

Editor's Notes

Sleepwalking But Not Well*

By *Stephen Jackson, M.D., Editor*



Physician impairment comes in all sizes, shapes and colors. The term does *not*, as we in our specialty might commonly believe, only imply chemical dependence or substance abuse. It also does not necessarily refer to the behavioral excesses or disruptive behavior that we all have experienced and been pressured to endure, at least until recent corrective actions were taken by medical staffs in response to mandates from The Joint Commission. Moreover, when we do consider physical impairment, most of us think in terms of physical diseases preventing physicians from practicing safely. However, there is one form of physical impairment that continues to plague our specialty, like a strange kind of tradition, and is largely unabated and poorly addressed: sleep deprivation and its consequent physical and mental fatigue. Although now addressed at the internship and residency levels by the Accreditation Council for Graduate Medical Education (see the article “On the Clock,” pages 19–24), sleep deprivation and associated fatigue still loom as major considerations in diminishing safety and quality in medical care. Unfortunately, beyond the specific ongoing discussions related to internship and residency training, little has been done to effectively deal with this festering malady that pervades the physician workforce. Indeed, from a practical standpoint, how can sleep deprivation be addressed without further depleting the already inadequate national physician workforce? Let’s look at two hypothetical-but-plausible scenarios from private practice.

First, a seasoned anesthesiologist at a small hospital in a rural resort community starts his 72-hour vacation-season call weekend with a labor epidural at 7 a.m. and soon is faced with a succession of typical “emergency” surgical cases on mostly otherwise healthy patients, punctuated by another two labor epidurals. Now, at 5 a.m. the next day, the final case is an appendectomy, and the anesthesiologist, despite several cups of coffee throughout the night, is exhausted and is having difficulty remaining awake. He recognizes this, and is somewhat embarrassed and annoyed by the realization, but he understands that his ethical obligation to his patients is to be well enough to care for them safely.

* This editorial is liberally drawn from two recent articles^{1,2} by Stanford’s Steven Howard, M.D., who has researched sleep deprivation and its adverse consequences on physician performance and patient safety.

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He knows that he was similarly fatigued before administering the previous anesthetic, and in fact, he had briefly fallen asleep several times during that case. He informs the surgeon that he believes that he cannot safely proceed with the appendectomy without first taking a 30-minute nap or—better still—he will try to find a colleague who can replace him. The surgeon, who has also worked most of the day and night and whose demeanor usually is calm and understanding, becomes angry and abusive. The anesthesiologist nonetheless contacts his only colleague who is in town. However, because the colleague was not on call, he had been imbibing alcohol at a party and states that he is not yet sober enough to work.

Next, a young anesthesiologist at a tertiary care/trauma hospital, who recently joined a large group immediately upon completion of her residency, begins her first 48-hour call weekend with a series of challenging cases involving ASA III and IV patients. The cases continue throughout the night and until 5 a.m. with almost no breaks. By this time she is exhausted both mentally and physically and is having trouble staying awake and thinking clearly. She literally is falling asleep on her feet. She knows, as she was taught in her residency, that she should consider herself unsafe to administer anesthesia and that she should not be permitted to do so. However, now she is informed that the emergency room just admitted a leaking abdominal aortic aneurysm that soon will be brought to the operating room. She is hesitant to contact the second call anesthesiologist, whom she doesn't know, and is concerned that her reputation among her colleagues may be harmed if she doesn't fulfill her call duty, regardless of her fatigue. Perhaps several cups of coffee might help her to safely care for this next patient.

Believable scenarios? Well, I do not mean to suggest that physicians who do these long shifts all become “zombies,” but I am attempting to portray a state *perhaps* resembling something more akin to sleepwalking (somnambulism). In fact, our “normal” state of being often is likely to be abnormal because many of us rarely, if ever, give ourselves the opportunity to get adequate sleep and rest. One even might conclude that our chronic sleep- and rest-deprivation effects a perceived normalization of a chronic physiologic deviance.

Some assert that anesthesiologists have the most onerous on-call workload of all physicians, and I would not try to refute this, although there may well be other specialties that would challenge this unpleasant and inconvenient truth. There is, however, no refuting the scientific evidence that sleep deprivation and fatigue (both physical and intellectual/mental) *adversely affect our performance as clinicians*, not to mention our personality and general well-being. Although interns and residents are protected from such potential self- and patient-abusive behavior, their attendings certainly are not, and, indeed, most anesthesiology practices are not “shackled” with regulations regarding sleep. Practicing in a

milieu obsessed with establishing and fortifying a culture of safety in our health care institutions, we must begin a serious dialogue on the adverse quality-of-care consequences of sleep deprivation and fatigue.

Given the reality that sleep deprivation and fatigue do arise in our practices, consider the ethical obligations that anesthesiologists are obliged to fulfill. The American Medical Association (AMA) Principles of Medical Ethics begin, quite simply, with the statement that “*a physician shall be dedicated to providing competent medical care.*” Assuredly, impairment of any kind would preclude sufficient competency. Likewise, the ASA Guidelines for the Ethical Practice of Anesthesiology (which incorporate the AMA's Principles),³ the only document to which *all* ASA members are *bound* (and to which we agree to adhere annually when we renew our ASA membership—read the front of your membership card), begin with the declaration that “*anesthesiologists have ethical responsibilities to their patients... that include placing the patient's interests foremost, faithfully caring for the patient and being truthful*” (Section I.1). Additionally, these guidelines state: “*The practice of quality anesthesia care requires that anesthesiologists maintain their physical and mental health and special sensory capabilities. If in doubt about their health, then... during this period... anesthesiologists should modify or cease their practice*” (Section IV.2). These and other related ethical responsibilities are succinctly covered by Steven Howard, M.D., in his chapter in *Clinical Ethics in Anesthesiology*.¹

