



***Driving While Drowsy:
The Threat to
Resident Physicians & Public Safety***

Submitted at the
Second Meeting of the Committee on
Optimizing Graduate Medical Trainee (Resident)
Schedules to Improve Patient Safety

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The Committee of Interns and Residents is the oldest and largest union of resident physicians in the U.S., representing 13,000 interns, residents and fellows in public and private teaching hospitals in New York, New Jersey, Massachusetts, Washington, D.C., Florida, California, New Mexico and Puerto Rico. CIR negotiates collective bargaining agreements with hospital employers over salary, benefits, hours of work and other conditions of employment. CIR strives to improve the quality of care we provide to our patients, the quality of our medical training, and the quality of resident physician work life and well-being.

“When we asked the subjects [Anesthesia residents] if they thought they had fallen asleep during the MSLT [Multiple Sleep Latency Test], only half gave the answer that corresponded with the EEG data. Among those who thought they had stayed awake, 68% were wrong. These findings have been reproduced elsewhere and raise important concerns in the complex environment of health care. Individuals have little ability to determine how sleepy they are or if they have fallen asleep. This may make them more likely to perform a critical task when they are not prepared or less likely to use a countermeasure strategy to improve alertness.”

Steven K. Howard, M.D.
Dept. of Anesthesiology, Stanford University School of Medicine
Patient Safety Center of Injury, Veterans Affairs Palo Alto Health Care System Lecture
Baylor University Medical Center
November 17, 2004

“As physicians, we want to provide the very best care to our patients. We take our oath seriously, which starts with the fundamental principle of ‘first, do no harm.’ Yet we are regularly required by hospitals to put people at risk by working 24-30 hours, and then getting behind the wheel of a car. We join this profession to serve the public. The last thing we want to be is a public safety hazard.

“Hospitals can’t have it both ways. If they schedule us to work 24+ hours in a row and count on our being there to provide patient care, then they can’t also claim that they aren’t responsible for what happens when we leave in an impaired state. Telling us we have the option of staying to sleep in the hospital after a 30-hour shift is ridiculous. We would never leave. It’s been a long time since residents were required to live in the hospital. We should not be going backwards.”

Barbie Gatton, M.D.
President (2004-2006)
Committee of Interns and Residents / SEIU
CIR NEWS, March 2005

In preparing for this, the second meeting of the Committee on Optimizing Graduate Medical Trainee (Resident) Schedules to Improve Patient Safety, CIR revisited the committee’s charge¹.

Upon review, we became concerned that a literal reading might lead panel members to conclude that the safety of resident physicians and the general public *outside of the clinical setting* was beyond the scope of this committee. We submit the following comments to argue the very opposite. CIR believes the panel must take under consideration the dangers that the nation’s 100,000+ resident physicians pose to themselves *and to the general public* when they

¹ www.iom.edu/residenthours

get behind the wheel of a car while in an impaired state due to acute and/or chronic sleep-deprivation.

There is a well-documented relationship between fatigue and an increased risk of vehicle crashes.^{2 3 4} As residents working in the ER, we take care of the victims of car accidents caused by drivers who've fallen asleep at the wheel.

Yet how many of us have walked out of the hospital post-call, post 30 straight hours of work, thinking only about getting into our bed at the soonest possible moment? There's just one thing between us and some desperately needed sleep – the drive home. It's a situation that every resident knows well. It's so common that we forget the fender-benders, the colleague who totaled her car or the one who fell asleep in the parking lot for hours with his car motor running. What can we do? We have to work the hours that we do. So we shrug our shoulders and – in an impaired state -- get behind the wheel.

The National Highway Traffic Safety Administration (NHTSA) estimates that 100,000 police-reported crashes are the direct result of driver fatigue each year. These crashes (the National Sleep Foundation labels the figure conservative) accounted for more than 1,500 deaths and 71,000 injuries, as well as \$12.5 billion in diminished productivity and property loss, according to a 1995 NHTSA survey.

