



# National Transportation Safety Board

Washington, D.C. 20594

## Safety Recommendation

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**Date:** November 29, 2004

**In reply refer to:** H-04-38 through -41

Honorable Jeffrey W. Runge, MD  
Administrator  
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Of the 291 million individuals living in the United States, approximately 191 million, or 65.6 percent, are licensed to drive. Every year, about 42,000 individuals die in traffic-related crashes. The National Highway Traffic Safety Administration (NHTSA) estimated in 2000 that highway crashes cost U.S. society about \$230.6 billion a year, with each roadway fatality costing an average of \$977,000, and each critical injury crash costing an average of \$1.1 million.<sup>1</sup>

The act of driving requires the proper orchestration of sensory/perceptual, cognitive, and motor activities to be performed successfully. Certain medical conditions have been found to negatively affect one or more of these activities, thereby increasing the safety risk of drivers that suffer from them. The extent of the overall impact of medically impaired drivers is not known because data are not available (except for data on alcohol-related accidents) on the number of licensed drivers with high-risk medical conditions or on the number of accidents in which a driver's medical condition was a contributory factor. However, statistics on the number of Americans with one or more of the following high-risk medical conditions offer some perspective on the medical oversight issues that State licensing agencies face:<sup>2</sup>

- Epilepsy: 2.5 million (180,000 new diagnosed cases each year).<sup>3</sup>
- Diabetes: 18.2 million (1 million new cases diagnosed each year in those over 20).<sup>4</sup>
- Sleep Disorders: 50 to 70 million.<sup>5</sup>
- Cardiovascular Disease: 23.5 million (41.7 million additional have hypertension).<sup>6</sup>

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<sup>1</sup> L. Blincoe, A. Seay, E. Zaloshnia, T. Miller, E. Romano, S. Luchter, and R. Spicer, *The Economic Impact of Motor Vehicle Crashes*, 2000, DOT HS 809 466 (Washington, DC: NHTSA, 2000).

<sup>2</sup> See the American Medical Association's *Physician's Guide to Assessing and Counseling Older Drivers* (Chicago 2003), <<http://www.ama-assn.org/go/olderdrivers>>, for a more exhaustive list of medical conditions and medications that may impair driving.

<sup>3</sup> Epilepsy Foundation <<http://www.epilepsyfoundation.org/answerplace/statistics.cfm>>.

<sup>4</sup> National Diabetes Information Clearinghouse <<http://diabetes.niddk.nih.gov>>.

<sup>5</sup> U.S. Department of Health and Human Services, *2003 National Sleep Disorders Research Plan*, National Institutes of Health Publication No. 03-5209 (Washington, DC: HHS, 2003).

- Alzheimer's Disease: 4.5 million (10 percent of those over 65 years and nearly 50 percent of those over 85 years suffer from the disease).<sup>7</sup>
- Arthritis: 40 million (over 7 million report limited activity due to the disease).<sup>8</sup>
- Eye Diseases: 5.5 million—cataracts, 2 million—glaucoma, and 1.2 million—later-stage macular degeneration.<sup>9</sup>
- Alcoholism: 14 million (alcohol linked to 40 percent of all automobile fatalities).<sup>10</sup>

The National Transportation Safety Board's interest in the medical oversight of noncommercial drivers stems from its examination of six noncommercial vehicle accidents in which a driver's medical condition played a role.<sup>11</sup> Of the six medical impairment-related accidents, one involved a diabetic driver and five involved drivers who experienced seizures.

The Safety Board has also investigated a substantial number of commercial vehicle and school bus accidents involving drivers with impairing or potentially impairing medical conditions, such as cardiovascular disease, visual impairment, renal disease, and sleep disorders.

On March 18 and 19, 2003, the Safety Board held a public hearing<sup>12</sup> to discuss the factors that contribute to medically related accidents. Major topics included the:

- Current state of knowledge regarding potentially impairing medical conditions.
- Adequacy of procedures for reporting medically impaired drivers.
- State licensure and oversight of drivers with high-risk medical conditions.
- Programs to increase public awareness of State oversight laws and procedures.
- Rehabilitation and transportation options for medically impaired drivers.

The Safety Board learned during the course of the hearing and has noted in its recent report on the medical oversight of noncommercial drivers<sup>13</sup> that the issues encompassing this subject are complex and will require the close cooperation of Federal, State, and private organizations to create an effective and uniform system that protects public safety while being sensitive to the needs of individual drivers.

Tens of millions of Americans have medical conditions that place them at risk of becoming incapacitated while driving. However, apart from alcohol addiction, the extent to

<sup>6</sup> U.S. Department of Health and Human Services, *Summary Health Statistics for U.S. Adults: National Health Interview Survey, 2001*, Series 10, Number 218 (Washington, DC: HHS, 2004).

<sup>7</sup> National Institute on Aging, *Progress Report on Alzheimer's Disease, 1999*, NIH Publication No. 99-4664 (Bethesda, MD: National Institute on Aging, 1999).

