

# The Facts Hurt:

## A STATE-BY-STATE INJURY PREVENTION POLICY REPORT

# 2015



## Acknowledgements

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# The Facts Hurt: *Injury Prevention Report* SERIES

## Introduction: Injuries in America

One person dies from an injury every three minutes in the United States, and injuries are the leading cause of death for children and for all Americans between the ages of 1 and 44. According to the National Safety Council (NSC), the unintentional injuries sustained in one year will have a lifetime cost exceeding \$794 billion.<sup>1, 2</sup>

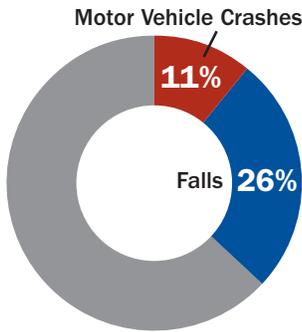
Injuries are a serious, persistent health threat in the United States — and a number of emerging trends make it even more urgent to take action to prevent and reduce the number of Americans who are harmed each year, including:

- Increases in deaths from prescription drug overdoses, dangers from distracted driving, head injuries and concussions, and serious injuries in older Americans as the Baby Boomers age. All of these require new action and research to develop or update prevention strategies.
- Significant complacency and lack of urgency about enhancing efforts to adopt, implement, enforce and expand research to build on effective strategies. These efforts could significantly cut down on motor vehicle, bicycle and pedestrian injuries and reduce assaults, suicides, childhood drownings and other forms of injuries and related fatalities.

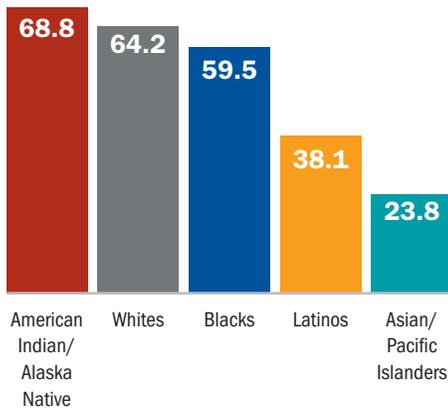
The vast majority of injuries are “predictable, preventable and avoidable,” according to the U.S. Centers for Disease Control and Prevention (CDC).<sup>3</sup> Successful public health policies, programs and public education campaigns can help give Americans the tools they need to stay safe and protect their families.

In this report, the Trust for America’s Health (TFAH) and the Robert Wood Johnson Foundation (RWJF) worked with a committee of top injury prevention experts from the Safe States Alliance and the Society for the Advancement of Violence and Injury Prevention (SAVIR) to help identify evidence-based approaches — which, if adopted and implemented, could help lower the number of injuries around the country. This report highlights a set of indicators that provide the public and policymakers with information about the status of some key injury prevention policies in states, and provides recommendations for key strategies to reduce injuries in the United States.

**Top Two Leading Causes for Emergency Department Visits**



**Injury Deaths by Race/Ethnicity per 100,000 Population**



**THE FACTS HURT**

- About 30 million Americans — around 9.7 percent of the population — are medically treated for injuries each year.<sup>4</sup> There were 58.4 injury deaths for every 100,000 people (2011 to 2013).
- Nearly 193,000 Americans die, nearly 2.5 million are hospitalized and more than 27 million are treated in emergency departments for injuries annually.<sup>5, 6, 7</sup>
- More than 30 percent of emergency department visits are injury-related, with falls as the leading cause (10.5 million visits, or 26 percent) and motor vehicle crashes as the second leading cause (4.5 million visits, or 11 percent).<sup>8</sup>
- Males account for more than two-thirds of all injury deaths.
- Injury deaths are significantly higher among American Indian/Alaska Natives (68.8 per 100,000 people), Whites (64.2 per 100,000) and Blacks (59.5 per 100,000), than among Latinos (38.1 per 100,000) and Asian/Pacific Islanders

