U.S. State and Federal Laws Targeting Distracted Driving

Catherine Chase, J.D.
Advocates for Highway and Auto Safety

ABSTRACT – Distracted driving has burgeoned with the proliferation of cell phones, global positioning systems and other in-vehicle and personal electronic devices. Annually more than 3,300 people are killed and an additional 400,000 are injured in the United States in distracted driving crashes. The United States (U.S.) federal and state governments have responded to this public health problem with policies and laws; however, a more comprehensive and more effective approach is still needed. Some restrictions on the use of electronic devices while driving by federal employees and some voluntary guidelines and recommendations have been issued. Public opinion polls show support for addressing the issue of distracted driving with state laws. The majority of states have laws banning text messaging while driving and prohibiting the use of an electronic device by teenage or novice drivers. Some states prohibit all drivers from using a hand-held cellphone. Currently no state has a total ban on the use of personal electronic devices while driving. Successful past traffic safety campaigns changing driver behavior have demonstrated the necessity to adopt a "three Es" approach of Enactment of a law, Education of the public about the law, and rigorous Enforcement of the law. Experience reveals that this approach, along with future federal regulation of in-vehicle electronic devices and the employment of technology to limit the use of electronic devices while driving, is needed to alter personal behavior in order to reduce distractions and keep drivers focused on the driving task.

INTRODUCTION

The issue of distracted driving has burgeoned with the proliferation of mobile and in-vehicle communications devices. While distracted driving includes any activity that diverts a driver's attention from the primary task of driving, the use of electronic devices while driving is particularly dangerous as they require visual, auditory and cognitive attention and often some form of manual attention as well. Unlike distractions such as eating, selecting pre-set radio stations, etc., electronic devices are more interactive and require greater time commitment and continual attention, response and manipulation to obtain a desired result. Safety research, studies and data, which will be discussed in this paper, reveal that the use of electronic devices for telecommunications (i.e., cell phone and text messaging), telematics and entertainment can readily distract drivers from the driving task. Crash risk increases dramatically – as much as four times higher – when a driver is using a cell phone, with no significant safety difference between hand-held and hands-free phones observed in many studies [McEvoy, Stevenson, McCartt, 2005 and Redelmeier, Tibshirani, 1997]. According to research performed at the University of Utah, because of the degree of cognitive distraction these devices cause, the behavior of drivers using mobile phones (whether hand-held or hands-free) is equivalent to the behavior of drivers at the threshold of the United States (U.S.) legal limit for alcohol while driving (0.08 percent blood alcohol concentration) [Strayer, Drews, Crouch, 2006].

CORRESPONDING AUTHOR:
Catherine Chase, J.D., Advocates for Highway and Auto Safety, 750 First Street, NE, Suite 901, Washington, DC 20002; Email: cchase@saferoads.org

At any given daylight moment in the U.S., approximately 660,000 drivers are using cell phones or manipulating electronic devices while driving [Pickrell, Ye, 2013]. According to the National Highway Traffic Safety Administration (NHTSA), in 2012, more than 3,300 people were killed in crashes involving distracted drivers and an estimated additional 421,000 were injured in motor vehicle crashes involving distracted drivers [National Center for Statistics and Analysis (NCSA), 2013a]. Of those drivers distracted during fatal crashes, cell phones are often a leading distraction, among those identified. However, problems remain with accurate attribution of cell phones to crash causes because of different state police crash report coding schema and limitations of crash databases [NCSA, 2013b].

Today, it is highly unusual for a person not to own or have access to a cell phone, a global positioning system (GPS), or an in-vehicle electronic device. While there are technologies to disable devices while motor vehicles are in motion, they are not in common use by the general public at this time. Additionally, there are engineering approaches to reduce distracted driving yet currently there are no federal regulations to require them. Consequently, in the short term, effective safety countermeasures which have been proven to address highway safety challenges and change behavior should be taken and thus will be the main focus of this paper.

BACKGROUND

In 1997 NHTSA issued a comprehensive report, "An Investigation of the Safety Implications of Wireless Communications in Vehicles," which assessed the state of knowledge regarding the safety implications of using wireless communication while driving by reviewing available data and information, examining crash statistics, performing statistical analyses, and conducting a comprehensive critical review of research. At the time of the report, over one in ten Americans was using "cellular telephones" [NHTSA, 1997]. A few years later, at the urging of safety organizations, NHTSA held a public meeting on the safety implications of "telematics" and communications technologies in 2000. Industry voluntary efforts resulted in lax guidelines including a total task time of up to 20 seconds [Bischoff, 2007]. In 2002, a review and inventory of current in-vehicle telematics devices was issued as part of this effort and one conclusion was that "[P]erhaps the best and most effective way to minimize the risk would be to disable equipment when vehicles are in operation." Moreover, "[s]ince driver discretion and judgment are central to the distraction issue, even well designed systems are not immune to distraction induced problems." [Llaneras, Singer, 2002, p. 64-65].

Subsequent research underscored the need for concern about the then emerging public safety risk including a 2003 study which showed that merely talking on a cell phone while operating a vehicle disrupts the driver's attention which can lead to "inattention blindness" or the inability to recognize objects in driver's field of vision [Strayer, Drews, Johnston, 2003]. In addition to cognitive distraction, sending or receiving a text message causes the driver's eyes to be off the road for an average of 4.6 seconds. When driving 55 miles per hour, this is the equivalent of driving the entire length of a football field blind [Olson, Hanowski, Hickman et al., 2009].

