ARTICLE
DEVELOPING EMPLOYEES

Is an 80-Hour Workweek Enough to Train a Doctor?

by Anupam B. Jena
Becoming a doctor has always been difficult. In the U.S. it requires four years of college followed by four years of medical school and, depending on the specialty, three or more years of residency training, a period when doctors routinely work up to 80 hours a week.

It may then come as a surprise that becoming a doctor is actually easier than it used to be, at least in terms of time spent on the job. Resident doctors in the 1980s, for example, sometimes worked more than 100 hours a week, with hospital shifts frequently lasting more than 30 hours at a stretch. The
reason for these grueling hours: a belief by many in the profession that long hours were a rite of passage necessary for giving doctors the clinical skills to practice independently.

But in 2003, amid mounting concerns about fatigued doctors and patient safety, major reforms were enacted that prohibited resident doctors from working more than 80 hours per week and limited shift lengths to 24 hours. These reforms were arguably the largest natural experiment in the history of modern medical training. But they were hotly contested.

It may be hard to imagine why many in the medical profession would have believed that an additional 10 to 20 hours in the hospital each week would make for a better-trained doctor. But for many doctors the 2003 reforms raised concerns that the quality of medical training would be diminished by a shift-work mentality, an erosion of professionalism, and an inability of doctors-in-training to witness firsthand the hour-by-hour progression of a critical illness, all of which may lead doctors to have less experience on which to base future treatment decisions and insufficiently prepare them for the long hours and patient commitments required in real-life practice.

In 2009 one physician wrote to the editor of the New England Journal of Medicine that, as a result of the 2003 reforms, “We now force [residents] to leave a patient with whose treatment they are intimately involved or to cease the observation of an instructive surgical procedure midstream. It did not take long for this system to produce residents who would either walk away when their time had expired or else lie in order to violate the rules.”

Similar concerns were raised in surgery: Reductions in work hours would reduce operative volume of surgeons-in-training. One surgeon noted in a recent article, “When I trained, good or bad, I worked about 120 hours a week. That was just expected. Today the average resident finishes with around 900 operative cases. I finished with twice as many.”

While physician sentiment toward long work hours has undoubtedly softened, many doctors, often those who trained in an era without restrictions on work hours, still question whether doctors today are trained as well as they used to be.

In a study published in the BMJ, my colleagues and I analyzed the outcomes of nearly 500,000 hospitalized patients in the U.S. who were treated by newly independent doctors with varying exposure to work-hour restrictions during their residency training. We found that newly independent doctors who trained in a period where their residency work hours routinely reached 90 to 100 hours per week had no better patient outcomes, despite the additional hours spent in training, than doctors whose residency training involved substantially less time in the hospital.

An 80-hour workweek seems sufficient for training a doctor.

Our analysis was straightforward. Because residency work-hour reforms were implemented in 2003, internists who completed residency after 2006 would have been exposed to a cap of 80 hours per
week for their entire three-year residency, while internists who completed residency before 2006 would have worked longer hours for one or more years of their training. We compared the patient outcomes of newly independent doctors — first-year internists just out of residency training — before and after 2006. (These outcomes were patient mortality and readmission to the hospital within 30 days of being hospitalized, as well as the costs of care.) We also looked at second-year internists — those who completed residency two years earlier — and found identical results.

To account for the fact that overall hospital care has improved over time, we used as a second control group doctors who completed residency 10 years earlier. We looked at the same three patient outcomes for these doctors, who were never exposed to work-hour restrictions during their residency training. Any trends in their patient outcomes over time should reflect only changes in the quality of hospital care, rather than any impact on care of having worked fewer hours during residency training.

Comparing doctors who completed their training before 2006 with those who completed theirs after it, 30-day mortality rates for hospitalized patients treated by first-year internists fell from 10.7% to 9.9%, a change that could incorrectly be used to argue that working fewer hours in residency led to better-trained doctors. But a similar decline was observed for 10th-year internists, whose patient mortality rates fell from 11.2% to 10.4%. Because mortality fell by a similar amount for both the treatment (doctors who worked 80-hour weeks) and the control group (doctors who worked 100 hours), the decline can’t be attributed to hours of training and is more likely due to hospital quality improvements. We similarly found that spending fewer hours in the hospital during training had, on average, no effect on internists’ hospital readmission rates or costs of care when they subsequently entered independent practice.

Our findings relate to the current epidemic of burnout among physicians — more than 40% of U.S. physicians reported experiencing burnout in several studies — a phenomenon that often starts during the busy years of residency training. If the intense nature of residency training is a prerequisite for doctors to deliver high-quality care once they enter independent practice, simply because a large number of hours spent treating patients is absolutely necessary for clinical expertise, then it may be difficult to further reduce resident work hours without compromising downstream quality of care. On the other hand, additional training may be at the “flat of the curve,” meaning extra hours spent in the hospital offer little marginal benefit in terms of added expertise. This is particularly relevant today, as any small gaps in an individual doctor’s expertise can likely be mitigated by the increasingly team-based nature of medical care and the growth in health care technologies, including electronic health records and various safety systems.

At a minimum, the data suggests that the incremental experience gained from working more than 80 hours per week as a resident doctor doesn’t generally translate into improved patient outcomes later. And with rates of physician burnout increasing in recent years, it’s worth considering whether residency work hours could be reduced further, or restructured to address other causes of fatigue (such as electronic health records and insurance issues), without compromising clinical expertise and
quality of care for patients downstream. Although there are no serious proposals to rethink residency training hours, it’s an open empirical question worth investigating.

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