(23.8 per 100,000).<sup>9</sup> However, rates by race and ethnicity vary considerably by type of injury; the relative risk for different types of injuries are related to individual and neighborhood socioeconomic characteristics.<sup>10</sup>

- Americans living in cities have lower injury death rates than those living in non-metropolitan areas (55.3 versus 76.4 per 100,000 people).
- Injuries are the leading cause and account for 70 percent of deaths among youth (ages 10 to 24). The three leading causes of death for youth are motor vehicle crashes (30 percent of youth deaths), homicide (15 percent) and suicide (12 percent).
- More than 7,000 children and teenagers under the age of 20 die from unintentional injuries each year and about 8.3 million are treated in emergency rooms for unintentional injuries.

**10 Leading Causes of Death by Age Group, United States – 2012**

Rank	Age Groups										Total
	<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	
1	Congenital Anomalies 4,939	Unintentional Injury 1,353	Unintentional Injury 743	Unintentional Injury 807	Unintentional Injury 11,908	Unintentional Injury 15,851	Unintentional Injury 15,034	Malignant Neoplasms 48,028	Malignant Neoplasms 113,130	Heart Disease 477,840	Heart Disease 599,711

**Data Source:** National Vital Statistics System, National Center for Health Statistics, CDC.  
**Produced by:** National Center for Injury Prevention and Control, CDC using WISQARS™.

# INJURY

The #1 killer of children in the US



For every 1 child that dies there are...

**25** hospitalizations

**925** treated in ER

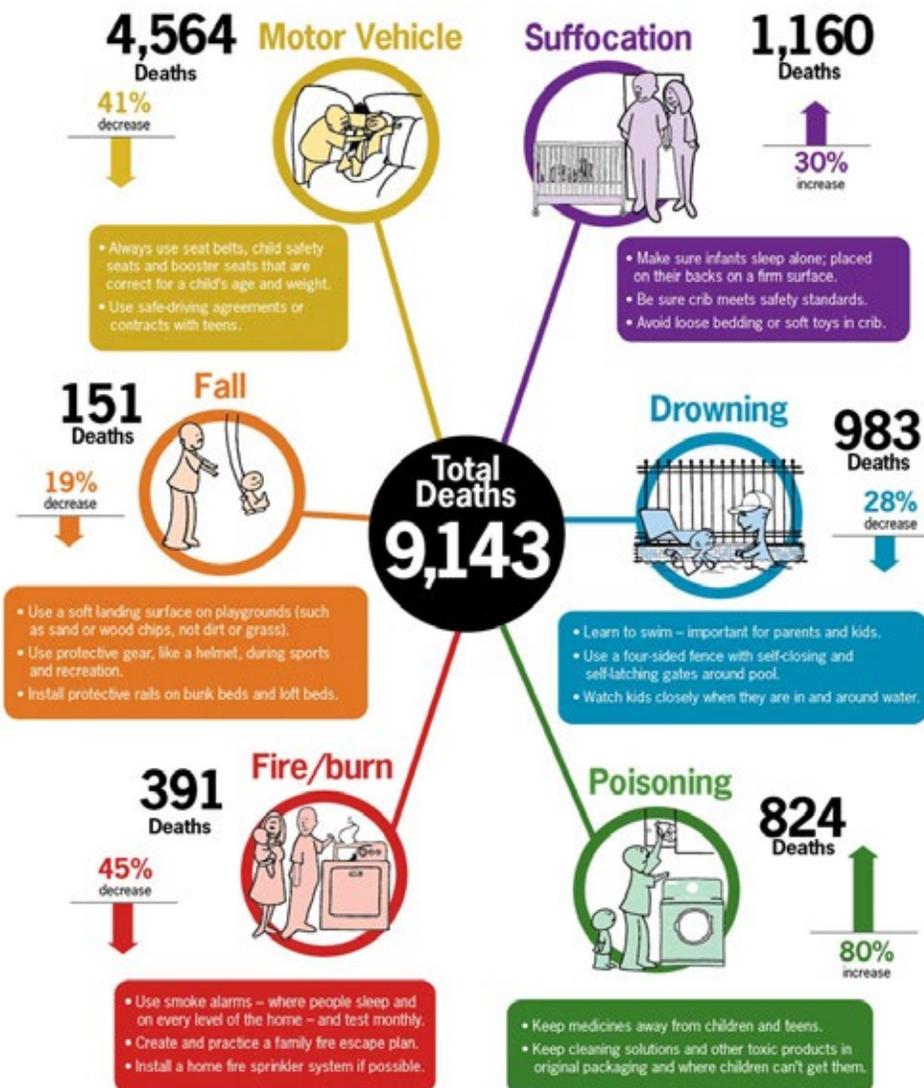
**Many** more treated in doctors' offices



