

VIEWPOINT

Making the Case for Investigating Flexibility in Duty Hour Limits for Surgical Residents

Karl Y. Bilimoria, MD, MS

Surgical Outcomes and Quality Improvement Center (SOQIC), Department of Surgery, Feinberg School of Medicine, Northwestern University, Chicago, Illinois; and American College of Surgeons, Chicago, Illinois.

David B. Hoyt, MD

American College of Surgeons, Chicago, Illinois.

Frank Lewis, MD

American Board of Surgery, Philadelphia, Pennsylvania.

Corresponding Author:

Karl Y. Bilimoria, MD, MS, Surgical Outcomes and Quality Improvement Center (SOQIC), Department of Surgery, Feinberg School of Medicine, Northwestern University, 633 N St Clair, 20th Floor, Chicago, IL 60611 (k-bilimoria@northwestern.edu).

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Restrictions on the number of hours that resident physicians can work continue to ignite tremendous controversy among stakeholders. The debate predominantly concerns whether restrictions enhance or endanger patient safety and resident education. The purported benefits of duty hour limits are fairly evident: well-rested residents will be less prone to error and burn-out, and they will have more time to study their field. While this may sound logical, it may actually be that duty hour restrictions disrupt continuity of care because the physician who knows the patient best may not follow the patient through critical phases of their hospitalization, stabilization, or surgery. The resulting handoffs may compromise patient safety and reduce continuous contact time and hands-on experiences for trainees.

Eliminating 120-hour work weeks, every other night call, and no days off for months was a necessity. Further restrictions on duty hours were implemented because of public pressure and expert opinion, not on high-level evidence. The challenge now in improving duty hour policies is to identify and maintain key limits while still allowing the flexibility necessary to deliver high-quality patient care and resident education.

Pressure to Reform

The 1984 high-profile death of Libby Zion in New York prompted the state to recommend duty hour limitations in 1989, which then became mandatory in 1999. Moreover, resident unions and public interest groups lobbied the Occupational Safety and Health Administration (OSHA) and the federal government to regulate national resident duty hour policies. Although never brought to a vote, federal legislation was repeatedly introduced in Congress to enact national resident duty hour restrictions.¹

In response to this policy environment, the Accreditation Council for Graduate Medical Education (ACGME) implemented common duty hour requirements for all residencies in 2003. These limits mandated an 80-hour work week, 1 in every 7 days off, call no more frequently than every third night, a 28-hour maximum call shift, and a minimum of 10 hours off between shifts. Despite these measures, public pressure continued to mount, and in 2008, the Institute of Medicine issued an expert opinion report recommending additional duty hour restrictions.² Simultaneously, the European Working Time Directive was moving toward a staggering 48-hour weekly cap on resident duty hours. In response to these pressures, the ACGME responded again in 2011 and required a 16-hour cap on call shifts for interns and increased time off between shifts. In summary, these ACGME duty hour restrictions were generally the result of external pressures and lim-

ited expert opinion, not a well-developed, high-level evidence basis.

Measuring the Impact

The ACGME acknowledged that its duty hour policies were largely driven by societal pressures and not necessarily scientific evidence.^{2,3} Evidence supporting the effect of duty hour reform has largely been generated after these policies were implemented. A systematic review by the ACGME concluded that continuity of care and resident education declined after duty hour reform. Importantly, there was generally no improvement in patient outcomes for medical patients, and outcomes for surgical patients might have worsened after duty hour reform.⁴ Unfortunately, most of the studies contributing to the systematic review had major limitations, and almost none of the data were available at the time national duty hour policies were enacted.

There are some benefits of duty hour reform. Duty hour policies made us better, more efficient educators. Nonessential tasks (scut work) were shifted to midlevel clinicians. Rotations and conferences of limited educational value were reduced or eliminated. Greater emphasis was also placed on simulation to enhance training. It should be possible to train physicians within the confines of an 80-hour work week, even surgeons. However, the rigidity of current duty hour limits may have unintended, detrimental effects on patient care and resident education that continue to go unmeasured.

