of assessments required to transition to the next stage of training.

Take-home Messages: A robust simulation program is critical to support and supplement clinical education in a competency-based residency training program, particularly for EPAs assessing resuscitation of critically ill patients.

#EP7.1 - ePosters: Postgraduate - General

#EP7.1.23 (5765)

Insights of South African medical interns on their career intentions: Implications for public health-care.

AUTHOR(S):

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ABSTRACT:

Background: Health provision in South Africa requires a focus on primary health care, especially in the context where medical practitioners continue to migrate from the public health service. Experiences of medical practitioners, during internship, influence their career intentions. Given the need for human resources in primary health care, this study was conducted to explore the perceptions and experiences of interns about pursuing a career in primary health care in the public health sector.

Summary of Work: Methods: This exploratory, qualitative study specifically explored the factors related to interns' perceptions about careers in child health and primary health care in the public health service in 5 hospitals in KwaZulu Natal (KZN). These hospitals are typical of high disease burdened, resource poor environments in many lower middle income countries. Data was collected through focus group discussions with a purposive sample of intern participants, who were chosen for having had the necessary experience to decide on long term careers. The data were coded, categorised and themed using a combination of manual and computer-assisted methods. (NVivo 11 software).

Summary of Results: Multiple factors, both external and specific to the intern-supervisor relationship, were found to influence intern career intentions. A high disease burden, perceived poor health systems and institutional management coupled with sub-optimal intern supervisor relationships were identified as significant factors that are associated with an inability of interns to fully participate within 'communities of practice' within internship. Interns were reluctant to pursue careers related to primary health care. They instead expressed a strong preference to specialise in other fields.

Discussion and Conclusions: Interns working in public service in KZN perceived barriers in the practice environment that prevent them from considering careers paths in primary health care. Internship experiences influence career intentions which are discordant with SA's national health priorities. Improving the intern working environment may be a way forward, to stimulate interests of medical practitioners in careers that are congruent with SA's health needs

Take-home Messages: Changing the focus and quality of training for junior medical practitioners holds the key to influence career directions that benefit country needs.

#EP7.1 - ePosters: Postgraduate - General

#EP7.1.24 (5987)

Patient Safety Awareness among Postgraduate Doctors and Nurses in Surgical and Non-surgical Specialties

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ABSTRACT:

Background: The World Health Organisation has published the “Multi-professional Patient Safety Curriculum Guide” for medical institutions to implement patient safety education into their curriculum. However, with the lack of evidence, neither success nor failure of the patient safety education program can be evaluated in Thailand. This study aims to evaluate the differences in patient safety awareness between physicians and nurses in surgical and non-surgical specialties.

Summary of Work: Postgraduate doctors (PGD) and nurses working at HRH Princess Maha Chakri Siridhorn Medical Center were asked to participate in this comparative study. Participation was voluntary, and their identities were kept confidential. APSQ-IV questionnaire regarding patient safety ranked on 7-point Likert scale, adapted from the previous study, was used. The differences between the mean score of two groups were analysed using t-test through SPSS version 26.

Summary of Results: There was a total of 98 responses, 34 PGD and 64 nurses. In general, responses from PGD and nurses in different specialties were in the same direction for all questions. However, nurses’ mean score was significantly higher than PGD ($p = 0.021$) while there was no significant difference between specialties ($p = 0.246$). When comparing between domains, nurses scored significantly higher in the “training” ($p = 0.001$), “reporting errors” ($p = 0.018$), “Professional incompetence as a cause of error” ($p = 0.016$), “teamwork” ($p = 0.024$) and “importance of teaching” domain ($p = 0.013$). PGD’s score in the “work duration” domain was significantly higher than the nurses ($p = 0.003$). The lowest scored domain was “Professional incompetence as a cause of error” for PGD and “knowledge” for nurses.

Discussion and Conclusions: The results suggest that nurses have higher patient safety awareness than PGD. Nonetheless, there was no difference in patient safety awareness between surgical and non-surgical specialties. This could reflect the role of factors such as training, culture, and responsibility in patient safety awareness.

Take-home Messages: While maintaining the current early years basic patient safety education, additional training should be individualised to each profession and environmental factors such as culture and responsibility should be taken into consideration while designing such programme.

#EP7.1 - ePosters: Postgraduate - General

#EP7.1.25 (5998)

The Intraprofessional Conflict Scale: Validity Evidence and Utility for Healthcare Training

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ABSTRACT:

Background: Effective collaboration has been described as the foundation for delivering safe, high quality patient care in the health care setting. While most health sciences curricula include training related to interprofessional collaboration, difficulties and breakdowns in communication can also occur within a profession. As intraprofessional conflicts are an understudied domain in health professions education, we developed and gathered validity evidence for an assessment tool for intraprofessional conflict management.

Summary of Work: We designed a 22-item assessment to evaluate medical trainees' skills in managing intraprofessional conflicts based on a literature review of conflict management in healthcare. Using Messick's framework, we collected validity evidence for content, response process, and internal structure. We performed our study in the context of a simulated intraprofessional conflict over a two-year period. Two raters evaluated each participant and two qualitative researchers observed each simulation to examine the usability and relevance of the tool. Descriptive statistics, inter-rater reliability, and generalizability theory were used to gather validity evidence for the assessment tool.

Summary of Results: We collected 164 observations for 82 participants. Inter-rater reliability was fair with a weighted kappa of .33 (SE=.03). The generalizability study showed that the assessment tool was able to differentiate among participants (19.7% person variance) and was highly reliable, G-coefficient .88, Phi-coefficient .88. The interaction of person and item showed high variance (11%), but the interaction of person and rater (1.3%) was low. The decision study showed that it is possible to use only one rater and still have high reliability, G-coefficient .80. Our qualitative observations aligned with these quantitative findings; we found all items to be applicable and highly relevant, allowing for identification of how applicants managed conflict.

Discussion and Conclusions: The tool provides a useful and reliable way to evaluate intraprofessional conflict management skills. It allows for the identification of strengths and weaknesses and may be helpful for health educators in preparing trainees to deal with intraprofessional conflict in the workplace.

Take-home Messages: Our tool is effective in assessing intraprofessional conflict management skills and may be a valuable resource for teaching conflict management.

#EP7.1 - ePosters: Postgraduate - General

#EP7.1.26 (6089)

A Feasibility Pilot Session: Teaching Kitchens as Innovative Nutrition Education Tool for Family Medicine Residents

AUTHOR(S):

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ABSTRACT:

Background: It is widely known that healthy eating can lead to better future health as well as allow patients to better manage chronic disease. Several studies have indicated that medical students receive relatively little education in nutrition. Teaching kitchens have emerged as an education tool and a kind of cooking laboratory that combines culinary instruction using healthful whole ingredients, nutrition education, exercise, mindfulness, and personalized health coaching.

Summary of Work: This study is a participatory intervention pilot consisting of (1) cross-sectional pre- and post- surveys that evaluated the perceived nutrition competence of health care practitioners and (2) an immersive culinary session. Open-ended questions were included in the post-session questionnaire to collect data on the experience of the session.

Summary of Results: Seven PGY1/2 Family medicine residents at Sunnybrook HSC attended the 2-hour culinary session led by a Registered Dietitian and Community Chef. 83% of the residents were not confident about their nutrition knowledge; 100% of the residents were not or somewhat confident in determining appropriate food goals for patients with CVD; and 82% of the residents were not confident in communicating with their patient about diet modification. All participants found the session enjoyable and would likely participate in a future similar session. All participants identified (1) lack of formal training and (2) time constraints as barriers in providing nutrition counselling in primary care practice.

Discussion and Conclusions: This pilot session proved to be an enjoyable and useful way for Family Medicine Residents to gain insight into nutritional counselling, healthy eating and personal wellness. There is a general lack of confidence and competence towards providing targeted nutritional advice to patients among FM Residents. Through this innovative approach in blended learning, Family medicine residents engaged with community partners (Loblaws) to address gaps in nutrition knowledge, build resiliency through healthy cooking and eating and gain awareness of accessible community nutrition services.

Take-home Messages: 1. Teaching kitchens can be used as an enjoyable and useful way for FM Residents to gain insight into nutritional counselling, healthy eating and personal wellness. 2. There is a general lack of confidence and competence towards providing targeted nutritional advice to patients among FM Residents.

#EP7.1 - ePosters: Postgraduate - General

#EP7.1.27 (6640)

The Attributes and Competencies of Family Medicine Residency Program Directors: the Illustrative View from Multi-level Stakeholders

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ABSTRACT:

Background: Clinical training programs bridge the role of transitioning residents into independent clinicians. Program directors have the challenging task to develop and implement training programs for their staff. Previous research revealed that social skills, favorable clinical skills and visionary thoughts are critical attributes for program directors, but more comprehensive investigations regarding attributes and competencies for specific program directors are still pending. We conducted the qualitative study aiming to investigate the opinions from multi-level stakeholders of Family Medicine training programs in Taiwan.

Summary of Work: A semi-structural interview draft was constructed for this study, interviewing four levels of stakeholders related to Family Medicine training programs which include trainees (residents), clinical teachers, program directors and individuals with high-level leadership roles in healthcare organizations or academic associations. Questions were focused on attributes and competencies for a Family Medicine Residency program director. The audio interview was recorded with permission and transcribed within 1 week. The numbers of participants primarily was estimated about 20-30 interviews, and finalized to 27 interviews due to theoretical saturation.

Summary of Results: 27 participants in 11 organizations were interviewed, including 4 from leadership roles in healthcare organizations or academic associations, 8 program directors, 9 clinical teachers and 6 residents. Participants commonly emphasized the willingness and ability of effective communication, teaching enthusiasm, and clinical competencies as significant attributes and abilities for program directors. Organizational leaders specifically regarded inter-professional administrative ability to be important, while program directors placed emphasis on risk management. Clinical teachers expected their directors to be influential and negotiable, and trainees looked to a reflective and kind program director.

Discussion and Conclusions: This study explored the in-depth opinions of different stakeholders related to Family Medicine Residency Programs. Most attributes and competencies can reach mutual consensus among multiple stakeholders, but a third of the opinions differed between interviewees, demonstrating the different interests and blind spots among these four levels of stakeholders which should be noticed when designing orientation courses or continuing education for program directors.

Take-home Messages: There are common and different interests among stakeholders of Family Medicine training program. Organizational leaders should be aware when assigning new academic positions or designing faculty training programs.

#EP7.1 - ePosters: Postgraduate - General

#EP7.1.28 (6739)

A novel hybrid video e-learning and national interview course to prepare applicants for the Academic Foundation Programme - a pilot study

AUTHOR(S):

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ABSTRACT:

Background: There is a current recognised crisis of recruiting clinicians into academia with early exposure and mentoring recommended to improve this. The Academic Foundation Programme (AFP) is a variation of the UK foundation training placing additional focus on research alongside clinical learning within the first two years of being a doctor.

Summary of Work: A pilot study was conducted to review if the production of online video-based lectures and a free national preparatory interview course would be beneficial for AFP candidates. A pre-course questionnaire collected data on candidates' use of the online material as well as their knowledge of the AFP interview process and confidence in key domains. This was followed up by a post-course questionnaire to examine if knowledge had improved from baseline. Paired t-testing was performed to compare pre- and post-course feedback.

Summary of Results: 47 students from 6 medical schools attended the interview course. 41/47 (87%) completed both questionnaires. 32/41 (78%) used the online material and rated it 4.16 out of 5 as a preparatory resource. There was a significant increase in candidates' understanding of the format of the AFP, question types expected at interview, how to answer these questions, assessing and managing unwell patients, and interpreting medical statistics (all $p < 0.01$). Mean confidence towards the interview increased from 2.88 to 4.12 ($p < 0.01$). The fact that the course was free was deemed highly significant as a reason for course attendance.

Discussion and Conclusions: Online material allows students access to AFP-specific content at their own pace without the geographical, temporal or financial limitations associated with traditional lecture based courses. Resources can be focused on providing a free comprehensive interview experience with personal one-to-one feedback. This was the first AFP course of its kind combining publicly available video lectures as the sole method of didactic teaching alongside mock interviews and has been shown to be effective in preparing candidates.

Take-home Messages: Video lectures are an effective pre-course teaching material. Most current candidates for AFP do not feel well prepared prior to interview. A single mock interview can significantly improve a candidates' confidence.

#EP7.1 - ePosters: Postgraduate - General

#EP7.1.29 (6937)

Confidence in urinary catheterisation amongst new foundation doctors and exposure to urology teaching

AUTHOR(S):

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ABSTRACT:

Background: As per Tomorrow's Doctors (GMC) guidance, Foundation Doctors should be competent in performing male and female catheterisation - 2 of the 15 core procedures highlighted in training. This audit covers postgraduate urology understanding with focus on catheterisation skills and reasons why junior doctors are not confident.

Summary of Work: 47 NHS Tayside Foundation Year 1 Trainees (starting August 2018) were included in first audit cycle. Feedback was collected following completion of first foundation training post via paper surveys during a regular foundation Wednesday teaching session (41), and online form (6). A senior led training session in catheterisation skills took place December 2018 – 11 Foundation Trainees completing the form took part. Following this, feedback was gained from attendants together with other foundation trainees just prior to completing FY1 training (July 2019) as part of second feedback cycle.

Summary of Results: FY1s found female catheterisation more difficult than male (59.6% vs. 21.3% rating confidence in performing them under 3 out of 5 – 5 being the most confident). For those scoring under 3/5 in confidence in either male/female catheterisation (41), the least confidence was seen in the actual process of inserting catheter vs. other aspects (gathering equipment, setting up bedside, documentation). Second feedback cycle revealed general increase in confidence performing catheterisation with only 30% and 15% of FY1s rating confidence under 3 out of 5 in females/males respectively. Of these, 83.3% had partaken in neither informal nor formal training in catheterisation during foundation training. All 11 FY1s attending the training session expressed greater confidence in both male and female catheterisation vs. non attendants. They were also more likely to engage in other informal teaching scenarios during training.

Discussion and Conclusions: This audit highlights importance in catheterisation training with scope for improving specific areas (female catheterization), and knowledge of acute urological emergencies - particularly haematuria and acute scrotal presentations. The finding of only half of FY1s having previous exposure to urology during undergraduate placement highlights greater emphasis being made in postgraduate urology education. Future audit cycles might explore implementation of compulsory (vs. opt in) training sessions at start of foundation training during shadowing week.

Take-home Messages: Foundation Doctors should have more urology related teaching/exposure.

#EP7.1 - ePosters: Postgraduate - General

#EP7.1.30 (5202)

TIPSQI - Trainees Improving Patient Safety through Quality Improvement

AUTHOR(S):

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ABSTRACT:

Background: Junior Doctors have been repeatedly referred to as ‘agents of change’ as the nature of their role means they are well placed to provide insight areas for service improvement. Consequently, Quality Improvement (QI) is now a part of many postgraduate training curricula to help enable positive changes. Despite this, junior doctors often feel unprepared and ill-equipped to undertake workplace-based improvement work.

Summary of Work: TIPSQI is comprised of interactive workshops based on the Model for Improvement. The project began in 2013 at a single NHS Trust and is now delivered to 22 Trust across the North West of England. The training has been delivered to over 3000 trainees, plus equipped approximately 200 Educational Supervisors with the tools to assist their trainees. To ensure sustainability, we annually recruit a cohort of leads. These are mentored by a member of the core faculty and trained further in QI methodology to deliver the sessions.

Summary of Results: The impact of this teaching was assessed against the Kirkpatrick’s Evaluation of learning. 1. Participant experience: The quality of the teaching averaged 8.27/10. Qualitative feedback identified that trainees overall felt more equipped and likely to undertake a QI project 2. Learning: When asked to rank their understanding of QI methodology pre and post session for each component trainees knowledge and understanding improved by over 50%. 3 & 4 . Behaviour Change and impact: We have seen the number of QI projects submitted increase from 13 projects in 2014 to 3683 in 2019.

Discussion and Conclusions: The feedback for the project has been overwhelmingly positive. Over the last 7 years the project has become embedded into the Foundation training programme. By using the ‘train the trainer’ approach we have been able to achieve sustainability and offer further development to engaged trainees.

Take-home Messages: In order for Junior doctors to act as medical leaders they need to be equipped to undertake quality improvement in the workplace. Trainees have been engaged and enthusiastic about the project. The peer lead aspect in particular in well received. It is felt it highlights that projects can be undertaken by trainees at their level and not just by senior members of staff.

#EP7.1 - ePosters: Postgraduate - General

#EP7.1.31 (5889)

How to maintain long-term ability of procedural skills

AUTHOR(S):

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ABSTRACT:

Background: Procedural skills are important in clinical practice as well as skill retention. This research aimed to study the factors affecting long-term ability to perform procedural skills in Udonthani Medical students who have been trained by simulations, skill laboratory and real practices.

Summary of Work: The questionnaires were sent to the doctors (graduated over two years ago). The data included their confidence of practice in 10 procedures, done during their undergraduate, internist year and current practice. The confidence was graded in five scales. The percentage of procedure with highest confidence and the correlation with the numbers of practiced case were analyzed by using Pearson correlation. Their attitudes about maintaining the skills were also studied.

Summary of Results: 36 doctors completed the questionnaire. The distribution of highest confidence levels were 100%, 96%, 91%, 89%, 87%, 85%, 82.6%, 48%, 10.8% and 10.8% in abdominal paracentesis, simple suture, intercostal drainage, BLS, CPR/Defibrillation, Pap smear, lumbar puncture, anterior nasal packing, neonatal CPR and normal labor, respectively. The numbers of cases during the three phases varied from zero to over 10 cases. We found strong positive correlation in current practice and practice of over 10 cases in the internist year ($r = 0.82$ and 0.77 respectively; $p < 0.05$), weak positive correlation in practicing over 10 cases during undergraduate year ($r = 0.52$) and weak negative correlation when they had never practiced with real patients during undergraduate year ($r = -0.49$). The reasons for low confidence are infrequent practices in their hospitals (63.2%), never practiced with patients during graduate year (16.2%) and easy to refer to tertiary hospital (11.8%). Attending specific courses (59.4%), personal training at tertiary hospital (23.2%) and online training (8.7%) are suggested to maintain their skills.

Discussion and Conclusions: To maintain the skills, current practice is the most important factor, followed by practice of more than 10 cases in the first year and undergraduate year. Having no practice with patients during undergraduate year, doctors can sustain their skills by practicing over 10 cases in the first year. Repeated trainings on site or online could be helpful.

Take-home Messages: Practices during undergraduate and first year after graduation, current practice and repeated trainings are useful to maintain procedural skills.

#EP7.1 - ePosters: Postgraduate - General

#EP7.1.32 (5170)

Current Status in Digital Health Training for Junior Doctors in Europe.

AUTHOR(S):

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ABSTRACT:

Background: Despite the growing interest and implementation of digital health tools into clinical practise, junior doctors, express the need for better training and understanding of information technology. In the recent survey published by the European Medical Student's Association, more than 50 % of medical students reported feeling not prepared to work in the digital environment and situation regarding junior doctors is not much different.

Summary of Work: To better explore current status in digital health training, two different surveys are conducted. Twenty-three member organizations of the European Junior Doctors (EJD) Association (representatives of national medical associations) were surveyed to analyze national strategies and current training schemes. At the same time, an additional survey was disseminated for 400 individual practising junior doctors (through social media and member organizations) to explore the self-evaluation of their digital health literacy. The preliminary results are received.

Summary of Results: According to preliminary results received from 19 countries responded to our survey, only one country (5%) reported having a digital health course implemented in the postgraduate training curricula. Rest of the countries reported having no unified officially approved training programme. All countries reported the availability to participate in the external or online courses on digital health organized outside of the resident's training centre; however, participation in such events is not mandatory. After finalizing responses from the second survey, we expect to deliver further results on how individuals evaluate their digital health skills and readiness to work in the digital environment. The results will also provide a better scope on how junior doctors see the profession in the future and what will be the core digital health tools and technologies for different medical professions.

Discussion and Conclusions: According to very preliminary results training in digital health and technologies is not yet implemented into postgraduate training programs neither nationally neither internationally. While these results provide us with evidence that further advocacy for better training at the European level is needed, the final results from individual physicians will provide a better overview of the general competence level of doctors.

Take-home Messages: There is still no unified and standardised digital health training neither nationally neither internationally.

#EP7.1 - ePosters: Postgraduate - General

#EP7.1.33 (5438)

Resident and selection committee member's views on an online assessment tool in selection for postgraduate training

AUTHOR(S):

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ABSTRACT:

Background: Selection for postgraduate training is a high-stakes process. Recently, there has been growing interest in non-cognitive methods such as personality- and competency assessments. However, a BEME review found limited studies on this topic.(1) Based on a Delphi study we developed an online assessment with variables on intelligence, motivation, personality and competencies, as an additional tool to written applications. Previously presented work revealed that the assessment played a significant role in the selection procedure.(2) The aim of this study was to investigate resident and selection committee member's views on the assessment in the selection procedure for postgraduate training.

Summary of Work: The assessment was implemented in the selection process for postgraduate training in pediatrics region East-Netherlands in 2006. In 2018, a 12-item survey with a 7-point Likert-scale was conducted among committee members and selected residents to explore opinions on the assessment as part of the selection process and on its use in postgraduate training.

Summary of Results: 12/14 committee members and 44/52 residents completed the survey. 75% of the committee members agreed that the assessment improved the objective selection process and provided important additional information. 64% agreed that it provided relevant information for mentoring residents during training. 75% of residents recognized themselves in the assessment results, and 64% and 50% agreed that it played an important role in the overall process and application interviews respectively. Only 15% of residents included assessment results in their personal portfolio and development plan, while merely 2% used it in meetings with their supervisors.

Discussion and Conclusions: Committee members and residents agree that the assessment plays a significant role in the selection process for postgraduate training and assessment results were considered accurate by residents. Remarkably, the assessment currently plays a limited role in personal growth and competency development after selection. This warrants the need for research into how the formative role of the assessment could be better exploited in the postgraduate training curriculum.

Take-home Messages: Committee members and residents agree that personality- and competency-based selection methods have an additional value in postgraduate selection, however its educational value for postgraduate training should be further explored. References 1.Roberts et al. MedTeach2018;40(1):3-19. 2.Draaisma et al. Poster presentation AMEE2018.

#EP7.1 - ePosters: Postgraduate - General

#EP7.1.34 (5574)

Simulation Teaching in Improving ACLS performance in PGY Residents

AUTHOR(S):

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ABSTRACT:

Background: ACLS (Advance Cardiac Life Support) knowledge and skill are essential in the healthcare profession, and especially for physicians. In Taiwan, in the post-SARS era, all graduate medical students enroll in 2 years of post-graduate professional training ; hence PGY training. PGY residents roles are to acquire core competencies in all the general fields of medicine. Again, competence in ACLS is essential. However, junior residents often lack the hands-on experience in CPR situations. Thus, training to enhance retention of ACLS knowledge and skill is vital in quality of patient care.

Summary of Work: From February of 2018 to April of 2019 24 PGY residents in the Internal Medicine Ward received an OSCE(pre-test) before undergoing high-fidelity ACLS simulation training, and then received another OSCE(post-test) after completion of the ACLS simulation training.

Summary of Results: Pre-and post-test OSCE scores before and after simulation training for the 24 PGY residents were examined by two clinical evaluators with $z=-4.249$ ($p<0.00$) and $z=-4.359$ ($p<0.00$), respectively. The differences in accuracy were significant between pre-and post- test scores of the evaluators; the kappa score was 0.833 ($p<0.00$). The 3 lowest-scoring performances were: 1) time to ECG, 2) timely defibrillation, 3) administration of Epinephrine when indicated.

Discussion and Conclusions: After using SimMan for PGY residents ACLS training, performance of the 24 residents improved. To further enhance ACLS competence of the PGY residents and decrease the three most commonly missed steps noted, ACLS flow sheets were posted in the internal medicine wards as reminders.

Take-home Messages: Simulation ACLS training and teaching model is able to boost junior residents' confidence and competence by strengthening emergency response skills in a safe setting to prepare for the real challenges ahead.

#EP7.1 - ePosters: Postgraduate - General

#EP7.1.35 (4229)

Incorporating Individualized Learning Plans into Postgraduate Training: Experience in Taiwan

AUTHOR(S):

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ABSTRACT:

Background: For medical students and residents, self-directed learning (SDL) plays a vital role in their clinical training. However, there are limited measures that directly facilitate SDL. The individualized learning plans (ILPs) program is one of them. In the previous studies, both medical students and residents found the ILPs are great tools in their clinical learning. Scholars in the western world have studied how to use ILPs in medical education, while there is limited research in Asia. Thus, it is a necessity that we start a pilot program of ILPs in Taiwan and evaluate its outcomes.

Summary of Work: Our study has two aims. The first aim is to develop an ILPs form that fits the contexts in Taiwan and a protocol including one-on-one mentoring meetings and evaluation. The second aim is to assess how ILPs improve the trainees' SDL using the Motivated Strategies for Learning Questionnaire (MSLQ). We also examine whether the learning goals in ILPs correspond with the I-SMART (Important, Specific, Measurable, Accountable, Realistic, and Timeline) strategies and the six Accreditation Council for Graduate Medical Education (ACGME) Core Competencies.

Summary of Results: A total of 14 postgraduate-year-one (PGY-1) residents participated in this study. They wrote up their ILPs forms and had a one-on-one, monthly meeting with the clinical teacher. Each meeting was 20-minutes long, and the residents would have three over a 3-month internal medicine rotation. Our research has shown that the PGY-1 residents' MSLQ scores were improved after they used the ILPs, and their learning goals in ILPs were set following the I-SMART strategies and mostly linked to medical knowledge and patient care.

Discussion and Conclusions: Residents in Taiwan were not familiar with ILPs and needed some instructions before they used their ILPs forms. Their meetings with the clinical teacher were the key to success in this pilot program. With the proper guidance of the clinical teacher, residents can learn from meaningful feedback and discussion generated by ILPs.

Take-home Messages: 1. The ILPs program can be developed and incorporated into postgraduate training in the context of medical education in Taiwan. 2. Residents mainly use ILPs as a tool to achieve their learning goals related to medical knowledge and patient care.

#EP7.1 - ePosters: Postgraduate - General

#EP7.1.36 (4350)

Gender-based discrimination in a General Surgery Residency Programme and beyond: a qualitative study

AUTHOR(S):

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ABSTRACT:

Background: We presented a literature review on gender-based discrimination among surgical trainees last year. Lack of role models was a barrier to entry for aspiring trainees, while more female surgeons dropped out at each stage of their career. At the workplace, patients had no preference for a specific gender, but they preferred “masculine” traits for surgeons doing complex surgeries.

Summary of Work: Following ethics approval, anonymised surveys were administered to female residents and surgeons across two hospitals involved in our programme. We looked at demographics, experience during training as well as after graduation using a Likert 5-point scale.

Summary of Results: Demographics: 12/30 (40%) participants completed the survey, with age ranging from 25 – 43 years. Although half of them were married, only 1 respondent had a child during training.

Discrimination in training/work: 41% of respondents felt their gender affected the treatment they received from others. Most (83.3%) disagreed that surgery was a man’s field, with limited roles for women. When queried on feeling pressed to work harder than their male peers, 58% felt this was not true. Almost all (91%) agreed starting a family would negatively impact their training. Reasons given included: (verbatim quotes): - “Singaporean Culture... Husbands expect the mother to stay home to look after the child...” - “After maternity leave like (sic) to need a period of time to regain the muscle memory of operating” - “females tends (sic) to spend more time and sacrifice more for family” The majority (75%) would choose surgery again if they had the chance and would recommend surgery as a career to female medical students. All 12 respondents (100%) identified positive work atmosphere as a motivating factor at work. When asked about how to mitigate discrimination faced, suggestions included: - “more interaction and advice from female surgeon mentors to female surgical trainees” - “To continue to be supportive during pregnancies”

Discussion and Conclusions: Our study participants identified facing discrimination based on their gender at the workplace, but also identified a positive work culture as a motivating factor.

Take-home Messages: We looked at rate and types of discrimination faced by female residents and surgeons, and identified factors that help motivate them to continue.

#EP7.1 - ePosters: Postgraduate - General

#EP7.1.37 (6730)

Moral Distress Among Physician Trainees: Drivers, Contexts, and Adaptive Strategies

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ABSTRACT:

Background: Moral distress is defined as a situation in which an individual believes they know the ethically appropriate action to take but are unable to take that action. Moral distress is increasingly recognized as a mediator of occupational stress and burnout in medicine, particularly in the nursing profession. However, there is a dearth of literature on moral distress among physician trainees, with the majority focused on end-of-life care. This study explores the phenomenon of moral distress among internal medicine trainees, with particular focus on drivers, situational contexts, and adaptive strategies such as coping mechanisms.

Summary of Work: We report qualitative data from a mixed methods prospective observational cohort study of internal medicine (IM) residents and associated faculty at a large, urban, academic medical institution. Five focus groups were conducted with 15 internal medicine residents, between January and October 2019. Trained facilitators used prompts on definitions of, experiences with, and consequences of moral distress. Transcripts were independently coded by investigators, and analyzed by major themes. Discrepant themes and codes were reviewed by the full research team to establish consensus. Data were analyzed using Dedoose®.

Summary of Results: Focus group participants were equally distributed by gender (7 women, 8 men) and across training year (30% PGY1, 20% PGY2 40% PGY3). Experience with moral distress was universal among participants, and was identified across four domains: personal values and morals, professional competency and training challenges, interpersonal relationships and conflicts, and systems/structural issues. Participants identified unique, place-based moral distress across different clinical environments, including intensive care units, wards, and outpatient environments, as well as between private, public, and government-run hospital facilities. Participants described a number of adaptive mechanisms for managing moral distress, including social support and connectivity, humor, and disassociation.

Discussion and Conclusions: Physician trainees experience considerable moral distress across multiple domains during the course of their training. They also develop unique adaptive strategies and coping mechanisms to manage and learn from distressing experiences.

Take-home Messages: This improved understanding of moral distress among physician trainees, particularly drivers and protective factors, has important implications for the training of physicians, and may have a role in promoting wellness and resilience among physicians across the training and professional pipeline.

#EP7.2 - ePosters: Postgraduate - Junior Doctor as Teacher

#EP7.2.1 (4806)

The F1 Educator: an untapped resource for advancing medical education

AUTHOR(S):

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ABSTRACT:

Background: One of the key facets of being a clinician is training the next generation. It is an essential pre-requisite for higher training in all specialties. Despite this, there is a paucity in the literature evaluating the role of Foundation Year 1 doctor (F1) teaching in undergraduate medical education. Consequently, there was a need to collect evidence to investigate the benefits of F1 teaching.

Summary of Work: At a District General Hospital (DGH) in Norfolk, there was much enthusiasm for F1 doctors to deliver formal teaching to medical students. Data collected from a focus-group composed of final year medical students from the universities of Cambridge and East Anglia revealed a demand for exam-focussed teaching. We designed and developed a 12-week twilight lecture series in collaboration with both universities. These exam-focussed teaching sessions covered commonly tested topics in a small-group environment. Qualitative and quantitative data was collected on attitudes, perceptions and subject knowledge pre-and post-sessions. Surveys were used to also identify the perspectives and experiences of F1 tutors.

Summary of Results: 93% of respondents found F1 teaching valuable to their learning. Prior to the session, on average only 48% of the respondents were confident in answering questions specific to the taught subject. This rose to 93.1% post-session. Qualitative feedback consistently highlighted the interactive and engaging nature of the F1 tutors, as well as the near-peer format. 100% of the responses from the F1 tutors highlighted that they felt teaching as an F1 is valuable to their professional development. However, 75% of the F1 tutors did not perceive the Foundation programme equipped them with the skills and knowledge to be a successful undergraduate educator.

Discussion and Conclusions: This twilight series attests to the reciprocal benefits for aspiring educators and willing students. Demonstrable improvement in confidence after engaging with the teaching sessions was seen. Similarly, F1 tutors enhanced their teaching skills and furthered their professional development.

Take-home Messages: F1s are untapped resources that when provided the right opportunity are able to deliver high quality teaching. Our data supports the need to incorporate formal training programmes in teaching to continue developing the clinical educators of the future.

#EP7.2 - ePosters: Postgraduate - Junior Doctor as Teacher

#EP7.2.2 (5254)

Digital devices can engage residents into longitudinal residents-as-teachers fellowship.

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- Shunsuke Kosugi, Aso Iizuka Hospital, Japan
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ABSTRACT:

Background: The authors developed and reported teaching competencies and EPAs for residents in AMEE 2016, 2018 and 2019. Based on these, we have held longitudinal workshops (RaTs fellowship) over a year since 2018. One of their features is that trainees and instructors evaluate resident teaching between the modules.

Summary of Work: In the first RaTs fellowship, flip and normal classes were mixed. This time, we unified all sessions into flip classes and prepared a web-based platform to communicate with each other. We examined whether this method resulted in improving the collection rate of the pre-challenges and evaluations.

Summary of Results: In 2018, 10 residents from 1 facility participated, and in 2019, 13 residents from 3 facilities participated. The collection rate for pre-assignments increased significantly to 51% and 91%, respectively. The average number of evaluations was increased to 0.7 and 1.0 per resident between modules, respectively.

Discussion and Conclusions: Residents are so busy that we need to devise ways to engage them in the fellowship. Because collecting evaluations takes time and effort, it is necessary to find a method to make access easier. Since many of the current residents are digitally fluent, it is better to use digital devices.

Take-home Messages: This is the second report of the longitudinal workshops based on teaching competencies and EPAs for residents in Japan. Rather than just giving training courses, it is necessary to know what teaching skill residents should develop, and devise ways to engage them.

#EP7.2 - ePosters: Postgraduate - Junior Doctor as Teacher

#EP7.2.3 (6075)

You've Been Bleeped!- Preparing final year medical students for FY1 oncall shifts using 'near-peer' learning and Scenario-Based Discussion

AUTHOR(S):

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ABSTRACT:

Background: A 2014 GMC report found that 24% of incoming FY1's felt prepared for their new role. Our aim was to improve the confidence of final year students in preparation for FY1 on-call shifts.

Summary of Work: An eleven-part structured teaching program was delivered to a cohort of 25 final year medical students during their eight-week Transition to FY1 block from April-June 2019 at Kings' College Hospital, London. Each session would cover one of the most common presentations encountered during on-calls delivered using 'near-peer' teaching by an FY2. Teaching sessions included clinical presentations such as chest pain, abdominal pain or acute neurological scenarios. The sessions were designed using feedback from juniors of various grades, with all material having been vetted by an appropriate senior or specialist. At the end of every session students filled out an anonymous online Survey Monkey feedback form. Surveys were filled out during the session or emailed out immediately after the teaching session.

Summary of Results: Survey analysis showed an average score was 9.04/10 (SD= 1.2, n=140), with 87% (122/140) of students rating the teaching as 9 or 10 overall. In the final survey, 75% of students felt the sessions had prepared them for FY1 oncall shifts. Positive feedback pertained to the reality of the scenarios and the consideration of human factors. One study limitation was the poor response rate encountered when gaining feedback via email rather than during the session itself.

Discussion and Conclusions: Most students found the teaching useful, with feedback praising that it was peer driven, with content derived from junior doctors and with senior quality checking. 10 of the students requested to be involved in teaching in subsequent years.

Take-home Messages: - We addressed a specific gap in the curriculum pertaining to lack of teaching on FY1 ward-cover on-call shifts out of hours, including human factors, logistical factors, clinical decision making and various routes of escalation to a senior.

- This received strongly positive feedback from both medical students and the medical school itself. Kings' medical school are now supporting us in expanding the teaching program to other hospital sites.

#EP7.2 - ePosters: Postgraduate - Junior Doctor as Teacher

#EP7.2.4 (6596)

Exploring what Motivates Junior Doctors to Become Clinical Teaching Fellows

AUTHOR(S):

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ABSTRACT:

Background: The delivery of undergraduate medical education has changed significantly over the past ten years as illustrated by the increasing number of Clinical Teaching Fellow posts for junior doctors. These posts are out of training opportunities which have a teaching component and variable clinical commitment. There is increasing interest in this form of near-peer teaching in the context of difficulties around availability of senior faculty members for teaching delivery. In addition, record numbers of junior doctors are choosing not to progress straight into specialty training raising concerns about the retention of doctors and future workforce planning.

Summary of Work: This study aimed to explore what motivates junior doctors to become clinical teaching fellows in order to better understand why trainees select these teaching posts. In order to gain a deep insight into these individual factors an Interpretive Phenomenological Analysis (IPA) approach was utilised. Purposive sampling was used to recruit three clinical teaching fellows who underwent individual semi-structured interviews. These interviews were then transcribed and analysed in line with the recognised analytic framework of IPA methodology.

Summary of Results: Three superordinate themes were identified from the data which comprised of disillusionment with medical training, autonomy over career and personal development. Each participant had considered other alternative options for a year out of training before committing to the clinical teaching fellow role.

Discussion and Conclusions: The choices for undertaking the clinical teaching fellow role are highly individualistic and illustrate a complex interplay between internal and external motivating factors. Multiple deficiencies were identified with postgraduate training which were partially addressed by undertaking a teaching fellow post. However, for each of the participants pursuing a teaching role wasn't their primary motivator. Instead the teaching fellow role appeared to offer a 'best fit' to address their identified personal and professional needs.

Take-home Messages: The acknowledgement of personalised decision making is important. Common themes that emerged provide an interesting starting point for further exploration in this under-researched area. Without understanding the factors that influence junior doctors to step out of training then the ability to adequately support doctors and build a motivated future workforce remains challenging.

#EP7.2 - ePosters: Postgraduate - Junior Doctor as Teacher

#EP7.2.5 (6712)

Residents as teachers? The attitude of residents on their role as clinical teachers and what motivate them to participate faculty development activities?

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ABSTRACT:

Background: Residents play an important role in teaching junior colleagues. Teaching skill training such as Residents as teachers (RaT) helps the residents to teach in a more efficient manner. However, the competing demands among clinical work, learning and teaching limited the willing of participating teaching skill training among residents. This study explores the attitudes of the identity about clinical teachers among residents and motivation about participating teaching skills training in an Asia context as the reference for RaT curriculum development.

Summary of Work: We conducted a semi-structured interview in ten selected different PGY1s with different background (gender and tendency of future specialty) from all PGY1 residents (n= 95) in one medical center in Taiwan. The content of interview includes the attitude toward their teaching role, confident level and past experience in teaching, motivation and the determining factors to participating faculty development activities.

Summary of Results: All residents agree that residents naturally play a role in teaching medical students, even without a title of “teacher”. Some of them didn’t consider that they were competent clinical teachers due to knowledge limitation. Near all reported that they seldom encountered difficulty in teaching and had no need to receive teaching skill training. They also were not familiar with the content of faculty development courses. They reported that the topic of faculty development activities should be eye-catching. The competing time need for clinical loading and training activities is the most challenge to participate the teacher training.

Discussion and Conclusions: The motivation to participate teaching skill training are low, not only due to heavy clinical load, but also the misinterpretation about their teaching competence among residents. Some strategies may help: 1. Protect time for teaching training during routine working hour 2. Provide 1-2 hour obligatory introductory courses to introduce the importance of teaching skill training. 3. The topic of training course should be attractive.

Take-home Messages: 1. One reason of low willing to participate the teaching skills training, is that the residents consider they are competent enough to teach. 2. Most residents are not familiar and careless with the teaching skill training course as well. 3. The curriculum developer should take this attitude into consideration and proper motivate the target participants.

#EP8 - ePosters: Professionalism

#EP8.1 (4762)

Integrating Professional Values in medical education curriculum: Expert viewpoints

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ABSTRACT:

Background: Internalization of the professional values related as the main requirement for medical practice is very important just like the way these values are taught and learned. This study's aim is to investigate the medical education experts' viewpoint about professional values as a step towards integrating professional values in medical education.

Summary of Work: A qualitative approach was adopted for this study. The data were obtained from the panel discussions with medical education experts with a variety of experiences in Iran, 2019. All sessions were audio-recorded, transcribed and analyzed using thematic analysis.

Summary of Results: The participants expressed their viewpoint and experiences on values of the medical profession and the way these values should present in medical education. The data analysis revealed 3 main categories: 1) Educational strategies including teaching and learning of professional values, 2) role of context and regulations to present professional values, 3) strengthening the hidden curriculum

Discussion and Conclusions: To address the internalization of the professional values in medical students, the main factors, i.e., value-based Educational strategies, contextual values, and executive resources for strengthening the hidden curriculum should be considered. In conclusion, developing a value-centered medical education system would be necessary and the integration of professional values with all its phases recommended.

Take-home Messages: The concepts of professional values and value-based medicine should be integrated into the general medical curriculum as a longitudinal theme. Specifically, the integration of professional values and its assessment in the clinical phase is recommended.

#EP8 - ePosters: Professionalism

#EP8.2 (5270)

The Reflection of a Unique Project Creating a Student-authored-oath in a “White Coat Ceremony” that Cultivates Professionalism for Medical Students in Japan

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ABSTRACT:

Background: Professionalism is an essential competency for medical students and physicians to possess, and there are many challenges to bring a more humanistic focus to these individuals. However, a standardized educational program for teaching and evaluating this fundamental proficiency has not yet been established due to its abstract definition of concept and subjective nature. White coat ceremonies (WCC) have been conducted for students to appreciate the meaning of the responsibility that comes with wearing the white coat and the expectation for humanism and professionalism all over the world.

Summary of Work: To nurture medical professionalism and humanistic qualities in medical students, we have developed a unique project creating a student-authored-oath (SAO) in the WCC since 2006. In the SAO project, the 4th year students, prior to clinical training, organized an SAO committee and conducted a survey on students’ perceptions of “Good Doctors”, reviewing the oath of Hippocrates, Physician Charter, and aphorisms from William Osler, et al. Furthermore, they reflected on their own behaviors and fitness to practice in medical school, discussed the principle attributes for becoming high quality humanistic physicians, and interviewed health care professionals and patients regarding society’s need for excellent physicians, before compiling their oath and declaring it in front of their relatives, peers, and senior doctors.

Summary of Results: We found that all of our students were engaged in discussion regarding humanism and medical ethics. It should be noted that their commitment to the four ethical principles of beneficence, non-maleficence, respect for autonomy, and justice have been consistently declared throughout all SAOs. Finally, students reaffirmed their dedication to the competent, compassionate, and ethical care of patients.

Discussion and Conclusions: The SAO project in the WCC is a valuable opportunity for our medical learners to re-acknowledge their professional responsibilities and encourages professionalism and humanism in clinical medicine.

Take-home Messages: It is expected that throughout the SAO project in the WCC, our students aspire to be “Good Doctors”, to provide the best care to patients with compassion, and to embark on a lifelong journey of advancing medical science for the future.

#EP8 - ePosters: Professionalism

#EP8.3 (5759)

From pupil to professional: Can professionalism be taught, or is it experiential?

AUTHOR(S):

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ABSTRACT:

Background: The literature (Thompson et al, 2008) finds significant number of medical students publicly post inappropriate online content. There is lack of understanding amongst medical students and doctors of how social media content directly and adversely impacts the public's trust in the profession. With increasing media vigilance, such as the recent coverage of inappropriate 'TikTok' videos, there is an obvious need for increased awareness of professionalism when posting online.

Summary of Work: We identified the need to educate medical students on professionalism in social media. We selected five publicly accessible National Health Service doctors' Instagram profiles (a photo sharing website) who openly identify as medical professionals. The students completed a pre-education questionnaire which consisted of quantitative and qualitative questions. We then delivered a 30 minute interactive, student-centred teaching session and repeated the questionnaire. We have since carried out the questionnaire with doctors of varying levels of seniority, and are analysing our results.

Summary of Results: Medical students could identify profiles which had clear professional or unprofessional content prior to the educational session. Two Instagram profiles were more ambiguous, and this is where we saw the impact of our education. 38% of students rated Profile 1 'unprofessional' pre-session, which increased to 83% post-session. Similarly, pre-session questionnaires of Profile 3 saw 29% of students rating it 'unprofessional', which increased to 81%. Analysing the qualitative data, students understanding of the importance of maintaining a professional boundary developed most significantly. We are in the process of analysing data from doctors' questionnaires.

Discussion and Conclusions: Medical students lacked comprehensive awareness in the importance of maintaining a social and professional boundary when posting online on a professional account. We have demonstrated that a short teaching session can significantly improve knowledge around professionalism in social media. After analysing the data from doctors' questionnaires we will draw conclusions about whether professionalism awareness increases with experience, and whether teaching is comparable to this experience.

Take-home Messages: • 3rd year medical students at the university of Bristol were able to identify extremes of professionalism, but there was a lack of awareness around more subtle aspects • A short teaching session significantly improved medical students' awareness of online professionalism

#EP8 - ePosters: Professionalism

#EP8.4 (5847)

How Early Clinical Exposures in Medical Humanity Course Impact on the Establishment of Medical Professionalism among Pre-clinical Medical Students

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ABSTRACT:

Background: Though there are various designs to enhance understanding of medical professionalism, this course *Medicine & Society: Theory & Practice*, a core course for pre-clinical medical students in Taipei Medical University, aims to improve the understanding of professionalism through early clinical exposures. To investigate the outcome of this core course, this study is therefore to understand how pre-clinical medical students perceive medical professionalism through early exposure to everyday clinical practices.

Summary of Work: This course designed four clinical scenarios, including psychiatrists on duty, ward of dementia, ICU, and school's neighborhood community. Students are randomly assigned to one scenario under instruction of a professor for whole semester. Inclusion criteria was students who took this courses in the year of 2018. We totally interviewed 21 students in 6 focus groups. We probed experience of clinical experience and reflection from students, and confirmed which critical incidents involved in their experiences. All interviews were verbatim into transcripts. Template analysis was used to check the effect of different exposures.

Summary of Results: Result shows that students in the group of neighborhood community report that public health obligation is important than they assumed before taking this course. Students in the groups of ICU and ward of dementia highlight the importance of communication skill. Moreover, students who observe psychiatrists on duty report nothing particular improvement or reflection regarding professionalism. Finally, some students report that more traits are very important, including observation skill, patience, and disease prevention, to become good doctors.

Discussion and Conclusions: Through the interview, we conclude that students obtain insight of professionalism, which is often triggered by particular incidents during their clinical exposures. Critical incidents are better developed under different clinical exposure and lead to enhance medical professionalism. Moreover, personal traits/personality, such as open-mind and empathy, also relate to how they perceive their roles of physicians. Therefore, to improve students' better understanding of professionalism and adapt their roles of good physicians, instructors are advised to include incidents diverse clinical exposures.

Take-home Messages: 1. Critical incidents are better developed under different clinical exposure and lead to enhance medical professionalism. 2. Early clinical exposure is good to facilitate the formation of good doctoring in terms of professionalism.

#EP8 - ePosters: Professionalism

#EP8.5 (6425)

Becoming the good doctor: medical students views on altruism and professional identity

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ABSTRACT:

Background: Professionalism is central to modern medical practice and thus, medical education 1. Altruism is one of the humanistic qualities thought to underpin professionalism and ranks highly among students drive to study medicine 2, 3, 4. However, there has been limited exploration of medical students' perceptions of altruism and if/how it is incorporated in to their professional identity. This study aimed to address this by exploring students' understanding of altruism and whether they felt it was an important part of being a "good" doctor.

Summary of Work: This research used semi-structured interviews with nine students from Leeds Medical School. Interviews began by asking participants to provide their own definition of altruism and then explored students views of altruism in clinical practice and the importance of altruism to being good doctors. Transcripts were then thematically analysed.

Summary of Results: Definitions of altruism varied and were easily shaken. Students conceptualised altruism as a spectrum. Generally, students did not consider altruism as essential to the role of a doctor and saw it as going above and beyond duty. However, almost all participants expressed a preference to work with, or be an altruistic doctor. Students also repeatedly referred to the idea of the right balance of altruism, to avoid self-sacrifice to the point of burnout.

Discussion and Conclusions: The variability in medical students definitions of altruism echoed the variability of definitions within literature 5, 6. This may be due to the abstract nature of the concepts altruism and professionalism. Such variability indicates students relatively shallow understanding of altruism. Our paper supports a move away from the term altruism in medical education towards 'prosocial behaviour'⁷ pg.318, which places importance on the benefits of an action without encouraging self-sacrifice 7. This may provide students with the motivation they associate with altruism, whilst encouraging self-care and work-life balance.

Take-home Messages: Students did not feel that altruism was essential to being a good doctor. The right balance of altruism was identified as protective; providing job satisfaction whilst preventing burnout. The findings support moving away from using the term altruism in medical education, towards using the term pro-social behaviour, to encourage the benefits associated with altruism, alongside protective self-care measures.

#EP8 - ePosters: Professionalism

#EP8.6 (5758)

Identity trajectories of health professionals involved in masters-level health professions education studies: a multiple case study

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ABSTRACT:

Background: Master's in Health Professions Education (MHPE) programmes have become the credential of choice for health professionals embarking on academic career tracks. These programmes generally focus on developing educational leaders and scholars. Effective engagement with educational leadership and scholarship requires health professionals to construct educator identities that are ideally well-integrated with their primary professional identities as clinicians or researchers. Research into identity construction at MHPE level is predominantly situated within first world contexts. This study explored the identity trajectories of health professionals involved in MHPE studies at one university in Sub-Saharan Africa.

Summary of Work: This longitudinal study employed a qualitative, multiple case study design. Maximum variation, purposive sampling was used to select nine cases representative of the diverse health sciences disciplines from which MHPE candidates were recruited. Data were generated by means of point-in-time narrative interviews, self-portrait drawings, and electronic course portfolios. Informed by landscapes of practice and boundary crossing theory, analysis comprised mapping of electronic course portfolios for incidences of boundary crossing, as well as thematic analysis of interview data.

Summary of Results: Findings showed that participants had diverse conceptualisations of what it meant to become a 'master' in HPE. While all participants identified to some degree with becoming an educational expert, the majority expressed tensions and uncertainties associated with constructing identities as educational scholars and leaders. In addition, enablers and constraints to constructing well-integrated educator identities were highlighted.

Discussion and Conclusions: When undertaking MHPE studies, health professionals embark on a dual career pathway that is often situated in two epistemologically and ontologically distinct disciplines. This may cause them to confront their identities in new and unpredictable ways. An in-depth understanding of key factors influencing professional identity construction at MHPE level allows for the development of progressive teaching strategies and supervisory practices that support the professional identity construction of emerging educational scholars and leaders in the health professions.

Take-home Messages: MHPE studies constitute a complex and transformative journey that incorporates identity construction as a process of 'becoming' within new fields of learning and practice. Structured support is required to facilitate the construction of well-integrated educator identities.

#EP9.1 - ePosters: Student - as Teacher

#EP9.1.1 (6718)

Student facilitated teaching: Using the Cognitive Apprenticeship Model to explore a “shared responsibility” of learning

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ABSTRACT:

Background: During clinical teaching, the clinician is considered both content-expert and expert-educator, and subsequently the student characterised as an active follower in the learning experience. Conceivably, students may seek to modify the teaching methods of clinicians to enable their own learning processes. Framing teaching interactions within the themes of the Cognitive Apprenticeship Model, we aimed to identify the extent to which students assist the practice of clinical teachers and to explore the factors which may promote or impair students in this.

Summary of Work: Ethical approval was obtained from the University of Liverpool. We recruited 17 student doctors in their penultimate year of study via purposive, convenience and snowball sampling techniques. Students participated in focus groups exploring experiences around the Cognitive Apprenticeship Model themes of modelling, coaching, scaffolding, articulation and exploration. Transcripts were coded using NVivo 12 allowing for inductive thematic analysis.

Summary of Results: Students identified several instances where they encouraged clinicians to use elements of the Cognitive Apprenticeship Model. Whilst most students enjoyed promoting articulation by clinicians, barriers towards promotion of other methods, such as modelling or exploration, included fear of being perceived as demanding and obstacles within busy clinical environments. Coaching was seen as an ‘externally legitimised’ teaching method which students could encourage regardless of pre-determined learning objectives. Additionally, scaffolding was thought to be particularly desirable method of learning as students enjoyed being employed as a “team member”.

Discussion and Conclusions: The majority of students recognised learning as a “shared responsibility”. When students identified a practicable method of facilitating teaching, they employed it repeatedly, adapting it to different teachers and contexts. Students recognised the value of proactive approaches and were keen to use the methods discussed within the focus group; some suggested a list could be supplied within their induction materials.

Take-home Messages: Student doctors do facilitate the educational interactions between themselves and clinicians when circumstances permit. Students are keen to employ such methods but may require explicit instruction prior to entering the clinical environment. Sharing this responsibility for structuring learning could relieve the pressure on clinicians to be expert-educators whilst promoting students’ self-regulated learning skills.

#EP9.1 - ePosters: Student - as Teacher

#EP9.1.2 (4674)

Developing a Student-led Mentoring Programme for Freshmen Medical Students.

AUTHOR(S):

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ABSTRACT:

Background: Medical students, particularly freshmen, often face difficulties; requiring support from senior colleagues. On the average, freshmen medical students in Nigeria are younger when compared to counterparts from other disciplines. Understanding the complex, tasking nature of medical education and the medical curriculum, we built a student-led mentorship programme for the first year students of the Ibadan Medical School.

Summary of Work: The Student Based Mentoring Programme works with a five-stage cycle: Mentor/Mentee Application Matching Process Training, Launch and Orientation Review (Continuous) Close Mentors were volunteer senior medical students (n=44) and mentees are first year medical students (n=65). Mentors and mentees apply through an online application form, providing required information such as: in what areas you feel you need mentoring? or what areas do you feel comfortable being a mentor?, preferred mode of communication with mentor or mentee and expectations from the mentorship programme. Based on the answers to the prompts, mentors and mentees with similar interest were matched manually. There was an orientation programme where mentors and mentee were taught basic principles of mentorship, communication skills and confidentiality. For proper evaluation, reviews in form of surveys and courtesy phone calls were carried out at different points during the program. Eight months after the launch, the first cycle ended with its final review and evaluation.

Summary of Results: At the end of the first cycle, there were numerous positive reviews, with 95% of the mentors and mentees expressing their satisfaction with the programme. In addition to improved academic performances, the first year students reported that the programme exposed them to extracurricular opportunities available and fostered friendly relations with the senior colleagues. This led to the formal adoption of the program, now in its second implementation cycle.

Discussion and Conclusions: Mentors help mentees gain confidence, clarity of purpose, insight and wisdom. This fosters academic excellence and facilitates an easy transition from the preliminary year to the preclinical year.

Take-home Messages: There should be thorough periodic evaluation and continuous re-thinking of the program. Medical Student Associations lacking any form of mentorship scheme should consider adapting this programme into their year plan.

#EP9.1 - ePosters: Student - as Teacher

#EP9.1.3 (5779)

Peer-assisted learning live on air – Social and cognitive congruence of student and student tutors in face-to-face vs. online student tutorial

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ABSTRACT:

Background: Cognitive and social congruence present key elements for an effective peer-assisted learning between student tutor and students (Loda et al., 2019). Cognitive congruence is shown when students and student tutors share a common and similar knowledgebase and language (Lockspeiser et al., 2008; Schmidt & Moust, 1995). Student tutors show social congruence by being interested in the students' problems and demands (Lockspeiser et al., 2008; Schmidt & Moust, 1995). Simultaneously, many student tutorials take place online as online tutorials have a lot of advantages like easy accessibility and flexibility. Further, online tutorials are well accepted by the students (Coetzee et al., 2018). Thus, in a comparative study we aim to investigate whether cognitive and social congruence as key elements for peer-assisted learning may differ between an online and face-to-face student tutorial.

