

Footnotes

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- 5 Barger LK et al. Extended work shifts and the risk of motor vehicle crashes among interns. *NEJM*. 2005;352:125-134.
- 6 New Jersey statute N.J.S.2C:11-5. Bills pending in several states.
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- 11 Aviation (14 CFR Part 121; 14 CFR Part 135).
- 12 Motor Carrier (49 CFR Part 395).
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Resident Work Hours:

Striving for an Evidence-Based Standard



How many consecutive hours should residents be scheduled to work?

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Since July 2003, national resident work hour limits have been guided by the ACGME 'Duty Hours Requirements,'¹ which permit 30-hour schedules of 24 consecutive hours plus 6 hours more for continuity and education.

These work hours limits were based on precedent and tradition rather than evidence from sleep research. In fact, recently published evidence suggests that the limitations are inadequate. In particular, sleep researchers find the 30 hour shift limit problematic. Research shows the following:

- Being awake for 24 hours produced cognitive psychomotor deterioration equivalent to a 0.1% blood alcohol level.²
- Residents working a traditional Q3 schedule suffered twice as many attentional failures, and made 36% more serious errors than residents on an interventional schedule limiting shifts to 16 hours.^{3,4}
- Residents driving home post-call had twice the risk of being involved in a serious motor vehicle accident as compared to controls.⁵ Residents now also risk civil and criminal liabilities for accidents committed when "driving while drowsy."⁶
- A meta-analysis of 60 resident work hours studies found that sleep deprivation of 24-30 hours leads to a significant decrease in clinical performance and vigilance.⁷
- Residents working a heavy call schedule had a higher degree of impairment than controls with a 0.05% blood alcohol level when performing tests of sustained attention, vigilance, and simulated driving tasks. Residents were often unaware of their impairment.⁸
- Another study similarly found that residents performing in-house call (Q4-7), had impaired reaction times, and decreased vigilance, both pre- and post-call, suggesting that recovery periods from overnight-calls exceeded several days. Again, residents were unaware of their impairment.⁹
- In a poll, 86% of patients would be extremely anxious if they knew their surgeon had been awake for 24 hrs; 70% would ask for a different doctor.¹⁰
- Other industries that regulate work hours have stricter limits protecting workers and the public from fatigue. Pilots are limited to 8 hours per day,¹¹ and commercial drivers are limited to 10 hours of driving and 15 hours of duty.¹²
- Sleep deprivation has attracted the attention of accreditation organizations and quality agencies as an essential area for patient safety improvement. Recently, JCAHO introduced a proposed patient safety goal for 2007 to "prevent patient harm associated with health care worker fatigue."¹³

Alert and Awake For Everyone's Sake

• Patients deserve to be treated by physicians unimpaired by fatigue

The current ACGME shift limit of 30 (i.e., 24 + 6) continuous hours is not consistent with the sleep research evidence whose findings support no more than 16 consecutive hour shifts as safe for patients and residents. There once was a time when doctors practiced without washing their hands, and, not so long ago, drew blood without wearing protective gloves. Medical culture finally changed because science said it was unsafe to continue in the old ways. In our time, there are doctors working while dangerously fatigued, and the science of sleep research is saying it is time to change. The medical profession needs to embrace the evidence and adapt now.

• Rethinking how the work gets done is essential

We need to keep asking the question and do problem-solving around what keeps residents in the hospital so long. Mechanical hours reduction begrudgingly implemented with no additional resources or attempts to rethink how the work gets done only creates more problems and contributes to the belief that positive change is impossible.

• Reducing resident hours is an opportunity

As others have pointed out, "the challenge is to [reduce hours] ... without reducing the quality of care, ... or lengthening the duration of training, ... or dropping standards."¹⁴ We know it can be done because it is being done in other countries and in a growing number of U.S. teaching hospitals where innovative hospital administrators and medical educators recognize hours limits as a way to enhance patient safety and resident well-being and as an opportunity to revitalize the training experience.

• Supporting 'evidence-based' scheduling

The CIR Executive Committee supports a consecutive work limit of no more than 16 hours, understanding that it will take time, determination, creativity, and additional resources to achieve. CIR will continue to advocate for the necessary funding, and encourage and publicize innovative 'best practices' to help lead the way towards this important and necessary change.