

SPECIAL ARTICLES

Assessment and Policy for Commercial Driver License Referrals

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This report describes experiences, subsequent action, and policy recommendations regarding sleep disorders assessment of veterans in relation to a commercial driver medical examiner referral. A series of 6 veterans were seen in our sleep clinic, presenting with an order from a commercial driver medical examiner (CDME) for polysomnography and/or Multiple Sleep Latency Testing (PSG/MSLT). We searched the literature for an evidence-based justification for handling this referral, and we concluded that there is neither federal policy nor current evidence to suggest that any current diagnostic test, including PSG/MSLT and/or MWT, is capable of predicting which individual drivers are at risk for fall-asleep crashes. The best indicator of risk is self-reported sleepiness, regardless of cause. Thus, we concluded that an administrative request for a "PSG/MSLT"

is not a rational use of VA resources. Procedures and a policy for the Cleveland VA system were developed to respond to the request for evaluation, recognizing that sleep problems and disorders other than sleep apnea may be present in this population. An educational component was an important feature of this response. We suspect that this approach may be appropriate for managed care systems in general.

Keywords: Sleepiness, commercial driving risk, obstructive sleep apnea, narcolepsy, sleep education.

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INTRODUCTION

ver a 12-month period, 6 veterans presented to the VA Sleep Disorders Clinic with an order from a commercial driver medical examiner (CDME). The referral was for a polysomnography and Multiple Sleep Latency Test (PSG/MSLT) to be performed within a 90-day window for the commercial drivers license (CDL) examination to continue. The presentation and outcomes of these 6 referrals are seen in Table 1. Four referrals were assessed; the patients were found to be adequately treated for sleep apnea and compliant with CPAP therapy, as shown by machine-based monitoring. These 4 drivers reported no symptoms of excessive daytime sleepiness (EDS). One driver had symptoms consistent with sleep apnea but reported EDS; he responded symptomatically to CPAP retitration and adjustment of CPAP pressure. Another driver, however, had symptoms of cataplexy and sleepiness, more consistent with narcolepsy than with sleep apnea. He agreed to additional clinical testing with an overnight PSG and MSLT. A diagnosis of narcolepsy was subsequently confirmed; as a result, this driver became ineligible for a CDL.

There are currently no practical guidelines in the VA or else-

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where in the literature for such administrative referrals for testing. The suspension of malpractice insurance that accompanies an administrative referral, as opposed to a medically indicated one, is a problem for medical systems and practitioners in the private sector and remains a concern in the VA system as well. As these referrals of eligible veterans are not medically mandated nor referred by VA physicians, the referral VA Sleep Clinic is not obligated to provide testing or to assess these referrals ahead of other eligible VA patients who are referred for medical indications. Because of this eligibility issue and a typical delay in testing of 3 months or more, we reviewed the literature with the goal of developing a set of policies and procedures for these nonmedical administrative referrals¹.

Both federal and state government agencies are legislated to have responsibility in the licensing of commercial drivers, and this obligation includes an assessment by the applicable agency of whether the applicant is medically fit to drive. The Federal Motor Carrier Safety Regulations Manual (49 CFR 390-399) provides guidelines to Medical Examiners in their evaluation of commercial drivers. This manual lists general principles for evaluation of fitness to drive, as well as elaborating on specific diseases and conditions that require medical waivers, specialist evaluation, and guidelines for those conditions that would disqualify a commercial driver's license applicant (CDL applicant) for licensure. This manual is the rationale for a Form 649-F (6045) that the Commercial Driver Medical Examiner (CDME) reviews to determine a driver's fitness to drive. On form 649-F (6045), the driver fills out a health history checklist, that includes a box to indicate the presence of "sleep disorders, pauses in breathing while asleep, daytime sleepiness and loud snoring." Also attached to this form are regulations specifying the physical qualifications for drivers (49 CFR 390-399, Section 391.41).