Summary of Work: First year medical students are taught in taking medical history by student tutors. The teaching of the medical history course takes place online or face-to-face. In the face-to-face setting the student tutor is in the same room with the students and explains the relevant topics by using flipchart. In the online setting the student tutor is joined by using a video chat.

Summary of Results: 20 students took part at the study ($M=19.22\pm 1.11$; female: $N=12$ (60.0%), male: $N=8$ (20.0%). $N=11$ visited the online setting and 9 were in the face-to-face setting. The cognitive congruence was rated high in both settings (online: $M=3.16\pm 0.39$; face-to-face: $M=3.14\pm 0.50$). In the online setting ($M=3.07\pm 0.22$) the student tutor was perceived as more socially congruent than in the face-to-face setting ($M=2.31\pm 0.72$). 83.3% agreed to visit the student tutorial again. 72.3% estimated their learning progress as high.

Discussion and Conclusions: The learning progress was high in both settings. There was no significant difference in the cognitive level among the two settings of student tutorial. The students saw the student tutor more socially congruent in the online setting than in the face-to-face setting. Online student tutorials may present an efficient teaching module in order to teach factual knowledge.

Take-home Messages: Student tutors do not have to be in the same room as the students, which might present new ways of teaching.

#EP9.1 - ePosters: Student - as Teacher

#EP9.1.4 (6790)

Students as Teachers: A Quantitative Evaluation of the Impact of Peer-led Teaching in Undergraduate Medical Education

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ABSTRACT:

Background: Peer-led education enables students to take ownership of their own learning and remains a favourable paradigm in medical education. Within Imperial College London, student-led societies have a pivotal role in facilitating this by running their own tutorials, lectures, mentorships and study resources.

Summary of Work: Our aim was to identify the motivations and impact of peer-led teaching/resources on undergraduate medical student tutees (students who have attended teaching and/or utilised study resources) and tutors (students who have delivered peer-led teaching and/or created study resources). Participants were recruited using a generic email signup targeting Year-groups 4-6. This ensured all participants had completed one clinical year and consequently, one year of clinically focussed peer-led education. Participants could choose whether they identified as tutors, tutees or both. To assess impact quantitatively, all participants were required to fill out a tutor and/or tutee specific, online Qualtrics questionnaire.

Summary of Results: 19 peer tutors and 34 tutees filled in the questionnaire. The median teaching programmes delivered by tutors was 3 (IQR=2-4). Open-ended questions highlighted the key reasons for teaching as 'giving back', 'consolidating own learning/keeping up-to-date' and 'gaining teaching experience'. Majority of tutors felt that they benefited from gaining teaching skills (89.5%) and as a result strongly agreeing to a developed understanding of the topic (74%). There was a positive evaluation of usefulness of feedback. The key disadvantage of teaching was the time requirement. Although 17 (89.5%) are keen to get involved with future teaching opportunities, only 9 (47.4%) are planning on pursuing a career in medical education. 23 out of 33 (69.7%) of tutees find student led-teaching more effective with only 3 (9.1%) preferring faculty-led teaching.

Discussion and Conclusions: These results suggest that, whilst there are numerous motivating factors for students to teach their peers, including the benefits to their own learning, nevertheless, practice is limited by logistics such as time requirement. Future investigations should consider optimising peer-led teaching as a conduit to reinforce faculty-led teaching, and evaluating translation into individual future practice.

Take-home Messages: Faculty members and curriculum developers should recognise the importance of creating protected time for peer-led teaching in the core medical school curriculum.

#EP9.1 - ePosters: Student - as Teacher

#EP9.1.5 (7298)

Using Near Peer Teaching to Close Gaps in Medical Student Education: Preparing Student Doctors for the US opioid crisis

AUTHOR(S):

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ABSTRACT:

Background: An opioid epidemic currently plagues the United States: drug overdose is a leading cause of injury-related death, and almost 68% involved a prescription or illicit opioid use. Nationally, graduating medical students report inadequate training in the management of pain and addiction. “Near peer” teaching is an instructional method in which senior students hone their skills as educators with learners at a similar level. Our aim was to use this method to empower students to expand their medical education while addressing a public health crisis.

Summary of Work: The IHI Student Champions of the Rush Medical College Class of 2019 recognized inadequate training in indications for opioids, alternative analgesics, and long-term pain management and advocated for curricular change. The project was implemented in two parts. First, the students designed an observational, cross-sectional study of senior medical students (n=54) to characterize in on their perceived deficiencies. Using these results in the second part of the project, a cohort of senior medical students developed and designed a curriculum. Sessions included topics on pharmacology of common opioids, acute pain and post-surgical pain management, and management of patients on chronic opioids. The content was developed with supervision from internal medicine and surgical faculty and was integrated longitudinally into the core clerkship of third year of medical school. Pilot sessions launched in November 2018 after approval from appropriate committees. The curriculum was formally integrated into the third-year curriculum as a case-based, flipped classroom model during the academic year 2019-2020. Pre- and post-surveys are completed during each session.

Summary of Results: In the first part of the project, the cross-sectional study identified significant knowledge gaps– surveyed students answered questions correctly 43% of the time. Only 13% of surveyed students reported feeling comfortable in addressing patient’s pain and 80% of students felt their current training was insufficient. The second phase of the project is ongoing.

Discussion and Conclusions: Thus far, this format of learning has been well received by learners, and has shown that near peer teaching empowers advocacy and expanded education around public health issues.

Take-home Messages: Near peer approaches to curricular development allow for optimization of undergraduate medical education in the context of changing population needs.

#EP9.1 - ePosters: Student - as Teacher

#EP9.1.6 (5736)

Peer Teaching in Musculoskeletal Anatomy: A students' initiative to promote active learning.

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ABSTRACT:

Background: Anatomy knowledge is fundamental for future medical professionals. Teaching musculoskeletal anatomy in the medical curriculum of the University of Thessaly, includes obligatory laboratory hours in order to familiarize the student with the anatomical structures, taught during lectures. A student-led Peer Teaching Programme (PTP) was initiated in 2018, to promote deeper, profound understanding and active learning. The purpose of the study is to evaluate the use of the PTP in learning musculoskeletal anatomy, based on students' perceptions and performance.

Summary of Work: Two groups of students (Group 1, n=40; Group 2, n=47) were created for the needs of the PTP. A team of 15 peer-teachers volunteered to participate in the intervention and were assigned to Group 1. In an effort to implement different methods that will enhance learning, peer-teachers were in charge of developing the material used during the anatomy sessions, such as logbooks containing the anatomical structures for display, critical thinking questions, audiovisual media and clinical cases. During laboratory sessions, all students worked in small teams of 5-8 persons, peer-teachers to students ratio was 1:5. At the end of every session there was an informal assessment among the peer-teachers team. Students' performance in the examinations was recorded and debriefing surveys were administered to students to assess the PTP.

Summary of Results: Peer-Teaching significantly improved pass to fail ratio (Group1: 90%:10%; Group 2: 60%:40%, $p < 0.001$). Regarding students' perceptions, 95% of students either agreed or strongly agreed that the PTP helped them get a deeper understanding of the anatomical structures, while 79.5% reported that through the PTP, they felt actively involved in the educational process. Moreover, 95% reported that the PTP should be applied in all anatomical regions throughout the curriculum, while 87% stated that they missed Peer-Teaching in subsequent sessions.

Discussion and Conclusions: Peer-Teaching was well received by students and improved their performance in the examinations.

Take-home Messages: The PTP can offer a viable resource to the quest of improving anatomy teaching and can lead to a beneficial change in anatomy learning. Official incorporation of Peer-Teaching should be considered in future curricula.

#EP9.1 - ePosters: Student - as Teacher

#EP9.1.7 (6220)

Participative teaching method for clinical teachers : clinical evaluation tools course

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ABSTRACT:

Background: Participatory teaching method is a student-centered teaching mode, through curriculum planning, allow students to take an active part in creative learning and development. The purpose of this study is to apply participatory teaching method to the clinical teachers to improve the understanding and operation of 3 clinical evaluation tools (CbD, Mini-CEX, DOPS).

Summary of Work: From August 24, 2019, 25 pharmacy clinical teacher from a teaching hospital in central Taiwan joined the training course. The training course is conducted through group discussion, simulation, gamification flipped classroom. After the course, we will evaluate the teaching effect by written tests, questionnaires after learning and a report of learning experience.

Summary of Results: Written test and questionnaire recovery rate 100%. Written test scores improved by 46.5% (average score improved from 58 to 85). Learning feedback: "Enriched curriculum", "stimulated motivation for participation", "enthusiastic discussion", "felt interesting learned teaching", "helped future teaching", "Learn more about teaching methods and applications".

Discussion and Conclusions: Participatory teaching can create a happy learning atmosphere, stimulate students learning interest, increase teacher-student interaction and improve teaching effectiveness, but the teachers need to invest more effort and time.

Take-home Messages: The participatory teaching method can make the learning process lively and interesting, and enhance students learning interest and learning effectiveness.

#EP9.2 - ePosters: Student - Career Choice

#EP9.2.1 (4919)

The role of accelerator in medical education

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ABSTRACT:

Background: Accelerator is a popular tool among biomedical entrepreneurs because its spirit of deconstruction empowers innovators to resolve unmet needs. Using accelerator as observation window in medical education is a sharp way to see what students are interested about future, which helps educators refine their courses.

Summary of Work: We recruit medical students as innovators, educators as venture investors and have a final pitch day for all the projects. The most feasible project is rewarded with symbolic startup fund and matching opportunities. Feasibility is evaluated with importance, SWOT, business model and milestone schedule.

Summary of Results: 16 medical students have joined the accelerator in two years. Their projects diversify into a broad spectrum which shows their ambition of greater impact. Industry analysis is observed as the most wanted course through post-pitch interviews. Related pioneers will be invited to deliver useful speeches and starters support.

Discussion and Conclusions: Accelerator in medical education can play roles of a chance for students to practice problem-solving skills, communication skills and career path planning. Traditional lectures or flipped classrooms aren't design specifically for internalization yet accelerator can assist in printing the future. By integrating this new tool into the context of medical training, physicians of the next generation will be able to expand their influence beyond clinics.

Take-home Messages: Accelerator in medical education not only inspires students to dream big but provide unmet needs for educators.

#EP9.2 - ePosters: Student - Career Choice

#EP9.2.2 (7034)

BUILDING A PROGRAM FOR SUPPORTING MEDICAL SPECIALTY CHOICE: LESSONS LEARNED

AUTHOR(S):

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ABSTRACT:

Background: Choosing a medical specialty and planning a career, are critical steps in medical education and may cause distress and insecurity for candidates. There are few counseling programs in medical schools today, and published guidelines on this issue are scarce.

Summary of Work: A six-month pilot program targeting volunteer internship medical students (N=50) was structured with four components: providing information on specialties and training programs through interactive lectures and a distance-learning platform (DLP); small-group discussions with specialists; a validated scale (SCI59 Brazilian version-SCIB) for testing aptitudes and recommending choices; on-demand individual counseling. An in-depth interview with a sample of active participants provided program evaluation data.

Summary of Results: Participants were pleased with the program structure and activities and acknowledged that it was helpful in the specialty choice process. The most valued activity was small-group discussions with specialists. Information provided through lectures and the DLP was regarded as relevant and useful. The SCIB scale was considered interesting, not only by its “positive” and “negative” recommendations but also for promoting reflections and revealing aptitudes. However, participation was regarded as quite difficult, due to the internships workload.

Discussion and Conclusions: This is perhaps the first experience in the country of structuring a specialty choice guiding program for medical students. Program evaluation indicated a successful outcome, with a well-chosen set of activities. Providing opportunities for students to talk to specialists was particularly valuable, as a genuine space for exchange. The SCIB scale seems to be an interesting resource to stimulate reflections. Given the difficulties of student participation due to the internships workload, it seems important to offer a range of different activities, including distance learning, and to search in the future for space in the curriculum.

Take-home Messages: Structuring a program for guiding and supporting medical students in the specialty choice process is feasible and may be successful even in resource-constrained settings, without protected time in the curriculum. Providing a range of different activities, including distance learning resources, is critical to ensure the participation of students facing the high internship workload.

#EP9.2 - ePosters: Student - Career Choice

#EP9.2.3 (7303)

Who does work experience in general practice, and does it make them want to specialise there? A research study utilising data from the UK Medical Applicant Cohort Study

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ABSTRACT:

Background: Recruitment into general practice (GP) is of national importance in the UK, and ensuring a well-rounded and diverse primary care workforce is important globally. The Wass Report in 2016 recommended that access to work experience for prospective medical students be improved. Using questionnaire data from a large cohort study of people interested in studying medicine, we plan to determine whether exposure to GP work experience is associated with an interest in choosing GP as a career, and which characteristics of applicants are associated with access to GP work experience opportunities.

Summary of Work: This study will use data from Wave 1 of the UK Medical Admissions Cohort Study. All UK-based registrants in the 2019 sitting of the University Clinical Aptitude Test, were invited to complete a 46-item questionnaire. This includes items grading enthusiasm for GP as a future career, listing GP work experience, indicators of Big Five personality traits, and markers of social and economic capital. Our analysis will use quantitative methodology to determine the statistical relationships between these factors, exposure to, and interest in GP careers.

Summary of Results: 5306 eligible respondents completed the survey. Coding is ongoing for respondents self-reported work experience; this is projected to be completed by February 2020 with final analysis of results available by May 2020, ready to be presented at the conference and included in the poster.

Discussion and Conclusions: Preliminary exploration of the data suggests that respondents show apparent patterns in their specialty choices. For example, some are interested in all specialties, some are interested in only a subset (e.g. GP, psychiatry and paediatrics). This study will provide evidence about the value of GP work experience placements in encouraging prospective doctors to choose GP as a career. It will also demonstrate which groups are less likely to have had GP experience before medical school, providing insights into which groups of applicants are underrepresented.

Take-home Messages: This is the first large-scale quantitative study of its kind, and the implications of these findings will be significant for local, regional and national policy making around availability and access to work experience in GP.

#EP9.3 - ePosters: Student - Characteristics

#EP9.3.1 (5056)

Predictive psychosocial factors associated with academic success in medical students

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ABSTRACT:

Background: Several studies showed that there is a relationship between psychosocial factors and academic success in medical students. Objective: to analyze the characteristics of medical students with academic success and the factors that predict it.

Summary of Work: Descriptive cross-sectional study. 305 medical students, who were in the selective semester in the academic year August-December 2018, answered a questionnaire on psychological factors (DASS-21), demographic, academic, economic, teacher integration, school satisfaction and lifestyles. Frequencies, percentages and cross tables were used for the descriptive statistical analysis of the qualitative variables and for the quantitative variables the central tendency measures were used. In the correlational analysis, Chi-square correlation was used, with a level of significance of $<.05$. For the inferential analysis, logistic regression was carried out.

Summary of Results: The sample consisted of 305 students of which 131 were men and 174 women with an average age of 18.4 years. The average of the upper middle level was 8.9.50% of the accepted students who had normal levels in the symptoms of stress and depression (50%). Dissatisfaction towards the selective semester is a negative predictor. However, the anatomy teacher, the school of origin of the Upper Middle Level (private) and grades between grade range 8.1-10 are positive predictors of academic success by 74.5%.

Discussion and Conclusions: Academic success depends on the school of origin the average and of the relationship with their teachers. Instead psychosocial variables such as: anxiety and depression, are those that most affect academic success, which is consistent with Castillo (2016); who states that several studies have revealed a significant prevalence of psychiatric disorders in university students, especially in medical students.

Take-home Messages: It is suggested to conduct a prospective cohort study to complement the information, as well as the use of other variables such as: intrinsic motivation, personality types, sleep quality and study techniques, for future research.

#EP9.3 - ePosters: Student - Characteristics

#EP9.3.2 (212)

Non-medical use of prescription stimulants by undergraduate medical students at a South African University

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ABSTRACT:

Background: There has been a documented increase in the off-label use of prescription psychostimulant drugs (e.g. methylphenidate) by university students. Multiple risk factors have been identified, including increasing academic/time pressures and competitive environments. In the context of medical schools with extremely demanding programmes, students are thought to be at even higher risk. Two South African universities have previously found prevalences of non-medical stimulant use amongst medical students of 11-18%.

Summary of Work: Objectives To determine the prevalence of non-medical prescription stimulant use by medical students at the University of the Witwatersrand in Johannesburg, South Africa. Methods This was a cross-sectional observational study, using an online survey administered to MBBCh students in years 3-6

Summary of Results: A total of 185 students completed the survey across all 4 years of study, yielding a response rate of 14.3% (total population = 1298), CI 6.67%. The highest response rate came from the MBBCh 3 class, the lowest from MBBCh 6. 15.1% (n=28) reported use of prescription stimulants for non-medical purposes, with 93% using methylphenidate. 61% of students used psychostimulants only when studying for tests/exams, and 100% reported 'improvement of concentration' as the reason for use. Multiple short-term adverse effects were reported, but 64% also reported positive effects in terms of improved grades. With respect to sourcing drugs, 58% obtained the stimulants from friends. There was a statistically significant difference ($p=0.003$) in usage between graduate-entry students (61%) compared to school-leavers (39%), and the highest prevalence was seen in the age group 24-26 years at 43% ($p=0.037$). There was no statistically significant difference in usage according to gender, race, or year of study.

Discussion and Conclusions: The prevalence of non-medical prescription stimulant use amongst medical students at the University of the Witwatersrand was found to be 15.1%, which is comparable with other South African universities. The highest prevalence was amongst graduate-entry students and those aged 24-26 years, with 93% using methylphenidate. The drugs appear to be easily procured.

Take-home Messages: Non-medical use of prescription stimulants by medical students is a concern, and there is still little known about the long-term effects. We should consider strategies to appropriately support students in dealing with the demands of tertiary education.

#EP9.3 - ePosters: Student - Characteristics

#EP9.3.3 (4630)

Problematic Cellular Phone Use and sleep quality among medical students: A cross sectional study from Iran

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ABSTRACT:

Background: Since the use of smartphones is increasing and most students are using it, the present study aimed to determine the relationship between the uses of the smartphones and sleep quality among medical students at Kerman University of Medical Sciences, 2018.

Summary of Work: This was a cross-sectional and descriptive-analytical study. In this study, 350 medical students of Kerman University of Medical Sciences were selected through quota sampling. The data collected using a self-administered questionnaire including three parts: demographic data, the Persian version of the Problematic Cellular Phone Use Questionnaire (PCPU-Q) and Pittsburgh Sleep Quality Index (PSQI). PCPU-Q had 12 items which response to each one is on Yes/No scale and having a positive response in \geq four items of the first seven questions indicate problematic CPU. PSQI has 19 items which are scored on a 4-point Likert scale from 0 to 3. An overall score of more than five indicates poor sleep quality. Both tools had excellent psychometric properties. The data were analyzed by SPSS 20 using chi-square, T test, ANOVA and Pearson.

Summary of Results: The current study showed that most students (47%) used smartphones for cyberspace. Conversation and SMS were in the next ranks. Of all the students, 172 (49%) students had problematic mobile phone use (PCPU) and 226 (64.4%) students had poor sleep quality. These frequencies were not significant according to demographic data. A significant and direct relationship was found between sleep quality and mobile phone use. ($p=0/001$, $r=0/3$)

Discussion and Conclusions: Our study showed that problematic use of mobile phones is associated with a decrease in sleep quality among medical students, and due to its negative impact on students academic performance, it is necessary for our educational system to plan effective intervention for this challenge.

Take-home Messages: Problematic use of mobile phones should be evaluated and intervened among medical students.

#EP9.3 - ePosters: Student - Characteristics

#EP9.3.4 (5124)

Bridging the gap: implementing an online induction course to support students' transition into first year medicine

AUTHOR(S):

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ABSTRACT:

Background: Students transitioning into medical school encounter a series of transitions on their journey towards graduation. In the context of undergraduate medicine, students must develop new skills common to all incoming undergraduates (e.g. academic writing, digital skills), as well as subject-specific knowledge, e.g., regarding professionalism or anatomical dissection governance. Whilst the University of Glasgow School of Medicine provides on-campus induction activities, for example to prepare students to participate in problem-based learning, other induction material has traditionally been delivered in a dry, didactic manner.

Summary of Work: We developed a five-unit online induction course using existing resources available under creative commons licensing. The course used an interactive approach to deliver teaching and signpost key resources related to digital and academic skills (e.g. referencing, avoiding plagiarism), and professionalism. The course was released to incoming students via the institutional public Moodle (VLE) site prior to their arrival at Glasgow. Student engagement and perception was assessed using analytics, quizzes and an online anonymous survey.

Summary of Results: Student engagement with the induction course was high: 95% (301/316) of students accessed the course, and 89% (280/316) of students completed the course by achieving 100% in all five end-of-unit quizzes. Whilst the overall feedback was very positive, key differences between students with different demographics were highlighted. Students placed particular value on content relating to professional expectations. They highlighted that inclusion of current students' testimonies would improve the course.

Discussion and Conclusions: These insights will be of key importance in supporting transition in our own context but should be applicable to others interesting in adapting and implementing this induction course in their own settings. Future work aims to understand student perceptions of the usefulness of the induction course in supporting them during their first year of study.

Take-home Messages: An online induction course is a feasible and acceptable method to support students during transition into undergraduate medical school.

#EP9.3 - ePosters: Student - Characteristics

#EP9.3.5 (5640)

Resilience and Mental Health in Medical Students

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ABSTRACT:

Background: Medical students had higher rates of mental health problems eg. depression, anxiety and burnout than age-matched population. People with higher resilience were associated with less anxiety and depression but very few studies focused on resilience and mental health problems in medical students.

Summary of Work: Objective: To compare resilience scores between medical students who had and did not have mental health problem. Method: A cross-sectional analytical study was conducted to find associations between resilience score and mental health problem in first-year medical students at Faculty of Medicine, Khon Kaen University. A total of 269 medical students were asked to voluntarily complete anonymous, self-report, online survey of General Health Questionnaire- 28 Thai (GHQ-28 Thai) and Emotional Resilience Assessment scale - Thai. Descriptive statistics and independent t-test were used to analyze the data collected.

Summary of Results: A total of 128 students (47.58 %) completed the surveys. About half of them (52.35%) were women. Fifty-two medical students (40.90%) had mental health problems. A group of medical students who had mental health problems had a significantly lower resilience score than in a group without mental health problem (p-value< 0.001).

Discussion and Conclusions: Differences in resilience score between medical students who had mental health problems and had no mental health problems indicated that resilience might be a protective factor toward mental health problems.

Take-home Messages: Medical education should include resilience enhancement intervention in the curriculum as a prevention measure for mental health problems in medical students.

#EP9.3 - ePosters: Student - Characteristics

#EP9.3.6 (5712)

Students' academic progression through a medical programme

AUTHOR(S):

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ABSTRACT:

Background: Medical programmes are long and demanding, and international studies have reported increasing attrition. The aim of the study was to investigate the factors that affect academic progression through medical programmes in a context where higher education is free of charge. The study was conducted at the School of Medical Sciences at Örebro University, Sweden. The medical programme consists of 11 semesters, with approximately 60 students per semester. Problem-based learning is the educational philosophy.

Summary of Work: A questionnaire was designed with questions regarding internal and external motivation, study techniques, well-being, friends, accommodation, study environment, study breaks and possible failed examinations. The questionnaire was administered electronically, anonymously and was voluntarily. It was sent by email to all students in the programme and was followed up by three reminders.

Summary of Results: The preliminary results show a response rate of 60%, with a preponderance of female students. The most represented age group was 20–24 years. The main reasons for attending medical school were a will to help others, a wish to have an exciting profession and an interest in the sciences. A small group also saw medical school as an opportunity to see if they fit into the profession. Its good reputation was the main reason cited for choosing the medical programme at Örebro University but another reason was the wish to study in a smaller town or to remain close to where they live. Approximately 40% had pursued higher education before beginning their medical studies, and approximately 60% felt they were well-prepared for medical school and had well-thought-out study techniques. Forty percent of the students had failed more than one examination. Roughly 20% had taken a break from their studies; depression and anxiety were mentioned as reasons.

Discussion and Conclusions: In our future work we plan to analyse the correlation between motivation, study techniques, social aspects and the students' academic progression. This analysis will be discussed in our presentation.

Take-home Messages: In order to develop an educational programme that supports students in their academic progression, it is important to examine the factors that influence the students' study results.

#EP9.3 - ePosters: Student - Characteristics

#EP9.3.7 (6072)

Perceived academic workload and its relationship to real and declared academic workload

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ABSTRACT:

Background: Academic Workload (AW) is a central phenomenon in management processes of higher education institutions. Several studies show discrepancies between declared workload in course programmes and the workload students experience, also called real workload. Nevertheless, literature emphasizes students' perceptions of AW as a better measure of workload. Indeed, perceptions of high AW may lead to critical problems such as dropout, academic failure and mental health issues. Disclosing eventual discrepancies between these three types of AW measures may help detect curricula problems threatening the quality of teaching learning processes in a now student-centered educational paradigm.

Summary of Work: This study sought to characterize the relationship between perceived and declared AW and between perceived and real AW of undergraduate students of Universidad de Chile's School of Medicine. We applied a survey to 500 students with the purpose of measuring their real and perceived AW, and used institutional data to compare these results with the workload declared in their course programmes. To test this, descriptive statistical analysis -like Spearman correlation- were performed.

Summary of Results: Perceived AW shows a mean that sets the perception between adequate and high. A positive relationship was found between all three types of academic workloads. Perceived AW correlates with real AW (0.596) higher than with declared AW (0.380). Looking closely at real academic workload, non-contact hours revealed a more significant correlation with perceived AW than contact hours (0.557 and 0.475 respectively).

Discussion and Conclusions: Although literature generally indicates that perceptions of workload are weakly related to real hours of work, our findings say otherwise. Furthermore, the fact that non-contact study hours are the ones that correlate the most with perceived AW, rather than the timetable class hours, suggests the relationship between real AW and perceived AW is worthy of deeper examination. Future research should explore real AW considering which factors are negatively affecting the autonomous work of medical students. For instance, they could be experiencing problems with study habits and library quality, among others.

Take-home Messages: Discrepancies revealed in this work, prove the need to continue tracking AW in order to improve teaching learning processes.

#EP9.3 - ePosters: Student - Characteristics

#EP9.3.8 (4279)

EVALUATION OF THE MORAL COMPETENCE OF MEDICAL STUDENTS

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ABSTRACT:

Background: The medical ethics study has been highly appreciated in recent curricular platforms, aligned to integral and humanistic training. However, there are gaps about the teaching and assessment strategies. Several authors suggest stagnation or regression of moral judgment during medical graduation, mostly evaluated from the perspective of cognitive-evolutionary theories. The Moral Competence Test (MCT) of Lind is highlighted to assess the capacity to make decisions and judgments which are moral (i.e., based on internal principles) and to act in accordance with such judgments, including cognitive and affective aspects of morality.

Summary of Work: Objective: to evaluate the moral competence of medical students comparing different times of the course; to evaluate sociodemographic aspects related to moral competence and discuss the application of evaluation instruments of moral competence among students. Methods: cross-sectional quantitative study with 139 students from the 1st and 5th semesters and the last year of the medical course. Two questionnaires were applied: MCT (portuguese edition) and other with sociodemographic, academic and extracurricular data. Statistical analyses were performed by ANOVA and by linear regression model, considering statistical significance level $p < 0.05$.

Summary of Results: The mean MCTxt C-total scores were low in the three periods evaluated, ranging from 15.7 in the 1st period to 11.0 in the last year, and the mean scores in the 1st period were statistically higher than the others in the univariate analysis. However, in the multivariate analysis of correlation between periods, dilemmas and scores, it was observed that the mean C-segmented score for the dilemmas of the worker and the judge were similar and statistically superior to the doctor, regardless of the period, and this last one influenced negatively the overall score. No correlation was detected between sociodemographic and evaluated variables with the moral competence score.

Discussion and Conclusions: The study has identified mean scores of MCT low in all evaluated periods with stagnation or regression of moral competence during the medicine course; it has detected an offbeat and lower performance of doctors dilemma, characterizing the segmentation phenomenon of MCT, and identified no correlation of sociodemographic variables with the final score of moral competence.

Take-home Messages: Its necessary to review the strategies for teaching medical ethics

#EP9.3 - ePosters: Student - Characteristics

#EP9.3.9 (5888)

Motivational profile and learning strategies in medical students: a three years prospective cohort study at Universidad Andrés Bello, Viña del Mar, Chile.

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ABSTRACT:

Background: Motivation and learning strategies are two important areas to achieve a meaningful learning experience. Motivation is what moves the person in one direction and for a specific purpose, conditioning the ability to learn. Learning strategies, are the set of activities, techniques and means that are planned according to the needs of the students. Objective: To compare motivational profile and learning strategies scores for medical students during a 3-year cohort.

Summary of Work: A cohort study from first to third year of medical school was performed. The Motivated Strategies for Learning Questionnaire (MSLQ), which measures motivation intrinsic (IM) and extrinsic (EM) and learning strategies (LS), was applied to obtain baseline data, at the beginning of the first year. For follow-up the questionnaire was applied at the beginning of next the second and third years. Cronbach's Alpha, Pearson's Correlation, t Student and Chi Square tests were used for statistical analysis, with $p < 0,05$. Informed consent was obtained.

Summary of Results: Cohorts in 2017 and 2018 were comprised of 33 students respectively. In 2019, only 18 students met inclusion criteria. All significant differences were found on: Gender, presenting females a decrease in global motivation; Learning Strategies, decreased for both sexes, in the variable resource management, specifically in effort regulation; Motivation, also decreased for all cohorts in motivation specifically in valuation of the extrinsic goal, homework assessment and self-efficacy. There is a positive correlation between motivation and learning strategies in all cohorts.

Discussion and Conclusions: Learning depends on motivation; however, it is a factor that tends to decline during academic training, both in men and women. Learning strategies decrease globally as courses advance, which can be associated with the increasing complexity of the learning process. Students do not know how to manage available resources, associated to the tendency to close in on oneself and not ask for help.

Take-home Messages: It is suggested to encourage strategies that increase student motivation through early direct contact with patients, and improve academic support to help the students develop learning resources management.

#EP9.4 - ePosters: Student - Engagement

#EP9.4.1 (5893)

Establishment of student committees on medical education development in Iran: Results of a 2019 national survey

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ABSTRACT:

Background: Student engagement in medical education is a trending topic worldwide. This engagement can be taken place within student associations. In 2018, Student committee on medical education development, SCMED, was formed as a subset of educational development centers(EDC) of medical sciences universities of Iran. This survey aims to elucidate details of formation of the SCMEDs such as, whether it is established or not, year of establishment, number of active participants, areas of interest and location of committees.

Summary of Work: During this national survey, a questionnaire was created by EDC of ministry of health and medical education of Iran on E-Poll (a national polling app) and was sent to 52 EDCs via link. It included 5 questions related to the structure and activities of SCMEDs in universities of medical sciences of Iran.

Summary of Results: Analysis of results has demonstrated that 48 out of 52 (92.3%) of EDCs have established their SCMEDs. Asking about the location of SCMED office, 45/48 (93.75%), 1/48(2.08%), and 2/48 (4.17%) have reported EDC, Exceptional talents centers and other parts of universities respectively. While asking about the year of forming SCMED and the number of active students participating in its activities, 27/48(56.25%) reported 2018-2019 and 28/48 (58.33%) mentioned having more than 10 active students in their SCMED, respectively. About the type of activities, multiple areas of interest have been described such as: Empowerment of students in 23/48 (47.9%) of responders, research in medical education in 13/48 (27%) Innovation in medical education in 11/48(22.9%) and public relations in 9/48(18.7%). Less frequent activities among SCMEDs were: need assessment, professionalism, virtual learning, Olympiads, evaluation in medical education, mentorship and educational problems.

Discussion and Conclusions: To sum it up, according to this survey, most of institutions have established their SCMED, plenty of which between 2018-2019. EDCs are the main location of SCMED offices and their activities are more focused on empowerment, research in medical education and innovation.

Take-home Messages: To engage more is to do more.

#EP9.4 - ePosters: Student - Engagement

#EP9.4.2 (6173)

Equipping medical students with skills to address social risk factors through a student-led learning experience

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ABSTRACT:

Background: Social risk factors (SRF) are adverse social conditions associated with poor health, such as food insecurity or housing instability. Medical education commonly addresses SRF, but often frames them as immutable realities rather than as actionable circumstance. To address this, students at the Boston University School of Medicine developed a quality-improvement educational experience to equip third-year medical students (MS3) with tools to address SRF during their internal medicine clerkship.

Summary of Work: MS3, during the 2018-'19 academic year (AY), screened patients using THRIVE, Boston Medical Center's SRF screening tool, and provided information about resources using the THRIVE resource referral directory. Two-weeks later, students conducted follow-up phone interviews with patients to assess their experience connecting with resources. We evaluated the feasibility, efficacy, and acceptability of this initiative using a mixed-methods approach, including MS3 pre- and post-experience self-assessment scores (5-Point Likert scale), electronic health record documentation, THRIVE directory use, and MS3 focus group feedback.

Summary of Results: Analysis of self-assessments indicated improved MS3 confidence in providing resources to help patients with SRF ($p < .001$, $n=41$). Despite this, MS3 still felt inadequately prepared and supported to address SRF. The experience had low completion rates (26%) due to challenges including heavy clerkship workload, lack of integration with existing workflows, and lack of support from resident physicians. During the '19-'20 AY we simplified MS3 workflow, created new processes for communication with residents and other healthcare team members, and improved resident buy-in. We are currently implementing the new workflow to determine its impact on the educational experience.

Discussion and Conclusions: Developing educational experiences that teach medical students skills to address SRF is critical to shift the paradigm of SRF from immutable realities to actionable circumstances. While our project attempts to integrate this into clinical education, it is critical that students begin to develop these skills during preclinical years. A significant change in medical school curricula is needed to better balance learning activities focused on providing biomedical care with those related to addressing SRF.

Take-home Messages: This learning experience can be used to promote the understanding that SRF are addressable with appropriate tools and to provide medical students with the skills to do so.

#EP9.4 - ePosters: Student - Engagement

#EP9.4.3 (4808)

Student Development in Medical Education at the University of Campinas

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ABSTRACT:

Background: Medical education is in constant transformation. Limitless possibilities can potentialize the teaching-learning process and to think and contemplate this objective, students are a fundamental part. Together with the faculty and managers, students are stakeholders for any progress. However, to be part of an educational change process, specific competencies are demanded. Within this context, an educational development program for medical students at the University of Campinas (UNICAMP) was born, as a project to stimulate student engagement in medical education, with the support of School of Medical Sciences and the Pro-Rector for Undergraduate Studies of the University.

Summary of Work: The main objective of this initiative was the establishment of a community of practice in medical education, gathering potential student leadership. Utilising active methodologies and based in national and international references, workshops were delivered on the following themes: “Active Role of the Students in Their Education”, “The Different Roles of the Medical Teacher”, “Teaching and Learning Styles”, “Student Engagement”, “Social Accountability”, “Curriculum Development”, “Assessment” and “Competency-based Education”. A retrospective pre-post questionnaire was used to analyse the impact of these sessions, measuring the attributed importance, knowledge, and competencies before and after the experience.

Summary of Results: The questionnaire measured the impact using Likert Scales. Overall, the attributed importance went from 34.14% to 73.84% and knowledge and competencies concerning the themes from 20.90% to 65.67%.

Discussion and Conclusions: Promoting an initiative in student development in medical education empowers students, through qualified formation, it supports and leads to transformations within their institution. Student representation positions are a positive conquest inside the University, however, they are not always performed with the necessary competencies. Student engagement needs resignification, changing from a critic-opposing posture to a critic-constructive one. This initiative creates an unprecedented space to empower student engagement inside medical schools, besides potentializing the understanding of the teaching-learning process and its complexities. It is a way for the student to integrate this process in an authentic, reflexive and critical manner.

Take-home Messages: Initiatives using active methods to engage students on their education enable students to signify and understand their path through their education. This allows them to offer a qualified perspective when engaging in medical education.

#EP9.4 - ePosters: Student - Engagement

#EP9.4.4 (4897)

Creation and Implementation of a Comprehensive Peer Support Program for Medical Students at the University of Ottawa

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ABSTRACT:

Background: Medical students have a high prevalence of distress during their training. Research has shown that learners prefer to seek support from peers rather than approaching health professionals or faculty members. There is a need for medical schools to provide opportunities to prevent and manage psychological distress. One solution is peer support.

Summary of Work: This program started with the recognition of students needs in order to fill existing gap and complement pre-existing services. Extensive research led to building a cost-effective peer support program benefiting from the proximity of medical students and their expertise in understanding medical school challenges. A survey assessed barriers to seeking help and gathered student preferences regarding the program. Selected peer supporters from all years of medical school completed a thorough training program tailored for the prevention and management of mental health crises. All peer supporters offer weekly hours of availability for students and must attend monthly debriefing sessions with a faculty counselor to ensure their own wellbeing and quality of interventions.

Summary of Results: In the survey, 85% of students indicated that they would feel relieved or indifferent if a peer supporter reached out to them based on behavioral changes. During the first month of the program implementation, 67 interactions occurred between students and peer supporters with an average rate of satisfaction of 4.7 out of 5.

Discussion and Conclusions: A comprehensive and collaborative approach is needed to improve mental health among students early in medical training. A peer support program can improve help seeking behaviors, reduce stigma and provide non-judgmental, accessible and confidential peer support from students who have undergone professional training. The recognition of behavioral changes will allow peer supporters to: 1) identify students who are at risk of experiencing distress, depression or suicidal ideation, 2) provide peer counselling and 3) facilitate their pathway to proper resources and professional services.

Take-home Messages: Peer support is a step towards a culture that values physician wellness and away from one of invulnerability and shame. Thus, peer support programs should adopt an integrative, proactive, and preventative approach. Careful evaluation will ensure the quality of a program that fits the needs of medical students.

#EP9.4 - ePosters: Student - Engagement

#EP9.4.5 (5512)

Lets Talk Ibadan Medicine: An afternoon of chill, chow and talk

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ABSTRACT:

Background: Since its development in 2010, the University of Ibadan Medical Curriculum has enabled improvement in several areas regarding competency-based medical education offered by the university. There have however been many challenges ranging from: complaints about assessment methods, timing/benefits of the core lecture series, duration of vacation periods and policies on foreign electives for resit/repeat candidates. Now due for a review, the Medical Students' Association organised a workshop bringing student representatives and faculty members together, in a bid to exchange ideas and respond to some unanswered questions.

Summary of Work: The workshop was attended by 50 student participants and was divided into three modules. The first was a comprehensive presentation of the curriculum content, highlighting important positives and areas of controversial implementation. The second featured an interactive session between the students and the faculty present, where questions about some of the afore-mentioned issues were answered and ideas shared. The last module featured a Kahoot game with questions based primarily on the content of the previous two modules. Following the workshop, a survey of its impact was carried out via a short online questionnaire with 10 assessment questions, with responses graded on a 5-point Likert-type scale.

Summary of Results: 33 participants (n=50, 66%) responded to the survey. Statistical analysis was performed using the SPSS software version 24. 28 respondents (84.8%) stated they had important questions about the curriculum before the workshop, with all agreeing that the workshop was able to answer their questions satisfactorily. 31 respondents (93.9%) believed that they acquired some new information about the curriculum at the workshop, and 29 respondents (87.8%) reported that they found the workshop to be sufficiently engaging of students. 28 respondents (84.9%) stated that they were satisfied with their experience at the workshop.

Discussion and Conclusions: Effective student participation in curriculum review process is crucial, for the success of the review in improving quality of medical education. Such student participation may be planned as engaging workshops, involving both students and faculty, in a fun and slightly informal atmosphere.

Take-home Messages: • Medical Students' Associations should take the initiative to promote effective student participation in curriculum review processes.

#EP9.4 - ePosters: Student - Engagement

#EP9.4.6 (7011)

Mayo Medics- An Integrative Teaching & Learning Innovation

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ABSTRACT:

Background: Modern medical students utilise multiple educational resources in order to acquire the necessary knowledge and clinical skills in preparation for future clinical practice. Online clinical videos improve student's clinical proficiency, motivation and confidence. The primary objective of this innovation was to explore student engagement with teaching and learning, teamwork, and user-generated content within the context of an activity where students were required to create a learning tool for their peers. The accessory aim of this tool was to integrate normal and pathological examples all consolidated into one easily accessible platform that is categorized by systems-based curricula to effectively provide simulated experiential learning for students. The "cognitive theory of multimedia learning" provides an important framework for this undertaking, highlighting that people learn more effectively from words and pictures compared to words alone.

Summary of Work: Thirteen videos were recorded over two weekends, where students undertook the role of patient and examiner to demonstrate the cardiovascular, respiratory, abdominal, neurological, endocrine, and vascular examinations. These videos were reviewed by a clinical lecturer experienced in the teaching of clinical examinations to benchmark if the adequate competency and proficiency were demonstrated. The feedback provided on areas for improvement were used to refine the content before the publication of these videos online.

Summary of Results: Noteworthy findings included significantly improved clinical skills & increased confidence regarding clinical interactions. The peer-teachers also reported a sense of satisfaction relating to engagement with peers in an exciting creative process and a sense of pride in the likely contribution to the knowledge and skills of future medical students. The process also highlighted some difficulties including variance in the levels of technical ability amongst students. Future directions aim to survey groups of peer medical students who have accessed the videos & assess its impact on their learning.

Discussion and Conclusions: Currently, there is a surge in the amount of educational resources available online. Our innovation utilizes a video-based learning platform that is extremely effective in creating an immersive environment wherein students can practice experiential learning via inductive simulations.

Take-home Messages: Knowing the type of resource that students find the most effective is essential to enhance their engagement and learning outcomes.

#EP9.5 - ePosters: Student - in Difficulty / Burnout / Wellbeing / Resilience

#EP9.5.1 (4544)

Causes and outcome of medical students delayed graduation in Tohoku University: study of registry and questionnaires

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ABSTRACT:

Background: There have been few studies investigating the causes and the long-term outcome of delayed graduation of medical students.

Summary of Work: We investigated the numbers of delayed graduates in Tohoku University School of Medicine (TUSM) between 1979 and 2013 using the official register of the school, examined the years of their passing the National Certificate Examination (NCE) using the website of the Ministry of Health Labor and Welfare, and sent questionnaires to 2672 graduates of TUSM whose addresses were available (67.6% of 3955 graduates).

Summary of Results: 542 of 3955 (13.7%) could not graduate within the regular six years, among whom, 535 (98.7%) passed the NCE. Among those traced, 460 (98.9%) were working as medical doctors including 13 professors. The rates of delayed graduation were high during 1972-1988 (13.7±3.5%), low during 1989-93 (9.0±2.9%), and high again after 1994 (15.3±4.7%). The plotted curves of the rates showed oscillation, with the average cycle of 3.3 years. The rate of passing the NCE immediately after graduation in "1-year delay" was lower than in "no delay" ($P<0.0001$), and higher than in "2-year delay" ($P=0.030$). Among the 1052 respondents to the questionnaires (response rate: 39.5%), 105 (10.0%) experienced delayed graduation. On a scale of -5 to +5, the mean rating was 1.36; 13 reported -5 while 9 reported +5. The positive aspects of delayed graduation included out-of-class experiences ($n=70$), expansion of friends ($n=46$), and acquisition of mental resilience ($n=25$), while negative reasons included economic burden ($n=53$), stress for parents ($n=47$) and mental stress of their own ($n=42$). The percentages of graduates who raised certain negative reasons (loss of friends, shortage of information, and disadvantages in the workplace) were significantly higher in the graduates after 2000 ($n=36$) than those before 1999 ($n=69$).

Discussion and Conclusions: The overall outcomes of delayed graduation, particularly within one year, were good, in terms of NCE success and pursuit of medical careers. Oscillation of the curve indicates that evaluation of students by university teachers are consciously or perhaps unconsciously influenced by previous outcomes.

Take-home Messages: Delayed graduation might have various effects, both positive and negative, on medical graduates, indicating that individual support, instead of general support, is needed.

#EP9.5 - ePosters: Student - in Difficulty / Burnout / Wellbeing / Resilience

#EP9.5.2 (5342)

Nudging to improve: Impact of nudges on students' progress and academic performance

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ABSTRACT:

Background: Nudge is a concept in behavioral sciences which uses positive reinforcement to improve attitude and behavior of individuals. Nudges can motivate students to identify and improve their weak areas if targeted and executed properly. We conducted a study to repeatedly nudge a number of students who scored below average in summative assessment of a module and tracked their progress using multiple online formative assessments in the next module.

Summary of Work: We identified thirty eight students after summative assessment of a module (Essentials of Medicine) who scored less than mean score of the class. Out of these, nineteen students volunteered to participate. We sent multiple nudges were to these students using social media during another integrated cardiovascular module (CVS) and monitored their progress with the help of multiple online formative assessments. At the end of the CVS module, we analyzed summative scores of these students before and after nudging and compared with scores of the rest of the class.

Summary of Results: Mean summative score of the study participants at the end of EOM module was significantly less than summative scores of the rest of the class (64.53 ± 4.16 vs 75.44 ± 7.74 ; $p < 0.001$) After sending multiple nudges and giving feedback on performance in multiple online formative assessments, mean score of the participants at the end of the second module improved in comparison to rest of the class (74.34 ± 4.45 vs 76.26 ± 6.95 ; $p = 0.89$). There was significant improvement in the overall score, MCQs score and attendance of students who were frequently nudged and assessed throughout the second module.

Discussion and Conclusions: Students responded positively to nudges and showed significant progress in their summative scores. Students responding more to nudges showed a greater improvement in scores and attendance in comparison to students who were less responsive to nudges. With rapid technological advancements, nudging has become convenient to motivate students for better outcomes.

Take-home Messages: Nudging is an effective approach to monitor progress and can motivate students to put more efforts into their studies to identify their weaknesses and improve academic performance.

#EP9.5 - ePosters: Student - in Difficulty / Burnout / Wellbeing / Resilience

#EP9.5.3 (5904)

Uncovering medical student biases and challenging attitudes towards body image

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ABSTRACT:

Background: Over a third of UK adults report feeling anxious or depressed because of body image concerns and one in five UK adults say images on social media have caused them to worry about their body. It has been recommended that front-line health and education professionals are trained to build and promote a positive body image to support good mental health and well-being.

Summary of Work: A 1½ hour workshop was developed for year 2 undergraduate medical students. The session considered how unconscious biases and social media may impact on an individual's attitudes and behaviour towards themselves and others. Facilitators provided a 'safe' environment for the workshop. Students participated in a weight Implicit Apperception Test and then discussed the test and any identified unconscious bias, considering if and how this might be problematic. They then critically analysed a social media account, considering the extent to which posts, photos, and comments were related to appearance and the potential implications of this on body satisfaction. Finally students considered specific strategies promoting body satisfaction.

Summary of Results: Facilitators found that the majority of students were extremely engaged during the session. A minority of students indicated they felt that being overweight or obese was purely due to individuals making poor dietary/exercise choices but these views generally received opposition and wider discussion from other students. Facilitators observed that student strategies for increasing body positivity mapped on to areas that had been considered relevant by tutors when designing the session. Unsolicited and informal feedback from students was positive with one student emailing afterwards to thank tutors for a great session.

Discussion and Conclusions: Facilitators were able to provoke wide discussion of issues surrounding attitudes and behaviours towards different body shapes and sizes with some excellent reflection on how promoting body positivity messages could attempt to mitigate body dissatisfaction. At the next iteration we intend to gather data on student perceptions of the session.

Take-home Messages: Given the common experience of body image concerns, undergraduate medical curriculum should include issues around increasing body positivity and challenge negative attitudes towards obesity that may impact on future clinical practice.

#EP9.5 - ePosters: Student - in Difficulty / Burnout / Wellbeing / Resilience

#EP9.5.4 (6355)

Performance of undergraduate medical students in relation to psychological state and social support

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ABSTRACT:

Background: Medical educational process brings a considerable amount of stress to the students influencing their psychological well-being. Social support may counteract this effect. This study aimed to determine the impact of psychological distress and social support on the academic performance of medical students.

Summary of Work: A cross-sectional facility-based study was conducted in Alnahda College, 412 students were selected using stratified random sampling technique. An anonymous research tool containing psychological distress measuring tool, social support measuring tool and the Grade Points Average (GPA) was used to collect data. Data analysis was performed through the statistical package for social sciences (SPSSv23). Descriptive statistics were implemented. Chi-square test and correlation analysis were done. A multiple regression model was built to predict the impact of psychological distress and social support on academic performance. All statistical tests were considered statistically significant when $p < 0.05$.

Summary of Results: Our findings revealed an anxiety rate of 71.3%, depression 76.3% and stress 86.3% amongst the medical students. Psychological distress and social support had a statistically significant ($p=0.041$) indirect correlation ($r= -0.102$) and a statistically significant ($p= 0.011$, $p= 0.021$) association with age, respectively. Academic performance was predicted from a set of explanatory variables. Psychological distress and social support were statistically significant ($p= 0.012$, 0.000) respectively. Their contributions were respectively - 0.059 and 0.005.

Discussion and Conclusions: Psychological distress and social support perfectly predicted the academic performance of medical students.

Take-home Messages: Family social support to undergraduate students can significantly affect their psychological state and academic performance. Universities administration can improve the academic performance of medical students by offering psychological counseling and social support services.

#EP9.5 - ePosters: Student - in Difficulty / Burnout / Wellbeing / Resilience

#EP9.5.5 (6612)

Addressing academic failure: a model to predict dropout among undergraduate medical students

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ABSTRACT:

Background: At a worldwide level, access to higher education by new social sectors has been increasing. However, these new students have shown performance issues associated with their socioeconomic condition, being dropout the most critical one. This phenomenon shows the importance of strengthening not only admission policies but also accompaniment policies. Therefore, we suggest processing socioeconomic and academic data can improve the support given by higher education institutions, helping prevent academic failure.

Summary of Work: The purpose of this work was to design a predictive model to determine which variables -socioeconomic and/or academic- shape medical student's academic trajectories, in order to predict which students are more likely to drop out. This was addressed by testing four logistic regression models and four decision tree models, each one including different sets of variables, using data of students admitted between 2013 and 2018 into eight undergraduate programmes available at Universidad de Chile's School of Medicine.

Summary of Results: Decision tree models showed superior performance at predicting academic dropout than logistic regression models. The chosen decision tree classified correctly 62,4% of the students who did drop out and 97,8% of those who didn't. Academic variables such as 'year of study in the programme', 'semesters completed', 'approved courses', 'entry year', 'failed courses', 'undergraduate programme selected' and 'score at the national admission test', were the most significant shaping the student's academic trajectories.

Discussion and Conclusions: Contrary to what literature says about South American educational systems, our results show a low explanatory power of socioeconomic variables. We suggest this can be explained due to the fact that Universidad de Chile's School of Medicine is highly selective and in spite of recent social-inclusive policies, students still have a homogeneous socioeconomic profile. The model's moderate predictive power can be improved by focusing the analysis on those undergraduate programmes with a higher dropout rate, in addition to gathering data concerning other aspects of the educational process.

Take-home Messages: It is crucial for institutions to continue tracking dropout so they can improve their accompaniment policies, giving all students a real chance to finish their academic trajectories successfully.

#EP9.5 - ePosters: Student - in Difficulty / Burnout / Wellbeing / Resilience

#EP9.5.6 (5785)

Reading between the lines: exploring Student Book Groups as a means of promoting wellbeing and building inter-professional relationships

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ABSTRACT:

Background: The inclusion of humanities within traditionally science-focused medical curricula has long been considered advantageous. Interventions encouraging healthcare students to read describe promising outcomes. Of particular relevance to the well-being agenda, is the growing evidence of the protective effect of reading literature in promoting empathy and preventing burn-out in health professionals. Time and financial restrictions are described as obstacles to incorporating reading into healthcare curricula. Book Groups, with dedicated time in the students' days and books provided, have been suggested to combat these difficulties and can promote inter-professional learning.

Summary of Work: A Student Book Group was established as part of a departmental wellbeing initiative branching from a trust-wide NHS Staff Book Club. Meetings are held fortnightly with discussions facilitated by teaching fellows and library staff. Novels are selected to address themes relevant to medical practice. Books are loaned free of charge. Evaluation of the initiative began after four months with an anonymous questionnaire requesting free-text feedback.

Summary of Results: Over four months the Book Group was attended by eleven medical students, nine teaching fellows and five library staff. Five books were covered over eight sessions addressing several themes. Ten attendees responded to the evaluation, excluding the authors. A key finding was the incentive the group provided for members to 'take time out', acting as 'a release' from work. Additionally, respondents commented on relational aspects of the book club describing in their experience that it 'broke down barriers' between staff and students, allowing them to meet on a 'more equal footing'.

Discussion and Conclusions: Our evaluation supports the finding that reading literature can reduce work-related stress. This is particularly significant in the UK context given high stress levels reported amongst medical students, some of which is attributed to staff-student interactions. Regarding inter-professional learning, our results are consistent with findings from similar initiatives, suggesting that Book Groups can promote relationships between individuals from different professional backgrounds and break down staff-student barriers.

Take-home Messages: Staff-Student Book Groups can be an inexpensive means of promoting well-being within healthcare curricula and may be effective in flattening hierarchies by promoting positive inter-professional relations.

#EP9.5 - ePosters: Student - in Difficulty / Burnout / Wellbeing / Resilience

#EP9.5.7 (6338)

How the teaching-learning environment affects first year healthcare students' stress and well-being?

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ABSTRACT:

Background: Students' experiences in teaching-learning environment has an effect on their stress and well-being. The well-being of healthcare students is significant for themselves, for their future patients and employers. The experiences of clear aims and organization of the studies, the proper workload and support from staff and peers can prevent stress. Especially, the beginning of the studies provides the basis for sustainable well-being.

Summary of Work: In this longitudinal study, the aim is to investigate how experiences of the teaching-learning environment explain the changes in stress, burnout and well-being among the first year students. Their learning environment experiences are examined using a validated questionnaire Experiences in Teaching-Learning Environment. The change in stress and well-being during the first study year are examined with validated measures of stress, burnout, functional ability and the quality of life both at the beginning and at the end of the first year.

Summary of Results: Altogether 221 students from four programs of the Helsinki University (dentistry, medicine, logopedics and psychology) answered the baseline questionnaire. In the baseline, 34% experienced elevated stress, 25% had an elevated burnout risk and the average of experienced functional ability was 7.76 (scale 1-10). By contrast, 82% expressed that their quality of life was good or very good. No differences between the programs were detected.

Discussion and Conclusions: Stress and burnout risks were relatively high at the beginning of the studies among the students of medicine, dentistry, logopedics and psychology, even though their quality of life was good or excellent. In this longitudinal study, we will follow the students in these four programmes, and analyse more in depth what aspects of teaching-learning environment promote well-being and functional ability and, on the other hand, protect from harmful stress and burnout.

Take-home Messages: Academic healthcare students are a valuable resource and their well-being has to be taken seriously from the first day of their studies. Based on follow-up results, we suggest remedies for support the well-being of different healthcare students. Furthermore, we discuss the development of various aspects of teaching-learning environment, like aims, the organization of the studies, workload, support and feedback.

#EP9.5 - ePosters: Student - in Difficulty / Burnout / Wellbeing / Resilience

#EP9.5.8 (7263)

Pathways to resilience: A scoping review of interventions in undergraduate medical students.

AUTHOR(S):

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ABSTRACT:

Background: Issues pertaining to resilience have been the subject of a growing cohort of literature in recent years. The question of how to build resilience in medical students is of considerable interest to both medical educators and practitioners. In spite of this, little has been done to evaluate methods and strategies employed to develop resilience, particularly in the setting of undergraduate medical education. The aim of this study was to survey what is currently known about interventions designed to improve the resilience of undergraduate medical students.