In 2005, injuries that resulted in death, hospitalization or an ER visit cost nearly \$11.5 billion in medical expenses.

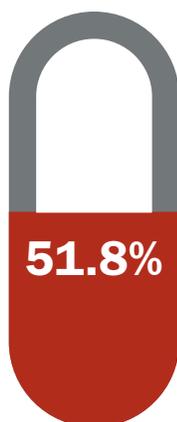
SOURCES: Web-based Injury Statistics Query and Reporting System (WISQARS), CDC, 2009.  
National Health Interview Survey, 2009 data release, CDC, National Center for Health Statistics.

## Causes of child injury and prevention tips



Percentages show changes in death rates from 2000 to 2009. Deaths are from 2009. Total deaths include 1,070 from other causes.

PERCENTAGE OF  
DRUG OVERDOSE  
DEATHS INVOLVING  
PRESCRIPTION DRUGS

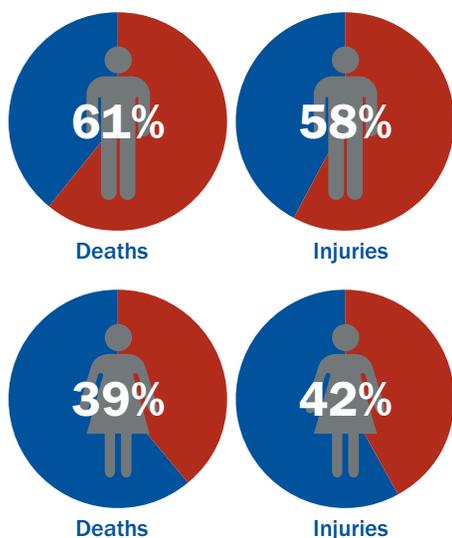


51.8%



Annually One in  
Three Adults 65 and  
Older Will Experience  
a Major Fall

Percentage of Fire-related Deaths and  
Injuries by Gender



## SOME KEY INJURY CONCERNS

- Drug overdoses** are now the leading cause of injury death in the United States, resulting in nearly 44,000 deaths in 2013.<sup>11</sup> More than half of these deaths (51.8 percent) were related to prescription drugs, with more than 16,000 deaths related to prescription painkillers, and nearly 7,000 related to anxiety and sleep medications. Overdose deaths more than doubled from 1999 to 2013.
- Car and other vehicle crashes** are the leading cause of death for Americans ages 5 to 34.<sup>12</sup> Motor vehicle deaths have decreased by 25 percent in the past decade, but more than 33,000 Americans still die each year from motor vehicle crashes.<sup>13, 14</sup>
  - There has been little change in suicide rates over the last 20 years. There was a decrease from 1993 to 2000, from (12.1 per 100,000 in 1993 to 10.4 per 100,000 in 2000), but since then, rates increased to 12.6 per 100,000 people in 2013). Rates increased the most among 45- to 54-year-olds (36.8 percent increase between 1993 to 2013). Suicide deaths are nearly four times higher among males than females, and rates are more than twice as high among Whites and American Indians/Alaskan Natives than Blacks and Latinos.<sup>15</sup>
- Suicides** accounts for around 41,000 deaths each year.
- Fires** kill nearly eight Americans each day, with about 3,000 deaths, 17,000 injuries, 380,000 houses damaged and \$11.7 billion in economic losses each year.<sup>20, 21</sup> The numbers of fires — and fire-related deaths have decreased by around 20 percent since 2002, due to fire-prevention measures such as smoke and carbon monoxide detectors and sprinklers.
- Suffocation** is the leading cause of injury death for children under 1 year old; drowning is the leading cause of injury death for children ages 1 to 4; and falls are the leading nonfatal injury for children and teens under 15.<sup>22</sup>
- Traumatic-injury consequences** are broad and long-term. For example, some adverse childhood experiences (ACEs) — including physical and sexual abuse — contribute to an increased risk for the 25 leading causes of death (e.g. heart disease, cancer and diabetes) and other health problems.<sup>23, 24</sup>
