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Restricting surgical residents' hours doesn't improve outcomes

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Controversial restrictions on hospital residents' duty hours imposed in 2011 did not improve surgery patients' outcomes, reports a large new Northwestern Medicine study of U.S. hospitals, one of the first national evaluations of the results of the restrictions.

The restrictions also did not result in any differences in surgical residents' performance on exams.

"Our study suggests that these latest duty hour restrictions have no benefit and may actually have the unintended consequences of hurting patient safety, resident education and the doctor-patient relationship," said lead study author Dr. Karl Bilimoria. "They seriously disrupt the continuity of caring for surgical patients, which is vitally important, so we believe the recent 2011 rules should be repealed."

Bilimoria is the director of the Surgical Outcomes and Quality Improvement Center at Northwestern University Feinberg School of Medicine and a surgical oncologist at Northwestern Memorial Hospital. He is also vice chair for quality in the department of surgery at Feinberg.

The study will be published Dec. 9 in the *Journal of the American Medical Association*.

Some of the first duty hour restrictions implemented in 2003 by the Accreditation Council for Graduate Medical Education (ACGME) were necessary to prevent resident fatigue that leads to errors, the authors

said. But the latest round of restrictions in 2011 likely have detrimental effects on surgical patient care.

"The newest rules have led to decreased continuity of care so the same doctor is not able to care for a patient throughout the life-threatening moments of a particular episode," Bilimoria said. "You want the person who knows you to take care of you through the really critical phases. Once you are stabilized or the operation is done, then you can hand off care in a responsible way."

A 2012 meta-analyis and a 2014 review suggested that the latest duty restrictions resulted in more deaths and serious post-operative complications in overall surgical outcomes. While the Northwestern study did not show higher adverse events, Bilimoria said that's probably because other members of the surgical team now bridge the gap in care.

"Now the residents come and go more frequently because the duty hour limits force them to leave and stop taking care of their patients," Bilimoria said. "Previously the residents provided great continuity of care in addition to the attending physician. You had two or more well-trained invested people caring for patients, and now that is often diminished to just the attending physician because of the limitations imposed on residents."

The 2011 restrictions required at least eight hours off between shifts for residents and imposed a 16-hour cap on continuous in-hospital duty for interns (first-year residents).

These ACGME duty hour limits were implemented primarily on the basis of public pressure, not high-level evidence, Bilimoria said.

The rules impair training for residents by creating a shift worker mentality for doctors in training and not allowing them to provide

continuity or get the critical educational experiences that only come from taking care of patients during the entirety of a life-threatening episode.

"The rules may need to be different for surgical residents and medical residents," Bilimoria said.

The Northwestern study of general surgery patient outcomes examined the outcomes of 204,641 general surgery patients from 23 teaching and 31 non-teaching hospitals two years before (academic years 2009-2010) and after (academic years 2012-2013) the 2011 duty hour reform.

In adjusted analyses (accounting for the ongoing improvement trend in surgical outcomes), the 2011 ACGME duty hour reform was not associated with a significant change in death or serious morbidity. There also was no association between duty hour reform and any other postoperative adverse outcome.

Northwestern is currently leading a national prospective study in which 152 hospitals have been randomized to either current resident duty hour rules or a subset of the 2003 rules which require no more than an 80-hour work week, call no more frequent than every other night and one day off per week. These restrictions make sense and are well accepted by most teaching hospitals, Bilimoria said.

"Our study results confirm the need for the prospective study," he said. "We are not trying to revoke all duty hour rules; we want to identify and maintain certain key limits while still allowing the flexibility necessary to deliver high-quality patient care and resident education."

More information: Papers: doi:10.1001/jama.2014.15273 , doi:10.1001/jama.2014.15277

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