

Sleepy Drivers

September 20, 2011

Signals are being given that the National Transportation Safety Board (NTSB) and Federal Motor Carrier Safety Administration (FMCSA) are nearing sleep apnea testing regulations for truckers. Everyone is concerned about safety, but none of the interested parties wants another regulation that is just going to be a nuisance costing more money and posing greater risk liability. Many legitimate objections have been raised:

- What is the scientific basis for diagnosis of sleep apnea that mandates treatment?
- What is the scientific basis for standards of successful treatment?
- What is a reasonable time period to allow from diagnosis to successful treatment?
- Being diagnosed with sleep apnea is a “scarlet letter” decreasing employment opportunities and health insurability should a trucker terminate employment.
- “The National Sleep Foundation appears to be a lobby for sleep companies trying to fleece truckers.”
- There is little or no data showing that truckers are tired or that drivers with sleep apnea are causing large numbers of wrecks
- Federal regulations already require a physician to examine for sleep apnea
- Truckers who would normally bring up the subject of daytime sleepiness with their physicians won’t do so if the threat of a \$2,000 to \$5,000 laboratory sleep study hangs over them
- Most truckers’ benefits will not cover costs in that price range
- CPAP and pharmaceutical manufacturers pay millions of dollars in perks and unreported cash to physicians for listening to their pitch. Medical consumers cannot make independent and informed purchasing decisions listening to advice from physicians getting such “Sunshine Payments”.

According to the white paper by ACS (Affiliated Computer Services, Inc.), a Xerox Company in business process and information technology services, “The real problem the trucking industry is currently facing is sleep apnea.” They suggest in this paper that the following steps would be an adequate solution:

1. Truck drivers will get screened for sleep apnea by their employers at a credible sleep lab.
2. Drivers found to have sleep apnea will be required to receive medical treatment.
3. Carriers will have to ensure their drivers with sleep apnea are taking their treatments.

4. Drivers receiving treatments will be required to remove data from their CPAP and upload the data on a device which would transfer the results to a sleep lab.

5. A receipt will be printed from the printer located next to the computer, giving the driver proof of their upload.

6. The data will then be centralized to distribute data to the driver, carrier, and physician. This data must be transparent so all parties can manage and document the findings.

7. The data will have the ability to be shared and documented through a web-portal. The web-portal will provide substantiated analytical proof of compliance that the driver is receiving proper medical attention for their sleep apnea.

Does this sound like they want to impose a police state, “big brother is watching you” dictum or what? It could reasonably be construed as an attempt by a big CPAP/sleep lab consortium to fleece the trucking industry with increased liability and risk, and truckers with bearing exorbitant regulatory costs. This white paper does not give any alternative solutions to CPAP and overnight sleep lab testing. ACS found this very serious problem and they can provide **all** the answers. But do they really?

For driver safety regulations to be effective, they must be based on a win-win situation. Let’s impose common sense to the problem. There are certain points that seem obvious, undeniable and logical.

- Studies of all human drivers have shown a link between sleepiness, untreated apnea and motor vehicle accidents.
- Drivers with sleep apnea do not sleep as well as drivers who do not have sleep apnea.
- Tired, sleepy drivers are more likely to crash than drivers who are alert and well-rested.
- Obesity, diabetes, smoking, high blood pressure, cardiovascular disease, male gender and large neck size have all been linked to sleep apnea.
- People having these characteristics should be referred to their physicians for sleep testing and proper treatment if indicated.

These points are the basis for the recommendations of the National Review Board to the Federal Motor Safety Administration. All references specific to truckers were removed. It is easy to see in this context that good principles of road safety apply to all motorists – not just truckers. This is not arguable. The unhappiness is over implementation of these guidelines relative to truckers. There appear to be commercial interests that want to make these into rules specific to truckers. We like to think of the United States of America as a free country. Events comparable to September 11, 2001 however have required some compromises of freedom for security and safety.