A 2006 study by the Virginia Tech Transportation Institute (VTTI) revealed drivers engaging in visually and/or manually complex tasks have a three-times higher near-crash/crash risk than drivers who are attentive [Klauer, Dingus, Neale, 2006]. Research regarding distractions due to electronic devices in motor vehicles shows that distracted driving has an increased association with visual distractions which divert driver vision from the road, manual distractions which reduce the physical ability of drivers to control the vehicle, and cognitive distractions which reduce attention and mental focus to the driving task [FMCSA, 2011]. The VTTI released several significant large-scale naturalistic driving studies that highlighted the serious danger of distracted driving. The studies showed that the risk of a crash or near-crash event was 2.8 times higher when dialing a cell phone, 1.4 times higher when using or reaching for an electronic device, and 1.3 times higher when talking or listening to a cell phone [Klauer et al., 2006]. Additionally, a 2011 Texas Transportation Institute study found that drivers responded more slowly when either reading or writing text messages [Cooper, Yager, Chrysler, 2011].

In response to the growing problem of electronic device-induced distracted driving, the Obama Administration took a number of actions. In 2009 President Barack Obama issued an Executive Order to prohibit federal employees, a workforce of approximately four million people [U.S. Office of Personnel Management, 2013], from text messaging while driving on official Government business or while using government-supplied equipment while driving at any other time. The Order also encouraged federal contractors and others doing business with the government to adopt and enforce their own policies banning texting while driving on the job, yet this provision lacks any force behind it [Exec. Order No. 13513, 2009]. Additional and more robust federal laws and regulations are still needed to fully address the issue of distracted driving.

U.S. Department of Transportation (DOT) Secretary Ray LaHood, who held the post from 2009 until 2013, made distracted driving his signature safety issue. Secretary LaHood convened two national summits on distracted driving in 2009 and 2010 [U.S. DOT, 2013]. Under his leadership, the DOT issued federal regulations to address distracted driving by all modes of transportation including commercial motor vehicle operators and drivers transporting hazardous materials. In September 2010, the Federal Motor Carrier Safety Administration (FMCSA) banned commercial truck and bus drivers from texting while driving and later banned all hand-held cell phone use by commercial drivers in November 2011 [FMCSA 2010, 2011]. In February 2011, the Pipeline and Hazardous Materials Safety Administration (PHMSA) banned texting on electronic devices by drivers operating a motor vehicle containing hazardous materials [PHMSA, 2011].

U.S. DOT also established a national campaign to reduce distracted driving which included a video series entitled "Faces of Distracted Driving" wherein victims of crashes caused by distracted driving and their families share their tragic stories [The Faces of Distracted Driving, 2013]. The national campaign also included the launching of the victim's advocacy organization, Focus Driven – Advocates for Cell-Free

Driving by the National Safety Council (NSC). This group supports the victims, and their families, affected by crashes resulting from cell phone distracted driving and seeks to increase public awareness of the dangers of cell phone distracted driving by putting a human face to the issue in order to promote public policies and programs to address the problem [Focus Driven, 2013].

In April 2013, NHTSA issued its first phase of voluntary distracted driving guidelines which were narrowly focused to encourage automobile manufacturers to limit the distraction risk connected to electronic devices built into their vehicles, such as communications, entertainment and navigation devices. The second phase will include visual-manual interfaces of portable and aftermarket devices, and the third phase will add auditory-vocal interfaces [NHTSA, 2013]. However, these voluntary guidelines do not have the "full weight" of a law and can be ignored by the industry. Clearly, there are additional countermeasures to address distracted driving related to electronic devices that can be taken by the Administration including regulating the use of current and emerging in-vehicle and portable technologies.

The National Transportation Safety Board (NTSB) has also taken steps to address distracted driving. In September 2009, Chairman Deborah Hersman announced a ban on text messaging and talking on cell phones for all NTSB staff who are driving during work hours, and texting and using a cell phone on personal time if the driver is using a federally owned wireless device [Hersman, 2009]. In December, 2011, the NTSB, comprised of approximately 400 employees, became the first government agency to call for a complete ban of nonemergency use of portable electronic devices, including hands-free devices, while driving. Further, in response to a high-visibility fatal multi-vehicle collision in which the NTSB determined that the probable cause of the initial collision was distraction, likely due to a text messaging conversation, the NTSB issued a number of safety recommendations. One of the recommendations was that all 50 states and the District of Columbia enact bans on nonemergency use of portable electronic devices while driving, as well as implement high visibility enforcement and targeted communication campaigns to support the bans [NTSB, 2011].

States first began to address the threat of distracted driving caused by portable electronic devices in 2001 when New York instituted the first ban on using hand-held cell phones while driving [N.Y. Veh. & Traf. Law § 1225-c, 2001]. In 2007, Washington became the first state to enact an all-driver ban on texting which was subsequently strengthened from a secondary to a primary enforcement law in 2010 [Wash. Rev. Code § 46.61.688, 2007; Wash. Laws Chap. 223, 2010]. Primary enforcement laws enable a law enforcement officer to give a citation for a violation of the law; however, with secondary enforcement laws, another law must be violated before an officer can give a citation for the "secondary" offense.

