Materials/Methods: For the past two years, residents participated in a 2-part image verification workshop consisting of a didactic session followed several weeks later by a hands-on portion for practice with setup images from actual patient treatments. Pre- and post-workshop, questionnaires were completed by the participants where each rated their ability on a 10-point scale to assess the appropriateness of an imaging modality for a given treatment and to independently check set-up and verification images. Quantitative data was tabulated for each year by participant and pre- and post-workshop scores were paired for analysis.

Results: In 2018, 7 medical residents and 2 physics residents participated. Participants' mean ratings post-workshop were significantly higher for ability to assess appropriateness of imaging (pre-activity 6.11, post-activity 7.33, p = 0.024) and to independently check images (pre-activity 5.56, post-activity 7.56, p = 0.003). In 2019, 6 residents who participated in the previous workshop and 2 new residents participated in both session of the workshop. The mean score post-activity was significantly higher for ability to independently check images (pre-activity 5.63, post-activity 6.88, p = 0.025), but not for ability to assess appropriateness of imaging (pre-activity 7.44, post-activity 7.50, p = 0.44). For the 7 residents who participated in both the 2018 workshop and the first session of the 2019 workshop, the mean scores for ability to independently check images were significantly lower pre-activity in 2019 than post-activity in 2018 (6.00 vs 7.29, p = 0.011).

Conclusion: A formal imaging verification workshop designed to provide hands on experience for medical and physics RO residents significantly improved their self-reported ability to assess the appropriateness of imaging modalities and to independently check set-up and verification images. However, residents scored their ability to independently check images significantly lower prior to the second workshop than after the first, indicating this skill is negatively affected by a lack of continuous practical application. Our findings indicate that a formal image verification workshop provides valuable resident image verification experience in RO training programs. Future directions include developing a dedicated software program for resident training and sharing the resource nationally.

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Rapid Radiotherapy Contouring Practice: Pilot Study of a Novel Web-Based Tool Enabling Automated Individualized Feedback

S.L. Duke,[1,2] L.T. Tan,[1] G. Eminowicz,[3] W.H.E. Park,[4] H. Wharrad,[2] R. Patel,[2] and G. Doody[2]; [1]Cambridge University Hospitals, Cambridge, United Kingdom, [2]University of Nottingham, Nottingham, United Kingdom, [3]University College London Hospitals, London, United Kingdom, [4]Imperial College London, London, United Kingdom

Purpose/Objective(s): Numerous studies have shown substantial inter-clinician variation in radiotherapy target delineation or "contouring," with errors linked to decreased cancer survival. Contouring practice often involves sophisticated software, but cases can take >1 hour to complete and feedback on the clinical significance of variations must be given manually. We developed a simplified web-based contouring simulation which enables quick learning exercises with automatic qualitative feedback. We piloted this with UK radiation oncology trainees, aiming to explore the tool's usability and impact on their contouring confidence and performance.

Materials/Methods: 16 cervix cancer exercises were created. For each exercise, 2 faculties agreed on "learning zones" - areas which should be included in, or excluded from, the contour e.g. "include the lateral tumor extent" or "exclude mesorectum." The tool automatically assesses contouring of these and provides relevant feedback. 12 exercises were delivered to 80 trainees in live workshops, with 4 follow-up exercises provided 4 weeks later. The time taken per exercise was recorded. Surveys were used to collect trainees' clinical experience, pre and post-workshop confidence in contouring (1=not at all confident, 5=highly confident), and perceived usefulness of feedback (1=not at all useful, 5=very useful). 8 learning zones were re-tested across separate cases. Study endpoints were: usability (time taken, reported usefulness), correlation of confidence with performance/experience [Spearman's rank], change in confidence [Wilcoxon signed-rank test], and proportional skill improvement/retention [McNemar's test].

Results: After an initial learning curve of 4 exercises, trainees contoured in ≤3 minutes per exercise; this speed was maintained at follow-up. Contouring confidence correlated strongly with higher stage of training (rho = 0.74) but weakly with performance (rho = 0.28). In general, trainees found the automated feedback very useful (median score 5/5, range 3-5). Of the 8 learning zones tested repeatedly, 2 had consistently high success rates (>80%). In 3 (all 'include' zones), there was an improvement from 42-45% to 78-92% (p<0.01) on immediate re-testing. In the remaining 3 (all 'exclude' zones), there was no change. After the workshop, trainees' contouring confidence had increased by 1.4 points on average (p<0.01). 34/80 (43%) trainees completed the follow-up exercises; their contouring confidence remained elevated but previous learning was not retained with only 1 learning zone having a follow-up success rate >10% above baseline.

Conclusion: Trainees learned to use the contouring tool quickly and were highly enthusiastic about it. The weak relationship between confidence and performance underlines the importance of objective feedback. Measuring skill retention is vital as initial improvements were not maintained. Regular (spaced) practice may improve learning and counter skill decay - this will be explored in future work.

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Opportunities, Impact, and Attitudes Toward Interprofessional Education Experiences for Medical Students Pursuing Radiation Oncology

M. Gwede,[1] Y. Hasan,[2] S.J. Chmura,[2] and D.W. Golden[2]; [1]University of Chicago, Chicago, IL, [2]Department of Radiation and Cellular Oncology, The University of Chicago Medicine, Chicago, IL

Purpose/Objective(s): Radiation oncology is a multidisciplinary field that involves many health care professionals (physicians, nurses, radiation therapists, dosimetrists). This study examines medical student exposure to interprofessional education (IPE) experiences during rotations at various radiation oncology programs. The prevalence of IPE experiences during clerkships and the relationship between IPE experiences and student readiness are examined. Student perceptions of the value of IPE opportunities are also assessed.

Materials/Methods: An anonymous electronic survey was sent to all applicants to one radiation oncology residency program in the 2018 Match in the period between rank-list deadline and the Match. The survey included quantitative questions related to demographics, individual rotation experiences, and IPE experiences across rotations, and qualitative questions evaluating the potential benefits and limitations of introducing formal IPE experiences into student clerkships. Likert-type scales were used (1=not at all, 5=extremely), reported as median [interquartile range]. STATA was used to characterize quantitative data, including comparison testing via Kruskal-Wallis ANOVA.

Results: The survey response rate was 39% (74/188). 217 individual rotations were reported (median of 3 clerkships per respondent). Only 35% of potential IP interactions were observed, and 28% of rotations had no formal or informal IPE experiences. Students rated potential IPE experiences with radiation oncology health care professionals variably (dosimetrists 5[4-5], radiation therapists 4[3-5], medical physicists 3[2-3], nurses 3[2-3]; ANOVA p<0.01). Students perceived formal IPE experiences as a way to deepen their understanding of the treatment process (58% of responses), and improve their ability to work within a team (30% of responses) and understand the patient's experience. Respondents expressed concerns that the time commitment of these activities may take away from interactions with attending physicians (53% of responses). Recommendations to facilitate integration of IPE into clerkships ranged from holding experiences when attendings are unavailable to incorporating IP team input into the evaluative process, so time spent is of value to applicants.

Conclusion: These results support the integration of certain IPE opportunities into Radiation Oncology clerkships, particularly in dosimetry and radiation therapy. Clerkships have varying degree of informal IP