

## **Abstract**

### **Aim**

The purpose of the study was to explore the unregistered health care staff's perceptions of 12-hour shifts on work performance and patient care.

### **Background**

Many unregistered health care staff work 12-hour shifts. It is unclear whether 12-hour shifts are compatible with good quality care or work performance.

### **Method**

25 Health Care Assistants with experience of working 12-hour shifts in a range of care settings took part in semi-structured interviews or focus groups.

### **Results**

A wide range of views emerged on the perceived impact of 12-hour shifts on patient care and work performance in different settings. Negative outcomes were perceived to occur when 12-hour shifts were combined with short-staffing, three or more consecutive long shifts, high levels of demands, insufficient breaks and working with unfamiliar colleagues. Positive outcomes were perceived to be more likely in a context of control over shift patterns, sufficient staffing levels, and a supportive team climate.

### **Conclusion**

The perceived relationship between 12-hour shifts and patient care and work performance varies with the patient context and wider workplace factors.

### **Implications for Nursing Management**

Nursing managers need to consider the role of other workplace factors in the perceived impact of 12-hour shifts on work performance and patient care.

Key Words: 12-hour shifts, unregistered health care staff, patient care, work performance

## **Background**

The risks and benefits of health care professionals working 12-hour shifts are a matter of intense public interest, largely due to question of potential risks to patients. Long shifts are the norm in Ireland and Poland. In the UK in 2010, 52% of UK hospital-based nurses, and 33% of health care assistants worked shifts of 12 hours or more and the trend is upwards (Ball et al., 2015, Griffiths et al., 2014). For nurses the advantages include having more days off work each week and travelling to work less frequently, leading to less emotional exhaustion (Stone et al., 2006). Managers may regard

two shifts per day a more efficient way to deploy nurses than shorter shifts while providing greater continuity of staffing (Josten et al., 2003; Estabrooks et al., 2009). Efficiency savings derive largely from less overlap of personnel during handovers.

Several recent systematic reviews have examined the association between adverse outcomes and shift length in nursing. Clendon and Gibbons (2015) took treatment errors as the outcome (e.g. medication administration mistakes and needle stick injury) and, based on 13 studies with over 60,000 nurse participants, concluded that there was a higher probability of errors when nurses worked 12 hours or longer. Bae and Fabry (2014) included both patient-related outcomes (e.g. errors in treatment administration or near misses, bed sores and hospital-acquired infections) and nurse-related outcomes (e.g. musculoskeletal injury, sleeping problems). From inspection of 17 quality-assessed outputs, they concluded that there was insufficient evidence to assert that patient outcomes were put at risk by nurses working long hours. However, they found a strong association with adverse outcomes for nurses themselves.

Attention has also been paid to contextual factors which influence the associations between staff fatigue and outcomes. Dall'Ora et al. (2016) reviewed the research on shift work in all sectors, with 25 of the 35 studies reviewed coming from the health sector. They concluded that shifts of 12 hours or longer are associated with 'adverse outcomes' overall, though the pattern of work was a key consideration. Working more than 40 hours per week, rotating shifts and working overtime were all associated with negative outcomes. Fixed night shifts did not lead to performance errors but workers were less satisfied. If workers took timely breaks this helped overcome fatigue. They pointed to the complexity of the problem and note that few studies have adequately accounted for all the possible variables.

One of the variables which has not been addressed is the difference between registered nurses and nursing assistants, also called health care assistants (HCAs) or licensed practical nurses (LPNs). In most national healthcare systems, the training, job roles and employment contracts are different for these two groups of staff. Most of the papers on long shifts in health care included in the systematic reviews restricted their participants to qualified nurses.

HCAs differ significantly from nurses because they are entry-level employees, with minimal job qualifications. They do different work, including much of the direct patient care: washing, cleaning, taking temperatures, delivering meals. In this role they have a great deal of personal contact with patients – often more than nurses (Spilsbury et al., 2004). It may therefore be argued that, if 12-hour shifts lead to fatigue in HCAs, the quality of care as perceived by patients is more likely to be affected. However, HCAs may present fewer risks in respect to treatment errors due to the scope of their responsibilities.

In order to understand the impact of 12-hour shifts on HCAs as a distinct staff group, this study undertook exploratory interviews with a range of HCAs in different healthcare settings.