- Homicide** rates have dropped by 42 percent in the past 20 years, but there are still around 16,000 homicides each year.<sup>16</sup>
  - Rates are dramatically different by race — the rates among Black male youth (ages 10 to 24) are nearly 10 times higher than for the overall U.S. population (49.4 per 100,000 people compared to 5.2 per 100,000 for the overall population in 2013).<sup>17</sup>
- Falls** are the leading cause of injury death in adults ages 65 and older, and one in three Americans ages 65 and older experiences a major fall annually.<sup>18</sup> The number of fall injuries and deaths are expected to increase as the Baby Boomer cohort ages; the number of seniors 65 and older will increase from 40 million to more than 88 million in 2050.<sup>19</sup>
- Traumatic-injury consequences** are broad and long-term. For example, some adverse childhood experiences (ACEs) — including physical and sexual abuse — contribute to an increased risk for the 25 leading causes of death (e.g. heart disease, cancer and diabetes) and other health problems.<sup>23, 24</sup>

## INJURY PREVENTION SUCCESS STORIES

While all individuals are responsible for taking steps to stay safe and protect their families, a significant body of research has shown that public health plays a major role in reducing injuries. From child safety seats to poison control centers, many public health strategies have contributed to reducing injuries and saving lives each year. For example:

- **Seat belts** save around 12,000 lives a year;<sup>25</sup>
- **Motorcycle helmets** save around 1,600 lives a year;
- **Child safety seats, booster seats and seat belts** save around 12,200 children's lives a year;
- **Sobriety checkpoints** have helped cut alcohol-related crashes and deaths by around 9 percent;<sup>26</sup>
- **Falls among seniors** have been reduced by as many as half for participants in fall prevention programs using proven strategies including exercise;<sup>27</sup> and
- **School-based violence prevention programs** have cut violent behavior by 15 percent for all school years — and by 29 percent for high school students.<sup>28</sup>

### Annual Lifetime Costs of Injuries, by Cause (2010)

Type of Injury	Lifetime Costs of Injury		
	Medical Costs	Productivity Losses	Total Costs
All Injuries	\$2,097,985,000	\$187,439,634,000	\$189,537,619,000
Poisoning	\$210,373,000	\$53,438,280,000	\$53,648,653,000
Firearm	\$186,585,000	\$41,054,437,000	\$41,241,022,000
Motor vehicle-Traffic	\$374,396,000	\$40,633,595,000	\$41,007,991,000
Falls	\$626,096,000	\$7,713,429,000	\$8,339,525,000
Drowning/Submersion	\$29,421,000	\$5,561,897,000	\$5,591,318,000
Cut/Pierce	\$25,085,000	\$3,450,617,000	\$3,475,702,000
Fire/Burn	\$43,793,000	\$2,554,659,000	\$2,598,452,000
Struck by or against	\$12,886,000	\$927,112,000	\$939,998,000
Others*	\$589,350,000	\$32,105,608,000	\$32,694,958,000

Others\* include: suffocation, unspecified, other specified, other transport categories, other NEC, machinery, natural/environmental, and overexertion.

