

2012 Edition



Preventing Injuries

IN MARYLAND

A Resource
for State
Policy Makers

25
YEARS

1987-2012
JOHNS HOPKINS
CENTER FOR
INJURY RESEARCH
AND POLICY

Dear Friend of Maryland,

Thank you for consulting this 2012 edition of *Preventing Injuries in Maryland: A Resource for State Policy Makers*. Our goal in producing this publication is to provide you with easily accessible and understandable information on the size and scope of specific injury problems in Maryland, and to highlight policy solutions grounded in state-of-the-art science.

Over the past twenty-five years, the Johns Hopkins Center for Injury Research and Policy has worked with people like you to reduce the burden of injury in the U.S. Together we have helped achieve remarkable progress. For example, it is estimated that during the years 2005 and 2009, the use of seat belts saved 72,000 lives; motorcycle helmets saved more than 8,000 lives; and child restraints saved the lives of an additional 1,800 children.

Looking ahead, the challenge we face is to build on these accomplishments, as there is much work left to be done. Currently in Maryland, both intentional (e.g., violence) and unintentional (“accidents”) injury are leading causes of death and disability. In fact, more Marylanders ages 1-44 die as a result of these injuries than from any other cause. Each year more than \$200 million in emergency department charges and \$835 million in hospitalization charges are incurred in Maryland as a result of injury.

We know that often the greatest success in reducing injuries and their associated costs is made by enacting strong, evidence-based policies, which is why we created this Resource. By helping you incorporate what is known about injury prevention strategies into policy, we can together help ensure Marylanders remain healthy and safe.

Thank you for the important work you do.



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ABOUT THE JOHNS HOPKINS CENTER FOR INJURY RESEARCH AND POLICY

Throughout its 25-year history, the Johns Hopkins Center for Injury Research and Policy has led the effort to redefine injury as a pressing public health problem and to promote it as a scientific discipline. The Center is one of the largest injury research and educational programs in the world, and the only such center in Maryland.

The Center's team of multi-disciplinary scientists, teachers and practitioners are committed to reducing the burden of injuries through research, education, practice and policy. Recognized around the globe as a leader in injury research, education and practice, the Center is guided by a commitment to ensuring that its high quality research is translated into programs and policies that make a difference.

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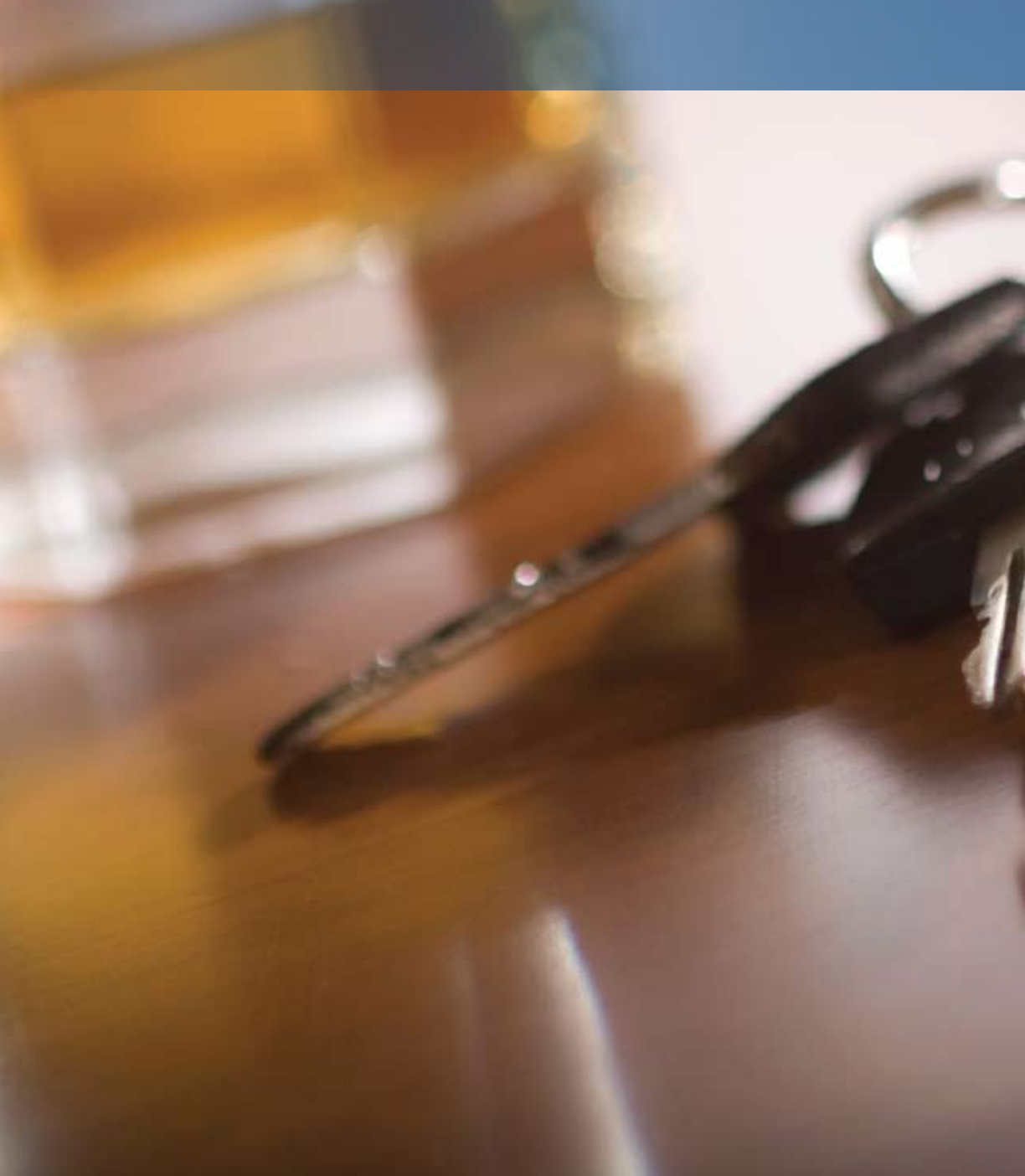
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For more information on the Johns Hopkins Center for Injury Research and Policy, please visit www.jhsph.edu/InjuryCenter or call 410-955-2221.

ALCOHOL AND INJURY



ALCOHOL AND INJURY

HOW DOES IT AFFECT THE U.S.?

- On average, 80,374 persons died each year from 2001-2005 as a result of excessive alcohol use, with more than half of these deaths from injuries.¹
- On average, 4,700 children and teens under the age of 21 died each year from 2001-2005 as a result of excessive alcohol use. The vast majority are from injury.¹
- In 2008, 11,773 people died in alcohol-related motor vehicle crashes; of these 1,510 were children and teens younger than 21 years old.²
- The cost of alcohol consumption to society is estimated to be \$223.5 billion in 2006, or approximately \$746 per person in the U.S.³ This includes direct costs such as medical care and the costs of the judicial and penal systems, as well as indirect costs such as lost wages and pain and suffering.⁴

HOW DOES IT AFFECT MARYLAND?

- Between 2001 and 2005, an average of 1,290 Marylanders died each year as a result of excessive alcohol use; more than half were from injuries.¹
- In 2008, 152 Marylanders died in alcohol-related motor vehicle crashes.²
- Alcohol consumption costs Maryland an estimated \$4.3 billion annually; over half of this amount is in productivity losses.⁵

HOW DO WE ADDRESS THIS PROBLEM?