## **Purpose and aims of the study**

The aim of the present study was to explore the HCA's perceptions of the impact of 12-hour shifts in a range of care settings. The specific research questions covered HCAs' perceptions of the impact of 12-hour shifts on: (1) their ability to deliver good quality care to patients; (2) satisfaction with their

work performance; (3) moderating factors between 12-hour shifts and patient care or work performance.

## **Method**

### **Sample**

HCA's were recruited from four different settings: acute medical wards; in-patient mental health wards; community-based healthcare services; care homes for the elderly. Recruitment was through two methods: via emails to senior managers at a range of NHS Trusts and care homes who in turn emailed other managers and HCA's to seek volunteers to participate; via an article emailed to HCA members of a large trade union in the UK asking for volunteers. HCA's, or their Ward Managers, contacted the research team directly if they wished to participate. A total of 25 HCA's participated, all of whom had experience of working both 12-hour shifts and other shift patterns. Recruitment of HCA's was stopped when no new themes were emerging from interviews.

### **Data collection**

A total of 25 HCA's took part. Face-to-face interviews were conducted with 4 HCA's from the same mental health ward, one focus group interview (McLafferty, 2004) was held with 4 HCA's from the same acute ward, and telephone interviews were carried out with 17 HCA's from different care settings and organisations. Face-to-face interviews and the focus group were conducted on the wards where the HCA's worked. All data was collected by LT and LHD. The interview topic guide is in Appendix 1.

### **Analysis**

The data were transcribed verbatim. NVivo 10 was used to manage the transcripts and data coding, which was conducted by LT. The transcripts were read and re-read and initial ideas and new sub-themes were noted. Framework analysis (Gale et al., 2013) was used to interpret the qualitative data. The initial framework of themes applied to the data was generated by the research questions and included: negative impacts of 12-hour shifts, positive impacts, and the role of other contextual factors. Additional codes were tested and modified by constant comparison. Collated themes and sub-themes were reviewed with other members of the research team (LHD, JS), before the final thematic structure was agreed upon.

### **Ethics**

All participants were provided with written and verbal information on the purposes of the study and were asked to give either written or audio-recorded verbal consent.

### **Results**

The sample of HCA's recruited for the study is presented in Table 1.

**[Insert Table 1 here]**

Table 2 shows the key themes and sub-themes that emerged. In the quotations below the respondents are referred to by a unique number and their work setting.

[Insert Table 2 here]

## **Benefits to Patients through continuity of care**

Across all care settings, HCAs perceived that patients benefitted from better continuity of care during 12-hour shifts. This continuity of staffing supported patient care in three ways: reducing the number of handovers, enhancing the completion of care tasks, and allowing more time to build up a rapport with patients.

### *Fewer Handovers*

HCAs in different care settings perceived that reducing the number of handovers between staff at shift changes allowed for more time spent on care-giving and less time spent re-stating things that had HCAs had already communicated. Fewer handovers between staff at shift changes was also reported to avoid care-related information getting missed or incorrectly communicated.

“Handovers can take time away from working with the service users.” (HCA25, Community)

### *Completion of Care-related tasks*

The completion of care-related tasks also benefitted from 12-hour shifts, and this manifested itself differently across care settings. In acute settings, longer shifts enhanced assessment of patients physical care needs, such as their mobilisation. This allowed HCAs to know what support a patient would need for their personal care such as washing, dressing and toileting, and also what could be put in place to enable self-completion of these tasks where appropriate. This perceived benefit is likely to be specific to HCAs rather than RNs, as they carry out the majority of personal care tasks.

“If you are working a [12-hour shift] you have got that knowledge and you know how the patient mobilises and things like that.” HCA2, acute

Participants in mental health settings felt that long shifts enabled the staff to achieve more with the patients. It gave enough time in the day to see tasks and activities through to completion, including therapeutic activities, writing up notes and making phone calls.

“If you are on a long day, you can plan taking someone out for a few hours. And it doesn’t matter what time of day it is.” (HCA10, Mental Health)

Similarly, in a community setting, the potential benefit of being able to achieve more on a longer shift was highlighted. This was specifically due to the significant amount of time spent travelling between home visits.

