



## Journal Scan

## Duty-hour flexibility in surgical training—is it necessary or possible to implement in Indian hospitals?

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### 1. Article information

Billimoria KY, Chung JW, Hedges LV, Dahlke AR, Love R, Cohen ME et al. National Cluster-Randomized Trial of Duty-Hour Flexibility in Surgical Training. *N Engl J Med.* 2016; 374(8):713–27. <https://doi.org/10.1056/NEJMoa1515724>.

### 2. Summary

The duty hours of residents have become a matter of continuing debate between those who think that overworked residents make more mistakes and those who counter that the lack of patient care continuity produces worse results and less experienced doctors. However, in most of Europe and the United States, there are now strict duty-hour policies ostensibly to protect the well-being both of residents and patients.

The authors conducted a national, cluster-randomized trial of 117 general surgery residency programmes from 154 affiliated hospitals in the United States during the 2014–2015 academic years. (The data were garnered from the American College of Surgeons National Surgical Quality Improvement Program [ACS NSQIP]) They compared the programmes that followed the current

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Accreditation Council for Graduate Medical Education duty-hour policies, a standard-policy group, with a more flexible-policy group that waived the rules on maximum shift lengths and time off between shifts. They then measured the outcomes which included the 30-day mortality or serious complications (primary outcomes) and other postoperative complications. They also measured resident perceptions and satisfaction regarding their well-being, education and patient care.

After analysing the data on 138,691 patients, they found that flexible, less-restrictive duty-hour policies were not associated with an increased rate of patient death or serious complications (9.1% in the flexible vs. 9% in the standard group) or of any secondary postoperative outcomes. They also found that the 4330 residents who were assigned to flexible policies did not report a significantly greater dissatisfaction with the quality of their overall education than those in the standard group (11% vs 10.7%). Residents under the flexible-policy group were less likely than those under standard policies to perceive negative effects of duty hours on multiple aspects of patient safety, continuity of care, professionalism and resident education but were more likely to perceive negative effects on their personal activities. There were no significant differences between resident-reported perceptions of the effect of fatigue on personal or patient safety, but the incidences of reported leaving during an operation and handoff of active patient issues were significantly lower in the flexible-policy group.

The authors concluded that there were similar patient outcomes and no significant differences in the residents' satisfaction with their overall well-being and education quality between those in the standard duty-hour policies and those working in programmes in which the duty hours were flexible.

### 3. Commentary

Resident duty hours and burnout have been a constant topic of debate since the Libby Zion case in New York in 1984,<sup>1</sup> when a young girl died, according to a court judgement, because the treating resident was overworked and made a prescription error. Since then, most hospitals in the United States and Europe have started restricting the working hours of residents to a maximum of 80 hours per week, one day off in seven days and a maximum of hospital call every third day. However, this rigid duty-hour

restriction has been thought to result in poorer patient outcomes because of a lack of continuity of care and inadequate surgical training. On the other hand, some studies have shown that residents working in institutions where the duty hours were flexible, i.e., nonrestricted, have a decreased cognitive function on night shifts, and there have been detrimental effects on patient care because of the residents' acute sleep deprivation.<sup>2</sup>

How have the trainers reacted to these new rules? Reed et al.<sup>3</sup> conducted a national survey of key clinical faculty (KCF) at 39 internal medicine residency programmes affiliated with US medical schools selected by random sampling and studied the effects of duty-hour limitations on residents' patient care, education, professionalism and well-being and on faculty workload and satisfaction. Of the 154 KCF surveyed, 111 (72%) responded and reported worsening in residents' continuity of care (87%) and the physician-patient relationship (75%). They believed that residents' education (66%) and professionalism, including accountability to patients (73%) and ability to place patient needs above self-interests (57%), worsened, yet 50% thought residents' well-being improved. The faculty themselves also noted a decreased satisfaction with teaching (56%), ability to develop relationships with residents (40%) and overall career satisfaction (31%). In a multivariate analysis, the KCF with more than 5 years of teaching experience were more likely to perceive a negative effect of duty hours on residents' education. They concluded that duty-hour limitations had adversely affected residents' patient care, education and professionalism, as well as faculty workload and satisfaction.

In India, the duty hours of residents are not fixed in most hospitals which, both in the public and private sectors, are overburdened with patients. There are also not enough doctors to fill the jobs, especially in the public sector where most poor patients go if a standard 80-hour week is enforced. There are only 25,041 postgraduate seats in India for 66,620 (including public and private colleges) who pass the undergraduate examination, while in the USA, in 2017, there were 28,849 first-year residency positions for only 19,254 US medical school graduates.<sup>4</sup> Further in a hierarchical

system, this excessive burden falls mainly on the most junior doctor, i.e., the resident.<sup>5</sup>

However, whether we should or can afford to restrict residents' duty hours to 80 per week is a moot question. In the current situation, where there are overwhelming patient numbers and a shortage of doctors, there is no choice but to carry on with whatever manpower resources we have. Perhaps with an increase in healthcare expenditure, more hospitals and more postgraduate places, we may be able to debate such questions in a future which seems rather far away. We are not even in a position to conduct a study on patient mortality and complications after surgery in most hospitals in this country because we just do not have the data unlike the remarkable ACS NSQIP platform which includes details of all the surgical procedures performed by its members.

Until then, we must take mild encouragement from the authors of this article who found that residents and faculty who worked in hospitals with flexible duty hours performed as well as, if not better than, those who worked in hospitals where the working hours were restricted.

#### Conflict of interest

None.

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