<sup>8</sup> R.C. Lawrence, C.G. Helmick, F.C. Arnett, R.A. Deyo, D.T. Felson, E.H. Giannini, S.P. Heyse, R. Hirsch, M.C. Hochberg, G.G. Hunder, M.H. Liang, S.R. Pillemer, V.D. Steen, and F. Wolfe, "Estimates of the Prevalence of Arthritis and Selected Musculoskeletal Disorders in the United States," *Arthritis and Rheumatism*, 41(5) (1998): 778-799.

<sup>9</sup> University of Washington Department of Ophthalmology <<http://depts.washington.edu/ophthweb/statistics.html>>.

<sup>10</sup> *Traffic Safety Facts 2003: Alcohol*, DOT HS 809 761 (Washington, DC: NHTSA, 2003).

<sup>11</sup> For additional information, read National Transportation Safety Board, *Medical Oversight of Noncommercial Drivers*, Highway Special Investigation Report NTSB/SIR-04/01 (Washington, DC: NTSB, 2004).

<sup>12</sup> Information on this hearing, including the full transcript, is available at <[http://www.nts.gov/events/2003/med\\_noncomm/default.htm](http://www.nts.gov/events/2003/med_noncomm/default.htm)>.

<sup>13</sup> NTSB/SIR-04/01.

which medical impairment contributes to the number of traffic accidents is not well defined. Safety Board investigations have shown that medical incapacitation can lead to traffic accidents. Research studies have found a correlation between certain medical conditions and an increased risk of accident involvement, although there is no agreement on the degree of risk posed by each type of condition. Nonetheless, research<sup>14</sup> shows that the accident risk associated with some medical conditions approaches or even exceeds that for alcohol and drug use. Based on the available research and the Safety Board's accident investigations, the Board concluded that many medical conditions are associated with increased accident risk and incompatible with the unrestricted operation of motor vehicles.

Witnesses at the public hearing agreed that certain medical conditions present an increased accident risk, but some believed that not enough is known about the number of medically high-risk drivers and the direct risks that medical conditions present to justify setting policy based on this information. The Safety Board recognizes that more data would be useful on the number of licensed drivers with high-risk medical conditions and on accidents that can be directly linked to these medical conditions. Licensing agencies cannot simply rely on drivers to disclose their medical status during licensing and renewals.

Finding a direct link between medical conditions and accidents would be useful for determining the risks posed by certain medical conditions. Establishing such a link would require improved awareness and training for law enforcement and other parties who witness driver behavior in traffic accidents and would require a system to transfer this information to the appropriate licensing authorities. The Safety Board learned that North Carolina and Florida have systems that inform the motor vehicle medical unit when a driver's medical condition is suspected to have caused an accident. This mechanism resulted in 17,642 driver referrals in Florida and 43,340 referrals in North Carolina from 2000 through 2002. The Safety Board's public hearing revealed that not all States have such a system in place. Few States provide the training that could help law enforcement officers identify a medically impaired driver.

Accident reporting forms provide a potentially rich source of data on medical impairment, assuming that law enforcement can be properly trained to identify and describe signs of impairment. The Model Minimum Uniform Crash Criteria (MMUCC) recommends that State accident forms include a field for a driver's condition at the time of the crash. This field functions as an umbrella for various attributes, including fatigue/sleepiness, alcohol/illegal substances/medication, acute emotional states (for instance, angry or disturbed), and illness. Although most States have included a variation of the driver condition field in their accident reporting forms, each interprets the field's purpose somewhat differently. In addition, the medical attributes listed on the MMUCC and most State accident forms are often too general to collect much useful information regarding the driver's medical condition at the time of the crash. As a result, the value of the driver condition field in yielding valid, reliable data on medical impairment nationwide is limited. A field in the MMUCC dedicated to impairing medical conditions would be a useful source of data for gauging the correlation between driver medical impairment and accidents. The Safety Board concluded that a system is needed for the collection

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<sup>14</sup> E. Diller, L. Cook, E. Leonard, J. Reading, J.M. Dean, and D. Vernon, *Evaluating Drivers Licensed With Medical Conditions in Utah, 1992-1996*, DOT-HS-809-023 (Washington, DC: NHTSA, 1999).

of accident data on a national basis to comprehensively evaluate the extent to which medical conditions play a role in accident causation.

Licensing is a State function, and each State has developed a unique system of oversight for its medically high-risk drivers. States differ in the way they train license examiners, set policy, inform physicians and the public about their reporting requirements, identify and refer drivers for assessment, conduct assessments, deliberate licensure, provide due process, track fitness to drive, impose driving restrictions, and provide counseling or information to drivers whose licenses have been restricted or denied. States also differ in their license renewal periods, renewal procedures and options, and testing requirements during license renewals. To some extent, these differences reflect deficiencies in the availability and accessibility of information useful in creating an effective medical oversight system. They also reflect a lack of coordination among the States and an absence of Federal guidelines that States can use as a basis for their programs.