Summary of Work: Scoping review methodology was used to map the research carried out in this area, as well as identifying any existing gaps in knowledge. Twelve studies were identified through searches in electronic databases and the grey literature. Data were collected and a narrative synthesis completed.

Summary of Results: The review identified variation in study type and size as well as marked heterogeneity in terms of intervention theory, structure, content and delivery. Of the eight studies which measured resilience scores, six (75%) found an increase in resilience following their intervention. Two (25%) showed statistical significance in students who either had a priori low resilience or had strongly engaged with the intervention. Multiple secondary measures were also assessed with variable outcomes; perceived stress, the most commonly assessed, was reduced in 3 out of 5 studies. Likert-scale surveys revealed that students who attended were generally positive about the experiences.

Discussion and Conclusions: This scoping review has shown that, although they may have some benefit, the evidence base for interventions designed to improve resilience in medical students is limited. There is a clear need for more primary research involving rigorously controlled studies before recommendations can be made as to the potential benefit (both short and long-term) of resilience training in this population.

Take-home Messages: - Though a growing area of interest, there is a limited corpus of robust research into resilience building in medical students.

- To date, there is a notable lack of conclusive evidence as to the effectiveness of such interventions.

#EP9.5 - ePosters: Student - in Difficulty / Burnout / Wellbeing / Resilience

#EP9.5.9 (5063)

Helping Surgical Residents Cope With Burnout – Can The Program Make A Difference ?

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ABSTRACT:

Background: In a baseline study of the NHG General Surgery residents, the prevalence of burnout was 72% and the coping strategy perceived to be most effective was support from families, friends, peers and colleagues. Guided by the survey result, the program increased its efforts in building a stronger social support structure for the residents. This present study aims to find out whether the program's efforts had made a difference.

Summary of Work: In this follow-up study, the Maslach Burnout Inventory (MBI) survey was re-administered, together with a custom-designed questionnaire which aimed to prompt residents to reflect on burnout management. 32 of the 33 current cohort of residents participated in the MBI survey and 31 of them completed the questionnaire.

Summary of Results: The results revealed that 63% of the residents met the criteria for burnout on at least one MBI subscale. Analysis of the qualitative data provided that 90% of the residents were aware of the program's efforts in helping them cope with burnout, citing examples such as mentor-mentee system, social gatherings, 1-to-1 feedback sessions with program director and sharing of articles on related topics. 75% of the residents felt that the program efforts were at least partially effective, taking into consideration outstanding drivers of burnout such as heavy clinical workload, administrative responsibilities and family commitments. The remaining residents found the efforts ineffective but expressed that they were appreciative.

Discussion and Conclusions: The improved burnout rate and the residents' appreciation suggested that the program's efforts had been worthwhile. Results from the baseline study had been useful in helping the program understand the residents' needs and therefore better able to focus its efforts to suit those needs.

Take-home Messages: Due to the varied factors that could contribute to a resident's burnout, effective coping strategies will require efforts beyond the program's capacity. However, with a willing listening ear, continuous resident engagement and dedication to improvement of residents welfare, the program can make a difference in helping residents cope with burnout. As shared by a resident - at least I do not feel like I am going through problems alone".

#EP9.5 - ePosters: Student - in Difficulty / Burnout / Wellbeing / Resilience

#EP9.5.10 (4838)

Take-a-Break: evaluating the impact of wellbeing activities on burnout in medical students.

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ABSTRACT:

Background: Burnout is described as complete mental and physical exhaustion secondary to work or care-giving activities, with a prevalence of 45-71% in medical students. Burnout can adversely affect clinical performance and patient safety. Mindfulness-based protocols have been shown to improve perceived stress. In response to this evidence and anecdotal perceptions that students are experiencing ever-rising stress, we have evaluated burnout and propose some activities to attempt to alleviate it, to third year medical students. Our aims were to: 1. Quantify the proportion of students experiencing burnout. 2. Trial measures to improve wellbeing of the students. 3. Measure the impact of these on burnout prevalence.

Summary of Work: University of Bristol's research ethics committee approved the study. We measured the prevalence of burnout amongst medical students, using a single question survey, over a 5-point ordinal scale. This has been dichotomised and validated against the more comprehensive Maslach Burnout Inventory, so that a score of 3 or more suggests burnout. We recruited students, in a convenience sampling methodology to answer this pilot question, before repeating the survey in the trial cohort of students. We have designed a series of wellness-based interventions, branded as "take-a-break sessions to deliver to the students on an optional, weekly basis. The initial question will then be repeated at the end of the series to reassess self-perceived symptoms of burnout.

Summary of Results: There was a 94% valid response rate (n=48) to initial pilot survey. The median score was 2 (n=28) and range 2-5. 35% (n=17) of students had a score of 3 or more, qualifying as burnout. A repeat baseline survey was conducted in the trial cohort of students. A total of 43 responses were gathered (response rate 84%). Median score was 2 (n=25), range 1-4. 42% of students qualified as burnout.

Discussion and Conclusions: We have identified a significant proportion of medical students who are burnt-out with a high prevalence documented in the literature and in our study. Quantifying the effect of wellbeing initiatives will aid the development of more holistic medical school curricula, with a greater focus on self-care.

Take-home Messages: Burnout is a significant issue for medical students which requires a holistic, multi-modal management approach.

#EP9.5 - ePosters: Student - in Difficulty / Burnout / Wellbeing / Resilience

#EP9.5.11 (4964)

How can orientation-camp combat loneliness among medical students? A cross-sectional survey

AUTHOR(S):

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ABSTRACT:

Background: Unacknowledged loneliness in the medical community are common factors leading to physician burnout and health consequences such as depression and suicide. Medical students experiencing loneliness are not rare and suffer from physical and mental distress, with detrimental influence on academic and professional performance. Measures combating loneliness should be implemented in medical schools as early as possible. Research showed that boosting self-worth and at the personal, social, and collective levels reduces loneliness. The study objective is to assess the correlation of self-esteem and loneliness after attending social activities at orientation-camp.

Summary of Work: An online cross-sectional questionnaire was distributed among 265 freshmen after attending the orientation-camp at a medical school from the Chinese University of Hong Kong. Perceived isolation and self-esteem of medical students were assessed by two validated psychometric measures, respectively, Loneliness Scale (Russell et al, 1980), and Self-esteem scale (Rosenberg, 1965).

Summary of Results: A total of 103 questionnaires were completed and returned, with an overall valid response rate of 37.7% (100/265). Of which, 44% were female and the majority (96%) primarily joined orientation-camp to make new friends (94.8%), and learn more about university life (77%). Four students (4%) did not join orientation-camp mainly because of time-clash (3%). Overall, students perceived themselves as able to do things as most other people (91%) and felt that they are a person of worth with others (92%). Students who did not join orientation-camp felt more lonely ($m=47.5$, $SD=5.9$) than those who have joined ($m=41.8$, $SD=8.2$), although the statistical difference is not significant due to small sample size. Loneliness and self-esteem are negatively correlated ($r=-.547$, $p<.001$).

Discussion and Conclusions: Students who attended orientation-camp report less loneliness than those who did not, after participation of social activities. Establishing peer contacts are beneficial for freshmen who are not familiar with the new learning environment. Correlation between self-esteem and loneliness is established, providing a possibility to alleviate loneliness by raising self-esteem.

Take-home Messages: Orientation-camps are a crucial step in boosting self-esteem and lowering loneliness in medical students by expanding social circles and providing information. Orientation-camps help boost self-esteem and reduce loneliness among medical students.

#EP9.5 - ePosters: Student - in Difficulty / Burnout / Wellbeing / Resilience

#EP9.5.12 (4965)

A Cross-sectional Survey: Combating Student Burnout and Enhancing Resilience in Medical Education

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ABSTRACT:

Background: Medical student burnout, a combination of physical and mental fatigue accelerated mainly by occupational and professional demands, is prevalent. It negatively jeopardises students' physiological and psychological well-being. Research reported that peer support enhances student's capacity and resilience to combat stress. Little is known how the evidence is translated into practice in local settings with unique two-tiered healthcare system and university cultures. The study's objective is to assess the effects of orientation camp on strengthening peer support network to alleviate medical student burnout in Hong Kong.

Summary of Work: A cross-sectional questionnaire was distributed among 265 medical freshmen at the Chinese University of Hong Kong. Two validated psychometric measures—Revised Sense of Belonging Scale (Hoffman et al 2003) was used to measure perceived peer support of learning environment and Maslach Burnout Inventory — Study Survey (Araraquara, 2009) to measure burnout symptoms in three components: Exhaustion, Cynicism and Professional Efficacy.

Summary of Results: A total of 103 questionnaires were completed and returned, with an overall valid response rate of 37.7%. Of which, 56% were male and the majority (96%) joined orientation camp with primary reason of making new friends (94.8%). From orientation camp, students perceived that they feel supported when encountering academic troubles (82%), and socially engaged with classmates outside classroom (87%). Only 27.1% reported experiencing high-level of Exhaustion, and 25% of Cynicism and 16% reported a low-levels of Professional Efficacy. No significant difference in burnout by gender. Perceived peer support is positively correlated with Professional Efficacy ($r=.378$, $p<.005$).

Discussion and Conclusions: A positive correlation is established between orientation camp participation and mental resilience in medical education. Long-term friendship established in orientation camp could provide students with tangible academic and intangible psychological support, thereby reducing burnout likelihood. With higher professional efficacy and extensive peer support, students are more likely to excel in medical schools with a positive mentality.

Take-home Messages: Orientation camps enhance students' resilience through peer support and offer an effective solution to alleviate medical student burnout worldwide.

#EP9.5 - ePosters: Student - in Difficulty / Burnout / Wellbeing / Resilience

#EP9.5.13 (6852)

Mental Health Essentials Workshop - a peer led approach to Mental Health in medical curriculum

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ABSTRACT:

Background: Mental illnesses are an extremely prevalent public health issue worldwide and a serious burden on an individual and societal level. Medical students have been consistently deemed as a vulnerable group and certain mental illnesses have been proven to have higher rates among medical students. Moreover, students usually lack adequate support as medical education does not adequately address the aspect of personal mental health and self management. The International Federation of Medical Students Associations (IFMSA), implemented a pilot workshop for medical students to promote empowerment in mental health.

Summary of Work: The 3 day pilot workshop addressed essentials of mental health, empowerment and self management skills such as self-realization and self-consciousness in prevention of mental health disorders through interactive delivery methods. Workshop participants were evaluated and assessed after six months.

Summary of Results: 12 international participants attended the workshop A post-evaluation form was answered by the 70% of workshop attendees including participants from 8 nationalities. When it comes to satisfaction, the 3-days training was evaluated with an average of 9.5 out of 10. The skills provided and gained in the workshop were assessed with 4.7 points out of 5 regarding relevance and importance. Finally, 86% of the participants stated that thanks to the training, they feel more confident now when it comes to activity planning and evaluation focused on mental health.

Discussion and Conclusions: The pilot workshop showed evidence of the importance of capacity building related to mental health among medical students and the efficacy of peer to peer education in mental health education.

Take-home Messages: Understanding how to proceed when facing mental health issues is crucial to medical students. Developing through peer-to-peer education and structured integration into medical education is essential to prevent medical students and later on physician burnout.

#EP9.5 - ePosters: Student - in Difficulty / Burnout / Wellbeing / Resilience

#EP9.5.14 (6944)

Medical Student Wellbeing and Quality of Life: Key Threats and Drivers

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ABSTRACT:

Background: Decreased wellbeing and quality of life (QOL) during medical school are well documented. At American University of the Caribbean School of Medicine (AUC), the THRIVE Survey was implemented in 2019 to assess current students' ratings of several factors associated with wellbeing and QOL. This survey will be repeated annually and used to track students across the 10-semester, 4-year curriculum to determine the impact of targeted wellbeing and QOL initiatives.

Summary of Work: At AUC in July 2019, 198 students responded out of 1413 invitations (14% response rate) to the THRIVE Survey. T-tests were employed to compare ratings on wellbeing and QOL factors including intellectual wellbeing, physical wellbeing, emotional wellbeing, spiritual wellbeing, financial wellbeing, level of social activity, fatigue, and social support from family and friends. The student variable of interest was enrollment in the first two years (medical sciences) or the second two years (clinical sciences) of the curriculum.

Summary of Results: Responses to the survey of a cohort of 198 students were analysed. Key factors negatively impacting wellbeing and QOL varied between the two groups. For medical sciences, fatigue, financial concerns, and level of social activity were rated significantly worse than other factors (P: <0.001). For clinical sciences, level of social activity was rated significantly worse than all other factors (P: 0.01). Across the two enrollment groups, social support from family and friends was consistently rated as the strongest driver of wellbeing and QOL (P: <0.001).

Discussion and Conclusions: At our institution, as at others, students experience threats to wellbeing and QOL. Medical school deans need objective guidance to inform allocation of resources to improve student wellbeing. In this study, fatigue, financial concerns, and level of social activity were the greatest threats to students' wellbeing during their first two years of enrollment while level of social activity was the greatest threat to students' wellbeing during their second two years of enrollment. Social support from family and friends was the key driver of wellbeing regardless of year of enrollment.

Take-home Messages: Data-driven initiatives may improve medical students' wellbeing and QOL. Year of enrollment should be considered when developing initiatives.

#EP9.5 - ePosters: Student - in Difficulty / Burnout / Wellbeing / Resilience

#EP9.5.15 (6042)

Working towards Wellness - An interactive resource for Doctors and Medical Students

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ABSTRACT:

Background: A humane working environment in medicine must acknowledge the struggles faced by doctors, and respond by ensuring that doctors are able to access available, appropriate support. A successful, live directory of resources aimed at supporting the health and wellbeing of the UK's medical students and doctors will illustrate an effective method of addressing this need.

Summary of Work: The need for accessible wellbeing support for doctors and medical students in the UK has never been more apparent. Multiple organisations have created bespoke support systems aimed at the medical profession. However those in need and supervisors responsible for the wellbeing of others are often unaware of where and how to access them. This can be compounded by the rotational nature of doctors' careers, particularly during training, which can restrict the ability to build relationships with mentors or local services. In response to these issues, the BMA Junior Doctors Committee set out to create a single point of access to signpost to services made for doctors and medical students and developed the BMA Wellbeing support directory. In December 2018 the JDC contacted multiple UK stakeholders, inviting them to submit the services they were aware of. In 2019 this was then opened more widely to the BMA's UK membership across newsletters and social media with the option to report services for inclusion in the wellbeing hub's database.

Summary of Results: In total we received information on approximately 100 services to be included, covering every nation in the UK. These services ranged from small group support for doctors recovering from alcohol misuse to online resources for those experiencing workplace stress.

Discussion and Conclusions: In August 2019 the BMA published the first version of the directory. We intend to continue to live update the directory with newly created or identified support resources.

Take-home Messages: Wellbeing support services are a valuable piece in the puzzle to supporting our profession and a tool which allows individuals to find the right service for them is vital. Highlighting regional variabilities in provisions has the potential to reward good practice with potential increased recruitment and retention as well as shining a light on areas where things need to improve.

#EP9.5 - ePosters: Student - in Difficulty / Burnout / Wellbeing / Resilience

#EP9.5.16 (4940)

Messages on Mental Health: Messages from the Wellness Websites of Medical Schools

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ABSTRACT:

Background: Medical students report a higher level of mental health issues in comparison to the general population.¹ Due to stigma and confidentiality concerns associated with mental health, many medical students fail to seek help when needed.² The perceived stigma associated with seeking help for mental health issues continues into practice creating a culture that may deter physicians from appropriate self-care.³ Websites are a source of helpful mental health information used by 18-25 year olds.⁴ In addition, organizations use websites to build relationships and foster trust, especially related to healthcare decisions. ^{5,6,7} This study explored how medical schools publicly address wellness via their public website.

Summary of Work: A structured approach to evaluate websites for wellness resources was developed and validated. Research team members evaluated 142 American and 16 Canadian medical schools' public websites for mental health resources between October 2017 and March 2018.⁹ Only medical schools accredited by the Liaison Committee on Medical Education were selected. This project was deemed exempt by the Institutional Research Board.

Summary of Results: The majority of medical schools (65%) had public facing wellness information for medical students. Only 22% presented similar information for residents and 18% for faculty. The number of U.S. medical school websites reporting Therapy/Counseling information was significantly higher than Canadian medical schools, Pearson χ^2 (1, N=158) = 5.950, $p = .015$. The percentage of Canadian medical schools providing information was higher for psychological testing/assessment (50%), mindfulness (44%), and mentoring (38%), but not statistically significant ($p = .481$, $p = .184$, and $p = .196$, respectively).

Discussion and Conclusions: Accrediting bodies in medical education have increased requirements for wellness. Examination of public interfaces of wellness exposes the willingness of medical schools to address openly mental health. This reduced attention to mental health wellness sends a message about the role of public discussion of the mental health challenges in medical education. Analysis of websites suggest medical schools may be failing to engage prospective students, residents and faculty in exploring wellness resources.

Take-home Messages: Medical schools send important messages regarding their wellness culture which is reflected through resources provided on their public websites.

#EP9.5 - ePosters: Student - in Difficulty / Burnout / Wellbeing / Resilience

#EP9.5.17 (5592)

The emotional well-being in medical and health sciences students' in northern Mexican universities.

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ABSTRACT:

Background: During their education, medical and health sciences students live under high levels of stress, having to cope with an intense academic load and emotionally exhausting situations. This predisposes them to multiple mental pathologies with diverse symptomatology. Depression, anxiety, and burnout cases have dramatically increased in this population in the past years.

Summary of Work: We designed a transversal and quantitative study, using the Student Mental Pathology Index, which consists of 30 items, on anxiety, burnout, clinical cynicism, and depression in a Likert-scale format. The sample consisted of 327 students training in medicine, odontology, psychology, nutrition, and biosciences disciplines from private and public universities in northern Mexico. The results were categorized by levels into mild, moderate and severe symptomatology.

Summary of Results: Most students resulted in mild and moderate symptomatology for anxiety, burnout, clinical cynicism, and depression (75.3%, 86.9%, 84.5% y 72.8%, respectively). A higher prevalence of symptoms was found among the medical student population. This prevalence kept a steady increase along with age and as they advanced in their careers. There was a mildly higher anxiety prevalence in female students.

Discussion and Conclusions: Most students have mild and moderate symptomatology for the above pathologies. Symptom prevalence is high, similar to that reported by authors in different countries. It is important to identify other modifiable risk factors in order to design strategies for the improvement of students' symptoms.

Take-home Messages: The marked increase in the prevalence of depression, anxiety, and burnout amongst health science trainees and professionals creates an urge for changes in the training system, those that take into account the students' emotional well-being and one that prioritizes the prevention and early detection of these pathologies before they can take over students' lives and affect their academic and clinical performances. It is imperative to realize that health practitioners can only help others if they maintain a healthy state of mind.

#EP9.5 - ePosters: Student - in Difficulty / Burnout / Wellbeing / Resilience

#EP9.5.18 (5720)

Associations between resilience and mental health in medical students in Scotland: the need for training in future practice.

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ABSTRACT:

Background: Resilience is regarded as an important quality for medical students to possess in order to cope with the challenges of medical school and on in their medical careers. This research study aimed to measure resilience in University of Dundee medical students using the Connor-Davidson Resilience Scale (CD-RISC) and to determine if certain characteristics of the medical students are associated with their resilience scores.

Summary of Work: A quantitative research design was implemented using a cross-sectional questionnaire which included the CD-RISC and questions about health, gender, age and year of study. The CD-RISC is a validated measure of resilience that has been used worldwide to quantify resilience in populations including medical students. However, it has not been used for UK medical students so this study is the first to do so. A global resilience score out of 100 was obtained for each questionnaire participant (a high score indicates a more resilient individual). Associations between characteristics of the students and their CD-RISC resilience scores were statistically analysed using one-way analysis of variance (ANOVA) and independent sample t-tests.

Summary of Results: The mean global score for 150 University of Dundee medical students was 68.84; there was found to be a statistical difference ($p < 0.05$) in scores between those reporting mental health conditions (65.03) and those who did not (70.29). No other characteristics significantly influenced resilience.

Discussion and Conclusions: Scottish medical students on average have good resilience. However, those who reported poor mental health were more likely to have low resilience and this relationship between mental health and resilience is supported by the literature. Therefore, strategies to boost resilience with a focus on mental health could be beneficial for medical students and be incorporated into medical school curriculums. This conclusion agrees with other research on medical student resilience. This study also contributes to global CD-RISC data by being the first CD-RISC use in a Scottish population and UK medical students.

Take-home Messages: This study found a statistical relationship between lower resilience and having a mental health condition. Resilience training with a focus on mental health at medical school could be beneficial in promoting resilience and good mental health in students and therefore, future doctors.

#EP9.5 - ePosters: Student - in Difficulty / Burnout / Wellbeing / Resilience

#EP9.5.19 (6812)

Its all too much. Finding the Key to Medical Student Resilience Through Appreciative Inquiry

AUTHOR(S):

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ABSTRACT:

Background: Medical students experience considerable stress due to intensive workload and exams, often leading to mental health problems. Resilience is a protective quality which helps individuals cope with these challenges and become effective working professionals. This study explored reasons why students consider themselves resilient and what makes them so. It also considered participants' experience of the support system at Dundee Medical School.

Summary of Work: This qualitative case study explored medical students' resilience using an Appreciative Inquiry (AI) methodology. Individual semi-structured interviews were carried out using the strengths-based approach and questions were constructed using the AI 4 D Cycle. Seven students participated whereby saturation was reached. A multiple readings technique was used to analyse the data and themes triangulated using NVivo software.

Summary of Results: Four main themes were identified: (1) challenges or difficulties, (2) resilience, (3) support and (4) coping strategies. Multiple subthemes emerged. Although participants do not explicitly consider themselves resilient, there are internal and external factors contributing to their resilience.

Internal factors include personal qualities that enable participants to deal with challenges and develop coping strategies. External factors are the support network around them. Support staff, peer mentor system, being part of academic groups and societies give them a sense of belonging within the medical school community. Suggestions to strengthen the support system included creating annual student-staff review sessions and introducing resilience training to build upon the peer mentor role.

Discussion and Conclusions: The literature agrees with the range of factors contributing to resilience. By implementing participants' suggestions, there may be potential to enhance resilience which could augment wellbeing, improve students' ability to cope with challenges of the medical course and their working lives.

Take-home Messages: Resilience is an important quality which can be fostered. Support provided by the medical school made a significant contribution to participants' resilience. There is scope for positive change within Dundee Medical School to augment the support students receive to help build resilience for their further studies and careers. This system could be transferable to similarly sized medical schools and make a beneficial impact to doctors of the future.

#EP9.5 - ePosters: Student - in Difficulty / Burnout / Wellbeing / Resilience

#EP9.5.20 (6984)

PsyMent: Workshops for dealing with new challenges and psychological stress during the first stage of medical studies

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ABSTRACT:

Background: Medical students often show stress-related psychological and psychosomatic symptoms of strain during their studies (Gilsdorf et al., 2014). It is known from the literature that students demand for targeted help to maintain health and to prevent later occupational psychological stress is high (Cetin, Hahn & Kuhnert, 2018). Education through topic-related information and exchange (Awad et al., 2019) in the sense of prevention are key functions for maintaining mental health. The PsyMent project (Psychische Gesundheit - Mental Health) picks up on these elements and offers topic-specific workshops (WS) for new students in human medicine.

Summary of Work: The PsyMent project represents the field of mental health in the area of competence and personality development. Specifically, the following subject areas are offered in a workshop (WS) format for preclinical medical students: Learning strategies (WS1), self-management (dealing with delicate emotions: WS2), time management & relaxation techniques (WS3) and stress management (WS4). Psycho-educational knowledge transfer, self-awareness and role play are used as teaching methods.

Summary of Results: During the project preparation phase (October to December 2019), our working group ran three pilot workshops: • Workshop Disgust and Appreciation: 6 hours, 12 participants (TN) - based on dealing with delicate emotions • Workshop Staying relaxed through stressful times: Mindfulness and stress management”: 4 hours in cooperation with the student initiative DissectReflect, 15 participants, medicine (predominantly 3rd semester - based on “time management & relaxation techniques” • Workshop Resilience and Coping: 3-hour training course from Blaupause AG, 10 participants (especially 5th semester) - based on stress management In the evaluation, the atmosphere of the event, the group size and the alternation between exercise, self-awareness and theoretical input were rated as very good (<1.2 based on school grades).

Discussion and Conclusions: Long-term offers aimed at maintaining mental health from the 1st semester in medicine on require students to invest additional time, but a current literature review and the qualitative results from our project preparation phase suggest that this leads to a promising gain in professional self-management.

Take-home Messages: Turning to not turning a blind eye paves the way for better mental health.

#EP10 - ePosters: Surgery Education

#EP10.1 (4823)

Surgical skill training for Physician Associates in Training

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ABSTRACT:

Background: The role of the Physician Associate is new to the UK and numbers are rising, due to the increased demands on the NHS workforce. The department of health recommends that Physician Associates should be able to manage simple and complex lacerations. This was expanded by the Faculty of Physician Associates to include 'simple skin suturing' and to 'be competent in the use of local anaesthetics' upon completion of the programme. In the 2018 census of PAs, 25-49% answered that they would routinely be performing suturing.

Summary of Work: Ten physician associates in training from Brighton and Sussex Medical School were surveyed as to their competencies with simple surgical procedures. A day involving short lectures and practical workshops was designed, with a focus on small group, peer-to-peer learning. Students were surveyed again following the surgical skills day, and feedback was taken from them.

Summary of Results: Before the course most students felt uncomfortable or not familiar at all with local anaesthetic or instrument ties. They had mostly observed procedures or had a single suturing session. After the course all students rated themselves as 'very comfortable' or 'somewhat comfortable' with gloving and gowning, local anaesthetic administration, hand and instrumental ties. All students also stated this day would be useful for their future practice, and would appreciate more sessions in the future.

Discussion and Conclusions: Surgical skills days are routinely offered for medical students, including a course specifically offered by the Royal College of Surgeons. Although physician associates are expected to have competence upon graduation, prior to our surgical skills day most students were uncomfortable with basic surgical skills. We propose a structured approach for the teaching of surgical skills to physician associates and demonstrate proof of concept.

Take-home Messages: • We must appropriately design and tailor our teaching of surgical skills to meet the roles of new staff within the NHS. • Practical workshops and small group teaching work well as methods to teach surgical skills. It is important to ensure the surgical skills you are teaching are relevant and applicable in their practice.

#EP10 - ePosters: Surgery Education

#EP10.2 (5750)

Evaluation of various teaching methods for practical skill transfer in general surgery

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ABSTRACT:

Background: Peer-assisted learning (PAL) describes an interactive teaching method based on knowledge and skill transfer between advanced student tutors and lower semester student learners. Despite many favorable effects, such as encouraging mutual learning and sharing of experience, some limitations exist. These include the need for ongoing training for student tutors, which is highly resource-intensive and time-consuming. Furthermore, learning opportunities within a PAL concept are only locally available and without any training repetition. In order to overcome these disadvantages, the linking of face-to-face events with digital learning aid has been approved. The latter approach is well-known as blended learning (BL). The aim of the present study was to evaluate learning outcomes of three different teaching methods using objective evaluation systems.

Summary of Work: A total of 120 medical students were included in the randomized controlled trial and divided into three different groups. All participants received training in practical surgical skills, as knot tying, sewing and clinical examination of the abdomen. Depending on randomization, the learning contents were mediated through different teaching methods, more precisely PAL, BL or only video-based learning (VBL). The students learning outcome was objectified via OSCE and OSATS scoring. Subjective assessment was carried out by a formal evaluation form.

Summary of Results: The preliminary results showed that the PAL concept led to a high OSCE and OSATS scoring. The evaluation form revealed that students appreciated the opportunity for interaction as a beneficial factor to their subjective learning progress. Due to the requirement of a blinded assessment the comparison to the other teaching methods is actually overdue.

Discussion and Conclusions: The present study evaluated various teaching methods in the context of practical surgical skill transfer to medical students. The PAL concept turned out to be an already accepted teaching method. The interaction option enables the consideration of different learning speeds and therefore an individual training. Digital learning aids are seen as a helpful tool for enhancing training effects. BL combines the advantages of both teaching methods.

Take-home Messages: PAL appears to be an effective teaching method in the context of practical surgical skill transfer to medical students.

#EP10 - ePosters: Surgery Education

#EP10.3 (6993)

Assessment of cognitive and technical competences in basic vascular ultrasound: a validity investigation of a novel assessment tool

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ABSTRACT:

Background: Sound and timely assessment ensures competence in basic vascular ultrasound (US). The European Society of Vascular Surgery rolled out a certification program to assess theoretical and technical competences in basic US examinations using newly developed comprehensive assessment tool- the Assessment of Vascular Ultrasound Expertise (AVAUSE). However, there is no evidence of its validity to support the scores and decisions for certification. The aims of the study were to gather validity evidence for the AVAUSE theoretical and practical tools and to establish pass/fail standards.

Summary of Work: Validity evidence was sought using Messick's framework of validity. Five vascular US experts developed and iteratively revised the AVAUSE theoretical and two practical assessment tools (carotid and superficial venous insufficiency (SVI) examinations). Examinees were vascular surgeons, technicians/scientists and nurses with varying experience levels. Theoretical test was administered prior to practical tests. Two carotid and two SVI stations were set. Eight trained expert raters were paired and assessed each participant individually. Contrasting groups method was used to set a pass/fail score for the theoretical test, while expert rater consensus and the extended Angoff method were used for the practical tests. Participants must pass all three components to be certified.

Summary of Results: Nineteen examinees participated. Internal consistency reliability for theoretical, carotid and SVI assessment tools was acceptable with Cronbach's alpha=0.93, 0.84 and 0.65, respectively. Inter-rater reliability was $r=0.68$ (carotid raters 1 and 2); $r=0.78$ (rater 3 and 4). Carotid scores correlated significantly with years of experience, $r=0.63$, $p=0.004$. Inter-rater reliability was $r=.81$ (SVI raters 1 and 2) and $r=.87$ (3 and 4); no correlation between SVI scores and years of experience. Pass/fail scores were: theoretical= 29 points; carotid examination based on rater consensus =42 and SVI=30 points, while pass/fail scores based on Angoff method were 57 and 37 points, respectively. Fifteen participants passed both the theoretical and practical tests and were certified.

Discussion and Conclusions: Supporting validity evidence was established for AVAUSE theoretical and practical assessment tools. These ensure competences in basic vascular ultrasound before supervised training in the clinical environment.

Take-home Messages: The AVAUSE is a useful and reliable tool to assess theoretical and technical competences in basic vascular ultrasound

#EP10 - ePosters: Surgery Education

#EP10.4 (4376)

Competence by Design in Canadian Neurosurgical Residency Programs

AUTHOR(S):

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ABSTRACT:

Background: The Royal College of Physicians and Surgeons of Canada (RCPSC) recently redesigned the Canadian neurosurgery residency training curriculum by implementing a Competence by Design (CBD) training program centered around the assessment of Entrustable Professional Activities (EPAs). This mixed-methods study evaluated the potential benefits and pitfalls of CBD in Canadian neurosurgery residency education.

Summary of Work: Two surveys were distributed at three-month intervals to all current first-year neurosurgery residents in Canada. The surveys assessed important educational components related to CBD including: 1) knowledge of the key stakeholders of CBD, 2) potential system barriers, and 3) educational and psychological impacts on residents. Based on longitudinal survey responses, semi-structured interviews were conducted with residents to investigate in depth their experience with CBD on a daily basis in neurosurgery. A thematic analysis following saturation of data was performed with 2 coders.

Summary of Results: The surveys had a response rate of 80% (n=25). Most residents understood the concepts around CBD (78%). Perceived benefits of CBD included an evaluation that was clearer and more objective with added feedback. Negative experiences with CBD were the amount of time needed to complete evaluations and residents forgetting to initiate EPA forms. When asked to weigh benefits and pitfalls of CBD, significantly more pitfalls were identified by residents ($p=0.028$ -survey 1 and $p=0.008$ -survey 2). During interviews, residents desired greater incorporation of technology to generate EPA assessments. Residents were also concerned about overburdening their supervisors with EPA requests.

Discussion and Conclusions: This study was the first to assess the benefits and pitfalls of CBD in Canadian neurosurgery programs. In general, residents believed that the principles behind CBD were advantageous to their learning and residency training. However, significant barriers for success still exist in terms of technological ability and time to do regular assessments.

Take-home Messages: The CBD learning experience for neurosurgery residents has been reported as constructive despite pitfalls described. National funding opportunities are needed to increase the ease for regular assessments and long-term studies are required to determine the ultimate benefits of CBD on resident learning and performance.

#EP10 - ePosters: Surgery Education

#EP10.5 (4476)

Rural Longitudinal Integrated Clerkships deliver comparative clinical exposure and equivalent academic outcomes in Surgery

AUTHOR(S):

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ABSTRACT:

Background: Longitudinal Integrated Clerkships (LICs) are an educational model that harness the capacity of rural primary care settings to train medical students. The impact of such contextual and programme differences on the surgical learning experiences of medical students requires further exploration. At Deakin University, School of Medicine in Victoria, Australia, formal teaching in Surgery occurs during year 3 in either a rural LIC or a hospital Block Rotation (BR). The purpose of this study was to compare surgical academic outcomes and clinical experiences of LIC and BR students.

Summary of Work: Part I: Participating LIC and BR students (2016-2018) electronically recorded a snapshot of their encounters with selected common surgical conditions from the curriculum, including condition encountered, setting, stage and clinical task performed. The groups' surgical encounters were subsequently compared using descriptive statistics and Pearson Chi-squared test. Part II: Third year Surgery assessment results (2011-2017) were analysed and compared. Statistical tests used included t-test (MCQ) and Mann-Whitney U test (OSCE results).

Summary of Results: Part I: Thirty-eight students (20 LIC, 18 BR) submitted 188 clinical encounters (LIC 71, BR 117). There was no significant difference observed in the conditions encountered by the two groups. BR students saw most patients as hospital inpatients, whereas LIC encounters were distributed across clinical settings ($P < 0.001$). There was a significant difference in the stage when conditions were encountered ($p < 0.008$), with LIC students more likely to see patients at a non-operative or pre-operative stage and BR students more likely to see patients post-operatively. Part II: 942 (121 LIC and 821 BR) students' assessment results were analysed. Both groups performed similarly in the MCQ ($P=0.21$) and OSCE ($P=0.16$). The only significant difference occurred in one cohort, with LIC students performing better on the MCQ.

Discussion and Conclusions: This study demonstrates equivalence in both surgical clinical encounters and academic results for rural LIC and BR students. This supports the limited literature on this topic and provides reassurance regarding the educational value of surgical experiences available in rural Australian LIC programs.

Take-home Messages: Rural LIC programs deliver comparative surgical clinical exposure to BR programs
Rural LIC students achieve equivalent results in surgical assessments to BR students

#EP10 - ePosters: Surgery Education

#EP10.6 (4601)

Feasible arthroscopic simulator for orthopedic residency training.

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ABSTRACT:

Background: Introduction: Surgical simulation training has gained considerable attention in recent years due to its effectiveness for improving basic arthroscopic skills such as eye-hand coordination and developing precise manipulation with bimanual task. However, it is still not simply accessible because most of available commercial simulators are expensive. Thus, we developed a convenient and inexpensive arthroscopic simulator using easily available materials and inexpensive portable arthroscopic camera with 30-degrees lens from online shopping.

Summary of Work: Methods: Participants were recruited from residents (PGY-1 to 4) in an orthopaedic surgery residency program. All subjects underwent 2-day course covering basic knowledge and handling of arthroscopic instruments. Before and after the course, participants were assessed by completion two arthroscopic tasks including 10-positions identification (task 1) and tissue-handling exercise (task 2). Time to completion on each task before and after the course were compared. Student's self-rated procedural competence and self-assessed confidence ratings following simulation training were evaluated with 5-Likert scale (1: no ability to perform or no confidence up to 5: able to perform independently or completely confident, respectively).

Summary of Results: Results : A total of 31 residents (9 PGY-1, 8 PGY-2, 9 PGY-3, and 5 PGY-4) completed and course and assessment. After course participation and simulation trainings, the average time to completion in task 1 and 2 were significantly improved (261.2 s vs 148.8 s, and 219.5 s vs 119.7 s, $p < 0.01$ both) with the average reduction of time to completion as 43.0% and 45.5%, respectively. Student's self-rated procedural competence and self-assessed confidence ratings were also significantly increased with the simulation training (2.9 vs 4.9, and 2.4 vs 4.6, $p < 0.001$ both).

Discussion and Conclusions: Conclusion: Simulation in surgical education is beneficial for orthopaedic residency program and should incorporate with the standard curriculum. Our arthroscopic surgical simulator with arthroscopic skill training workshop showed an ability to significantly improve the residents' arthroscopic skill and confidence.

Take-home Messages: Surgical skill training does not always need an expensive simulator. Simulation arthroscopic skill training for residency program with an economical and practical simulator is another feasible and worthwhile option.

#EP10 - ePosters: Surgery Education

#EP10.7 (4647)

Improving the Surgical Patient Care by Learning from Experts' lectures and a Surgery Simulation

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ABSTRACT:

Background: Studies have pointed out that if operating room (OR) nurses are not familiar with the use of surgical innovative technology, it is easy to extend the surgical preparation time and affect patient safety. In order to transfer and share innovative technological information and shorten the learning curve of the OR nurses. We conducted an education workshop in terms of learning from experts with simulation training to improve the competency of nurses.

Summary of Work: We conducted an international workshop following the robotic with integrated table motion (ITM) only available in Taiwan in 2018. The activity was held on April 13, 2019 for a total of six hours. Course design included: Five domestic and foreign experts; Learning tools including video appreciation, live simulation demonstrations and group operation in the operating room; Objectives of the activity being innovative technology of ITM and nursing care skill acquisition; Evaluation tools including course satisfaction, clinical application effectiveness tracking.

Summary of Results: A total of 211 OR nurses participated in the workshop, with an average satisfaction score of 99.5 points. Between May and December 2019, the ability of nurses to track their clinical use was tracked in 54 nurses participated in the actual use of 207 patients. On average, each nurse could shorten the preparation time for surgery by 20 minutes, no pressure injury and falls in 207 patients.

Discussion and Conclusions: The results show that it takes more than half a year to complete the training of new technology for robotic surgery. It is not easy to train a nursing staff who can participate in surgery independently. The trainees responded by telling the course to experts to help them acquire new technology knowledge. Simulation training helps to strengthen the familiarity of knowledge application and skills, so learning from experts and simulation training can improve the effectiveness of nursing care.

Take-home Messages: The diversified-teaching method is very useful to induce new knowledge and skills because the learning process can be fastened by experts' experience sharing. It works effectively and efficiently

#EP10 - ePosters: Surgery Education

#EP10.8 (4879)

Flipped classroom as a strategy in a chapter of the course of surgery : perception of students and professors from Peruvian University San Juan Bautista

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ABSTRACT:

Background: The flipped classroom as an educational strategy transfers work outside the classroom and uses class time together with the teachers experience to facilitate and improve the acquisition of knowledge during class.

Summary of Work: It is wanted to evaluate the perception of the students and professors in front of the change of the traditional way to one dynamic and participatory. A qualitative study was carried out with a sample non-probabilistic for convenience , generating an ad-hoc data sheet using the positive domains of the DREEM questionnaire as a model, instead of the 50 questions the students were asked 7 questions aimed at assessing the appreciation and acceptance of the new dynamics, which was applied for to two students cohorts (one for each semester), while the professors staff was the same and they answered a questionnaire with 15 questions . The global score and the percentages were calculated to see if there was a response trend.

Summary of Results: We work with 135 students (first cohort 45/181, second cohort 90/177) and with the professors .The results showed a clear trend to the satisfaction to use the “flipped classroom” , 90% were satisfied with the information that was sent to them prior to the class , while 89% were according to the time they were given to make the presentation , 84% considered that the interest and motivation for the subject increased, 88% considered that the difficulty for learning was lower applying the “flipped classroom”, 87% was satisfied with the clarifications made by the professor, 87% consider that the empathy and professor-student relationship grew , finally 85% agreed with this learning method . Similar results were obtained in the professors group.

Discussion and Conclusions: The “flipped classroom” strategy provides a pedagogical tool that is accepted by students and professors , allowing greater interaction between the two, which was not achieved with the master classes. In conclusion of the students a high positive response was found to the use of flipped classroom (86% vs 14%). While in the group of professors there was also a favorable response to apply the flipped classroom (75% vs. 25%)

Take-home Messages: Dynamic teaching tools allow new achievements

#EP10 - ePosters: Surgery Education

#EP10.9 (4928)

Next Level of Tracheostomy Lecture by Video Learning

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ABSTRACT:

Background: Tracheostomy, the surgical lecture for medical students is usually best taught in the operating room with real patients. However, not all surgical lectures can be performed during real operation every time due to a lack of suitable cases. Moreover, the limited surgical field makes it difficult for the students to observe. Video learning offers a solution to improve the lecture for the students.

Summary of Work: Video learning about tracheostomy was made for 5th year medical students in Chiangrai Prachanukroh hospital during 2018. The lecture in the video had necessary topics such as indication, tracheostomy tube, procedure, complication and postoperative care. Fifteen questions were made to test before (pretest) and after (posttest) watching the video. The students were tested with the same questions when they became 6th year students. More questionnaires about the video were held.

Summary of Results: 43 students aged 22-24 years old participated in the study. 24 students were female (55.8%). The mean score of the pretest and posttest were 7.63 (range 1-12) and 13.86 (range 9-15) respectively. The mean score dropped to 8.53 (range 7-12) 1 year after the lecture. From the questionnaires, no student has reviewed the lecture after passing 5th year. 83% of the students would prefer learning tracheostomy by video learning instead of observing in the operating room.

Discussion and Conclusions: The total score of every student increased significantly after watching the video. As no knowledge review took place after initial lecture, the score one year later showed no statistical difference compared to the pretest score. Although the knowledge retention after video lecture is 20-30% in theory, the score remains 60% in this study. We concluded that the video learning is an effective method for studying tracheostomy and it should be accessible online so the students can review the knowledge anytime anywhere.

Take-home Messages: Not only reducing time to prepare the case, video learning also prevents contamination in the operating room from students' observation. It could be an effective way to teach other medical procedures as well.

#EP10 - ePosters: Surgery Education

#EP10.10 (4991)

Medical Students' Weaknesses in Suturing and Knotting Skills : 3-Year Evaluation

AUTHOR(S):

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ABSTRACT:

Background: Suturing and knotting are essential procedures medical students required to perform properly before graduation. Due to most of junior doctors work independently at community hospitals, good suturing is vital for patients and can decrease unnecessary referral. This study aims to evaluation the weaknesses of suturing and knotting skills of medical students at Udon Thani Hospital for the purpose of training development.

Summary of Work: Suturing and knotting practical examination completed by 4th-6th-year medical students in 2016, 2017 and 2019. The scores were rated by surgery staff using check-list form, and separated into 4 levels: excellent(score 9-10), good(score 7-8), fair(score 5-6) and poor(score <=4).

Summary of Results: Research sample was 49 medical students including 24(49%)male and 25(51%)female. They were in 4th-year(8.2%), 5th-year(10.2%) and 6th-year(81.6%). The suture types were simple interrupted(24.5%), continuous(38.8%) and vertical mattress(36.7%). The score levels were excellent(83.7%), good(12.2%) and fair(4.1%). Finding shows that students used instrumental knotting correctly(98%), right equipment(93.9%), instrumental knotting tightly(91.8%), hand knotting tightly(89.8%), hand knotting correctly(85.7%), proper distance from wound edge and between stitches(100%), beginning from far to close(100%), approximated wound edge(100%), completed at once(83.7%) and no free-hand holding the needles(79.6%).

Discussion and Conclusions: Similarities between male and female of which most were in 6th-year. All passed the examination and most were in excellent level. Two fair-level students(6th-year, 1st and 3rd-semester) were similar in continuous suture type. Six good-level students (6th-year, 1st, 2nd and 3rd-semester) were mostly similar in continuous suture(4/6). Therefore, semester did not affect skills while continuous suture was the weakness. All 4th and 5th-year students got excellent scores, implied that they might benefit from early semester training different from the 6th-year students. Inability completed at once implied less practice; thus, solution was increasing amount of practice, often checking their log books, teaching in preclinical year and early surgery section and two examination in each semester. Conclusion: Weaknesses were incomplete safety technique, inadequate practice, problem of hand knotting over instrument knotting and continuous suture.

Take-home Messages: Important factors of suturing and knotting skills include teaching in early semester, keep practicing, personal weaknesses recognition and emphasis on safety techniques.

#EP10 - ePosters: Surgery Education

#EP10.11 (5143)

Video recording orthopedic trauma surgical procedures: Solutions to challenges

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ABSTRACT:

Background: The outcome of patients undergoing surgical treatment for trauma is influenced by several factors including surgeon skills. AO Foundation developed metrics to objectively assess performance of fixation of a hip fracture with intramedullary nailing. In a previous study Face and Content validity of the metrics were verified by 32 senior orthopaedic and trauma surgeons from 18 countries. We are now evaluating their construct validity by analyzing recordings of novice and experienced surgeons performing the procedure.

Summary of Work: Construct validity of the metrics requires assessment of video recordings of the procedure from multiple international sites. Three synchronized video cameras in the operating room capture 1.) overall movements, 2.) the surgical field of view, and 3.) the image feed from the image intensifier.

Summary of Results: Initially, we obtained 23 video recordings of the procedure from 6 different international sites. Several videos were rejected because the recording was incomplete or had insufficient quality to evaluate surgical performance.

Discussion and Conclusions: Usable and good-quality video recordings underpin robust surgical and scientific metric validation efforts. Factors which facilitate/impede these efforts at participating sites include i) procedure volume, ii) sufficient surgeon subjects, iii) engagement of investigators, iv) adequate informed consent, v) a robust technical and recording protocol, vi) establishment and verification of GDPR compliant secure data transfer and vii) sufficient support and feedback to participating sites on the quality of their videos.

Take-home Messages: Video recordings (of orthopedic trauma procedures) from multiple international participating sites is not as straightforward as it might appear. We provide practical and concrete guidance for other investigators.

#EP10 - ePosters: Surgery Education

#EP10.12 (5351)

Do Role Models influence student intentions for Surgery and Primary Care? Results of a multisite study.

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ABSTRACT:

Background: Exploring student career intentions is necessary to inform the planning and training of the future medical workforce. Definitive career decision is associated with career intentions in medical school. Evidence highlights the impact of motivational factors (MFs), but little is known about role models (RMs) influencing these intentions. We aimed to explore RMs and MFs influence on students' intentions for two frequented specialties: Surgery (SUR) and Primary Care (PC).

Summary of Work: In 2018, 448 graduating students (38% males) from three Medical Schools were assessed on career intentions, RMs identification, the importance of RMs and 4 other MFs i.e. Lifestyle, Field-of-Action, Social Accountability, Gain for career choice (CCMS-R, 12 items; 1=very important to 5=not important) and their level of deterrence (=1)/attraction=6) to SUR and PC. Logistic regression was used to predict the effect of RMs, MFs, site and gender on intentions for each specialty.

Summary of Results: About 11% (66% males) of students intended to choose SUR, 27% (68% female) PC. About 75% of students identified a role modelling doctor, however RMs showed average attraction to both SUR and PC intentions ($m=3.4/6$; $m=3.0/6$, respectively). For all sites, being a Male, Field-of-Action and Gain predicted SUR intentions ($\beta=.96$; $\beta=.72$; $\beta=.56$, respectively; $p=0.001$); Lifestyle and Social-Accountability predicted PC intentions ($\beta=.47$; $\beta=.31$, respectively; $p=0.001$).

Discussion and Conclusions: RMs showed no influence on SUR or PC intentions suggesting that the place of RMs in the medical curricula should be reconsidered. Students intending to choose PC or SUR present specific personal and motivational features, thus confirming the differences of these 2 career tracks, previously described in the literature as medically-oriented/low-controllability of lifestyles (SUR) vs socially-oriented/high-controllability of lifestyles (PC).

Take-home Messages: Positive incentive measures that affect RMs are required. Investigating Motivations and gender preference for specific specialties could help define effective strategies to encourage career choices meeting society needs.

#EP10 - ePosters: Surgery Education

#EP10.13 (5511)

A pilot study in undergraduate surgical experiences and factors that influence career decisions

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ABSTRACT:

Background: The aim of the study was to explore clinical undergraduate medical students surgical experience at a teaching district general hospital (DGH) and factors that influence their career decision making.

Summary of Work: An online structured questionnaire was sent to all undergraduate clinical medical students based in a single teaching DGH.

Summary of Results: The response rate was 46% (44/95), three quarters of respondents were female. 75% of students rated variety of work and intellectually interesting, followed by work environment as the most important factors for their future careers. Half of students before their surgical placement declared they were not interested in a surgical career, one third were interested and 18% were unsure. After their surgical experience, 57% were interested, one third were not interested and 11% were unsure about a surgical career. A total of 25% of students changed from not considering surgery, to contemplating a surgical career after their experiences. There was a 32% increase in year 3 students, compared to a 10% increase in fifth year students considering a surgical career after their surgical experience. A total of 50% of respondents rated their undergraduate surgery experience as very good or excellent. All of the students who rated the placement as excellent, were unsure or not considering a career in surgery before the placement but were considering a surgical career afterwards.

Discussion and Conclusions: It is known that increasing medical student exposure to clinical specialities can help to improve recruitment to that speciality. Multiple factors influence medical students career decision making and it is important to identify and assess factors and surgical experiences important for their decisions. This pilot study identified some key findings which require further research, especially if a positive surgical placement can be influential for undergraduates career decisions, especially during early clinical years.

Take-home Messages: A good clinical surgical placement could be positively influential for students who may not have considered a surgical career previously, especially junior clinical students. Variety of work, intellectually interesting and work environment were rated as the most important factors for undergraduate respondents career decisions. Further research is required to understand undergraduate perceptions of surgical experiences and factors that influence career decision making.

#EP10 - ePosters: Surgery Education

#EP10.14 (5642)

Clinical supervision of residents in the basic suturing skills training using the four-component instructional design (4C/ID): Are we doing enough?

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ABSTRACT:

Background: Basic suturing skills training using the four-component instructional design (4C/ID) is conducted every 3 months for the residents who rotated to the Children's Emergency. Clinical supervision plays a crucial role in the provision of just-in-time information (3rd component) and part-task practice (4th component) of 4C/ID. This study focused on trainees' perception of clinical supervision, its adequacy, its impact on trainees' clinical skills and patient safety.

Summary of Work: We used a survey method to explore the trainees' perception of clinical supervision by distributing the questionnaires to the trainees who completed their clinical rotations. The questionnaires focused on trainees' perception of the current supervision and its adequacy, and impact on the trainees' clinical skills improvement and patient safety.

Summary of Results: The survey was responded by 60.7% of the trainees. Clinical procedures were mainly supervised by consultants (52.9%) and in the first month of the training (88.2%). In 35.3% of procedures, supervisors were present in and out of the procedures. The supervisors were present partly in 23.5% of the procedures. Supervisor presence throughout the procedure was noted only in 41.2%. The majority expressed adequate supervision (76.5%) with a satisfactory time (70.6%). Most trainees agreed that supervisors were able to recognized trainees' mistakes in performing the procedures, to advise the correct methods which enabled trainees to perform the procedure correctly. The survey showed that supervisors were approachable (94.1%), serious in supervision (82.3%), knowledgeable and skillful (84.4%), and their feedbacks were specific and clear (76.4%), and constructive (82.3%). Trainees valued the importance of clinical supervision in patient's safety (94.1%), in improving their procedural skills (76.4%), and in a conducive and safe learning environment (70.6%).

Discussion and Conclusions: The trainees' perception of clinical training reflects the adequacy and effectiveness of clinical supervision in skills training. Clinical supervision has a significant impact on trainees' learning experience, and on patient's safety. Evaluation of the adequacy and quality of clinical supervision is crucial. Training of supervisors, protected time for supervision, and provision of a conducive learning environment are essential for effective supervision.

Take-home Messages: Adequate clinical supervision is crucial in the skill training of residents.

#EP10 - ePosters: Surgery Education

#EP10.15 (5916)

A Quality Improvement project on Surgical teaching for final year medical students

AUTHOR(S):

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ABSTRACT:

Background: After every attachment medical students are asked to provide feedback. At UCL (University College London) the quality of teaching on medical firms is consistently Good or Excellent. However, the quality of Surgical teaching varies and is not consistently above average. This is true across hospital sites and also during the same academic year.

Summary of Work: Over several years, changes have been made to help improve the teaching with little effect. Therefore, a novel approach was undertaken to boost the quality of teaching and overall satisfaction of the undergraduate experience at a District General Hospital. We used LifeQISystem in order to assist with our Plan, Do, Study, Act (PDSA) cycles. The improvement was mediated by a structured induction, introducing a formal schedule of teaching sessions, increase the educational value of ward rounds and ensuring all students experience Day Surgery.

Summary of Results: Timely feedback was sought and collected via the surveymonkey website. The questions and the answers were aligned with the UCL end-of-placement questionnaire. To quantify the results a Likert scale was used to scale the responses from 1, ie Poor to 6, ie Excellent. There were more questions, including open questions, relevant specific to a Surgical Attachment about operating theatre attendance and what sessions they found most educational. The results showed an increase in the quality of the teaching during the first placement. The quality of the responses rose from an average of 4 to an average of 5.33 on the Likert scale which in percentage is from 66% to 88% respectively. This translates to Excellent in the standardised university questionnaire.

Discussion and Conclusions: We have shown that quality improvement (QI) methodology can improve non clinical services. We plan to further improve and sustain the improvement of the students experience by continuing the cycles with the future cohorts of students as further changes are rolled out and implemented.

Take-home Messages: Surgery environment can be a challenging field for undergraduate education but we have managed to show that it can be a field of high educational value and barriers can be tackled effectively.

#EP10 - ePosters: Surgery Education

#EP10.16 (4485)

Relationship between medical students' negative perceptions of colleagues' work-life balance and their burnout in clinical clerkships

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ABSTRACT:

Background: Learners learn more by observing other people's actions or the effects of these actions than through personal experience. This study examined whether medical students' negative perceptions of their colleagues' work-life balance (NWLB) during their rotations among clinical specialties were related to burnout (BO), and the effect of sex on this relationship during clinical clerkship was evaluated.

Summary of Work: This was a prospective cohort study of medical students in clerkships. Our target population was medical students in a 2-year clerkship from September 2013 to April 2015. A routine survey was performed among students in each clinical department and recorded their NWLB and BO level. Personal data potentially related to participants' BO level such as sex and age were also collected. Descriptive analyses were used to examine all variables. All participants were free to decide whether to complete each survey; therefore, varying numbers of responses were submitted during the study period. In total, 2223 responses were obtained from 112 medical students, with each student providing an average of 20 responses. The multivariate statistical approach was employed in this study.

Summary of Results: During clinical department or specialty training of the medical students, strong NWLB was related to high BO levels during clerkship ($p < .05$), but no sex effect on the relationship was noted ($p > .05$).

Discussion and Conclusions: Our study revealed that medical students' NWLB was directly related to their BO level during a 2-year clerkship, with no sex difference discovered. Advanced socialisation and mentoring should be provided to clerkship trainees, who may be vulnerable when undergoing the transition to an unfamiliar clinical workplace.