- Increasing the price of alcohol is associated with reduced drinking among adults and adolescents,⁶ as well as fewer suicides,⁷ youth traffic fatalities,^{8,9} and homicides.^{7,10,11} Effective July 1, 2011 Maryland Bill 994 increased the sales tax on alcohol to 9 percent.
- In addition to raising alcohol taxes, the CDC recommends limiting the hours and days when alcohol can be purchased, decreasing the density of alcohol outlets, strengthening commercial host liability laws, and increasing enforcement of minimum legal drinking age laws to curb underage drinking.¹²
- The Institute of Medicine recommends reducing adolescent exposure to alcohol advertising.¹³ At the local or state level, this can be done by restricting outdoor advertising, retail signage and alcohol sponsorships or promotions on public property and in places frequented by youth.¹⁴
- Ignition interlock devices prevent drivers who have measurable alcohol (set to a predetermined level) in their system from driving an interlock-equipped car. They reduce repeat drunk driving offenses by an average of 64 percent as long as the device remains on the vehicle.¹⁵ Other alcohol-sensing technologies show promise for the future.¹⁶

ADDITIONAL RESOURCES

Johns Hopkins Center for Injury Research and Policy: www.jhsph.edu/InjuryCenter

National Center for Injury Prevention and Control, CDC: www.cdc.gov/injury

Center for Substance Abuse Research: www.cesar.umd.edu

Center on Alcohol Marketing and Youth: www.camy.org

REFERENCES

1. Centers for Disease Control and Prevention. Alcohol-Related Disease Impact Software (ARDI). Available at: <http://www.cdc.gov/alcohol/ardi.htm>. Accessed November 15, 2011.
2. Traffic Safety Facts 2008. A Compilation of Motor Vehicle Crash Data from the Fatality Analysis Reporting System and the General Estimates System. National Highway Traffic Safety Administration: DOT HS 811 170. www-nrd.nhtsa.dot.gov/Pubs/811170.PDF
3. Bouchery EE, Harwood HJ, Sacks JJ, Simon CJ, Brewer RD. Economic costs of excessive alcohol consumption in the U.S., 2006. *American Journal of Preventive Medicine*. 2011;41(5):516-524.
4. Harwood H, Henrick D, Fountain D, Livermore G. The Economic Costs of Alcohol and Drug Abuse in the United States 1992. www.niaaa.nih.gov/Resources/DatabaseResources/QuickFacts/EconomicData/cost5.htm. Note: 2009 estimate calculated based on the assumption that the cost increase remained stable at 3.8 percent per year since 1998.
5. U.S. Census Bureau. State & County QuickFacts: Maryland. <http://quickfacts.census.gov/qfd/states/24000.html>. Note: estimate is based on applying national estimate of costs of alcohol to society of \$746 per capita to MD population.
6. Wagenaar AC, Salois MJ, Komro KA. Effects of beverage alcohol price and tax levels on drinking: A meta-analysis of 1003 estimates from 112 studies. *Addiction*. 2009;104(2):179-190.
7. Cook PJ. Paying the Tab: The Costs and Benefits of Alcohol Control. Princeton: Princeton University Press; 2007.
8. Ponicki WR, Gruenewald PJ, LaScala EA. Joint impacts of minimum legal drinking age and beer taxes on US youth traffic fatalities, 1975-2001. *Alcoholism: Clinical and Experimental Research*. 2007;31(5):804-813.
9. Ruhm CJ. Alcohol policies and highway vehicle fatalities. *Journal of Health Economics*. 1996;15:435-454.
10. Sen B. The relationship between beer taxes, other alcohol policies, and child homicide deaths. *Topics in Economic Analysis and Policy*. 2006;6(1), Article 15. Available at: <http://www.bepress.com/bejeap/topics/vol6/iss1/art15>. Accessed November 17, 2011.
11. Sloan FA, Reilly BA, Schenzler C. Effects of prices, civil and criminal sanctions, and law enforcement on alcohol-related mortality. *Journal of Studies on Alcohol*. 1994;55:454-465.
12. National Center for Health Marketing (NCHM) Centers for Disease Control and Prevention. Guide to Community Preventive Services. Evidence-Based Strategies to Prevent Excessive Alcohol Consumption and Related Harms. Available at: <http://www.thecommunityguide.org/alcohol/SummaryCGRecommendations.pdf>. Accessed September 21, 2011.
13. National Research Council and Institute of Medicine. Reducing Underage Drinking: A Collective Responsibility. R.J. Bonnie and M.E. O'Connell, eds. Washington DC: National Academies Press, 2004.
14. Center on Alcohol Marketing and Youth. State Alcohol Marketing Laws: Current Status and Model Policies. Baltimore, MD: Center on Alcohol Marketing and Youth, 2011.
15. Willis C, Lybrand S, Bellamy N. Alcohol ignition interlock programmes for reducing drink driving recidivism. *Cochrane Database of Systematic Reviews*. 2004; Issue 4. Art. No.: CD004168. DOI: 10.1002/14651858.CD004168.pub2.
16. Pollard JK, Nadler ED, Stearns MD. Review of Technology to Prevent Alcohol-Impaired Crashes. U.S. Department of Transportation, National Highway Traffic Safety Administration. September 2007. DOT HS 810 827. <http://www.nhtsa.gov/DOT/NHTSA/NRD/Multimedia/PDFs/Crash%20Avoidance/2007/TOPICrev.pdf>.



ALL-TERRAIN VEHICLE SAFETY

ATV SAFETY

HOW DOES IT AFFECT THE U.S.?

- All-terrain vehicle (ATV) riders are at risk of injury from rollovers, falling off the vehicle, and collisions.^{1,2}
- In 2009, approximately 132,000 people were treated in U.S. emergency departments (ED) for ATV-related injuries.³
- Between 2000 and 2009, more than 1,300 children younger than 16 years died as a result of ATV-related injuries.³
- In 2006, there were more than 4,000 hospitalizations of children due to ATV-related injuries; one-third were diagnosed with a traumatic brain injury.⁴
- According to the National SAFE KIDS Coalition, the cost associated with deaths and injuries from ATVs is an estimated \$3,500 for each ATV sold.⁵

HOW DOES IT AFFECT MARYLAND?

- From 2001-2006, more than 9,000 individuals were injured in off-road vehicle incidents (including ATVs) and required treatment in Maryland EDs; about one-third of those treated in EDs were younger than 16 years.⁶
- According to a MIEMSS report, among all ATV-related trauma patients for whom helmet use or non-use was known, approximately two-thirds were not wearing a helmet when the crash occurred.⁶

HOW DO WE ADDRESS THIS PROBLEM?

- Helmet use reduces the risk of fatal head injury by 42 percent and the risk of non-fatal head injury by 64 percent.⁷
- Compared to helmeted ATV riders, unhelmeted ATV riders are much more likely to suffer a serious traumatic brain injury and much more likely to receive significant injuries to the face and neck.⁸
- A Maryland ATV Safety Task Force (2008; SB 28 and HB 114) recommended several safety strategies, including prohibiting use by those under 6 years, requiring use of approved helmet and eye protection, prohibiting passengers unless the ATV was designed for passenger use, requiring safety training for all youth riders, and improving data collection of ATV-related injuries.^{9,10}
- The American Academy of Pediatrics (AAP) recommends that children younger than 16 years of age not be allowed to operate ATVs.¹¹
- Crashes involving children often occur when riding adult-sized ATVs; ATV dealers continue to sell adult-sized ATVs for use by children.¹²