Prior to widespread efforts to ban hand-held cell phones and texting while driving, the initial focus on the dangers of distracted driving was on novice teen drivers through the passage of state graduated driver licensing (GDL) provisions. Motor vehicle crashes are the number one killer of teens in the United States [CDC, 2012]. GDL laws, which introduce teens to the driving experience gradually by phasing in full driving privileges over time and in lower risk settings, have subsequently been expanded to include cell phone and texting restrictions. The Nielsen Company indicates that American teens on average send or receive 3,339 texts a month. In fact, no one texts more than teens (age 13-17) [Nielsen, 2010]. Eleven percent of all drivers 15-19 years old involved in a fatal crash were reported as distracted at the time of the crash. This age group has the largest proportion of drivers who were distracted [NCSA, 2013b]. Therefore, it is important that cell phone use while driving is illegal for teens. The first states to restrict the use of cell phones by teen drivers were Maine and New Jersey in 2002 [Me. Rev. Stat. Ann. tit. 29-A, § 2116, 2002, N.J. Rev. Stat. § 39:3-13.4, 2002].

DISCUSSION

Enactment of Traffic Safety Laws is an Essential Component to Change Driver Behavior

On the federal level, Congress can enact authorizing legislation to create or add to grant programs providing a financial incentive to states to enact safety laws. Congress can also enact a penalty or a sanction wherein if a state does not pass a law, a percentage of its federal highway construction funds is redirected or withheld until the state acts. The U.S. DOT then drafts regulations that describe how the grant programs are to be implemented. The states then are either awarded or penalized based on their state laws.

Passing and enforcing state laws are key components to improve safety and change driver behavior. Past national and state traffic safety campaigns have shown that education alone is not sufficient to achieve permanent changes in driver behavior

[Insurance Institute for Highway Safety (IIHS), 2001]. In order to successfully achieve and sustain long-term modifications in driver behavior, it is essential that any efforts include "three Es" of Enactment (of a law), Education (of the public about a safety hazard), and Enforcement (of the laws). Again, it is understood there are additional components such as engineering solutions, but this paper will focus primarily on the legislative solutions at hand. A prime example of the need for and successfulness of "three Es" is safety belt use. In 1981, only 14 percent of Americans used a safety belt despite 15 years of educational campaigns aimed at convincing drivers to buckle-up [NSC, 2012]. However, after a shift in strategy that included not only education but also enactment of mandatory seat belt laws and high visibility enforcement, the national seat belt use rate rose to 86 percent by 2012 [Pickrell, Ye, 2012]. A 2010 NHTSA study of the effectiveness of the first seven years of the "Click It or Ticket" campaign found that states with primary enforcement seat belt law had substantially higher belt use and higher levels of enforcement than states with only secondary enforcement of their belt laws [Tison, Williams, 2010]. NHTSA states that from 1975 to 2011, seat belts saved an estimated 292,471 lives [NCSA, 2013c].

The fight against impaired driving is another example of the need for and the effectiveness of a "three Es" approach to addressing a deadly highway safety problem. As Mothers Against Drunk Driving (MADD) notes, before tougher drunk driving laws, Congress had appropriated millions of dollars towards alcohol safety action programs, yet alcohol was still involved in nearly 60 percent of fatal crashes [Davies, 2005]. A shift occurred when the National Minimum Drinking Age Act of 1984 (MLDA) [Pub. L. No. 98-363, 98 Stat. 437, 1984] was enacted, setting the legal drinking age at 21 nationwide and compelling every state to adopt this law or face a significant reduction in federal-aid highway construction funding. By 1990, just six years after enactment of the MLDA, drunk driving deaths had dropped to approximately 22,400 fatalities [CDC, 1993]. NHTSA states that from 1975 to 2011, the MLDA saved an estimated 28,765 lives [NCSA, 2013d]. "There is no evidence that alcohol education can even partially replace the effect of MLDA-21 (minimum legal drinking age)." The highway safety benefits of the 21 drinking age law have been proven. "Deaths go up when the drinking age is lowered, and they go down when it is raised." [McCartt, Hellinga, Kirley, 2010, p. 180]. Yet, strong enforcement efforts and appropriate funding for them help to increase compliance with MLDA-21 laws [McCartt, et al, 2010].

Furthermore, after many years of a hard-fought and hard-won lobbying campaign by MADD, Advocates for Highway and Auto Safety and others in the highway safety community and the leadership of Senator Frank Lautenberg (D-NJ), in 2000, the blood alcohol concentration (BAC) above which it is illegal to drive was lowered to 0.08 percent in all 50 states after federal legislation that implemented a similar sanction strategy was enacted [Department of Transportation and Related Agencies Appropriations, 2001, Pub. L. 106-346, 114 Stat. 1356, 2000]. Since 2002, alcohol-impaired driving deaths have decreased 27 percent [NCSA, 2012]. According to a report by the United States Government Accountability Office (U.S. GAO), "Effectiveness of State .08 Blood Alcohol Laws," there are "strong indications that .08 laws in combination with other drunk driving laws…sustained public education and information efforts, and vigorous and consistent enforcement can save lives" [1999, p.2]. Moreover, NHTSA has published several comprehensive studies on the effectiveness of .08 BAC laws. "These studies found consistent and persuasive evidence that .08 BAC laws are associated with reduced incidence of alcohol-related fatal crashes." [NHTSA, 2004, p.1].

The IIHS, in a special report, provided convincing historical evidence that the most effective highway traffic safety programs combine education with the enforcement of traffic laws. "While education to change driver behavior almost never is effective by itself…, it's beneficial when it enhances the effectiveness of traffic safety laws. It can build public support to enact the laws in the first place. Then education can enhance enforcement by increasing motorists' perceptions of the risk of apprehension." [2001, p. 7]. In fact, IIHS notes research has shown that education programs for motorcyclists did not reduce collisions and a bicycle safety education initiative did not reduce injuries. The importance of laws cannot be understated, IIHS notes, because "with publicity and education, laws change behavior" [2001, p. 6]. In its fight against distracted driving, the National Safety Council has also stated, "[t]ransportation safety professionals know that education alone won't change behaviors**.** It takes laws combined with increased education and high-visibility enforcement campaigns to successfully reduce the number of crashes, catastrophic injuries and deaths involving cell phone use while driving" [2012, p. 1].