Take-home Messages: Studies on medical education worldwide have demonstrated that medical students' perceptions and expectations of work-life balance are crucial in determining their clerkships, career expectations and choices, preferred specialties, and practice locations. The importance of policies promoting employees' work-life balance because of its social contagion effect on medical students should be emphasised.

#EP10 - ePosters: Surgery Education

#EP10.17 (6009)

Clinical Anatomy Knowledge is Better Retained than Non-Clinical Anatomy Knowledge in Medical Students

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ABSTRACT:

Background: The anatomy curriculum at the University of Malta is taught during the first two years of medical school. It is lecture and dissection based, includes core anatomy as well as clinical applications but is not formally revisited later in the course. This project aimed to determine whether clinical anatomical knowledge is better retained by students than non-clinical.

Summary of Work: 239 Year 1 to 5 students submitted voluntarily to a written test, under examination conditions, comprising 100 anatomy questions which included a combination of non-clinical and applied clinical questions.

Summary of Results: Overall test performance was best in Year 5 and worst in Year 2 (68 ± 14 vs $57 \pm 16\%$, $p=0.037$); this was also noted for non-clinical anatomy scores (70 ± 13 vs 58 ± 16 , $p=0.038$). Year 1 students performed worst in clinical anatomy questions (76 ± 12 vs 52 ± 15 , $p<0.0001$). Preclinical students performed better in non-clinical than applied anatomy questions ($+9 \pm 10\%$); Year 3 and 4 students scored equally in both ($0 \pm 9\%$), whilst final year students responded more accurately to clinical questions ($-6 \pm 6\%$; $p<0.0001$).

Discussion and Conclusions: Performance in applied anatomy questions was best in Year 5, suggesting that, although not formally revisited in medical school, anatomical knowledge is still improved by clinical contextualisation. Performance across both domains improved over the years, with clinical knowledge improving even more significantly, possibly reflecting consolidation of knowledge through application. Although much of what is taught of the anatomy curriculum in the first couple of years of medical school is not formally revisited, anatomical information is retained and improves more significantly with direct clinical relevance.

Take-home Messages: Even if not vertically integrated, anatomy should be taught in a clinical context to be better retained by future junior doctors.

#EP10 - ePosters: Surgery Education

#EP10.18 (6066)

The 5-minute surgeon: Teaching clinical skills using videos with Obstetrics & Gynecology residents

AUTHOR(S):

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ABSTRACT:

Background: Obstetrics & Gynecology (Ob/Gyn) residents are often uncomfortable performing complicated abdominopelvic operations, despite this being a key objective of residency training. Video-based surgical education bridges the gap between lack of experience and direct patient involvement. Little is known about how residents learn from surgical videos, yet there is evidence that intraoperative videography drives surgical quality.

Summary of Work: A video was created of a surgical intervention to elucidate the practical components through which video-based surgical learning occurs. Ob/gyn residents (n=10) watched this video and participated in a pre/post interview process including a 'think aloud' to determine if/how the use of the video was an effective learning tool and why. Residents commented on aspects of the video while watching the video in real-time. This was recorded, transcribed and qualitatively analyzed. Questions elucidated the practical components of video-based surgical learning and how it occurs.

Summary of Results: Participants found the video served its purpose and was a useful and effective self-directed tool to learn a surgical skill. Participants reported that had they seen this video prior to the operating room (OR), they would have been more familiar with anatomical structures in a live patient. Residents stated that the video was more useful than a simulation as it allowed learners to become comfortable with a challenging procedure and showed alternative ways of approaching surgery prior to attempting it. Beyond viewing of the video, participants reported that having repeated access to the tool would provide an effective way to reinforce skills.

Discussion and Conclusions: Participants felt that the use of video to learn a surgical skill was an important, and effective bridge between the textbook and the OR. The video gave them access to anatomy that textbooks could not. It was reaffirmed that a variety of surgical teaching methods are required in order for trainees to master a skill.

Take-home Messages: Videos as a teaching and learning tool are a useful, effective way for residents to gain surgical skills competency. The findings of this study are applicable beyond Ob/Gyn training programs and can be applied to other medical/surgical specialty environments.

#EP10 - ePosters: Surgery Education

#EP10.19 (6179)

Conversations in the operating room: the need to cultivate a learner-centric culture

AUTHOR(S):

- *Cindy Tran, McMaster University, Canada**
- Jennifer Zering, McMaster University, Canada
- Kathleen Howcraft, McMaster University, Canada
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ABSTRACT:

Background: Coaching is now emerging as a training modality in the world of medicine. However, implementations of coaching are heterogenous in surgery to date. Previous work from our group found surgical staff and trainee experiences with coaching to be inconsistent. Notably, the focus on learner-directed goals and consistent rapport that are identified as important for successful learning in the coaching literature were largely absent. Working with a number of surgical staff and trainees, we created a surgical coaching checklist to highlight these areas. In the present study, we explored the utility of this tool.

Summary of Work: Eight surgical staff and eight trainees from different surgical specialties used our coaching tool for four weeks. Trained observers captured how this tool was used in the OR using fieldnotes. The data were independently analyzed for emergent themes using content analysis by two researchers.

Summary of Results: Participants had strong interest in, and uptake of the tool. However, although the tool seemed effective at simulating feedback, creating a stronger rapport, and providing a consistent framework for learning in the OR, it was less effective at promoting the establishment of learner-centred goals than we had hoped. Trainees were much more comfortable when being told what their goals should be by the supervising staff, and seemed to prefer staff taking a more instructional role. Staff also seemed more comfortable directing, rather than coaching, learners.

Discussion and Conclusions: There is strong evidence for the importance and value of learner-centred goals. Our coaching tool was intended to help facilitate a shift away from staff-directed goals in clinical learning encounters. Despite strong support for our tool, cultural factors coupled with the challenges of balancing learner needs with the provision of clinical care seemed to remain an impediment to the adoption of learner-centred goals in the procedures which we observed.

Take-home Messages: Even with the aid of a surgical coaching tool, and engaged educators, the surgical training environment does not lend itself well to a more learner-centred culture. Coaching in surgery should be informed by a clear understanding of coach and learner roles, and the cultural changes that are required to facilitate and foster success.

#EP10 - ePosters: Surgery Education

#EP10.20 (6604)

Intraoperative Feedback: Disparity and Concordance between residents and faculty views

AUTHOR(S):

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ABSTRACT:

Background: Educational feedback on intra-operative performance is crucial in building a conducive resident training environment. The various manner and characteristics of feedback plays an important part in this. Thus the aim of this study is to establish the quality of educational intraoperative feedback practices in Singapore's National Neuroscience Institute(NNI).

Summary of Work: We adapted our survey from previous well-established feedback studies conducted in other countries. We used a 5-point Likert scale in the survey to assess quality and value of feedback, frequency and perception of importance of feedback in the 7 main areas of surgical competency. An open-ended question on most important factor for good intra-operative feedback was also included. The survey was phrased to address residents or faculty and distributed anonymously online to surgical residents and faculty members of NNI from April to June 2019.

Summary of Results: Survey response rates were 64% for Faculty (9/14) and 86% (12/14) for residents. Majority of residents are satisfied with feedback received and majority of the faculty feel the quality of the feedback was good. There was 100% concordance among residents and faculty that feedback on performance and areas of improvement were necessary and important elements when giving feedback. Both residents and faculty were also in agreement that the optimum timing for feedback to occur was immediately post-operations 90.9% and 88.8% respectively. The main disparity was in the perceived value of intraoperative feedback, with residents feeling that intraoperative teaching has more value than other feedback (72.7% agree) but faculty expresses a differing opinion (only 22.2% agree).

Discussion and Conclusions: There are differences between faculty's and residents' perception of feedback practiced in NNI. Recommendations to minimize this gap include explicit expression of feedback taking place, encouraging pro-activity, practice of communicating intended steps and setting time aside for immediate post-operative re-cap.

Take-home Messages: Intraoperative feedback is highly valued by residents but significantly undervalued by faculty leading to possible dissatisfaction of the learner with the learning process in the operating room environment.

#EP10 - ePosters: Surgery Education

#EP10.21 (6923)

What is the impact of dedicated endoscopy training list on surgical trainee's skills and progression? An evaluation from a district general hospital

AUTHOR(S):

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ABSTRACT:

Background: Competency in upper and lower gastrointestinal endoscopy (GIE) is a fundamental skill in surgical training. Previously, there has been some anxiety around surgical trainees and whether they will achieve nationally agreed standards for proficiency set up by the Joint Advisory Group (JAG) for certification process to practice independently, as recommended by the Associations of both Upper Gastrointestinal Surgeons and Coloproctology of Great Britain and Ireland.

Summary of Work: Our hospital implemented endoscopy training lists since April 2011 with a number of 25 trainees attended these training sessions. The aim of this survey was to evaluate trainees' perceptions of the GIE training list and whether it helps to improve their endoscopy skills. A survey was distributed to all doctors in training (ST3 and above or equivalent) who had been exposed to GIE training list in the last 8 years. Confidence to perform GIE was self-reported on a scale of 0-5. Responses were collated and analysed in Microsoft Excel 2013.

Summary of Results: We received 12 responses. 6 were Clinical Fellow grade, 1 was a speciality doctor and 5 were Specialist Trainee grade. Mean confidence to perform Upper GI endoscopy before and after attending the list was 2.58 (range 0-5) and 4.17 (range 3-5) respectively. Mean confidence to perform lower GI endoscopy before and after attending the list was 1.50 (range 0-3) and 3.3 (range 2-4) respectively. Survey respondents were generally content with trainer feedback (mean score of 3.75/5 (range 2-5)). 2 trainees obtained provisional JAG certification in Endoscopy. However, there was evidence from trainees that the trainee list was cancelled on occasion.

Discussion and Conclusions: Our results indicate that on the whole the training list significantly improved trainee's endoscopy skills with increased dedicated time, teaching and feedback (completing DOPS) when procedures performed. Trainees were generally satisfied with making progression in both upper and lower GI endoscopy.

Take-home Messages: Availability of dedicated training list would help surgical trainees to achieve JAG certification in endoscopy.

#EP11 - ePosters: Sustainability

#EP11.1 (4365)

Evaluation of core teaching to medical undergraduates on sustainable healthcare at Queen Mary University London

AUTHOR(S):

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ABSTRACT:

Background: Climate change and effects on healthcare and sustainable healthcare are area in which undergraduate medical education has paid little attention to this far. Sustainability in the NHS and mitigating for the health effects of climate change are emerging fields, yet to infiltrate into many areas of mainstream medical practice. The 2025 GMC curriculum has identified sustainable healthcare as a priority learning outcome.

Summary of Work: Using a critical pedagogy approach, we aimed to empower undergraduate medical students to explore current practices relating to sustainability and climate change within the healthcare sector and beyond. We developed a series of talks and workshops, to introduce climate change, its health impacts, mitigation strategies, quality improvement work in sustainable healthcare and related examples of civil society activism. Through workshops using case studies and group discussions, students were encouraged to identify areas in which they had impact upon in the health sector, barriers in the implementation of more sustainable practices and potential solutions.

Summary of Results: The evaluation of the teaching (currently in progress and to be presented at the conference) will focus on levels 1, 2 and 3 of the Kirkpatrick evaluation model through quantitative and qualitative evaluation of the teaching.

Discussion and Conclusions: Early evaluation has shown positive engagement from those who attended the teaching. However although this was core teaching that all medical students were expected to attend attendance and engagement was low and much work needs to be done to improve the perceived value and importance of education on this topic. It was also noted that methodology of addressing this politicised and challenging topic needs to be addressed to prepare educators to meet the needs, varied viewpoints and levels of engagement of students.

Take-home Messages: Planetary health and sustainable healthcare and new areas of teaching for medical undergraduates. This series of talks and workshops aims to raise the awareness on this topic as well as empower medical students to play an active role in practicing sustainable healthcare, a priority learning outcome in the 2025 GMC curriculum. The evaluation looked at how best to engage students and empower them to be actively engaged in principles of sustainable healthcare.

#EP11 - ePosters: Sustainability

#EP11.2 (4428)

Integrating planetary health and sustainable healthcare into the undergraduate medical curriculum at the University of Dundee

AUTHOR(S):

- *Tim Smith, University of Dundee, UK**
- Emily Stevenson, University of Dundee, UK

ABSTRACT:

Background: Healthy ecosystems and biodiversity provide vital life support services, without which humans cannot survive. There is also mounting evidence to support the health benefits of regular contact with nature. However, we are at a crucial point in history, in which human activities are causing such extensive ecological degradation that human health and survival is threatened. Healthcare systems are unwitting contributors to these problems, largely through their greenhouse gas emissions, waste generation and pharmaceutical pollution. It is increasingly important that future generations of doctors understand the links that exist between human health and the natural environment. Acknowledging these issues, the GMC now requires that “newly qualified doctors must be able to apply the principles, methods and knowledge of population health and the improvement of health and sustainable healthcare to medical practice.” Medical Schools have until 2020 to meet these outcomes.

Summary of Work: The University of Dundee Medical School has been delivering sustainability education for a number of years. At present this is mainly in the form of Student Selected Components (SSCs). We currently run a Planetary Health SSC entitled The Natural Health Service: ecosystems, biodiversity and human health. A second SSC allows students to undertake a Sustainable Healthcare project using Quality Improvement methodology. A further SSC focuses on Climate Change and Health. The aim now is to embed these topics throughout the entire curriculum, using a variety of learning modes, phased in over several years. Several other medical schools are also attempting to integrate sustainability into their curricula. This is a novel area and we hope that by sharing our own experiences and learning from those of other institutions, this new paradigm in medical education will develop more quickly and effectively.

Summary of Results: Includes: A Planetary Health and Sustainable Healthcare curriculum Methods of teaching, assessment and feedback Details of projects, including susQI projects

Discussion and Conclusions: Details of student feedback and our own reflections, describing what has worked well, and what has been less effective.

Take-home Messages: We will attempt to draw these lessons together in the form of a summary document/ toolkit which can be shared with other institutions attempting similar work.

#EP11 - ePosters: Sustainability

#EP11.3 (5864)

2000-2020 Developments preparing medical students to understand climate impacts on health

AUTHOR(S):

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ABSTRACT:

Background: Encouraged by the Conference theme on educational developments 2000-2020 that has been incorporated into this years AMEE program, it seems a good opportunity to report on a set of training activities designed two decades ago to help medical students understand the wide variety of environmental living conditions existing across the planet and the underlying short-term, long-term and phylogenetic adaptation mechanisms in cells and tissues to adapt to them.

Summary of Work: Problem-based learning objectives and training outcomes focus to-date on these topics: Adaptation of man to planet Earth, to extreme climates, to high altitudes, to UV-radiations, to air flights, to diving activities, to gravitational changes and, to climate change impact on health. Different educational interventions and teaching formats: A face-to-face trunk course for Medical students delivered in PBL seminars; an interprofessional e-learning elective course (intercampus) that allowed the participation of Medical students and a teacher from a remote city of Guatemala. Moreover, an Erasmus teaching-staff mobility where these contents were trained to undergraduate Medical students and postgraduate Health professionals together.

Summary of Results: 1. Since 2000. the trainees showed great interest and good development in the different educational interventions and teaching formats. 2. The training activities resulted extremely positive providing the knowledge and skills needed to develop adequate clinical interventions in a multiethnic society where extreme activities and intercontinental travelers are common and climate change impacts on health are rising. 3. Moreover, these courses supposed the training of ICT skills for trainees and a constant learning on how technology evolves since the year 2000 for trainers.

Discussion and Conclusions: Ethnic differences influence the ability to cope with environmental changes. Tackling climate change is everyones business and addressing its health impacts is a challenge for medical doctors. The e-Poster will contain a summary of these Basic Medical Education training activities, the why and how and, a set of educational videos as an example of results from student's teamwork in problem-based study-groups.

Take-home Messages: Basic Medical Education must include competencies that guarantee adequate preparation to face environmental changes and global health issues.

#EP13.1 - ePosters: Teaching and Learning - Clinical Teaching

#EP13.1.1 (4205)

The Effect of 360° Virtual Reality versus 2-Dimensional Video Reviews on History Taking and Physical Examination Skills Learning—A Randomized Controlled Trial

AUTHOR(S):

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ABSTRACT:

Background: Recent advances in virtual reality (VR) simulation, lowering the learners' cognitive load, make this novel technology well suited for the initial training of novices. Reduced heart rate variation (HRV) is associated with decreased cognitive efficiency in health. The aim of this study was to explore the effectiveness of 360° VR versus 2-dimensional (2D) video instructions to learn history taking and physical examination (H&P) skills with regards to learning outcome, cognitive load, and HRV.

Summary of Work: We randomly assigned (1:1) 64 undergraduate medical students to either a 360° VR or 2D video group (matched by age, sex, and learning style) with allocation concealment to learn H&P skills. Subsequently, the participants each performed a focused H&P with a real outpatient. Two raters used the DOPS and Mini-CEX questionnaires to assess the participants' performance blindly. The Cognitive Load Component questionnaire and a portable electrocardiogram monitor were used to measure cognitive load and HRV, respectively.

Summary of Results: All participants completed the study. The total DOPS score, physical examination and student's satisfaction scores (Mini-CEX), intrinsic cognitive load, and HRV in the 360° VR video group were significantly higher than those in the 2D video group (effect size 0.72, 0.63, 0.56, 0.67, and 0.52, respectively). Differences in the other aspects of the Mini-CEX and cognitive loads of both groups were not statistically significant.

Discussion and Conclusions: We found that although the 360° VR video instruction triggered a higher intrinsic cognitive load than the 2D video review, it helped the learners to perform physical examinations more effectively. Therefore, the amount of information clearly did not exceed their processing capacity. The 360° VR video instruction induced a higher HRV to overcome the learning task and it was also associated with higher self-rated satisfaction. In conclusion, 360° VR video instruction was more efficient and thus more satisfactory than 2D video instruction for learning H&P skills.

Take-home Messages: This study provides a high level of evidence to confirm that 360° VR video instruction can be used to more efficiently examine the body of a real patient with higher learner's satisfaction. These findings may inspire the design of 360° VR video-based training protocols to enhance competencies other than history taking.

#EP13.1 - ePosters: Teaching and Learning - Clinical Teaching

#EP13.1.2 (5375)

Variation in undergraduate clinical teaching practices across different teaching hospitals within the same medical school: a narrative review

AUTHOR(S):

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ABSTRACT:

Background: Clinical teaching in undergraduate medical education is generally delivered across a multitude of locations within the same medical school. Whilst this can lend to a great variety in learning opportunities, there is potential for inconsistency in the medical student experience. To understand the variation in clinical undergraduate medical education across different teaching hospitals within the same medical school, we undertook what we believe to be the first literature review in this area.

Summary of Work: We conducted a narrative review of the literature from 2000 to 2019. We searched the databases: EMBASE, ERIC, MEDLINE and PsychINFO. Our search looked at four key areas: 'medical student', 'teaching hospital', 'education' and 'satisfaction/evaluation'. We standardised our search across multiple databases and two researchers independently screened titles and abstracts.

Summary of Results: We summarised, and critically evaluated 11 articles. We found marked variation existed between different clinical sites within the same medical school. A majority of studies examining subjective evaluations of the clinical learning experience found significant intra-hospital variation, with many students preferring smaller hospitals rather than their larger counterparts. Four studies investigated whether the clinical placement location influenced exam performance; however, only one study found significant results.

Discussion and Conclusions: All studies identified were published before 2012, highlighting the need for further research, especially with medical education being such a rapidly evolving field. Further research should identify potential variation in clinical education through student experience rather than through exam performance, in order to avoid the confounding factors associated with objective evaluation methods; for example, more studious students achieving better exam results regardless of hospital placement location. We also encourage more research into the reasons for variation and any potential methods to standardise an equivalent minimum in the delivery of clinical undergraduate medical education.

Take-home Messages: The delivery of clinical teaching throughout various teaching hospitals within a medical school leads to inconsistencies in student experience during their clinical years. We need up to date research in this field, using subjective evaluation to identify variation in clinical undergraduate medical education. We also need further research into the reasons for variation between student experience and any potential methods to standardise the delivery of clinical teaching.

#EP13.1 - ePosters: Teaching and Learning - Clinical Teaching

#EP13.1.3 (5098)

Adaptation in clinical clerkship of medical students and factors relating to clinical performance

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ABSTRACT:

Background: Learning in medical school challenges every student to provide the most effective way of learning. Students individually adapt to the clinical environments and inevitably interact with other companies and uncontrolled factors. Therefore, study in the relating factors can point the effective way of learning and suitable environment for medical students. The study aims to discover factors that relating to clinical adaptation in the clinical clerkship of medical students.

Summary of Work: Self-administered questionnaires were used to reveal the individual perspective over the feasible influencing factors and their adaptation problems. The correlation between adaptability of medical students during their clinical clerkship, academic achievement and the influencing factors has been explored.

Summary of Results: Regarding the perceptions towards the clinical clerkship adaptation, the majority of them have agreed that a positive mindset (93.9%), the learning style (93.9%), self-responsibility (92.4%) and time management skill (90.9%) can assist them in clinical clerkship adaptability. The teaching style (90.9%) and interpersonal relationships with group members (96.9%) have also influenced their adaptation. Many students self-report that they have experienced difficulties in adaptation during the transition period (68.2%). Students in good adaptation group have academic performance better than difficulties in adaptation group. Students in good adaptation group rated family support help them in adaptation significantly more than students with difficulties in adaptation group (85.7% vs 66.7%). Whereas, they rated the role model (70.5% vs 85.7%) and clinical environment factors (63.6% vs 86.4%) significantly less than students with difficulties in adaptation group.

Discussion and Conclusions: Transitions within clinical clerkship are complex. The students with low academic performance may experience more difficulties in adaptation. The study revealed potential factors that affect the students' adaptation in their own views. Students and their family, teacher role model, and clinical environment factors have influenced student adaptation during their transition period.

Take-home Messages: Success cannot be accomplished by only oneself but also good environments. The medical school should provide competent teacher role models and supporting system for the students.

#EP13.1 - ePosters: Teaching and Learning - Clinical Teaching

#EP13.1.4 (6985)

Learning the six core competencies through non-physician shadowing for junior medical students

AUTHOR(S):

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ABSTRACT:

Background: Shadowing physicians of different specialties is frequently practiced by pre-medical students. At our medical college, a course to shadow non-physician hospital staff is arranged for junior medical students. Whether the six ACGME core competencies could be learned earlier through this course was evaluated.

Summary of Work: Fifty-one preclinical medical students were divided into small groups and visited 12 departments in turn at an affiliated hospital during their second semester in 2019. These students had to shadow nurses, respiratory therapists, physical therapists, radiographers, laboratory technicians, dietitians, pharmacists, infection-control administrators, social workers, chaplains, administrative officers and medical affairs officers. When they visited the social service department, they could serve as voluntary workers. After the course, all students had to report their gains and feed backs. Whether they could learn more about the six core competencies, namely practice-based learning and improvement (PbLI), patient care and procedural skills (PC), systems-based practice (SbP), medical knowledge (MK), interpersonal and communication skills (IPCS) and professionalism (P), was analyzed.

Summary of Results: The most learned competencies were PC from nurses (90.2%), respiratory therapists (80.4%) and physical therapists (72.5%); MK from medical radiographers (78.4%); P from laboratory technicians (86.3%), dietitians (84.3%), pharmacists (80.4%) and infection-control administrators (68.6%); and IPCS from social workers (92.2%), chaplains (90.2%), administrative officers (68.6%) and medical affairs officers (62.7%). SbP and PbLI can be learned most from nurses (72.2%) and social workers (70.6%), respectively. A gain most frequently reported was recognizing the importance of team-work (73.5%) which was observed from dietitians and pharmacists.

Discussion and Conclusions: Non-physician shadowing is good for medical students as they may learn to respect and empathize with other hospital members. Team-work and the six core competencies may also be learned outside of college at pre-clinical stage through observation and reflection. Being teachers of medical students, non-physician hospital staff may improve their performance through demonstration and feed backs.

Take-home Messages: Non-physician shadowing at hospital may be arranged for junior medical students. All the six competencies and the importance of team-work can be earlier learned.

#EP13.1 - ePosters: Teaching and Learning - Clinical Teaching

#EP13.1.5 (6996)

Teaching clinical examination skills in child neurology and pediatrics

AUTHOR(S):

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ABSTRACT:

Background: Clinical training in child neurology and pediatrics should provide skills for medical students and residents to interact with the patient and the family, assess the child's development and perform a clinical examination. Teaching large groups and with few patient contacts is a challenge for learning. In recent studies, the performance of students was enhanced by use of mobile technology compared to only print media. However, appropriate videos are not easily accessible, and the quality of videos on the internet varies.

Summary of Work: To optimize learning, we produced videos on clinical examination of a child at different ages. These videos and structured "check lists" were provided for medical students and doctors in training prior to clinical training. To evaluate how the videos influenced students' learning and self-efficacy, a web-based survey went to medical students and doctors in clinical training.

Summary of Results: Of 224 students and residents, 68 (30.3%) returned the web-based survey. Students' learning experience improved significantly, at a mean 4.25/5, and self-efficacy was enhanced at a mean 3.82/5. The videos and check lists provided a structured demonstration of the practical procedure, mean 4.15/5. Students' defined qualities of a good educational video: easy access, duration less than 5 minutes, and simultaneous text explanations and sound.

Discussion and Conclusions: Our videos and check lists for teaching of clinical skills and assessment of child development led to the students' and residents' clinical performance and self-efficacy improved significantly. We conclude that structured orientation, combined with short, easily accessible videos and check lists, improve the level of self-confidence and enhance the learning of medical students and residents in pediatrics and child neurology.

Take-home Messages: Short, educational and timely videos, provided as a part of structured orientation, enhance learning significantly.

#EP13.1 - ePosters: Teaching and Learning - Clinical Teaching

#EP13.1.6 (3765)

The Prevalence of Microaggressions in the Clinical Workplace as Experienced by Medical Students: A Questionnaire-Based Evaluation

AUTHOR(S):

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ABSTRACT:

Background: Microaggressions are brief and commonplace verbal, behavioural or contextual indignities, which may be unintentional, yet communicate hostile or derogatory prejudices (Sue, 2010). The incidence and impact of such indignities towards staff in the clinical workplace have been widely reported.

Summary of Work: The aim of this study was to explore the frequency of microaggressions towards clinical medical students and to probe whether medical students feel able to report such experiences to senior members of staff. An anonymous web-based survey was distributed to all fifth and sixth-year medical students at the University of Cambridge (n=544). The survey asked whether the student had experienced any form of microaggression (as defined by Sue (2010) in the clinical workplace, and if so, what the microaggression was directed towards, with regards to race, gender, sexual orientation or 'other'. The survey also explored whether the incident was raised with a senior.

Summary of Results: The response rate was 15.6% (85/544). 58.8% of respondents reported having experienced some form of microaggression in the clinical workplace, whilst 5.9% were unsure. Of those who had experienced an incident of microaggression, the most common targets of the encounter were reported to be gender (35/50), ethnicity (17/50), and sexuality (10/50). 91.1% did not report their encounter(s) to a senior.

Discussion and Conclusions: Our results show that microaggressions directed towards medical students are unacceptably prevalent in clinical practice, with gender being the most commonly reported target of such experiences. This study emphasises the need for improved support structures for medical students: medical educators in the clinical workplace should be trained to facilitate discussions about discrimination, and seminars should be implemented for medical students to offer practical and emotional support on how to deal with these encounters.

Take-home Messages: 1) The NHS zero tolerance policy applies to all, and students should not be an exception to this rule. 2) Seminars should be implemented for medical students to establish a toolkit for tackling microaggressive encounters. 3) Training should be made available for clinical supervisors to identify microaggression and support students in the face of adversity.

#EP13.1 - ePosters: Teaching and Learning - Clinical Teaching

#EP13.1.7 (3817)

1HR On-Call

AUTHOR(S):

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- Laura Horne, Blackpool Victoria Hospital, UK

ABSTRACT:

Background: A survey of Blackpool Foundation Year One (FY1) doctors found limited training in being on-call. We could not find any direct mention in Tomorrows Doctors for preparing undergraduates for this (1). Working out of hours, on-call and with a reduced workforce is a known area of angst amongst Junior Doctors. With few examples in literature (2,3), we developed a novel approach to aiding final-year medical students prepare for this. A simulated teaching programme allowed students to experience the pressures of working on-call. We hoped to emulate internal and external stressors within a safe environment.

Summary of Work: Students were each given a bleep for an hour. Supervisors role-playing a concerned nurse 'bleeped' the students. Each task was held in a folder on different wards (no patient interaction or information was involved). They were relatively simple and revolved around resourcefulness, communication and triage skills. Various resources were available including the number for the medical registrar, played by supervisors. The final station was always the unwell patient aimed at drawing the student immediately to this scenario. A facilitated feedback session explored students' positive and negative experiences, angsts and coping mechanisms (4).

Summary of Results: Over the three years of this running, results were resoundingly positive with students taking great confidence from the programme. During the open feedback session students valued using open wards and having to navigate in an unfamiliar hospital as a realistic preparation for next year.

Discussion and Conclusions: Being on-call is an inevitable part of a junior doctors progression and we believe there is scope for better preparation within undergraduate training. Overall the feedback was extremely positive, with 100% believing this should be available to all students. We have developed an effective and sustainable simulation that has shown excellent results at the time of teaching and one year on. Due to the positive reaction and low maintenance of the project, we aim to cement our teaching programme as a permanent feature for undergraduate students at Blackpool Victoria Hospital.

Take-home Messages: Experiential learning is essential to medical education. Very little focus is put on preparing medical students for their first day. The gap between theory and practice need to be bridged.

#EP13.1 - ePosters: Teaching and Learning - Clinical Teaching

#EP13.1.8 (4109)

Non-Traditional Uses of SNAPPS in a Low-Resource Academic Clinical Setting

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ABSTRACT:

Background: Bedside teaching (BT) is a critical component of clinical teaching, but has become a dying art. BT models have been developed to revive and sustain BT. An example of such BT initiatives is Summarize-Narrow-Analyze-Probe-Plan-Select (SNAPPS), a learner-centered clinical teaching model.

Summary of Work: This was the third phase of a three phase study aimed to optimize the learning and teaching on paediatric ward rounds at Princess Marina Hospital in the Department of Paediatrics, University of Botswana, which uses action research design and mixed methods approach for data capture and analysis. In August 2018, the SNAPPS BT model was introduced to the Department of Paediatrics. Thereafter, weekly “SNAPPS debriefs”, a mixed collection of open-ended question surveys, semi-structured interviews and critical narratives, were collected from trainees and faculty using SNAPPS on their ward rounds. Inductive analysis of the SNAPPS debriefs collected from August 2018 – February 2019 was performed.

Summary of Results: Several non-traditional uses of SNAPPS were identified from the SNAPPS debriefs, including: 1) partial use of SNAPPS, 2) flexible entry points into SNAPPS, 3) the use of SNAPPS to solve acute clinical problems, 4) the use of SNAPPS by the faculty to unpack their own clinical thinking in a structured way, 5) the use of SNAPPS for mapping the expanded role of the physician, and 6) the use of SNAPPS and its influence on patient care.

Discussion and Conclusions: The introduction of a learner-centered BT model within a low-resource, academic clinical setting resulted in several alternative, non-traditional uses of SNAPPS. Most notably was the use of SNAPPS to provide a structure for physician role-modeling, discussion beyond medical knowledge, and its positive influence on patient care.

Take-home Messages: This unexpected flexibility and potential advanced uses of SNAPPS promotes its use, especially in clinically challenging teaching environments.

#EP13.1 - ePosters: Teaching and Learning - Clinical Teaching

#EP13.1.9 (4556)

Connecting context and theory in team training of clinical skills and reasoning for medical students in their 3rd year - it makes it stick!

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ABSTRACT:

Background: Learning and training management of serious and acute conditions is one of the challenges in early undergraduate medical education. Due to the students' limited theoretical and practical clinical skills, team based simulation activities have been considered less valuable. In this project we wanted to explore the use of context based simulation scenarios and curricular-context based team activities with structured feedback concerning communication skills, theoretical and performance skills.

Summary of Work: Students in the first major clinical course (year 3 in the Medical program), were offered the opportunity to train 2-3 scenarios built on the written exam that they recently had passed. Patient safety, communication skills and medical management were trained and the students were formatively supported by using criteria based frameworks. They were also observed by their peers and were given oral feedback on their communicative and clinical skills. The students were then asked to fill in a questionnaire on how the activity contributed to practical application of theoretical knowledge. Parallel to the context based team activity the students were offered the possibility of self-directed training (supported by instructional videos) of simple procedures such as venous puncture, intramuscular injection and arterial puncture (on simulators).

Summary of Results: All students of two consecutive courses (n=71) were offered the possibility to participate in the extra curricular context based activities, 60 (85%) chose to participate. 100% of the participating student reported that the context based activity contributed to their clinical skills. The students were more positive towards the team activity than the simple procedural training. Commenting freely a majority of the students suggested that the context based activities should be made compulsory.

Discussion and Conclusions: Especially early in medical training the unfamiliar clinical environment can be intimidating and be restraining on the students learning capacity. Scenario training designed to overcome the restraints and let the student work at its potential facilitate the learning. Scenario training of clinical skills can be an effective learning activity if based the students previous experience and theoretical knowledge.

Take-home Messages: Practie makes theory stick!

#EP13.1 - ePosters: Teaching and Learning - Clinical Teaching

#EP13.1.10 (4921)

Bridging the 'Know-Do Gap' in Transitioning to Clinical Practice : A Qualitative Study of Medical Students' Perspectives

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ABSTRACT:

Background: The transition from pre-clinical to clinical phase is often expressed by medical students as one of the most 'troublesome' periods. Students must adapt to changes in pedagogy from class rooms to clinical context, as well as, socialization with healthcare providers, patients and their families. This process of professionalization is an integral part of becoming a physician. A 2-week Introduction to Clinical Medicine course has been implemented to facilitate this transition. Little is known whether or how this course prepares students for entering the clinical phase.

Summary of Work: We explored how medical students perceived their experiences during their transition from pre-clinical (3rd Year) to clinical phase (4th Year) through focus groups interviews with qualitative thematic analysis. A purposive sampling of 12 students from 4 clinical rotations totaled 48 participating students. Three analysts independently coded the transcripts and written comments from each focus group session, and discussed to derive agreements on their interpretation. Overarching themes of students' perspectives were created iteratively through triangulation of data from all rotations to establish credibility. Member checking with students ensured dependability of the results.

Summary of Results: Themes and sub-themes were identified and synthesized into a conceptual framework. Five themes were elaborated: 1) perceived anxiety, 2) knowledge and skills, 3) clinical supervision, 4) clinical reasoning, and, 5) patient encounters.

Discussion and Conclusions: The students' perspectives revealed troublesome areas and enriched social interactions as critical parts of professionalization. Students expressed anxiety due to lack of confidence in fundamental knowledge and practical skills. Students grappled with application of knowledge to clinical practice (i.e. know-do gap) of diverse patient conditions. The positive experiences from exemplary teaching and supervisions provided by dedicated clinical teachers and residents were highlighted. Considering learning needs and the strengths of clinical teaching, emphasis on teaching clinical reasoning by experienced clinical teachers should be one of the keys to preparing students to apply prior knowledge into clinical practice.

Take-home Messages: Deep understanding of students' perspectives informs further design of the curriculum to help medical students bridge the know-do gap as they transition to clinical practice.

#EP13.1 - ePosters: Teaching and Learning - Clinical Teaching

#EP13.1.11 (5103)

Think Pre-Assessment

AUTHOR(S):

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ABSTRACT:

Background: The pre-assessment clinic allows students to evaluate and link already known knowledge to actual clinical scenarios and decisions. It is an underutilised ambulatory care teaching resource.

Summary of Work: A three hour education session was designed to teach second year postgraduate medical students about pre-assessment. The session was structured around two cases and students would attend the clinic in pairs. The first history would be taken by the facilitator and the second by the students, who could then be involved in any examinations and investigations. Before and after each consultation there would be a discussion around the fitness for surgery, optimisation of long term conditions and what investigations were appropriate. At the end of the session students were given an information document.

Summary of Results: Information from a pre course questionnaire showed that 88% of students had never been to a pre-assessment clinic. They were also asked what they would like to learn from the experience. The main learning points were: • consent and what happened in clinic, • what pre assessment entailed and how to advise patients, • what could prevent surgery happening, They were also asked who ran the clinics, with 78% of students correctly answering nurses. The session was well received by students, with average satisfaction rating of 81/100. Feedback from the session stated that the students would like more patient and practical experience.

Discussion and Conclusions: • Students' previous experience and knowledge of pre-assessment at second year is poor. • The students enjoyed and felt the session was useful to their learning. • To improve the students' experience, it may be appropriate for the students to take both histories, or another patient could be involved so that each student could to take an individual history. • Due to their poor knowledge of pre-assessment, completing some pre-course work may be appropriate.

Take-home Messages: The pre-assessment clinic is an underutilised resource and can be very beneficial to a medical students learning. Maximising student interaction and participation is vital for an immersive and beneficial experience.

#EP13.1 - ePosters: Teaching and Learning - Clinical Teaching

#EP13.1.12 (5725)

What is the benefit of clinical placement?

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ABSTRACT:

Background: The Clinical Learning Environment (CLE) is a significant but complex determinant of student learning. Determining the exact benefit of clinical placement is challenging as the CLE is a coalescence of numerous different factors that affect learning. We sought to assess the value of clinical placement by answering the following questions: 1. Does increased exposure to the CLE correlate with higher attainment in formative assessment? 2. Does the nature of clinical placement (i.e. medical vs surgical) influence how well students answer questions related to that specific specialty?

Summary of Work: We invited 30 medical students (n=30) undertaking their clinical placements at Chelsea and Westminster hospital to participate in answering a 5 question MCQ test conducted on a weekly basis over the course of nine weeks. In total, students answered 45 question. All participants were Imperial College London Year 3 medical students at attached to either a medical or surgical firm. Medical students were required to sign a register on each day they attended placement. The correlation between attendance and MCQ scores was assessed using Pearson Rank Correlation coefficient. 95% Confidence intervals and a P value were also calculated.

Summary of Results: There is a positive correlation ($r=0.46$) between attendance at clinical placement and attainment in formative MCQ assessment. This relationship is statistically significant ($p<0.05$, CI 0.29-0.64). For both medical and surgical MCQ questions, we found no statistically significant difference in attainment between students attached to medical firms and those attached to surgical firms.

Discussion and Conclusions: The results of this study demonstrate that better attendance on placement correlates with improved outcomes in formative MCQ testing. However, this relationship is independent of the type of clinical placement being undertaken, implying that is not the nature (i.e medical or surgical) of clinical placement that underpins the better attainment.

Take-home Messages: Increased exposure to the CLE has a positive impact on student attainment. However, more research is needed to determine the exact nature of this benefit as well as the impact the different aspects of the CLE has on learning and outcomes

#EP13.1 - ePosters: Teaching and Learning - Clinical Teaching

#EP13.1.13 (5743)

The SBAR Catalyst: the use of a novel SBAR-based tool to aid communication when receiving a handover.

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ABSTRACT:

Background: Newly qualified medical graduates consistently report feeling unprepared for ‘on-call’ work, particularly with regards to handover and task prioritisation. Quickly obtaining relevant information is vital when working on-call in order to be able to safely and efficiently prioritise tasks. The SBAR communication tool is widely used to help clinicians handover clinical information to colleagues, yet no such tool exists to help healthcare professionals receive a handover – such as when junior doctors answer bleeps whilst on-call.

Summary of Work: Here we describe a pilot study that aimed to improve the way that final year medical students answer bleeps and receive clinical information using a novel communication tool called the “SBAR catalyst”. We designed a teaching session on how to approach answering bleeps using the SBAR catalyst tool that was printed onto a pocket-sized card that students could take away. The “SBAR catalyst” prompts students to ask questions in an SBAR-style format when answering bleeps. The students role-played answering a bleep from a colleague simulating a ward nurse. Their performance was assessed using a 17 point mark scheme at the start and end of the session. Written feedback was also obtained at the end of the session.

Summary of Results: Twenty final year medical students participated in the study. Students scored an average of 9.46/17 at the start of the teaching session. When the students repeated the task after teaching using the SBAR catalyst tool they scored an average of 13.6/17. Qualitative feedback from the students focused on the usefulness of the session in increasing the students’ preparedness for practice.

Discussion and Conclusions: The “SBAR catalyst” tool helped students to increase the amount of information they obtained when answering simulated bleeps which should allow students to safely prioritise tasks whilst on-call. However, its use was only assessed in the classroom environment.

Take-home Messages: The “SBAR catalyst” appears to be a useful tool for helping final year medical students to quickly gain essential clinical information as part of a bleep handover. We intend to evaluate whether the improvement we demonstrated is sustained in a stressful clinical environment.

#EP13.1 - ePosters: Teaching and Learning - Clinical Teaching

#EP13.1.14 (5848)

Medical Student Goal Setting in the Ambulatory Care Setting

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ABSTRACT:

Background: Clinical clerks completing psychiatry rotations often have an ambulatory care component. Often, clerks ‘shadow’ their preceptors and do not engage in experiential learning. This project sought to investigate the impact of an active approach to learning in the clinical setting. Specifically, the impact of goal setting on learner satisfaction and knowledge acquisition in the outpatient geriatric psychiatry setting was investigated. It was hypothesized that clerks who set active goals for their clinic experience would be more satisfied with the outpatient clinic experience. It was hypothesized that clerks who set active goals would have greater knowledge acquisition as measured by differences in post-test and pre-test scores.

Summary of Work: One hundred clinical clerks were randomized to either an active (goal setting) vs. control (no goal setting) clinical experience. Pre-tests and post-tests covering basic knowledge in geriatric psychiatry were designed by the investigator. A learner satisfaction questionnaire was designed. These measures were completed by participating clerks during the allotted clinic time. A paired t-test was used to determine if there were significant differences in post and pre-test scores for the clerks in each arm of the study. An independent t-test was used to see if there was a significant difference in post and pre-test scores between the active and control group.

Summary of Results: No significant differences were found either within each group or between the groups. There was no satisfactory significant difference in learner satisfaction in the groups. Future studies might address whether changes in interviewing skills or attitudes towards psychiatry occurred.

Discussion and Conclusions: Engaging in goal setting might improve learner satisfaction with the outpatient geriatric psychiatry experience. But it does not appear to result in knowledge acquisition as measured by changes in pre- and post-test scores.

Take-home Messages: Goal setting may not be the best approach for medical students in the ambulatory care context.

#EP13.1 - ePosters: Teaching and Learning - Clinical Teaching

#EP13.1.15 (5882)

Undergraduate medical students' stress levels in simulated communication scenarios with various degrees of fidelity

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ABSTRACT:

Background: Simulations of various degrees of fidelity are an inherent part of undergraduate medical education. It is well-known that simulations pose stress to participants, however, little is known about different stress levels in different kinds of simulation.

Summary of Work: The aim of this study was to investigate the stress-level of 2nd-year medical students within their regular course on history taking. They were randomised to one of the following settings: role-play (low fidelity), SP contact (high fidelity), encounter with a real patient (reality). Psychological stress was measured before and after using standardized questionnaires (STAI, distress thermometer), and physical stress was measured before and during taking a medical history via heart rate variability (HRV).

Summary of Results: N = 128 (76.6%) students participated (81 female [63.3%]), age 22.4 ± 3.7 years). Students rated the different communication scenarios more stressful with progressing fidelity (low 7,9%, high 23,8%, real 52,4%; $p < .001$). Furthermore, students indicated significantly more stress during the sessions ($M = 41,56 \pm 8,84$) than at rest ($M = 37,84 \pm 7,64$). HRV also supported this picture. Interestingly, during the interaction, no significant correlation between the psychological and physical stress level could be shown ($p_{STAI, RMSSD} > .05$ and $p_{STAI, HF \text{ power (log)}} > .05$).

Discussion and Conclusions: Practicing how to take a medical history is a stressful situation for medical students. The intensity of stress – psychologically as well as physically – seems to be aligned with progressing degree of fidelity. It is still an ongoing debate whether stress helps or hinders learning. In order to understand those complex interactions, more knowledge about different stress levels (psychological vs physical) and scenarios is necessary.

Take-home Messages: Even when practising in the protected environment of skills labs simulations do pose a psychological and physiological stressor to medical students. Students need supportive structures to positively make use of this stress and optimise their learning outcome.

#EP13.1 - ePosters: Teaching and Learning - Clinical Teaching

#EP13.1.16 (6177)

Pediatric Clerkship Students' Reflections on Value In Healthcare: A Mixed Methods Analysis

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ABSTRACT:

Background: Despite costs twice those of many developed nations, health outcomes in the US remain suboptimal. Though there has been a recent emphasis on high-value health care (HVHC), most medical schools do not have formal HVHC curricula. Our institution developed a curriculum to teach students about value improvement in pediatrics, incorporating relevant literature, Choosing Wisely lists, and a reflective writing assignment. We sought to analyze pediatric value improvement opportunities described by medical students in a reflective writing assignment within a HVHC curriculum.

Summary of Work: We used mixed methods to analyze student reflections. Quantitatively, we determined settings, diagnoses, and value categories (determined a priori based on existing literature) for each reflection. We used an inductive approach for qualitative analysis to describe student perspectives. Two investigators independently coded each reflection and then achieved consensus on each code. We analyzed 225 reflections for quantitative analysis and 100 reflections for qualitative analysis upon theme saturation. We collapsed codes and sorted them into themes via an iterative process.

Summary of Results: Value opportunities were 45% inpatient, 40% outpatient and 15% other. Respiratory (37%), infectious (15%), and gastrointestinal (14%) etiologies were most common. Predominant value categories included overtesting (ordering unnecessary tests and imaging, 49% inpatient, 59% outpatient), overtreatment (providing excessive treatment, 40% in both settings), systems issues (adverse effects due to the healthcare system, 20% inpatient only) and family relationships (providing care to preserve the physician-patient relationship, 26% outpatient only). In qualitative analysis students identified themes including the need to consider the utility and cost of screening tests, the importance of pre-test probability and most likely diagnosis, and the avoidance of interventions that do not change management.

Discussion and Conclusions: Pediatric value improvement opportunities are similar in inpatient and outpatient settings; overtesting and overtreatment predominate. Preserving the physician-patient relationship was identified in outpatient encounters. Qualitative analyses highlighted themes in clinical reasoning and value awareness. Value improvement narrative reflections are an active learning strategy that can feasibly be incorporated into clinical clerkships to enhance curricula in high-value care.

Take-home Messages: Students can engage in active learning, identifying opportunities for value improvement during their clinical experiences.

#EP13.1 - ePosters: Teaching and Learning - Clinical Teaching

#EP13.1.17 (6317)

«When you feel “trygg”, it is easier to ask questions” – students’ perspective on how clinical supervision impacts their learning

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ABSTRACT:

Background: Medical students need to be prepared to function in clinical settings upon graduation. To prepare them for this, medical schools typically provide supervised clinical educational activities. Medical students’ rating of supervision quality in the clinical context has proven to be an indicator of exam results. So, what is it about supervision that students perceive as important to their learning?

Summary of Work: The main author held semi-structured, qualitative interviews on students’ experiences of learning in and from supervised patient encounters, with medical students from the 4 Norwegian medical schools. The authors used Malterud’s systematic text condensation to analyse the data.

Summary of Results: The word “trygg”, meaning something along the lines of comfortable, confident, sense of safety and/or secure, was used by students in relation to the supervisors, patients and themselves. They expressed a desire for patients to be “trygg” and to become “trygg” clinicians themselves. They also thought that they themselves being “trygg” in the clinical situation was important to their learning behaviour and - outcome. The supervisors appearing “trygg”, could help with student’s sense of being “trygg”, and feeling that the patient was taken care of, thus opening up for student engagement and participation.

Discussion and Conclusions: Students’ extensive use of the word “trygg” signalled a state that was important to them in their learning. It encompassed the whole situation of clinical supervision and its participants – the doctor, student(s) and patient. The students’ description of “trygg” resonates with the concept of “psychological safety” which has proven important to learning behaviour and – outcome, as well as performance in the field of organisational psychology.

Take-home Messages: Students’ experience of “trygg” – which appears to be similar to the concept of psychological safety – was described by students as important to their learning.

#EP13.1 - ePosters: Teaching and Learning - Clinical Teaching

#EP13.1.18 (6622)

Identifying and Supporting Struggling Candidates in Peer-Led Basic Life Support Teaching

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ABSTRACT:

Background: In 2017 Bristol Medical School adopted a peer-led teaching approach to deliver Basic Life Support training to 1st year medical students: delivered over 3 weeks. It can be challenging to identify and record which candidates are struggling with their learning so that remedial support can be offered. We have developed a novel online scoring system to better track candidate progress, modelled on early warning score systems used in clinical practice.

Summary of Work: During training, instructors rate candidate performance at six time-points (1= inadequate demonstration of skills, 10= Perfect demonstration of skills), via an excel spreadsheet stored in a secure university shared drive. By using conditional formatting, the output display gives a real time visual indication of performance for the session lead. To improve reliability of the conditional formatting display, a repeated-measures ANOVA was performed on the scores using the analysis software SPSS and trends analysed. A binary variable was then used, classifying candidates as above or below the Mean(\bar{x})-1SD. A sub-analysis was performed to identify significant differences within this binary classification. Values are presented as \bar{x} ±SD unless otherwise stated.

Summary of Results: A significant linear trend was demonstrated ($P<0.01$) for the progression of candidates over the 3 weeks. The average session score increases from 4.47 ± 1.67 at the start to 8.33 ± 1.85 before the final assessment. The largest gain is seen between session 1 and 2 with a difference of 1.71 ± 1.12 .

Discussion and Conclusions: By examining the trend over the time, we have identified candidates requiring more support with greater ease: either singly scoring less than 1SD of the mean or the rate of improvement between sessions is below \bar{x} -1SD. We have also used our statistical analysis to improve the conditional formatting of the real time output display. By identifying these struggling candidates early and effectively we are able to offer the necessarily remedial support to ensure the development of their skills for both their assessment and for safe practice in their future careers.

Take-home Messages: The use of live scoring system with conditional formatting for a skills-based training course enables quick and effective identification of candidates needing support.

#EP13.1 - ePosters: Teaching and Learning - Clinical Teaching

#EP13.1.19 (6953)

A comparative study of undergraduate medical students' perception about Emergency Department educational environment at Sultan Qaboos University Hospital using Dundee Ready Education Environment Measu

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ABSTRACT:

Background: Emergency Department of any hospital (ED) is an appropriate educational environment to manage different acute cases but it set-up poses a challenge. At (SQUHED), local and international undergraduate medical students do clinical rotation. The survey aim is to assess the perception of educational environment at SQUH ED among students using standardised (DREEM) questionnaire to evaluate quality of teaching.

Summary of Work: This was a prospective cross-sectional study conducted at SQUH ED between 2016 and 2019. It was distributed as hard copy, then the data were analysed using SPSS. The following scores were compared between the elective and selective students: mean overall score, subscale scores and individual item scores.

Summary of Results: A total number of 77 students participated (44% elective and 56% selective). The overall DREEM score was 162(SD14.2). The mean (SD) DREEM score was 164.7(13.8) in selective students and 157.6(14.3) in the elective (p=0.12). In academic self-perception subscale, mean score was significantly higher in selective (26.95) in comparison to the elective (25.08) (p=0.024). The selective had significantly high mean scores compared to the elective students in the following individual items: The teaching is often stimulating (3.43±0.63 vs 3.00±0.79; p= 0.01); the teachers are good at providing feedback to students (3.60±0.54 vs 3.16±0.72; p= 0.004); I feel I am being well prepared for my profession (3.37±0.58 vs 3.06 ±0.61, p= 0.03); I have learned a lot about empathy in my profession (3.50± 0.55 vs 3.09± 0.36 ; p= 0.004) and my problem-solving skills are being well developed (3.49±0.55 vs 3.03± 0.73; p= 0.003).

Discussion and Conclusions: Overall, elective and selective students have same opinion about the quality of teaching provided. However, the elective students are less confident in the skills. They felt not encouraged for teaching and they didn't receive good feedback. This might be attributed to the student-to-supervisor ratio especially during summer time were the load of the elective students usually is high and most of senior faculty not around and they might be supervised by junior staff at ED.

Take-home Messages: The ED team should control the number of accepted elective students during summer period to maintain student-to-supervisor ratio to improve teaching quality for the students.

#EP13.1 - ePosters: Teaching and Learning - Clinical Teaching

#EP13.1.20 (5139)

The concept of a Clinical Task Force: Evolving and improving the quality of clerkships for Danish medical students

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ABSTRACT:

Background: Several have discussed the necessity of changes in the clerkships of medical school, and in light of these needs for changes, the concept of the Clinical Task Force emerged, which visited departments with students in clerkships. The meetings were dialogue-based and included discussions about a pre-filled self-evaluating questionnaire and the students evaluation of them. There were also made an agreement of 2-6 focus points, which they were to work on afterwards. This study's primary purpose was to investigate the effect on the students evaluations of the departments. The secondary purpose was to describe quality assessed learning points that affected the departments and clerkships in general.

Summary of Work: This study, included data of departments in internal medicine and surgery, with students in clerkship, from 1st and 2nd semester of the fourth year of medical school. The students evaluated the departments on eight parameters on a scale of 1-5, and of these, a mean score was calculated. The mean score one semester before the meeting was compared with one and two semesters after the meeting. Follow-up on the focus points was after three and 12 months. Most of these related to the evaluation parameters and were categories under these. The effect of the completed focus points was analysed by comparing the evaluation parameters they were categorised within, before and after the meeting.

Summary of Results: A meeting was established with 53 out of 61 eligible departments, and there was agreed upon 199 focus points. The mean evaluation scores insignificantly increased. The individual evaluation parameters increased for those departments who completed a focus point within this category, and two of these increases were significant.

Discussion and Conclusions: Because most of the measured outcomes increased after both one and two semesters, it indicates a tendency towards a truly positive effect, even though only two of these were significant. Besides increasing the evaluation scores, the quality assessed learning points illustrated that the Clinical Task Force also became a good viable linking element between the faculty, departments and students.

Take-home Messages: A Clinical Task Force is a pragmatic and flexible tool in evolving and improve the quality, and is implementable in many types of clerkships.

#EP13.1 - ePosters: Teaching and Learning - Clinical Teaching

#EP13.1.21 (6093)

Exploring Medical Students Perceptions of Scenarios of Public Embarrassment in Clinical Teaching Environments

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ABSTRACT:

Background: 'Public embarrassment' is the most common mistreatment of medical students identified by the Association of Medical Colleges graduation questionnaire, and contributes to high sickness absence, poor teamwork and desire to leave future employment. There is limited research into these behaviours in the UK. Our aim was to explore students' perceptions and speculations on behaviours and determine how judgements vary amongst students.

Summary of Work: A questionnaire featuring three 90-second animated videos, each portraying one of three major behaviours attributed to humiliation (shouting, hostility, intimidating questioning), was distributed among 2000 medical students via social media. Qualitative and quantitative data was collected to analyse perceptions using chi squared tests amongst age groups, routes into medicine, and training stages. Thematic analysis was undertaken of qualitative data to identify themes across the scenarios.

Summary of Results: There were 78 respondents. Shouting and hostility were deemed 'publicly embarrassing' (86%, 82%); more so than intimidating questioning (68%, $P < 0.05$). Mature students, graduates, and senior students perceived shouting as less 'publicly embarrassing' (79%, 45%, 63% respectively) than their junior counterparts (97%, 94%, 90% respectively, $P < 0.05$). Senior students were more likely to escalate being shouted at (63% vs. 26%, $P < 0.05$). Besides this, escalation was generally avoided. Respondents criticised the behaviours and felt clinicians were too pre-occupied or emulating past teachers. Advantages to learning were identified, particularly through intimidating questioning.