ADDITIONAL RESOURCES

Johns Hopkins Center for Injury Research and Policy: www.jhsph.edu/InjuryCenter

National Center for Injury Prevention and Control, CDC: www.cdc.gov/injury

Consumer Product Safety Commission, ATV Safety: www.atvsafety.gov

National Safety Council: www.nsc.org

Concerned Families for ATV Safety: www.atvsafetynet.org

REFERENCES

1. Centers for Disease Control and Prevention. All-terrain vehicle fatalities—West Virginia, 1999–2006. *Morbidity and Mortality Weekly Report*. 2008;57:312–315.
2. Mullins RJ, Brand D, Lenfesty B, et al. Statewide assessment of injury and death rates among riders of off-road vehicles treated at trauma centers. *Journal of the American College of Surgeons*. 2007;204:216–224.
3. Garland S. U.S. Consumer Product Safety Commission. 2009 Annual Report on ATV-related Deaths and Injuries. Washington, DC: US Consumer Product Safety Commission. December 2010:1–22.
4. Bowman SM and Aitken ME. Still unsafe, still in use: Ongoing epidemic of all-terrain vehicle injury hospitalizations among children. *Journal of Trauma*. 2010;69(6):1344-1349.
5. National SAFE KIDS Campaign (NSKC). ATV Injury Fact Sheet. Washington (DC): NSKC, 2004. www.preventinjury.org/PDFs/ATV_INJURY.pdf.
6. Bass RR, Gainer PS. Report on Off-Road Vehicle Incidents Including All-Terrain Vehicles In The State of Maryland. The Maryland Institute for Emergency Medical Services Systems (MIEMSS). www.miemss.org/home/Portals/0/Docs/LegislativeReports/ATV_Report_2007_Final_SUBMITTED.pdf. Accessed November 17, 2011.
7. Rodgers GB. The effectiveness of helmets in reducing all-terrain vehicle injuries and death. *Accident Analysis and Prevention*. 1990;22:47-58.
8. Bowman SM, Aitken ME, Helmkamp JC, Maham SA, Graham CJ. Impact of helmets on injuries to riders of all-terrain vehicles. *Injury Prevention*. 2009;15(1):3-7.
9. Pollack KM, Frattaroli S, Morhaim D. Working in the legislature: perspectives on injury prevention in the United States. *Injury Prevention*. 2009;15(3):208-211.
10. Report of the All-Terrain Vehicle Safety Task Force. Interim and Final Reports, Required by SB 28 and HB 114. Report to the Budget Committees Required by the Joint Chairmen's Report – Operating Budget, April 2008. December 2008.
11. American Academy of Pediatrics. Committee on Injury and Poison Prevention. All-Terrain Vehicle Injury Prevention: Two-, Three-, and Four-Wheeled Unlicensed Motor Vehicles. *Pediatrics*. 2000;105(6):1352-1354.
12. U.S. Government Accountability Office, Report to Congressional Committees. All-Terrain Vehicles: How they are used, crashes, and sales of adult-sized vehicles for use by children. GAO-10-418, April 2010. <http://www.gao.gov/new.items/d10418.pdf>. Accessed October 10, 2011.

A close-up photograph of a person's hands on a steering wheel, with a hand holding a mobile phone in the foreground. The phone is a silver flip phone with a keypad. The background is blurred, showing the interior of a car. The text "DISTRACTED DRIVING" is overlaid in white on a dark blue background.

DISTRACTED DRIVING

DISTRACTED DRIVING

Driver distraction is the voluntary or involuntary diversion of attention from the primary driving tasks not related to impairment.¹

HOW DOES IT AFFECT THE U.S.?

- From 2005-2009, 27,537 people in the U.S. died in crashes associated with distracted driving, including 5,474 in 2009 alone.²
- Of the 5,474 people killed in crashes associated with distracted driving in 2009, 995 involved cell phone usage.² Similarly, of the 448,000 people injured in crashes associated with distracted driving in 2009, 24,000 involved cell phone usage.²
- In 2009, about 20% of 1,517,000 crashes resulting in injury were reported to involve distracted driving.³
- Drivers who engage in non-driving activities are 2-3 times more likely to experience a near-crash or crash.⁴ Text messaging while driving increases the risk of a high-risk driving event by 23 times compared to non-distracted driving.⁵

HOW DOES IT AFFECT MARYLAND?

- Inattentive driving accounted for more than 75,000 crashes resulting in injury and more than 500 fatalities between 2003 and 2008 in Maryland, including 11,636 injuries and 35 deaths in 2008 alone.⁶⁻⁸
- Maryland has a primary ban on text messaging and a secondary ban on using a handheld cell phone while driving, meaning it can only be enforced when the police officer detains a driver for a suspected violation of another provision.⁹

HOW DO WE ADDRESS THIS PROBLEM?

- As of July 2011, 34 states and the District of Columbia ban text messaging for all drivers. Also, 9 states plus the District of Columbia prohibit all drivers from using handheld cell phones while driving.⁹ These types of bans, if rigorously enforced, may be effective in reducing cell phone use while driving;¹⁰ however, it's too soon to assess the impact of well-enforced cell phone laws on crashes.¹ Primary enforcement laws are easier to enforce and more likely to be effective.
- Polling data indicates support for banning cell phone use while driving and even stronger support for banning text messaging and emailing while driving.¹¹
- Engineering to make roads safer for distracted drivers is a promising strategy. Specific strategies include safe stopping, resting areas and rumble strips.¹
- Changing social norms to make distracted driving less socially acceptable is a promising strategy,¹ as is technology that prevents drivers from using a cell phone while the vehicle is in motion.
- High Visibility Model (HVE) enforcement programs in CT and NY have shown to reduce hand-held cell phone use and texting while driving. HVE combines enforcement during specific periods and media that addresses enforcement methods.¹²

ADDITIONAL RESOURCES

Johns Hopkins Center for Injury Research and Policy: www.jhsph.edu/InjuryCenter

National Center for Injury Prevention and Control, CDC: www.cdc.gov/injury

Advocates for Highway and Auto Safety: www.saferoads.org

Maryland Department of Transportation Motor Vehicle Administration: www.mdot.state.md.us

National Highway Traffic Safety Administration (NHTSA): www.nhtsa.dot.gov

University of Maryland School of Medicine National Study Center for Trauma and Emergency Medical Systems (NSC): www.nsc.umaryland.edu

REFERENCES

1. U.S. Department of Transportation. National Highway Traffic Safety Administration. Driver Distraction: A Review of the Current State-of-Knowledge. April 2008.
2. National Highway Traffic Safety Administration. Traffic Safety Facts- Research Note: Distracted Driving 2009. <http://www.distracted.gov/research/PDF-Files/Distracted-Driving-2009.pdf>
3. US Department of Transportation. Distraction.gov website. Statistics and Facts About Distracted Driving. Last Updated April 2011. <http://www.distracted.gov/stats-and-facts/index.html>. Accessed November 16, 2011.
4. 100 Car Naturalistic Driving Study Fact Sheet: Driver Inattention Analysis Fact Sheet. Virginia Tech Transportation Institute, April 2006. www.vtti.vt.edu/publications.html. Accessed November 18, 2011.
5. Olson RL, Hanowski RJ, Hickman JS, Bocanegra J. Driver Distraction in Commercial Vehicle Operations. Virginia Tech Transportation Institute. www.vtti.vt.edu/publications.html. Accessed November 18, 2011.
6. Maryland Department of Transportation, State Highway Administration: Office of Traffic and Safety. Inattentive Drivers. University of Maryland School of Medicine National Study Center for Trauma and Emergency Medical Systems. www.medschool.umaryland.edu/nscfortrauma/traffic_2007data_statewide.asp. Accessed November 18, 2011.
7. National Highway Traffic Safety Administration. State of Maryland FY 2008 Annual Report. National Highway Traffic Safety Administration, 2008.
8. Maryland Department of Transportation. Maryland Highway Safety Office. 2010 Annual Report. http://www.nhtsa.gov/nhtsa/whatsup/safeteaweb/FY10/FY10ARs/MD_FY10AnnualReport.pdf. Accessed November 18, 2011.
9. US Department of Transportation. National Highway Traffic Safety Administration. State Laws on Distracted Driving. <http://www.distracted.gov/content/get-the-facts/state-laws.html#Maryland>. Accessed December 9, 2011.
10. McCartt AT, Geary LL. Longer-term effects of New York State's law on drivers' handheld cell phone use. *Injury Prevention*. 2004;10:11-15.
11. Nationwide Mutual Insurance Company. 2009 Driving While Distracted Survey. www.nationwide.com/pdf/NW-Cell-Phone-Ban-final-survey-results.pdf. Accessed November 18, 2011.
12. National Highway Traffic Safety Administration. Traffic Safety facts- research note. High visibility enforcement demonstration programs in Connecticut and New York reduce hand-held phone use. <http://www.distracted.gov/research/PDF-Files/High-Visibility-Enforcement-Demo.pdf>. Accessed November 18, 2011.