### *Building Relationships*

HCAs across all care settings talked about the benefits of 12-hour shifts to building a rapport, trust and understanding with patients, and helping the patient to feel secure. Greater contact with the family members of a patient was also seen as a benefit of longer shifts. The importance of these relational aspects of care may be more central to HCA’s work than that of RNs, as they spend more time with patients delivering hands-on care.

“they physically feel safe, people touch your hand and say ‘Oh I’m really glad that ... you’re here, I know you’re on all night, ... I feel really assured” (HCA5, acute)

The benefits of familiar people and infrequent changes of personnel was particularly highlighted as being important on mental health in-patient wards. In this setting, trust and familiarity between patients, their families, and care-givers was critical to delivery of care across an entire ward, and changes to staffing during the day could have a domino effect, affecting patients across the ward.

“Patients don’t like a high turnover during the day, they don’t like a kaleidoscope of faces changing. They like to get used to someone.” (HCA20, Mental Health)

Building a working relationship with other team members was cited as an additional benefit in a community setting. The benefits of working with the same staff members were highlighted when 12-hour shifts were undertaken together.

“You do tend to know what the other one is thinking, and I think that really does help with patient care” (HCA22, Community)

### **Satisfaction with your performance through continuity of care**

Providing continuity of care for patients was also identified by HCAs as leading to higher levels of satisfaction with their own work performance.

#### *Control over role completion*

HCAs described the satisfaction of knowing that they would be there to provide care throughout the day or night, and a feeling of missing out if they worked a shorter shift. This reflects a sense of ownership and control over this care-giving role, and that working a 12-hour shift provides a sense of competence that comes from ensuring the provision of continuity of care “from the moment they get up, to winding down in the evening”.

“I enjoy the continuity of [longer shifts]... It's almost like I'm missing something if you are coming in late, things have happened and I've missed it.” (HCA13, Mental Health)

“I think there is more satisfaction because you get in there, you know you’re going to be there for 12-hours. You actually get to pick up everything that comes in” (HCA22, Community)

#### *Sense of Achievement*

Participants also expressed a measure of pride in putting in the long hours, a satisfaction in working hard and getting things done. This was reflected in the sense of achievement which some reported:

“It kind of gives you a sense of satisfaction you are able to do it.” (HCA18, Care Home)

For these interviewees, 12-hour shifts led to greater feelings of accomplishment and fulfilment than shorter shifts. This seemed to arise from the interaction of greater sense of control over

the completion of tasks during a shift and a sense of achievement that came from the continuity that 12-hour shifts enabled.

## **Negative impact of staff fatigue**

### *Less tolerant and observant*

About half of participants reported that 12-hour shifts could lead to fatigue for the last few hours of their shifts, and this occurred across care settings. Their view was that tiredness affected levels of tolerance towards both staff and patients. They felt that tiredness could also affect how observant and alert they were to patient needs, and this in turn could lead to mistakes. Several judged that the effect of fatigue was cumulative, and most likely to occur when working a number of consecutive 12-hour shifts with little time for recovery between shifts.

“People get tired in the last hours of the shift... they become nervous, impatient, and that impacts on quality of care” (HCA20, Mental Health)

### *Professionalism counteracting fatigue*

Although about half of the participants recognised the effect of fatigue on themselves and a few felt that this could impact on patient care, some denied that tiredness affected their work performance and that this was due to their ‘professionalism’;

“I’m still not as kind of fresh at 7 o’clock as if I’d kind of just come on shift. But I’d say I’m still am able to give good quality care... It’s kind of just professionalism that you just get on with it.” (HCA18, Care Home)

It may be true that some individuals are exceptions to the evidence that tiredness leads to treatment errors. HCAs do not work at the critical end of patient care, so they may be able to fulfil their role effectively despite fatigue. But it is also improbable that relational care is unaffected by fatigue. These assertions indicate a tendency by some respondents to use professionalism as a defence against implicit criticisms of their work performance. This highlights the need to validate subjective viewpoints with reference to more objective sources.

## **Moderating factors**

In the interviews, a wide range of other workplace factors were perceived to influence the extent to which 12-hour shifts impacted on their subjective experience.

“In my current setting I would say yes, [I am in favour of 12-hour shifts] ... if I was put back into the setting I was in before I would say no.” (HCA4, acute)

Most of these factors were related to organisational aspects of the work. They included: the distribution of 12-hour shifts within a given time period; the control people felt they had over when

to do these; the intensity of the demands during the shift; the makeup of the team with whom the HCA worked; and the ability to take scheduled breaks during the shift.