Discussion and Conclusions: The importance of students as legitimate peripheral participants, eliminating damaging hierarchies, and need for a culture of openness was emphasised. Perceived negative intent from clinicians and expectations of the clinical teacher predicted subsequent feelings of embarrassment and inclination to escalate. Further studies could involve inviting clinicians to discuss students' speculations on reasons for harmful behaviours.

Take-home Messages: This study highlighted the importance of teaching skills as requirements for clinicians, orientations for clinical students, encouragement of positivity towards learners with an explicit "zero tolerance" of public embarrassment, empowering students to work against stigma associated with whistleblowing and allowing clinicians to take more pride in teaching.

#EP13.1 - ePosters: Teaching and Learning - Clinical Teaching

#EP13.1.22 (6513)

Inquiring Students' Perception on their Early Clinical Exposure Experience

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ABSTRACT:

Background: Early Clinical Exposure (ECE) as a common educational model is adopted to eliminate the gap between basic and clinical science. However, a variety of organizational cultures which exist among different preclinical training environments, could affect the students' ECE experiences. This study aimed at investigating students' perception on their learning during clinical exposure under aspect of environmental and individual differences.

Summary of Work: The 50-items Dundee Ready Education Environment Measure (DREEM) is here used to assess medical students perception of learning environment. DREEM comprised five dimensions including Student Perception of Teaching (SPT), Social-Self Perception (SSP), Student Perception of Learning (SPL), Student Perception of Atmosphere (SPA), and Self Academic Perception (SAP). An internal consistency test is conducted to ensure the reliability of items in the five abovementioned subscales. Independent Sample t test is used to compare the differences between male/female students, and freshmen/non-freshmen. One-way ANOVA was employed to investigate the differences of clinical environments among three hospitals.

Summary of Results: 121 medical students (M=66, F=55) who carried out ECE in three different hospitals participated this study. Results of the internal consistency test of their DREEM responses showed an acceptable reliability: The Cronbach's α value in subscale SPL, SPT, SPA, SAP, and SSP was 0.863, 0.806, 0.909, 0.751, and 0.820 respectively. The 63 Year-1 participants (M = 25.68, SD =3.70) compared to the 58 non-freshmen (M =23.97, SD =4.24) demonstrated significantly higher scores in SSP subscale, $t(120) = 2.375$, $p < .05$. There was no significant difference between male and female participants and no difference among either of the three hospitals.

Discussion and Conclusions: With the between-group comparison, there was no significant difference in the mean score among three ECE environments in all five dimensions of DREEM. According to results of paired T test, the freshmen gave higher scores regarding to their Social-Self Perception than seniors. The senior participants in focus groups commented that it's because the supervisors gave the newcomers more attention and regarded it as appropriate.

Take-home Messages: DREEM is useful for monitoring the quality of Workplace-based learning such as early clinical exposure.

#EP13.1 - ePosters: Teaching and Learning - Clinical Teaching

#EP13.1.23 (7032)

Integrated family and Internal medicine teaching during internal medicine clerkship: a pilot study

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ABSTRACT:

Background: Most medical care is provided in primary care and outpatient settings, yet most of the teaching during medical school takes place in hospitals. In recent years, there is a trend towards shifting teaching to the community in order to reflect the real-world practice expected of medical graduates. We aimed to examine the feasibility of joint teaching by family practitioners and hospitalists and assess its' added value.

Summary of Work: This pilot study was conducted in the internal medicine ward at Shamir Medical Center affiliated to Tel-Aviv University Sackler School of Medicine. Seven 3rd year students participated in four meetings during the 14 weeks of their first clinical exposure. Each meeting was jointly led by a senior internist and a family medicine specialist. Four inpatients cases were pre-selected including: Anemia, Chronic Obstructive Pulmonary Disease, Congestive Heart Failure and Syncope. A bedside examination was followed by a discussion about the cause of hospitalization, working diagnosis, the course of hospitalization and discharge recommendations as advised by the internalist and the way they are applied by the family physician.

Summary of Results: Assessment was performed by qualitative personal interviews and a focus group for physicians and students, respectively. All participants were asked to indicate the strengths and weaknesses of the pilot and elaborate on the experience of joint teaching and its' added value. The students indicated that the integrated point of view enabled them to capture the complexity of patient care while introducing the tools and services with which to address it. All participants, students and physicians alike highly appreciated this experience and strongly expressed their will to continue and expand the project to future groups and medical domains.

Discussion and Conclusions: This limited pilot study strongly suggests that joint teaching during clerkship in the internal medicine ward is feasible and well accepted by teachers and students. It provides students a unique opportunity to deepen their knowledge while bridging the gap between hospital and community.

Take-home Messages: incorporating family physicians as tutors during internal medicine clerkship can enrich students' perspectives on the hospitalization experience and should be a part their medical education.

#EP13.1 - ePosters: Teaching and Learning - Clinical Teaching

#EP13.1.24 (3695)

Benefits of a Near-Peer-Led Practice Objective Structured Clinical Examination (OSCE) in Teaching Physical Examination (PE) Skills

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ABSTRACT:

Background: The acquisition of physical examination (PE) skills can be challenging for junior medical students. While the benefits of near-peer teaching, active learning and practice examinations are individually well-established, few have reported its combined use in the setting of teaching PEs. We conducted a near-peer-led Practice Objective Structured Clinical Examination (OSCE) to explore its effectiveness in helping junior medical students to hone PE skills.

Summary of Work: Fifty-nine second-year students underwent a mock OSCE organised by third and fourth-year students at the Singapore General Hospital. Cardiovascular, abdominal, neurological, thyroid, breast, and arterial system PEs were tested. Students rotated through stations in pairs, taking turns to be candidates and standardised patients (SPs). Near-peer tutors comprising fourth-year, fifth-year students and one junior doctor assessed candidates using a checklist before providing verbal feedback. Post-OSCE structured questionnaires were administered.

Summary of Results: All respondents agreed the mock OSCE was useful for learning PE skills (n=25), with 80% agreeing strongly. While all respondents found being a candidate useful, 8% disagreed that being an SP value-added, and 20% found practising on SPs inadequate in learning PE skills. The majority of respondents (44%) ranked senior medical students (fourth and fifth year) as their most-preferred assessor, over senior doctors (27%), junior doctors (16%) and immediate seniors (third-year students) (12%).

Discussion and Conclusions: Our findings suggest that students prefer playing an active role in learning PE skills. Mixed feedback on being an SP could reflect discomfort in being examined by fellow classmates, and challenges of realism due to their familiarity with one another. The preference for near-peer senior students may stem from their ability to create safe learning environments while also having accumulated adequate clinical experience. Future studies should aim to quantify the effectiveness of this initiative through comparative pre- and post-test scores, and focused group discussions to explore reasons underlying the preference for near-peer tutors and active learner roles.

Take-home Messages: Near-peer-led mock OSCEs can serve as effective platforms for junior medical students to learn physical examination skills. Active learning roles and having near-peer tutors as assessors may provide additional benefits to further augment the learning experience.

#EP13.1 - ePosters: Teaching and Learning - Clinical Teaching

#EP13.1.25 (6899)

The patients' perceptions of encounters with students in primary care in Sweden

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ABSTRACT:

Background: Background: Ordinary patients in primary care are involved in encounters where medical students act in the role of a doctor, but few studies examine how ordinary authentic patients perceive their role in medical students' learning. The aim of this study was to investigate how ordinary patients in primary care perceived participating in encounters with medical students.

Summary of Work: Summary of work: A qualitative study with individual interviews, using a semi-structured interview guide, with 13 patients who had just met 7th- and 9th-term medical students during their visit to primary care centre. Qualitative inductive content analysis was performed.

Summary of Results: Summary of results: Analysis of the data showed that the patients expected the students to have an open and curious mind and to examine them carefully. Some patients could perceive the student as vulnerable and insecure. There existed a need of back-up from the ordinary doctor who supervised the student. The patients tried to adapt themselves and have a focused, clear, truthful and honest communication with the student. The patients perceived that there might be no space for a student if their reason to visit was of a nature where they could feel vulnerable.

Discussion and Conclusions: Discussions and conclusions: The patients perceived their participation in the students' learning most often as positive, but the participation was not unconditional. The patient expected to be listened to with open minds and to be carefully examined.

Take-home Messages: Take home message: Primary care patients mainly perceive participation in the students' learning as positive if they are listened to, carefully examined and in a non-vulnerable situation.

#EP13.2 - ePosters: Teaching and Learning - Clinical Teaching/Clinical Reasoning

#EP13.2.1 (5069)

Can shared decision making become a self-directed learning model by changing clinicians' long term attitude to integrate evidence based concept into daily practice?

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ABSTRACT:

Background: In last few years, the effectiveness of using flipped classroom and teaching coach concepts in evidence based medicine (EBM) education were validated in our series studies. To step further, we finalized this study to describe how utilizing shared decision making (SDM) tools influence clinicians' long term attitude toward daily practices, a self-directed model.

Summary of Work: During 24-month EBM small group case-based discussion session, 32 post-EBM training postgraduates were recruited. They were instructed how to use SDM tools during their daily practice in the first beginning month. The SDM tools were developed and validated by our senior teachers. The attitude change was assessed by 5-item survey sheet with 5-points scale, as well as free responded records after their three-month rotation clinical practice session.

Summary of Results: Twenty-nine participants completed all five surveys. The results grossly revealed significant attitudes change toward utilizing SDM tool in several items within 24-month follow-up period. The rating item "Utilizing SDM tool helps in getting better understanding of EBM practice?" increased from 2.8 to 3.9. Another item "I actively integrate evidence into daily practice with familiarizing SDM tool" increase from 3.2 to 4.1. In the meantime, several free responded records confirmed attitude changing including "SDM tool inspire me looking back to current evidence with deeper understanding to patients' need, it should be able to be adjusted to meet different needs".

Discussion and Conclusions: Current systematic review showed physician express positive attitude toward SDM in clinical practice, however, there are practical problems of implementation, which include training, access to research and development of and access to tools to evidence and support decision making. There are limited approaches toward long term attitude changes in EBM practice and education. This study gave us a hint that utilization of SDM tool may lead to long term attitude change in EBM practice and education. It may result from better communication between patient and clinicians, and possible self-directed learning process. Further studies are needed to investigate if this attitude change truly improves learners' care quality and patient satisfaction.

Take-home Messages: Utilization of SDM tool facilitates long term attitude change of EBM practice in postgraduate clinicians, implying a self-directed learning model.

#EP13.2 - ePosters: Teaching and Learning - Clinical Teaching/Clinical Reasoning

#EP13.2.2 (5421)

Observed clinical reasoning skills development among preclinical students by developing a scenario

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ABSTRACT:

Background: Clinical reasoning skills are core competencies for medical doctors. Problems-based learning, team-based learning, and case-based learning have been utilized to teach clinical reasoning. In our institution, pre-clinical courses are taught in English historically for the first time in Japan. To get prepared our students for clinical clerkship, integrated courses are provided in Japanese for patient care. For this purpose, clinical reasoning courses are provided partially as an elective course. This is to describe the clinical reasoning course and students' clinical reasoning skills development over the course.

Summary of Work: A nine-week course to teach clinical reasoning skills was provided for our 138 third-year students. Among them, a total of 17 students chose the scenario development course for their elective. For the 17 students, 15 common symptoms and their pathophysiology were taught by developing a scenario by the students. Students then presented their scenario by three groups. Students' clinical reasoning skills were observed by the faculty through the presentations.

Summary of Results: Students were divided into a group of 5 or 6 students. Each group developed their own scenario for each symptom. At the beginning, students did not feel comfortable to make up some common history or scenario for the symptom. However, over the course, students started to feel comfortable to search case reports, and understand and apply semantic qualifiers to each disease. All 17 students completed the course without dropping out.

Discussion and Conclusions: To teach clinical reasoning may be challenging for preclinical students without clinical exposures. In addition to problem-based, team-based, or case-based learning, scenario-development may support students' understanding pathophysiology more deeply. Scenario development can be the form of application of the students' knowledge in pathophysiology.

Take-home Messages: Our observation is encouraging to demonstrate students' potential to become self-directed learners.

#EP13.2 - ePosters: Teaching and Learning - Clinical Teaching/Clinical Reasoning

#EP13.2.3 (5636)

What are the expectations for a longitudinal clinical reasoning curriculum? An international needs analysis by the DID-ACT project

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ABSTRACT:

Background: Clinical reasoning is an indispensable skill integral to the practice of all health professions. Deficiencies in its acquisition and maintenance lead to an increased rate of medical errors that is a major challenge faced by healthcare systems worldwide. Yet, training clinical reasoning skills is challenging because of the complex and tacit nature of experts' performance and controversies regarding how to best teach this skill in learners.

Summary of Work: DID-ACT is a three-year project co-funded by the Erasmus+ programme of the European Union in years 2020-2022 involving eight international partner institutions. The project aims to develop, implement and disseminate an adaptive clinical reasoning curriculum for healthcare students and educators. Guided by David Kerns six-step approach to curriculum development, we completed a general needs assessment that was implemented as a web survey distributed to all AMEE members. This is followed by a specific needs assessment to deepen the analysis.

Summary of Results: The 313 respondents of the international web survey highlighted a great need for a longitudinal clinical reasoning curriculum. The presence of such a curriculum was reported by 28% of respondents and the need for such stated by 85%. A gap was identified in terms of clinical reasoning teaching strategies and cognitive error avoidance. The most outstanding barriers were lack of awareness of the need for explicit clinical reasoning teaching, lack of guidelines for curriculum development and lack of qualified faculty.

Discussion and Conclusions: The general needs analysis provided data to better understand the state of clinical reasoning curricula at the global level. The specific needs assessment that follows in the project is conducted at partner institutions and includes semi-structured interviews, focus groups and additional questionnaire that will have finished in June 2020. The outcomes of the DID-ACT project are available at the project's website (www.did-act.eu).

Take-home Messages: There is a considerable interest of the health professions educators community in a longitudinal explicit clinical reasoning curriculum. The awareness of assessment procedures and teaching strategies needs to be increased on the overarching international level.

#EP13.2 - ePosters: Teaching and Learning - Clinical Teaching/Clinical Reasoning

#EP13.2.4 (5658)

Is Script Concordance Test assessing a different clinical reasoning construct compared to classic assessment tools?

AUTHOR(S):

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ABSTRACT:

Background: Script concordance test (SCT) is a valid and reliable tool to assess clinical reasoning in medical education. A clinical scenario is presented in the context of uncertainty, additional pieces of information are given and students are asked to decide whether this information increases or decreases the probability/appropriateness of the proposed diagnosis/management on a 5-point Likert scale (-2, -1, 0, +1 or +2). The answers are then compared to that of a panel of expert clinicians and scored using a weighted scoring system according to the concordance with the panel. The correlation of SCT scores with other classical modalities of assessment is not well studied.

Summary of Work: From 2016-2018, 40 SCT questions was given to the final year cohorts in the summative examinations. Scoring was done electronically. The reliability of the examination and correlation between the scores of SCT, MCQ, short-answer questions (SAQ) and objective structured clinical examination (OSCE) were analysed to investigate the evidence of criterion validity of SCT scores.

Summary of Results: The Cronbach's Alpha internal consistency reliability for the SCT scores ranges from 0.67-0.75 for the 3 cohorts. The bivariate correlation (r) between SCT scores and scores for MCQ, SAQ and OSCE were 0.20-0.41*, 0.10-0.29 and 0.23-0.31* respectively (* $p < 0.01$).

Discussion and Conclusions: SCT scores are moderate and significantly correlated with MCQ and OSCE scores. SCT seems to be assessing a different clinical reasoning construct which is different to that assessed by MCQ/OSCE in the summative examination. Limitations of the study include the relatively small number of SCT items in the examinations and data from one medical school.

Take-home Messages: SCT could be used as an additional modality in the summative examination to assess clinical reasoning of medical students. It is relatively easy to develop, administer and mark electronically. It seems to be assessing a different clinical reasoning construct compared to other modalities of assessment.

#EP13.2 - ePosters: Teaching and Learning - Clinical Teaching/Clinical Reasoning

#EP13.2.5 (6086)

Assessing nursing students' Clinical Reasoning When Encountering Virtual Patients

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ABSTRACT:

Background: Clinical reasoning is a vital skill that is required for professional nursing practice. Training with virtual patients has been proposed as a suitable learning activity to improve clinical reasoning competence. An objective assessment of students' clinical reasoning is challenging and an instrument with the capacity to objectively visualize and evaluate learners' clinical reasoning when interacting with virtual patients is lacking. The objectives of this study were (a) to develop an assessment tool to assess nursing students' clinical reasoning skills when encountering virtual patients, and (b) determining the psychometric properties of the new instrument.

Summary of Work: The Lasater Clinical Judgment Rubric (LCJR) which has been used for assessing nursing students' clinical reasoning when encountering high-fidelity simulation (using human-like manikins) was adapted for assessing students' encounters with virtual patients. A two-phase design was used. In phase 1, the LCJR was adapted using deductive and abductive analysis. In phase 2, data from 125 students' reflections on solving two different virtual patient scenarios were included in the analysis. First, a deductive content analysis was conducted using the categories of the rubric as a lens. After that, each student's performance was quantified according to the different levels of the rubric and an exploratory factor analysis was performed.

Summary of Results: The virtual patient version of LCJR (vpLCJR), aimed to assess nursing students clinical reasoning in encounters with virtual patients was developed. The rubric includes Tanner's four phases of clinical reasoning/judgment in nursing: noticing, interpreting, responding and reflecting. The psychometric data show that the rubric has acceptable validity and reliability for assessing nursing students' clinical reasoning when encountering virtual patients.

Discussion and Conclusions: The vpLCJR has the potential to be used as a valid assessment instrument to assess various aspects as well as the level and progress of nursing students' clinical reasoning competence during encounters with virtual patients.

Take-home Messages: The vpLCJR deconstructs different aspects of clinical reasoning and provides students and faculty members with mutual parlance. This may foster feedback, discussion and a collective understanding of the concept of clinical reasoning and thereby promote learning and enhance objective assessment of students' clinical reasoning competence.

#EP13.2 - ePosters: Teaching and Learning - Clinical Teaching/Clinical Reasoning

#EP13.2.6 (6310)

Assessment for Learning: An analysis of the effectiveness of case based learning (CBL) in the development of clinical reasoning

AUTHOR(S):

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ABSTRACT:

Background: The University of Adelaide, Australia, offers a 6-year undergraduate medical program which is primarily school leaver entry. The first three years include Case Based Learning (CBL) tutorials designed to support the development of clinical reasoning. Students learn to weigh evidence, critically evaluate data, develop differential diagnoses and consider and justify next steps to progress the case. Importantly, the CBL environment encourages students to combine acquisition of knowledge with development of reasoning skills. The purpose of this study was to explore the effectiveness of a Year 1 examination that assesses the development of clinical reasoning ability.

Summary of Work: The Clinical Reasoning Examination (CRE) is completed at the end of Year 1; students are required to analyse a clinical scenario using the approaches learnt in CBL. They are required to identify significant data, use it to hypothesise about differential diagnoses and select and justify appropriate history questions to support/refute the differential diagnoses. The CRE scenario is new to students, but is based on pathologies covered across the year. This assessment provides an opportunity to measure the effectiveness of CBL at developing student reasoning, and for students to receive feedback on their strengths and weaknesses. The assessment also acts as a catalyst to drive student learning.

Summary of Results: Analysis of CRE data from 2017–19 (n= 516) indicates that students are most challenged by the aspects of the assessment where they are required to justify their choices. This applies to identification of the reasons why elements of the scenario are significant (24% failed), and in justifying appropriate history questions (23% failed). Students were able to provide appropriate differentials, however this may correlate with the limited scope of Year 1 CBL cases, and therefore limited differential diagnoses for students to consider.

Discussion and Conclusions: Despite the majority of students passing the CRE overall due to high performance in other components of the assessment task, there is a subset of students (n=35) who find it challenging to develop the thinking processes required for clinical reasoning, even with support provided by CBL facilitators.

Take-home Messages: The CRE provides an approach to assessment of CBL which emphasises the development of student reasoning ability.

#EP13.2 - ePosters: Teaching and Learning - Clinical Teaching/Clinical Reasoning

#EP13.2.7 (7161)

Improving the Competency in Interpersonal and Communication Skills by Participating of Shared Decision Making Teaching Program for Post-Graduate Year Student

AUTHOR(S):

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ABSTRACT:

Background: The Accreditation Council for Graduate Medical Education (ACGME) has mandated that all residency programs should teach and assess six competencies. “Interpersonal and communication skills” is one of the difficult and challenging competencies. Shared decision making (SDM) with the assist of patient decision aids (PDAs) is a way to provide information to patients and to involve them in making decisions about their treatment. The designed PDAs will lower decisional conflict scores and decision regret scores of the patients. Earlier exposure to SDM may help post-graduate year (PGY) students to promote their “interpersonal and communication skills”.

Summary of Work: We developed a SDM teaching program for PGY. During the training year, they were asked to discover clinical issues which are difficult to make decision by the patients, then they were trained to develop a patient decision aids and applied it clinically. After a six-month period, half of the PGY completed the training course (SDM group), and the other half of PGY were waiting for participating in the program (non-SDM group) during the research period. We compared the effects of SDM teaching program between the two groups based on the survey findings.

Summary of Results: Evaluation surveys were completed by 11 PGY in SDM group and 13 PGY in non-SDM group. General satisfaction was evaluated using a five item Likert scale (1 = strongly disagree, 5 = strongly agree). When compared with the non-SDM group, more PGY in the SDM group agreed that SDM are important in clinician-patient communication (mean \pm standard deviations, 4.00 ± 1.04 versus 4.63 ± 0.48), helpful in increasing the competency of interpersonal and communication skills (3.69 ± 1.07 versus 4.55 ± 0.50), and can improve the ability in developing PDAs (3.54 ± 1.15 versus 4.64 ± 0.48).

Discussion and Conclusions: Our study supported the efficacy of SDM teaching program in helping PGY to apply SDM in the future. Therefore, we suggest PGY students to join the SDM teaching program to enhance their communication skills and enrich their clinical experience.

Take-home Messages: Teaching PGY students the concept of SDM and training to develop PDAs is important for promoting interpersonal and communication skills.

#EP13.2 - ePosters: Teaching and Learning - Clinical Teaching/Clinical Reasoning

#EP13.2.8 (6259)

How to Write Medically: A Creative Writing Workshop for Trainees

AUTHOR(S):

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ABSTRACT:

Background: Writing workshops have recently been used to increase critical reflection in medicine. Yet few studies have looked at the benefits of creative writing, the literary techniques relevant to medicine, and the clinical effect of writing.

Summary of Work: A four-month course was created alongside an author and a neurologist. 11 were selected. Workshops consisted of pre-reading, interactive lectures, writing prompts, and a discussion of the participants' pieces, for a total of two hours. Data was collected on pretest and post-test skill-level, frequency of writing, confidence, empathy, and perceived relation to patients. Statistics were calculated with SPSS25, with U-Mann Whitney for non-normal distribution. Qualitative data of open-ended questions was coded using thematic analysis.

Summary of Results: 80.2% reported a subjective increase in confidence in their writing skills. Frequency of creative writing immediately after and 1 month after the intervention increased by 89% and 80% respectively. Empathy was self-observed to increase by 60%, as well as dealing with uncertainty by 75%. 90% of participants reported that they could better understand patients, with their self-reported clinical communication improving by 73%. All (11/11) stated the course had utility and should be widely applied in medicine. 54% were able to publish their work in peer-reviewed journals after 1 month, of which 81% had never tried before the class.

Discussion and Conclusions: Literary focused writing workshops improve self-reported assessments of medical competencies, objective measures of creativity, and opportunities to publish that differ from traditional scholarship. Moreover, these elements may reflect patient-important values, and work to bring them out to medical practice.

Take-home Messages: Writing workshops are preferred by medical students to other reflective outlets. Finding a means to write creatively increases self-perceived consciousness, clinical practice, and dealing with the reality of medicine, from uncertainty to scholarship necessary.

#EP13.2 - ePosters: Teaching and Learning - Clinical Teaching/Clinical Reasoning

#EP13.2.9 (6565)

Reflection in action by making use of materialization

AUTHOR(S):

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ABSTRACT:

Background: In the medical field it is commonly acknowledged that professionals should have good self-reflective skills. Mostly, reflection is explicitly done by reflecting on experiences after they have passed, e.g. by writing a reflection report. Yet, one could also already instigate reflection when still in action, by making use of the method of 'materialization'. Materialization is a method in which students translate their experiences and insights into a material form. In the process of materializing, students are confronted with what they are making, stimulating reflection during the experience, i.e. reflection in action. After they have finished their materialization, students share their materialization with a group and explain what they have learned, after which questions are asked by the audience, i.e. reflection on action. The gain of this method is that an opportunity is created for a deepened reflection in a creative way.

Summary of Work: The method of materialization was piloted in a course for second year medical students. First, students had to formulate a personal question they struggled with (e.g. 'what is helping?' and 'why do I put pressure on myself?'). Then they followed a 4 ECTS art course in which they were asked to keep their question in mind. In the last phase of the course, they had to translate their insights regarding their personal question into a material form. After the course students received an evaluation questionnaire, also three students were interviewed.

Summary of Results: Very diverse materializations were made, e.g. sculpture, poet, painting and collage. Most students expressed that the method of materialization was valuable, engaging and helped them think deeper about their question. For example, one student stated that 'by first formulating a question (in fact, putting into words which was a difficult problem for me) and then materializing it, you actually investigate what is really behind that question'.

Discussion and Conclusions: The method of materialization could be an effective method to enhance self-reflection. More research is needed to gather evidence for the effectiveness of this method.

Take-home Messages: The method of materialization could deepen self-reflection in an effective and creative way.

#EP13.2 - ePosters: Teaching and Learning - Clinical Teaching/Clinical Reasoning

#EP13.2.10 (7059)

Teaching clinical reasoning to medical students: Development and evaluation of a new diagnostic reasoning teaching methodology

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ABSTRACT:

Background: Clinical diagnostic reasoning is the cognitive process employed by clinicians to reach conclusions regarding patient diagnoses, and is therefore an essential skill that must be developed by medical students. Despite this, it remains an aspect of medical education which is rarely taught explicitly, especially in the clinical environment.

Summary of Work: We set out to design a teaching tool to support the development of diagnostic reasoning in 3rd year medical students transitioning into the clinical environment. The model we developed drew on current diagnostic reasoning theory and worked to scaffold students' understanding of diagnostic process in the context of their own clinical clerkings. Two tutors used this method to teach groups of 4-5 students on an AMU attachment over 4 weeks (18 students total). Evaluation was by anonymous questionnaire, completed both pre- and post-sessions, and thematic analysis of a focus group of 4 students.

Summary of Results: All 16 students responding by questionnaire found the teaching sessions using this methodology useful and agreed there was added value over the traditional 'case presentation'. Self-reported confidence scores, given on a 10-point scale pre- and post-sessions, increased by an average of 1.5 points for eliciting a history and by an average 1.8 points for formulating a diagnosis. Thematic analysis of the qualitative data from the questionnaires and the focus group revealed central themes of explication, transformative learning, and a learner-centred environment.

Discussion and Conclusions: Development of diagnostic reasoning was seen by the students to be part of a professional transformative process, though characterised by an unconscious automaticity. The diagnostic reasoning teaching methodology trialled was well received by students and increased their reported confidence in history elicitation and diagnosis formation. Although the students appreciated the structure and processes of this method, the most crucial aspect of the teaching related to the reasoning processes being addressed in a learner-centred environment.

Take-home Messages: The development of clinical diagnostic reasoning is an important step in the transition from medical student to doctor. This development should be explicitly addressed and supported in a learner-centred teaching environment.

#EP13.2 - ePosters: Teaching and Learning - Clinical Teaching/Clinical Reasoning

#EP13.2.11 (7172)

Sharing experiences through images: an intervention that promotes reflection using mobile technologies in dental education

AUTHOR(S):

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ABSTRACT:

Background: Reflection and Critical thinking is an ability highly requested in dental students. However, programs are not finding a holistic way to measure and promote it. Besides, a gap between theory and practice is widely described in the literature, making explicit the difficulties the students face when they start treating patients after a preclinical training. Thus, following Deseing based Research (DBR) a three phase intervention trying to cope with those issues and using mobile applications was designed and applied to third-year students at a traditional University in Chile.

Summary of Work: An intervention was designed, using OneNote (Microsoft application) as a platform to share experiences, comments and reflections, based on images took by the students while working in the preclinical sessions.

Summary of Results: From 65 students that constituted the cohort, 56 (86.15%) agreed to participate in the intervention voluntarily signing the consent form. From these participants, 37 were females (66.1%) and 19 males (35.8 %). This ratio was like the ratio of the entire cohort and did not show a tendency of females to participate in the intervention. They share in total 634 images, and a their participation where diverse in their groups of work. There was a strong influence of external factors mirrored in the increment of their participation on line. Students main use of images: 1. Record data: dimensions (e.g tooth length) needed to take some decisions; name and manipulation of different materials. 2. Self-Evaluate: See new angulation of own work; Compare with others 3. Visualise: Step by step of the procedures, details, value the development of their work, distinguish errors, recognise the work of others.

Discussion and Conclusions: There are little actions that tutors can take to promote reflection on their students (i.e. asking them some questions to tackle deep considerations of their procedures) The students comments suggested that reflecting on their work help them to consider different scenarios and inform future actions they conduct.

Take-home Messages: Reflection needs to be understood as a holistic process and can be promoted through images of own work. Mobile technologies offer a high possibility to develop strategies to encourage reflection, that possible contribute to bridging the gap between theory and practice.

#EP13.3 - ePosters: Teaching and Learning - Clinical Teaching/Communication

#EP13.3.1 (4152)

What is the value of simulation training encounters for teaching communication skills in palliative care and end of life care discussions to medical students?

AUTHOR(S):

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ABSTRACT:

Background: Palliative care discussions are a challenge for many junior doctors and they often feel unprepared. Having a better understanding of the use of simulation to teach communication skills for palliative care scenarios can aid medical student teaching to help better prepare medical students for scenarios they may face during their foundation years.

Summary of Work: A literature review was performed using key themes including palliative care, terminal care and patient simulation. A total of 8 papers were identified to be relevant and these were analysed using a thematic approach.

Summary of Results: Three main themes were identified. Firstly, palliative care communication skills simulation provided a safe and supported opportunity to practice often in a realistic environment using high-fidelity simulation. Secondly, this resulted in improved competence and confidence among medical students. Finally, inter-professional research found that it improves collaboration amongst team members and better understanding of the multi-disciplinary team.

Discussion and Conclusions: Specific palliative care communication skills simulation sessions are a positive experience and of value to medical students with regards to exposure to challenging discussions and improved confidence. Arranged teaching sessions provide a safe environment to practice these challenging discussions and make mistakes as well as an opportunity to debrief. High-fidelity sessions using manikins also provide a more realistic environment. Confidence and competence is consistently improved post-simulation as measured using questionnaires pre and post teaching. However, there is a lack of longitudinal research on confidence and competence – retention of the learned skills may be poor and the quality of the learning achieved is hard to measure due to possible reporter bias. Patient-reported outcomes have not been measured or investigated. Inter-professional communication skills simulation sessions enable all team members to understand the setup and importance of a multidisciplinary approach. This is essential within palliative care due to the complexity of the patients.

Take-home Messages: - Specific palliative care communication skills simulation sessions result in improved confidence and team working skills

- Further high-fidelity simulation research in palliative care is required on much larger scales and done in a longitudinal design to assess the retention of learning among students and the overall impact on patients and families

#EP13.3 - ePosters: Teaching and Learning - Clinical Teaching/Communication

#EP13.3.2 (5877)

Medical students' perception and dealing with Patient dissatisfaction

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ABSTRACT:

Background: Almost health personnel have experienced a patient dissatisfaction during working in hospital. While medical students were the first one who expose to the complaints, The purpose of this study was to acknowledge how medical students dealing with patient dissatisfactions through reflection process.

Summary of Work: The qualitative descriptive cross sectional study was conducted in Surin Medical Education Center, Thailand. Twenty-four of sixth year medical students were included. Questionnaire is an open-ended question consisted of three major domain which are dissatisfaction events, student's perspective to the situations and how they will improve for prevention.

Summary of Results: The three leading events that medical students experienced during their practice were ineffective communication, ineptitude and excessive waiting time, respectively. Moreover, medical students were thereafter often felt unhappy and appalled by their mentor's reaction. Most of students decided to establish better communication skill using polite and pleasant conversation and explain more about treatment plan for further prevention of dissatisfied situations. Furthermore, good doctor- patient relationship and patient safety concern will also be beneficial for minimizing patient's dissatisfaction events.

Discussion and Conclusions: Although we aimed to prevent patient dissatisfaction, still it happened in various situations. However, medical students only reacted to the events with using good communication skills which unlikely handling all unpleasant events. Therefore, teaching and helping them to have better resolutions will definitely courage medical students to operate the obstacles.

Take-home Messages: Practicing dissatisfaction situation case scenario will be advantage for medical students to manage and prevent further dissatisfied events.

#EP13.3 - ePosters: Teaching and Learning - Clinical Teaching/Communication

#EP13.3.3 (5867)

Determining the Level of Confidence in Communication Skills of Thai Medical Students and Academics: An Insight for Future Improvements in Communication Skills Teaching

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ABSTRACT:

Background: While effective communication is a fundamental outcome of the Srinakharinwirot University medical curriculum, the faculty has yet to have explicit training of such skills, which could significantly affect medical students' confidence levels in communication. This research aims to compare the level of confidence in communication skills between clinical-year medical students and academics, to reflect which modalities of teaching aid in the improvement of these skills.

Summary of Work: A 29-item questionnaire obtained from literature review, grouped into verbal, non-verbal and interpersonal skills, was used to assess the level of confidence in communication, using Likert scale ranging from 1 to 5. Additional questions were constructed to explore the modes of teaching utilised by academics. 83 clinical-year medical students and 30 academics were selected via convenience sampling.

Summary of Results: Students were found to be significantly less confident than academics in verbal communication (36.1% vs 63.9%, $p < 0.001$). However, no significant differences were observed between students' and academics' confidence levels in non-verbal (63.9% vs 93.3%, $p = 0.134$) and interpersonal skills (78.3% vs 86.7%, $p = 0.322$). Comparison between sixth-year students (Externs) and academics revealed no significant difference in all 3 modalities of communication. Despite this, only 52% of Externs were confident in their verbal skills, compared to 70% of academics ($p = 0.171$). Upon further exploration, most academics employed "role-model" as a modality of teaching (53.3%), while 40.0% utilised lectures and feedback. Only a few (6.7%) used workshops to teach students.

Discussion and Conclusions: Overall, students' confidence in verbal communication was under par, especially in breaking bad news. This suggests that learning through role-model is insufficient, due to academics' relatively low confidence level, and a lack of opportunity to experience such cases, hence prompting a need for proper training courses. The percentage of "confident" Externs remained low at 52%, further emphasising the need for improvement of the curriculum. Nevertheless, this suggests an increasing trend in the level of confidence as students progress through their clinical years.

Take-home Messages: Students have low confidence in verbal communication skills, suggesting a need to improve communication skills training. Learning through simulation-based training could be further implemented.

#EP13.3 - ePosters: Teaching and Learning - Clinical Teaching/Communication

#EP13.3.4 (6473)

To be or not to be.... Can actors with intellectual disabilities help medical students gain confidence in clinical communication?

AUTHOR(S):

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ABSTRACT:

Background: St George's University of London has been running an innovative teaching session with a group of actors with intellectual disabilities (ID) for over a decade. Following the launch of new General Medical Council's Outcomes for Graduates (2018) we aimed to update this teaching to (i)increase awareness of strategies students could use to enhance communication with people with ID(ii)provide practice opportunities for communication skills with people with ID including carrying out an Annual Health Check (iii) modelling best practice for working with these individuals. We worked with an ID actor company and a clinical nurse specialist to develop the teaching session. Training was provided to tutors prior to the session.

Summary of Work: Forty-eight small (5/6 students per group) group teaching sessions for 248 third year medical students took place. The session consisted of discussion activities followed by two clinical scenario role-plays with simulated patients who were people with ID. All students were requested to complete a short paper questionnaire pre and post the teaching session. The pre-session questionnaire capturing students' confidence (self-reported along a six-point Likert scale extending from 0 - not at all confident, to 6 -extremely confident) communicating with people with ID. The post session questionnaire asked whether the student participated in the role play and their perceived confidence level to communicate with people with ID.

Summary of Results: 227 students;92 % of eligible students completed the pre and post questionnaire. Pre-session 10%(n=22) of students' high confident levels (5 or 6 on Likert scale) for knowledge of strategies to communicate with people with ID and 8%(n=19) reported high confident levels for their ability to communicate effectively with people with ID. Post session perceived confidence had increased to 67%(n=153) and 55%(n=124) retrospectively.

Discussion and Conclusions: Evaluation of this teaching session indicates that it is effective in increasing students' confidence in their communication abilities with individuals with ID These findings support the continuation of this teaching session in the next academic year.

Take-home Messages: Involving people with ID is effective in improving students confidence in communication skills an approach which will raise the quality of patient care provided by them in the future.

#EP13.3 - ePosters: Teaching and Learning - Clinical Teaching/Communication

#EP13.3.5 (5462)

SELECTED PERSONALITY TRAITS AND EMPATHY DETERMINING THE ATTITUDE TOWARDS LEARNING COMMUNICATIVE SKILLS OF THE NURSES

AUTHOR(S):

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ABSTRACT:

Background: Shaping a positive attitude towards acquiring communicative skills (CS) is a complex process, on which numerous factors have an impact. One of them is personality and emphatic attitude, which constitutes one of the significant dimensions of emotional intelligence. It is believed that the skill of understanding and identifying one's own and others' emotions is an important factor influencing decision-making in clinical practice, cooperation with a patient and also the need to improve and acquire professional clinical skills in nurses.

Summary of Work: A cross-sectional study administered to a representative group of Polish registered nurses (N = 1,010) was carried out from March to May 2018. Data for the analysis was obtained with the help of three instruments: NEO-PI-R questionnaire for the measurement of the six selected personality traits (Kindness [K], Trust [T], Assertiveness [A], Gregariousness [G], Cautiousness [C], Straightforwardness [S]), Communication Skills Attitude Scale (CSAS) for the measurement of the attitudes towards learning CS and Empathy Understanding Questionnaire of other people (KRE II) for the measurement of empathy [E]. The analysis of the influence of selected personality traits and empathy (predictors) on attitude towards learning CS (dependent variable) was conducted with the use of multiple regression.

Summary of Results: The suggested regression model was statistically significant ($F = 17.929$, $P = 0.000$, $SEE = 1.54$). The evaluated empathy and selected personality traits altogether stood only 11% variability of attitude towards learning CS. Positive influence on attitude towards learning CS was observed for E ($\beta_{std}: 0.20$) and K ($\beta_{std}: 0.16$). However negative predictors of attitude towards learning CS was observed for G ($\beta_{std}: -0.09$), C ($\beta_{std}: -0.10$), and S ($\beta_{std}: -0.21$).

Discussion and Conclusions: Shaping positive attitudes towards acquiring CS is a complex process dependent, among others, on such factors as emphatic skills and personality traits. However, the role of personality traits in differentiating attitudes is not clear. Some of them may improve attitude towards learning CS, while others may decrease it. Therefore, it seems that teaching CS requires a more individual educational approach (i.e. individualized training).

Take-home Messages: Emphatic attitude and some of personality trait influence attitudes towards acquiring CS.

#EP13.3 - ePosters: Teaching and Learning - Clinical Teaching/Communication

#EP13.3.6 (4332)

Innovative Approach to Communication Competence Enhancement and its Assessment in Medical Postgraduate Students

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ABSTRACT:

Background: The objectives of the study are to present methodological grounds for innovative approach to communication competence (CC) enhancement that would (i) be consistent with the expectations of the state and potential employers, (ii) raise competitiveness of future medical specialists, (iii) develop required communication skills (CommSkills) at postgraduates.

Summary of Work: Basing on the results of the questionnaire with potential employers we developed a CC model of a future academic in Medicine. It is universal and interdisciplinary in character and structures oral and written Commskills for working online/offline. CC model was implemented through CLIL, flipped classroom and scenario-based learning. Learning outcomes were assessed at communication station exam at the end of the course. Credibility of the proposed methodology was proved.

Summary of Results: We assessed CC and English language proficiency through 5 communication scenarios with two types of checklists. Comm skills checklists contained Commskills of less and more importance defined by the Delphi method. ComSkills of less importance were assessed by experts as 0 (performed) and 1 (not performed). ComSkills of more importance were ranged 0 to 2, where 0 is 'not performed', 1 is 'poorly performed' and 2 is 'well performed'. Language skills checklists evaluated pronunciation, lexis, grammar and language-in-use. Statics obtained showed, that CLIL method increased language proficiency, flipped classrooms stimulated self-study work and scenarios enhanced CC.

Discussion and Conclusions: Proposed CC enhancement program came up with positive and negative outcomes. Positive outcomes are: - CC enhancement program facilitates PhDs integration into global academic community; - high satisfaction level of students with their learning outcomes from the modernized discipline can drive them to ongoing self-development in the field; - pedagogic design of CC enhancement program removed students' psychological barriers. Negative outcomes (unfamiliar format of the tasks, time-consuming process of class preparation etc.) challenge us for searching methods to improve the program 2019-2020 academic year.

Take-home Messages: Modern Communication Competence of academics in medical area should be accepted and taught to postgraduate students at an interdisciplinary level with employment of best teaching practices and methods.

#EP13.4 - ePosters: Teaching and Learning - General

#EP13.4.1 (5775)

Pearls on a postcard

AUTHOR(S):

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ABSTRACT:

Background: Reflective practice is an essential aspect of both undergraduate and postgraduate medical education. It improves self-awareness and can shape future experiences, however these insights are not often shared amongst peers. Evidence suggests that shared reflection offers “information from multiple sources and multiple perspectives”. This could be an invaluable tool to enhance experiences between students at different stages in their training.

Summary of Work: Final year medical students from University of Bristol Medical School were asked to write a postcard stating ‘what they wish they had known’ reflecting back to their time as a third-year medical student. The postcards were then displayed to 21 third-year medical students during induction. A survey was completed to assess how valuable they felt these reflections were and whether this improved their confidence going into their clinical attachment. Reflections shared on postcards were broadly categorised into four main themes; wellbeing, career development, clinical advice and professionalism. Examples of postcard reflections included ‘talk to friends/mentors when feeling overwhelmed’, ‘you can’t know everything so don’t worry if you don’t know the answers’, ‘take care of you; maintain your hobbies and interests’.

Summary of Results: 90% of students stated this exercise improved their confidence going into their clinical attachment. The themes that were reported to be most valuable were wellbeing and clinical experiences; 86% of students found the wellbeing advice was valuable and 95% of students found the clinical experience was valuable. 33% of students made additional comment that this was positive addition to their induction

Discussion and Conclusions: This project has highlighted the value of shared reflection amongst medical students of different year groups to create a relaxed anonymous method of sharing ‘real life’ experience and provides guidance from a student perspective. We found limited evidence on shared reflection therefore this is an interesting topic for further research.

Take-home Messages: Shared reflection between students of different grades appeared to be a valuable exercise to improve confidence of medical students. Further research into shared reflection is required to further understand the value and application of this.

#EP13.4 - ePosters: Teaching and Learning - General

#EP13.4.2 (6528)

Teaching neuroscience to medical students: small-scale promotion of active learning can lead to a positive, sustained effect on performance

AUTHOR(S):

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ABSTRACT:

Background: Despite substantial evidence that active learning improves exam scores and lowers failure rates, lack of preparation time and the potential need for pedagogical expertise represent barriers to instructors' willingness to experiment with this strategy. This study assessed the effectiveness of a 'faculty-friendly' approach to neuroscience instruction in a 4-year Doctor of Medicine degree programme which was derived from the large literature on active learning techniques and did not require extensive effort or education research experience.

Summary of Work: One to two short active learning activities (ranging two to ten minutes duration) were added to each of six largely didactic introductory neuroanatomy lectures taken by four cohorts of second term medical students at one campus (campus A). This did not occur at a separate campus (campus B), where an otherwise identical course was delivered. It was hypothesized that seeding these activities into lectures would have a positive effect on performance. The instructor at campus A did not have any formal background in education research.

Summary of Results: Students at campus A who engaged in neuroanatomy active learning activities performed significantly better on related medium-difficulty test items in midterm examinations than students at campus B. Surprisingly, campus A students also performed significantly better on midterm test items linked to a later, more challenging neuroscience module.

Discussion and Conclusions: This study builds on current literature in several ways. It shows that within the framework of a traditional lecture, small scale promotion of active learning by a scientific, rather than educational, expert can change the scholastic experience for the better. It illustrates that meaningful benefits can be achieved without extensive content addition or remodelling of delivery method and, indicates that encouraging active learning strategies in early foundational topics may positively influence students' understanding of subsequent complex concepts.

Take-home Messages: Teaching using an active learning approach can improve medical students' neuroanatomical knowledge and the positive effects on performance may extend to separate, more complex concepts. Faculty fears that considerable time, effort and specific educational expertise are required may be unfounded.

#EP13.4 - ePosters: Teaching and Learning - General

#EP13.4.3 (4233)

Clinical application of flipped teaching in Medical Technologist education

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ABSTRACT:

Background: In medical technologists education, students often play a good audience but don't participate in the class. As a consequence, students lost their concentration easily. If students become speakers and teachers become the audience, students will participate more in the class and teachers can understand what students have learned. Therefore, we applied flipped teaching in Medical Technologist education to investigate if students learn more effectively

Summary of Work: The flipped learning was designed by setting up an online teaching platform, e-learning. The course content includes video recording and exams, based on the hospital standard inspection procedure. Before classes, students have to watch videos on the e-learning. At the end of the online class, students have to pass the exam in order to practice in the hospital laboratory with teachers. Finally, students will give an oral presentation on what they learn. Feedbacks will be given by teachers and other students. These courses will be evaluated with a satisfaction survey.

Summary of Results: We collected the satisfaction questionnaires from 16 students. The five-point assessment showed no dissatisfaction in the results of 5.0, 4.5, 4.5, 5 for teaching content, teaching skills, teaching attitude, overall satisfaction of the curriculum, respectively. In addition, the students feedback is also positive and grateful.

Discussion and Conclusions: The satisfaction survey and students feedback showed positive results for our flipped teaching course. However, we still require a long term observation to solid the outcome of our study. Flipped teaching depends on the interaction between teachers and students. Good interaction can create an atmosphere where everyone is willing to participate in the class. Teachers can make the teaching method more attractive, and have a more enthusiastic of teaching.

Take-home Messages: The e-learning platform allows students to have basic knowledge of Medical Technologist education so that they are able to have more time to interact with teachers, not just sit and listen in the class.

#EP13.4 - ePosters: Teaching and Learning - General

#EP13.4.4 (5318)

Effectiveness of scenario simulation combined PBL teaching in obstetrics nursing classroom

AUTHOR(S):

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ABSTRACT:

Background: The nursing education is mainly to cultivate clinically applicable nurses, this study purpose to compare the effect of scenario simulation PBL teaching and traditional teaching in the nursing classroom.

Summary of Work: This study uses two groups of pretest and posttest quasi-experimental methods, adopted random sampling. They were divided into an experimental group (scenario simulation PBL teaching) and a control group (traditional teaching). The experimental group research process is divided into four stages: the first stage, for the pre-test of evaluation of the participant obstetric nursing cognition and attitude. In the second stage, scenario simulation and problem-based teaching are carried out. In the third stage, complete literature review, concept mapping and report in the classroom. The fourth stage is to for the post-test. The control group adopted traditional teaching methods and panel reports as intervention measures. Using SPSS 20.0 for statistical analysis.

Summary of Results: A total of 87 participant were received, 41 in the scenario simulation PBLteaching group and 46 in the traditional teaching group. In the learning effectiveness, scenario simulation teaching group on the overall mean, and the post-test results are significantly higher than the pre-test results ($p = .016$; $p < 0.05$), which are statistically significant. In curriculum content, include learning motivation ($p = .000$; $p < 0.05$), literature search skills ($p = .000$; $p < 0.05$), and reflective ability ($p = .007$; $p < 0.05$), the integration of knowledge ($p = .026$; $p < 0.05$), critical thinking ($p = .009$; $p < 0.05$), Positive attitude about the content of the curriculum ($p = .024$; $p < 0.05$), which was statistically significant. In clinical practice, scenario simulation teaching understanding of obstetrical practice ($p = .035$; $p < 0.05$) and reduces the fear of obstetrical practice ($p = .034$; $p < 0.05$) higher than to traditional teaching methods and reached a statistical significance.

Discussion and Conclusions: Scenario simulation PBL teaching is superior to traditional teaching in terms of learning effectiveness, course content, and improvement of clinical practice effectiveness.

Take-home Messages: Scenario simulation PBL teaching helps to stimulate learning motivation, enhance reflection ability, literature search skills, clinical concepts, and knowledge, and stimulate learning motivation, the integration of academic knowledge, and critical thinking ability.

#EP13.4 - ePosters: Teaching and Learning - General

#EP13.4.5 (6732)

Artificial Intelligence-integrated clinic tool improves student's learning experience and outcome: A pilot study

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ABSTRACT:

Background: Outpatient clinic is an important learning field for internal medicine training. The main concept of learning is “thinking process” and “clinical reasoning”. However, due to many reasons, the learning experience is not good enough. Therefore, we conducted an artificial intelligence (AI)-integrated clinic tool for medical students aiming to improve the learning experience and outcomes.

Summary of Work: There were 85 medical students participated in this artificial intelligence-integrated outpatient clinic. We implemented this AI-integrated tool for learning by using an iPad or a desktop computer. The first step is to key in the demographics and chief complaints of the patient. The second step is to ask the patient questions consecutively according to the AI tool. The third step is to write down 3 differential diagnoses by the students, and correlate with the AI diagnoses. The fourth step is to discuss with students the logic of questions by the AI tool. In this pilot study, we measured three main clinical skills, including medical interview, physical examination, and clinical judgment for students. A visiting staff tested the students and feedback to students immediately. A paired t-test was applied to compare these parameters between AI-integrated and non-AI-integrated group students

Summary of Results: In the overall performance, the clinical skills scores were better in the AI-integrated group than the non AI-integrated group. The mean score of medical interview in the two groups were 7.49 ± 0.59 vs 6.95 ± 0.57 ($P < 0.001$), physical examination 7.63 ± 0.58 vs 6.89 ± 0.62 ($P < 0.001$), and clinical judgment 8.02 ± 0.53 vs 7.54 ± 0.65 ($P < 0.001$).

Discussion and Conclusions: This AI-integrated clinic tool provided a chance for improving the medical students' clinical skills, especially in medical interview and clinical judgment. It may be an effective approach for the training of thinking process and clinical reasoning. To further improve our learning program, it may be warranted to measure the motivation, willingness, and satisfaction scores of students and physicians in the future.

Take-home Messages: Medical students can increase the ability of clinical reasoning by using the AI-integrated clinic tool. Teachers can also get more material for feedback or reflection by using the AI-integrated clinic tool.

#EP13.4 - ePosters: Teaching and Learning - General

#EP13.4.6 (6795)

“It was therapeutic!”: The Use of Rich Pictures to bring closure to medical students emotional experiences.

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ABSTRACT:

Background: Medical students often face emotionally intense experiences during their clinical training. Particularly emotional are the situations related to the moral dilemmas lived at the onset of clinical practice. In these complex situations, students have to navigate different moral values and deal with the uncertainty of never-perfect decisions. Recently, in a Rich Pictures study, we observed that the emotional reactions to moral dilemmas stay vivid in students’ minds for as long as two years. In the present study, we performed a secondary analysis of our data to explore whether the experience of drawing a Rich Picture could bring emotional closure to medical students.

Summary of Work: Thirteen undergraduate students from a Brazilian medical school made a Rich Picture followed by an interview about a moral dilemma situation they have experienced. Rich Pictures are visual tools that enhance data collection by allowing a non-verbal meaning-making process, facilitating the expression of emotions. At the end of each interview, the principal author asked students about the experience of drawing. The interviews were transcribed and analyzed following a thematic analysis protocol.

Summary of Results: Medical students showed intense positive and negative long-lasting emotional reactions to moral dilemmas. The negative emotional reactions were so intense that they were aroused again during the drawing (through crying or tapping the table). We understood the experience of students through identifying four main themes: critical reflection, re-signification of experiences, sense of emotional closure, and emotional peace. Students considered the experience of drawing important to reflect on their future professional behavior.

Discussion and Conclusions: The lengthened period of the negative emotional reactions associated with the strong residual effect indicates that students often lack a sense of closure in the process of coping with moral dilemmas. On the other hand, positive emotional reactions such as pride and happiness brought a strong sense of professional fulfillment, which stimulated students to engage with subsequent clinical experiences.

Take-home Messages: We believe that drawing and discussing Rich Pictures can help students to engage further in challenging and emotional experiences and find the moral courage to fight for their patients interests.

#EP13.4 - ePosters: Teaching and Learning - General

#EP13.4.7 (6167)

Medical students attitude towards manikin and simulated patients in high fidelity scenarios

AUTHOR(S):

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ABSTRACT:

Background: Medical simulation has gained widespread acceptance in medical education. Both, SPs and manikins, are alternatives to real patients. There are papers in the literature comparing SP with real patients or manikin with real patients and there are only few papers comparing SP with manikins. The aim of this study was to evaluate the attitude of medical students towards simulated patients and manikins in simulated teaching environment. The second objective of the study was to evaluate clinical competencies of medical students in terms of clinical communication in high-fidelity scenarios with manikin and simulated patients.

Summary of Work: 5th MD program students participated in two high-fidelity scenarios concerning differential diagnosis of acute abdominal pain (with simulated patient and manikin). Measures of attitude were collected by the confronting students directly with the studied objects (manikins and SPs) and eliciting responses about these objects. The author designed questionnaire was administered to individuals. It included 30 questions to estimate the behavioral, emotional and cognitive component of students' attitude. High-fidelity scenarios with manikins and SP were audio and video recorded. The recordings were analyzed with the communication skills checklist (53 items) based on Calgary Cambridge Guide.

Summary of Results: Of the 241 subjects who completed the questionnaire 61% were female and 39% were male. The presented study revealed a more positive attitude of students towards SP comparing to manikins. In all three components of the attitude: cognitive, behavioral and emotional, the surveyed students show the preference for learning with the participation of SP. Clinical communication skills has revealed only few significant differences between scenarios with manikins and SPs (only 8 skills out of 53).

Discussion and Conclusions: Students prefer learning with SP. Teaching in medical simulation environment cannot be based only on SPs. Students' negative attitude towards manikin need serious reflection of facilitators. In terms of teaching communication skills, the compared methods have not differed significantly.

Take-home Messages: Using very sophisticated and expensive equipment like high-fidelity manikins is not always the best method even in complex clinical scenarios. The methods - manikin or simulated patient - as itself seems not to play a significant role if teaching clinical communication is not imbedded in the curriculum in effective way.

#EP13.4 - ePosters: Teaching and Learning - General

#EP13.4.8 (4289)

Guess Who? Identifying Medical Students in the Clinical Environment

AUTHOR(S):

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ABSTRACT:

Background: Clear identification of medical students in the clinical environment is important in the safety of patient care and the maximisation of student learning through integration into the clinical team. A recent study reported that 74.3% of inpatients feel they can accurately distinguish between medical students and qualified doctors. Many hospitals have started to introduce a colour coding system for doctor's badges or lanyards, to allow their grade/competency level to be easily identified.