In July 1997 a college student, Maggie McDonnell was struck and killed in a head-on motor vehicle accident by a driver who fell asleep at the wheel. The driver at fault had not slept in over 30 hours. Because there were no drowsy driving laws the offender received a \$200 fine and a suspended sentence. Maggie’s mother campaigned successfully and in 2003 New Jersey passed

a vehicular homicide law. It made vehicular accidents caused by someone driving without sleep during the preceding 24 hours a felony offense carrying a \$100,000 fine and up to 10 years in jail. To date no other state has passed a vehicular homicide law for driving while drowsy. Certainly what is fair for the general population is fair for truckers. An accident where a drowsy auto driver runs into a truck has the same damage and injury potential as one where the trucker hits the auto. If sleepy driver regulation is not wanted by the general population for themselves, it certainly seems unfair to impose it just on truckers.

Good sleep is extremely important to good health. Acute lack of sleep causes alterations in physical well being, irritability, mood and overall cognitive functioning, including reduced acuity in controlling a motor vehicle. Chronic lack of sleep can cause depression, lethargy, fatigue and contribute to numerous morbid medical conditions. Scientific research has strongly associated sleep apnea with high blood pressure, severely increased risk of heart attack, stroke, diabetes, weight gain, immune system disorders, and reduced sexual libido. Epidemiologic research has demonstrated that motor vehicle accidents caused by falling asleep at the wheel are more prevalent than those caused by excessive alcohol use.

Unpopular but necessary to address, sleep apnea has more acceptable alternatives than uncomfortable and expensive CPAP machines and uncomfortable, expensive and threatening overnight studies in a sleep lab. Inexpensive and reliable home sleep studies are available. Recent guidelines published by the American Academy of Sleep Medicine (Collop et al., 2007) recommend that the same technology used in sleep laboratories be used for unattended portable monitoring in the home. Such technology includes the use of a thermal oronasal airflow sensor to detect apnea, a nasal airflow cannula to determine hypopnea, respiratory effort belts using respiratory inductive plethysmography technology, pulse oximetry, and body position. This technology is available today and has been found to be easy to use with high specificity and sensitivity.

In a recent study involving 73 patients comparing the attended sleep laboratory data collection method against the MediByte[®] unattended portable home monitoring method, Driver et al. (in press) found that the association for the detection of sleep apnea between the two methods were very high: a Pearson correlation of 0.92, accounting for 85% of the variance in the data. When apnea was moderate to severe, the sensitivity and specificity of the unattended home method was 80% and 97%, respectively. When the apnea+hypopnea index was greater than 30 times per hour (i.e., severe) the positive predictive value of the MediByte unattended home recorder was 100%, while the negative predictive value was 88%. The authors concluded that the home recorder accurately identified patients without sleep apnea and had a high sensitivity for moderate to severe apnea patients.

With the aging baby boomer demographics, unattended home sleep apnea testing presents an inexpensive opportunity to increase sleep apnea screening in the USA. It is also an efficient and convenient technique to evaluate the efficacy of oral appliance therapy. In most of Europe unattended home sleep testing has been used for many years to economically and reliably diagnose and monitor sleep apnea. Recent improvements in technology coupled with approval of home sleep testing by the Center for MediCare / MediCaid in 2008 reinforce the view that home sleep testing is a valid and widely accepted option for both diagnosis and monitoring of

snoring and sleep apnea. Now is the time to take advantage of this modern technique to properly address the important issue of sleep apnea diagnosis and management of sleepy drivers.

The diagnosis and treatment of sleep apnea is rapidly approaching critical mass in terms of recent new technological innovations and gaining public awareness. Numerous intraoral appliances that are FDA approved, and AASM approved for mild to moderate sleep apnea are already being prescribed and fitted by dentists qualified to practice sleep dentistry. They are comfortable and have a very high compliance rate according to patient testimonials. Other intraoral sleep apnea devices are in late stage development as comfortable alternatives to CPAP that are both inexpensive and highly effective. Compliance chips to monitor usage of oral appliances are also in late stage development. Both technologies, inexpensive intraoral appliances and compliance chips are expected to be available for market by the end of the year. Collaboration between the trucking industry, the insurance industry, the medical and dental community of interest and the regulatory agencies offer far more affirmative possibilities to make safer roadways than a biased white paper and behind the scenes lobbying efforts by those standing to reap huge financial gain from poorly conceived regulatory mandates.

Allen J. Moses, DDS, Chicago, IL, USA

Richard A. Bonato, PhD, Ottawa, Canada