Evolution of State and Federal Legislative Activity

Since Washington State first banned texting while driving in 2007, forty states and the District of Columbia (D.C.) have followed suit in prohibiting all drivers from texting while driving and all but three states have some type of ban against texting while driving. In 2013, Hawaii and Florida became the 40th and 41st states respectively to ban texting while driving (See Appendices A and D). Legislation to address the issue of driver distraction by "cellular telephone" use started being considered by state legislatures in the late 1980s [NHTSA, 1997]. While some local ordinances banning hand-held cell phones were enacted beginning in the late 1990s [Town of Brooklyn, Ohio Ordinance, Chap. 331.45, 1999], New York became the first state to ban the use of hand-held cell phones by all drivers in 2001. Subsequently, eleven states and D.C. have followed suit including in 2013, when both Hawaii and Illinois banned the practice (See Appendices C and D). It is of note that 41 states and D.C. passed texting bans in just seven years, while in comparison, in twelve years, only twelve states and D.C. passed hand-held cell phone bans. Teen cell phone bans are also more prolific than cell phone bans for the entire driving population. After Maine and New Jersey became the first states to specifically ban teen drivers from using cell phones in 2002, 35 states and the District of Columbia have enacted such laws. Most recently in 2013, Utah became the 37th state to ban the dangerous behavior (See Appendices B and D).

Yet, among these laws, there is a significant distinction to be made between those that are primary enforcement laws and those that are secondary enforcement laws. Secondary enforcement lack teeth, send a message to the public that the law is not as important as other primary violations, and are not as effective in saving lives. In "Effect on fatality risk of changing from secondary to primary seat belt enforcement," Farmer and Williams determined, "[s]hifting from a secondary to primary seat belt law enhances belt use enforcement potential, and prior observational studies have found that this shift increases belt use. In the present study, converting to primary enforcement was associated with a decrease in fatalities." [2005, p. 192].

Additionally, states vary in providing exceptions to these laws. For example, New York permits emergency calls, and Virginia allows texting while stopped in traffic or at controlled intersections. Moreover, the fine amounts differ in severity. There is also variation in definitions in terms of what is considered "texting", including the complicating factor of distinguishing when a driver may be using an electronic device to surf the web, visit social media sites or implement voice-to-text technology. Weak highway safety laws which include exceptions, special circumstances or age-specific requirements have been shown to create enforcement challenges and thereby can weaken their full impact [NHTSA, 1998; McCartt et al, 2010].

Of the 41 states and D.C. that ban text messaging while driving, 37 states and D.C. require primary enforcement. Four of the states that ban texting while driving for all drivers have a law that is subject to secondary enforcement. Additionally, some states have partial bans (See Appendix A). The twelve states and D.C. that prohibit all drivers from using a hand-held cellphone while driving all have primary enforcement laws. Maryland upgraded its law to primary enforcement during the 2013 legislative session and it went into effect in October 2013 [Md Code, Transp. Law § 21-1124, 2013]. Illinois passed its law during the 2013 legislative session as well and the law is scheduled to take effect on January 1, 2014 (See Appendix C). [See McCartt, Kidd, Teoh in this journal for further analysis of content of the laws.] Of the 37 states and D.C. that restrict the use of cell phones by teen or novice drivers, 31 states and D.C. have primary enforcement, and six states have a secondary enforcement law (See Appendix B). Additionally, four states and D.C. have a "general law" against operating a vehicle while distracted (CT, ME, OK, & UT).

In March of 2012, Chapel Hill, North Carolina, enacted the nation's first total ban on the use of cell phones will driving. However, the ban is subject to secondary enforcement and violators face a fine of only $25 [Town of Chapel Hill Ordinance, Art. VII, Chap. 21, Sec. 21-63, 2012]. Under current North Carolina state law, drivers under the age of 18 are prohibited from using a cell phone and the ban requires primary enforcement [N.C. Gen. Stat. §20-137.3, 2006], and there is also an all-driver primary enforcement texting ban [N.C. Gen. Stat. §20-137.4A, 2009]. In August of 2012, the North Carolina District Court overturned the Chapel Hill ban after a lawsuit was filed by a local towing company challenging the cell phone restriction as well as a new ordinance regarding towing vehicles in the city. The Court held that the state already regulated the use of cell phones while driving. However, the North Carolina Court of Appeals overruled the District Court in June of 2013, finding that the towing ordinance was valid but did not comment on the merits of the cell phone ban because the company had yet to face a penalty for a violation of the new law [*King v. Town of Chapel Hill*, 2013].

The North Carolina Supreme Court has yet to rule on the matter and consequently the Chapel Hill ordinance is currently pending and not being enforced.

On the Federal level, Congress began to address the problem of distracted driving in 2009, when both Senate and House committees held hearings on the issue. The Senate Commerce, Science and Transportation Committee held a hearing entitled Combating Distracted Driving: Managing Behavioral and Technological Risks, on October 28, 2009. Testifying at this hearing were U.S. DOT Secretary Ray LaHood, Chairman of the Federal Communications Commission Julius Genachowski, and U.S. Senator Charles Schumer (D-NY). Secretary LaHood spoke about the growing dangers of being distracted while driving, and proposed several ideas such as state laws, education, awareness, and outreach for curbing distraction. Chairman Genachowski praised several industry leaders for undertaking broad educational and public awareness campaigns to develop a cultural norm against distracted driving. Senator Schumer spoke about a bill he had introduced, the ALERT Drivers Act (S. 1536/H.R. 3535, 111th Congress), along with several other Senators, that would impose financial penalties on states that did not pass adequate texting bans. This approach is favored by some safety groups as the most effective strategy to achieve state adoption of laws [Combating Distracted Driving, United States Cong., 2009]. These bills did not move out of the committees to which they were assigned.