Untreated sleep disorders and “lifestyle choices” account for some of the driving while drowsy statistics, but a large portion is the result of long work hours – people holding down two jobs or doing a double shift. And then there are resident physicians – who are routinely required to work 24-30+ consecutive hour shifts, as often as two to three times per week. The hours we work are high profile (who hasn't watched ER or Scrubs?) and thus easily documented. They put us squarely in the cross-hairs of the movement to criminalize driving while drowsy or DWD.

² Dement WC. The perils of drowsy driving. *NEJM*. 1997; 337:783-4.

³ Safety study: fatigue, alcohol, other drugs and medical factors in fatal-to-the-driver heavy truck crashes. Vol 1. 1990. Washington, D.C.: National Transportation Safety Board, 1990. (NTSB publication no. SS-90/01).

⁴ Department of Transportation. Hours of service of drivers; driver rest and sleep for safe operations; proposed rule. *Fed Register* 2000; 65(85):25541-611.

The problem of resident physicians driving while drowsy is also well documented.^{5 6 7 8} In a 1988 article published in the *Journal of the American Medical Association*, the author referred to chronically sleep-deprived residents as “misguided missiles.”⁹

Researchers at Wayne State University studied motor vehicle crashes (MVCs) and near-MVCs in emergency medicine residents. Fifty-six percent of the residency programs surveyed responded, with 697 resident surveys returned. Of those, 17% (121) had a total of 157 MVCs. The survey also revealed that, “emergency medicine residents are 6.7 times more likely to have a MVC due to falling asleep at the wheel during their residency [than before residency].”¹⁰ “

In a 2005 study published in the *New England Journal of Medicine*, the Harvard Work Hours Health and Safety Group “found that the odds that interns will have a documented motor vehicle crash on the commute after an extended work shift were more than double the odds after a nonextended shift.”¹¹ The authors based their findings on data collected in a 2002-03 prospective, web-based survey in which 2,737 interns completed 17,003 monthly reports. Three hundred and twenty motor vehicle crashes were reported, “including 133 that were consequential (i.e. crashes leading to treatment in an emergency department, property damage of \$1,000 or greater, the filing of a police report, or a combination of those factors).”

The public, already educated to the dangers of driving while intoxicated, is beginning to recognize the dangers of driving while drowsy. Indeed, the effects of alcohol and fatigue on driving are similar. An often quoted study published in *Nature* found that “after 24 hours of wakefulness, cognitive function deteriorates to a level equivalent to having a 0.1%

⁵ Gupta, Sanjay MD, Is your doctor too drowsy? Time, March 11, 2002.

⁶ Gear, RT et al. Incidents of automobile accidents involving anesthesia residents after on-call duty cycles. *Anesthesiology*. 1997; 87: 938

⁷ Lyznicki, James M et al. Sleepiness, driving and motor vehicle crashes. *JAMA*. 1998; 23:279

⁸ Marcus, Carole L & Loughlin, Gerald M. Effects of sleep deprivation on driving safety in housestaff. *SLEEP*. 1996; 19: 763.

⁹ Wendt JR, et.al. The resident by moonlight: a misguided missile. *JAMA*. 1988; 259(1):43-44.

¹⁰ Kowalenko, M et. all. Emergency medicine residency related MVCs – is sleep deprivation a risk factor? *Academic Emergency Medicine*. 2000; 7(5):45,1.

¹¹ Barger, LK. Extended work shifts and the risk of motor vehicle crashes among interns. *NEJM*. 2005. 352:125-134.

blood alcohol level.¹² And a 2005 study published in the *Journal of the American Medical Association* found that 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. The authors found that residents were often unaware of their impairment.¹³

In the U.S., the legal limit of the blood alcohol concentration for commercial drivers is 0.04 and for most non-commercial drivers is 0.08.

New Jersey passed “Maggie’s Law” in 2003. The law was named for a 20-year-old woman who was killed in 1997 by a driver who had been up all night partying and then fell asleep at the wheel. The driver crossed three lanes and hit the victim head-on. At that time, the driver could only be cited for reckless driving and fined \$200. Today, being awake for more than 24 hours and causing a fatal crash in New Jersey can result in up to 10 years in prison and a \$100,000 fine.