#### *Number of Consecutive shifts*

HCA's reported that their shift pattern influenced the impact that 12-hour shifts had on their tiredness and fatigue. Working three 12-hour shifts on consecutive days was repeatedly mentioned as a shift pattern that led to fatigue. Some participants reported that their workplaces had policies in place to prevent people working more than three consecutive shifts.

“They gave me 3 days [in a row] once...I didn't even want to be bothered with the patients to be quite honest. I felt really tired.” (HCA15, acute)

In contrast, having sufficient days off in between 12-hour shifts was highlighted as being an important factor in recovering from tiredness and fatigue following a 12-hour shift, with some participants suggesting that at least 2 days off are required following a 12-hour shift.

#### *Control over Shifts*

A number of HCA's described experiences of having worked a large number of consecutive 12-hour shifts due to poor shift planning. This appears to happen when the next rota is planned without looking at how the previous rota ends, resulting in the HCA working a series of 12-hour shifts at the end of one rota and starting another at the beginning of the next rota. The solution lay outside their control.

“Sometimes I work like 4 nights [...and then] I am in 4 days. I find that quite hard going...it's just now and again we get that on the rota.” (HCA1, acute)

When participants talked about their experience of working 12-hour shifts, having a degree of choice and control over shift patterns was frequently described as a something that prevented the potential negative impact of long shifts.

“There is flexibility on this ward to do those [short shifts] if it suits you.” (HCA12, Mental Health)

There was a recognition that different shift patterns suited different people, and this was partly determined by factors such as their family circumstances, their commute to work and their personal preference for a certain working pattern. Having a choice over shifts patterns and self-rostering was often described in terms of a wider sense of flexibility within the team, and the general benefits that was associated with more flexible working practices.

“Everybody is like flexible...and if we can help each other out we will. And I think that's how the 12-hour shift works” (HCA2, acute)

It appeared that the element of control over one's working life which is associated with self-rostering was easier to achieve on smaller wards. In contrast, having a particular shift pattern being 'enforced' on staff was described in negative terms, and perceived to be linked to lower satisfaction and higher turnover. HCA's expressed concerns about the implementation of e-rostering and whether this would increase the imposition of a large number of consecutive shifts.

“If ... you feel that you are being asked or told to do it by somebody else, that can be quite arduous and tiring. However, if you have asked to do that shift, and you are fully committed to it, then I think you are more likely to feel satisfaction in doing it... You should be allowed to choose.” (HCA25, Community)

It follows that enabling HCAs to plan their own working schedules as far as possible would be a popular management approach.

### *Intensity of work demands*

Many HCAs reported that particular demands on the ward had an impact on how tiring a shift was. HCAs described how the workload had changed over time. In the acute hospital setting, the high level of need presented by a growing proportion of older, frail patients was seen as a driver of these changing demands. In particular, cognitive impairments, such as delirium or dementia were noted as a source of increased physical and psychological demands on HCAs. HCAs described how one-to-one care was often needed to prevent these patients from injuring themselves by trying to get out of bed.

“Some of our patients are dementia patients, so they don’t sleep at all so you are on the go for 12-hours” (HCA9, acute)

One-to-one assignments reduced the number of HCAs available on the ward, and left the other HCAs with additional patients to care for. HCAs considered that increased demands had made what were previously manageable 12-hour shifts much more tiring.

### *Team makeup*

The number and type of staff were also perceived to be factors that affected the experience and impact of working a 12-hour shift. Staffing levels were linked to how HCAs saw the demands on the ward, such that when staffing levels were low, the workload demands were perceived to have increased, and that in turn leads to increased fatigue from a 12-hour shift.

“If you have got not enough staff it does have an impact” (HCA9, acute)

However, increasing the numbers of staff through the use of casual ‘bank’ staff was not seen as a solution, particularly in more specialist care settings that required a certain skill set or experience of working with certain patient groups.

“If you’ve got two bank staff on with you ...who you don’t know and ... aren’t particularly good at that [type of work], the shift is a nightmare.” (HCA10, Mental Health)

The issue here is not simply the temporary assignment of bank staff, which in itself is likely to shift greater responsibility towards the permanent HCAs. Our respondents clearly felt that the skills and experience of bank staff were inferior to their own, making the shift harder when shared with a high proportion of bank staff.