FALLS AMONG OLDER ADULTS

FALLS AMONG OLDER ADULTS (AGE 65 AND OLDER)

HOW DOES IT AFFECT THE U.S.?

- Every 15 seconds an older adult is treated in an emergency department (ED) for a fall. Every 27 minutes an older adult dies as a result of a fall.¹
- Falls are the leading cause of injury deaths for older Americans: in 2009, over 19,700 people age 65 and older died from fall-related injuries.²
- In 2000, direct medical costs of falls totaled a little over \$19 billion—\$179 million for fatal falls and \$19 billion for nonfatal fall injuries. This equals \$28.2 billion in 2010 dollars.³

HOW DOES IT AFFECT MARYLAND?

- Falls are the leading cause of injury deaths, hospitalizations, and ED visits among older adults in Maryland. In 2007, falls resulted in 23,030 ED visits, 14,016 hospitalizations and 432 deaths among older adults.⁴ The number of deaths has more than doubled since 2000.⁵
- For older adults in Maryland, the average hospital length of stay for a fall injury is 5 days; the average cost is \$13,204. Older-adult falls generated a total of \$120 million in hospital charges in 2007 in Maryland.⁵

HOW DO WE ADDRESS THIS PROBLEM?

- Multi-strategy initiatives that assess and address known risk factors, such as severely low blood pressure and visual or foot problems, are effective. These include effectively managing medications, home hazard modification, and exercise programs that address strength, gait and balance.⁶⁻⁹
- As of November 2011, seven states have enacted laws to address falls in older adults: CA, CT, FL, ME, NY, TX and WA. These laws establish commissions, coalitions, and/or programs. Two states (NY, WA) have allocated funds to address these initiatives.¹⁰
- Thirty-three states have enacted laws relating to osteoporosis prevention programs and 14 (including MD) have mandated insurance coverage of diagnosis and treatment.¹¹
- The MD Department of Health and Mental Hygiene participates with 36 other states in promoting National Falls Prevention Awareness Day and has implemented Safe Steps for Seniors, a fall prevention program. However, funding is limited and only five counties currently offer the program.¹²
- The Federal Affordable Care Act implemented annual wellness visits that include screening for fall risks.¹³ Health care providers must have the capacity and training to do this.

ADDITIONAL RESOURCES

Johns Hopkins Center for Injury Research and Policy: www.jhsph.edu/InjuryCenter

National Center for Injury Prevention and Control, CDC: www.cdc.gov/injury

National Council on Aging: www.ncoa.org

Home Safety Council: www.homesafetycouncil.org

Maryland Department of Health and Mental Hygiene: www.fha.maryland.gov/ohpetup/eip_falls.cfm

Partnership for a Safer Maryland: www.safermaryland.org

REFERENCES

1. Centers for Disease Control and Prevention. Fatalities and injuries from falls among older adults, 1993-2003 and 2001-2005. *Mortality and Morbidity Weekly Report*. 2006;55(45):1221-1224.
2. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reporting System (WISQARS). www.cdc.gov/injury/wisqars/index.html.
3. Centers for Disease Control and Prevention. Falls Among Adults: An Overview. <http://www.cdc.gov/HomeandRecreationalSafety/Falls/adultfalls.html>. Accessed November 16, 2011.
4. Maryland Department of Health & Mental Hygiene, Injuries in Maryland. 2007 Statistics on injury related emergency department visits, hospitalizations and deaths. www.fha.maryland.gov/pdf/ohpetup/Injuries_in_Maryland_2007.pdf.
5. Partnership for a Safer Maryland. Preventing Falls in Older Adults. <http://www.safermaryland.org/start/injury-topics#TOC-Falls>. Accessed November 16, 2011.
6. Gillespie LD, Robertson MD, Gillespie WJ, et al. Interventions for preventing falls in older people living in the community. *Cochrane Database of Systematic Reviews* 2009;(2):CD007146. www.mrw.interscience.wiley.com/cochrane/clsysrev/articles/CD007146/frame.html. Accessed December 9, 2011.
7. Gillespie LD, Gillespie WJ, Robertson MC, et al. Interventions for preventing falls in elderly people. *Cochrane Database of Systematic Reviews* 2009;(2):CD000340. www.mrw.interscience.wiley.com/cochrane/clsysrev/articles/CD000340/frame.html. Accessed November 18, 2011.
8. McClure RJ, Turner C, Peel N, Spinks A, Eakin E, Hughes K. Population based interventions for the prevention of fall related injuries in older people. *Cochrane Database of Systematic Reviews* 2005;(1):CD004441. www.mrw.interscience.wiley.com/cochrane/clsysrev/articles/CD004441/frame.html. Accessed November 18, 2011.
9. Tinetti ME, Baker DI, King M, et al. Effect of dissemination of evidence in reducing injuries from falls. *New England Journal of Medicine*. 2008;359(3):252-261.
10. National Conference of State Legislatures NCSL, Elderly Falls Prevention Legislation and Statutes. www.ncsl.org/default.aspx?TabId=13854. Accessed November 18, 2011.
11. National Conference of State Legislatures NCSL, Osteoporosis Legislation and Statutes. <http://www.ncsl.org/default.aspx?tabid=14472>. Last accessed November 16, 2011.
12. Maryland Family Health Administration. Fall Prevention. www.fha.maryland.gov/ohpetup/eip_falls.cfm. Accessed November 18, 2011.
13. O'Rourke PT and Hershey KM. Never-Event Implications. *The Hospitalist*. February 2009. http://www.the-hospitalist.org/details/article/184520/Never-Event_Implications_.html. Accessed November 16, 2011.

HOME FIRES



HOME FIRES

HOW DOES IT AFFECT THE U.S.?

- In 2010, 3,120 people in the U.S. died in fires (not including firefighters); 17,720 additional people were injured by fire and survived, translating into one injury every 30 minutes.¹
- In 2010, about 85 percent of all fire deaths occurred in the home.¹
- Young children and older adults are at highest risk of dying in a fire.²
- Residential fires caused an estimated \$7.1 billion in home property losses in 2010.¹

HOW DOES IT AFFECT MARYLAND?

- From 2006-2010, 299 people died in residential fires in Maryland.^{3,4}
- Marylanders over 65 years are at highest risk of dying in a residential fire.²

HOW DO WE ADDRESS THIS PROBLEM?

- Working smoke alarms reduce the risk of dying in a home fire by at least half.⁵
- Maryland law requires homes to be equipped with a working smoke alarm; however, the Maryland Fire Marshal estimates that only half of Maryland homes are protected by working smoke alarms.⁶
- Among homes with smoke alarms, most have too few alarms, incorrectly placed alarms, or non-working alarms.^{7,8} Support for efforts to assure smoke alarms are properly installed and maintained are needed.
- Fires that occur in homes with sprinklers cause less damage. Since 1992, Prince George's County has required sprinkler systems to be installed in all newly constructed homes. A 2009 study concluded there had been no reported fire deaths in a sprinkler-equipped home in Prince George's County.⁹
- Several Maryland localities require sprinkler systems in all new residential buildings; however, retrofitting older buildings with sprinkler systems as part of substantial renovations is not required by most of these ordinances.¹⁰
- The 2012 edition of the *International Residential Code* requires that all new 1-and 2-family homes be equipped with a home fire sprinkler system.¹¹ Maryland adopted the code and it became effective on January 1, 2011. Assuring implementation and compliance of the sprinkler requirement is important.