Maggie’s Law is a concern for all New Jersey resident physicians who drive, as well as those residents who live in New Jersey and commute to teaching hospitals in New York and Pennsylvania. Some New Jersey teaching hospitals, fearful of employer liability, have tried to get residents to sign a statement purporting to shift that liability to the resident, even though it is the hospitals that establish resident schedules and rely on resident labor. Other hospitals have pressured residents to stay in the hospital to nap until they are rested after a 24+ hour shift, or arrange for someone to pick them up after work, or take a taxi home at their own expense (since public transportation is generally unavailable). Each of those “options” puts the onus and responsibility for compliance entirely on the resident physician. Both residents and teaching hospitals know these are not viable or practical solutions, so compliance is not enforced.

The obvious – and most effective – way to comply with Maggie’s Law would be to reduce the scheduling of consecutive work hours for New Jersey residents to well below a 24-hour limit. Field and laboratory studies, across disciplines, consistently show performance

¹² Dawson D, Reid K. Fatigue, alcohol and performance impairment. *Nature*. 1997; 88:235.

¹³ Arnedt T. et al. Neurobehavioral performance after heavy night call vs. after alcohol ingestion. *JAMA*. 2005; 294:1025-1033.

deterioration after 12 to 16 hours.¹⁴ CIR has urged hospitals and medical educators to act on the evidence and set hours limits accordingly. However, where CIR has contractual agreements in New Jersey, those hospital employers have made it clear that they do not intend to deviate from the ACGME Common Program Requirements for Duty Hours, even though those rules put residents and hospitals in frequent violation of Maggie's Law. The ACGME duty requirements state:

“Continuous on-site duty, including in-house call, must not exceed 24 consecutive hours. Residents may remain on duty for up to 6 additional hours to participate in didactic activities, transfer care of patients, conduct outpatient clinics, and maintain continuity of medical and surgical care.”¹⁵

In practice, this 24 + 6 “limit” is universally interpreted by program directors and residents as a 30 hour shift.

New Jersey is now currently the only state with DWD legislation on the books, but it is only a matter of time before other states follow. According to the National Sleep Foundation, there are currently twelve bills introduced in eight states that address drowsy driving in various ways.¹⁶

Finally, it is instructive to examine the Brewster vs. Rush Presbyterian St Luke's Medical Center case. In 1997, a resident at Rush Presbyterian drove home after being up for 34 of the previous 36 hours in the hospital. On the way, she was involved in a car accident which resulted in serious injury to a young graduate student named Heather Brewster. Ms. Brewster was in a coma for several months and was in a rehabilitation center for more than a year. She suffered permanent brain injury. Ms. Brewster's family sued and settled with the resident physician. But the family also sued Rush Presbyterian, believing that the teaching hospital should bear responsibility for having scheduled the resident to work so many hours.

¹⁴ Landrigan, C. Effects of traditional 24-30 hour shifts on patient and resident safety: the case for a 16-hour limit. Grand Rounds Presentation, Dec. 20, 2006, Cambridge Hospital, Cambridge, MA.

¹⁵ http://www.acgme.org/acWebsite/dutHours/dh_dutyHoursCommonPR.pdf

¹⁶ <http://www.DrowsyDriving.org>

The case wound its way through the Illinois courts, with Rush and the Illinois Hospital Association (IHA) consistently denying all responsibility for the accident. In an amicus brief filed in support of Rush, the IHA wrote: “No hospital forces tired residents to drive home when they are too tired to drive safely. On the contrary, hospitals provide beds and rest facilities for their residents while they are working in the hospital before taking the wheel.”¹⁷ The Association went on to stress that sleep deprived residents had other choices – public transportation or “ask[ing] if someone at the hospital could drive them home.”

“No legislature or court should impose far-reaching liability on remote parties who did not put the key in the ignition, their foot on the pedal or their hands on the wheel,” concluded the Hospital Association.

CIR filed an amicus brief supporting the Brewster family’s position that Rush should be held liable. We did not think it was right that any teaching hospital could walk away from the fact that a) they schedule residents to work these long hours; b) they know that sleep deprivation impairs the judgment of a resident deciding whether or not to get behind the wheel; and c) that sleep deprivation causes car accidents.