NOTE: Injury Deaths, costs are generated using WISQARS-Cost of Injury Reports, All Intents, All Mechanism Levels; Costs Expressed in 2010 U.S. Prices

SOURCE: WISQARS: Cost of Injury Reports, 2010 <http://wisqars.cdc.gov:8080/cost/>



## U.S. INVESTMENT IN INJURY PREVENTION

Historically, U.S. investment in injury prevention has been limited. Injury prevention receives only about 5 percent of CDC's total budget, yet injuries incur the second highest medical costs of all preventable health issues, according to the Institute of Medicine (IOM).<sup>30</sup>

Total spending on injury prevention at CDC remains low — only \$0.28 per capita, with a high of \$1.56 per person in Rhode Island to a low of \$0.10 per person in Missouri. Programmatic funding supports a range of programs, including the Core Violence and Injury Prevention Program (Core VIPP), the Rape Prevention and Education Program, the Injury Control Research Centers and Youth Violence Prevention Centers and the National Violent Death Reporting System. But only 20 states received basic statewide infrastructure funding (\$250,000 grants) to support injury and violence prevention programs from the Core VIPP. Due to limited funding, some of the states with the largest populations, such as California, do not have core funding for injury and violence prevention. Only 13 states receive core funding for injury research.

A greater investment in developing and testing prevention strategies could have a dramatic impact on preventing injuries and reducing the severity of injuries. Public health strategies involve working with experts in other fields — such as transportation, fire, law enforcement, the judicial system, education, social work and human services — to develop and implement effective and practical strategies.

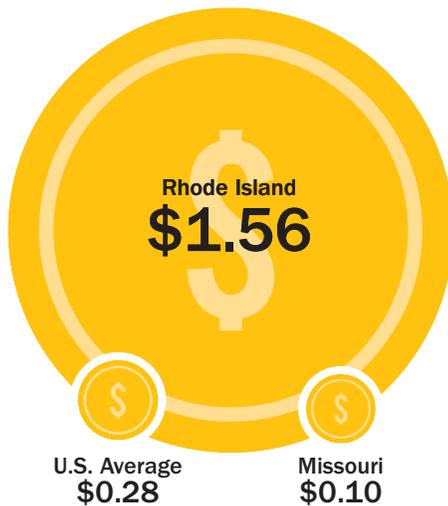
At the federal level, the National Center for Injury Prevention and Control (NCIPC) is the

sole federal agency with a singular focus and responsibility for injury prevention research and practice. In the fiscal year (FY) 2015 federal budget, NCIPC received \$170.4 million.<sup>31</sup> This funding includes research to advance science and the implementation of evidence-based programs at the state and local levels.

NCIPC also provides cooperative agreement grants to states and several U.S. territories to support injury and violence prevention programs and activities. Funding for these programs have grown from a low of \$78.6 million in FY 2013 to a high of \$87.4 million in FY 2015, due to increased attention to the prevention of prescription overdose deaths. The president has proposed an increase to \$256.9 million in his FY 2016 budget, including a \$53.6 million increase for prescription drug abuse prevention.