The House Transportation and Infrastructure Committee and the House Energy and Commerce Committee also held hearings regarding distracted driving in the Fall of 2009. The overarching theme of both hearings was that distracted driving is a growing problem, that it is particularly salient among younger drivers and that the federal government must play a leadership role in identifying solutions. A broad array of proposals, including sanctions of highway funds, incentive grant programs and public awareness and education campaigns were discussed. Secretary LaHood testified at both hearings along with Members of Congress and representatives from both industry and the highway safety community. Secretary LaHood once again emphasized that distracted driving was an issue of great importance to him personally as he believed that unless steps were taken to stem the epidemic, the problem was only going to get worse. [Addressing the Problem of Distracted Driving, United States Cong., 2009].

As a result of lobbying by safety groups and the leadership efforts of Senator John D. "Jay" Rockefeller IV (D-WV), Chairman of the Senate Commerce, Science and Transportation Committee, in 2012, Congress enacted a grant program to incentivize states to pass distracted driving laws. This grant program was part of the surface transportation authorization act known as "MAP-21" (Moving Ahead for Progress in the 21st Century, Pub. L. 112-141, 126 Stat. 405). To qualify for funds a state needs to have a primary enforcement all-driver texting ban and a primary enforcement cell phone ban for drivers under 18 years of age. In 2013, seven states received distracted driving grants (See Appendix A). MAP-21 expires in September, 2014 [National Priority Safety Programs, Section 31105(a), 2012].

Public Opinion on Distracted Driving Laws Show Support

The public has consistently supported efforts to combat distracted driving. This is important to note in developing effective countermeasures for driver distraction. The support of the public can buttress the course of action to address the issue. Polls show a range of high support, averaging nearly 90 percent approval of texting bans and a strong majority of approximately 70 percent endorsing hand-held cell phone bans. Of these polls, the strongest support was demonstrated in a survey conducted by the New York Times and CBS News in 2009 which revealed near unanimous agreement by those sampled (97 percent) that texting while driving should be outlawed. The poll also indicated that 80 percent of respondents agreed that talking on a hand-held cell phone while driving should be outlawed. Furthermore, 50 percent of those polled believed that texting while driving should be punished as severely as drunk driving [New York Times/CBS News Poll, 2009]. The New York Times noted that such a significant majority supporting the ban on texting was "an unusual level of agreement for any topic" [Connelly, 2009]. In 2011, a national phone survey conducted by NHTSA also highlighted wide support by the American public for laws against distracted driving. According to the poll, 94 percent of those interviewed supported a ban on texting and 71 percent supported a prohibition against the use of hand-held cell phones while driving [Tison, Chaudhary, Cosgrove, 2011].

The AAA Foundation for Public Safety Traffic Safety Culture Index, an annual survey of drivers, reveals that from 2010 to 2012, support for bans on texting while driving increased from 80 percent to 86 percent, and for those three years support averaged 84 percent. Support for hand-held cell phone bans remained relatively consistent, 69 percent in 2010 and 66.5 percent in 2012, with an average of 69

percent for the three years. Similarly the support for a total ban on cell phones remained relatively consistent, 46 percent in 2010 and 48.6 percent in 2012, with an average of 49 percent for the three years. It is interesting to note that in its 2011 survey, the majority, 57.9 percent, reported driving while using a cell phone as a serious safety threat to their personal safety and 78.8 percent reported texting while driving as a serious safety threat [AAA Foundation for Public Safety, 2010, 2012, 2013].

With regard to age-specific bans, in 2010, a survey conducted by IIHS revealed "nearly universal support" by parents for bans on all types of cell phone use by novice teen drivers. Ninety-six (96) percent of parents surveyed supported bans on cell phone use and 98 percent supported bans on texting [Williams, Braitman, McCartt, p. 5, 2011].

CONCLUSION

Steps have been taken by the Obama Administration, the NTSB, Congress, safety organizations and victims and survivors of distracted driving crashes to address the issue of distracted driving. Federal public policy and state laws have ensued, yet much work still remains to be done to eliminate the threats posed by distracted driving caused by electronic devices. With more than 3,300 people being killed and more than 400,000 injured in crashes involving distracted drivers annually and cell phone use being a leading distraction, it will take continued and more expansive state and federal government efforts to address the dangers posed by current and future emerging technologies while behind the wheel [NCSA, 2013a]. Implementation of a "three Es" approach to highway safety issues, enactment, education and enforcement, should be continued and enhanced.

This method has been successful in addressing the traffic safety issues of low safety belt use and impaired driving. Moreover, the public has shown support for addressing the issue of distracted driving. Public opinion polls show a range of high support for texting bans and the majority also supports hand-held cell phone bans. The nexus between public support and taking action to develop effective countermeasures is instrumental.

In addition to a "three Es" approach within the states, with limited restrictions and voluntary guidelines already in place, the U.S. DOT now needs to take an aggressive leadership role in regulating the use of current and emerging in-vehicle and portable technologies. Use of technology to temporarily disable electronic distractions and prevent their use by the driver while behind the wheel needs to be evaluated and implemented. The U.S. DOT also needs to evaluate new technologies and set safety performance standards for technologies that limit driver distraction to levels compatible with the safe operation of motor vehicles. Driver use of any technology that presents an unreasonable risk to safety due to distraction while operating a motor vehicle should be temporarily disabled or "locked out." Additionally, the permissible total time for eye glances to operate less distracting devices should be highly restricted, and regulations, not voluntary guidelines, should apply to portable as well as built-in electronic devices.