Our hearts went out to Heather Brewster and her family, who must cope with the impact of this devastating and very preventable accident. We also felt deeply for the Rush resident, who we know will always bear the burden of this tragedy.

Ultimately, state courts ruled that Illinois law addressing third party liability was narrowly written and did not support the Brewsters’ claim. But many in the legal world believe that Rush Presbyterian dodged a bullet that is still aimed squarely at the nation’s teaching hospitals. In a 2003 law journal article, Andrew W. Gefell provided a thorough discussion of potential third party tort liability with respect to resident physicians and hospitals.¹⁸ Gefell cites comparable, successful employer liability cases in other states and argues that:

¹⁷ Brief of *Amicus Curiae* Illinois Hospital Association in support of Rush-Presbyterian St. Luke’s Medical Center. Nov. 18, 2004.

¹⁸ Andrew W. Gefell, *Dying to sleep: using federal legislation and tort law to cure the effects of fatigue in medical residency programs*, 11 *Journal of Law and Policy* 645 (2003).

A common thread in cases discussing an employer's liability to third parties is that if a risk or hazard arising out of employment is reasonably foreseeable, a duty is triggered on the part of the employer to prevent such a risk. As a general proposition, if an employer affirmatively requires its employee to work to the point of excessive fatigue, it becomes reasonably foreseeable that the employee may fall asleep at the wheel after work and cause an accident. Similarly, a hospital arguably creates a duty to act with reasonable care when scheduling residents beyond set limits because of the foreseeability that an exhausted resident will cause an accident driving home from work.

Literature and studies by the medical community highlighting the inherently dangerous nature of resident physician training and employment methods as they pertain to operating an automobile also put the hospitals on notice of this problem. This information, if not produced by doctors and researchers actually working at or with the hospital, is at least available to employer-hospitals. Hospitals regularly schedule residents for an excessive number of hours, despite medical evidence that "residents are 6.7 times more likely to have a motor vehicle accident due to falling asleep at the wheel during their residency than before their residency." Therefore, these schedule practices constitute an affirmative act triggering a duty to prevent the risk of motor vehicle accidents.

In light of the hospital's knowledge of resident fatigue and its detrimental effect on driving a vehicle, in conjunction with ever-expanding medical evidence, it is foreseeable that residents will fall asleep at the wheel and pose a danger to the general public. Not only is it foreseeable because overworked and fatigued employees are at risk of falling asleep at the wheel and causing accidents, but residents are especially prone to accidents as a result of their difficult and irregular schedules that produce irregular sleeping patterns. Since the hospital creates the hazardous condition, they arguably owe a duty to those who are at risk when a resident leaves the hospital after, for instance, a thirty-six hour on-call shift.¹⁹

In sum, CIR urges the Committee on Optimizing Graduate Medical Trainee (Resident) Schedules to Improve Patient Safety to take into consideration the overwhelming evidence linking 24+ consecutive hour shifts with an increased incidence of car crashes and the harm that causes to resident physicians and to the general public. As former CIR President Barbie Gatton has noted, "We take our oath seriously, which starts with the fundamental principle of 'first, do no harm'.... We join this profession to serve the public. The last thing we want to be is a public safety hazard."²⁰

¹⁹ Ibid. p. 676-8.

²⁰ Car crashes and long hours linked in Harvard intern study. CIR NEWS. 2005; March:7

The ACGME hours limits currently in effect for resident physicians are simply unsafe for patients, residents -- and the driving public, who unwittingly come into contact with resident “misguided missiles” on the road.

We repeat here the three recommendations that we presented to this panel on December 3, 2007. We urge you to:

1. Act on the scientific evidence and recommend shifts for resident physicians that are no greater than 16 consecutive hours;
2. Recognize that change will not occur unless all teaching hospitals are required by law to adhere to the same safe hour limits;
3. Insist on rigorous enforcement of work hour limits by an external agency that has no economic self interest in perpetuating the status quo.

Thank you for the opportunity to share these comments with the Committee.

*In memory of
Dr. Valentin Barbalescu, a senior medical resident and member
of CIR, who died in January 1999 in a one-car crash after falling asleep
at the wheel post-call from the CCU.*