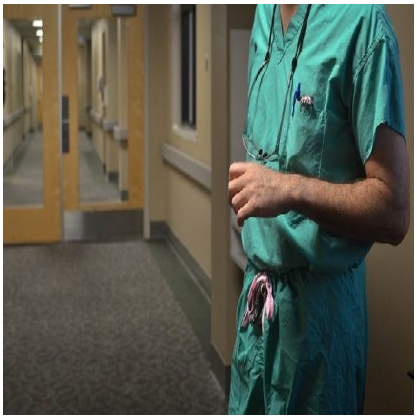
ICU
MANAGEMENT & PRACTICE

Reducing Residents' Duty Hours Impacts Patient Care



A new study published in the *Canadian Medical Association Journal* shows that shorter duty hours for medical residents, although slightly better for residents themselves, may result in worse patient care. The finding is based on a randomised trial assessing resident duty hour schedules in the intensive care unit (ICU).

"Our findings that overnight duty periods of 12 or 16 hours may be somewhat better for residents and worse for patients are relevant in Canada, the United States and Europe, where these shorter schedules are increasingly used, and underscore the need to further delineate this emerging signal before widespread system change," writes Dr. Christopher Parshuram, Department of Critical Care, The Hospital for Sick Children (Toronto, Ontario) with co-authors.

Many hospitals in Canada and other countries are opting for shorter work shifts (from 24- to 16- or 12-hour periods) to alleviate fatigue and improve well-being in residents and reduce medical errors that can occur due to sleepiness and stress. This study looks at the impact of different shift lengths for residents who provide the majority of overnight in-hospital care in Canada, and adds to current research in intern and other physician groups.

Dr. Parshuram and his colleagues assessed the impact on patient safety and resident well-being of three commonly used in-hospital overnight schedules of 24, 16 or 12 hours. For this study, 47 residents in two adult teaching hospitals were randomly assigned to the shifts over two-month rotations. The participants were assessed at regular intervals throughout their shifts. There were 971 admissions to the ICU, totalling 5,894 patient days, during the study period.

The results show that residents assigned to shorter resident schedules did not feel less tired, and that shorter resident schedules may be less safe than longer resident schedules. Analysis of over 1,700 sleepiness measurements from the 47 participating residents found no significant differences in resident sleepiness in the day or overnight. This suggests that time of day is a greater determinant of fatigue than resident schedule.

Importantly, residents were asleep at 4 am in 28 percent of assessments, suggesting that, even in the busy ICUs studied, residents do sleep, according to researchers.

In addition, analysis of nearly 1,000 patient admissions to the ICUs involved revealed that the overall rate of harmful errors was low, and that most of these harmful errors occurred in the 12-hour schedule. The perceptions of ICU staff were that the 16-hour shift was associated with lower-quality clinical decisions. This indicates that shorter schedules may not actually be better for patients.

Notably, longer duty periods were associated with more severe fatigue-related symptoms. Medical residents on the 24-hour shifts reported more physical symptoms, including headaches, nausea, eye pain, muscular pain, light-headedness and palpitations.

"Our findings do not support the purported advantages of shorter duty and highlight trade-offs between residents' symptoms and multiple secondary measures of patient safety," Dr. Parshuram et al. point out.

In a related commentary, Dr. Thomas Maniatis, an internist and director of the Internal Medicine Residency Training Programme at McGill University in Montréal when Quebec transitioned from 24- to 16-hour shifts in 2012, commends Dr. Parshuram's team for their success in undertaking the study.

However, "the study team did not observe or otherwise document the exchange of patient information at times of patient sign-over. Given that information loss during sign-overs is one of the biggest concerns hypothesised to negatively affect patient safety, this is an important unmeasured potential confounder in this study," Dr. Maniatis notes.

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Published on : Wed, 11 Feb 2015