Working as a member of a staff team that is well-managed was seen as a positive aspect in the context of 12-hour shifts.



“How good you all work together and how the work load is shared between you all ... it makes an awful lot of difference.” (HCA10, Mental Health)

Belonging to a supportive team, including registered nursing and allied professionals, medical, administrative and management personnel as well as the HCAs, was seen to create a working environment which protects against the potential negative aspects of 12-hour shifts.

#### *Ability to take breaks*

Insufficient breaks were a source of dissatisfaction, mentioned by HCAs in mental health and acute settings, where the work seemed most intensive and high risk by comparison with community-based work, where HCAs are more likely to be able to take breaks between visits.

‘You only get two [30 minute] breaks in that twelve hour... I think that you should be able to have more frequent breaks’ (HCA8, acute)

Having sufficient breaks during a 12-hour shift was described as an important factor in preventing fatigue. Yet HCAs often reported that they were unable to take their allocated breaks due to staff shortages or high levels of demands on the wards.

‘We are entitled to a break but taking that break is unsafe because you're leaving a member of staff on the ward on their own...’ (HCA12, Mental Health)

Not only were breaks seen as an opportunity to physically rest for a short while, they were also a chance to re-hydrate and eat, something that was particularly challenging on an acute ward where restrictions on eating and drinking were in place.

## **Discussion**

This interview study aimed to explore HCAs’ perceptions of how 12-hour shifts affect their ability to deliver good care to patients, and on their work performance. The results show mixed opinions of 12-hour shifts. Our broad interpretation of the interview data is that HCAs regarded the advantages and disadvantages in the light of other aspects of the work context. As Dall’Ora et al. (2016) also concluded, the complexity of working patterns is such that 12-hour shifts need to be examined in the wider context of other work characteristics. In our study, many HCAs report situations when care can be compromised if a number of other conditions are also present. These conditions include: short-staffing; three or more consecutive shifts; high levels of demands; insufficient breaks; and working with unfamiliar or inexperienced colleagues. None of these conditions is directly related to working a 12-hour shift. The factor that intervenes here is fatigue and tiredness. Being exhausted is likely to make the high-stress, low-staff environments particularly difficult to withstand.

The patient context is clearly a factor that increases the risk of poor outcomes. Twelve hour shifts are particularly challenging on acute wards where HCAs may be caring for cognitively impaired older patients with higher care needs who may frequently require 1:1 care. An intense 12-hour shift in such settings is likely to be more tiring than a shift in the community where the HCA may have more control over the pace of the work. Where this is combined with levels of staffing that are perceived

as inadequate, and where there is inadequate break time, HCAs expected the quality of care to be impaired.

Despite these risks and disadvantages, the freedom and flexibility offered by 12-hour shifts were popular with many respondents. In mental health in-patient wards, 12-hour shifts were largely seen to be of benefit to developing a positive and therapeutic relationship with patients. We heard examples of “good 12-hour shifts” across the range of settings. These were generally characterised by: flexibility and control over shift patterns; sufficient staff to meet the demands and allow breaks; and a positive team climate where colleagues supported each other in delivering their duties. In such a context, 12-hour shifts were reported to provide a positive care environment which provided continuity of care for patients and families, and this in turn provided increased satisfaction for staff. These findings are consistent with the extensive evidence in support of theories of job design, such as the Demand-Control-Support model (Karasek and Theorell, 1990) and the Job-Demands Resources model (Demoutri, Bakker, Nachreiner and Schaufeli, 2001), which indicate that access to support, job autonomy and demand control should reduce the detrimental emotional impact accumulated in the long shift, making it less harmful to the worker’s wellbeing.

HCAs are a large and flexible workforce (Kessler et al. 2012) whose potential remains to be realised in health care. From a manager’s point of view, savings may be achieved through devolving tasks from higher-paid nurses to HCAs, so the willingness and capacity of HCAs to undertake 12-hour shifts are of interest from an organisational perspective. There are also likely to be important differences between nurses and HCAs in relation to the resources on which they can draw to offset the impact of long shifts. These resources may include on the job support and supervision, autonomy and decision-making at work, and training and development opportunities.