Under the heading of respiratory dysfunction, the instructions

DEFINITIONS

Commercial Drivers License (CDL): License required for the operation of large vehicles, trailers, passenger vehicles, or vehicles carrying hazardous materials.

Commercial Driver Medical Examiner (CDME): Medical practitioner responsible for evaluating the fitness to drive of CDL applicants.

Excessive Daytime Sleepiness (EDS): The inability to stay awake and alert during the major waking episodes of the day, resulting in unintended lapses into drowsiness or sleep.

Federal Motor Carrier Safety Administration: Federal agency responsible for reducing crashes, injuries, and fatalities involving large trucks and buses.

Federal Motor Carrier's Safety Regulations: Department of Transportation (DOT) regulations regarding commercial drivers.

Maintenance of Wakefulness Test (MWT): A validated objective test used to measure the ability to stay awake for a defined time.

Multiple Sleep Latency Testing (MSLT): A validated objective test used for the evaluation of pathological sleepiness, by measuring latency to either the first epoch of NREM sleep or REM sleep in a controlled environment.

National Highway Traffic Safety Administration: Entity under the auspices of the US DOT that carries out research on driver behavior and traffic safety.

Narcolepsy: A medical condition characterized by excessive daytime sleepiness occurring almost daily for at least three months, with or without cataplexy, hypnogogic hallucinations, and sleep paralysis.

Ohio Department of Transportation: The department that regulates transportation issues for the state of Ohio.

Polysomnography (PSG): A multimodal diagnostic procedure during which a number of physiological variables are measured during sleep in order to characterize and diagnose sleep disorders.

Sleep Apnea: A medical condition characterized by repeated cessation of breathing, leading to fragmentation of sleep and consequent excessive daytime sleepiness.

Sleep Disordered Breathing (SDB): A spectrum of sleep-related breathing abnormalities, including snoring and obstructive sleep apnea syndrome (OSAS).

to the CDME refer to sleep apnea as "a disorder that may impair driving, requiring specialist evaluation." There is a directive in the medical reports section to the FMCSA website (www. fmcsa.dot.gov/rulesregs/medreports.htm) under *Conference on Respiratory Disorders and Commercial Drivers* which provides additional guidelines regarding sleep disorders. On the printed instructions to the CDME, however, under the discussion of conditions that can lead to a loss of consciousness, epilepsy is the only condition discussed in any detail. Narcolepsy is not mentioned in this section; however, in the section titled, FMCSA Conference on Neurological Disorders and Commercial Drivers- FHWA-MC-91-004, references to narcolepsy can be found.

In these 1991 guidelines, narcolepsy is an exclusionary condition for commercial licensure. If this appears confusing to the reader, it reflects the pathways an interested CDME might need to navigate to be informed about the federal regulations regarding driving and sleep disorders.

Thus, the general guidelines for the evaluation of fitness to drive with regard to sleep disorders are in comparison to other disorders, poorly detailed or are found only by gathering information from several different sources in the system. There is little direct guidance for the CDME for handling sleep disorders in comparison with other medical disorders such as hypertension or diabetes, which may lead to uneven interpretation by CDMEs, commercial drivers, state licensing agencies, and possibly by sleep medicine practitioners and centers. This issue has been recently reviewed by a non-federal, expert panel, who emphasized this point.² The State of Ohio has adopted, in full, the FMCSA recommendations concerning commercial drivers and sleep disorders. The Medical Examination Report for Commercial Driver Fitness Determination provides instructions to the ME stating, "If a Medical Examiner detects a respiratory dysfunction, that in any way is likely to interfere with a driver's ability to safely control a commercial motor vehicle, the driver must be referred to a specialist for further evaluation and therapy." Commercial driver medical examiners (CDMEs) may refer veterans who are commercial drivers for evaluation by a specialist, as a condition of licensure, when sleep apnea is suspected. The driver is responsible for finding a center to do the evaluation and for providing a report to the CDME.

