Is the elimination of 24-hour resident call a good idea?

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NO

The death of Libby Zion in 1989 triggered a controversial debate within the medical community regarding resident work-hour regulations. In the public's eye, this seminal event was attributed to resident fatigue. As a consequence, the Accreditation Council for Graduate Medical Education (ACGME) implemented a restricted resident call schedule throughout the United States in 2003. These regulations prohibit interns from spending more than 16 consecutive hours working in the hospital. However, more senior residents have no such restrictions as long as they do not work more than 80 hours per week averaged over the month. Following a grievance filed by a resident at McGill University in 2007, the Quebec government ruled that 24-hour in-hospital call represents a violation of the Canadian Charter of Rights and Freedoms. Thus, with the best of intentions and a critically flawed interpretation of the evidence, Quebec has made it illegal for all residents of all specialties to perform 24-hour in-hospital call as of 2012.

After extended periods without sleep, a precipitous decline in the quality of performance and cognitive tasks can be observed in physicians.[1] It is these observations that provided the impetus for further work-hour restrictions. Nevertheless, effective hospital systems are replete with rigorously trained and highly skilled practitioners. These experts and the risk management systems they implement determine patient outcomes, while individual trainees, which is what residents are, do not.[2] The deleterious effects of physician fatigue are real and they must be dealt with in the context of the needs of our patients as a whole. However, this should not prevent us from training the most expert, dedicated, and professional physicians and surgeons.

Examining the evidence

The ACGME guidelines have been in place for nearly a decade, and a wealth of evidence from the United States has failed to demonstrate an improvement in patient safety since their implementation. A study published in *JAMA* in 2009 examined the results of more than 200 000 surgical and obstetric procedures. The authors then compared the complication rate of procedures performed between 12 AM and 6 AM with those performed during the daytime. They were unable to demonstrate any difference in the complication rate during the day and at night. Similarly, the duration of the time on duty, defined as greater than 12 hours versus less than 12 hours, did not correlate with the degree of complications.[3] Along the same lines, Shetty and Bhattacharya demonstrated absolutely no change in mortality or relative risk of death in 243 000 surgical patients after institution of the work-hour restrictions.[4] A meta-analysis by Jamal et al reviewed 20 high-quality studies examining the effects of the ACGME work-hour restrictions before and after their implementation between 2000 and 2009. Again, the authors identified no improvement in patient outcomes in well over 700 000 patients.[5] Taken together, these data do not support the conclusion that decreasing resident duty hours will benefit patient safety.

Dr Bates, a Harvard professor and expert on medical errors, was quoted as saying that the results of these studies are disappointing.[6] However, the finding that restricting resident work hours does not correlate with improved patient outcomes is neither surprising nor worrisome. In fact, it indicates robust health care systems with many checks and balances. In the context of appropriate oversight and an effective hospital system, an error made by a resident regardless of the cause should have no effect on the outcomes of our patients.[2] The studies, which equate resident performance after call to the equivalent of a blood alcohol content of 10 mg per 100 mL, are alarmist to say the least.[7] However, they fail to take into account the ultimate goal of residency. In general surgery, that goal is to train a competent, safe, and independent surgeon within 5 years. This represents the only opportunity to learn in a mentored environment, and there is no substitute for learning at the bedside.

The elimination of 24-hour call has been applied uniformly without taking into account the needs of each specialty. In general surgery, an hour spent working at 2 PM is drastically different from one spent at 2 AM, and frequently the continuum of care for a patient might be encompassed in its entirety within 36 hours. Residents have had no choice but to implement strict and inflexible schedules, forcing them to abandon their patients during clinical encounters, ultimately disrupting both their autonomy and their sense of duty. Both of these have been cited as key factors for noncompliance with work-hour restrictions in the United States.[8]

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Effective change

Mitigating the deleterious effects of physician fatigue is a laudable and necessary task. However, the blanket application of rigid and simplistic rules to models of training that might be unable to adapt so quickly does our patients a great disservice. In general surgery, the number of handovers has increased to 3 per day from 1. Handovers do represent a critical time when errors are made, and while these can be mitigated by standardized handover procedures, an institution must have sufficient time to implement them.[9] By contrast, electronic medication and other health records might decrease medication errors associated with fatigue, a key point highlighted by Landrigan et al.[10] Furthermore, these are much faster and easier conceptually to implement than changes in culture are. Ultimately an evidence-based approach to doctor fatigue is important. However, it must be dealt with according to the needs of each specialty, balancing resident training with resident well-being. In Quebec, this balance has been disrupted. The pendulum has swung too far and the training of surgeons has been compromised by short-sighted and inflexible rules.

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Competing interests
None declared

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CLOSING ARGUMENTS

- Resident work-hour restrictions have been in place for nearly a decade in the United States, and a wealth of evidence has failed to demonstrate improved patient safety. If the goal of resident work-hour reductions was to improve patient safety, it failed. Health care systems are complex with many checks and balances. It is therefore unlikely that a simple modification to resident work hours will substantially change the way health care is delivered overall. Conversely, this modification can have profound effects on resident training.

- The deleterious effects of physician fatigue are real and must be addressed through system-wide changes within hospitals aimed at mitigating the potential for patient harm. These include but are not limited to electronic medical records and electronic surveillance of prescriptions. In addition, these modifications must take into account the importance of training skilled, dedicated, and professional physicians and surgeons.

- Various specialties have different training requirements. The goal of residency is to train competent, independent, and safe physicians and surgeons. Some specialties provide emergent care to patients whose problems arise in an unpredictable way without respecting shift duration or daylight hours. Graduating residents must be able to provide life saving emergent care that is in line with the needs of their patients and their training has to take this fact into account. With call restrictions, residents have no choice but to implement strict and inflexible schedules that might not reflect the reality of their future practices. As such they are forced to abandon their patients during clinical encounters, ultimately disrupting the quality of the care they deliver, their education, and their sense of duty.

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