But experts are concerned about the decrease over time in NCIPC funding for research. Injury Control Research Centers (ICRCs) were created by NCIPC in 1987 to serve as centers for excellence in injury research, and they have a broad mandate to conduct leading-edge research, train injury scholars and practitioners and ensure research is relevant and translated into action at state and local levels. Working with state and local health departments, community partners and other non-governmental organizations, ICRCs research how to improve injury prevention practices, focusing on priority areas such as prescription drug abuse, traumatic brain injuries, motor vehicle crashes and violence against children and youth. However, there are only 10 centers in the country and

### Injury Prevention Spending Per Capita



### National Center for Injury Prevention and Control (NCIPC) Funding

FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013	FY 2014	FY 2015	Proposed President's Budget FY 2016
\$95,135,731	\$97,773,591	\$95,919,713	\$88,684,854	\$137,683,000	\$130,528,000	\$150,477,000	\$170,477,000	\$256,977,000

the annual budgets of these centers have decreased.<sup>32</sup> There are also no centers in the Mountain or Western/Pacific states.

Many states can also use a portion of the funds they receive from CDC's Preventive Health Services Block Grant (funded at \$160 million in FY 2015) and the Maternal and Child Health Block Grant at the Health Resources and Services Administration (HRSA) to support injury prevention activities (funded at \$637 million in FY 2015). The Maternal and Child Health Block Grant support represents a reported 23 percent of injury prevention funding.

But these limited resources provide support for only a small number of officials to focus on injury prevention in states and communities. State-by-state information about federal injury grants is available in Appendix B.

Public health programs are supported through a combination of federal, state and local funds. State and local funding varies dramatically based on the structure of a state's public health department. Some departments are centralized and funded at a state level, while others are

decentralized and funded through a combination of state and local support.<sup>33</sup> States and localities also place different priorities on public health, which also accounts for differences in funding.

The Safe States Alliance is a non-profit organization and professional association with the mission to strengthen the practice of injury and violence prevention. The Alliance conducts a survey of representatives from each state to gather information about their injury and violence prevention programs. Key findings from their 2013 survey include (responses are for 41 states):

- In comparison to previous years, injury prevention activities are becoming more decentralized within state health departments (31 percent reported injury and violence prevention activities were decentralized — compared to 6 percent in 2009 (out of 49 respondents in 2009));
- Staffing for injury and violence prevention programs were still limited. For state IVP programs — 342 full time employees across 41 states. In comparison, the Association of State and Territorial

Health Officers (ASTHO) report an average of 302 vacancies within state public health agencies per state. There are almost as many vacancies per state as there are full time employees working across the United States in all state injury and violence prevention programs;

- 60 percent of states reported budget cuts to injury and violence prevention in 2013;
- The most common topics addressed included: motor vehicle safety, falls, sexual assault/rape, suicide/self-inflicted injury and poisoning/prescription drug overdose;
- An increasing number of state injury and prevention programs reported they have no access to an epidemiologist, statistician or other data professional — 14 percent in 2013 compared to 4 percent in 2009; and
- On average, injury and violence prevention programs maintained partnerships with: 12 other offices within the state health department; eight partnerships with other agencies within the state; 11 partnerships with non-governmental organizations; and five partnerships with federal agencies.

## STATE HEALTH OFFICIALS AND INJURY AND VIOLENCE PREVENTION

State Health Officials play an important role in injury and violence prevention and control. ASTHO issued an ASTHO President's Challenge in 2010 for injury and violence prevention and issued the report, "Spotting Injury and Violence on Your Radar Screen: Creating a Legacy in Public Health — A Guide for State and Territorial Health Officials."<sup>34</sup> The report highlights the importance that state health officials have in informing and leading efforts not only within their own states, but also in developing cross-state

initiatives to prevent injury. Partnerships that state health officials have built with other sectors— such as public safety, healthcare providers, transportation, social services, business and faith-based organizations — are essential for understanding and assessing the scope of the injury prevention issue and for identifying opportunities and barriers. These efforts and partnerships can help identify and build support for policy, regulatory and programmatic strategies for preventing and reducing injuries.