Given the manner of VA sleep medicine care and the short timetable for processing these requests, we decided to develop a policy and procedures for the evaluation of sleep disorders in commercial drivers referred to the VA system. We emphasize that the suggested policy and procedure was developed for the Louis Stokes DVA Medical Center, Cleveland OH, and does not represent the policy of the Veterans Administration. However, it is applicable to managed care systems, as it reflects a general approach to an assessment of the obligation and the response to an administrative referral from a federal and state process of licensing commercial truck drivers.

METHODS

Using PubMed and the Transportation Research Information Service, a search of the literature was performed for English language articles containing the keywords "drowsy driving," "sleep disorders and drowsy driving," "commercial drivers and sleep," "commercial drivers, sleep, regulations," "sleep apnea and driv-

Table 1—Presentation and Outcomes of Six Patients

Drivers (all male)	Referral Dx	Current Rx	Assessment	Testing	Final Dx
1	OSA	CPAP	EDS	CPAP Re-titration	OSA adequately treated
2	OSA	CPAP	Normal H&P	None	OSA adequately treated
3	OSA	CPAP	EDS, cataplexy, sleep paralysis	PSG & MSLT	OSA, Narcolepsy
4	OSA	CPAP	Normal H&P	None	OSA adequately treated
5	OSA	CPAP	Normal H&P	None	OSA adequately treated
6	OSA	CPAP	Normal H&P	None	OSA adequately treated

Dx – Diagnosis; Rx – treatment/therapy; OSA – obstructive sleep apnea; EDS – excessive daytime sleepiness; PAP – positive airway pressure; CPAP – continuous positive airway pressure; H&P – history and physical; MSLT – multiple sleep latency test.

ing accidents." A manual review of the reference lists of relevant articles was performed. Editorials, commentaries, and book chapters were not included in the survey. This resulted in the identification of approximately 130 original articles, of which 23 were reviews. Additionally, various search engines, including Google and Alta Vista, were used to identify the following pertinent websites: National Highway Traffic Safety Administration (http://www.nhtsa.dot.gov/); National Sleep Foundation (http://www.sleepfoundation.org);

American Automobile Association Foundation for Traffic Safety (http://www.aaafoundation.org.)

It is from these sources that references were selected to identify issues germane to the development of a policy and procedures for the assessment of sleep disorders in VA patients who are commercial drivers.

Sleep Disorders and CDL Licensure.

Sleepiness is an impairment that can lead to a deterioration of a driver's ability to adequately perform the task of safely operating a motor vehicle.^{3,4} Sleepiness contributes to decreased alertness, diminished judgment and slowed reaction time.5 It has been estimated from data collected by the National Safety Council that the total cost of crashes due to drowsy driving is approximately \$11.1 billion per year.^{6,7} Sleepiness is common and adversely affects driving behavior and performance. According to National Sleep Foundation's 2005 Sleep in America poll, 60% of adult drivers report having driven a vehicle while drowsy in the past year, and, 37% (103 million people) reported having fallen asleep at the wheel. According to NHTSA data,8 up to 100,000 police-reported crashes annually involve drowsiness or fatigue as a principal causal factor, accounting for 1.5% of all crashes. It is commonly believed that the number of noncommercial vehicle crashes attributed to drowsy driving is likely to be an underestimate, and this may hold true for commercial crashes as well. The reasons for a suspected underestimate include differences in reporting policy and practice from state to state, lack of conclusive evidence that the driver was drowsy, lack of awareness on the part of police, and lack of awareness by the drivers themselves that drowsiness/fatigue played a part in their crash.

A common feature of vehicular accidents, regardless of the cause, is excessive sleepiness. Those with restricted sleep by choice or by occupation can reduce risk by choosing to get more sleep, and/or rearranging employment schedules. Those with undiagnosed or untreated sleep apnea can reduce risk by seeking treatment. Drivers with an established diagnosis of sleep apnea who are receiving treatment can reduce the risk of drowsy driving by maintaining compliance with the treatment plan. All interventions or behavioral modifications are predicated on adequate knowledge concerning the risks of excessive sleepiness.