ADDITIONAL RESOURCES

Johns Hopkins Center for Injury Research and Policy: www.jhsph.edu/InjuryCenter

National Center for Injury Prevention and Control, CDC: www.cdc.gov/injury

National Fire Protection Agency: www.nfpa.org

Office of the State Fire Marshal in Maryland: www.firemarshal.state.md.us

REFERENCES

1. Karter MJ. Fire loss in the United States during 2010. Quincy: National Fire Protection Association; 2011. www.nfpa.org/assets/files/pdf/os.fireloss.pdf.
2. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reporting System (WISQARS). www.cdc.gov/injury/wisqars/index.html.
3. Maryland State Fire Marshal. Fire Deaths in Maryland: January-December 2010. Prepared February 2011. <http://www.firemarshal.state.md.us/pdf/Fire%20Deaths%20-%202010.pdf>.
4. Maryland State Fire Marshal. Fire Deaths in Maryland: 2006-2008. Prepared February 2009. <http://www.firemarshal.state.md.us/pdf/Fire%20Deaths%20-%202008.pdf>.
5. Ahrens M. Smoke Alarms in U.S. Home Fires. Quincy: National Fire Protection Association; 2009. www.nfpa.org/assets/files/PDF/OS.SmokeAlarms.pdf.
6. Office of the State Fire Marshal. What Every Marylander Should Know about Smoke Alarms. www.firemarshal.state.md.us. Accessed October 3, 2011.
7. Peek-Asa C, Allareddy V, Yang J, et al. When one is not enough: prevalence and characteristics of homes not adequately protected by smoke alarms. *Injury Prevention*. 2005;11(6):364-368.
8. Sidman EA, Grossman DC, Mueller BA. Comprehensive smoke alarm coverage in lower economic status homes: alarm presence, functionality, and placement. *Journal of Community Health*. 2011;36(4):525-33.
9. Weatherby S. Benefits of Residential Fire Sprinklers: Prince George's County 15-Year History with its Single-Family Residential Dwelling Fire Sprinkler Ordinance. August 2009. www.homefiresprinkler.org/images/Prince-Georges-County-Report.pdf.
10. Maryland State Fire Marshal. Residential Sprinkler Ordinances in Maryland (Single-Family Homes and Duplexes as of 12/08/2011) www.firemarshal.state.md.us/Residential_Sprinkler_Ordinances.htm. Accessed December 8, 2011.
11. Frattaroli S, Yee N, Pollack KM, Gielen AC. From SAVIR: New developments in building codes and the future of home fire sprinkler systems. *Injury Prevention*. 2009;15(6):430.

A close-up photograph of a woman with long, wavy brown hair. She has a distressed and somber expression, looking down. Her face shows signs of physical trauma: a large, dark purple bruise is visible on her forehead, and a fresh, bloody laceration is on her left cheek. Her eyes are closed, and her hand is resting against her temple. The background is a plain, light-colored wall. The overall mood is one of pain and vulnerability.

INTIMATE PARTNER VIOLENCE

INTIMATE PARTNER VIOLENCE

“Intimate partner violence” (IPV) describes physical, sexual, or psychological harm by a current or former partner or spouse.¹ IPV is commonly called domestic violence.

HOW DOES IT AFFECT THE U.S.?

- In 2010, 1,095 women and 241 men in the U.S. were murdered by their intimate partner or estranged spouse.² Firearms are used in more than half of all intimate partner homicides.³
- One in 4 women and 1 in 7 men in the U.S. have experienced severe physical violence by an intimate partner in their lifetime. One-third of women and 10% of men victimized by IPV report negative consequences of the violence, including injuries, needing medical treatment, and missing work or school.⁴
- The estimated costs from IPV against women are as high as \$8.3 billion.⁵
- Forty-two percent of victims of nonfatal IPV report that perpetrators were under the influence of alcohol or illicit drugs at the time of the attack.³

HOW DOES IT AFFECT MARYLAND?

- There were 17,931 crimes involving IPV reported to law enforcement agencies in Maryland in 2010. Twenty-two percent of these incidents involved assaults with dangerous weapons or resulted in a serious injury.⁶
- In 2010, 18 women and 3 men in Maryland were murdered as a result of IPV.⁶

HOW DO WE ADDRESS THIS PROBLEM?

- Laws prohibiting IPV offenders from possessing firearms save lives.⁷ Maryland recently enhanced its laws designed to prevent IPV with guns. Additional resources for effective enforcement would strengthen this law.⁸
- Risk of IPV is lower when victims can obtain final protective orders from courts.⁹⁻¹¹ Recent changes allow MD judges to extend a peace order, which can be granted when IPV occurs between people who are dating but do not qualify for a protective order. Peace orders can only be extended to 6 months while protective orders can be extended to 2 years. Allowing peace orders to be issued for the same duration as protective orders will offer greater protection to victims who are not married or cohabitating with the perpetrator.
- Substance abuse and mental illness are common among perpetrators of IPV.¹² Policies which require screening¹³ and treatment for offenders with these conditions reduce IPV.¹⁴ Maintaining funding for substance abuse and mental health treatment is important for the prevention of IPV.
- The Centers for Disease Control and Prevention supports programs and interventions that prevent violence before it occurs.¹⁵ Programs that encourage healthy and safe relationships in teens can reduce dating violence,¹⁶ and can reduce the risk of future IPV. Incorporating these programs into school curricula would expand their reach and impact.

ADDITIONAL RESOURCES

Johns Hopkins Center for Injury Research and Policy: www.jhsph.edu/InjuryCenter

National Center for Injury Prevention and Control, CDC: www.cdc.gov/injury

Maryland Network Against Domestic Violence: www.mnadv.org

Partnership for a Safer Maryland: www.safermaryland.org

REFERENCES

1. National Center for Injury Prevention and Control, CDC. www.cdc.gov/ViolencePrevention/intimatepartnerviolence/definitions.html. Accessed November 18, 2011.
2. Federal Bureau of Investigation. Crime in the United States, 2010. U.S. Department of Justice, Washington, DC, 2011. <http://www.fbi.gov/about-us/cjis/ucr/crime-in-the-u.s/2010/crime-in-the-u.s.-2010/tables/10shrtbl10.xls>. Accessed October 5, 2011. Note: these figures do not include former boyfriends or girlfriends.
3. Calatano S. Intimate Partner Violence in the United States. Washington, DC: US Department of Justice. December 2007. <http://bjs.ojp.usdoj.gov/content/pub/pdf/ipvus.pdf>.
4. Black MC, Basile KC, Breiding MJ, et al. The National Intimate Partner and Sexual Violence Survey: 2010 Summary Report. National Center for Injury Prevention and Control, Centers for Disease Control and Prevention, December 2011.
5. Max W, Rice DP, Finkelstein E, Bardwell RA, Leadbetter S. The economic toll of intimate partner violence against women in the United States. *Violence and Victims*. 2004;19(3):259-272.
6. Maryland State Police. *Crime in Maryland: 2010 Uniform Crime Report*. Page 56. July 2011.
7. Vigdor ER, Mercy JA. Do laws restricting access to firearms by domestic violence offenders prevent intimate partner homicide? *Evaluation Review*. 2006;30:313-346.
8. Frattaroli S, Teret SP. Understanding and informing policy implementation: A case study of the domestic violence provisions of the Maryland Gun Violence Act. *Evaluation Review*. 2007;30:347-360.
9. Holt VL, Kernick MA, Wolf ME, Rivara FP. Do protection orders affect the likelihood of future partner violence and injury? *American Journal of Preventive Medicine*. 2003;24:16-21.
10. Campbell JC, O'Sullivan C, Roehl J, et al. What battered women know and do to protect themselves from abuse: Results and methodological challenges from the domestic violence risk assessment validation experiment. Presented at the 9th International Family Violence Research Conference, July 2005.
11. Logan TK. Civil protective order effectiveness: justice or just a piece of paper? *Violence and Victims*. 2010; 25(3):332-348.
12. Moracco KE, Andersen K, Buchanan RM, Espersen C, Bowling M, Duffy C. Who are the defendants in domestic violence protection order cases? *Violence Against Women*. 2010;16:1201-1223.
13. Brackley MH, Williams GB, Wei CC. Substance abuse interface with intimate partner violence: what treatment programs need to know. *Nursing Clinics of North America*. 2010;45:581-589.
14. Gover AR, MacDonald JM, Alpert GP. Combating domestic violence: Findings from an evaluation of a local domestic violence court. *Criminology & Public Policy*. 2003;3:109-132.
15. Centers for Disease Control and Prevention. Preventing intimate partner and sexual violence: program activities guide. http://www.cdc.gov/violenceprevention/pdf/IPV-SV_Program_Activities_Guide-a.pdf. Accessed October 5, 2011.
16. Wolfe DA, Crooks C, Jaffe P, et al. A school-based program to prevent adolescent dating violence. *Archives of Pediatric and Adolescent Medicine*. 2009;163(8):692-699.