Federal regulation and the application of technology to limit the use of electronic devices while driving will take significant resources and time and therefore are likely long-term goals. In the short term Enactment, Education and Enforcement of strong and comprehensive state laws regulating unsafe driver behavior is critical to address the current public health problem of distracted driving.

ACKNOWLEDGMENTS

This paper was written as part of the Engaged Driving Initiative (EDI) created by State Farm Mutual Automobile Insurance Company (State Farm®). The EDI Expert Panel was administered by the Association for the Advancement of Automotive Medicine (AAAM) and chaired by Susan Ferguson, Ph.D., President, Ferguson International LLC. The views presented in this paper are those of the author and are not necessarily the views of State Farm, AAAM or Ferguson International LLC.

Thank you to the staff of Advocates for Highway and Auto Safety for invaluable assistance and guidance.

REFERENCES

AAA Foundation for Traffic Safety, 2010 Traffic Safety Culture Index, AAA Foundation for Traffic Safety, 2010.

AAA Foundation for Traffic Safety, 2011 Traffic Safety Culture Index, AAA Foundation for Traffic Safety, 2012.

AAA Foundation for Traffic Safety, 2012 Traffic Safety Culture Index, AAA Foundation for Traffic Safety, 2013.

Addressing The Problem Of Distracted Driving, Hearing Before Subcomm. On Highways and Transit of the House Comm. on Transportation and Infrastructure. 111th Cong. 1st Sess., 2009.

Bischoff D, Developing Guidelines for Managing Driver Workload and Distraction Associated with Telematic Devices, Proceedings of the 20th International Technical Conference on the Enhanced Safety of Vehicles, Paper No. 07-0082, 2007.

CDC (Centers for Disease Control and Prevention), Reduction in Alcohol-Related Traffic Fatalities – United States, 1990-1992, MMWR Morb Mortal Wkly Rep, 42(47), 905-909, 1993.

CDC (Centers for Disease Control and Prevention), Teen Driver Fact Sheet, National Center for Injury Prevention and Control, 2012.

Combating Distracted Driving: Managing Behavioral And Technological Risks, Hearing before the Senate Comm. on Commerce, Science, and Transportation, 111th Cong. 1st Sess., 2009.

Connelly M, Many in U.S. Want Texting at the Wheel to Be Illegal, N.Y. Times, Nov. 2, A8, 2009.

Cooper J, Yager C, Chrysler ST, An Investigation of the Effects of Reading and Writing Text-Based Messages While Driving, Texas Transportation Institute, Report No. SWUTC/11/476660-00024-1, 2011.

Davies L, 25 years of saving lives, Driven, Fall, 8-17, 2005.

Department of Transportation and Related Agencies Appropriations, 2001, Pub. L. 106-346, 114 Stat. 1356, 2000.

Distraction.gov, Key Facts and Statistics, Available online at: http://www.distraction.gov/content/get-the-facts/facts-and-statistics.html (Accessed 22 Nov. 2013) 2013.

Doster, Stephanie, Judge Strikes Down Ban On Use Of Cell Phones, Philly.com, Jul. 16, 2000 (Available online at: http://articles.philly.com/2000-07-16/news/25610879_1_cell-phones-handheld-phones-morgan-lee-pena)

Driven to Distraction: Technological Devices and Vehicle Safety, Joint Hearing Before Subcomm. on Commerce, Trade, and Consumer Protection and Subcomm. on Communications, Technology, and the Internet of House Comm. on Energy and Commerce. 111th Cong. 1st Sess., 2009.

Exec. Order No. 13513, 74 Fed. Reg. 51225, 2009.

Farmer CM, Williams AF, Effect on fatality risk of changing from secondary to primary seat belt enforcement, J Safety Res., 36(2), 189-94, 2005.

Flink, John, Highland Park May Disconnect Drivers' Cell Phones, Chicago Tribune, Jan. 27, 2000.

FMCSA (Federal Motor Carrier Safety Administration), Limiting the Use of Wireless Communication Devices, Final Rule, Fed Reg, 75, 59118-136, Sept. 27, 2010.

FMCSA, Drivers of CMVs: Restricting the Use of Cellular Phones, Final Rule, Fed Reg, 76, 75470-488, Dec. 2, 2011.

Focus Driven. Mission, Vision & Board; Available online at: http://www.focusdriven.org/our-board (Accessed 12 Aug. 2013) 2013.

Hersman DAP, Remarks of Honorable Deborah A.P. Hersman National Transportation Safety Board Chairman At Her Swearing-In Ceremony, NTSB, Sep 8, 2009.

James, George, DRIVING; Hung Up Over Law On Phones, New York Times, Aug. 12, 2001.

IIHS (Insurance Institute For Highway Safety), Special issue, what works and doesn't work to improve highway safety, Status Report, Vol. 36, No. 5, May 19, 2001.

King v. Town of Chapel Hill, NC Ct. of Appeals, No. COA12-1262, June 2013.

Klauer SG, Dingus TA, Neale VL, et al., The Impact of Driver Inattention On Near-Crash/Crash Risk: An Analysis Using the 100-Car Naturalistic Driving Study Data, NHTSA, Report No. DOT HS 810 594, 2006.

