Malmberg et al. Sleep and recovery in physicians . . .

The authors address the important problem of sleep loss in physicians and the time it takes for recovery. They examine two physician groups: anesthesiologists and pediatric otolaryngologists. Although their schedules differed somewhat, both groups sustained considerable sleep loss during night call.

Self-report (diary and Karolinska Sleepiness Scale) and actigraphy measure were the main variables. These are well researched and validated instruments. The study monitored the physicians' sleep during a night after a workday, during night call, during a nap post call, during the two post call nights and during a Saturday night. Given the difficulty of studying physicians with their variable schedules while dealing with issues that can trump research study goals, the authors did an admirable job collecting this data. The method and results sections present the data thoroughly with appropriate analysis in a clear manner.

The results indicated marked sleep loss (only about three hours of sleep when on call) and the need for a two-day recovery period. This is in line with earlier data. The paper mentions the limitation of a relatively small group of physicians and the lack of a measure of workload.

Other potential limitations

1. The self-report data are non-blinded to condition. Presumably, highly trained professionals in critical positions are hesitant to admit that their work schedule may contribute to impairment. In terms of recovery, physicians may have overestimated whether they obtained sufficient sleep and were well rested, thus indicating a shorter recovery time than actually occurred.

2. Presumably, recovery is not one-dimensional. Other measures such as mood could have different recovery periods. For example, although irritable/grouchy physicians may perform medical skills adequately, patient interaction may be poor.

3. Performance is an important measure to determine recovery from sleep loss. Although perhaps impossible to measure medical skill performance, it would be comforting to see that other performance measures from the simple Psychomotor Vigilance Test to more complex driving simulation confirm the physicians self report of recovery.

Other comment

Although the argument that there is a trait vulnerability for some and thus
self-selection bias (p15) is possible and interesting, I am not aware of data that support this for any night work profession. A reference would strengthen this argument.

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I receive fund from a medical school and hospital that are financially affected by physicians’ work schedules. I have done related research. Beyond that, I have no competing interests.