MOTORCYCLE SAFETY

MOTORCYCLE SAFETY

HOW DOES IT AFFECT THE U.S.?

- In 2009, there were 4,595 motorcycle-related fatalities in the U.S. After 11 straight years of increases in motorcycle deaths, this number reflects a major decline nationally.¹
- In 2009, there were approximately 84,000 motorcycle crashes that resulted in nonfatal injury in the U.S.¹
- About 80 percent of motorcycle crashes result in injury or death, compared with 20 percent of passenger vehicle crashes.²

HOW DOES IT AFFECT MARYLAND?

- In 2009, there were 69 motorcycle rider deaths,¹ representing a rate of 83 deaths per 100,000 registered motorcycle riders.³
- Despite repeated attempts at repeal, Maryland has maintained its all-rider motorcycle helmet law since its enactment in 1992.⁴ This law does not apply to riders of motor scooters or mopeds.
- Since Maryland enacted a helmet law in 1992, the death rate due to motorcycle crashes has decreased by 67 percent.^{4,5}
- Uninsured, non-helmeted motorcycle crash victims cost Maryland taxpayers annually almost \$1.35 million in uncompensated care per rider, roughly seventeen times that of helmeted victims.⁶

HOW DO WE ADDRESS THIS PROBLEM?

- Maintain and enforce all-rider helmet laws. Helmets reduce the risk of head injury by approximately 69 percent, death by 42 percent, and are associated with reductions in overall injury severity and likelihood of hospitalization.^{4,7}
- Repealing helmet laws is associated with increased deaths. In Texas, a repeal of its all-rider helmet law in 1997 led to a 31 percent increase in fatalities. Similar outcomes have been observed in Kentucky (50 percent increase) and Louisiana (100 percent increase).^{6,7}
- Promote the installation of safety technology. Motorcycles with antilock braking systems (ABS) had 20 to 30 percent fewer fatalities per registered vehicle year compared to identical models not equipped with ABS.⁸
- Other solutions to prevent motorcycle fatalities and injuries include ensuring helmets meet federal standards, wearing protective clothing, providing education and training, and requiring motorcycle operator licensure.⁷ Highway engineering can also prevent motorcycle crashes. Examples include making roads resistant to skidding and providing advance-warning signs to alert motorcyclists.⁹

ADDITIONAL RESOURCES

Johns Hopkins Center for Injury Research and Policy: www.jhsph.edu/InjuryCenter

National Center for Injury Prevention and Control, CDC: www.cdc.gov/injury

Advocates for Highway and Auto Safety: www.saferoads.org

Maryland Department of Transportation Motor Vehicle Administration: www.mdot.state.md.us

National Highway Traffic Safety Administration (NHTSA): www.nhtsa.dot.gov

REFERENCES

1. National Highway Traffic Safety Administration. Traffic Safety Facts 2009 (Early Edition). <http://www-nrd.nhtsa.dot.gov/pubs/811402ee.pdf>. Accessed October 13, 2011.
2. National Highway Traffic Safety Administration. Motorcycle Safety Program 2005. <http://www.nhtsa.gov/people/injury/pedbimot/motorcycle/motorcycle03/McycleSafetyProgram.pdf>. Accessed October 13, 2011.
3. Maryland Department of Transportation. Maryland Highway Safety Office. Maryland Traffic Safety Facts Maryland 2005-2009. http://www-nrd.nhtsa.dot.gov/departments/nrd-30/nca/stsi/24_MD/2009/24_MD_2009.PDF. Accessed October 13, 2011.
4. Advocates for Highway and Auto Safety. Motorcycle Helmets. <http://www.saferoads.org/motorcycle-helmets>. Accessed October 23, 2011.
5. Auman KM, Kufera JA, Ballesteros MF, Smialek JE, Dischinger PC. Autopsy study of motorcyclist fatalities: The effect of the 1992 Maryland motorcycle helmet use law. *American Journal of Public Health*. 2002;92(8):1352-1355.
6. Advocates for Highway and Auto Safety. Protect Maryland's Motorcycle Helmet Law. February 10, 2005. <http://www.saferoads.org/protect-marylands-motorcycle-helmet-law>. Accessed December 8, 2011.
7. Liu BC, Ivers R, Norton R, Boufous S, Blows S, Lo SK. Helmets for preventing injury in motorcycle riders. *Cochrane Database of Systematic Reviews* 2008;(1):CD004333. <http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD004333.pub2/pdf>. Accessed December 8, 2011.
8. Teoh E. Effectiveness of Antilock Braking Systems in Reducing Motorcycle Fatal Crash Rates. January 2010. http://www.iihs.org/laws/petitions/pdf/petition_2010-04-30.pdf.
9. Uniform Guidelines for State Highway Safety Programs: Motorcycle Safety. <http://www.nhtsa.gov/nhtsa/whatsup/tea21/tea21programs/pages/MotorcycleSafety.htm>. Accessed October 13, 2011.



POISONING

POISONING

For this fact sheet, poisonings refer to unintentional and undetermined methods in which the person taking or giving the substance did not mean to cause harm. These poisonings include the use of drugs or chemicals for recreational and non-recreational purposes, which when used in excessive amounts may lead to an overdose.

HOW DOES IT AFFECT THE U.S.?

- In 2008, there were 31,116 unintentional poisoning deaths and 3,421 poisoning deaths of undetermined intent in the United States. This accounted for 84% of all poisoning deaths.¹⁻³
- Unintentional poisoning was the second leading cause of unintentional injury death for all ages in 2008.²
- Poisoning death affects primarily adults: 94 of the unintentional poisoning deaths in 2008 (0.3%) were children less than 15 years old.²
- In 2009, 708,318 Emergency Department (ED) visits were attributed to unintentional poisoning.²
- The use and abuse of illicit and legal drugs, especially prescription opioids, are growing problems in the United States.⁴ From 1995-2005, the number of people in the U.S. abusing prescription drugs increased from 6.2 to 15.2 million.⁵

HOW DOES IT AFFECT MARYLAND?

- In 2007, unintentional and undetermined poisoning was the leading cause of injury death in Maryland, responsible for 773 deaths.³
- From 1999-2007, there were 6,661 unintentional and undetermined poisoning deaths in Maryland.³
- Poisoning was the second leading cause of injury-related hospitalizations in Maryland in 2007.⁴
- From 2007-2010, treatment admissions due to prescription opiate drug abuse in MD doubled; 55% of all poisoning deaths involved a prescription opiate in 2010.⁶

HOW DO WE ADDRESS THIS PROBLEM?