Summary of Work: The aim of our study was to establish how differences in identification badge and attire influence the accuracy of patient and staff identification of medical students in our local clinical environment. A convenience sample of hospital inpatients/members of staff identified at University Hospital Monklands, Wishaw and Hairmyres. Participants were shown a series of 16 photographs and asked to identify whether the individual in the photograph represented a medical student or a qualified doctor. Ethical approval was granted by University of Dundee Research Ethics Committee.

Summary of Results: 102 responses were obtained across 3 sites. 36% of respondents were patients, 32% doctors and 13% nurses. The most correctly identified photograph (84.5%) was male, smartly dressed with NHS ID badge. Significantly more respondents identified a medical student correctly with university badge and medical student badge in comparison to wearing a university badge alone. Doctors identified significantly more correct photographs than both nurses and patients.

Discussion and Conclusions: Medical students were identified most accurately when the photograph showed a female, dressed in scrubs, wearing both a university badge and medical student badge. Using both a student badge and university identification badge in combination was better than a university badge alone. Interestingly the majority of responders assumed a person without any form of identification badge was a doctor rather than a medical student, highlighting the importance of using medical student identification badges.

Take-home Messages: Doctors were significantly better than both patients and nurses, highlighting that education on how to identify a member of staff vs students should be targeted at these groups. Other methods should be investigated such as lanyards or student scrubs. However, the impact of the identifier on hygiene must be considered.

#EP13.4 - ePosters: Teaching and Learning - General

#EP13.4.9 (6418)

Testing, spacing and interleaving improve exam scores among medical students

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ABSTRACT:

Background: Throughout their education, medical students have to acquire vast amounts of knowledge. The three learning principles testing, spacing and interleaving have shown effect on long-term retention of knowledge in multiple studies. However, the experimental set-ups of such studies have been simple (e.g. learning foreign words), and evidence is lacking on the effect of these principles applied in a complete medical curriculum. In this study we wanted to investigate if the use of these three principles could promote knowledge retention among medical students.

Summary of Work: All students in five of six study years in the medical degree program at The Norwegian University of Science and Technology (NTNU) were invited to solve six tests spread throughout the spring semester 2019. Students in the fifth year have no exam and were thus not invited. Each study year received tests consisting of ~30 multiple choice questions from medical subjects being tested on their respective end-of-semester exams. Students within each study year were randomly divided into two groups, and the medical subjects were stratified by size and randomly assigned to the two groups. Thus, half of the students within a study year were tested in 50 percent of exam subjects, and the second half in the other 50 percent of exam subjects. The score on the end-of-year summative exams was used as the study endpoint. Students served as their own controls, with exam scores on tested subjects being compared to exam scores on non-tested subjects.

Summary of Results: 364 students from all invited study years completed six tests. The students achieved 2% higher exam scores on subjects in which they were tested compared to subjects in which they weren't (95% CI 0.01–0.02, $p < 0.01$). Subgroup analyses show that the effect was largest for students in the final year taking the end-of-curriculum exam (5%, 95% CI 0.03–0.07, $p < 0.01$).

Discussion and Conclusions: Students performed significantly better in tested subjects than in non-tested subjects. This indicates that applying the principles of testing, spacing and interleaving in a complete medical curriculum can improve knowledge retention among medical students.

Take-home Messages: Testing, spacing and interleaving promote learning among medical students.

#EP13.4 - ePosters: Teaching and Learning - General

#EP13.4.10 (7015)

A qualitative exploration of how the speciality of PBL tutors' impact upon their perceptions of and behaviour within PBL

AUTHOR(S):

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ABSTRACT:

Background: The Problem-Based Learning (PBL) tutor has been extensively analysed in the literature. Particular interest has been paid to the link between the tutor's intervention behaviours and student learning, and the impact of the tutor's content knowledge on PBL outcomes. Despite this, the impact of the tutor's medical speciality on the facilitation of the group has not yet been studied. Thus, this study aims to identify themes arising from how the PBL tutor's speciality impacts upon their opinion of PBL, and behaviours within PBL tutorials.

Summary of Work: This prospective qualitative study consisted of one-to-one semi-structured interviews which explored the opinions of 9 PBL tutors at the Hull-York Medical School (HYMS), a PBL-based UK institution. 5 general practitioners (GP) and 4 specialists were interviewed. All data was collected and analysed using grounded theory.

Summary of Results: Following data analysis, 5 global themes emerged: 'The role of the tutor within PBL'; 'The impact of the tutors career on their behaviour'; 'The relationship between the tutors career and the student'; 'External factors affecting the tutor's role'; 'Education and assessments'.

Discussion and Conclusions: The tutor's opinions of the role and responsibilities of the PBL tutor, alongside the limitations of current PBL assessment methods were largely congruent current data. Generally, the perceptions and behaviours of GPs and specialists were similar, however some significant differences existed. Most notable were the differing perceptions with regard to the impact of the tutor's career on their knowledge of the PBL curriculum. GPs believed that their careers resulted in superior knowledge of the PBL curriculum, allowing them to feel confident within most cases, though potentially at the expense of student self-directed learning. Alternatively, specialists frequently described feeling unconfident, unknowledgeable, and less directive within PBL tutorials, owing to their highly specialised knowledge.

Take-home Messages: This is the first qualitative study to analyse the impact of the PBL tutor's speciality on their behaviours within, and perceptions of PBL. Notable differences were found between GPs and specialists with respects to the opinions of, and behaviours within PBL. Based on these results, the study provides ten practical teaching points for improving PBL at the HYMS, and other medical schools with similar curricula.

#EP13.4 - ePosters: Teaching and Learning - General

#EP13.4.11 (6915)

Lessons learned from the TELSON project – enhancing team-based learning using virtual patients in a Physician Associate programme

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ABSTRACT:

Background: The use of virtual patients (VPs) and scenario-based learning is widespread in medical and healthcare curricula, offering the opportunity for learners to develop clinical reasoning skills in a safe environment. Team-based learning (TBL) represents a collaborative approach to learning that is well suited for preparing learners both with knowledge and the development of team skills necessary for healthcare professions. However, various strategies for integrating technology within TBL have been suggested.

Summary of Work: As part of the EC Erasmus+ funded TELSON project, the Master's in Physician Associate Studies programme at St George's, University of London are implementing and evaluating two team-based learning sessions within their curriculum, supported by a scenario delivered using VP technology. The project team had previously delivered a problem-based curriculum using VPs; feedback was gathered to compare student perceptions and attitudes towards the two contrasting educational approaches.

Summary of Results: An initial pilot provided positive feedback about the team-based learning session, while clearly highlighting areas in which the pedagogy and infrastructure could be further developed to improve the learner experience. Changes were developed in response to this feedback, and implemented in a subsequent session that was further evaluated using surveys and a focus group discussion.

Discussion and Conclusions: Team-based learning offers an extremely engaging approach to encourage active learning and collaboration amongst learners. However, it places very specific demands on both learners and educators, such that successful implementations need careful preparation. Training facilitators and preparing students is essential for the approach to work successfully, and to ensure that the stages of the process, both learning and assessment, function in a complementary fashion.

Take-home Messages: Team-based learning can provide valuable learning experiences, and well-designed use of technology within the approach has the potential to further develop a combination of important skills in learners: critical thinking, clinical reasoning and decision making.

#EP13.5 - ePosters: Teaching and Learning - Lectures/Flipped Classroom

#EP13.5.1 (4042)

A retrospective analysis of pre-clinical medical student usage and preferences for lecture capture over time at the University of Sheffield Medical School

AUTHOR(S):

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ABSTRACT:

Background: Lecture capture is the recording of an educator's presentation which is later disseminated to students via an online platform. Lecture capture has been extensively researched but there is little work concentrating on the change in its utilisation by students over time. This research analysed the lecture capture usage of pre-clinical medical students at The University of Sheffield Medical School (UoSMS). The aims were to: identify students' lecture capture usage patterns, determine whether or not they change over time and assess the impact of usage on attendance.

Summary of Work: This study utilises quantitative lecture capture usage and attendance data from a single cohort of 239 pre-clinical medical students at UoSMS over their first 2 years of study. Both data sets were extracted from the internal virtual learning platform 'Minerva'. The usage data signifies when a student accessed a lecture capture recording. Lecture capture usage was analysed both between and within academic years in proximity to assessment.

Summary of Results: Analysis showed no change in the number of lecture capture hits in Year 1 compared to Year 2. Students in Year 2 showed a significantly lower number of lecture capture hits when compared to Year 1 at one month before assessment but the opposite was true at 5 months. Both years demonstrated a significantly lower number of lecture capture hits at 1 month before assessment compared to 5 months. Correlation analysis of attendance and lecture capture usage showed no correlation in Year 1 but a significant positive correlation was found in Year 2.

Discussion and Conclusions: A differing distribution of usage in proximity to assessment between Year 1 and Year 2 suggests a developing lecture capture integration into the student's learning strategy. Significantly lower usage at increasing proximity before assessment perhaps demonstrates that students utilise lecture capture preferentially in a spaced learning strategy. The positive correlation between attendance and lecture capture hits in Year 2 suggests students utilise lecture capture to supplement live lectures and not as a substitute.

Take-home Messages: These findings suggest students use lecture capture preferentially in a spaced learning strategy and not as a substitute to the live lecture but as a supplementary adjunct to learning.

#EP13.5 - ePosters: Teaching and Learning - Lectures/Flipped Classroom

#EP13.5.2 (5747)

Smarter Faculty-Student Interactions by Smartphones: Comparisons of a Tailor-Made Interactive Response System App and Clickers

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ABSTRACT:

Background: Interactive Response System (IRS) has been used to enhance teacher-student interactions. The most commonly used classroom IRS in the past decades were “Clickers”. Recently, smartphones and Apps have evolved rapidly and have expanded classroom engagement options. This study was to compare the benefits of Clickers and a tailor-made IRS App in classroom management.

Summary of Work: In 5 consecutive semesters from 2017 February to 2019 June, an App (iKMU IRS App) designed with multiple tailor-made functions for all students in Kaohsiung Medical University (KMU), has been used as an interface connecting students’ smartphones to a web-based platform for teachers. This App was linked to academic administration database in KMU, including all courses with corresponding teachers and students. A Bluetooth radio-transmitter “beacon” was used to detect the presence of students at the specific classroom and to match the lecture and its teacher during interactions. This App had various forms of question delivering and gamified functions that allowed teacher-student interactions and feedback. User data, questionnaire survey and classroom observations were used to compare conventional Clickers and this App.

Summary of Results: During these 5 semesters, the frequency of using this App increased from 158 to 362 lectures/semester, while the use of Clickers decreased from 197 to 15 lectures/semester. By the IRS App, there were average 8274 questions/tests sent by 171 teachers to 3122 students in each semester. In addition, expense of establishing this App was 7% of the Clickers system. Teachers’ survey (n=78) showed that compared with Clickers, this App had benefits of feasibility working without collecting hardware, easier roll calling, increased student participation and feedback, enhanced formative assessment and gamifying teaching process. Students’ survey (n=121) showed benefits of convenience, enjoyment, improved attention spans, increased interactions, and decreased cheating by one user with multiple devices.

Discussion and Conclusions: These results demonstrate that IRS users in KMU have a growing preference for this App over Clickers. Compared with Clickers, this App is more affordable, convenient and versatile. In conclusion, this App helps students to more actively participate in class and facilitates a more efficient and interesting environment of interactions.

Take-home Messages: This tailor-made IRS App is a novel and valuable tool for classroom management.

#EP13.5 - ePosters: Teaching and Learning - Lectures/Flipped Classroom

#EP13.5.3 (6950)

Are we ready to move from traditional face-to-face lectures? Acceptability and preferences among a group of allied health students.

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ABSTRACT:

Background: One of the challenges with growing student cohorts is finding venues large enough to hold lectures. The aim of this study was to explore the feasibility, acceptability and preference of live, online lectures (E-lecture) in a group of allied health students.

Summary of Work: Two E-lectures were delivered to 497 students taking a common module on health systems. These lectures were delivered in weeks 3 and 4 of the first semester of the undergraduate programs. Pre-lecture instructions and materials were provided. Students were able to participate from any location of their choice. The lectures were approximately 1.5 hours long, delivered using freeconferencecall platform. Both lectures included a question and answer segment, and recordings of the lectures were made available. After the lectures, an online survey was administered to ascertain the students' preferences and acceptability of the E-lectures.

Summary of Results: 63.2% of the students (mean age 21.8years, SD 3.7; 76.4% female) responded to the survey, of which 13.1% did not participate in either E-lectures. Almost half (44.9%) reported having prior experience with E-lectures and webinars. While most (59.0%) cited no difficulties participating in the lectures, a small proportion reported technical issues such as problems joining the call (7.0%), internet connection problems (4.5%), audio (17.8%) and display issues (1.6%), and difficulty participating in the interaction section (4.1%). Overall, 84.4% rated their experience with the E-lectures between good and excellent. Two-in-3 felt E-lectures were an effective way to delivery lecture material. Those who were female and older were more likely to agree with this. However, when asked to rank options, face-to-face lecture options remained the most preferred way for them to learn, while group seminars their least preferred.

Discussion and Conclusions: Beyond venue constraints, disruptions to classroom-based delivery of lessons due to disease outbreaks and environmental issues in recent years highlight a pressing need to find alternative ways to teach. Given their ease and comfort in navigating technology these days, it is interesting to note that while students were acceptable of E-lectures, their preference is still for face-to-face lectures.

Take-home Messages: Students are acceptable of E-lectures, but still prefer face-to-face lectures

#EP13.5 - ePosters: Teaching and Learning - Lectures/Flipped Classroom

#EP13.5.4 (5810)

Using Flipped Classroom in Nursing Research Course to Enhance Critical Thinking of Nursing Students

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ABSTRACT:

Background: Nursing Research course is aimed to enhance students' critical thinking, however it is difficult to learn. Flipped classroom are student-centered and effective teaching approaches. Rarely study has identified the effects of flipped classroom on the critical thinking of students who learn Nursing Research course.

Summary of Work: Objectives. The purpose of this study was to explore the effects of flipped classroom on students' critical thinking after learning Nursing Research course. Method. This study was a quasi-experimental study with a convenient sample. It was a single group pre-test and post-test design. This research was conducted in Nursing Department of a University which was in the north of Taiwan. A total of 31 undergraduate students were recruited. The critical thinking Improvements were analyzed by using the Wilcoxon test.

Summary of Results: The total score of the critical thinking was significantly improved during the pre-test and the post-test (Wilcoxon test = -2.08, $p = .038$). Analyzing the 20 items of the critical thinking questionnaire, its 7 items showed a significantly increase between pre-test and post-test. The top one improved item is "When others make an argument, I try to find out the main assumptions underlying this argument". Its shows a significant increase from 4.10(± 0.70) at the pre-test to 4.63(± 0.93) at the post-test (Wilcoxon test = -2.92, $p = .004$).

Discussion and Conclusions: The results indicate the rising degrees of students' critical thinking, which means it would be beneficial to teach Nursing Research course with a flipped classroom.

Take-home Messages: Flipped classroom is student-centered and effective teaching approaches. It can apply in nursing education, especially a hard knowledge, such as Nursing Research Course.

#EP13.5 - ePosters: Teaching and Learning - Lectures/Flipped Classroom

#EP13.5.5 (6972)

Evaluation of voluntary attendance in workshops in relation to academic performance and overall student satisfaction

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ABSTRACT:

Background: We provide a course in oral microbiology for dental hygienists where most of the students are University enrolled and some are commissioned students. The age, background and intrinsic motivation of the students are highly diverse and their study habits and self-efficacy differs. In 2018 we changed this course from a traditional lecture-based course to a course with student-centered learning. We introduced the concept of flipped classroom, giving the students access to web-based lectures and quizzes followed up by voluntary workshops on campus. In addition, this course consists of compulsory laboratory practicals on campus to support a deeper understanding of oral microbiology. In this study we evaluated the participation in the workshop correlated to the academic performance as well as the students' satisfaction with the course format.

Summary of Work: The study compared the grades on the major course assessment for the students who attended the workshop (n=20) with the grades of the students who did not attend the workshop (n=16). In addition, an extended course evaluation form was used to study the students' satisfaction with the course format.

Summary of Results: The pass rate (either pass or pass with distinction) was 75% in both groups; though the number of students passing with distinction was higher in the group that attended the workshops. The questionnaire showed that the majority of the participating students appreciated the web-based material and those attending the workshops also found this learning model beneficial.

Discussion and Conclusions: Combining digital lectures and quizzes enables the students to learn when and where it is most suitable for them. This may lead to more engaged students and a higher pass rate. The inclusion of workshops in this model did not result in a higher pass rate, though the number of students passing with distinction was higher, which may indicate that the students attending the workshops were more motivated and achieved deeper learning.

Take-home Messages: Using digital tools in combination with workshops is a promising approach to achieve a more student-centered learning and in particular in a heterogeneous group of students.

#EP13.6 - ePosters: Teaching and Learning - Online/Games

#EP13.6.1 (4466)

Undergraduate Student Wikipedia Project: Using Wikipedia to teach educational skills

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ABSTRACT:

Background: Wikipedia is a familiar web-based encyclopaedia that can be used to develop student experience in the following areas; building digital literacy, evaluate and use research effectively, communicate effectively in writing/summarizing, writing for a non-specialist audience, exercise effective interpersonal communication skills, practice self-assessment, incorporate processing skills, conflict resolution, build individual accountability, attain familiarity with copyright laws, learn about plagiarism, problem solving and improving presentation skills.

Summary of Work: Over the last 3 years, Dental Undergraduate Students from second to fifth year have been invited to participate in a Wikipedia project. The students were then allowed to pick a dental topic of interest and divided into groups. Each group was assigned a topic expert from the staff at the Glasgow Dental Hospital that they could contact if help or guidance was needed. The groups each researched, synthesised and developed either one existing article, or created a new article on Wikipedia within the field of dental surgery.

Summary of Results: A total of 28 students took part and attended several progress meetings to discuss and share experiences. Although over 93% were at least somewhat confident that they could edit an existing Wikipedia article at the outset of the project, only 30% were aware or had even heard of the five pillars. On completion, all students used Wikipedia at least once per month, and all were at least somewhat confident that they could edit an existing article. Further, all were aware of, and could recall, the five pillars. At the end of the project, 70% students rated their overall experience good and 30% rated their experience exceptional.

Discussion and Conclusions: On completion of this student-led project it was found that editing Wikipedia pages provides students an excellent teaching experience and a chance to learn some important educational skills. They found the experience highly rewarding.

Take-home Messages: A student-led Wikipedia project provided a worthwhile educational experience. The creation of 1 new Wikipedia article and development of 6 existing articles within the field of Dental Surgery.

#EP13.6 - ePosters: Teaching and Learning - Online/Games

#EP13.6.2 (4527)

Successful Implementation of National Board of Medical Examiners Content Review in Escape Room Format for Second Year Medical Students in Longitudinal Clerkship Tracks at a 3- Year Regional Campus

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ABSTRACT:

Background: MCW-Green Bay is a three-year medical school and students start clinical clerkships at the beginning of their second year. The pediatric clerkship is a longitudinal experience with a four-week block of clinical instruction followed by one half day weekly over the following six months. The NBME subject exam happens long after the majority of clinical instruction occurs, and students found it challenging. We provided a review session of core content in the novel escape room format to enhance student's preparation for the examination.

Summary of Work: Our review covered the ten most heavily weighted categories per NBME exam specifications. The authors generated questions using common shelf review resources. The escape room format was the chosen as methodology and is a novel format not used in other areas of our curriculum. Students completed a pre- and post-survey to assess the effectiveness of the 2-hour review sessions content and format.

Summary of Results: Students reported studying 10 to 50 hours for the exam prior to the review yet they all reported feeling unprepared. Upon completing the review all students either strongly agreed or agreed the escape room format was effective, the content was pertinent, the review was necessary and enhanced their knowledge of core content, and they felt more prepared for the exam.

Discussion and Conclusions: The escape room is a unique gaming format and we postulated it would help students prepare for their examination. Student unanimously reported the escape room review was enjoyable and effective. Materials used are portable and affordable. One challenge with this format is the faculty time required to develop the materials and a comprehensive review is not possible in one two-hour session. We believe the escape room format could be adapted to cover most UME content. We plan to evaluate if our review correlated with higher participant NBME exam scores.

Take-home Messages: The escape room format is an effective, adaptable, and affordable teaching modality that engages students in learning. Students unanimously reported the escape room format was effective, the content was pertinent, it enhanced their core content knowledge, and was necessary to prepare for their exam.

#EP13.6 - ePosters: Teaching and Learning - Online/Games

#EP13.6.3 (4326)

Usability of Blended Learning Programs within Health Professions Education: A Scoping Review

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ABSTRACT:

Background: Blended learning, a pedagogical approach that combines traditional face-to-face teaching methods with technological innovations, is being implemented in training programs across health professions education (HPE). Research indicates that usability is a critical dimension to consider when evaluating blended learning programs (BLPs). Despite its importance, knowledge about usability and its consideration in this context remains lacking. The purpose of this study was to map current knowledge about how usability has been defined and examined in BLPs within HPE.

Summary of Work: A scoping review guided by the Arksey & O'Malley framework was conducted. Scopus and ERIC were searched iteratively. Screening was conducted with the use of a questionnaire guide and in collaboration with librarians and co-authors. Charted data were validated by a co-author. Quantitative descriptive analysis and qualitative content analysis were conducted by the first author. Thematic analysis was conducted by two independent reviewers. All analyses performed were discussed and validated by the whole research team.

Summary of Results: Initially, 8626 studies of potential relevance were identified. Title and abstract screening yielded 508 studies for full-text revision. Ultimately, 53 studies were included. No study explicitly mentioned the term usability. Qualitative analysis indicated that, although scholars do not employ the term usability, they do evaluate for one or more of its components. The analysis also unveiled that authors used different terms to discuss similar concepts, and ascribed different connotations to similar terms.

Discussion and Conclusions: The concept of usability was not explicitly mentioned in the retained studies. However, at least one of its components was evaluated across all 53 studies, albeit in a disparate manner. This suggests that the comparability and generalizability of evaluative research on usability in BLPs appears compromised. A conceptual map that clarifies the consideration of usability evaluation in this context was developed.

Take-home Messages: Usability is an important dimension of BLPs, though its definition and application in HPE literature remains controversial. The findings of this scoping review contribute to a better understanding of the meaning of this construct and provide a conceptual foundation for the future development of tools to evaluate it in this context.

#EP13.6 - ePosters: Teaching and Learning - Online/Games

#EP13.6.4 (5234)

Evaluating the impact of livestreaming student-led lectures and assess attitudes to distributed learning

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ABSTRACT:

Background: Imperial College London's Medical Education society (MedED) runs an annual 'Finals Lecture Series' for final year medical students consisting of 12 lectures, split between key medical and surgical topics. The series was advertised to 287 students by email regularly receiving a 50-70 person turnout. Teaching is mainly registrar-led, but lecturers vary from Foundation Year 1 to Consultants. Half of the lectures were livestreamed and subsequently available to watch on YouTube for a week's time.

Summary of Work: All feedback collected from attendees at the end of the series in 2019/2020 period was retrospectively analysed. The online feedback forms included multiple choice, 5-point Likert-type questions, with 5 indicating strong agreement, and open-ended questions.

Summary of Results: A total of 41 feedback forms were collected for the overall lecture series. 39.3% felt that having a livestream option would discourage them from attending in person, conversely 41.5% felt the opposite and the remaining 19.5% were indifferent, yielding no clear majority. 58.5% of students agreed or strongly agreed that lectures were more useful if they attended in person. In the qualitative feedback, livestream availability was very well-received, consolidating material and improving access for students in distant placements. In terms of improvement, students asked for livestreaming all lectures and better timekeeping.

Discussion and Conclusions: These results suggest livestreaming lectures in student-organised teaching as it improves student satisfaction, however, lecturers' satisfaction should also be assessed in subsequent studies. Future work should focus on meeting the needs of students by livestreaming, assessing how that impacts the physical attendance of students compared to the current attendance and how livestreaming and students' physical attendance impacts lecturers' satisfaction.

Take-home Messages: This option of delivery allows for the consolidation of material, as students can review the content delivered, and greater accessibility, especially when it may not be logistically possible to attend the lecture. Although having the option drives up student satisfaction, there is a concern for reduced attendance, posing a threat to lecturers' satisfaction.

#EP13.6 - ePosters: Teaching and Learning - Online/Games

#EP13.6.5 (7251)

Evaluation of commercially-produced medical education videos in a cardiovascular course

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ABSTRACT:

Background: Short explanatory videos are increasingly being used in medical education. They can enhance learning by applying multimedia principles as part of flipped classroom experiences, where students independently watch videos prior to interactive class sessions. Published reports of video use in medical education focus on use of faculty-created videos, but making videos takes time and effort that many faculty may not have. Purchasing videos produced by health education companies may be more practical, although there is no published evidence on how to use these commercial videos as part of a formal curriculum. This study evaluated the implementation of Osmosis videos in a cardiovascular system (CVS) course with attention to how videos aligned with self-regulated learning (SRL) strategies.

Summary of Work: All 200 first-year medical students at the University of Miami, taking the 8-week CVS course in spring 2019 were given free access to Osmosis, a commercial platform that includes videos, flashcards, and multiple-choice questions, and advised by instructors to watch 1-2 specific videos among 58 Osmosis cardiovascular videos before each classroom session. All students were emailed post-course electronic surveys (containing 23 prompts) assessing satisfaction and items aligned with SRL strategies. Viewing data were extracted from Osmosis dashboards.

Summary of Results: Overall, 60% students completed surveys. Students viewed a median of 39 videos during the course. Each video was viewed by a median of 158 students. 83% of students found Osmosis videos helpful and 80% of respondents agreed or strongly agreed that watching Osmosis videos before attending classroom sessions allowed them to reflect at a deeper level and apply the content during classroom sessions more than with traditional lectures alone. Survey responses indicated that technology-enriched learning environments primarily helped learners incorporate the SRL strategies of: environment-structuring, goal-setting, and self-evaluation.

Discussion and Conclusions: Commercial videos were feasible to implement as part of a formal CVS curriculum at low faculty effort. Students found videos acceptable and felt their learning was deepened by them. Future work is needed to determine how video-watching related to learning outcomes.

Take-home Messages: Commercial medical education videos may enhance curriculum at low faculty effort, may improve students’ learning and experience, and could offer a favorable return on investment to medical schools.

#EP13.6 - ePosters: Teaching and Learning - Online/Games

#EP13.6.6 (4232)

The role of gaming in the future of medical education

AUTHOR(S):

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ABSTRACT:

Background: At a time where content and delivery of medical education are continually changing, an important challenge for universities is determining how to teach. In recent years, game-based teaching methods are increasingly being used to educate students in a more motivational way. However, there is a lack of clarity regarding their true effectiveness.

Summary of Work: This project set out to gain a better understanding of medical educators' and students' perceptions on game-based learning. It also reviewed the evidence base for its use over more traditional teaching methods. Methods included a literature review and an online questionnaire to those involved in medical education (medical students, their teachers and medical educationalists).

Summary of Results: Literature review: The literature search highlighted a lack of high quality evidence surrounding the effectiveness of game-based learning in medical education. Online questionnaire: There were a total of 44 respondents to the online questionnaire. Responses showed that most people viewed game-based learning as being more engaging and enjoyable than traditional methods. Several respondents also felt it allowed mistakes to be made in a 'risk free' environment. However, others said it was difficult to design an appropriate game, that such an approach was time-consuming and that it was hard to ensure all learning objectives were achieved. Furthermore, many were unaware of the concept of 'game-based learning' altogether, and it was not being widely used.

Discussion and Conclusions: This project highlighted interesting opinions with some appetite for more game based learning and strategies for educators to adopt to vary teaching methods, and possibly help demotivated students remain engaged in their learning.

Take-home Messages: • Game-based teaching is engaging and enjoyable, allowing mistakes to be made in a 'risk-free' environment • The online questionnaire revealed a game-based teaching approach was not widely used, predominately due to people being unaware of the concept altogether. • There is a clear need for further research and better quality evidence on effectiveness of game-based teaching in medical education

#EP13.6 - ePosters: Teaching and Learning - Online/Games

#EP13.6.7 (4269)

Environmental Scan of Educational Games for Medical Education

AUTHOR(S):

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ABSTRACT:

Background: Educational games are digital learning resources that have been postulated to support the acquisition of knowledge, skills and behaviour. This is particularly applicable to medical education as they can provide a safe virtual environment where students and trainees can practice clinical reasoning and decision-making. Although the commercial landscape of educational games is wide, it is unclear to what proportion of available games are suitable for or based around medical education. The aim of this environmental scan is to survey the landscape of the educational game in regard to 1) commercially-available games, and 2) the design features contained within them.

Summary of Work: This study employed an environmental scan methodology across five areas: 1) online game databases, 2) search engines, 3) educational book publishers, 4) mobile application stores and 5) experts in the field of educational games. Educational games deemed eligible were those identified to be aimed at healthcare professionals and students with the purpose of training and education. A total of 4332 games were identified and assessed for their eligibility. 2745 games were excluded, with the remaining 1587 games included being systematically analysed against a data extraction sheet. This included topics, targeted audiences, number-of-players, genres, learning domains, sources, cost, type-of-platforms, and any affiliation with higher academic institutions or training centres for healthcare professionals.

Summary of Results: The result revealed that majority of games were based on human anatomy for undergraduate students. Moreover, single-player was also popular alongside an integrated quiz that focused on acquiring new knowledge. Games were predominantly sourced from online game databases, were freely available and could be played on desktop computers. Affiliation with institutions or training centres were largely rare.

Discussion and Conclusions: In conclusion, although the commercial landscape of educational games for medical education is extensive, the majority of these games were designed in a quiz genre, focused on anatomical education and aimed at undergraduate students.

Take-home Messages: The commercial landscape of games for medical education is wide and is not limited to published literature. Furthermore, little is known about the pedagogical underpinnings of these games and this necessitate further investigation in later studies.

#EP13.6 - ePosters: Teaching and Learning - Online/Games

#EP13.6.8 (4282)

Turn the classroom teaching of medical law and ethics upside down, by using board games to verify clinical thinking and to improve learning effectiveness.

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ABSTRACT:

Background: 1. In traditional medical ethics classroom teaching, the participation of students is not high; usually it's only a formality. 2. For simulation court teaching intervention, even though there is more legal attack and defense, due to medical students lack of understanding of professional law, the results are still limited. 3. Designing a board game will increase participation and verification of clinical thinking with games.

Summary of Work: 1. Design a medical situation based on the results of the Delphi technique. 2. Discover the change factors, common conditions, and improvement factors that reduce the risk of medical disputes, with opportunities (Bingo, Rock 'n' Roll), in order to stimulate students to think. 3. Introduce experience-reflective learning leaflets, record the corresponding thinking of each change, and provide feedback from teachers. 4. Combined with the final group summary, the students reflect and the teachers review, then they complete the medical meditation debate.

Summary of Results: Participants Demand 96%,Necessity 90%,Impediment 30% Course satisfaction 91.2%,Teachers fluency 88%,Integrity 84%

Discussion and Conclusions: 1. The randomized changes and the mitigation factors enriched the appearance of the lesson plan and improved the students learning attitude. 2. On the experience reflection study sheet, record each change. Students need to respond to the disposition, complete the learning process, and enhance the effect of reflection growth. 3. The course is summarized in the students reflection and teachers expectations, so that playing the game still has the central idea of the course, and finally converges on the professional growth of ethical law knowledge. 4. Board game teaching is suitable for the changing situation of ethical and legal issues; by changing the diversity of the situation, the students are enabled to have a more oriented thinking and learning experience. It's much more effective than the discussion about a single lesson plan!

Take-home Messages: 1. Adult education focuses on participation and feedback, coupled with the history of experience reflection leaflets, combined with TBL teamwork, peer encouragement, and board games to complete the learning experience of medical ethics. The results are outstanding. 2. We can have the best match of teaching and learning through the teachers observation, to create a richer board game, offering more fun.

#EP13.6 - ePosters: Teaching and Learning - Online/Games

#EP13.6.9 (4288)

E-learning, the double-edged sword

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ABSTRACT:

Background: Over the years, E-learning has started to replace traditional lecture in many classes around the world as we claim that E-learning makes learning easier, self-paced, more mobile and more effective. In Thai medical school, E-learning is widely used.

Summary of Work: To investigate the pros and cons of E-learning in Thai medical school, we applied a questionnaire to second-year medical students at the end of the post-test in neuroscience block. We carried out a multiple-choice questionnaire about 1) their frequency of using E-learning in neuroscience block and 2) their attendance in neuroscience lectures. 235 second-year medical students were analysed. Academic performance was assessed by 1) MCQ score; 2) spot test score; 3) pre-test score; 4) post-test score; 5) improvement in pre- and post-test score; 6) total physiology score.

Summary of Results: Proportion of frequency of using E-learning in neuroscience block negatively correlated with attendance in neuroscience lectures ($P = 0.028$, Fisher's exact test). The overall analysis showed that E-learning behavior had no significant effect on all 6 mean scores. Subgroup analysis was performed. Among most proactive E-learning students, mean MCQ score, mean spot test score, mean improvement in pre- and post-test score, and mean total physiology score in Poor-planned attendance (PA) group were significantly lower than Most attendance (MA) group and Valuably-planned attendance (VA) group ($P = 0.026$, $P = 0.012$, $P = 0.036$ and $P = 0.017$ respectively, ANOVA).

Discussion and Conclusions: Many of the medical students may benefit from E-learning but, on the contrary, some students may not. Students performance depends on various factors which future study could focus on and explore further. One of those factors we found in this study is how well the students plan to attend lecture classrooms.

Take-home Messages: We should continue using E-learning as part of the teaching method while giving instructions to the students at the same time. Otherwise, they will get trapped in this double-edged sword.

#EP13.6 - ePosters: Teaching and Learning - Online/Games

#EP13.6.10 (4328)

The Influence of Gamification on Medical Students' Diagnostic Decision Making and Cost Reduction: A Cross-sectional Survey

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ABSTRACT:

Background: The gamification of learning outcomes has been positive by increasing motivation and engagement in learning tasks, as well as enjoyment over time. This study aimed to investigate the effects of gamification on diagnostic decision-making and cost reduction in case scenarios.

Summary of Work: A cross-sectional study was conducted to investigate the effects of gamification on diagnostic decision-making and medical cost reduction in case scenarios. Participants comprised 30 medical students participating in clinical clerkship. They were randomly assigned to 14 small group teams. Use of decision-making cards (DMCs) was gamified. The DMCs had the clinical information heading and medical cost on the front and details of clinical information on the back of the cards. First, each team was provided brief clinical information (age, gender, chief complaint, and history of present illness) in case scenarios. Subsequently, DMCs were distributed to them and they decided which cards to choose in turn. Then, the correct final diagnosis, the total number of cards drawn, and the total medical cost were scored. Faculty members debriefed the students about the process of the cards chosen. Four case scenarios were implemented and the order in which each team answered was randomized. Students completed a questionnaire about confidence in effective clinical decision-making, motivation to learn diagnostic decision-making, and awareness of medical cost before and after the educational intervention.

Summary of Results: Confidence in effective clinical decision-making, motivation to learn diagnostic decision-making, and awareness of medical cost before and after the educational intervention were significantly higher after the educational intervention (2.9 ± 0.2 to 3.6 ± 0.2 , 5.8 ± 0.1 to 6.2 ± 0.2 , 3.3 ± 0.2 to 4.8 ± 0.2 , $p < 0.01$ respectively). The average total cost decreased significantly in the clinical case scenario tackled last compared to the tackled first (11,921 Yen to 8,895 Yen, $p < 0.05$).

Discussion and Conclusions: Teaching medical students clinical reasoning using DMCs as a gamification method leads to improved clinical decision-making confidence and learning motivation, and reduces medical cost in clinical case scenarios.

Take-home Messages: Gamification using DMCs is an effective teaching method to improve medical students' diagnostic decision-making and cost reduction.

#EP13.6 - ePosters: Teaching and Learning - Online/Games

#EP13.6.11 (4418)

Social media Facebook and You Tube usefulness in anatomy learning: Experience at Sapienza University of Rome

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ABSTRACT:

Background: University students belong to digital natives, who use social media to communicate with each other. Few outcome-based studies assess the impact of social media in the Human anatomy field. A human anatomy teacher (HAT) at Sapienza university of Rome created a professional Facebook profile (HATPFP) to have direct contact with the students and a You Tube channel dedicated to human anatomy topics (HATYTC), in order to communicate with students quickly and effectively and allow anatomy study also on public transport.

Summary of Work: HATPFP was used by the teacher to share lesson calendar and related topics, dates and location of exams, the presence of scientific seminars of possible interest to the students, the deepening of some anatomy issues. HATYTC playlists divided by subject, containing videos taken from some scientific channels. In order to assess the usefulness of social media not only in human anatomy learning but also to get in touch with the human anatomy teacher, at the end of each course a survey was created than distributed to the students of health professions and medicine and surgery degree courses.

Summary of Results: HATPFP usefulness perception: 84% of the students used HATPFP, mainly to have information about exam modalities (68, 6%). 94% of students consider HATPFP useful to communicate with the teacher for its speed (75.8%), ease of use (63.7) and informality. HATYTC usefulness perception: 71% of the students used HATYTC, 97% say that HATYTC is a useful tool for learning anatomy because it pushes students to autonomously search for other video material (63%) both of anatomy (49.2%) and of related subjects (39.7%).

Discussion and Conclusions: We have highlighted how social media can be an effective support for anatomy teaching by facilitating social interactions (in terms of time reduction, simplification, immediacy, less formality), improving learning (in terms of memorization and understanding of concepts and notions of anatomy), and making students autonomous in their search for new knowledge of anatomy.

Take-home Messages: The link of teaching, communicative and cognitive practices, already widespread among students, can be very effective both in improving teacher-student communication and students' study method.

#EP13.6 - ePosters: Teaching and Learning - Online/Games

#EP13.6.12 (4551)

Facilitators and barriers to use Facebook(FB) closed group as a platform of Inter-professional education(IPE)

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ABSTRACT:

Background: The author used the closed group function of FB, named “TSGH IPE”, to facilitate collaboration, interaction, and information and knowledge exchange among different professions of clinical instructors. Disappointedly, low engagement and shallow interaction between the members was observed in this group. In this study, we tried to figure out the barriers and facilitators of using the TSGH IPE.

Summary of Work: A total of 61 clinical instructors joined the TSGH IPE. Of them, 17 members from 12 professions invited by a convenience sampling were evenly assigned to three focus groups. The focus group moderator facilitated the participants to discuss their usage experiences, Pros and Cons, and suggestions about the TSGH IPE.

Summary of Results: The experience of the participants to view, like, comment and post is 100%, 100%, 12%, and 0%. Several barriers to use the TSGH IPE were identified: low personal usage of social media, no sense of belonging, and a sense of insecurity to speak in this so-called official group. The facilitators were: to give a clear position of the group, to ask more young clinical instructors to join, to post more photos about activities they have participated, and to host some tag activities to engage them in a discussion.

Discussion and Conclusions: Several barriers caused the slow growth of the participants and the low usage of the group. The moderator of the FB group should develop some strategy accordingly to build a more functional and cohesive FB IPE group.

Take-home Messages: A closed Facebook group might be a useful tool to engage all professions to share their clinical teaching experiences. The moderator of the group should pay more attention to remove the barriers and reinforce the facilitators of using the FB IPE group.

#EP13.6 - ePosters: Teaching and Learning - Online/Games

#EP13.6.13 (4565)

SimuSurg - minimally invasive surgery app.

AUTHOR(S):

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ABSTRACT:

Background: In 2016 the Australia and New Zealand Surgical Skills Education and Training (ASSET) Committee of the Royal Australasian College of Surgeons (RACS) decided to develop an app that would introduce novice learners to minimally invasive surgery. The aim was to produce a novel programme that could be used on devices already owned by the target market, eliminating the need for purchase of a gaming console or other technical equipment. The development of the app would also introduce the College to the potential of games and mobile applications in facilitating teaching and learning outcomes.

Summary of Work: A prototype was developed to demonstrate functionality and then tested by ASSET committee members to provide feedback from a clinical perspective. Further refinements were made before testing the app with participants on a standard RACS surgical skills training course. The final version of the app was launched at the RACS Annual Scientific Congress in 2018 and made available via the Apple App Store and Google Play.

Summary of Results: The app presents a series of graded challenges, gamifying the learning process to keep the users engaged. A number of scenarios were developed in order to demonstrate basic object manipulation, grasping, and cutting in an endoscopic environment. Simulated physics ensures objects within the game behave realistically. In order to express the range of motion within the human body the app uses 3D visuals. The overall design endeavours to reflect a sense of realism, stylised for practicality.

Discussion and Conclusions: Games are an engaging and validated medium for learning, providing a safe environment where users can experiment without fear of failure. The gaming aspect helps maintain engagement even when the exercises are potentially boring or repetitive. The app has introduced potential surgical trainees (medical students and junior doctors) to simulated endoscopic surgery via a novel interface. The app will be refined to allow the study of learning methods and skill acquisition.

Take-home Messages: The development of a smartphone or tablet-based educational app is feasible within reasonable time and cost constraints. The app may inspire new methods of teaching and learning. The novel interface may stimulate interest in the development of surgical instrumentation.

#EP13.6 - ePosters: Teaching and Learning - Online/Games

#EP13.6.14 (4734)

EscapiSim. Combining high fidelity simulation with an escape room

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ABSTRACT:

Background: Medical students at Kings college have an 8 week attachment post final examinations where the focus is on learning the skills required to be a FY1 doctor. The students reported feeling under confident in A-E assessments, SBAR handovers and interpretation of results. They also reported that they were able to perform ABGs and insert cannulas but struggled when under pressure in a clinical situation. We have designed an escape room for these students using the high fidelity simulation lab to help develop these skills.

Summary of Work: The scenario consists of an acutely unwell patient with pneumonia. The students have to solve puzzles to access 4 locked boxes to progress through the scenario. The code for box 1 is found by scanning a QR code on the manikins leg (to highlight doing a full A-E assessment). This contains equipment to assess the observations and needles to do an ABG. In the room is a plastic ABG arm and the students are required to successfully perform an ABG. The code for Box 2 requires calculation of the NEWS score, identification of a cranial nerve palsy and calculation of the GCS. It contains puzzles of investigations including an ECG, ABG, CXR and urine dip result. Interpretation of these results correctly leads to the code for box 3 containing equipment to give oxygen and fluids (after cannulation of a plastic arm). The final box containing antibiotics is opened after appropriately escalating the patient using a SBAR format.

Summary of Results: Students reported significant improvement confidence in A-E assessments, SBAR handovers and performing clinical skills (ABG and cannulation) under pressure. They also reported that they enjoyed the simulation and would like to do further sessions in their future training.

Discussion and Conclusions: This format of escape room simulation has been very successful involving minimal costs (above that of using the simulation room). Students liked the competition and doing simulation based training in a different way. We think that this model could be used for a variety of different clinical scenarios across undergraduate and post graduate medical education.

Take-home Messages: We think that escape room simulation could be incorporated into the undergraduate and postgraduate medical curriculum.

#EP13.6 - ePosters: Teaching and Learning - Online/Games

#EP13.6.15 (4742)

An immersive game to equip medical students with history-taking and physical exam skills

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ABSTRACT:

Background: Studies have shown a nationwide trend in which medical students seldom get one-on-one interactions with a standardized patient conducting a full medical visit before their clerkship years. We have designed a card-based game that allows students to practice their clinical skills with each other, using a variety of cases that emulate case-based learning as well as clinical skills exams. This tool works to supplement the integration of medical knowledge in clinical scenarios and can be used as an add-on to medical school curricula.

Summary of Work: Twenty second-year, pre-clinical, medical students participated in the game's pilot study. Participants played four cases regarding chest pain, and we analyzed their feedback using the first and second levels of the Kirkpatrick scale. We used the first level to determine the enjoyment of the simulator and whether participants would be willing to continue using it as a supplement. The second level encompassed quantitative measured variables, which included game and confidence scores, analyzed using a paired t-test.

Summary of Results: Analysis of the implemented surveys shows that 71% of responders (n=14) said they would use this game as a supplement in medical education. 73% of responders (n=15) reported they would likely play this game again. Mean confidence scores increased from a baseline of 15 to 21 (n = 8, p = 0.003, 95% CI [4, 8]) out of a maximal score of 25. Mean game scores increased from 415.15 to 443.95 (n = 20, p = 0.011, 95% CI [12, 50]) out of a score of 500.

Discussion and Conclusions: The results indicate that there is interest in this simulator as a supplemental educational tool, and show a significant increase in confidence and game scores. The study suggests that the game had a significantly positive effect as an education tool.

Take-home Messages: More tools are necessary for the practical application of clinical knowledge without the medical risks of clinical practice. The study proposes that this game is of benefit to students by increasing experience and providing a great supplement to medical schools. Further studies with more participants are warranted.

#EP13.6 - ePosters: Teaching and Learning - Online/Games

#EP13.6.16 (4820)

Exposing medical students to clinical communication errors in drug prescribing through board games: Development and implementation in undergraduate patient safety education

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ABSTRACT:

Background: To prevent accidents caused by communication errors, medical professionals should develop the habit of practicing appropriate communication. Therefore, education should be provided continuously as early as possible (e.g., first-year medical students). In Japan, first-year students have not experienced clinical practice, and it is difficult to teach about clinical communication errors. We developed a board game allowing students to experience errors caused by ambiguous instructions from doctors. The game may help sustain students' motivation and simplify clinical errors while promoting understanding among students. This game was conducted for 59 first-year students.

Summary of Work: In the game, students act as staff members who receive ambiguous instructions. The board contains the names of 9 patients, and 60 cards contain the names, dosages, and unit sizes of medicines. Students place the appropriate amount of medicine on the appropriate patient according to 11 sentences read by us. This game contains "traps" for student mistakes—e.g., two patients with the same last name, multiple drug cards with similar names, or ambiguous or contradictory instructions—based on actual medical accidents occurred in Japan. Students were asked after the study for feedback (handwritten comments) on the game.

Summary of Results: All 59 students made errors due to one of the traps. Students' comments about the game included, I enjoyed the game. I want to practice good communication in daily life, We have to ask doctors to repeat the instructions, and Not only to give a clear instruction, but also appropriate voice tone and speed is important.

Discussion and Conclusions: Use of actual error cases in the game owed to expectations that students would be able to understand the importance of the skills of both the person giving and receiving the instruction in clinical situations. In addition, it seems that gamification enabled students to learn while having fun. From a students' comment, appropriate communication in actual practice are expected.

Take-home Messages: Development of a communication skills board game could simplify the clinical situation and inculcate the importance of communication while sustaining student motivation. Participants learn how to communicate in clinical settings through making errors during game play.

#EP13.6 - ePosters: Teaching and Learning - Online/Games

#EP13.6.17 (5083)

Talking about digital transformation in healthcare – interaction analysis in a virtual classroom at Witten/Herdecke University (W/HU)

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ABSTRACT:

Background: Digital transformation is changing many areas of healthcare. It is important to prepare students interprofessionally, both in terms of content and methodology. Since 2016, W/HU has been offering an online course on this topic to students from all departments (healthcare, economics and culture). The research question here is how such a course is accepted and whether interaction can take place in an online setting.

Summary of Work: In winter 19/20 the course Digital Medicine was offered to all W/HU students via Adobe Connect. There were 13 appointments with external and internal lecturers. On all dates, the log files (login and polls) were evaluated and the chat content was qualitatively content analysed.

Summary of Results: An average of 199 students took part in the individual events. Of these 82.1% (SD 4.5) used the chat. 63,2% (SD 17,4) of the comments came from the social, 13% (SD 5,3) from the technical and 23,8% (SD 20,7) from the professional area. In addition to the social exchange, the main focus was on help with the virtual classroom and discussions on technical but also moral and ethical questions of digitisation. Up to 92% of the students took part in the interrogations (MCQ and free text). There were some differences in the interactivity of the different speakers (e.g. students or external experts) and the methods used (more polls also resulted in more chat postings).

Discussion and Conclusions: In these online events, even more interactivity can be achieved than in same sized face-to-face lecture. However, this also depended on the lecturers and the methods used. The W/HU will continue this format in the coming years and open it up to other universities to increase networking among students.

Take-home Messages: Virtual classrooms help to deal with current topics, such as digital transformation, in an interdisciplinary and interactive way.

#EP13.6 - ePosters: Teaching and Learning - Online/Games

#EP13.6.18 (5167)

Crafting an Inter-professional Escape Challenge Using a Complex Patient Care Scenario

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ABSTRACT:

Background: Coordinated care is necessary for the optimal management of patients with multiple and complex morbidity. Effective communication, coordination and teamwork can improve clinical outcomes and patient experience. The factors that could result in poor inter-professional collaboration and practice (IPCP) include the lack of understanding of each profession's roles, poor communications, fear to speak up and complex clinical processes. We designed an IPCP escape challenge using a complex patient care scenario to stimulate the formulation of the integrated care plan.

Summary of Work: Escape rooms can be used to mimic the uncertainty and problem-solving nature of clinical patient management. We developed a framework for the IPCP escape, which was underpinned on the theories of constructivism, cognitivism, and social learning. The complex clinical patient scenario was crafted with the dimensions of clinical, physical, psychological, social and emotive issues. The design of the stages of the escape was based on the principles of contextual and collaborative learning for all the stakeholders. In teams of 6-8 participants, they collectively assimilate their knowledge, skills and experience to solve problem collaboratively. They construct their own knowledge based on real-time experiences of advancing through several challenges in the escape room. 'Positive' behavior is validated and encouraged through progression through the escape stages, whilst 'negative' behavior impedes the team's progression.

Summary of Results: The escape room provided a realistic and collaborative experiential learning for all professions (physicians, nurses, allied health members, dietitians, administrators, educators) in the team. The complex scenario stimulated cognitive and collaborative learning. The challenge had positive impact on the health stakeholder's reaction, learning, change in practice and contributions to organizational outcomes (Kirkpatrick's evaluation model).

Discussion and Conclusions: We will share the learning points in the crafting of the escape room and complex scenario. Further research is also done to explore the influence of these complex case experience on inter-professional trust and rapport (reaction and learning) and changes in practice and organization (behavior and organizational outcomes).

Take-home Messages: The escape room, crafted based on a complex patient care framework presented an effective and engaging platform to increase immersive inter-professional learning and collaboration.

#EP13.6 - ePosters: Teaching and Learning - Online/Games

#EP13.6.19 (5756)

The Correlation among Virtual-Reality Technology Usage, Learning Anatomy and Spatial Ability

AUTHOR(S):

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ABSTRACT:

Background: The virtual reality technology (VR) has been utilized in teaching and learning medical anatomy in addition to cadavers. This study aims at investigating the correlation between students' utilization of VR technology in medical anatomy, their spatial ability and their learning performances.

Summary of Work: 41 nursing school students who participated in medical anatomy course in 2019 were recruited for this study. This course comprised lecture and laboratory two hours per week respectively. The instructor adopted the Team-Games-Tournament Method to involve students in using VR program in each session. Data of their test scores in midterm (after 7-weeks VR usage) and final (after 15-weeks VR usage), their spatial ability test scores prior to and after using VR equipment were collected for investigating their Spearmans rank correlation coefficient. The spatial ability test is consisted of five dimensions: spatial perception, mental rotation, spatial organization, spatial identifying, mental cutting. A Paired T-Test was conducted to compare students' midterm and final test score in anatomy lecture and laboratory courses respectively.

Summary of Results: According to Spearmans rank correlation coefficient, participants' final learning achievement after using VR equipment are significantly correlated to their laboratory midterm test scores ($\rho=.437, p<.005$), to the lecture midterm ($\rho=.481, p<.005$), and final test score ($\rho=.762, p<.005$). Participants' initial spatial ability responses to "spatial perception" were significantly correlated to their midterm test scores ($\rho=.421, p<.05$), and final test scores ($\rho=.342, p<.05$) of the lecture. The results of paired t-test showed that there is a statistically significant difference between laboratory midterm and final test ($M=14.95, SD=19.1, p<.001$), and between pre- and post- test scores in spatial perception ($M=2.995, SD=.447, p<.001$), but no statistically significant difference between midterm and final test in anatomy lecture.

Discussion and Conclusions: Although VR usage was imbedded in each course section, participants had a significant improvement in learning anatomy laboratory and their spatial perception but not in the lecture course. Regarding spatial ability, respondents' "spatial perception" is the only factor that significant correlated to their anatomy test scores.

Take-home Messages: Students' spatial perception could be a covariable to their VR anatomy learning performance.

#EP13.6 - ePosters: Teaching and Learning - Online/Games

#EP13.6.20 (5844)

A reflective case study on facilitating mastery of pharmacology with a game app

AUTHOR(S):

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ABSTRACT:

Background: Medical and health professions students in medicine, dentistry, nursing, and pharmacy must acquire mastery of application of pharmacological knowledge in clinical practice. A foundational element of acquisition of mastery is fluency and automaticity in component knowledge and skills, enabling practise of the integration and application of these components. However, many students find acquiring component fundamental pharmacology knowledge difficult and perceive pharmacology as memorisation intensive. Using a game app may help to enable repeated, isolated practice of key component knowledge to achieve fluency and automaticity and so facilitate development of mastery.

Summary of Work: A reflective case study examined use of the QuizUp game app over the past four years to teach pharmacology. QuizUp is a free mobile trivia game app allowing users to play multiple-choice question quizzes against each other. The game app was used for teaching approximately 300 second-year medical students, 50 second-year dental students, 180 first-year and second-year pharmacy students, 300 first-year nursing students, and 30 Master's nursing students per year. Qualitative student feedback routinely collected for all modules and teachers was probed for comments on the game app. Reflective analysis explored how the characteristics and use of the app aligned with educational theories of acquisition of mastery.

Summary of Results: Students found the game app engaging and reported that the quizzes helped them to consolidate their learning and cement their understanding of key concepts. An additional benefit of using the game app was that students reported increased engagement in interprofessional interaction between health professions courses.

Discussion and Conclusions: The multiple-choice quiz format of the game app allows for the formulation of questions for the isolated practice of fundamental component knowledge in pharmacology. The competitive element in the game appears to increase student engagement and motivation, enabling repeated practice. Meanwhile, the scoring of the quizzes on both accuracy and speed encourages fluency and automaticity.

Take-home Messages: The use of game apps that require both accuracy and speed for repeated, isolated practice of components of fundamental knowledge can facilitate achievement of fluency and automaticity to prepare students to progress in the acquisition of mastery.

#EP13.6 - ePosters: Teaching and Learning - Online/Games

#EP13.6.21 (6567)

Survey of online learning materials and applications in undergraduate and postgraduate medical students

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ABSTRACT:

Background: Nowadays, social networking services become a well-known powerful toolkit for finding an issue, organizing activities and also for educational purposes. There are many social media formats used by students for providing the medical knowledge. Each of them have different strengths and weaknesses. The aim of this study is exploring the preferred type of learning online materials in undergraduate and postgraduate medical students.

Summary of Work: A cross-sectional analytical research was performed on medical students at Nakornping hospital, Chiang Mai, Thailand. An investigator-designed questionnaire was administered to 44 undergraduate students and 10 postgraduate students. STATA version 14 was used for all analyses. The independent data were analyzed using fisher's exact test.