The Safe States Alliance issued a complimentary guide of state health department injury and violence program directors, "Making the Case for Injury and Violence Prevention." The document provides insights, strategies and tips from directors of state injury and violence prevention programs on how garner support from state health officers and other leaders. The overall goal of the publication is to help state directors elevate injury and violence prevention as priorities within their state health.<sup>35</sup>

**SECTION 2:**

State-By-State  
*Injury  
Prevention  
Indicators and  
Scores*

**State-By-State Injury Prevention Indicators and Scores**

Injury death rates vary greatly among the states — the eight states with the highest rates [(1) West Virginia with 97.9 per 100,000 people; (2) New Mexico with 92.7 per 100,000 people; (3) Oklahoma with 88.4 per 100,000 people; (4) Montana with 85.1 per 100,000 people; (5) Wyoming with 84.6 per 100,000 people; (6) Alaska with 83.5 per 100,000 people (7) Kentucky with 81.7 per 100,000 people; (8) Mississippi with 81.0 per 100,000 people] have more than twice as many deaths as the state with

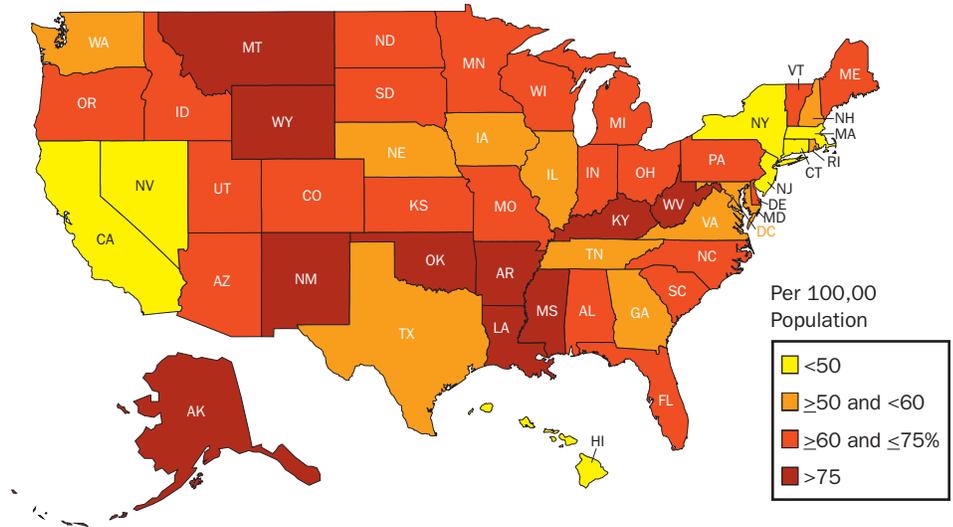
the lowest rate (New York with 40.4 per 100,000 people).<sup>36</sup>

Rates increased significantly in 17 states, remained stable in 24 states and decreased in nine states.

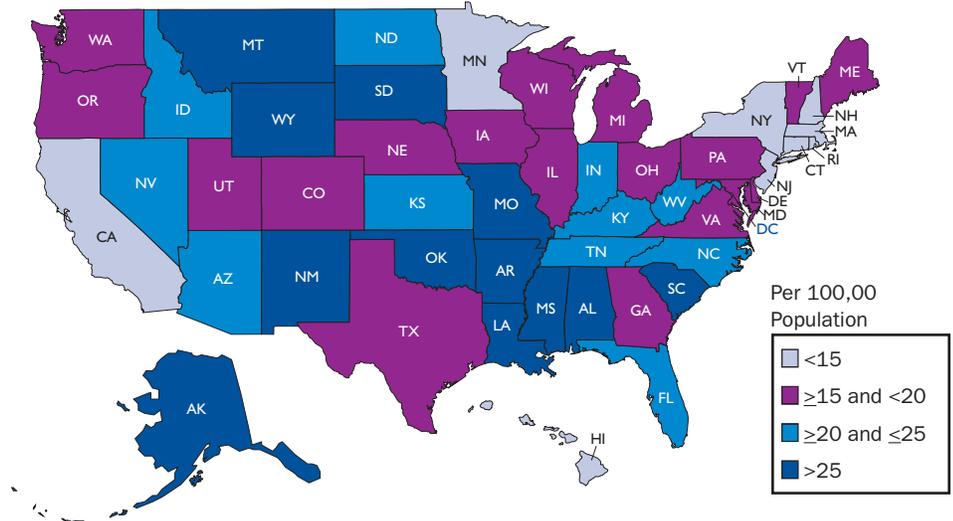
Forty states had rates exceeding the *Healthy People, 2020* national goal of no more than 53.9 injury deaths per 100,000 people.<sup>37</sup>