- Prescription Drug Monitoring Programs (PDMPs), which collect data from pharmacies to detect sources of drug diversion, can be an effective tool for dealing with prescription drug abuse.⁷ In May 2011, SB 883 was signed to establish a PDMP in the Maryland Department of Health and Mental Hygiene.
- Other promising strategies include: regulating unlicensed pharmacy technicians; public outreach and education campaigns on the dangers of prescription drug abuse; training for pharmacists and physicians to detect doctor shopping and use of fraudulent prescriptions; and regulating the online pharmaceutical industry.⁸
- Poison control centers reduce costs by reducing the number of unnecessary ED visits and decreasing length of stay in hospital admissions.^{9,10}

ADDITIONAL RESOURCES

Johns Hopkins Center for Injury Research and Policy: www.jhsph.edu/InjuryCenter

American Association of Poison Control Centers: www.aapcc.org

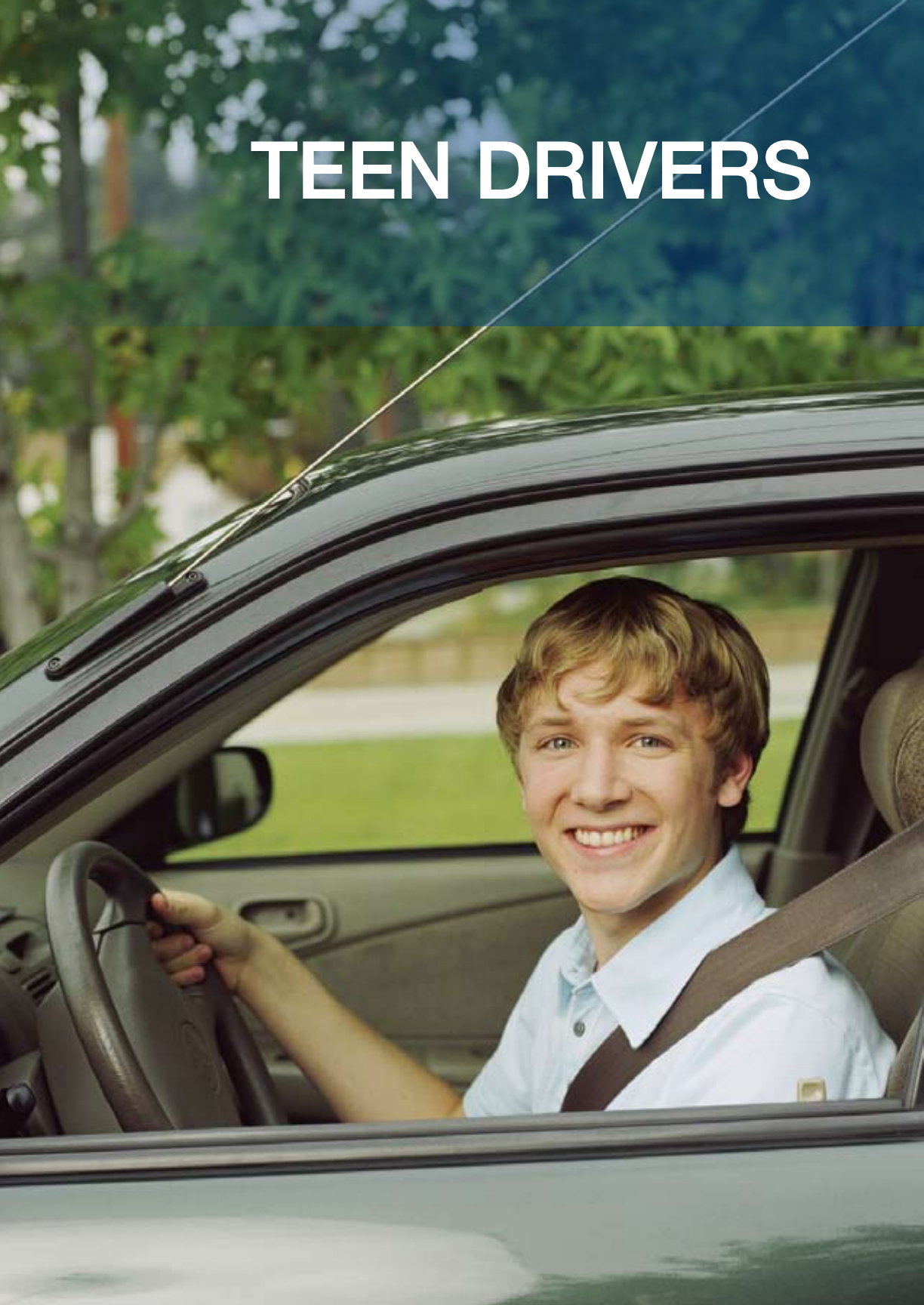
Substance Abuse and Mental Health Services Administration (SAMHSA): www.samhsa.gov

Partnership for a Safer Maryland: www.safermaryland.org

REFERENCES

1. Centers for Disease Control and Prevention. Poisoning in the United States: Fact Sheet. 2011. <http://www.cdc.gov/HomeandRecreationalSafety/Poisoning/poisoning-factsheet.htm>. Accessed November 18, 2011.
2. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reporting System (WISQARS). www.cdc.gov/wisqars/index.html.
3. Centers for Disease Control and Prevention. CDC WONDER-Wide-ranging Online Data for Epidemiologic Research. <http://wonder.cdc.gov>.
4. Maryland Department of Health & Mental Hygiene. Family Health Administration. Center for Health Promotion and Education. Injuries in Maryland. 2007 Statistics on Injury-related Emergency Department Visits, Hospitalizations and Deaths. http://fha.maryland.gov/pdf/ohpetup/injuries_in_maryland_2007.pdf. Accessed November 18, 2011.
5. Manchikanti L. National drug control policy and prescription drug abuse: Facts and fallacies. *Pain Physician*. 2007;10:399-424.
6. State of Maryland. Maryland Department of Health and Mental Hygiene. Data Update: Rising Prescription Drug Abuse in Maryland. http://www.dhmh.state.md.us/pressreleases/pdf/2011/PDMPData_fin.pdf. Accessed November 18, 2011.
7. Wang J, Christo PJ. The influence of prescription monitoring programs on chronic pain management. *Pain Physician*. 2009;12:507-515.
8. State of Maryland Office of the Attorney General. Prescription for Disaster, The Growing Problem of Prescription Drug Abuse in Maryland. September 2005. www.oag.state.md.us/Reports/PrescriptionDrugAbuse.pdf.
9. Vassilev ZP, Marcus SM. The impact of a poison control center on the length of hospital stay for patients with poisoning. *Journal of Toxicology and Environmental Health*. 2007;70(2):107-110.
10. Philips K, Homan R, Hiatt P, et al. The costs and outcomes of restricting public access to poison control centers. Results from a natural experiment. *Medical Care*. 1998;36(3):271-280.

TEEN DRIVERS



TEEN DRIVERS

HOW DOES IT AFFECT THE U.S.?

- Motor vehicle crashes are the leading cause of death for U.S. teens 13-19 years old. More than one in three deaths in this age group is attributable to motor vehicle crashes.¹
- The risk of motor vehicle crashes is higher among 16- to 19-year-olds than among any other age group.¹
- Young people ages 15 to 24 years represent only 14 percent of the U.S. population, but account for 30 percent (\$19 billion) of the total costs of motor vehicle injuries among males and 28 percent (\$7 billion) among females.²
- Of the 16-20 year-old drivers who were killed in crashes in 2009, 35% of the males and 19% of the females had Blood Alcohol Concentration (BAC) at or above the legal limit (0.08 or higher).³

HOW DOES IT AFFECT MARYLAND?

- In 2007, motor vehicle crashes were the leading cause of injury deaths among teenagers ages 13-19 in Maryland.⁴
- In 2008, 6,670 drivers under 21 were involved in fatal or injury-causing crashes in Maryland; this accounts for nearly one-fifth of all fatal crashes in Maryland.⁵
- Alcohol or drugs were involved in 1107 crashes and 30 fatal crashes of drivers aged 20 years or younger in Maryland in 2008.⁵
- One-third of the drivers aged 20 years or younger killed in crashes in Maryland in 2008 had not used safety devices such as seatbelts.⁵

HOW DO WE ADDRESS THIS PROBLEM?