In fact, with respect to a physician's sleep-deprived impairment, Nurok has raised the question as to whether informed consent should include that specific piece of information,⁴ but this also would assume that physicians understand the likelihood of their underestimating their own level of physiologic sleepiness (and accompanying impairment).¹ Of course, to be entirely realistic, there also are numerous practical and situational factors (such as economic, workforce and institutional exigencies) that need to be plugged into this “equation,” ones that necessarily force their intrusion into this messy conundrum, but all of these ultimately must be reconsidered if we (and our colleagues in other specialties) are to continue to hold ourselves out as professionals whose primary focus is the best interests of our patients.

Sleep is a reversible behavioral condition of perceptual disengagement from—and unresponsiveness to—the environment. Indeed, sleep is a basic human physiologic need that must be met or it becomes a relentless pressure. How many of you actually routinely achieve eight hours of sleep, the *average* requirement for an adult (the range of six to 10 is genetically determined) and an amount that cannot be “trained” nor one that is altered with age? The fatigue resultant from sleep deprivation will slow cognition, increase performance variability, decrease motivation, and impede memory and learning

of new information. In such a state, our contract with society, our promise to our patients to hold their best interests foremost, and our commitment to provide continuous vigilance over their well-being all cannot be upheld: *our* lack of well-being can have a harmful impact on *their* well-being.

With respect to some of the avenues of resolution potentially open to the anesthesiologist in our first scenario, we should look at the “sobering” comparison of sleep deprivation to ethanol consumption, his colleague’s excuse for not covering the last case. In fact, the two physicians may well have been equivalently impaired even though the former had not imbibed. The literature shows a correlation between sleep deprivation and alcohol consumption in terms of the impairing effects of sleep deprivation compared with those of actual blood alcohol levels. Several experiments have determined that wakefulness of 17 to 24 hours effects a diminished performance on various tasks equivalent to a blood alcohol level of 0.05–1.0 percent, the legal limit in California being 0.08 percent! How can we ethically and morally justify working under a sleep-deprived impairment equivalent to being legally intoxicated, which, if discovered while caring for a patient, most likely would result in loss of one’s medical license? Yet, we do so routinely, perhaps largely facilitated by the fact that there is no scientific study relating impairment of performance to morbidity and/or mortality.

And what of the anesthesiologist who has struggled through a prolonged period of sleep deprivation while on call and then must begin yet another day of an elective schedule? How does one manage a situation in which there is no apparent alternative but to forge forward and get the work done? What of the sleep-deprived physician who now is at increased risk of inadvertent percutaneous injury at work or of an accident when driving home in an impaired state? (Hospitals or anesthesia groups might be liable for sleep-deprived practitioners who have accidents in the hospital or on their drive home. Note that in New Jersey, “Maggie’s Law” labels a sleepy driver—one who has not slept for more than 24 hours—as reckless and susceptible to conviction for vehicular homicide!) None of these situations is easily confronted or resolved, and yet they are all too common and largely devoid of planning and forethought by colleagues and institutions. A perfect solution may not be at hand, but this topic is in dire need of serious consideration and should be introduced in medical school curricula.

As for possible solutions to the scenarios presented above, perhaps most effective would be “power napping” or “strategic napping.” When I was in college and medical school, I discovered that the best way for me to prepare for class, papers and exams—to “defeat” sleep deprivation—was to give in to my overwhelming sleep-deprived physiology and take a nap for 20 minutes

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(with a small alarm clock right next to my ear to assure that I would wake up on cue). I would awake newly energized, perhaps accruing advantage both physiologically and psychologically, at least until the need arose for my next “power nap” later on.

The strategic use of caffeine will enhance alertness, but the chronic use of this drug results in tolerance. Thus, it is most useful for someone who does not imbibe routinely. It is most effective during circadian low points (2–6 a.m. and p.m.), has an onset of a quarter to half an hour, and lasts as long as three to four hours. Coffee is the obvious vehicle for caffeine self-administration, but there are also caplets (No-Doz or other commercial preparation), which contain 200 mg caffeine, the equivalent of one cup of coffee without the added fluid intake. Of course, caffeine would antagonize any opportunity for napping that might arise during the three to four hours.

As a fourth-year medical student, I was part of a small group of students meeting at the Massachusetts General Hospital at 6 a.m. for a series of informal mini-lectures by an eminent pediatric surgeon. Despite emerging from my circadian nadir, I inevitably would fall asleep (from both sleep deprivation and boredom) within minutes of the commencement of the lectures. After my napping through his first three lectures, Dr. Hardy Hendren began his fourth class by pulling a box of No-Doz from his pocket, tossing it to me, and telling me to take one so that I might actually hear more than the first couple of minutes of his talk! Shocked and shaken to my boots, red-faced and embarrassed, I took one to the thunderous laughter and amusement of my classmates and Dr. Hendren (also affectionately known as “Hardly Human,” but that’s another story). Whatever the mechanism might have been for remaining awake for the lecture that morning, it worked! A couple of years later, as an anesthesiology resident, I had the pleasure of working with Dr. Hendren on numerous occasions, and that embarrassing and shocking episode commenced a long and mutually respectful professional relationship and friendship. But neither of us, to my knowledge, has previously revealed how that happened.

References

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