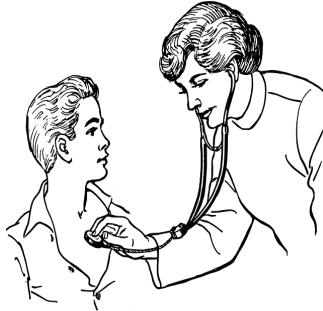


Paradox for Young Doctors: Work Restrictions May Increase Errors, Study Suggests



University of Michigan-led study of 2,300 first-year residents questions impact of 2011 duty rules. At hospitals in the U.S., young doctors fresh out of medical school help care for patients of all kinds - and work intense, long hours as part of their residency training.

Traditionally, residents were allowed to work more than 24 hours without a break. In 2011, new rules cut back the number of hours they can work consecutively to 16, in the name of protecting patients from errors by sleepy physicians.

But a new study of more than 2,300 doctors in their first year of residency at over a dozen hospital systems across the country raises questions about how well the rules are protecting both patients and new doctors.

While work hours went down after new rules took effect in 2011, sleep hours didn't go up significantly and risk of depression symptoms in the doctors stayed the same, according to a new paper published online in *JAMA Internal Medicine* by a team led by University of Michigan Medical School researchers.

Most concerning: the percentage of residents reporting that they had committed medical errors that harmed patients went up after the new rules took effect.

The results, especially the increase in errors, surprised Srijan Sen, M.D., Ph.D., the U-M psychiatrist who is the report's first author.

"In the year before the new duty hour rules took effect, 19.9 percent of the interns reported committing an error that harmed a patient, but this percentage went up to 23.3 percent after the new rules went into effect," he says. "That's a 15 to 20 percent increase in errors - a pretty dramatic uptick, especially when you consider that part of the reason these work-hour rules were put into place was to reduce errors."

The findings echo anecdotal reports about the impact of the 2011 duty hour rules.

Co-author Sudha Amarnath, M.D., a resident in the radiation oncology program at the University of Washington, says, "Many interns entering after the new work hour restrictions took effect felt that they were expected to do the same amount of work as in previous years, but in a more limited amount of time, leading to more harried and tiring work schedules despite working fewer hours. Overall, they felt that there was less 'down time' during the work day compared to pre-2011 work schedules, which may partially explain some of the unexpected findings."

Breck Nichols, M.D., MPH, the program director of the combined Internal Medicine and Pediatrics residency program at the University of Southern California, and another co-author on the paper, concurs.

"In 2000 a typical call day lasted 36 hours. We have very specifically reduced that for interns from 36 hours to 30 hours in 2003, and now with the latest 2011 work hours change it has been reduced even further to 16 hours," he says. "For most programs the significant reduction in work hours has not been accompanied by any increase in funding to offload the work. As a result, though many programs have made some attempts to account for this lost work in other ways, the end result is that current interns have about 20 less hours each week to complete the same or only slightly less work. If we know that timed tests result in more errors than untimed ones, we should not be surprised that giving interns less time to complete the same amount of work would increase their errors as well."

All the interns assessed in this study were working under the duty hour restrictions that went into effect in 2003 - limiting residents to no more than 80 hours of work in a week, and other restrictions. Some studies have suggested that these rule changes, recommended by the Accreditation Council for Graduate Medical Education, did result in better safety for patients cared for by residents. But in an effort to achieve even greater safety, the ACGME recommended further changes that were implemented in 2011.

Each year, Sen and colleagues send out surveys to students entering residency programs around the U.S. The research team then surveys these interns every three months throughout that first year, asking questions that gauge mental health, overall well-being, sleep habits, work hours and performance on the job.

By comparing the interns serving before the new ACGME rules (called the 2009 and 2010 cohorts) with the interns serving after the new rules were implemented (the 2011 cohort), the research team assessed the effects of the new duty hour rules.

In addition to the increase in self-reported medical errors, 20 percent of the residents screened positive for depression.

Sen was an intern in 2006, and in the years since has studied depression among medical students and residents, said he had been in favor of the adjusting duty hour rules in principle. "It was obvious that after working for 24 hours, we were not functioning at our best, and this was not optimal for us or the patients we were treating," he explains. But in practice, he says, the new rules may have had unintended consequences that ran counter to the goals of new guidelines.

In addition to "work compression," he says, residents now hand off responsibility for a long list of patients more frequently than in the past. Communication between the intern who is ending a shift, and the one beginning a shift, may not cover all patients in detail, he suggests, and this gap in communication may not become apparent until an urgent situation arises with one of the patients.

He also said the increase in errors may come back down with time. "The 2011 changes were a pretty radical shift," he notes. "Doctors have worked 30-hour shifts for decades, and it may just take time for all parts of the health care system to get used to the new rules and adjust."

But, he cautions, the new data don't definitively support any one of these theories as the culprit in the rise in error rates or the lack of progress in sleep hours and well-being among young doctors. Further study is needed to assess what's happening - and determine how to better support young doctors in during their stressful training and keep the patients that they treat as safe as possible.

The Intern Health Study, from which the new results are drawn, is funded by the National Institutes of Health (grants UL1RR024986, MH095109 and AA013736) with additional support from the American Foundation for Suicide Prevention. In addition to Sen, Amarnath and Nichols, the paper's authors include Joseph Kolars, M.D., senior associate dean for education and global at the U-M Medical School, Gregory Dalack, M.D., chair of the U-M Department of Psychiatry, Henry R. Kranzler, M.D., from the University of Pennsylvania; Aashish K. Didwania, M.D., from Northwestern University; Ann C. Schwartz, M.D., from Emory University; and Constance Guille, M.D. from the Medical University of South Carolina.

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