New Drowsy Driving Report Raises Profile of Emerging Issue

WASHINGTON, D.C. – The National Sleep Foundation has released a report showing that states have made some progress during the last decade in identifying drowsy driving as a hazard to the motoring public, through police training, driving education and legislation. But states still have a long way to go in developing a coherent strategy to reduce drowsy driving and the resulting deaths and injuries.

According to the National Highway Traffic Safety Administration, drowsy driving results in 100,000 police-reported crashes, 71,000 injuries, and 1,550 deaths each year. But these estimates are thought to be conservative for a variety of reasons: there is no test for drowsy driving, states have inconsistent reporting practices, few police departments are trained to identify drowsy drivers, and self-reporting is unreliable. Data from other nations, such as Australia and England, show that drowsy driving is a factor in 10 to 30 percent of all crashes. According to the NSF, 60 percent of drivers have driven while drowsy in the past year, and 20 percent, or about 32 million people, admit to having actually fallen asleep behind the wheel.

Drowsy driving is often compared to drunk driving because drivers operating while fatigued have slower reaction times, reduced vigilance and deficits in information processing, similar to alcohol impairment.

The NSF's state survey, released in November, shows that all states address fatigue or reduced alertness; about half have separate codes for sleep and fatigue, but there is very little uniformity among the codes for fatigue and sleepiness only nine out of 27 said that their police officers receive training on the impact of fatigue on driving performance. Only two states said that they would not charge a driver for causing a fatality during a sleep-related crash and there was wide variance in the types of charges levied against drivers in sleep-related crashes.

Early this year, NHTSA is expected to release the results of its own five-year study to develop, demonstrate and evaluate methods to minimize driver distraction and enhance the effectiveness of crash warning systems in vehicles. The agency has been involved with the issue since1996, when Congress allocated funds for a public education campaign on drowsy driving among noncommercial drivers. In 2002, the agency convened a special panel to study the issue. It made a variety of recommendations for better public awareness, especially among the high-risk populations of young males, shift workers and victims of sleep disorders.

In 2003, NHTSA launched the Safety Vehicle using Adaptive Interface Technology (SAVE-IT) program with Delphi Corp leading the effort. Research is also underway at the National Advanced Driving Simulator (NADS) at the University of Iowa, at the University of Michigan Transportation Research Institute (UMTRI) and at Ford Motor Company's Virtual Text Track Experiment (VIRTTEX) lab. The goal is to develop a prototype vehicle incorporating adaptive interface technology to understand and assess the safety benefits of systems designed to reduce driver inattention.

Some states are reacting to the drowsy driving issue by passing laws meant to discourage it. To date, New Jersey is the only state to have passed a law making drowsy driving a crime. In 2003, the state legislature passed Maggie's Law, named after Maggie McDonnell, who died in a 1997, when a man asleep at the wheel of a van hit her car head-on. The driver in the crash, Michael Coleman, received a $200 fine. The law establishes fatigued driving as recklessness under the vehicular homicide statute and carries a prison term of five to 10 years. Prosecutors must prove that the driver fell asleep while driving or was driving after being awake for more than 24 consecutive hours. But the law is seldom used to prosecute drowsy drivers.

While an effort to pass national drowsy driving legislation that would have funded comprehensive education and training for drivers and police, failed in 2003, it paved the way for the inclusion of fatigue-related language in a federal transportation-spending bill. It also sparked a state movement to pass drowsy driving bills.

Massachusetts is among the states taking a comprehensive look at the issue. The Massachusetts Prevent Injury Now! (MassPINN), a network of about 40 public and private community organizations and agencies working to provide education and resources promoting injury prevention strategies, has embarked on a research project aimed at reducing the drowsy driving injuries and deaths. In 2006, with a Centers for Disease Control grant, the state legislature passed a measure establishing a drowsy driving commission. MassPINN, co-chaired by Lewis Howe and Sean Kane, is coordinating the research project

“It’s a huge problem,” says Howe, an injury prevention coordinator with Massachusetts Department of Public Health. “We want to focus on the college community, the medical community -- high-risk populations.”

MassPINN is currently at work on a literature review, which will form the basis of its recommendations to lawmakers in a formal report due in July.

“We want to come up with a workable and feasible series of policies -- not all of them punitive,” says Howe. Ideally, we want to prevent the number of injuries. But we are going to go where the data takes us.”

Automakers and suppliers are also responding to the problem. Entities -- ranging from automakers to private companies such as Effective Control Transport, Inc., a telematics firm, to the Johns Hopkins Applied Physics Laboratory -- are working on systems to monitor fatigue and grab the driver’s attention.

One of the earliest forms of these adaptive technologies are lane departure warning systems, which many manufacturers and suppliers are either developing or have launched them in Europe and Japan. Among the leading suppliers are Delphi, Bosch, TRW, Continental AG and Hella, which have been developing their own systems that use infared or radar technology to notify drivers of their position in relation to other vehicles. Visteon and the University of Michigan Transportation Research Center are currently working on a radar-based lane-warning departure system. Daimler-Chrysler has partnered with the Massachusetts Institute of Technology and Motorola to develop a Driver Advocate System, a more comprehensive technology, which includes a lane-departure warning component. Some automakers have already debuted this technology on their overseas models. Honda’s European and Japanese Accords features the Honda Intelligent Driver Support, which uses a lane –departure warning system. In 2002, Toyota introduced its Lane Monitoring System on its Alphard minivan sold in Japan.

In the U.S., Nissan’s luxury division, Infiniti, offers it on its FX45 SUV and M45 sedan.
Volvo is offering a Driver Alert package, expected to become available in December or January 2008. The Driver Alert package consists of a lane departure warning system and Driver Alert Control, which emits an auditory signal to bring the driver’s attention back to driving, when the system assesses that vehicle may become out of control.

The Driver Alert Control system combines a camera, located between the windshield and the interior rear-view mirror, sensors and a control unit. The camera monitors the distance between the car and the lane markings; the sensors register the movement. The control unit stores the information and calculates whether the driver risks losing control of the vehicle. If the system decides that the risk is high, the vehicle emits a sound and a take-a-break icon of a coffee cup appears.

Nissan has introduced the Pivo2 a battery-powered concept car with a fully rotating cabin, so that the driver is always facing forward. The Pivo2, expected to debut at the 2007 Tokyo Auto Show in October, is also equipped with sensors that monitor the driver’s facial expressions and tailors the vehicle’s conversation with the driver and – according to a Reuters story -- “can help an angry driver overcome road rage or wake you up if you're prone to dozing behind the wheel, the car makers said. "Are you sleeping? There's a cafe 500m ahead."