

Will Physicians Eventually Become Shift Workers?

Stuart F. Quan, M.D.

Editor in Chief, Journal of Clinical Sleep Medicine, Sleep Disorders Center, University of Arizona College of Medicine, Tucson, AZ

Recently, there has been increasing publicity focused on the consequences of sleep deprivation amongst residents. Much of this data has been provided by elegant studies performed by the Harvard Work Hours, Health and Safety Group. Last year, these investigators presented evidence that interns working extended shifts were at increased risk for motor vehicle accidents.¹ In addition, interns working extended shifts made more serious medical errors.² Changes in interns work schedules increased their sleep and decreased their error rate.³ Because of incidents such as the Libby Zion case⁴ as well as the accumulating evidence of the adverse effect of sleep deprivation, the Accreditation Council for Graduate Medical Education (ACGME) instituted work hour limitations on all accredited post-graduate medical training. Under these regulations, trainees are limited to working no longer than 80 hours per week, to working not more than 24 consecutive hours in direct patient care with 6 additional hours for completion of other duties and educational activities, to have shifts separated by at least 10 hours, to have 1 day off per week and to have night call no more frequently than every third day. Previously, it was common for trainees in many programs to work more than 100 hours per week and to have little time off. Limited data suggest that these new rules have improved quality of life, decreased sleepiness and reduced medical errors. (reviewed in ⁵) More recently, the Harvard Work Hours, Health and Safety Group has published evidence that there is substantial non-compliance with the work hour limitation amongst interns (43% reporting violations with the 80 hour rule).⁶ These data would suggest that trainees are in violation of the work hour limitation more often than reported by the ACGME (3.3% noncompliance with the 80 hour rule).⁷ Although one can argue that differences in survey techniques or other factors may explain this discrepancy, there can be little disagreement that the new work hour regulations have profoundly affected graduate medical education (GME). The full extent of the ramifications on GME remain to be determined.

Despite the importance of the research pertaining to sleep deprivation and work schedules on trainees involved in GME, one needs to ask whether emphasis now needs to be placed on the larger question. How does sleep deprivation and the work schedules of attending physicians impact medical care? There are approximately 5,800 hospitals in the United States of which only approximately 1,200 are teaching hospitals. There are approximately 727,000 physicians and 100,000 residents in the United States. Thus, most medical care in the United States is delivered outside of the tightly regulated environment of teaching facilities and the adverse impact of sleep deprivation on medical care is potentially several factors greater than the effects resulting from

sleep deprivation amongst residents in teaching hospitals. As emphasized in an earlier editorial in the Journal,⁸ on June 30 a trainee physician is limited to working not more than 24 consecutive hours. The very next day, the newly minted attending physician is not subjected to any work hour limitation. In one small survey, 62% of practicing obstetrician-gynecologists worked in excess of 80 hours per week.⁹ Given the economic incentives of a private practitioner, there is little advantage for an attending physician to self-regulate their work hours. The Institute of Medicine, the Joint Commission on Accreditation of Healthcare Organizations (JACHO) and private organizations such as the Institute for Healthcare Improvement and the Leapfrog Group recently have emphasized the importance of eliminating errors in the practice of medicine. They have made recommendations and initiated programs to reduce errors. However, there has been little or no emphasis placed on reducing work hours for physicians who are the primary decision makers in the medical care of patients. Currently, there are work schedule regulations for a number of occupations which are felt to be related to patient safety such as truck drivers and airline pilots. Can it be long that regulations pertaining to physicians' work hours be next? If so, additional research in several areas is needed so that rationale regulations based on scientific evidence can be formulated. For example, how many hours do practicing physicians work and in what specialties are the longest work hours? If physician work hours are limited, what are the work force and economic implications?

One must wonder if the practice of medicine will eventually become a "shift work" occupation. Already this is already a reality in emergency rooms. What specialty will be next?

REFERENCES

1. Barger LK, Cade BE, Ayas NT, et al. Extended work shifts and the risk of motor vehicle crashes among interns. *N Engl J Med.* 2005;352:125-34.
2. Landrigan CP, Rothschild JM, Cronin JW, et al. Effect of reducing interns' work hours on serious medical errors in intensive care units. *N Engl J Med.* 2004;351:1838-48.
3. Lockley SW, Cronin JW, Evans EE, et al. Effect of reducing interns' weekly work hours on sleep and attentional failures. *N Engl J Med.* 2004;351:1829-37.
4. Brensilver JM, Smith L, Lyttle CS. Impact of the Libby Zion case on graduate medical education in internal medicine. *Mt Sinai J Med.* 1998;65:296-300.
5. Parthasarathy S. Implementation of the 80-Hour Work-Week Limitation for Residents Has Improved Patient Care and Education. *J Clin Sleep Med.* 2006;2:14-17.

6. Landrigan CP, Barger LK, Cade BE, Ayas NT, Czeisler CA. Interns' compliance with accreditation council for graduate medical education work-hour limits. *JAMA*. 2006;296:1063-70.
7. Accreditation Council for Graduate Medical Education. The ACGME's approach to limit resident duty hours 12 months after implementation: A summary of achievements. http://www.acgme.org/ac-Website/dutyHours/dh_dutyhoursummary2003-04.pdf
8. Quan SF. Where have all the giants gone? *J Clin Sleep Med*. 2006;2:11.
9. Promecene PA, Schneider KM, Monga M. Work hours for practicing obstetrician-gynecologists: The reality of life after residency. *Am J Obstet Gynecol*. 2003;189:631-3.