Summary of Results: Medical students expressed positive attitudes towards social media for medical education purposes. The most popular forms were facebook page, medical website and general website respectively. Facebook page was frequently accessed by undergraduate students significantly (83.6% vs 50% p=0.021). Most students preferred the free access format, format that not require passwords and accurate medical contents. The undergraduate students did not prefer online material that need membership significantly when compare with postgraduate students. (88.64% vs 50% p=0.013) and also formats that require money for access (83.6% vs 50% p=0.021). The beautiful decoration of resources, 2-way communication forms and update frequency did not affect the decision. 68.5% of all students used online material for educational purposes more than 50% of all learning.

Discussion and Conclusions: Students frequently use online materials for educational purposes that set off by modes and forms of materials. Although, some have to pay for accessibility or membership, but have good reliability for medical knowledges. Some of general forms are easy to accessed but did not have precise contents. The medical instructors should give advice and wisely integrated social media with teaching program for the better learning outcomes.

Take-home Messages: This study supports the importance of social media not just in everyday use, but for medical learning. Medical students can wisely choose the appropriate learning forms for the better self-learning processes.

#EP13.6 - ePosters: Teaching and Learning - Online/Games

#EP13.6.22 (6841)

Let's play OBGYNpoly! A Active learning for medical students with board game.

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ABSTRACT:

Background: A board game was developed as material to review the semester content in gynecology and obstetrics for undergraduate medical students at a Brazilian University.

Summary of Work: Medical school students created a game called OBGYNpoly, inspired in the classic Monopoly™, to assist the study. The participant uses the pawn to walk on the board and has to answer questions related to the subject. In a playful way the game helps to integrate theory and practice.

Summary of Results: The successful game made students remind the semestral topics. Its playful character which retakes an already known and beloved game, guaranteed great participation and interaction. The use of dummies and simulators made the game more dynamic and held everyone's attention, what also allowed the training of physical exam skills.

Discussion and Conclusions: The objective of the game is to consolidate the content already studied and not the presentation of new subjects. The game helps to identify topics that the student needs to deepen studies being a good alternative to improve knowledge and skills needed by medical students.

Take-home Messages: The experience proposed by the game includes group interaction, active participation and motivation for studying, which are all necessary virtues for the professional formation. It is possible to teach with fun using active learning!

#EP13.6 - ePosters: Teaching and Learning - Online/Games

#EP13.6.23 (7045)

Knowledge and Attitudes of Medical Students Towards Digital Health, an Upcoming Phenomenon: A Multicentre Analysis

AUTHOR(S):

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ABSTRACT:

Background: Digital health (DH) is continuously evolving by use of information and communications technology to improve human-health thereby reshaping healthcare systems and clinical practices. Recent studies identified an overwhelming lack of awareness of DH within the profession. This study aimed to analyse student perceptions and knowledge of DH to assess confidence in its use to develop greater DH awareness and literacy.

Summary of Work: Students from 12 universities were invited to take part in an online survey assessing aspects of DH including demography, familiarity, attitudes, level of knowledge and confidence. Anonymised data was collated in a spreadsheet and subsequently analysed to review DH awareness.

Summary of Results: A total of 143 students participated from nine universities with 30.2% respondents admitting low levels of familiarity of DH concepts; with e-Health being the most familiar (43.4%). Surveys revealed students anticipated negative repercussions including reduced data security (42.7%) and deterioration in doctor-patient relationship (30%); while improvements in healthcare access and health-outcomes were expected by 89.5% and 68.5%, respectively. 71.4% of participants believed they had minimal experience of exposure to DH and 76% believed they did not possess the necessary skills to utilise DH.

Discussion and Conclusions: The analysis revealed an alarmingly low rate of familiarity among students regarding DH. It was widely believed that DH will revolutionise healthcare service provision bringing with it both negative and positive reverberations. This survey predicts a future of impaired DH development and implementation as a result of future-doctors with low confidence, knowledge and skills. It is recommendable to increase focus on DH education and to continue researching attitudes surrounding DH on a national level to maximise its use and potential.

Take-home Messages: DH is an inevitable move towards personalising healthcare and making improvements to provisions, however it remains relatively unknown amongst current medical students. It is crucial to shed light and focus upon DH as the future of healthcare in order to gain maximal benefit from this shift towards DH.

#EP13.6 - ePosters: Teaching and Learning - Online/Games

#EP13.6.24 (7078)

Game-Based Learning of Urogynaecology Teaching for Medical Students using “Million Dollar Money Drop”

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ABSTRACT:

Background: Game-based learning (GBL) is a type of gameplay that balances defined learning outcomes with students' ability to retain and apply learnt skills practically. Its increasing use in medical education to complement traditional teaching methods makes large-group learning more engaging and motivating, especially for topics perceived to be difficult to understand.

Summary of Work: An observational study was designed where a one-hour GBL session, adapted from popular game-show “Million Dollar Money Drop” (MDMD), was conducted immediately after a one-hour traditional lecture. Urogynaecology was chosen as Singaporean students commonly perceive it as harder to understand due to less clinical exposure. Teaching materials included a projector for displaying questions and the “Money Drop” gameplay, and rewards in the form of chocolates. Identical sessions were delivered to students from three medical schools during their clinical attachment in KK Women's and Children's Hospital, Singapore. After each session, standardised SingHealth teaching feedback forms were distributed, inviting voluntary qualitative feedback.

Summary of Results: Feedback forms from 67 respondents were analysed, of which 100% (67 of 67) reported being engaged in active learning. 97.0% (65 of 67) found that the session stimulated and facilitated questions and discussions, encouraging critical thinking. 98.5% (66 of 67) enjoyed the session and would recommend it to others. 35 qualitative responses were received, including “fun” (28.6%, 10 of 35), “engaging” (22.9%, 8 of 35), and “interactive” (11.4%, 4 of 35).

Discussion and Conclusions: GBL, compared to traditional lectures, is fun and engaging, increasing conceptual learning and cognitive flexibility. GBL incorporates frequent and immediate feedback, reinforcing concepts quickly and rectifying misunderstandings early. Through friendly competitiveness, GBL evokes intrinsic motivation to master a topic, while small rewards maintain extrinsic motivation for learning and engagement. Team-based collaborative learning like in MDMD allows supportive knowledge sharing, higher achievement, and better self-esteem. Incorporating GBL with large-group traditional lecture teaching is an innovative way to positively engage and motivate medical student learning to achieve enhanced learner effectiveness, especially for topics traditionally perceived to be more difficult to master.

Take-home Messages: GBL promotes learning for large-group medical student teaching when used in conjunction with traditional lecture teaching, especially for topics that are traditionally perceived to be harder to master.

#EP13.6 - ePosters: Teaching and Learning - Online/Games

#EP13.6.25 (6644)

DIGITISATION OF PATHOLOGICAL AND ANATOMICAL SPECIMENS IN UNDERGRADUATE MEDICAL AND VETERINARY SCIENCE EDUCATION

AUTHOR(S):

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ABSTRACT:

Background: Historically, both pathology and anatomy teaching in clinical programmes have hugely benefited from museum collections featuring well preserved specimens. However, several factors have restricted the use of these specimens and consequently the reliance on such resources is declining dramatically. Additionally, there is rapid evolution of: curricula & disciplines, teaching spaces and web-based technologies. Therefore, there is scope for finding new teaching modalities which are interactive and engaging for our learners and can effectively provide a platform for mastering their subject efficiently and sustainably.

Summary of Work: Our pathology department at the University of Liverpool has a valuable collection of dissected specimens which were gathered in a previous era and are now regarded as a historical record. These specimens are nowadays impossible to replicate in modern practice and therefore provide a unique and valuable resource for teaching. The advancement of digital technologies in medical science (photometry, CT and MRI imaging) and their increased availability within universities, through technology-enhanced learning facilities, are some of the means by which teaching & using these specimens can be scaled. Here, we describe how we have: i. Created a digitalised, interactive 3D library of human pathology specimens (for MBChB students) and veterinary anatomy specimens (for BVSc course) and disseminated this through our institutional virtual learning environment (VLE); ii. Piloted its usage by students; iii. Assessed the use of digitised museum specimens by evaluating student preferences and examination results.

Summary of Results: Student feedback is mainly positive, appreciating this resource as a rich and valuable addition to complement existing teaching methods.

Discussion and Conclusions: Whilst it is possible to create a high-quality digitalised library of preserved pathology and anatomy specimens, here we present the challenges with imaging these types of specimens and offer solutions.

Take-home Messages: Students found this resource to be a more interactive and effective learning experience and would like to see more digital specimens available online to support their anatomy learning. Additional longitudinal studies over multiple cohorts are required to establish statistically significant results and develop this resource further.

#EP13.6 - ePosters: Teaching and Learning - Online/Games

#EP13.6.26 (4442)

The Use of Chatbots in Medical Education: A Pilot Study

AUTHOR(S):

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ABSTRACT:

Background: To our knowledge, this is the first paper which directly addresses the use of chatbots in British medical education. All Warwick medical students participate in case-based learning exercises and 'Clinically Observed Medical Education Training simulation sessions. Students can therefore share their opinions on integrating a chatbot in their curriculum. Medical educators are experienced and aware of the learning outcomes in teaching, therefore can offer insight into uses of chatbots. The aim of this study is to assess the suitability and limitations of creating a chatbot which can be implemented into a medical curriculum.

Summary of Work: 13 medical students and 3 academic staff from Warwick Medical School participated in small focus groups for a qualitative study. 10 questions were discussed about how chatbots can augment existing teaching practices. The outcome measures were the themes derived using the thematic framework approach.

Summary of Results: Five main themes were identified: (1) patient simulations – practicing history taking and management of patients. (2) Revision tool – a chatbot to practice mechanism of actions and uses of drugs. (3) Suitable users – all participants felt that chatbots were useful and beneficial for first year medical students in particular. (4) Standardisation – in teaching and marking. (5) Perception of chatbot use – a range of positive and negative opinions of chatbot use in medical education.

Discussion and Conclusions: We identified areas of the Warwick Medical School curriculum in which chatbots could be useful, and how they could be integrated into the student learning workflow. Pitfalls to avoid when designing such chatbots came to light during focus group discussions. Our conclusions are limited by the small number of participants. Nevertheless, we showed that integrating chatbots in the delivery of graduate medical education could benefit students and faculty alike. The next steps are to create a minimum viable prototype and iterate it using varied academic staff and medical students, to arrive at the most optimal chatbot design.

Take-home Messages: Students can engage and utilise chatbots to ensure that they are regularly practicing key skills and knowledge, which is required of them to be competent doctors for the NHS and perhaps can be extended to other health care professions.

#EP13.6 - ePosters: Teaching and Learning - Online/Games

#EP13.6.27 (5017)

A comparative study of immersive virtual reality simulation and computerised virtual patient simulation in undergraduate medical education – quantitative approach

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- Alan Rigby, Hull York Medical School, UK

ABSTRACT:

Background: Simulation-based medical education has become an integral feature across the medical curriculum, underpinned by its delivery of clinically contextual learning within a safe environment. However, with the emergence of technological-based simulators, a bewildering array of possibilities are available to educational institutions. Alarmingly, evidence informing their use is scarce; particularly direct comparisons of the numerous virtual simulators. Consequently, this study compares two digital simulators to determine their effect on knowledge acquisition and retention in fourth and fifth year medical students.

Summary of Work: This randomised controlled trial incorporated a crossover design. A total of 18 medical students were induced to both modalities and their operation before independently completing the same two scenarios: one on an immersive virtual reality simulator and one on a virtual patient simulation scenario. Multiple-choice questions were used to assess knowledge acquisition and knowledge retention; with participants completing the questions immediately before the scenario, immediately after the scenario and three months later.

Summary of Results: Full results are expected by May 2020. The data will consist of an analysis of pre-, post- and delayed-test scores within each modality, as well as post- and delayed-test scores between each modality.

Discussion and Conclusions: This study will contribute to the limited literature surrounding the uptake of these novel approaches within medical education. Thus, working towards empowering medical schools with the necessary knowledge required to invest in the most effective equipment for their students. Further discussion and firm conclusions will be drawn once the results are available.

Take-home Messages: Key messages derived from this study will depend upon the final results. However, an overarching issue identified from this study is the scarcity of the research underlying this rapidly expanding field. Henceforth, further work is urgently required exploring the application of these up-and-coming technologies, their efficacy and their role within the medical curriculum.

#EP13.6 - ePosters: Teaching and Learning - Online/Games

#EP13.6.28 (5018)

A comparative study of immersive virtual reality simulation and computerised virtual patient simulation in undergraduate medical education – a qualitative approach

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ABSTRACT:

Background: Technology-enhanced medical education is growing at an exponential rate, with a key area of this transition being simulation-based training methods. The diverse, personalised and safe learning environment offered by simulation has contributed to it becoming a central feature within the medical curriculum. However, traditional mannequin-based methods are being surpassed by digital alternatives and fundamental to their successful integration are the students that will be using them. To date, limited research exploring the views of students regarding these specific digital alternatives has been conducted. As a result, this study aims to compare two novel approaches to simulation, using student perceptions as the basis of their evaluation.

Summary of Work: This randomised controlled trial, specifically of a cross-over design, consisted of 18 medical students independently completing an immersive virtual reality simulation scenario and a virtual patient simulation scenario. With each scenario preceded by an induction detailing how to operate the equipment and followed by a standard debrief. Immediately after the scenarios, participants completed questionnaire, consisting of a combination of Likert-scale and free-form questions. This approach ensured areas deemed important by the researchers were addressed, in addition to providing participants with the opportunity to highlight key aspects of their subjective experience.

Summary of Results: Full results are expected by March 2020. Primarily, the results will compare the participant enjoyment, ease of use, perceived value and potential uses of each modality, in addition to undertaking a thematic analysis of the free-form responses.

Discussion and Conclusions: Conclusions are dependent upon the final results. However, this study will provide an evaluation of two novel approaches to simulation, using students' perceptions to determine their educational value, usability and role within the medical curriculum.

Take-home Messages: This study acknowledges the importance of the subjective experiences of students in the effectiveness and uptake of novel approaches to medical education and contributes to the limited literature surrounding their use.

#EP13.6 - ePosters: Teaching and Learning - Online/Games

#EP13.6.29 (4586)

High-fidelity 3G simulation and virtual reality: an evaluation of students' experiences as observers

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ABSTRACT:

Background: Active observers, rather than passive watchers, can benefit vicariously from the experience of the hands-on learner. Vicarious learning theory and Kolb's experiential learning cycle together form the theoretical basis for directed observation during simulation. This study analysed student views on observing their colleagues during emergency simulation scenarios using the Oxford Medical Simulation virtual reality (OMSVR) simulator versus a 'gold standard' high-fidelity patient simulator (SimMan3G®).

Summary of Work: We conducted a mixed methods cross-over study. 40 final year medical students were randomly divided into two groups, with students either first using the OMSVR or the SimMan3G® technology to complete a scenario, before completing a matched scenario using the other simulation technology. After each scenario, students completed a questionnaire about their perceptions of the technology from the observer point of view, with further qualitative information provided by focus groups.

Summary of Results: 39 participant scores were analysed, due to missing data. As observers, the students reported similar experiences with regards to 'enjoyment', 'getting distracted' and 'reflecting on their performance', with no statistical difference between both technologies. However, the SimMan3G® simulator scored higher than the OMSVR technology in 'feeling more confident in patient assessment' ($p=0.002$), 'usefulness' ($p=0.003$), 'developing clinical reasoning skills' ($p=0.004$) and 'realism' ($p<0.001$). Qualitative analysis further supported these findings.

Discussion and Conclusions: It is unsurprising that the high-fidelity SimMan3G® scored higher than the OMSVR technology for domains associated with traditional clinical practice, e.g. 'confidence in patient assessment' and providing a 'useful' and 'realistic' experience. This is probably due to familiarity with the simulation suite, which aims to emulate a true clinical environment. In comparison, the OMSVR environment is novel to many students despite creating an excellent representation of an emergency room. However, both technologies were of equal value in maintaining student engagement, with no difference in distractibility or enjoyment between the two technologies.

Take-home Messages: Students value observing their colleagues completing scenarios within both technologies. Observation of SimMan3G® scenarios was superior for improving confidence, as well as providing a realistic and useful experience. OMSVR technology offers an alternative which provides an equally useful observation experience regarding enjoyment, engagement and self-reflection but without the need for a physical simulation suite.

#EP13.6 - ePosters: Teaching and Learning - Online/Games

#EP13.6.30 (4893)

Developing SafeHospitalVR: an innovative and immersive environment for training physicians

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ABSTRACT:

Background: The awareness of reducing medication errors and risk situations for the patient has increased in recent years, due to the increasing pressure from health centers, regulatory and certification bodies, and community. However, this awareness should be reflected in the integration of strategies to prevent them and train medical students, residents and specialists in patient safety principles. The inclusion of technologies, particularly those for tridimensional visualization such as virtual reality, allows developing innovative and immersive training proposals with the potential to contribute to patient safety culture.

Summary of Work: The objective was to design a virtual reality (VR) setting to train physicians, medical residents and students to promote patient safety. The development consisted of the phases of planning and design. Planning referred to the development of learning objectives and conceptualization of scenarios. The design phase consisted of the technical exploration of the different tools, and the production of the setting. The definition of the key competencies and elements to integrate was done by triangulating the perspectives of faculty members, hospital and school leaders.

Summary of Results: As a result, a VR surgical setting for training was developed for medical students to explore and familiarize themselves with the environment and the processes that take place in a surgical setting. The reported experience describes the key elements for a new developer: the link to solving the needs of the organization and the technical feasibility of the systems that are available in the market.

Discussion and Conclusions: Medical schools are committed to incorporate strategies in the curriculum that trigger motivation and student engagement. However, the design of VR settings has been delegated to the technology and design specialists, because it requires extensive technical expertise to develop a brand new app, as well as a project management team that deals with timekeeping, budget planning, resources allocation, and staff training. Although this process consists of prototyping, developing, testing and constantly debugging applications; it also requires to have extensive expertise on the discipline and the know-how on how to teach it.

Take-home Messages: The development of new solutions must integrate a robust interdisciplinary team that contributes with their specific skills.

#EP13.6 - ePosters: Teaching and Learning - Online/Games

#EP13.6.31 (5452)

Virtual Reality in radiology: a new learning tool for undergraduate students in Medical Technology

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ABSTRACT:

Background: In radiology the equipment technology and technical skills for patient's position play a primordial issue in medical technology's undergraduate students learning outcomes, but the access to handling a real patient and ionizing radiation are problematic, so new strategies for teaching this techniques must be implemented

Summary of Work: Virtual Reality (VR) system was implemented by Simulator Hospital with Siemens Healthineers using an HTC VIVE system that could be visualized in a 65" touchscreen. The radiology VR system contained 58 positions from different human anatomical sections that are divided in Head & Neck, Trunk, Upper Limb and Lower Limb. 20 students for Radio-diagnosis lectures from Medical Imaging and Physics mention in Concepcion were included in this report with the possibility to access a virtual patient in a simulated environment with no risk, allowing students to perform a specific radiological exam by practicing patient positioning, radiological technique and evaluation of the obtained image quality

Summary of Results: Pre-Test indicated that 60% of students had the perception they remembered bone human anatomy from upper and lower limbs, 40% of them indicated that ignored how X-ray works in radiology and 15% did not know the utility of this type of radiation. The academic survey performed at the end of the course indicated in the item "The teacher used methodologies that contributed to my learning" increased from 58% in 2018 without VR radiology system to 95% in 2019 with VR confirming the good reception of this technology by the students

Discussion and Conclusions: The results demonstrate that students accept VR radiology system that provide opportunities to develop skills related to autonomous learning, responsibility and group work in a safe environment

Take-home Messages: VR system is a new strategy for student's training in radiology Grant from: Proyectos de Investigación Educativa 2019. DGDI/VRID/UNAB

#EP13.6 - ePosters: Teaching and Learning - Online/Games

#EP13.6.32 (5348)

Network analysis in virtual patients using the graph theory

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ABSTRACT:

Background: Social network analysis is a technique that can be used to analyze more than a social network. Economic and decision networks as well could be analyzed using graph theory in order to increase the efficiency of the user choices. The traditional statistical analysis of the results of a virtual patient reflects to the decision path leading from the first to the final node/choice. Information about the cost of the choices and the time are usually not represented in the network.

Summary of Work: A virtual patient scenario simulating acute myocardial infarction was created. In this scenario, trainees are asked to follow a step-by-step workflow procedure including a network of 254 options. The cost and time were included as counters in this scenario. Using graph analytics, the educator is able to find among trainers who completed the scenario the ones who spent the less money and in the shortest time.

Summary of Results: Trainees seemed to prefer ordering as many tests as possible in order to perform differential diagnosis among various illnesses. At the end of the game, they were able to be informed about the total cost and the time spending or their choices. At the same time the path with the minimum money and time cost may be represented. Choices (nodes) with the bigger centrality are analyzed in order to explain trainees' behavior.

Discussion and Conclusions: The results from the use of graph analytics seemed very positive and encouraging and trainees seemed to prefer learning to have the same results spending less. Most trainees stated that they didn't know that they could have the same patient therapy spending less money and time. Nowadays, medical professionals need to make the correct decisions spending the less money in the shortest time. The use of graph analytics seems to be an effective tool that can be integrated into lifelong learning programs.

Take Home Messages: The use of graph theory seems to better analyze the results of the trainees performance in a virtual patient case.

#EP13.6 - ePosters: Teaching and Learning - Online/Games

#EP13.6.33 (6203)

VIRTUAL REALITY: 360° IMMERSION IN URGENCY-EMERGENCY TEACHING

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ABSTRACT:

Background: 360° immersion is part of the virtual world of many young people and can help arouse a greater interest of students to actively seek more knowledge.

Summary of Work: Objectives: To present the experience lived in the urgency-emergency discipline of 6th year students of medical education.

Experience report: In 2017, students of the discipline of urgency-emergency were presented to the topic of pulmonary thromboembolism in the format a traditional class (expository class) and a class where the 360° immersion resource was used. The content was presented preliminarily to their entry into the simulation or practical activity. As in some classes of the discipline, an evaluation was carried out diagnosis on the knowledge of the contents to be worked on in that class, as well as as well as their knowledge about different strategies of teaching and the use of technology in Virtual Reality 360° for the teaching of medicine. After class, students answered the same questions and were asked to an opinion about the sensations experienced and perceived in each of the classes was asked to be delivered individually.

Summary of Results: The expectation regarding the theme was similar in both classes, as well as the level of initial knowledge on the topic. The most well-known teaching methodologies were expository classes, dialogued expositions, seminars, discussions of clinical cases and practices in simulation center . The 360° immersion resource for teaching and learning medical content was not known to the group, which was related to this technology more for virtual games or other forms of entertainment. 360° immersion was perceived as a strategy interesting and practically real in preparation for simulation and practice activities, arousing greater student interest in the content.

Discussion and Conclusions: Active strategies for aided by technology, can arouse greater interest of students in the search for more active learning.

Take Home Messages: Virtual Reality : 360° immersion brings students closer to practical experience and minimizes dispersion. New frontiers for learning.

#EP13.7 - ePosters: Teaching and Learning - Simulation

#EP13.7.1 (4440)

Multiagency simulation in paediatric safeguarding: a novel approach to improving trainees confidence

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ABSTRACT:

Background: Multiple historical serious case reviews over the last 40 years have highlighted the need for effective interagency communication and appropriate child protection (CP) training. New Specialty Trainee Year 4 (ST4) trainees in paediatrics, who are at the frontline of acute child protection work, have consistently demonstrated a lack of confidence in CP procedures and a need to bolster existing mandatory training. By developing a fully immersive multiagency simulation teaching day we aimed to address trainees fears regarding interagency communication and improve confidence in procedures, whilst making the simulation as high fidelity as possible.

Summary of Work: Three scenarios and one workshop covered areas of safeguarding that ST4 trainees would be expected to deal with, with emphasis on understanding how different agencies work together to advocate for the child. Each case took 70 minutes and included a comprehensive debrief led by medical consultants in safeguarding and Social Work. Informative presentations were delivered by safeguarding social workers and Joint Investigation police team. The scenarios included: 1. Abusive head trauma in a 10-month-old infant 2. Multiagency Strategy Meeting involving social workers, police officers, medical and nursing staff for the above case 3. Disclosure of sexual abuse from a 12-year-old girl 4. Identifying neglect workshop

Summary of Results: 7 ST3 trainees took part. A pre-course questionnaire demonstrated 100% of trainees felt inadequately prepared to work at ST4, and 85% reported not understanding what safeguarding at ST4 involves. Post-course feedback demonstrated 100% of trainees felt their understanding of their own role and confidence had either fully or mostly improved. 85% felt either fully or mostly prepared to begin undertaking child protection medical examinations.

Discussion and Conclusions: We demonstrated the need to expand safeguarding training for trainees and how effective simulation is to improve self-reported confidence and understanding. To our knowledge this is the first course published which integrates multiagency team members within simulation for trainee paediatricians.

Take-home Messages: A multi-agency approach to complex topics such as child safeguarding is crucial in delivering effective learning. Instilling confidence in trainees expected to deal with extremely emotive and challenging cases should be a priority for education.

#EP13.7 - ePosters: Teaching and Learning - Simulation

#EP13.7.2 (6487)

The impact of high fidelity pre-clinical simulation on short- and long-term knowledge retention

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ABSTRACT:

Background: High-fidelity simulations are computer-model driven mannequins, resembling realistic clinical situations. They present clinical symptoms and parameters and respond to medical interventions in accordance with the regular and pathological processes of physiology and pharmacology. Regardless of the potential benefits in enhancing student learning, high-fidelity simulation is underutilized in pre-clinical simulation.

Summary of Work: This study evaluated the short- and long-term knowledge retention after interdisciplinary pre-clinical simulation. Second year medical students were asked to complete on the day of the simulation an online pre-test, testing knowledge on acute coronary syndrome (ACS). Then a simulation group encompassing learning goals of the physiology, pharmacology and pathology of ACS was performed using the patient simulator iStan. During debriefing, students participated in a short post-intervention test. After two months the simulation group and control group (receiving no additional simulation training) were tested again for knowledge retention.

Summary of Results: Students were randomized into a simulation group (n=21) and control (n=24). All students completed a pre-test. The mean pre-test value was 7.83 points out of 14. There was no difference between the control and intervention group prior to the intervention (p=0.919). The post-simulation test was completed by 20 students in the simulation group showing a significant knowledge improvement (p<0.001). The long term post-test showed a significant difference (p=0.004) between knowledge improvement of the simulation and control groups.

Discussion and Conclusions: In learning pre-clinical concepts, simulation is shown to be an efficient way to support long term knowledge retention. While both groups had experienced classic lectures regarding cardiovascular physiology and pharmacology as part of the ordinary curriculum, the simulation group benefited through a simple intervention of ACS simulation more and retained their knowledge almost completely even after two months.

Take-home Messages: Pre-clinical simulation enhances knowledge acquisition and retention more effectively compared to traditional methods. Simulation with appropriate, learner level adjusted goals was feasible even in the pre-clinical environment to integrate basic principles of pathophysiology.

#EP13.7 - ePosters: Teaching and Learning - Simulation

#EP13.7.3 (4361)

What medical students practice in Skills lab at the University of Helsinki

AUTHOR(S):

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ABSTRACT:

Background: We introduced peer-tutor program at the Skills lab in 2015 to offer low-threshold supervised voluntary practical training possibilities for all medical students. Peer-tutors from 4th to 6th study years were recruited and introduced to Skills lab teaching. The purpose of this study was to investigate how students use the Skills lab and whether they practice independently or with peer tutors.

Summary of Work: Students may fill in a questionnaire after their visit to Skills lab. The questionnaire contains 25 fields, asking what activities were performed and may be filled in individually or in groups.

Summary of Results: Total of 90 groups consisting of 153 students (1.7 students per group) visited Skills lab from September 2016 to December 2019. 43 groups reported peer-tutor being available. Total of 183 activities were practiced. Most practiced activities were suturing (n = 35), iv-cannulation (n = 28) and ultrasound (n = 18). The mean satisfaction rate was 4.74 in Likert scale. There were 22 responders in 2016, 28 in 2017, 23 in 2018 and 17 in 2019. The most practiced skills remained the same.

Discussion and Conclusions: Our study showed that Skills lab is being used both for individual practice and with peer tutors' assistance and that students practice mostly in pairs. On average students came to practice at least two different skills. The skills practiced most have stayed the same, although it seems that ultrasound is gaining more popularity. The main feedback is positive and students are very satisfied with the Skills lab. Overall response rate is perceived low. The questionnaire is not obligatory. The calendar to Skills lab shows much more bookings and peer tutors have observed and reported high levels of Skills lab utilisation. Therefore a better and readily available questionnaire to the Skills lab is being developed and other feedback channels are considered as well.

Take-home Messages: Skills lab is a popular and students come to practice multiple clinical skills. Skills lab was perceived as a valuable addition to otherwise theoretical teaching.

#EP13.7 - ePosters: Teaching and Learning - Simulation

#EP13.7.4 (4776)

Simulation of Paediatric Life-threatening Emergencies (SimPLE) for undergraduate medical students

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ABSTRACT:

Background: Simulation is increasingly used as a teaching tool across undergraduate education but its use in our paediatric undergraduate curriculum remains limited. We aimed to evaluate whether embedding simulation into the undergraduate curriculum as a tool for learning affected students' perceived confidence to recognise and manage an acutely unwell child.

Summary of Work: We developed a one-day immersive simulation pilot course (SimPLE) for 8 students currently rotating through a paediatric placement. The learning objectives focussed on the initial assessment, recognition and acute management of the unwell child as well as the importance of non-technical skills (NTS). 5 scenarios were followed by a debrief and a short 'mini-teach' presentation. It enabled faculty to focus discussion on NTS during the debrief in the knowledge that the clinical aspects of each case would be explored during a dedicated 'mini-teach' presentation.

Summary of Results: Pre and post course questionnaires using 5-point Likert scales were used to assess medical students' perceived confidence across a variety of domains, demonstrating an overall mean score increase of 1.27. Furthermore, qualitative feedback included comments such as "really helped my learning & application of knowledge" and "explanation of scenarios provided good insight". More specifically the addition of 'mini-teach' presentations were felt to be "very useful" and "valuable for experience and enhancing knowledge".

Discussion and Conclusions: As shown, participation in the SimPLE course improves students' perceived confidence in managing acutely unwell paediatric patients and their use of NTS in emergency situations. Whilst acknowledging the use of 'mini-teach' presentations is not generally accepted simulation practice, in this case it was universally well-received and improved upon the existing methods of simulation delivery. Furthermore, the success of the pilot SimPLE course has led to its incorporation within the curriculum as a mandatory learning requirement for all students rotating through paediatric placements in our region.

Take-home Messages: - Mini-Teach sessions are found to be both useful to students and also enhance debriefing

- Use of mini-teaches allows deep focus on non-technical skills throughout debrief

- Simulation training in paediatrics has been found to enhance student learning and confidence

#EP13.7 - ePosters: Teaching and Learning - Simulation

#EP13.7.5 (4848)

A novel cadaver model in airway management training

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ABSTRACT:

Background: Airway management is crucial in different medical specialties. Novices learn these techniques on patients, manikins or even deceased patients. However, training on deceased patients raises ethical concerns, while fresh frozen cadavers of body donors are time-constrained due to ongoing decomposition. Recently, a new fixation method, Fix for Life (F4L) has been developed, supposedly without the aforementioned disadvantages.

Summary of Work: The F4L cadaver model, a manikin and formalin-fixed cadaver models were compared for mask ventilation, direct laryngoscopy and laryngeal mask airway insertion. Participants were asked to rank the model types (1st to 3rd position) and award a score (1=worst, 10=best) for suitability and realism of performing these techniques. Additionally, the videolaryngoscope and flexible bronchoscope were evaluated in the F4L model. Secondary outcomes were success rates.

Summary of Results: Total ranking was 1 for the F4L, 2 for the manikin and 3 for the formalin-fixed cadaver model. The F4L model was ranked highest for mask ventilation, while ranking for other techniques was equal to the manikin. For laryngeal mask insertion, the F4L model received higher scores for realism. The formalin-fixed model was ranked last and received lowest scores. For videolaryngoscopy and fiberoptic bronchoscopy, the F4L model received high scores for suitability and realism. Success rates for direct laryngoscopy were 100% for manikin, 61% for F4L model and 0% for formalin-fixed model. Success rates of videolaryngoscopy and flexible bronchoscopy in the F4L model were 100% and 96.3%, respectively.

Discussion and Conclusions: Simulation training has found a permanent place in airway management training, although there is ongoing discussion about the degree of reality of airway manikins and simulators. The ranking and scores of the F4L model are promising when a more realistic anatomical view is desired. Success rates of direct laryngoscopy compared to videolaryngoscopy and fiberoptic bronchoscopy suggest that the F4L model might be appropriate in training to intubate the more difficult airway using advanced techniques.

Take-home Messages: The F4L model was rated high scores for suitability and realism as airway teaching model. The F4L model could be a suitable and realistic alternative to manikins in training and teaching airway management procedures to novices, especially for the more difficult airway.

#EP13.7 - ePosters: Teaching and Learning - Simulation

#EP13.7.6 (5028)

Simulating an on-call experience for final year medical students without a formal simulation centre in a district general hospital

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ABSTRACT:

Background: 50% of students believe that medical school prepares you knowledge-wise but not experience-wise for life on the wards, particularly for on-call shifts. Over a quarter of newly qualified doctors in Barnet Hospital feel less than 60% confident in facing an on-call shift. In keeping with previous studies, concerns from local feedback surround clinical prioritisation, time management and documentation. Simulation, proven to be a powerful tool in addressing this issue, requires high fidelity simulation centres which are unavailable to trainees at Barnet Hospital. A low-resource simulation session was therefore designed to immerse final year medical students into an on-call experience. The aim was to better prepare the students for transition to clinical practice within a district general hospital without a formal simulation centre.

Summary of Work: In a simulated “hospital ward” (constructed in the lecture theatre), one patient requiring urgent clinical review was handed over to each student alongside other ward jobs. The patients (acted by volunteer doctors) were based on clinical scenarios typical of an on-call shift. Whilst clinical assessment was priority, scenarios incorporated themes such as timely escalation, capacity, confidentiality and interaction with the multidisciplinary team. Clinical prioritisation was tested with interruptions from an on-call bleep. The sessions ended with students giving hand-over and a formal debriefing. Data was collected from pre- and post-session questionnaires to capture changes in confidence, feedback regarding the fidelity of scenarios and scope for improvement.

Summary of Results: 63.2% of final year medical students felt more confident in their ability to face an on-call shift after just one simulation session. Specifically, confidence in bleep prioritisation, delegation and documentation increased. Qualitative feedback emphasised the high fidelity despite the low-resource setting.

Discussion and Conclusions: The data suggest these simulation sessions fulfil a gap in the current curriculum of final year medical students at Barnet Hospital. The low-resource simulation session was limited by its dependence on volunteers. This may hinder the reproducibility of similar sessions in small hospitals.

Take-home Messages: We plan to follow up these students after the commencement of foundation year training, to monitor the lasting educational impact. If successful, this teaching model could be adapted to aid training at various stages of a medical career.

#EP13.7 - ePosters: Teaching and Learning - Simulation

#EP13.7.7 (5354)

Applying Simulation to Teaching Medical Students Clinical Skills of Emergent Management: Learning Outcomes Evaluation Based on the ARCS Learning Motivation Model

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ABSTRACT:

Background: High Fidelity Simulation (HFS) is an innovative teaching strategy to inspire medical student learning in Clinical Skill Course (CSC) designed based on Attention, Relevance, Confidence, and Satisfaction (ARCS) model. The ARCS learning model focuses on increasing stimulation of student's knowledge, skills, and competences regarding patient care. Little is known about the effective learning model of Emergent Management Training (EMT) through Team Resource Management (TRM). The study purposes were to examine the effects of a teaching strategy of integrating HFS and Video-recording-playback-feedback-debrief (Video-debrief) on students' learning outcomes (learning attitudes, learning satisfaction, self-efficacy, and flow experience and Competence in managing Emergency Condition).

Summary of Work: The study adopted exploratory design to examine the effects of integrating HFS-EMT and Video-debrief on students' learning outcomes in the CSC. Convenience sampling was used to recruit the participants at a medical school in northern Taiwan. There were totally 119 medical students received HFS-EMT in a simulation laboratory: "Enhance competence in managing emergent and critical condition through TRM", and completed learning outcome measurement using questionnaires. We administered pretest and post-test for the learning outcomes during the HFS-EMT. During debriefing, we used Video to record the process of simulation Scenario training for students who could playback and gained immediate feedback regarding their performances, knowledge, and skills. The learning outcomes were measured using validated 5-point Likert scales before and after training. Data were analyzed using generalized estimating equation (GEE) model.

Summary of Results: Results suggest that integrating HFS-EMT with Video-debrief in emergent and critical management can significantly improve the students' attitudes ($B=2.41, p<0.001$), self-efficacy ($B=1.75, p<0.001$), satisfaction ($B=3.22, p<0.001$) and the item score of flow experience is greater than 85. Besides, the HFS-EMT could enhance Competence in managing Emergency Condition ($B=4.44, p<0.001$), and Airway Management ($B=5.07, p<0.001$).

Discussion and Conclusions: Integrating the HFS-EMT with Video-debrief could significantly improves medical student's learning outcomes of the CSC, and their Competence in Emergent Management. The study findings also support the hypothesis of ARCS learning model

Take-home Messages: The integration of HFS with Video-debrief could be applied to the Emergent Management Training in medical students.

#EP13.7 - ePosters: Teaching and Learning - Simulation

#EP13.7.8 (5795)

Hybrid Lumbar Puncture Simulation: Teaching Entrustable Professional Activities During the Medical Student Neurology Clerkship

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ABSTRACT:

Background: In 2014, the Association of American Medical Colleges (AAMC) published a list of Entrustable Professional Activities (EPAs) that students should be able to perform upon starting residency. According to survey data at our institution, our neurology clerkship has been deficient in addressing EPAs 4 (enter and discuss orders/prescriptions), 11 (obtain informed consent for tests and/or procedures), and 12 (perform general procedures of a physician). We therefore developed a hybrid simulation experience encompassing these three skills, centered around lumbar puncture (LP).

Summary of Work: We created a hybrid LP simulation for our medical student rotators, beginning with obtaining informed consent from a standardized patient (SP) followed by performing LP on a specialized manikin and entering CSF orders into a simulated electronic chart. Students received real-time feedback from SPs and clinical preceptors. The students filled out surveys to assess their perceived confidence and skill with these activities both before and after the simulation.

Summary of Results: To date, 62 students have completed the pre-simulation survey and 51 students have completed the post-simulation survey. The percentage of students who increased their confidence with LP from minimal or nil to average or more was 53.62%, 33.34%, and 31.89% for LP, informed consent, and order entry, respectively. The percentage of students who improved from not being able to perform/needing significant supervision to being able to perform with minimal supervision or independently was 20.29%, 43.48% and 34.79%, for LP, informed consent, and electronic order entry, respectively. These differences were all statistically significant ($p < 0.0001$). There was no difference in improvement between students taking the clerkship earlier in the academic year vs. later ($p > 0.10$).

Discussion and Conclusions: Our preliminary analysis demonstrates that this hybrid LP simulation is effective in increasing medical student confidence and perceived skill with EPAs 4, 11, and 12. This effect does not diminish as the academic year progresses.

Take-home Messages: Hybrid LP simulation improved student competency in obtaining consent, performing LP, and entering orders.

#EP13.7 - ePosters: Teaching and Learning - Simulation

#EP13.7.9 (6041)

Familiarize and Enhancement Ultrasound Skill for Medical Student: Early Preclinical Exposure and Workshop

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ABSTRACT:

Background: Ultrasound has now becomes more accessible and important integral part of clinical practice even in rural hospital in Thailand. However, the medical students still had little experience to develop this skill. Due to short radiology rotation of the curriculum, we aim to early introduce basic ultrasound and hands-on workshop to familiarize and enhance ultrasound skill for medical student.

Summary of Work: Early ultrasound exposure was introduced to preclinical year as part of introduction to clinical medicine lecture and integrated into preclinical subjects. Before ending 4th year medical study (the first clinical year), we performed interactive lecture-based course to adapt basic ultrasound to clinical knowledge (including basic ultrasound knowledge, sonographic findings and signs of common detectable diseases) and hands-on workshop with standardized patients, focus on abdominal ultrasound and FAST. 4th year medical students (since 2018-2019), including 64 students, attended these programs (at least 1 hour for lecture period and 3 hours of workshop). Assessment was performed after completing lecture and hands-on course using a 5-point Likert scale understanding level questionnaire, ranging from 1 (not understanding) to 5 (highly understanding), and confidence level questionnaire, ranging from 1 (unconfident) to 5 (highly confidence). Wilcoxon Signed Rank test was used.

Summary of Results: Overall medical students improved median(IQR) understanding level from 3(2-4) after lecture to 4(4-5) after hands-on workshop ($P=0.000$), about 50% of students rising 2 scores. Students felt more familiar and confident to practice ultrasound, rising of median(IQR) of confidence level from 2.5(2-3) at preclinical year to 4(4-4.75) after hands-on workshop ($P=0.000$), about 63% of students rising at least 2 scores. Qualitative part revealed clarifying the use of ultrasound, truly understanding ultrasonographic image, recalling anatomy knowledge and more understanding in-depth, feel more interested in radiology subject, improved participate in teacher-student and student-student interactions, and empathy patients' feeling during procedure.

Discussion and Conclusions: Confidence to practice ultrasound and familiarization can be significant increased by early ultrasound exposure with clinical adaptation and hands-on course. Further regular practice with ultrasound should be considered to improvement skill and accuracy.

Take-home Messages: Early ultrasound exposure into preclinical year and using clinical adaptation with hands-on workshop are powerful methods to increased ultrasound skill of medical students.

#EP13.7 - ePosters: Teaching and Learning - Simulation

#EP13.7.10 (6464)

How do different learning models affect learning self-efficacy of clinical skills in clerkship?

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ABSTRACT:

Background: Learning clinical skills is a core task for medical students during clerkship, and some models have been developed for them in learning clinical skills. For instance, they can learn from their tutor through one-by-one face-to-face tutoring, or do self-directed learning with hand-on practice on mocks after watching online video and checklists. The students can also take two learning models (combined learning model).

Summary of Work: We provided 3 learning models of clinical skill for the 5th year medical students in Taipei Medical University Hospital. The students could freely choose what kind of model they wish. A total of 188 students participated in this clinical skills learning project. We used the Learning Self-Efficacy Scale (L-SES) developed by Kang et al. (2019) for outcome measurement. The scale involves cognitive, affective, and psychomotor domains with 5-point Likert scale. We analyzed data by One-way ANOVA.

Summary of Results: Effects of learning models on learning self-efficacy (LSE) are interacted with sex ($F=4.778$; $P<0.01$), and therefore we did stratified analysis by sex. In fact, male students had higher overall mean LSE than females (mean difference [MD]=0.276; $P<0.001$). For male students, they had significantly higher overall mean LSE in combined learning model than tutoring model (MD=0.260; $P<0.01$) and self-directed model (MD=0.305; $P<0.05$). On the other hand, no significant difference in overall mean LSE among the learning models in female students. In further analysis, combined learning model led significant higher cognitive LSE than tutoring model (MD=0.282; $P<0.001$) and self-directed model (MD=0.527; $P<0.01$) in males. Combined learning model also resulted in significant higher psychomotor LSE than tutoring model (MD=0.244; $P<0.05$) in males. Interestingly, for females, combined learning model showed lower affective LSE than tutoring model (MD=-0.466; $P=0.079$) and self-directed model (MD=-0.496; $P=0.089$) with marginal significance.

Discussion and Conclusions: Our test found that male students had a higher overall mean LSE than females. Furthermore, combined learning model led significant higher cognitive as well as psychomotor LSE.

Take-home Messages: The L-SES serves as a generic assessment tool in measuring clinical skill's self-learning efficacy for medical students. However, additional analyses in relevant learning model settings are needed.

#EP13.7 - ePosters: Teaching and Learning - Simulation

#EP13.7.11 (6495)

Watch and Learn: Directed observation methods to improve observer engagement in paediatric simulation

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ABSTRACT:

Background: Simulation is increasingly used in medical education. Students value actively participating significantly more than observing, and engaging the observing students can be challenging. It has been shown that directed observation is superior to non-directed observation for observer learning and satisfaction, but there is no consensus on the best method of directing observation.

Summary of Work: Medical students attended paediatric simulation days comprising five scenarios based on common emergencies. A different observation method was used for each scenario: • Checklist of key aspects • Three positives/negatives worksheets • Domain worksheets: Each observer given questions on one domain from assessment, investigations & management, or communication • Verbal direction: Each observer verbally asked to focus on a specific domain • Non-directed Method-scenario pairings were rotated over different days. We assessed students' contributions to the debrief by tallying the number of contributions and subjectively scoring quality of contributions out of five.

Summary of Results: Data collection is ongoing. Preliminary results show that the average number of contributions ranges from 5.18 (positives/negatives worksheets) to 6.46 (verbal direction). Using checklists, 39% (7/18) of observers received a quality score of 4 or higher, compared to 27% (4/15) for positives/negatives, 21% (3/14) for non-directed, 18% (3/17) for verbal direction and 11% (1/9) for domain worksheets. Quantitative analysis will be performed once data collection is complete in June 2020. Informal verbal feedback from students revealed a range of opinions about the methods, with views about checklists being the most polarised.

Discussion and Conclusions: From our initial results, the method of directing observation appears to affect the quality of contributions, with checklists generating the highest quality. The average number of contributions does not vary widely. Contrary to existing literature, we found that non-directed observation is not inferior to all directed observation methods. Interestingly, the lowest quality contributions occurred when using methods where observers focussed on specific domains, suggesting that the specific focus perhaps distracted observers from the bigger picture. We will re-evaluate these conclusions following statistical analysis.

Take-home Messages: Directed observation can improve engagement, but the method of direction must be carefully constructed to facilitate attention to a breadth of aspects of the scenario.

#EP13.7 - ePosters: Teaching and Learning - Simulation

#EP13.7.12 (6617)

Simulated clinical rounds: an authentic learning opportunity for medical students in their pre-clerkship years

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ABSTRACT:

Background: History-taking and problem-solving are crucial for making accurate diagnoses. Gathering, organizing, and interpreting information, followed by decision-making are functions of problem solving. These can be affected by factors like time constrain and unfamiliarity of context or clinical environment. Creating an authentic context to allow practice on such skills for medical students is a challenge.

Summary of Work: Simulated rounds constituted of teams of 4 to 5 students, who stopped for 20 minutes by each patient. It included mixed-realty encounter where students watched a 90-seconds 360o video with a Virtual-Reality goggle then met the patients' father, two beds had simulated patients, and a fourth was a video-based scenario.

Summary of Results: 16 of 38 students (42%) responded to the e-survey. 87.5% rated this method of training as good or excellent, and 12.5% as fair. Finally 100% found the experience to be engaging. Students received instant feedback from SPs and clinical tutors on their clinical reasoning, communication, empathy, and team-work.

Discussion and Conclusions: The complexity of clinical encounters make them difficult to simulate. History-taking should not be taught in isolation from reasoning or problem-solving, empathy and team-dynamics. Authentic environments supported by feedback may warrant better transfer of skills into real practice. Starting early in the curriculum provides an opportunity of spaced-practice and remediation. Simulated rounds are liked very much by the students. Having students commit to specific objectives or questions to address after each patient encounter can keep them focused. Timed patient encounters seem to add an element of stress and has a value in creating an authentic context.

Take-home Messages: Simulated hospital rounds can be a golden opportunity if planned well. Ensure that students receive feedback instantly. Train and allow simulated patients to provide feedback especially on aspects like communication and empathy.

#EP13.7 - ePosters: Teaching and Learning - Simulation

#EP13.7.13 (6634)

Teaching Associate Simulation Fellows the art of debriefing: Simulation Suite to Ward

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ABSTRACT:

Background: Simulation based education is an established cornerstone of acquiring clinical skills. It remains resource intensive and learning relies on robust, constructive debriefing. To tackle the challenge of faculty recruitment we introduced a simulation associate fellowship program 3 years ago. Presently, we have 15 simulation fellows at different stages of training. The programme involves scenario writing, moulage, quality improvement and facilitation at a sim session. The key feature of the programme is teaching the art of debriefing to the simulation fellows.

Summary of Work: In the first year we used didactic lectures to introduce debriefing models followed by observation and supervised co-debriefing. Subsequently, we introduced a faculty development day where simulation fellows were asked to run a scenario in the simulation suite followed by debriefing and then they were debriefed on their debrief by the programme organisers.

Summary of Results: We use debriefing with good judgement and the RUST (Reaction, Understanding, Summary and Take-home message) model. Having learned the basic concept, the fellows were keen to use the framework not only in simulation but also practice it in their day to day ward craft. It allowed them to benchmark feedback in clinical practice and also lead debriefs after serious incidents such as cardiac arrests.

Discussion and Conclusions: We believe that debriefing is a tool that should be taught to anyone undertaking supervision. High quality and safe patient care rely on knowledge, non-technical skills and a firm commitment to professionalism. Debriefing with good judgement can foster and enhance critical thinking, highlight performance gaps and sign post learners to better performance. Shared experiential learning is a powerful and engaging tool to improve performance. Our simulation fellows have demonstrated that debriefing skills can be translated to everyday clinical situations and used as mini learning events.

Take-home Messages: Debriefing need not be limited to the simulation suite. Once learned, the art of debriefing can be a powerful educational tool and an adjunct to other well-established educational methods. Debriefing skills can be translated to the clinical setting even in short bursts and used to suggest improvements at individual, team or organisational level.

#EP13.7 - ePosters: Teaching and Learning - Simulation

#EP13.7.14 (4662)

Simulation in learning child psychiatry - A new way to teach medical students to face child maltreatment

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ABSTRACT:

Background: Simulation is an effective method to practice difficult situations and learn communication skills during medical education, but it is still underutilized in psychiatry, especially in child psychiatry. In Tampere University, simulation was piloted during the child psychiatric clinical course, alongside with the traditional method of attending small group lessons concerning child maltreatment and visiting in the forensic child psychiatric unit.

Summary of Work: Aim Aim was to assess the usability of simulation in teaching medical students to face child maltreatment. Material and methods Final year medical students either attended small group lessons concerning child maltreatment (control group, n=24) or participated in a simulation with approximately similar content (n=26), presenting an interview of 1) a parent of a shaken baby and 2) of a school-aged child who had been an object of maltreatment. Students were randomly assigned to a role. Before and after the course, students evaluated their skills to detect maltreatment and to act in such a situation.

Summary of Results: The baseline questionnaire was filled by 67% in the control group and by 85% in the simulation group, the second questionnaire by 96% and 92%, respectively. At baseline: Three control group students (19%) considered their skill to detect maltreatment good, 75% average and one student poor/very poor. The respective numbers in the simulation group were none, 68% and 32%. Two students in the control group considered their skill to act when maltreatment is suspected to be good/very good, 56% average and 31% poor/very poor. The respective numbers in the simulation group were one student, 46% and 50%. After the course: All students considered their skills to detect maltreatment and to act in such a situation at least average. Nine percent of the controls and 21% in the simulation group considered their skills to act in a situation of suspected maltreatment to be very good. There were no statistically significant differences between the groups.

Discussion and Conclusions: Simulation seems to be at least as effective method to teach child psychiatry as small group lessons.

Take-home Messages: Simulation also provides a safe environment to practice complex and emotionally challenging situations such as interviewing a child or an adult about suspected child maltreatment.

#EP13.7 - ePosters: Teaching and Learning - Simulation

#EP13.7.15 (4299)

Effectiveness of Medical Students in Communication Skills Training using Simulated Patients or Volunteer Outpatients

AUTHOR(S):

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ABSTRACT:

Background: Communication skills are the important basis to patient-doctor interactions. Appropriate investigations and treatment plan can then be devised which patients would be more inclined to adhere to. The most common and effective ways of teaching communication skills to medical students are by using simulated patients (SPs) and volunteer outpatients (VOs). Establishing the demonstrable difference of using both types of patients would redefine the training scheme for students.

Summary of Work: Medical training programme takes up at least 5 years to complete. Different method of improving medical students communication skills are often seen in various medical schools. However, communication skills training would differ based on training. This is dependent on their year of study, scope of knowledge and topic of discussion which is based on body system.

Summary of Results: Interviews were performed to obtain more detailed ideas on their clinical development and confidence in communicating with patients when using simulated patients and volunteer outpatients. A group of students were controls where they were given communication skills training with only simulated patients and another group was given similar training with volunteer outpatients. Their clinical outcome and management were analysed to identify which group produced better results which optimises patients care. Clever et al (2011) study was in favour of VOs while studies by Jabeen (2013) and Elley et al (2012) preferred having SPs. Bokken et al (2009) study showed that students considered both types of patients to be essential for communication skills training.

Discussion and Conclusions: All the studies presented with strengths and weaknesses of both SPs and VOs. Discussion of the validity of all studies were based on the CASP criteria. Study design, sample selection and biases were scrutinised for each study. Various adult learning theories were used to correlate the effectiveness of the communication skills training.

Take-home Messages: SPs are more useful for pre-clinical years, intimate examination and giving instructions regarding the physical examination. Whereas VOs are put to better use in clinical years to incorporate more medical aspects such as obtaining differential diagnosis, management of illness and procedural techniques. Introducing different types of patients based on their year of study and topics of discussion is recommended.

#EP13.7 - ePosters: Teaching and Learning - Simulation

#EP13.7.16 (5506)

Enhancement of Medical Students Non-Technical, Clinical Skills Using an Interactive Virtual Patient Software. Application of a Computerized Platform as a Part of a Blended Clinical Course

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ABSTRACT:

Background: Low availability of bed-side, clinical teaching fields and increased emphasis of Non-Technical, Clinical Skills development amongst medicine students raise the need for alternative teaching platforms such as Virtual Patients (VP).

Summary of Work: We used a Virtual Patients (VP) software developed in the Rappaport Faculty of Medicine, Technion University, enabling written, real-time conversation with VPs for history taking. It also deploy images and sounds of heart and lung auscultation, enabling users to order laboratory tests and interpret their results.

Summary of Results: VP software was used during 3 blended-learning sessions, including three clinical scenarios: pulmonary edema, asthma exacerbation and acute kidney injury. Each case was followed by an open discussion. Fifty students (60.4% females; average age 28 years) Filled questionnaires regarding their satisfaction from these sessions. On a Likert-type (0 to 5) scale they graded the VPs contribution to their knowledge of initiating a clinical case management (3.92 ± 0.9); the extent they would like to experience more VP sessions (3.78 ± 1.25); general satisfaction from using the VP (3.3 ± 0.1) and the extent to which such sessions exceeded parallel, frontal lectures (3.34 ± 1). The students also graded the three scenarios according to their contribution for the development of clinical reasoning: acute kidney injury (3.60 ± 1.075), asthma exacerbation (3.54 ± 0.97) and pulmonary edema (3.27 ± 0.998). 32 students also wrote qualitative feedbacks.

Discussion and Conclusions: In this study, application of Interactive Virtual Patient Software during the pre-clinical years in medical school demonstrated to be an important teaching method. We demonstrated the benefits of VP software, included conducting high yield topics within a limited amount of time, reinforcement of clinical reasoning and critical thinking while coping with unknown patient scenarios. One of the most frequent feedbacks among the participants was satisfaction from their ability to experience integration of several pathologies of different organ systems for the first time while in pre-clinical years, a unique modality, not included in frontal, non-blended learning.