Narcolepsy is one condition that precludes a CDL. It has a low prevalence (0.067%) in the general population, but is clearly implicated in impaired driving performance. The 1991 US Department of Transportation Federal Highway Administration recommendations reference the 1988 Conference of Neurological Disorders and Commercial Drivers, which states that persons with a diagnosis of narcolepsy are disqualified from driving commercially. The current Public Utilities Commission of Ohio (PUCO) guidelines for the state of Ohio defer to the regulations and recommendations of the Federal Motor Carrier's

Safety Administration with regard to commercial drivers with sleep disorders.

Mitigation of Risk

There are a number of ways by which drowsy driving risk might be reduced; none are mutually exclusive. Activities beyond the scope of a medical practice, like engineering roadways, should be included as part of a larger awareness of preventive measures, but others, like effective treatments or educational interventions to increase health literacy, can be incorporated as part of a care pathway.

MEDICAL INTERVENTION

Effective diagnosis and treatment of sleep disorders is an important countermeasure to drowsy driving and is predicated on the recognition of these disorders. Drivers with untreated OSA may have a 2-fold to 7-fold increase in the rate of drowsy driving, ¹² but individual prediction of risk is not very precise, ² so one should not over-profile for risk. While caffeine can help increase alertness for a short period of time, the effect is temporary and does not address the underlying physiologic need for sleep. ¹³ At the present time there are no guidelines for the use of prescribed stimulants or sleeping medications in the setting of commercial driving, nor is there a well-defined role for phase-shifting interventions such as bright light therapy or melatonin.

EDUCATIONAL INTERVENTIONS

Patient-based educational programs may increase the driver's awareness of the relative risk of drowsy driving. Such programs should stress awareness of the warning signs of drowsy driving, ¹⁴ provide advice on maintaining good sleep hygiene, advise that drivers get adequate sleep prior to long periods of driving, and instruct on the use of strategic napping. These are expert-based recommendations that should be conveyed to the driver and assessed by the practitioner. ¹⁵ From this paper, we have created a summary Drowsy Driving Awareness Education Checklist (See Table 2) to serve as a framework for the assessment of a driver's current knowledge of drowsy driving risks and determine educational needs. There are no interventional studies, at present, to address the utility of such a checklist.

WORKPLACE ISSUES

Table 2—Drowsy Driving Risk Awareness Education Checklist

What is driver's current level of awareness of the risks of Drowsy Driving?

Has the driver had vehicular crashes or near misses due to sleepiness?

Is driver aware of the degree to which sleep deprivation can impair driving ability?

What fatigue /sleepiness management techniques can minimize risk of drowsy driving?

Is driver aware of the elements of good sleep hygiene?

Table 3—Questions to be Addressed for Diagnosis and of Adequacy of Treatment

- Does the patient have a significant improvement in symptoms of Excessive Daytime Sleepiness (EDS)?
- Is patient compliant with the prescribed treatment? (Electronic usage data can be helpful, if available.)
- Is CPAP pressure set to proper level?
- Do patient's symptoms, or lack of adequate response to current treatment plan, suggest a modification of the current treatment plan or diagnosis of a second sleep disorder?
- Is the patients CPAP equipment, CPAP machine, mask, tubing in good repair?

Occupation-based strategies that reduce the commercial drivers risk of drowsy driving include reduction of shift work and establishment of work schedules that allow sufficient time for sleep before driving tasks are to be performed.¹⁵⁻¹⁷

Engineering roadways

Rumble strips, corrugated areas along the edge of the roadway that cause "rumbling" vibrations that warn a driver that he/she is in danger of running off the road have been shown to be of benefit in averting some drowsy driving crashes. ¹⁸ The driver should be aware of the purpose of these measures and the meaning of "hitting the strips" with regard to awareness of excessive sleepiness.