Llaneras RE, Singer JP, Inventory of In-Vehicle Technology Human Factors Design Characteristics, NHTSA, Report No. DOT HS 809 457, 2002.0 594, 64-65, 2006.

McCartt AT, Hellinga LA, Kirley BB, The effects of minimum legal drinking age 21 laws on alcohol-related driving in the United States, J Safety Res., 41, 173-181, 2010.

McEvoy SP, Stevenson MR, McCartt AT et al., Role of mobile phones in motor vehicle crashes resulting in hospital attendance: a case-crossover study. BMJ, 331, 428-433, 2005.

Md Code, Transp. Law § 21-1124, 2013.

Me. Rev. Stat. Ann. tit. 29-A, § 2116, 2002.

Moving Ahead for Progress in the 21st Century (MAP-21) Act, Pub. L. 112-141, 126 Stat. 405

National Minimum Drinking Age Act Of 1984, Pub. L. No. 98-363, 98 Stat. 437, 1984.

National Priority Safety Programs, Section 31105(a), Moving Ahead for Progress in the 21st Century (MAP-21) Act, Pub. L. 112-141, 126 Stat. 405, 2012.

N.C. GEN. STAT. §20-137.3, 2006.

N.C. GEN. STAT. §20-137.4A, 2009.

NCSA (National Center for Statistics and Analysis), Alcohol-Impaired Driving, NHTSA, Report No. DOT HS 811 700, 2012.

NCSA, 2012 Motor Vehicle Crashes: Overview, NHTSA, Report No. DOT HS 811 856, 2013a.

NCSA, Distracted Driving 2011, NHTSA, Report No. DOT HS 811 737, 2013b.

NCSA, Occupant Protection, NHTSA, Report No. DOT HS 811 729, 2013c.

NCSA, Young Drivers, NHTSA, Report Not. DOT HS 811 744, 2013d.

New York Times/CBS News Poll, October 5-8, 2009, Available online at: http://s3.amazonaws.com/nytdocs/docs/267/267.pdf (Accessed 8 Nov. 2013) 2009.

NHTSA (National Highway Traffic Safety Administration), A comprehensive approach to motorcycle safety, helmet laws work, Available online at: http://www.nhtsa.gov/people/injury/pedbimot/motorcycle/safebike/helmet.html (Accessed 12 Nov. 2013) 1998.

NHTSA, An Investigation of the Safety Implications of Wireless Communincations in Vehicles, Available online at: http://www.nhtsa.gov/people/injury/research/wireless/#preface (Accessed 7 Jan. 2014) 1997.

NHTSA, .08 BAC Illegal per se Level, Traffic Safety Facts, Vol. 2, Number 1, 2004.

NHTSA, Visual-Manual NHTSA Driver Distraction Guidelines For In-Vehicle Electronic Devices, Notice of Federal Guidelines, Fed Reg, 78, 24818-90, Apr. 26, 2013

Nielson (The Nielson Company), U.S. Teen Mobile Report Calling Yesterday, Texting Today, Using Apps Tomorrow, Available online at: http://www.nielsen.com/us/en/newswire/2010/u-s-teen-mobile-report-calling-yesterday-texting-today-using-apps-tomorrow.html (Accessed 31 Oct. 2013) 2010.

N.J. Rev. Stat. § 39:3-13.4, 2002.

NSC (National Safety Council), State of the Nation of cell phone distracted driving, Available online at: http://www.nsc.org/safety_road/Distracted_Driving/Documents/State%20of%20the%20Nation.pdf (Accessed 12 Aug. 2013) 2012.

NSC, Crashes Involving Cell Phones, Challenges of Collecting and Reporting Reliable Crash Data, Available online at: http://www.nsc.org/safety_road/Distracted_Driving/Documents/NSC-Under-Reporting-White-Paper.pdf (Accessed 15 Nov. 2013) 2013.

NTSB (National Transportation Safety Board), Highway Accident Report: Multivehicle Collision, Interstate 44 Eastbound, Gray Summit, Missouri, August 5, 2010, Report No: NTSB/HAR-11/03, 2011.

N.Y. Veh. & Traf. Law § 1225-c, 2001.

Olson RL, Hanowski RJ, Hickman JS et al., Driver distraction in commercial vehicle operations, FMCSA, DOT Report No. FMCSA-RRR-09-042, 2009.

PHMSA (Pipeline and Hazardous Materials Safety Administration), Hazardous Materials: Limiting the Use of Electronic Devices by Highway, Final Rule, Fed Reg, 76 FR 10771-78, Feb. 28, 2011.

Pickrell TM, Ye TJ, Seat Belt Use in 2012 – Overall results, NHTSA, Report No. DOT HS 811 691, 2012.

Pickrell TM, Ye TJ, Driver Electronic Device Use in 2011, NHTSA, Report No. DOT HS 811 719, 2013.

Redelmeier, DA, Tibshirani, RJ, Association between cellular-telephone calls and motor vehicle collisions, N Engl J Med, 336, 453-58, 1997.

Report on Driver Telematics Working Group, slide #3, presented at NHTSA 2001 Research and Development Meeting, Baltimore/Washington International Airport Marriot, July 26, 2001, available online at: http://www.nhtsa.gov/Research/Public+Meetings/2001+NHTSA+Research+&+Development+Meetings. (Accessed on August 15, 2013) 2001.

Strayer DL, Drews FA, Crouch DJ, A Comparison of the Cell-Phone Driver and the Drunk Driver, Hum Factors, 48(2), 381-91, 2006.

Strayer DL, Drews FA, Johnston WA, Cell Phone-Induced Failures of Visual Attention During Simulated Driving, J Exp Psychol Applied, Vol. 9, No. 1, 23-32, 2003.