These divergent State oversight systems have resulted in significant differences in the way high-risk drivers are identified and evaluated. For example, driving suspensions after a seizure range from no required seizure-free interval to up to 18 months. Some States require those diagnosed with moderate dementia to immediately surrender their licenses; others have no requirements pertaining to dementia. Some States employ medical specialists to evaluate drivers, while others use civil servants with no prior medical experience. Some States provide information and counseling for former drivers, but many do not. These inconsistencies have the potential of leading to a wide range of outcomes in licensing countermeasures among States. Because noncommercial drivers are not restricted in where they may drive, these differences could undermine the intent of an effective driver screening program in some States. Each State should consider the oversight systems used in other States and share information and experiences to strengthen the overall effect of its own medical oversight system. The Safety Board concluded that deficiencies exist in the availability and accessibility of information necessary for States to identify the most effective countermeasures for restriction, modification, or prohibition of driving privileges for medically impaired drivers.

In June 2003, NHTSA published a report<sup>15</sup> summarizing the States' medical oversight program. This report described each State's medical impairment reporting procedures; identification, evaluation, and evaluation outcome procedures; licensing appeal processes; and counseling, information, and educational materials. The report also described the organization and duties assumed by the medical department of each State licensing agency. The report, according to the American Association of Motor Vehicle Administrators (AAMVA), was the first step in a larger effort to create a best practices guideline that would encourage the development of model laws that could be used to promote uniformity among State licensing jurisdictions.

Since then, the AAMVA and NHTSA have conducted another survey<sup>16</sup> asking State medical review representatives to rank the important procedural elements in a medical review program. The report generated from the survey does not indicate how best to implement these

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<sup>15</sup> K.H. Lococo, *Summary of Medical Advisory Board Practices in the United States*, National Highway Traffic Safety Administration, DTNH22-02-P-0511 (2003).

<sup>16</sup> K. Lococo and L. Staplin, *In-Depth Study to Identify Best Practices for Licensing Drivers With Medical and Functional Impairments and Barriers to Their Implementation*, National Highway Traffic Safety Administration, DTNH22-02-P-05111 (2004).

procedural elements, but it does note suggestions from respondents. From this survey, and through meetings with jurisdictional representatives and the Driver Fitness working group,<sup>17</sup> the AAMVA and NHTSA hoped to generate a best practices report by fall 2004.

The Safety Board is encouraged by the progress that has been made by the AAMVA and NHTSA toward creating a best practices guideline and a model medical oversight program. The Safety Board anticipates that the adoption of these guidelines by the States will likely involve significant procedural, regulatory, and statutory changes that may extend across several agencies, including law enforcement and emergency medical services. Communication among State representatives will be necessary to facilitate the sharing of experiences, data, and strategies, so that each State can gather the tools necessary to implement an effective program while minimizing costs. Advances in medical research, driving assessment tools, and rehabilitation and counseling programs will necessitate a continual evaluation of the guidelines.

Therefore, the National Transportation Safety Board recommends that the National Highway Traffic Safety Administration:

In cooperation with the American Medical Association and the American Association of Motor Vehicle Administrators, develop a procedure to periodically collect, evaluate, and report data, on a State and national basis, regarding the extent to which medical conditions contribute to the cause of accidents. (H-04-38)

and, in cooperation with the American Association of Motor Vehicle Administrators:

Determine the most effective methods for the comprehensive reporting to State licensing authorities of drivers who may be medically impaired. (H-04-39)

Determine the most effective licensing countermeasures to reduce the risks posed by medically impaired drivers. (H-04-40)

Once the most effective reporting methods and licensing countermeasures have been determined, develop a model comprehensive medical oversight program for States to use to oversee medically impaired drivers. Such a program should include, as a minimum:

- a. Methods to provide information to the public on resource availability and on the medical oversight laws and procedures to assist medically high-risk drivers.
- b. Plans and strategies to simplify and maximize reporting of potential driver medical impairment to medical evaluation units of State driver licensing organizations by law enforcement officers, health care providers, emergency services providers, and the public.
- c. Methods to capture all cases of motor vehicle incidents or accidents potentially related to driver medical impairment.
- d. Standardized methods of driver evaluation for potentially medically impaired drivers incorporating medical records review, systematic testing, and on-road appraisals, as needed.

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<sup>17</sup> For more information, see <<http://www.aamva.org/committees/comDriverFitnessWorkingGroup.asp>>.

- e. Methods for timely and appropriate restriction of driving privileges for drivers found to have medical conditions or treatments that impair their ability to safely operate a motor vehicle. (H-04-41)

The Safety Board also issued safety recommendations to the U.S. Department of Transportation, the National Committee on Uniform Traffic Laws and Ordinances, the American Association of Motor Vehicle Administrators, the Commission on Accreditation for Law Enforcement Agencies, the Liaison Committee on Medical Education, the American Osteopathic Association, the Association of American Medical Colleges, and the Federation of State Medical Boards.

Please refer to Safety Recommendations H-04-38 through -41 in your reply. If you need additional information, you may call (202) 314-6177.

Chairman ENGLEMAN CONNERS, Vice Chairman ROSENKER, and Members CARMODY, HEALING, and HERSMAN concurred in these recommendations.

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Chairman