VEHICLE-BASED SYSTEMS

Such systems can monitor driver alertness by head position or other physiological data and sound an audible alert when a driver appears to be sleepy, but at this time there is not enough data to support the effectiveness of these devices. There is also the concern that such systems might lead drivers to take more risks with drowsy driving, by giving them a false sense of security.¹⁹

Conclusions Related to Review of the Literature

We have concluded that a yearly PSG/MSLT is not indicated in commercially licensed veterans with OSA who are currently welltreated and compliant with CPAP therapy. This is in contrast to the Federal Motor Carriers Safety Administration recommendation, that in order to be considered fit to drive, a driver with a diagnosis of sleep apnea must, in addition to being effectively treated, have a yearly PSG or MSLT to ensure continued adequacy of treatment. Our review of the literature indicates that there is little evidence-based information to support this recommendation. Tests of objective sleepiness (MSLT and MWT) do not predict individual driving risks. Neither the diagnosis of sleep apnea nor measures of its severity can predict which drivers will be sleepy or be involved in a crash.² Evidence does exist to support that individuals who are adequately treated for sleep apnea and remain compliant with their treatment plan have driving risk comparable to the general population.^{20,21} Rather than relying entirely on testing, management of commercial drivers with OSA should focus on enhancing compliance and the adequacy of the current treatment plan.

Our approach is based, as are many clinical pathways, on best use of available resources, as well as best evidence available in the literature for indications for diagnostic testing and treatment. Our approach would be applicable to any managed care system with limited resources.

We concluded that diagnostic testing for sleep disorders in this population be performed if:

- (1) the driver reports worsening of symptoms of excessive sleepiness during waking hours;
- (2) noncompliance with current treatment plan is suspected;
- (3) there is a suspicion for additional, previously undiagnosed sleep disorders;
- (4) upon review of the diagnosis and clinical presentation, there is doubt about the diagnosis;
- (5) there is doubt about the adequacy of the patient's current treatment, based upon sleep history, physical exam, and patient report.

If, after assessment by the sleep specialist, the driver is found to be adequately treated with the current treatment plan (See Table 3), i.e. no return of symptoms and is compliant with the prescribed treatment, this determination should be communicated to the referring medical examiner (see Table 4).

We recognize that any clinical assessment would rely on the honest report of symptoms of sleepiness by drivers to the CDME and to the sleep specialist. We acknowledge that some drivers might be tempted to underreport symptoms for fear of losing their livelihood, but we make the assumption that the driver is telling the truth, as this is a reasonable expectation in healthcare systems.²²

Enumeration of Policy and Procedures

Veterans referred by a CDME are scheduled in the sleep clinic rather than proceeding directly to testing. (Figure 1 shows a flow pathway for assessment.) This policy is in accordance with existing VA directives regarding the need for evaluation by VA physicians for a plan of care. We assess patients in the clinic as follows:

A) We determine if there exists an unrecognized and/or unspecified sleep disorder by review of documentation provided, perform a thorough sleep history and review past medical history, perform a system-focused physical examination,, and, if clinical suspicion dictates, arrange diagnostic testing. B) We determine if the driver has a pre-existing diagnosis of a sleep disorder by review of patient medical records and collection of health history information, a focused physical examination, identify the current or past treatment and/or treatment plan, including a review of patient VA medical records, and arrange for receipt of medical records from outside institutions with patient permission.

In both scenarios, after assessment and appropriate management, we establish if the patient is compliant with the current treatment plan based on patient report of symptoms and/or downloadable patient continuous positive airway pressure (CPAP) device usage data when available, and establish a management plan including thresholds for objective monitoring, follow-up visits, and equipment maintenance. To assess behavioral sleepiness in the presence of known and treated sleep disorders, we use patient-based assessments including patient reports of how sleepiness affects daily life, by means of the Functional Outcomes of Sleep Questionnaire

Table 4—Elements in the Communication to the Medical Examiner

- 1) Release by driver that information can be provided.
- 2) Confirmation or Designation of patient's diagnosis.
- 3) Evaluation of any tests or procedures performed.
- 4) Instructions to CDL applicant by Sleep Disorders Clinic.
- 5) Final opinion and proposed treatment and follow-up plan.