- Enforcement of underage purchase, possession and provision laws for youth access to alcohol can reduce alcohol-related crash involvement.³
- Graduated Driver Licensing (GDL) has consistently been shown to substantially reduce crashes of 16- and 17-year old drivers.⁶ Strengthening and enforcement of GDL systems that contain passenger limits, night restrictions and other components are effective measures.^{7,8} The National Highway Traffic Safety Association (NHTSA) recommends 16 years as the age for receiving a learner's permit; it is currently 15 years and 9 months in Maryland.⁷
- Enforcement of the primary seat belt law in Maryland is important: primary seat belt laws are associated with increased seat belt utilization⁹ and a decreased risk of fatalities.¹⁰
- Driver education on its own has not been demonstrated to reduce crashes among high school-aged drivers.¹¹

ADDITIONAL RESOURCES

Johns Hopkins Center for Injury Research and Policy: www.jhsph.edu/InjuryCenter

National Center for Injury Prevention and Control: CDC: www.cdc.gov/injury

International Institute for Highway Safety: www.iihs.org

Maryland Department of Transportation: www.mdot.state.md.us

National Highway Traffic Safety Administration: www.nhtsa.dot.gov

University of Maryland School of Medicine National Study Center for Trauma and Emergency Medical Systems: www.nsc.umaryland.edu

REFERENCES

1. Insurance Institute for Highway Safety. Fatality Facts 2008: Teenagers. http://www.iihs.org/research/fatality_facts_2008/teenagers.html. Accessed December 9, 2011.
2. Finkelstein EA, Corso PS, Miller TR. Incidence and Economic Burden of Injuries in the United States. New York: Oxford University Press; 2006.
3. Insurance Institute for Highway Safety. Teenagers - Underage Drinking. <http://www.iihs.org/research/qanda/underage.html>. Accessed October 11, 2011.
4. Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reporting System (WISQARS). www.cdc.gov/injury/wisqars/index.html.
5. Maryland Department of Transportation. State Highway Administration. Office of Traffic and Safety. Maryland Traffic Safety Facts 2008 Young Drivers. http://www.sha.state.md.us/MHSO/youngdrivers_sheet_2008.pdf. Accessed November 16, 2011.
6. McCartt AT, Teoh ER. Strengthening Driver Licensing Systems for Teen-aged Drivers. *Journal of the American Medical Association*. 2011;306(10):1142-1143.
7. Insurance Institute for Highway Safety. State Laws and Regulations. www.iihs.org/laws/default.aspx. Accessed October 11, 2011.
8. Chen LH, Baker SP, Braver ER, Li G. Carrying passengers as a risk factor for crashes fatal to 16- and 17-year old drivers. *Journal of the American Medical Association*. 2000;283:1578-1582.
9. Shults RA, Elder RW, Sleet DA, Thompson RS, Nichols JL. Primary enforcement seat belt laws are effective even in the face of rising belt use rates. *Accident Analysis and Prevention*. 2004;36(3):491-493.
10. Rivera FP, Thompson DC, Cummings P. Effectiveness of primary and secondary enforced seat belt laws. *American Journal of Preventive Medicine*. 1999;16(1S):30-39.
11. Vernick JS, Li G, Ogaitis S, MacKenzie EJ, Baker SP, Gielen AC. Effects of high school driver education on motor vehicle crashes, violations, and licensure. *American Journal of Preventive Medicine*. 1999;16(1S):40-46.

A medical professional, likely a trauma surgeon, is focused on a patient in an operating room. The scene is dimly lit, with a bright surgical light illuminating the patient's torso. The surgeon is wearing a grey scrub top and white gloves, and is using a blue surgical instrument. Other medical staff are visible in the background, some wearing masks and scrubs. The overall atmosphere is professional and urgent.

TRAUMA & TRAUMA SYSTEMS

TRAUMA & TRAUMA SYSTEMS

HOW DOES IT AFFECT THE U.S.?

- Every year, injuries result in almost 2 million hospitalizations in the United States; nearly 50 million more are treated on an outpatient basis.¹
- Trauma ranks as the second most expensive condition, after heart disease, accounting for 6.9% of total health care spending.²
- Long-term consequences of traumatic injuries include significant functional disability,³ delayed return to work,⁴ debilitating chronic pain,⁵ long-term depression, and anxiety.⁶

HOW DOES IT AFFECT MARYLAND?

- Maryland's regional trauma system handled over 14,000 ground and nearly 2,000 aeromedical evacuations in 2011, and more than 20,000 admissions to the state's nine trauma centers and numerous specialty referral centers.⁷
- Despite state-of-the-art care, more than 600 Marylanders treated at these trauma centers die as a result of their injuries every year,⁷ and many more suffer lifelong disability as a result of their injury.

HOW DO WE ADDRESS THE PROBLEM?

- Maryland has an opportunity to lead the nation and improve outcomes by building on its existing trauma system and statewide trauma registry to develop a system for assessing needs for post acute care and rehabilitation services.
- Promising interventions exist that may improve long-term outcomes among trauma patients, including self-management and peer support programs.⁸⁻¹⁰ Comprehensive evaluations of these programs are needed. Widespread dissemination of effective programs will require mechanisms for hospitals to fund or bill for these secondary prevention services.
- Trauma centers have unique opportunities to reduce the burden of injury related disability through injury prevention activities and reducing trauma recidivism. Partnerships with community injury prevention efforts, as well as hospital-based safety resource centers,¹⁰ violence prevention programs,¹¹ and brief alcohol interventions,¹² are particularly promising strategies.

ADDITIONAL RESOURCES

Johns Hopkins Center for Injury Research and Policy: www.jhsph.edu/InjuryCenter

Maryland Institute for Emergency Medical Services Systems: www.miemss.org

American Trauma Society: www.amtrauma.org

Trauma Survivors Network: www.traumasurvivorsnetwork.org

Next Steps Online Self Management Program: www.nextstepsonline.org

Major Extremity Trauma Research Consortium: www.metr.org

R Adams Cowley Shock Trauma Center: www.umm.edu/shocktrauma

REFERENCES

1. Finkelstein EA, Corso PS, Miller TR. The Incidence and Economic Burden of Injuries in the United States. New York: Oxford University Press, 2006.
2. Olin GL, Rhoades JA. The five most costly medical conditions, 1997 and 2002: estimates for the U.S. civilian noninstitutionalized population. Statistical Brief #80. Agency for Healthcare Research and Quality, Rockville, MD. Web site: http://www.meps.ahrq.gov/mepsweb/data_files/publications/st80/stat80.pdf. Accessed November 16, 2011.
3. MacKenzie EJ, Bosse MJ, Pollak AN, et al. Long-term persistence of disability following severe lower-limb trauma. Results of a seven-year follow-up. *The Journal of Bone and Joint Surgery*. 2005;87(8):1801-1809.
4. MacKenzie EJ, Bosse MJ, Kellam JF, et al. Early predictors of long-term work disability after major limb trauma. *Journal of Trauma*. 2006;61(3):688-94.
5. Castillo RC, MacKenzie EJ, Wegener ST, Bosse MJ; LEAP Study Group. Prevalence of chronic pain seven years following limb threatening lower extremity trauma. *Pain*. 2006;124(3):321-329.
6. McCarthy ML, MacKenzie EJ, Edwin D, et al. Psychological distress associated with severe lower limb injury. *The Journal of Bone and Joint Surgery*. 2003;85:1689-1697.
7. Maryland Institute for Emergency Medical Services Systems (MIEMSS). 2010-2011 Annual Report. <http://www.miemss.org/home/LinkClick.aspx?fileticket=umP90BsWYiI%3d&tabid=58&mid=448> Accessed November 18, 2011.
8. Bradford AN, Castillo RC, Carlini AR, Wegener ST, Teter H, Mackenzie EJ. The Trauma Survivors Network: Survive. Connect. Rebuild. *Journal of Trauma*. 2011;70(6):1557-1560.
9. Wegener ST, Mackenzie E, Ephraim P, Ehde D, Williams R. Self-management improves outcomes in persons with limb loss. *Archives of Physical Medicine and Rehabilitation*. 2009;90(3):373-380.
10. Gielen AC, McDonald EM, Wilson MEH, et al. The effects of improved access to safety counseling, products and home visits on parents' safety practices. *Archives of Pediatrics and Adolescent Medicine*. 2002; 156:33-40.
11. Cooper C, Eslinger DM, Stolley PD. Hospital-based violence intervention programs work. *Journal of Trauma*. 2006;61(3):534-537.
12. Soderstrom CA, DiClemente CC, Dischinger PC, et al. A controlled trial of brief intervention versus brief advice for at-risk drinking trauma center patients. *Journal of Trauma*. 2007;62(5):1102-1111.

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For more information on the Johns Hopkins Center for Injury Research and Policy, please visit www.jhsph.edu/InjuryCenter or call 410-955-2221

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