Relational Care: The themes emerging on the perceived impact of 12-hour shifts on the provision of patient care highlighted the important role that HCAs have in delivering relational care (add reference). The positive impact was perceived through the building of trust and relations provided by greater continuity of care.... The negative through less patience and tolerance due to fatigue ....

Suggested re-structure of discussion: 1. *settings (acute, community and mental health, but also size of ward and patient profile); and 2. the uniqueness of HCAs position in relation to 12 hour shifts. Re this 2nd plane, you fail to mention again that HCAs have a particular role in helping with personal care and ADLs; that they have a key role in relational care; and (should you chose to add it) that they have more interaction with family members than nursing staff.*

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## **Limitations**

The main limitation of this study concerns its relevance to international care settings. All participants were employed in UK health and social care settings, potentially limiting the international scope of these findings. In addition, this study had a specific focus on staff perceptions of the impact of 12-hour shifts on work performance and patient care. Patient perceptions and other staff or patient outcomes were not explored.

## **Implications for Nursing Management**

This is the first study to investigate the perceived impact of 12-hour shifts amongst HCAs. The evident acceptability to HCAs of 12-hour shifts does not necessarily make them safe. Although other research findings have indicated an increased risk of treatment errors in nurses working 12-hour shifts (Clendon and Gibbons, 2015) HCAs are less likely to be carrying out medication-related tasks where these errors largely occur. However, as the responsibilities of HCAs extend into more clinical roles, the possibility of treatment error resulting in harm to patients is likely to increase. In addition, HCAs have a central role in providing relational care which, whilst clearly affected by fatigue and tiredness, can also benefit from continuity of care that 12-hour shifts provide.

The consensus from this study is that three consecutive 12-hour shifts is a maximum number advisable, but even this was judged too many for some participants. Individual differences of HCAs, notably age and chronic health issues, may need to be taken into account. Personal and domestic circumstances of the worker also clearly play a part in their ability to undertake 12-hour shifts, but that is largely beyond the control of managers. Other issues to be considered by nursing managers before implementing longer shifts include: weekly work patterns, the nature and level of the demands of the healthcare setting, HCAs' control over shift patterns, their ability to take scheduled breaks, staffing levels and skill mix (ratios of registered and unregistered healthcare workers), quality of the team cohesion and management support.

Further exploration is needed to understand the interaction between individual differences, organisational variables and shift length, in relation to outcomes for staff or patients. Future research should regard 12-hour shifts as one factor amongst many which influence the work performance of HCAs.

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## Tables

Table 1. Number of Participants by Healthcare setting and region

UK Region	Acute	Mental Health	Community	Care Home
North	2	2	0	0
South	2	1	2	0
Midlands	4	4	1	1
East	1	0	0	0
Scotland	1	0	0	0
Wales	0	0	1	1
Unknown	2	0	0	0
TOTAL	12	7	4	2

Key to workplace settings: Acute – hospital wards; Mental Health – mental health inpatient wards; Community – health care services delivered in people’s own homes by mobile HCAs; Care Homes – residential settings for frail older people.

Table 2. Key themes from HCA perceptions of impact of 12-hour shifts

Theme	Sub-theme
Benefits to Patients through Continuity of Care	Fewer handovers Completion of Care-related tasks Building Relationships
Satisfaction with performance through continuity of care	Control over role completion Sense of achievement
Negative Impact of staff fatigue	Less Tolerant and Observant Professionalism counteracting fatigue
Other Factors moderate the impact of 12 hour shifts	Number of consecutive shifts Control over shifts Intensity of work demands Team make up Ability to take breaks

## Appendix 1: Interview Topic Guide

- What is your current role?
- What does a typical shift involve?
- How regularly do you work 12 hour shifts and for how long have you been working that pattern?
- What other shift patterns have you worked in the past?
- What are your perceptions of the impact of 12-hour shifts on your ability to deliver good quality care to patients?
  - How does this differ from a short shift? Can you give any examples?
- What are your perceptions of the impact of 12-hour shifts on your own job satisfaction?
  - How does this differ from a short shift? Can you give any examples?
- Are there any factors that prevent 12-hour shifts from having a negative impact, or that lead to an increased likelihood of a negative impact?
- Any other pro's and con's to 12-hour shifts?