Take-home Messages: In the following years the pre-medical curriculum will expand exponentially leading to an unbridgeable knowledge gap Thus, application of Interactive Virtual Patient Soft wares during the pre-clinical years in medical school may have a critical role in medical education

#EP13.7 - ePosters: Teaching and Learning - Simulation

#EP13.7.17 (6722)

An artificial intelligence assisted ECG recognition program to teacher ECG recognition skill to undergraduate medical students

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ABSTRACT:

Background: To interpret echocardiogram (ECG) is challenging for medical students, who are lack of clinical experience even with plenty of knowledge. With the aids of technology advancement, artificial intelligence (AI) with deep learning model provide much convenience in both health care and medical education. Previously, our group developed a web-based system for ECG recognition practice. In this study, we applied the explainable AI to assist undergraduate medical students to learn the interpretation of ECG and evaluated the outcome of the program.

Summary of Work: One hundred and forty 4th-year medical students were recruited in the study. Based on the previously established ECG web-based practice system, students did exercise after a 20 min video teaching class. The web-based system allowed user for reviewing their answer in any time, therefore, participants can get real time feedback whenever they selected a wrong answer. An AI assisted system was applied to point out the important features of abnormal ECG, which provides the interpretation logic to the students for learning. In addition to the questionnaires regarding the curriculum satisfaction, learning motivation, and critical thinking capacities, the academic performance of ECG recognition was evaluated by web-based test system.

Summary of Results : The academic performed will be presented. In the qualitative feedback, the students suggested a significant knowledge improvement by AI assisted ECG learning compared with traditional class. Besides interesting and interactive, the technology enhanced learning provides an opportunity for huge practice at any time, and real-time feedback as a personal tutor.

Discussion and Conclusions : We developed a novel AI assisted ECG learning to provide personalized and active learning and promote learning quality and efficiency. AI assisted ECG learning program can point out the specific and critical information and concept which students miss and immediately deliver the targeted figures to improve the ECG interpretation outcome.

Take Home Messages : Applying AI-assisted real-time feedback and reflection could be a promising strategy to promote learning outcome of medical student in recognition of ECG.

#EP14 - ePosters: Empathy

#EP14.1 (5289)

A simple structured home visit – significantly raised the awareness of considering social history when offer medical care plans

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ABSTRACT:

Background: Considering of patients' social history is essential for physicians to create individualized care plans. To establish the concept of how and how much social factors influence health care delivery, however, isn't enough if those constitute just a part of the medical examination. We created a structured home visit, hoping to help clerkship students understand the degrees social history account for a care plan and contextualize patient care in their future career.

Summary of Work: The task of four clerks in a team was to visit two patients' home and try to figure out the obstacles patients face when following a care plan. During the thirty minutes of patient visiting, students were asked to take social history in six categories: individual characteristics, life circumstances, emotional health, perceptions of healthcare, health-related behaviors, and utilization of health care. Pre- and Post- visiting quantitative questionnaires were given and a feedback session was held.

Summary of Results: Of the forty participants, 88%(35/40) responded to the questionnaires. A majority(91%) of clerks reported that social determinants should be more seriously considered when mapping care plans after the visits. The analysis from the feedback indicated that students had learnt about how and how much the forces work against the patients' health-enhancing behaviors after taking social history in person. The positive responses from the structured home visits proved it as an effective and practical way for guiding clerkship students.

Discussion and Conclusions: Through structured home visits program, students enhanced social perspective and made a better association with patients. Students elevated the acknowledgement of patients' behaviors not just as complex social environment but as the reasons why patients were at poor medical compliance, missing of appointments or addiction to unhealthy habits. Paying more attention to the social forces in patients' life could prevent students from merely following an evidence-based care plan but ignore patients' real needs.

Take-home Messages: Conducting simple structured home visits intensified the importance of considering social history when mapping a care plan in students mind. We expect that a new generation of clinicians may provide more personalized and patient-centered treatments.

#EP14 - ePosters: Empathy

#EP14.2 (5829)

Bohm dialogue : a room for sharing and growing

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ABSTRACT:

Background: Shifting from preclinical to clinical training is a challenging situation for every medical student. They often ignored some problems in their everyday life because of strenuous activities. Some frustrating situation may be the key to help our student understanding themselves, if we explore, reflect, and discuss it freely. Bohm dialogue, one of the transformative learning method, was used to create a safe space for sharing and discussing their perspective.

Summary of Work: A qualitative study of medical student experience with Bohm dialogue was arranged in 2015-2019. The participants were 8 to 10 of fourth-year medical students and four medical staffs. Everyone sits in a circle and engaged in conversations with a non-judging mind. Free flow talking and active listening was run for 3 hours. A facilitator may use power question to help participants creating new idea and concept by themselves. Reflections were made throughout the conversation.

Summary of Results: We have five years of experiences with 155 medical students and 7 medical staffs. Patient death, family problem, and failure of medical licensing examination were usually led to a crisis in their life, especially during an early clinical year. Slow adaptive personality students may have more benefit from this activity, since other student experience may help them. The students reported this activity having an advantage for learning and growth. Sometimes, We can detect and support medical students with mental illness. They have more empathy with patient and colleague. Medical staff also have the advantage to perceive the student-teacher generation gap.

Discussion and Conclusions: With supporting form colleague and mentor, Medical students may turn some difficult situation into a more positive approach. This may lead to learning and self-developing. We think some critical circumstances can create transformative change. Applied an idea of this method, e.g. active listening, could help them succeed in work and happiness in life.

Take-home Messages: With a suitable activity, Medical staff can support the student and help them deal with stressful experience efficiently.

#EP14 - ePosters: Empathy

#EP14.3 (5885)

Teaching and assessment of Empathy and Caring Attitudes in Medical Education: Perceptions of Educators at the National Ribat University, Sudan 2019-2020

AUTHOR(S):

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ABSTRACT:

Background: Empathy: is understanding others' feelings with maintaining person's perspectives. Caring attitudes: are views coming from understanding others' different needs. They are necessary for effective communications and better outcomes. The aspects of professionalism are frequently overlooked, and more concern is paid to knowledge. Research question: Does the medical staff value empathy and caring attitudes? Does the educational program support empathy and caring attitudes? Objectives: the aim of this study is to survey educators about teaching and assessment of empathy at the National Ribat University Sudan and to explore the barriers towards empathy and caring attitudes.

Summary of Work: The study is observational cross-sectional analytic study including medical staff at the National Ribat University; 98 educators were surveyed, Data was collected electronically and analyzed using descriptive statistics.

Summary of Results: Of the 98 educators surveyed, 36 responded. 72.2% and 83.3% agreed that medical school emphasize empathy and caring attitudes during per-clerkship and clerkship respectively. Sixty one percent of respondents were pessimistic about teaching caring attitudes if students do not possess them upon admission. Main methods for teaching empathy were; problem-based learning reported by 86.1% of the respondents, small group discussion reported by 63.9%, and team learning reported by 50% of the respondents. Main assessment methods included students' case presentation reported by 72.2% of the respondents, OSCE reported by 61.1%, and faculty observation of the students' interaction with patients and families reported by 38.9% of the respondents. Barriers towards attainment of empathy are increased time and productivity pressure reported by 66.7% of the respondent, followed by lack of the designed time in the curriculum reported by 52.8% of the respondent and lack of faculty development and expertise reported by 36.1% of the respondent.

Discussion and Conclusions: Empathy and caring attitudes are difficult to be attained by a learner who doesn't show them upon admission. The educational staff value empathy and caring attitudes, however, implementation during teaching, assessment and faculty development is insufficient. Moreover, there are several barriers towards empathy and caring attitudes.

Take-home Messages: Medical school should screen learners for empathy during admission, facilitate staff development and encourage humanistic environment. Further research is needed to reflect teaching, assessment and barriers towards empathy.

#EP14 - ePosters: Empathy

#EP14.4 (6140)

Is it just me, or is this awkward?

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ABSTRACT:

Background: In modern medical curricula volunteer patients are integral to medical student training. However, evidence exploring the student-patient-tutor triad has shown patients can be left feeling objectified. Given medical education has an obligation to produce patient centred and empathetic doctors, tutors need to be able to facilitate interactions between students and patient volunteers that reflect these qualities.

Summary of Work: In our district general hospital, an action research project was initiated in response to anecdotal reports of concerning behaviours demonstrated by 3rd year medical students when interacting with volunteer patients during round robin examination skills teaching. An ice-breaker intervention was piloted with the aim of supporting positive volunteer-student interactions. 15 groups took part in the initiative across two days. Data collection triangulated findings from observation field notes, tutor reflections and a student focus group. Themes were developed through an inductive thematic analysis.

Summary of Results: The findings demonstrated that student interaction with patients on round robins was more patient focused following the introduction of the icebreaker. Students more easily developed rapport and were significantly more empathetic in their approach. Key themes were the development of a positive learning climate and encouragement of a patient-led teaching approach.

Discussion and Conclusions: This project suggests that the use of a simple icebreaker can transform the experience of patients, tutors and students when learning in the format of a round robin. One explanation for this could be its effect in reducing power imbalances within this triadic relationship through positive role-modelling.

Take-home Messages: When facilitating learning in a round-robin format, icebreakers can be helpful in promoting empathetic interactions between students, patients and tutors and may promote a positive learning climate through flattening of hierarchies.

#EP14 - ePosters: Empathy

#EP14.5 (6562)

Enhancing Empathy: Medical Students' perspectives

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ABSTRACT:

Background: Empathy is a multifactorial personality trait which is key to patient-physician communication and satisfaction. The therapeutic relevance of empathy emphasizes the need to help medical students develop their empathic abilities. This study was designed to examine underlying components and factors affecting empathy in medical students.

Summary of Work: This is a cross-sectional study, using web-based questionnaire to assess empathy of preclinical and clinical medical students. The survey consists of Jefferson scale of empathy (student ver.) and 34 factors that have been acknowledged as crucial components in enhancing empathy during a pilot focus-group study. Five-point likert scale was used to evaluate the influence of factors in participants views. Correlation of each factor and Jefferson scale were then statistically examined.

Summary of Results: There were no statistical differences between the average JSE score in preclinical and clinical year medical students; scoring 4.11 and 4.06 respectively. However, the students' perspective on various factors demonstrated that there are three crucial components that results in higher empathy with statistical significance these include: Physical health, Self-criticism, and Self-compassion ($p < 0.05$). The study revealed that 'Physical health' was the most significant factor influencing empathy while 'Connectiveness and belonging' has shown least significant relationship ($p = 0.996$). It is noteworthy that mental health had no significant correlation with degree of empathy.

Discussion and Conclusions: It is a common occurrence all over the globe and in our institution to discover a decrease in empathy as medical students progresses further into their medical curriculum. However, this study suggested otherwise, where Thai medical students' empathy actually maintained their level even throughout their clinical years. In the exploration of this unusual circumstance, medical students particularly supported that having "self-criticism and self-compassion" to be crucial in developing higher empathy. This highly advocate and stresses the importance of these factors and suggest that "self awareness" as a fundamental skill that should be taught to all years of medical study.

Take-home Messages: Though the statistics may not show significant correlation, empathy is a state of mind which varies due to many reasons, however, it may be sustained with crucial factors that are integral to medical education.

#EP14 - ePosters: Empathy

#EP14.7 (6696)

Effect of Scenario-Based Simulation Training on Newly Recruited Nurses Empathy

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ABSTRACT:

Background: Empathy is a crucial element to establish a good nurse-patient relationship and quality of care. However, newly recruited nurses don't know how to express their empathy and lack of skills in the clinical practice. Previous studies indicated that scenario-based simulation training enabled learners to develop empathy. We aim to develop a scenario-based simulation program to promote the empathy in the junior nurses.

Summary of Work: Our research implemented a quasi-experimental design and purposive sampling. The objects were 42 new recruited nurses who have been working for two months in 2019. We developed a scenario-based simulation task of empathy. These nurses had attended empathy course in the orientation then taken the scenario-based simulation task of empathy in the Objective Structured Clinical Examinations (OSCEs) by the second month. Before the orientation course, all objects shall evaluate themselves by Jefferson Scale of Physician Empathy and also be assessed by preceptors. The data were measured and analyzed by SPSS/Window19.0.

Summary of Results: In the 42 research objects, internal medicine staffs accounted for 38.1% (16/42), novices accounted for 73.8% (31/42). The average length of service was 0.61 year. In general, the scale of empathy for the pre-test and post-test were 117.43 ± 1.58 and 117.69 ± 1.72 , respectively ($P < 0.1$). Positions and working experience didn't affect the scores significantly.

Discussion and Conclusions: Our study demonstrated that scenario-based simulation training could improve junior nurses' empathy effectively. Educators can develop the future curriculum mapping based on the results to meet the individual requirement, especially the work-place training and assessment.

Take-home Messages: Scenario-based simulation could promote the empathy of junior nurses effectively and significantly. It's a good way to help junior health professionals improve their empathy.

#EP14 - ePosters: Empathy

#EP14.8 (6724)

The Effect of narrative medicine program on improving reflective capacity and empathy in medical students

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ABSTRACT:

Background: Narrative medicine, expressing on experiences, could create empathetic communication with patients through reflection on experience. Educational interventions like reflective writing can improve reflective capacity and empathy. the aim of this study was to examine the effect of narrative medicine program on improving the reflective capacity and empathy of medical students.

Summary of Work: A quasi-experimental study was performed for 135 medical interns with control (n=66) and experiment (n=69) groups by running a narrative medicine course. Pre-test and post-test were held using two tools to assess reflective capacity (REFLECT) and empathy (JSPE). We confirmed the face and content validity of both tools and measured the reliability of the tools by Internal consistency through the Cronbachs alpha coefficient. A comparison of the mean scores of interns' empathy and reflection was performed in pre-test and post-test in one group and between groups using t-paired and t-test ($p \leq 0.05$). Data analysis was conducted using SPSS23.

Summary of Results: The Cronbachs alpha coefficient of the REFLECT and JSPE tools were 0.83 and 0.82, respectfully. The mean scores of reflection and empathy had a significant difference before and after the intervention, in the experiment group compared to the control group. Moreover, the comparison of the mean scores between the two groups in the post-test was significant.

Discussion and Conclusions: Studies have shown that narrative medicine can promote clinical reasoning and also professionalism in students. Our study also showed that narrative medicine is an effective teaching method in our context (Iran), that can improve reflective capacity and empathy, and ultimately promote professionalism as an important goal in medical humanities. Integrating the narrative medicine course in the formal curriculum or as an extracurricular activity is recommended.

Take-home Messages: narrative medicine is an effective method for teaching and promoting professionalism in medical students.

#EP14 - ePosters: Empathy

#EP14.9 (4021)

Health Empathy Map: Creation of an Instrument for Empathy Development

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ABSTRACT:

Background: Empathy is a multidimensional construct that requires the ability to perceive and understand the others' perspectives, as well as feel their emotional state. It is an intellectual skill to be learned and represents one of the domains of emotional intelligence. There are few studies on structured methods for teaching and practicing empathy in care settings. Some students report difficulties in coordinating the cognitive knowledge necessary for care and still consider the patients perspective. The XPLANE, a business design thinking-company, developed the Empathy Map to be used when one need to immerse oneself in a user's environment. The aim of this study was to create an instrument for teaching and practice of empathy skills in medical education, called the Health Empathy Map (HEM).

Summary of Work: This is a qualitative and descriptive study with 3 phases: (1) Adaptation of XPLANEs Empathy Map for medical education scenarios (2) Adequacy of the instrument content performed by teachers from the outpatient clinic of José do Rosário Vellano University, during teacher training (3) Assessment of content and feasibility of the instrument, first performed using the focal group technique and then by third-year medical students during outpatient clinic practice and in the tutorial group.

Summary of Results: The adequacy of the instrument for medical education scenarios was based on conceptual aspects of empathy: perspective-taking, emotional sharing and empathetic concern, as well as suggestions from the outpatient clinic teachers, focal group participants and medical students. All suggestions were debated and accepted, after a consensus that indicated advances and improvements of the instrument, in order to allow its use in health learning scenarios.

Discussion and Conclusions: The final version of the HEM was considered by participants of different phases of the study, as an educational instrument with great instructional potential, in terms of stimulating the development of empathy, with a broad use in medical education scenarios. This is a innovative instrument, simple and easy to apply, that can get a student to focus on the patient feelings and needs. Future studies are necessary to assess the effects of the HEM.

Take-home Messages: In a world of such virtuality and technology a simple tool for teaching and practicing empathy.

#EP14 - ePosters: Empathy

#EP14.10 (4061)

Use of online chronic patient management tool improves empathy of the medical students

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ABSTRACT:

Background: Empathy is considered the key element of doctor-patient relationship and effective medical treatment. However, medical students are occupied with too many patients, especially in China. It's hard to cultivate empathy in such situations. We designed an online tool for chronic patient management, in which medical students were involved. The present study is to observe if continuous, long term communication and taking part in patient management could be a way for the students to develop empathy.

Summary of Work: An online patient management tool was designed. The patients with chronic arthritis were involved through the app. Students communicated with the patients routinely, answered their questions, explained the test results, gathered clinical and social-psychological data, discovered the flag signs and sent alarms under supervision of the tutors. Students used the app to organize emotional survey of the patients. The Jefferson Scale of Physician Empathy student version (JSPE-s) was administered to the students. Open questions regarding to empathy were designed.

Summary of Results: Students taking part in online patient management had higher JSPE score than the students not taking part in the program. And the students had higher JSPE score after they took part in the program than before. The students felt most touched when the patients chatted and shared their ideas about the diseases and medication and how their lives had been changed by the diseases.

Discussion and Conclusions: With too many patients and too little time for each patient, the medical students couldn't see a complete picture of the patient's life. That's one of the reasons why empathy was not well established. The chronic patient management app provided an approach of open-ended communication. The students got a lot more chances to talk to the patients in a more amiable way and made them see the patient as an integrated person rather than just an object. This would be a way out for teaching empathy when doctor-patient face-to-face time is so limited.

Take-home Messages: Empathy could not be taught in textbooks. Actual contact to the patients helps the students to promote empathy. The Chronic patient management app provided a lot more chances of communication. It could be used as a tool to develop empathy.

#EP14 - ePosters: Empathy

#EP14.11 (4337)

Early clinical exposure curriculum effect on preclinical medical student's empathy

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ABSTRACT:

Background: Faculty of Medicine, Princess of Naradhiwas University (PNU) is a newly established medical school which provided early clinical exposure curriculum for instill clinical skills as well as empathy, crucial component of doctor-patient relationship, to medical students. Effect of the program on student's empathy was studied in order to curriculum development and empathy enhancement strategy.

Summary of Work: The internet-based questionnaire was administrated to 108 first-to-third year preclinical medical students. The questionnaire consists of two parts; firstly, demographic data including gender, year of study and accumulated grade point average (GPAX); Secondly, self-assessment empathy questionnaire, Thai version of Jefferson Scale of Physician Empathy-Student Version. Participant's demographic data and mean of empathy score were analyzed. Independent t-test and one-way ANOVA were used as a statistical tool for mean score comparison. Correlation study between GPAX and empathy score was demonstrated by Pearson Correlation coefficient.

Summary of Results: Total of 91 (84.25%) preclinical medical students were completed the questionnaires. In early clinical exposure medical students, the empathy score ranged from 77 to 132 with a mean score of 105.32 ± 11.73 . No demonstrated statistically difference of mean empathy score between male and female (male; $\bar{x} = 104.68 \pm 13.44$, female; $\bar{x} = 105.85 \pm 10.20$) as well as year of study (1st year; $\bar{x} = 108.40$, 2nd year; $\bar{x} = 102.42$, 3rd year; $\bar{x} = 105.68$). Correlation study revealed no statistically association between empathy score and GPAX of medical students in early clinical exposure curriculum.

Discussion and Conclusions: In early clinical exposure medical program of PNU, preclinical students were high empathic level for all preclinical years as well as no statistically difference between gender and year. It might be explained by identical clinical exposure together with normally slow progressive increasing of empathy. According to irrelevant correlation between empathy and GPAX, might be explained by independently academic aspect from non-technical skills. In conclusion, early clinical exposure medical program effected on preclinical medical student's empathy.

Take-home Messages: Early clinical exposure should be curriculum development principle integrated with empathy enhancement activities for good doctor-patient relationship of medical students

#EP14 - ePosters: Empathy

#EP14.12 (4692)

A two-year follow-up study of empathy in students of clinical psychology before and after IPE with students of medicine

AUTHOR(S):

- **Hiroki Okada, Department of Medical Education, Faculty of Medicine, Kagawa University, Japan***
- Shuji Bandoh, Department of Medical Education, Faculty of Medicine, Kagawa University, Japan
- Naohiro Kurotaki, Department of Clinical Psychology, Faculty of Medicine, Kagawa University, Japan
- Kenji Kanbara, Department of Clinical Psychology, Faculty of Medicine, Kagawa University, Japan
- Shuji Noguchi, Department of Clinical Psychology, Faculty of Medicine, Kagawa University, Japan
- Junko Kawahito, Department of Clinical Psychology, Faculty of Medicine, Kagawa University, Japan

ABSTRACT:

Background: In 2018, Kagawa University established its Department of Clinical Psychology in the Faculty of Medicine. At the same time, we started IPE (Interprofessional Education ; outlines of medicine and experiences in medical institutes) between students in the Department of Medicine and Clinical Psychology. We compared empathy using JSE (Jefferson Scale of Empathy) before and after the IPE. In clinical psychology students, some items in JSE categorized in perspective thinking significantly decreased after IPE. However, those changes were not seen in medical students. We thought the study of medical issues might influence the decrease of empathy in clinical psychology students (reported in AMEE 2019). To confirm the hypothesis, we made following study.

Summary of Work: Clinical psychology students study psychological issues more in the second year rather than in the first year. We compared the average empathy score of the same clinical psychology students between first and second year. In addition, we made the same comparison between before and after IPE for students admitted in 2019.

Summary of Results: 1) Previously observed decreased items in JSE were item 13; Non-verbal cues and body language in understanding patients 16; understanding emotion in patients-clinician relationship, and 20; empathy as a therapeutic factor. All of these items were increased in the second year. However, they didn't reach the level before IPE. 2) In students admitted in 2019, the same significant decrease as we observed in the previous year was not seen. Average scores of the above three items were lower than in the previous year's scores.

Discussion and Conclusions: 1) After studying more psychological issues in the second year than the first year, three decreased items of JSE were elevated. However, as medical issues were continuously learnt (anatomy, physiology, biochemistry, pathology, immunology, microbiology, and social medicine) in the second year, empathy might not reach the before-IPE level. 2) Students admitted in 2018 were the first in the Department of Clinical Psychology. So, as their expectation of psychology were very high, empathy levels might have been higher than in students admitted in 2019.

Take-home Messages: Evaluation of the level of empathy in clinical psychology students needs more longitudinal observation.

#EP14 - ePosters: Empathy

#EP14.13 (4943)

Empathy analysis of medical teachers and undergraduate students in a university in Brazil

AUTHOR(S):

- **Adriana Rabello, School of Medicine of University of Sao Paulo, Brazil***
- Milton Martins, School of Medicine of University of São Paulo, Brazil
- Patricia Tempiski, School of Medicine of University of São Paulo, Brazil
- Renata Kobayasi, School of Medicine of University of São Paulo, Brazil
- Fernanda Arantes-Costa, School of Medicine of University of São Paulo, Brazil

ABSTRACT:

Background: Empathy is fundamental in the doctor-patient relationship and essential for professionalism. There is a dearth of studies about teachers' empathy and conflicting results about students' empathy throughout the course.

Summary of Work: We performed a cross-sectional study, aimed to assess the empathy scores of 480 medical students from first, third and fifth year and their 103 teachers, compare the differences between them and understand if they believe that teachers' empathy could influence students' empathy through a specific question. For the evaluation of self-reported empathy, we used Jefferson Scale of Empathy for students and professionals (JSE-S and JSE-HP) and Davis' Interpersonal Reactivity Index (IRI).

Summary of Results: The response rate was 69.37% for students and 85.44% for teachers. Teachers exhibited higher scores for empathy when compared to students in Jefferson Scale (124.59 (± 10.28), teachers, vs 121.168 (± 10.76), students $p = 0.008$) and in subscale Perspective Taking (PT) of IRI (27.68 (± 4.06), teachers vs 26.21 (± 4.24), students $p = 0.004$). On the other hand, teachers exhibited lower scores in the subscale Personal Distress (PD) of IRI (17.68 (± 4.5), teachers vs 19.37 (± 4.78), students $p = 0.003$). There was a positive correlation (Pearson's coefficient) between students question scores and the IRI subscales PT (0.122; $p = 0.025$) and Empathic Consideration (0.191; $p = 0.000$), besides JSE-S (0.180; $p = 0.001$). Among the teachers, a positive correlation was observed between the PT subscale and the specific question (0.279; $p = 0.009$).

Discussion and Conclusions: Teachers showed higher scores in JSE and PT than students, but lower scores in the PD, possibly meaning that teachers feel less discomfort with suffering than students. These results demonstrate that the more the student believes in the teachers' influence on his empathy, the higher are his score on PT, CE, and JSE-S. Among teachers, the higher score in TP, the more it is believed in its influence on students' empathy. These results may indicate the importance of role-models in education and students' empathy scores.

Take-home Messages: Teachers' empathy is important to increase students' empathy. Thus, we must place empathy as something that can be taught in medical education.

#EP14 - ePosters: Empathy

#EP14.14 (5659)

Effect of Case-based and Experiential Learning Module on Empathy in the First-year Medical Students

AUTHOR(S):

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- Kusalaporn Chaiudomsom, Department of Psychiatry, Faculty of Medicine, Khon Kaen University, Thailand

ABSTRACT:

Background: Introduction: Physician empathy is a critical competency for effective therapeutic practice. Early clinical exposure to a case-based and experiential learning module may enhance empathy. Objective: To examine the effect of a case-based and experiential learning module on empathy scores and its associated factors in the first-year medical students.

Summary of Work: A quasi-experimental study in a total of 285 first-year medical students at Faculty of Medicine, Khon Kaen University, Thailand was conducted. Participants were asked to complete following questionnaires before and after taking a 13 week course of case-based and experiential learning module: demographic data, General Health Questionnaire-28 (GHQ-28), and Jefferson Scale of Physician Empathy-Student Version (JSE-S). The study was started from January 2020 and expected to complete in March 2020.

Summary of Results: A total of 254 participants (89.12%) completed questionnaire and 12 outlier data (4.72%) were excluded from this preliminary analyses. The median JSE-S score before taking the module was 110 (IQR = 13.00) and median GHQ score was 2.0 (IQR = 4.0). There were no significant differences of pre-course JSE-S scores among groups by gender, grade-point accumulation (GPA), parents' status and parents' level of education

Discussion and Conclusions: Hypothetically, an early clinical exposure with the case-based and experiential learning module may enhance empathy. We expected that the post-course JSE-S score will be significantly higher than the pre-course score. We will present results from final analyses at the conference after completion of the study.

Take-home Messages: The Integrative learning module could enhance the empathy skill for the 1st year medical students. For achieving medical student empathy skill outcome, longitudinal study should be done for monitoring and developing continuously.

#ICBME Summit

#ICBME1.1 (CBME/7685)

Entrustment in the Association of American Medical Colleges (AAMC) Core Entrustable Professional Activities (EPA) Pilot

AUTHOR(S):

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- Vivian Obeso, Florida International University Herbert Wertheim College of Medicine, USA
- William Cutrer, Vanderbilt University School of Medicine, USA
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ABSTRACT:

EPAs are framed as a pragmatic tool to translate competency-based medical education into daily practice. In 2013, the AAMC defined a set of thirteen core EPAs that graduating medical students should be able to perform with indirect supervision on day one of residency. In 2014, the AAMC commissioned a five-year pilot to support ten medical schools in implementing the Core EPA framework. One of the main pilot goals has been to determine the feasibility of developing a process to make high-stakes entrustment decisions. We conducted semi-structured interviews with representatives of all ten pilot and compiled entrustment data from four schools that made provisional (for process improvement only) entrustment decisions for 2019 graduates. Results grouped around five major themes: 1) adherence to the guiding principles, 2) data review, 3) logistics, 4) relationship to existing progress promotions committees and, 5) implementation challenges. Entrustment data included 2,416 EPA-specific entrustment determinations for 349 students. Overall, 29% were “ready to be entrusted with confidence,” including over 50% of students considered for history and physical and oral presentation and None of the schools in the AAMC Core EPA Pilot has yet fully implemented a process for summative entrustment for the thirteen Core EPAs. Several common barriers to the process emerged, and there was a consensus that more experience is needed before consequential entrustment decisions can be made. Entrustment decision-making based on the Core EPA pilot guiding principles is complicated and remains a work in progress.

#ICBME Summit

#ICBME1.2 (CBME/7721)

Identification of resident-sensitive quality measures using consensus methodology in an internal medicine residency

AUTHOR(S):

- **Benjamin Kinnear, University of Cincinnati Academic Health Center, USA***
- Matthew Kelleher, University of Cincinnati Academic Health Center, USA
- Matthew Sall, University of Cincinnati Academic Health Center, USA
- Daniel Schauer, University of Cincinnati College of Medicine, USA
- Eric Warm, Program Director, Internal Medicine, University of Cincinnati Medical Center, USA
- Daniel J. Schumacher, Cincinnati Children's Hospital Medical Center, USA

ABSTRACT:

Issue: Competency based medical education (CBME) begins with the needs of patients. However, few reports describe using assessment of clinical care measures to ensure residents provide high quality care. Resident-sensitive quality measures (RSQMs), developed using consensus methodology, have been advocated to address this need. First developed for the Pediatric Emergency Department setting, it is unknown if these methods are generalizable to other settings. This study sought to use consensus methods to develop RSQMs for the general Internal Medicine (GIM) wards setting.

Methodology: Nine residents and six faculty members completed two nominal group technique (NGT) meetings to generate a list of candidate measures that: (1) Were important to quality care on a GIM ward, and (2) Would likely represent a resident's care (not another provider's). Once redundant measures were combined, a Delphi group of fourteen residents and faculty members completed three rounds of consensus building to prioritize measures that met these criteria. ResultsThe NGTs generated 380 unique clinical process and outcome measures which were used in the Delphi groups. The Delphi technique resulted in 92 RSQMs with the following clinical condition breakdown: diabetes mellitus-17, hypertension-14, COPD-13, hyperkalemia-16, pneumonia-10, GIM general care-22. Among final measures, 49% related to documentation and 50% focused on orders.

Discussion: Consensus methodology generated 92 RSQMs for an IM residency program, though validation of their use in assessment of resident performance is still needed. Next steps include studying if these measures correlate with other available assessment data.

#ICBME Summit

#ICBME1.3 (CBME/7765)

Implementation of a Simulation Program to Support Assessment in a New Competence-Based Postgraduate Medical Training Curriculum in Emergency Medicine

AUTHOR(S):

- **Lorri Beatty, Department of Emergency Medicine, Dalhousie University, Canada***
- Janet MacIntyre, Department of Emergency Medicine, Dalhousie University, Canada
- Nick Sowers, Dalhousie University, Canada
- Simon Field, Department of Emergency Medicine, Dalhousie University, Canada

ABSTRACT:

Background: In Canada, postgraduate training programs in Emergency Medicine transitioned to Competence Based Medical Education (CBME) in July 2018. Within this curriculum trainees are expected to collect assessments of competence on a number of Entrustable Professional Activities (EPAs) before transitioning to the next stage. To ensure trainees had sufficient opportunity to attain competence for all EPAs (particularly those involving care of critically ill patients), we developed a simulation program to supplement clinical learning opportunities.

Summary of Work: During the first two years of the program 41 simulation sessions were conducted for CBME trainees. Simulated cases focused on critical yet infrequent presentations (cardiac arrest, dysrhythmias, respiratory distress, altered level of consciousness and shock) using a high-fidelity simulation mannequin. Simulation sessions were conducted with the intent of providing an educational opportunity, but trainees could choose to use the simulation to be assessed on an EPA at their discretion.

Summary of Results: In the first 18 months of the program five CBME-based trainees participated in the simulations, and a total of 110 EPA assessments were completed during simulation (9.2% of all assessments), ranging from 7 to 23 per resident. For the three EPAs addressing resuscitation of critically ill patients, 80/184 (43.4%) were completed during simulation, and 12/352 (3.4%) of procedural EPAs were assessed in simulation.

Conclusions: Trainees completed a large proportion of their resuscitation EPAs in the simulation setting. Without simulation-assessed EPAs, trainees would not have met the minimum number of assessments required to transition to the next stage of training.

#ICBME Summit

#ICBME1.4 (CBME/7767)

Using a Rapid-Cycle Approach to Evaluate Implementation of Competency-Based Medical Education

AUTHOR(S):

- **Stephanie Baxter, Queen's University, Canada***
- Heather Braund, Queen's University, Canada
- Tessa Hanmore, Queen's University, Canada
- Nancy Dalgarno, Queen's University, Canada

ABSTRACT:

Background: Competency-based medical education (CBME), referred to as Competence by Design (CBD), is being adopted in Canada. Given the initial institutional CBME implementation (July 1, 2017) at Queen's University and the upcoming national implementation, a program evaluation of CBME implementation is a timely approach to identify barriers and strengths. We explored key stakeholders lived experiences of CBME implementation for the Foundations of Discipline Stage in one Department of Ophthalmology.

Summary of work: Using a case study approach, a qualitative rapid-cycle program evaluation was conducted during the 2018-2019 academic year with two evaluation cycles (Fall 2018 and Spring 2019). Key stakeholders participated in semi-structured interviews or focus groups. All data were analyzed thematically.

Summary of results: From the first cycle, 15 recommendations, 6 entrustable professional activities (EPA)-specific concerns, and 8 strengths were identified. A total of 25 recommendations were made for the second round and 6 strengths were identified. Recommendations included adding punctuality, efficiency, and time management to the assessments and faculty cheat sheets for triggering assessments. Increased transparency, regular and explicit feedback, and greater resident self-awareness were identified as strengths. Three themes emerged across all data: developing a shared understanding, refining assessment processes and tools, and feedback.

Discussion and Conclusions: Exploring lived experiences resulted in positive and immediate improvements to the residency program. The recommendations and approach will be useful to other departments and institutions as they prepare for CBME. Take-home message: Rapid-cycle program evaluation has been a valuable process for identifying key barriers, strengths, and recommendations following CBME implementation.

#ICBME Summit

#ICBME1.5 (CBME/7779)

Roadmap to Implement Undergraduate Competency-Based Medical Education: A Scoping Review

AUTHOR(S):

- **Mohammed A. Alqarni, College of Medicine, Sulaiman Al Rajhi University, Saudi Arabia***
- Richard Fuller, School of Medicine, University of Liverpool, UK
- Valerie Farnsworth, Leeds Institute of Medical Education, University of Leeds, UK
- Trudie Roberts, Leeds Institute of Medical Education, University of Leeds, UK

ABSTRACT:

Background: CBME has undergone a new wave of development from accreditation agencies and medical education scholars in the last two decades. This has been accompanied by implementation in medical education worldwide to meet challenging healthcare needs. CBME is complex, and no roadmap currently exists for undergraduate's implementation.

Method: A scoping review of the implementation of CBME for undergraduates was carried out. A search was conducted in databases and research engines for literature from 2007–2019. Each article's reference list was analysed, and articles that met the necessary criteria were included.

Result: Of 264 articles identified, 20 papers met the inclusion criteria, with topics on self-reporting of CBME implementation (n=9), competency framework development (n=6), curriculum evaluation (n=3) and Authors' perspectives (n=2).

Discussion: CBME implementation in medical schools is challenging and consumes numerous resources. Several factors create this challenge of difficulties, including considerable efforts to define the competencies and the complexity of the concept. Those implementing CBME need to be conscious of its risks to minimise potential pitfalls. Consequently, we offer an implementation framework for undergraduate CBME included: commitment and change procedure; collaboration and communication; consultation and transparency; faculty buy-in and training; learning approaches and assessments; resources and infrastructure; and medium of research-informed practice and practice-informed research.

Conclusion: CBME implementation in undergraduate medical schools has multiple prongs. It requires a systematic procedure and planning with frequent evaluations to capture intended and unintended consequences. The CBME implementation framework presented here offers medical schools a robust means to implement CBME and thus produce competent doctors.

#ICBME Summit

#ICBME1.6 (CBME/7698)

A Mobile App to Capture EPA Assessment Data: Utilizing the Consolidated Framework for Implementation Research to Identify Enablers and Barriers to Engagement

AUTHOR(S):

- *John Q. Young, Donald and Barbara Zucker School of Medicine at Hofstra/Northwell, USA**
- Rebekah Sugarman, Northwell Health, USA
- Jessica Schwartz, Northwell Health, USA
- Matthew McClure, Northwell Health, USA
- Patricia S. O'Sullivan, University of California, San Francisco School of Medicine, USA

ABSTRACT:

Background: Mobile apps that utilize the EPA framework to capture and deliver feedback are being implemented. If EPA apps are to be successfully incorporated into programmatic assessment, a better understanding of how they are experienced by the end-users will be necessary. The authors conducted a qualitative study using the Consolidated Framework for Implementation Research (CFIR) to identify enablers and barriers to engagement with an EPA app.

Method: Structured interviews of faculty and residents were conducted. Transcripts were independently coded by two study authors using directed content analysis. Differences were resolved via consensus. The study team then organized codes into themes relevant to the domains of the CFIR.

Results: Eight faculty and 10 residents chose to participate in the study. Both faculty and residents found the app easy to use and effective in facilitating feedback immediately after the observed patient encounter. Faculty appreciated how the EPA app forced brief, distilled feedback. Both faculty and residents perceived the App as aligned with the department's philosophy. Barriers to engagement included faculty not understanding the EPA framework and scale, competing clinical demands, residents preferring more detailed feedback and both faculty and residents noting that the app's feedback should be complemented by a tool that generates more systematic, nuanced, and comprehensive feedback. Residents rarely if ever returned to the feedback after initial receipt.

Discussion: This study identified key enablers and barriers to engagement with the EPA app and provides guidance for future research and implementation efforts focused on using smartphones to capture feedback.

#ICBME Summit

#ICBME1.7 (CBME/7703)

Workplace-based assessment in emergency medicine: how do physicians use entrustment anchors?

AUTHOR(S):

- Trevor Robinson, Queen's University, Canada *
- Natalie Wagner, Queen's University, Canada
- Adam Szulewski, Queen's University, Canada
- Nancy Dudek, University of Ottawa, Canada
- Warren J. Cheung, University of Ottawa, Canada
- Andrew K. Hall, Queen's University, Canada

ABSTRACT:

Background: Competency based medical education (CBME) has triggered widespread utilization of workplace-based assessment (WBA) tools using entrustment anchors. This study aimed to identify factors that influence supervisors' choice of ratings and explore their experiences using entrustment anchors, specifically the Ottawa Surgical Competency Operating Room Evaluation (OSCORE) scale anchors, within the context of clinical work in the Emergency Department.

Method: A convenience sample of fifty semi-structured interviews with Emergency Medicine (EM) physicians from a single Canadian hospital system were conducted. All interviews occurred within two hours of completing a WBA with an EM trainee. Assessors were asked what they considered when rating the trainee and whether they had any difficulty assigning a rating. Interview transcripts were independently analyzed using thematic analysis by two research team members.

Results: Interviews captured interactions between 73% (27/37) of EM staff and 83% (37/50) of EM trainees, across all levels of training. The mean OSCORE rating was 4.34 ± 0.77 (2 to 5). Six major factors that influenced ratings were identified: amount of guidance required, perceived competence through questioning, trainee experience, clinical context, past experience with the trainee, and perceived confidence. Staff rarely reported struggling to assign ratings, save for occasional difficulty with interpretation of entrustment anchors.

Conclusion: Supervisors appear to take several factors into account when deciding what rating to assign a trainee on a WBA that uses entrustment anchors. These results further our understanding of WBAs using entrustment anchors and may facilitate effective faculty development regarding WBA completion as we move forward in CBME.

#ICBME Summit

#ICBME1.8 (CBME/7736)

An Empirical Investigation into Milestones' Factor Structure using National Data from Clinical Competency Committees

AUTHOR(S):

- **Kenji Yamazaki, Accreditation Council for Graduate Medical Education, USA***
- Stanley J. Hamstra, Accreditation Council for Graduate Medical Education, USA
- Eric Holmboe, Accreditation Council for Graduate Medical Education, USA

ABSTRACT:

Since 2014, the Accreditation Council for Graduate Medical Education (ACGME) Milestones have served as a measure of residents' professional development in surgery residency programs. For U.S. surgery residencies, the six general competencies in the ACGME Milestones framework are further divided into 16 sub-competencies. Milestone ratings are determined by a Clinical Competency Committee (CCC) of each program semi-annually. The present study investigated whether national Milestones data in surgery residencies reflected the 6-domain competency framework. Milestone ratings from 307 Surgery programs from 2018-19 were examined. Data from 1330-2932 residents – depending on post-graduate year (PGY) and assessment period – were used in the analysis. Intra-class correlations (ICC) were calculated by sub-competency to gauge program-clustering effects on ratings. We applied a multilevel confirmatory factor analysis to compare the fit of the 6-domain factor model against 4 other plausible models. The model-data fit was evaluated using several statistical criteria; here we present only the Comparative Fit Index (CFI). Moderate levels of ICC were prevalent among sub-competencies (0.193-0.606). Across PGY levels and assessment periods, the 6-domain factor model was a better fit (mean CFI =0.978) than 4 other alternatives (mean CFI ranged from 0.897-0.971). CCCs appear able to distinguish 6 general competencies. This study provides internal structure validity evidence for the Milestones within a single specialty, and may shed light on CCCs' shared understanding of the distinctive competency content embedded within the Milestones. The consistent findings over PGYs and assessment periods provide support for the meaningful use of Milestones as a measure of performance trajectories.

#ICBME Summit

#ICBME1.9 (CBME/7740)

Shadow systems in assessment: how supervisors make progress decisions in practice

AUTHOR(S):

- **Damian Castanelli, Monash University, Australia***
- Jennifer Weller, Auckland City Hospital, New Zealand
- Elizabeth Molloy, University of Melbourne, Australia
- Margaret Bearman, Deakin University, Australia

ABSTRACT:

Introduction: In CBME, educators must make decisions on trainee progression and credentialing for independent practice, which requires robust evidence from workplace-based assessment. Simultaneously, workplace-based assessment is promoted as a pedagogical approach promoting learning; meeting both purposes may present unforeseen challenges. In this study, we explored how supervisors make decisions on trainee progress in practice.

Methods: We performed a thematic analysis of semi-structured interviews with 19 supervisors of postgraduate anaesthesia training across Australia and New Zealand.

Results: Supervisors looked beyond the formal assessment portfolio when making performance decisions. They instead used assessment 'shadow systems' based on their own observation and confidential judgements from trusted colleagues. Supervisors' decision making involved expert judgement of the perceived salient aspects of performance and the standard to be attained, allowing for opportunities and constraints in local learning environments. Supervisors found making progress decisions an emotional burden. Faced with difficult decisions, supervisors found ways to share responsibility and balance potential consequences for the trainee with the need to protect their patients.

Discussion: Viewed through the lens of community of practice theory, development of assessment 'shadow systems' indicates a lack of alignment between local workplace assessment practices and the programmatic assessment approach to high-stakes progress decisions.

Conclusions: Avenues for improvement include cooperative development of formal assessment processes to better meet local needs or incorporating information from 'shadow systems' into formal assessment processes. Castanelli DJ, Weller JM, Molloy E, Bearman M. Shadow systems in assessment: how supervisors make progress decisions in practice. *Adv Health Sci Educ Theory Pract.* 2020;25:131-47.

#ICBME Summit

#ICBME1.10 (CBME/7805)

Using Machine Learning to Augment Medical Student Narrative Assessments

AUTHOR(S):

- *Maxwell Spadafore, University of Michigan Medical School, USA**
- Seetha Monrad, University of Michigan Medical School, USA

ABSTRACT:

Background: Programmatic assessment in CBME necessitates the synthesis of numerous types of assessment data; this is resource-intensive. We present a series of machine learning (ML) models designed to derive competency metrics from narrative text, provide preliminary validity evidence, and discuss potential applications.

Methods: We trained machine learning (ML) models on a dataset of 6,583 assessments of clerkship students. Each form contained “strength” and “development” narratives, Likert ratings for six competency domains, and an overall numeric score (ONS). We trained ML models to score competency similarity (the extent to which the narrative embodied the competency) and valence (the narrative’s positive/negative attitude toward the competency). To provide validity evidence, we calculated model accuracy and correlated the valence and similarity scores against the ONS and narrative lengths.

Results: The ML models accurately predicted valence (mean accuracy 0.693, range 0.676-0.716) and similarity (mean accuracy 0.744, range 0.715-0.765) for each competency. Competency valence scores were highly correlated (range 0.395-0.509) with ONS. Similarity scores were lowest near the mean ONS, with higher similarity scores at the extremes. Valence scores were positively correlated with “strength” narrative length and negatively correlated with “development” length.

Conclusions: Computational techniques can generate competency ratings from assessment text which correspond with rater-provided quantitative scores. By augmenting the amount of data which can be mined from narrative text, our approach could allow narratives to become a primary source for competency assessment data, amplifying assessment-for-learning for students and simplifying workplace-based assessment for faculty.

#Exhibitor Sessions

#ES1

Pre-covid, covid, and post-covid - a discussion about medical education in the future

Date: Monday 7th September

Time: 0915-1015

Stream: 7

PRESENTER(S):

- Kieran Walsh, BMJ, UK
- Matt Morgan, BMJ, UK

ABSTRACT: In this discussion, Dr Kieran Walsh, Clinical Director and Dr Matt Morgan, Clinical Lead Editor, discuss the impact of the COVID-19 pandemic on medical education and the future of medical education.

Please take the opportunity to visit our booth C7 in Exhibition Arena Hall 1

#Exhibitor Sessions

#ES2

The role of online assessment in today's teaching environment

Date: Monday 7th September

Time: 1145-1245

Stream: 7

PRESENTER(S):

- David Game, Elsevier
- Madelene Hyde, Elsevier
- Carlos O. Aguilar, Mexico
- Eric Chan, Hong Kong
- Pragna Rao, India

ABSTRACT:

Moderators David Game and Madelene Hyde from Elsevier lead a panel discussion with three distinguished faculty from around the world. Hear from panellists Dr Carlos O. Aguilar in Mexico, Dr Eric Chan in Hong Kong and Dr Pragna Rao in India as they discuss key topics such as teaching clinical skills outside the hospital, using online formative assessments as a motivation tool to encourage students, and strategies that can be used to improve cohort cohesion given the current distance learning environment. Following their discussion, the panellists will be available for a 10 minute live Q&A to take questions from the audience.

Please take the opportunity to visit our booth C1 in Exhibition Arena Hall 1

#Exhibitor Sessions

#ES3

Remote exams - understanding the constraints and realising the opportunities

Date: Monday 7th September

Time: 1300-1400

Stream: 7

PRESENTER(S):

- Geoff Hazell, Maxinity, UK

ABSTRACT:

The current Covid-19 pandemic has brought the question of whether medical educators should be running remote exams for their students into sharp focus. In this session we discuss the pros and cons of running exams remotely, and take a look at some of the considerations organisations need to evaluate before deciding how to proceed. Questions we explore include whether exam structures need to change, if cheating can be prevented/discovered and whether exam invigilation in the form of proctoring is worth considering. We will also be opening the floor to discussion to spark a useful debate.

Please take the opportunity to visit our booth C17 in Exhibition Arena Hall 2

#Exhibitor Sessions

#ES4

Have InSimu Patients. Teach to save lives. - How to deliver a more efficient and standardized clinical training with simulated virtual patients at a scale.

Date: Monday 7th September Time: 1645-1745

Stream: 7

PRESENTER(S):

- **Gabor Toth, InSimu, Hungary**

ABSTRACT:

Clinical reasoning is one of the most complex skills that students have to learn and educators have to teach and assess. Such as, it requires a well designed objective assessment strategy to support students in their journey to become a professional.

InSimu Patient is an interactive medical educational app with simulated virtual patients, unlimited diagnostic pathways, and an objective scoring system. InSimu detects blind-spot and pitfalls in diagnostic thinking and efficiently teaches the correct, cost- and time-efficient, evidence-based diagnosis with a cutting-edge learning algorithm, like a private mentor. By offering an unlimited number of virtual scenarios in 140 diseases, InSimu is the most comprehensive tool for clinical training and standardized assessment.

Join the InSimu Presentation to get familiar with the best practices, learn more about what's beyond OSCE and see some specific examples on how you can deliver a more efficient clinical training with the InSimu Platform in your online and offline clinical training as well.

Please take the opportunity to visit our booth C10 in Exhibition Arena Hall 1

#Exhibitor Sessions

#ES5

Clinical Reasoning Education through Gamification

Date: Monday 7th September

Time: 1800-1900

Stream: 7

PRESENTER(S):

- Raja-Elie Abdulnour, NEJM Knowledge+, USA

ABSTRACT:

Errors in diagnostic reasoning are a leading cause of medical error. Diagnostic reasoning as described by information processing theory starts with data acquisition, formation of a problem representation, followed by illness script activation and a hypothesis for the patient's presentation. Additional data is then acquired in a hypothesis-driven fashion to determine illness script concordance and ultimately identification of the most likely diagnosis. Exposing learners to this cognitive process in an explicit manner can enhance clinical reasoning skills and improve patient care. Working closely with leading experts in case-based clinical reasoning education, NEJM Group has applied gamification principles and diagnostic reasoning theory to a computer-based clinical reasoning simulator aimed at teaching and assessing students and trainees. This application is being piloted in several medical schools, internal medicine residency programs, and physician assistant training programs, thus allowing an iterative development process with rapid response to learner and educator feedback. By profiling clinical reasoning at various levels of expertise, this program may help define mastery in clinical reasoning.

Please take the opportunity to visit our booth C15 in Exhibition Arena Hall 1

#Exhibitor Sessions

#ES7

Re-Envisioning Medical Education: Transforming Constraints into Opportunities

Date: Monday 7th September

Time: 1915-2015

Stream: 7

PRESENTER(S):

- Peter Horneffer, Lecturio GmbH, Germany
- Stefan Wisbauer, Lecturio GmbH, Germany

ABSTRACT:

While pandemics have historically brought significant disruption and challenge, they have also been followed by significant improvements in the well being of mankind. We expect COVID 19 to be no different. We have therefore organized this webinar designed to highlight opportunities for moving from the current Remote Emergency Teaching to a new paradigm of Highly Effective Evidence-Based Medical Education.

Please take the opportunity to visit our booth C8 in Exhibition Arena Hall 1

#Exhibitor Sessions

#ES8

1, 2, 3 - These simple, savvy techniques will enrich what you're teaching medical students

Date: Tuesday 8th September

Time: 0800-0900

Stream: 7

PRESENTER(S):

- Jason Woods, AMBOSS GmbH, Germany

ABSTRACT:

The strategies we will demonstrate are tech-lite, low-cost, and easy-to-implement for anyone in a teaching role working with medical students on foundational science principles or on clinical medicine objectives. Whether you're looking for ideas on how to increase student engagement or seeking exposure to the most up-to-date student learning materials, this workshop will help you explore your options. Our focus will be on 3 easy to implement extensions of traditional teaching:

1. Discover the didactic patient cases that we recommend for an in-class workshop or pre-class prep
2. Get tips on searching for images, illustrations, charts and videos to support a teaching objective
3. Learn how the Anki tool (a free online flashcard tool) can be enhanced with an AMBOSS plug-in to effectively leverage flashcard-based studying

You can innovate the learning environment for your students, without losing any extra time on course prep.

Please take the opportunity to visit our booth C9 in Exhibition Arena Hall 1

#Exhibitor Sessions

#ES9

Casper - An overview of Situational Judgement Testing in MD Admissions

Date: Tuesday 8th September

Time: 1415-1515

Stream: 7

PRESENTER(S):

- Andrew Kay, Altus Assessments, Canada

ABSTRACT:

The mission of the Casper test is to create a world served by exceptional professionals. This is achieved by providing programs with systematic and defensible information about the non-academic attributes of their applicants, and was designed to be used alongside academic measures. While academic aptitude can be adequately assessed by graded course performance and standardized cognitive tests, assessments of personal attributes have been particularly challenging for admissions into medicine and other health science programs. Two types of assessments that have shown promise in this regard are structured interviews and situational judgement tests. As a result, universities seek to implement the Casper test, a non-academic measure of personal and professional characteristics to allow for a more holistic look at their applicant pool.

This presentation is an overview of the Casper test and will consist of logistics details, validity evidence and how other MD programs are incorporating Casper into their selection process.

Please take the opportunity to visit our booth C4 in Exhibition Arena Hall 1

#Exhibitor Sessions

#ES10

Future Trends in Medical Education: A Publisher's Perspective

Date: Tuesday 8th September

Time: 1645-1745

Stream: 7

PRESENTER(S):

- Scott Grillo, McGraw Hill, USA

ABSTRACT:

How can we empower medical educators to train doctors of the future, given the ever-changing landscape of medicine and demanding student learning needs?

Today's medical students have a wealth of information available to them, but do they understand the importance of identifying and using trusted medical resources for foundational learning and clinical reference in an internet cluttered with unreliable information? Medical faculty are facing ongoing pressures to alter old teaching strategies and embrace new active learning, but how do we bridge the gap between classroom learning and clinical practice?

This session will explore how eLearning resources can provide the foundation on this journey of change and support faculty with the most current and continuously updated information and learning methods.

We will also discuss new teaching pedagogies, such as flipping the classroom, and how they may play a vital role in growing the students' sensibility to understand how to look for evidence, how to assess it and – eventually – transform their learning path into a more self-directed, and lifelong one.

Please take the opportunity to visit our booth C14 in Exhibition Arena Hall 1

#Exhibitor Sessions

#ES11

Teaching Online with ScholarRx

Date: Tuesday 8th September

Time: 1800-1900

Stream: 7

PRESENTER(S):

- Tao Le, ScholarRx, USA

ABSTRACT:

Dr. Le will discuss and demonstrate how a modern, high-quality digital curriculum can enhance teaching and learning, especially in online environments. The presentation will explore applications of the new Rx Bricks, a comprehensive curricular platform featuring student-friendly, customizable multimedia modules built around consensus learning objectives and continuous formative feedback. Actual case studies will highlight schools that have successfully used the Rx Bricks to:

- Enable a move to flipped-classroom model
- Support online learning with asynchronous content prior to live lectures
- Support longitudinal, integrated teaching and learning
- Reduce faculty prep time and improve assessment quality
- Efficiently increase the number of formative exams aligned and linked to the curriculum

Please take the opportunity to visit our booth C3 in Exhibition Arena Hall 1

#Exhibitor Sessions

#ES13

Equity in Medical Education and Information Acquisition in the Age of COVID and Beyond

Date: Wednesday 9th September **Time:** 1715-1815

Stream: 7

PRESENTER(S):

- Dr Art Papier , Visual DX, USA
- Virginia Jones, University of Illinois, Chicago, USA
- Kayla Clark, University of Illinois, Chicago, USA

ABSTRACT:

Dr. Art Papier will discuss the disparities in knowledge and the need for equity in resources to teach skin of color. He will also examine the visualization of medical complexity and teaching variations of disease. This will be illustrated by the use of case-base teaching with evidence to improve virtual education. Dr. Art Papier will be joined by Virginia Jones and Kayla Clark, two medical students at the University of Illinois Chicago, who will present their latest findings on the proportion of skin of color in popular licensing preparatory resources used by medical students.

Please take the opportunity to visit our booth C23 in Exhibition Arena Hall 1