# **Sleep Deprivation:** It's Not Just an **Issue With Residents**

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It is 3:00 AM on Monday and you are finishing a weekend call that began on Friday evening at 6:00 PM. During this period of time you have had only about 6 hours of sleep.

The intern on call phones you and relates the laboring patient on oxytocin you have been following has been 5 cm dilated for about 3 hours, and there are some worrisome changes on the fetal monitoring strip. You sleepily tell her to keep the oxytocin going but to check back in an hour.

Five minutes later the nurse caring for the patient urgently requests you to see the patient. Feeling groggy, you arrive at bedside and note the fetal heart rate pattern is now showing persistent late decelerations. Discontinuing oxytocin, giving a fluid bolus, and position change do not correct the situation.

Since the patient is remote from delivery, you proceed with a cesarean birth. Although this is a relatively uncomplicated primary cesarean delivery, you struggle to complete it and, during the course of the surgery, puncture your finger with a needle while suturing.

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Following the case, you are able to sleep an hour or so despite interruptions for telephone calls. When awakened at 7:00 AM by your partner taking over call responsibility, you don't remember the substance of the calls. Prior to going home, you complete an elective scheduled laparoscopic tubal sterilization procedure complicated by some bleeding on one tube, managed with cautery.

On the drive home you doze off, with an accident being avoided when you awake as you drive over rumble strips. Just before going to bed, you recall that you forgot to check with infection control regarding possible HIV prophylaxis due to the needle stick.

This hypothetical case highlights an area of concern that is gaining increasing attention nationally. In the area of resident education, the Accreditation Council for Graduate Medical Education continues to limit work hours to 80 hours per week. More recently they have revised their regulations to limit first-year residents to a maximum of 16 hours of continuous work followed by a minimum of 8 hours off

This regulation of resident work hours raises several issues. Does sleep deprivation adversely affect performance of physicians? Does a physician who has been on duty for a prolonged period without rest have a duty to disclose this information to patients? How do practices, espe-

## **FOCUSPOINT**

The literature shows sleep deprivation can affect recalls, reasoning, reflexes, and fine motor skills.

cially in rural areas, maintain continuity of care and 24/7 coverage if work hours are limited due to concerns regarding sleep deprivation?

#### **SLEEP DEPRIVATION AND** PHYSICIAN PERFORMANCE

There is substantial literature demonstrating that sleep deprivation affects recall, reasoning, reflexes, and fine motor skills. For example, Arnedt and coworkers found equivalent impairment in tests of sustained attention, vigilance, and simulated driving in residents after 4 weeks of heavy call, compared with residents ingesting alcohol to reach a blood alcohol level of 0.04 to 0.05 g% (equivalent to 3 to 4 drinks).1 In a study by Lockley et al, interns working limited continuous hours in an intensive care unit (16 hours or less) compared to working 24 or more hours in a shift had decreased attentional failures during night work hours.2

A national survey of first-year residents by Barger and colleagues also documented an increased risk of significant medical errors, adverse events, and attentional failures among those on duty for extended-duration work shifts.3-5 There is also an increased risk of percutaneous injuries and motor vehicle accidents on the way home.

This issue is not just confined to physicians in training. In a study by Rothschild and coworkers, among attending surgeons who completed elective daytime surgical procedures following a less-than-6-hour opportunity for sleep between procedures during a previous on-call night, the risk for significant complications was increased by 83%.6 The hypothetical case scenario illustrates how these situations might occur in a busy obstetric practice.

#### **SLEEP DEPRIVATION AND DISCLOSURE TO PATIENTS**

In a national survey of 1,200 representative members of the public, more than 4 out of 5 respondents believed that "patients should be informed if a medical resident who is treating them has been working for more than 24 hours."7 If they learned that their doctor had been awake longer than 24 hours, 85% of respondents

reported that they would "feel anxious about the safety of [their] medical care," and 80% would "want to be treated by a different doctor."

Although this was a survey directed towards work hours of residents, one could logically conclude that most patients would have the same concerns with their older attending physicians. Certainly in the scenario presented earlier, the elective surgery after call could be postponed to a later date or performed by another physician in the practice. At the very least, given its elective nature, the patient should be informed of the situation and the inherent risks.

Some groups, such as the Sleep Research Society, have endorsed the concept that if physicians have been awake for 22 out of the previous 24 hours, they need to inform their patients of the potential safety impact of sleep deprivation and obtain consent from such patients prior to performing any clinical care or procedures.8 In the situation of on-call procedures with sleep deprivation, there may be no other option in an emergency situation than to have the procedure performed by the on-call physician, particularly in smaller hospitals.

#### **HOW CAN PRACTICES AND HOSPITALS** ADDRESS SLEEP DEPRIVATION ISSUES?

As noted in a recent article by Nurok and colleagues, hospitals should establish policies that prohibit elective procedures post call, especially if the physicians are covering busy practices.7 In smaller hospitals where the call is often less intense, elective procedures post call may be permitted as long as there are provisions to deal with the occasional instance of sleep deprivation post call. In such cases, there should be a policy that prohibits sleepdeprived surgeons from proceeding and that facilitates rescheduling.

For the on-call instances of sleep deprivation, larger institutions should consider developing policies that allow a maximum of 24 hours of call coverage and/or which require back-up coverage within the practice or some other cross coverage arrangement when a clinician is sleep deprived.

Another method is to utilize a hospitalist approach ("laborist") to provide night

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Avoiding care of a patient when the clinician is sleep deprived is primarily a patient safety initiative.



and weekend coverage. With smaller hospitals, the challenges are greater, due to limitations of staff. Possible solutions may be to use specially trained nurses to triage phone calls or certified nurse midwives to help cover call.

Finally, it is important to emphasize that avoiding care of a patient when the clinician is sleep deprived is primarily a patient safety initiative. It also has implications relative to medical liability. Increasingly in medical malpractice litigation, plaintiff attorneys are requesting information regarding call responsibility, workload, and time on call when an incident has occurred. Such information is then used to suggest sleep deprivation was a major factor in the plaintiff receiving substandard care.

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**COMING SOON** 

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