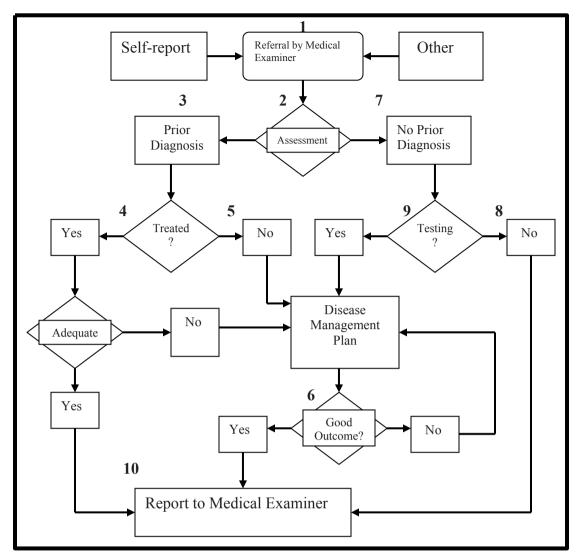


Figure 1—Algorithm for Evaluation of Sleep Disorders in Commercial Drivers.

This flowchart maps the decision tree for the evaluation of a driver referred to the Sleep Clinic by a CDME referral. The decision points are numbered. (1) The driver is referred by the Medical Examiner, either because of patient self-report of symptoms of a sleep disorder, ME clinical suspicion, or renewal of license of driver with known sleep disorder. (2) The sleep specialist assesses the driver for possible sleep disorder. (3) If the driver has a prior diagnosis of a sleep disorder, a determination of the adequacy of the current treatment plan is made based on patient history and electronic monitoring. (4) If the current treatment plan is adequate, then a report is made to the medical examiner to that effect. (5) If the current treatment plan is not adequate, then the patient has further diagnostic testing and the treatment plan is modified accordingly. (6) Based on the outcome of the modified treatment plan the driver is either deemed adequately treated and a report is made to the medical examiner or additional modification may be necessary. The diagnosis of narcolepsy is considered as a disqualification for a commercial driver's license. (7) If the patient has no prior diagnosis of a sleep disorder, an assessment is made, as to whether, the driver meets the indications for further diagnostic testing. (8) If further testing is not indicated a report to this effect is made to the medical examiner. (9) If the driver meets the threshold for additional diagnostic testing, testing is performed and a treatment plan is formulated. (10) Communication is made to the referring medical examiner.

(FOSQ). ^{15,18} We determine the applicant's level of awareness of the hazards of drowsy driving using a Drowsy Driving Risk Awareness Questionnaire addressing issues outlined in Table 2, and provide instruction regarding recognition of risk factors for drowsy driving and the use of countermeasures to driving while sleepy. Instruction may take the form of verbal explanation of the risks of drowsy driving, of how sleep disorders and sleepiness in general affect one's ability to drive, and of the relative effectiveness of countermeasures. This is supplemented by informational brochures regarding obstructive sleep apnea, good sleep hygiene, drowsy driving, and reference to appropriate internet websites.

We schedule the veteran for further testing under the following circumstances: (1) If there exists adequate clinical suspicion that

the patient has an undiagnosed sleep disorder; (2) If upon review of any prior diagnosis and clinical presentation that there is doubt about the diagnosis, or an additional problem is suspected; (3) If there is doubt about the adequacy of current treatment as assessed by subjective report of symptoms, objective assessment, and CPAP usage monitoring. (See Table 3)

If an evaluation determines that the driver is adequately treated for OSA, is compliant with his/her treatment plan, and reports no return of symptoms of excessive daytime sleepiness, the sleep disorders clinic will communicate these findings to the referring ME and no further diagnostic testing will be performed.

THRESHOLD FOR TREATMENT

Patients shown to have excessive daytime sleepiness by ESS and/or by self-report, reported loud snoring, observed apneic episodes during sleep, and demonstrated AHI > 5 on PSG will be treated with CPAP at the pressure titrated by in-house overnight PSG. For patients for whom the suspicion of OSA is high and the ESS> 11, a home based sleep study with an auto-titration CPAP method can be used.

