

Extended Work Duration and the Risk of Self-reported Percutaneous Injuries in Interns

Exposures to contaminated fluids from percutaneous needlesticks and laceration injuries are serious hazards associated with postgraduate medical training. These injuries may result in the transmission of blood-borne pathogens, including hepatitis and human immunodeficiency viruses, and thus have significant occupational health implications.¹ Factors contributing to the occurrence of these percutaneous injuries (PIs) in physicians have not been well studied. We hypothesized that sleep deprivation may play a role in these incidents.²

Polysomnographic recordings of interns (residents in their first postgraduate year) have revealed that sleep deprivation induced by repeated extended-duration (≥ 24 hours) work shifts doubled the risk of attentional failures during critical care unit rotations.^{3,4} Among interns scheduled to work every third night, extended duration work shifts account for half of all work shifts and more than 80% of work hours. Such intense work schedules result in chronic sleep deprivation, with superimposed episodes of acute sleep deprivation when interns have overnight call, because they sleep an average of only 2.6 hours during these extended work shifts and often obtain no sleep at all.⁵ This degree of sleep deprivation leads to decrements in vigilance, cognitive performance, and motor function.⁶⁻⁸ Interns have double the rate of motor vehicle crashes while driving after extended work shifts compared with non extended shifts.⁵ However, the relationship between extended work duration (and night work in general) and rates of PIs at work has not been well studied. We hypothesized that rates of injuries would increase with consecutive work hours and that rates of injuries would be greater during nighttime compared with daytime hours.

The purposes of this study were to describe the epidemiology and contributing factors for PIs in interns and to assess the relationship of PIs to extended duration overnight work. We ...

RESIDENTS IN THEIR FIRST POSTGRADUATE year (interns) in the United States frequently work shifts of an extended duration (≥ 24 hours), a practice that results in long workweeks.^{1,2} Both the number and the distribution of work hours can affect sleep, productivity, and safety.³ The risk of fatigue-related crashes, a leading cause of truck crashes that have been fatal to the driver in the United States,^{4,5} increases markedly as a function of truckers' consecutive driving hours.⁶ Despite long-standing concerns regarding the effects of work hours on performance and safety among postgraduate physicians,⁷⁻¹⁰ prior studies have not directly associated safety outcomes with such a specific characteristic of their work schedule.

To address this issue, we

METHODS