Flexibility in Duty Hour Requirements

The primary resident team providing care for a patient knows the patient best (eg, what exactly happened in the operating room during the first operation) and is best suited to manage these patients in critical situations (eg, a reoperation). Moreover, continuity and decision making required during the management of acute illness offer invaluable learning experiences for trainees. Thus, introducing flexibility in duty hour requirements to facilitate more seamless care may improve both patient care and resident education. This entails giving trainees the flexibility to stay in-house as needed to care for patients they have admitted or on whom they have consulted and/or operated, as well as the flexibility to return to the hospital when a patient on their service is having a problem, needs to be stabilized, or requires an operation or reoperation. Additionally, some flexibility in duty hour requirements would allow residents to remain at work to attend educational conferences and simulation training that they would have otherwise missed because of currently inflexible limitations on work hours.

Particularly concerning is that duty hour limits have forced otherwise conscientious trainees to go against their inclinations to provide high-quality, continuous patient care and instead hand off their work to others. This has unfortunately created a culture of shift work for some trainees, reducing their sense of professionalism and self-effacement in the service of the patient. The fact that we refer to them as *shifts* conveys the wrong sentiment. The current generation of trainees may accept a lack of continuity as the norm, much to the detriment to patient care. Even worse, we have created an unfair ethical dilemma for our generally hard-working, dedicated residents: should they leave a patient at a critical time (eg, while in the operating room or in crisis in the intensive care unit) to avoid a duty hour violation, or should they stay to care for their patient and then falsify their duty hour logs? This is undoubtedly sending the wrong message to professionals who should be developing a keen sense of obligation to their patients. Current duty hour limits may train residents to place these somewhat arbitrary administrative requirements ahead of patient care obligations.

There is a need to establish straightforward and easy-to-implement rules for managing duty hour limits. Residents and training programs should have the flexibility to optimize continuity of care essential for high-quality patient care and resident education. Residents should be allowed to monitor their own need for sleep, and we need a cultural change where attending physicians will say that it is okay for the resident to go home when exhausted. Attending staff and program leadership should ensure that residents are not staying in the hospital needlessly or because the residents fear they might be penalized by their attending physicians for not being present in the hospital. For example, we should abolish the unwritten requirement that all junior residents wait in-house until their chief resident finishes in the operating room at 9 PM. Trainees' time in-house must be optimized for meaningful patient care and educational experiences.

Testing the Flexibility Hypothesis

The evidence base supporting duty hour limitations is inadequate. Methodologically rigorous prospective studies are

needed that will generate high-level evidence that can, in turn, be used to inform policy. These studies must examine patient safety, resident education, and resident well-being as end points. Rather than simply relying on expert opinion or public pressures, studies fulfilling these criteria must be the basis for policy development and revision.

To examine the safety of greater flexibility in duty hour policy, we are performing a national, prospective, cluster-randomized trial at 152 hospitals in the United States: the Flexibility in Duty Hour Requirements for Surgical Trainees (FIRST) Trial (<http://www.TheFirstTrial.org>; clinicaltrials.org identifier: NCT02050789). This study began on July 1, 2014, and randomized hospitals to current national duty hour requirements (usual care) vs flexible duty hour requirements (ie, ACGME-approved elimination of all but 3 key requirements: 80-hour cap, 1 day off in 7, and call no more than every third night). Patient outcomes will be compared using data from the American College of Surgeons National Surgical Quality Improvement Program (ACS NSQIP). Resident education will be examined with American Board of Surgery In-Training Examination (ABSITE) scores and board examination pass rates. Resident perceptions of duty hours and their well-being will be assessed using a survey given during the annual ABSITE. Results from the FIRST Trial are expected to be announced in early 2016. A similar trial is expected to be undertaken in July 2015 for internal medicine residents. Importantly, both of these studies will retain key elements of the duty hour limits to ensure residents are protected. Residents will not work more hours; they will just be able to work more effectively.

Conclusions

Policies limiting resident duty hours were well intended but lacked a strong evidence base and pose threats to quality of care and resident education. If trials of increased flexibility in duty hour requirements show no change in clinical outcomes for patients or in resident well-being, policies should be changed to allow more flexible work hours for residents as this will likely improve patient safety and resident education.

ARTICLE INFORMATION

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