COMPLIANCE EVALUATION

A patient will be considered compliant with CPAP therapy if CPAP, set at appropriate pressure, is used at least 4 hours/night, on at least 50% of nights used. Electronic usage data will be retrieved from the CPAP machine for confirmation, if available. Subjective sleepiness as measured by Epworth Sleepiness Scale in the normal range (<11). If the ESS is >10, objective sleepiness is measured by the Maintenance of Wakefulness Test (MWT). 19,20,23

COMMUNICATION WITH MEDICAL EXAMINER

The veteran will sign a release for a report detailing the assessment of the CDL applicant, a document that is forwarded to the CDME who initiated the referral. (See Table 4.) This form contains fields for the following elements to be included in communication to CDME: (1) confirmation or designation of a diagnosis, (2)Description of evaluation or procedures, if any, that were performed, (3) final opinion and proposed plan for follow-up, and (4) instructions given to the CDL applicant.

The role of the VA in the interaction with veterans who are commercial drivers and are referred by a CDME for sleep disorders evaluation is limited; however, the pathway does have the properties to include a diagnosis of any sleep disorders present, the arrangement of appropriate testing, treatment of disorders discovered, and assessment the adequacy of treatment. We envision a role for the sleep disorders clinic in drowsy driving risk awareness education and in follow-up care.

The above policy and procedures will be reviewed at intervals of one year for continued relevance, and necessary changes in procedure will be made when required due to the development of new technologies/techniques/standards.

DISCUSSION

Since the development of these procedures and policy, a joint task force of the ACCP, AASM, and National Sleep Foundation was convened with the charge of developing recommendations for obstructive sleep apnea for CDME evaluations for CDL licensure.². This document, of which one of us (K.P.S.) was a coauthor, expands on the occupational necessity for the CDME evaluation; however, unlike our policy it addresses only OSA, and provides expert-based recommendations on proposed tests, treatment, and outcome assessment to contrast with the existing DOT/CDME CDL licensure directives. As in our review, this report found inadequate or incomplete data regarding the CDL process, as it would pertain to sleep apnea. Our policy differs in that we refer to a more global assessment of sleep functions, including confirming or establishing a diagnosis, evaluating adequacy of current therapy by patient report, and by adherence monitoring, assessment of driver knowledge, and need for education. We developed a checklist to document such instruction. We present a pathway that acknowledges that no current test is sufficient to address driving ability and provide a template for reporting this standardized assessment and report structure (see Table 4).

We expect more referrals for testing to the VA system, as awareness by the CDME increases. Unlike fee-for-service facilities, the VA has a restricted budget and resources are directed at medical rather than administrative or pro forma assessments; hence the need for a policy. We believe that this policy is applicable not only to respond to CDME referrals but also to preemptively evaluate VA patients who are or intend to become commercial drivers. In an anonymous survey in our sleep disorders clinic, approximately 20% of new and follow-up patients identified themselves as former or current commercial drivers; interestingly, none reported being assessed for sleep problems at the CDL medical examination (unpublished data). This informal survey occurred at a time before there was explicit language directed at sleep apnea in the CDME form. How or even whether to approach and educate VA patients in anticipation of their obtaining or renewing a CDL under is an open question.

Additional concerns arise about the number of these administrative referrals in the future. According to 2006 statistics, there are 380,182 current CDL holders in the state of Ohio, not including temporary permits.²⁴ If the prevalence of sleep disorders in this group approximates that of the general population, our VA, and sleep centers in general, will see an increasing number of these referrals. In any event, failure to set rational, fair, and evidence-based management for CDME-referred individuals may be problematic from a number of nonmedical as well as medical perspectives.