The Faces of Distracted Driving, Available online at: http://www.distraction.gov/content/faces/index.htmh (Accessed 22 Nov. 2013) 2013.

Tison J, Chaudhary N, Cosgrove L, National phone survey on distracted driving attitudes and behaviors, NHTSA, Report No. DOT HS 811 555, 2011.

Tison J, Williams AF, Analyzing the First Years of the Click It or Ticket Mobilizations, NHTSA, Report No. DOT HS 811 232, 2010.

Town of Brooklyn, Ohio Ordinance, Chap. 331.45, 1999.

Town of Chapel Hill, North Carolina Ordinance, Art. VII, Chap. 21, Sec. 21-63, 2012.

National Minimum Drinking Age Act of 1984, Pub. L. No. 98-363, 98 Stat. 437, 1984.

U.S. DOT (U.S. Dept. of Transportation), Accomplishments Overview, Available online at: http://www.dot.gov/sites/dot.dev/files/docs/01-28-13%20Accomplishments%20Overview%20U%20S%20%20Department%20of%20Transportation%20FINAL.pdf (Accessed 1 Nov. 2013) 2013.

U.S. General Accounting Office (GAO), Effectiveness of State .08 Blood Alcohol Laws, Report No. GAO/RECD-99-179, 1999.

U.S. Office of Personnel Management, Historical Federal Workforce Tables, Available online at: http://www.opm.gov/policy-data-oversight/data-analysis-documentation/federal-employment-reports/historical-tables/total-government-employment-since-1962/ (Accessed 31 Oct. 2013) 2013.

Wash. Laws Chap. 223, 2010.

Wash. Rev. Code § 46.61.688, 2007.

Williams A, Braitman K, McCartt A, Views of Parents of Teenagers About Licensing Policies: A National Survey, IIHS, Traffic Injury Prevention, 12:1-8, 2011.

APPENDIX A

States That Ban Text Messaging While Driving

All Drivers-Primary Enforcement	All Drivers-Secondary Enforcement	Partial Ban	No Law
AL, AK, **AR**, CA, CO, CT, DE, DC, **GA**, HI, ID, IL, IN, KS, KY, LA, **ME**, MD, MA, MI, **MN**, NV, NH, NJ, NY, NC, **ND**, OR, PA, **RI**, TN, UT, VT, VA, WA, **WV**, WI, WY	FL, IA, NE, OH	MS, MO, NM, OK, SD, TX (i.e. school zones, drivers under age 21, public transport drivers)	AZ, MT, SC

*States in bold received a distracted driving grant under MAP-21.

APPENDIX B

States That Ban Use of Cell Phones While Driving For Teen or Novice Drivers

Primary Enforcement	Secondary Enforcement	No Law
CO, CT, DE, DC, **GA**, HI, IL, IN, IA, KS, KY, LA, **ME**, MD, MA, MI, **MN**, NJ, NM, NC, **ND**, OH, OR, **RI**, TN, TX, UT, VT, WA, **WV**, WI, WY	AL, **AR**, CA, NE, SD, VA	AK, AZ, FL, ID, MS, MO, MT, NV, NH, NY, OK, PA, SC

*States in bold received a distracted driving grant under MAP-21.

APPENDIX C

States That Ban Hand-Held Cell Phones While Driving

All Driver-Primary Enforcement	No Law
CA, CT, DE, DC, HI, IL, MD, NV, NJ, NY, OR, WA, WV	AL, AK, AZ, CO, FL, GA, ID, IN, IA, KS, KY, ME, MA, MI, MN, MS, MO, MT, NE, NH, NM, NC, ND, OH, PA, RI, SC, SD, TN, UT, VA, WI, WY

*Several states (AR, LA, OK, TX, VT) ban the use of hand-held cell phones while driving under certain circumstance i.e. work or school zones.

APPENDIX D

Enactment Dates of Laws Banning Texting While Driving

AL	2010	MO	2009
AK	2008	NE	2010
AR	2009	NV	2011
CA	2008	NH	2009
CO	2009	NJ	2007
CT	2010	NM	2011
DE	2010	NY	2009
DC	2004	NC	2009
FL	2013	ND	2011
GA	2010	OH	2012
HI	2013	OK	2010
ID	2012	OR	2009
IL	2009	PA	2011
IN	2011	RI	2009
IA	2010	SD	2013
KS	2010	TN	2009
KY	2010	TX	2005
LA	2008	UT	2009
ME	2011	VT	2010
MD	2009	VA	2009
MA	2010	WA	2007
MI	2010	WV	2012
MN	2008	WI	2010
MS	2011	WY	2010

Enactment Dates of Laws Banning Use of Cell Phones While Driving for Teen or Novice Drivers

AL	2010	MN	2005
AR	2009	NE	2007
CA	2007	NJ	2002
CO	2009	NM	2011
CT	2005	NC	2006
DE	2005	ND	2011
DC	2004	OH	2012
GA	2010	OR	2009
HI	2013	RI	2006
IL	2007	SD	2013
IN	2009	TN	2005
IA	2010	TX	2011
KS	2009	UT	2013
KY	2010	VA	2007
LA	2008	VT	2010
ME	2002	WA	2010
MD	2005	WV	2006
MA	2010	WI	2012
MI	2013	WY	2007

Enactment Dates of Laws Banning Hand-Held Cell Phones While Driving

CA	2006
CT	2005
DE	2010
DC	2004
HI	2013
IL	2013
MD	2010
NV	2011
NJ	2004
NY	2001
OR	2009
WA	2007
WV	2012