

## What are 12-hour shifts good for?

**In the UK many hospitals use 12-hour shifts, believing it to be a cost-efficient means of providing 24-hour nursing care on wards. While healthcare organisations need to find ways to deliver nursing care around the clock, and efficiency is a key consideration, nurse leaders have raised concerns about whether nurses can function effectively and safely when working long hours [1,2]. In this Policy Plus we focus specifically on what is known about the impact of shift length on patient safety, employee health, and quality of care.**

### Prevalence of 12-hour shifts in the UK

12-hour shifts are relatively common: in a survey of nurses across the UK, 41% of NHS hospital nurses and 63% of nurses in care homes regularly work 12-hour shifts [3]. Employers are reported to prefer 12-hour shifts because of increased continuity of staffing, lower staffing costs, and potential improvements in staff morale. However, some organisations are reverting to 8-hour shifts because of concerns about quality and safety of care [1,4]. Nurses views are mixed; some like 12-hour shifts as it reduces travel costs (by compressing working hours onto fewer days), gives more work free days, and do not feel it affects their performance adversely. Others describe long shifts as gruelling and consider their performance to be affected by the end of a shift [1].

### Research regarding risks associated with long shifts

- Several large multi-site studies of hospital staffing suggest that the risks to patient safety significantly increase when nurses work beyond 12 hours:
  - Several observational and review studies show that nurses' critical thinking and professional judgement are more likely to be impaired at the end of long shifts (10 or 12 hours), resulting in more errors and accidents [1,5-7].
  - Large scale studies of nurses in US hospitals show the risks of making an error are significantly increased when work shifts are longer than 12 hours, when nurses work overtime, or when they worked more than 40 hours per week [2,4].
  - A study of 663 nurses at 71 acute care hospitals in Illinois and North Carolina showed patient deaths from pneumonia and acute myocardial infarction occurred more often in hospitals where nurses worked long hours. Along with long (12-hour) work shifts, a lack of time off from the job was linked to patient deaths from pneumonia and abdominal aortic aneurisms [8].
- Nurses who work 12-hour shifts are at increased risk from known occupational hazards compared to those working 8-hour shifts:
  - Multi-site studies show nurses feel more physically exhausted after a 12-hour shift compared to 8-hour shifts [1,9] and are more prone to long-term health problems [4,10].
  - Nurses working for more than 8 hours per day are at greater risk of sharp and needle stick injury, musculoskeletal and other work-related injuries and increased risk of motor vehicle collisions or near-misses while driving home [1].
  - Working more than 12 hours increases risk of lapses in hand-washing technique and greater risk of patient-to-professional infection transmission [11,12].
- A systematic review comparing quality and safety outcomes of 12-hour and 8-hour shifts suggests there is currently insufficient evidence to determine the effects of shift length on quality of patient care and healthcare provider outcomes [13]: three studies indicated that 8-hour shifts resulted in higher quality care, one study offered support for 12-hour shifts over 8-hour shifts, and one found no significant association between shift length and quality of care.

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## Discussion

Multiple factors affect the quality and safety of nurses' work, including: shift length, shift rotation [5], total hours worked [14], working for many consecutive days [15] and unplanned or extended shifts [2]. All of these factors can contribute to nurse fatigue and jeopardise patient safety. The challenge is to separate out these related but distinct factors to isolate the effect of shift length. The evidence on working long shifts (i.e. planned 12-hour shifts) is particularly difficult to distinguish from the evidence on working long hours overall (i.e. working back-to-back shifts or unplanned overtime). Making it unclear whether 12-hour shifts are any better or worse than shorter shifts.

Added to this, the risks (and benefits) of different shift lengths for individual nurses are not the same [9]: the health risks of working long shifts can be greater for older nurses [10,11]. And the time of day also makes a difference; safety risks are greater at night, towards the end of long shifts/during overtime, before breaks, and after successive shifts [4].

The effects of 12-hour shifts on patient experiences are complex and the evidence is limited. Whilst patients may benefit from seeing the same nurse across a whole day through 12-hour shifts, the result is they are less likely to see the same nurse across the week. Some evidence suggests that increasing the consistency of shift patterns is the key to better organised care and improved patient experience [16].

## Conclusions and Implications

- Whilst 12-hour shifts are seen as less expensive to operate, little research has been undertaken to assess the cost-effectiveness of different shift lengths.
- Many hospitals are moving towards 12-hour shifts for nurses but this raises concerns about safety and quality. At the present time there is insufficient evidence to conclusively say that 12-hour shifts are safe.
- However, it is known that patient safety risks and occupational hazards to nurses increase considerably when nurses work beyond 12 hours or do not have sufficient rest days.
- Evaluating the impact of shift length on quality and safety requires reliable measures, with valid controls, to account for the confounding effects of different shift patterns.
- Managers need to be aware of risks associated with long shifts and assess whether nurses are working very long hours or not having sufficient rest days. The US Institute of Medicine recommends that nurses in direct patient care do not work more than 12 hours in a 24-hour period or 60 hours in a 7-day week.

### *Key points for policy*

- We need to know more about the policy drivers for 12-hour shifts.
- Where nurses work long shifts, managers can adopt safeguards including: limiting overtime or meetings at end of shifts, protecting 'rest' days, making improvements in physical layouts, communication and handovers, and encouraging nurses to understand the risks of fatigue.
- More research evidence is needed to understand the costs, benefits, and pros and cons of 12-hour shifts from a hospital, nurse and patient perspective.

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