REFERENCES

- Flemons WW, Douglas NJ, Kuna ST, Rodenstein DO, Wheatley J. Access to diagnosis and treatment of patients with suspected sleep apnea. Am J Respir Crit Care Med 2004;169:668-72.
- Hartenbaum NP, Collop N, Rosen IM, Phillips B, et al. Sleep Apnea and Commercial Motor Vehicle Operators: Statement of the Joint Task Force of The American College of Chest Physicians, the American College of Occupational and Environmental Medicine and the National Sleep Foundation. Chest 2006;130:902-5.
- Suratt PM, Findley LJ. Driving with sleep apnea. N Engl J Med 1999;340:881-3.
- Lyznicki JM, Doege TC, Davis RM, Williams MA. Sleepiness, driving, and motor vehicle crashes. Council on Scientific Affairs, American Medical Association. JAMA 1998;279:1908-13.
- Cassel W, Ploch T, Becker C, Dugnus D, Peter JH, von Wichert P. Risk of traffic accidents in patients with sleep-disordered breathing: reduction with nasal CPAP. Eur Respir J 1996;9:2606-11.
- Sassani A, Findley LJ, Kryger M, Goldlust E, George C, Davidson TM. Reducing motor-vehicle collisions, costs, and fatalities by treating obstructive sleep apnea syndrome. Sleep 2004;27:453-8.
- 7. Pack AI, Pien GW, Gurubhagavatula I, et al. How much do crashes related to obstructive sleep apnea cost? Sleep 2004;27:369-70.
- National Center on Sleep Disorders Research/ National Highway Traffic Safety Administration EP. Drowsy Driving and Automobile Crashes: Report and Recommendations. Vol. 2005: National Insitutes of Health, 1997.
- American Academy of Sleep Medicine. Drowsy Driving: The Sleeping Giant., 2002.
- Pakola SJ, Dinges DF, Pack AI. Review of regulations and guidelines for commercial and noncommercial drivers with sleep apnea and narcolepsy. Sleep 1995;18:787-96.
- 11. Federal Highway Administration. Conference of Neurological Disorders and Commercial Drivers. Vol. 2006, 1988.

- George CF, Smiley A. Sleep apnea & automobile crashes. Sleep 1999:22:790-5.
- Reyner LA. Early morning driver sleepiness:efectiveness of 200 mg caffeine. Psychophysiology 2000;37:251-6.
- 14. National Sleep Foundation. Drowsy Driving.org. Vol. 2005.
- McCartt AT, Rohrbaugh JW, Hammer MC, Fuller SZ. Factors associated with falling asleep at the wheel among long-distance truck drivers. Accid Anal Prev 2000;32:493-504.
- Feyer AM, Williamson A, Friswell R. Balancing work and rest to combat driver fatigue: an investigation of two-up driving in Australia. Accid Anal Prev 1997; 29:541-53.
- Mitler MM, Miller JC, Lipsitz JJ, et al. The sleep of long-haul truck drivers. N Engl J Med 1997;337:755-61.
- McConnell CF, Bretz KM, Dwyer WO. Falling asleep at the wheel: a close look at 1,269 fatal and serious injury-producing crashes. Behav Sleep Med 2003; 1:171-83.
- Caffier PP, Erdmann U, Ullsperger P. The spontaneous eye-blink as sleepiness indicator in patients with obstructive sleep apnoea syndrome-a pilot study. Sleep Med 2005;6:155-62.
- Weaver TE, Laizner AM, Evans LK, et al. An instrument to measure functional status outcomes for disorders of excessive sleepiness. Sleep 1997;20:835-43.
- Arnedt J, Owens J, Crouch M, Stahl J, Carskadon MA. Neurobehavioral performance of residents after heavy night call vs after alcohol ingestion. JAMA 2005;294:1025-33.
- American Thoracic Society. Sleep apnea, sleepiness, and driving risk. Am J Respir Crit Care Med 1994;150:1463-73.
- Johns MW. A new method for measuring daytime sleepiness: the Epworth sleepiness scale. Sleep 1991;14:540-5.
- 24. Ohio Bureau of Motor Vehicles. Facts and Figures. Vol. 2007, 2006.