For childhood injury fatalities, Alaska has the highest rate at 25.3 per 100,000 children, while Massachusetts had the lowest at 7.6 per 100,000 children.

**2011-2013 Injury Fatalities, All Causes, All Ages, Age-Adjusted**



**2011-2013 Injury Fatalities All Causes, Among Children 19 and Under, Crude Rates**



This report focuses on a series of 10 indicators that provide a snapshot of efforts states are taking to prevent and reduce injuries and violence, including laws, policies and programs. The indicators are not a comprehensive evaluation — but taken together, provide information about the strengths and weaknesses of each state’s injury prevention efforts.

The 10 indicators of injury prevention were selected based on:

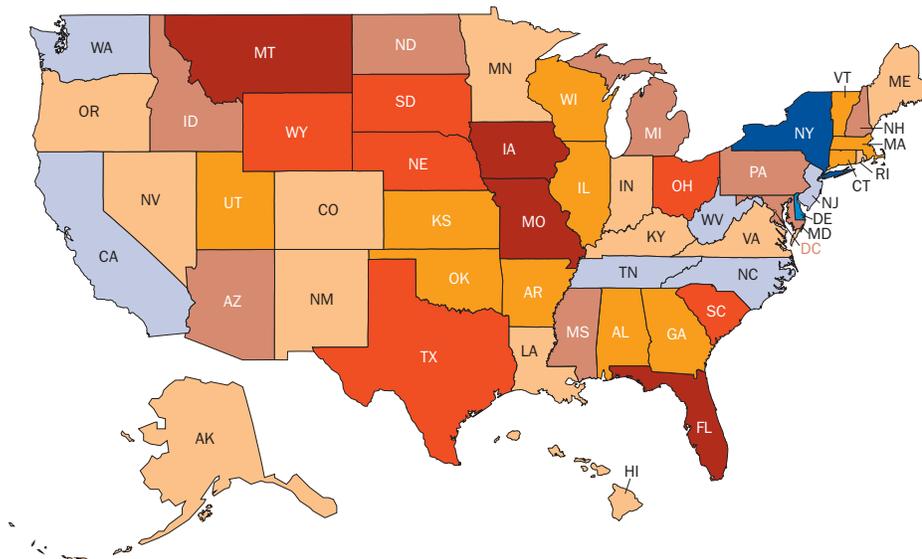
- Consultation with leading experts about key areas of preventable injury;
- Representation of a range of different types of injury;
- Availability of identified interventions that can help reduce rates of these injuries; and
- Availability of data about indicators in most or all states.

Each state and Washington, D.C., receives a score based on the 10 indicators.

States receive one point for achieving an indicator, zero points if they do not. Zero is the lowest possible overall score (none of the policies in place) and 10 is the highest (all of the policies in place). (For more information, please see Appendix A: Data and Methodology for State Indicators).

The scores ranged from a high of nine in New York to a low of 2 in Florida, Iowa, Missouri and Montana.

### Injury Prevention Indicator Map



9 (1 states)	8 (1 states)	7 (6 states)	6 (13 states)	5 (11 states)	4 (8 states & D.C.)	3 (6 states)	2 (4 states)
New York	Delaware	California New Jersey North Carolina Tennessee Washington West Virginia	Alaska Colorado Hawaii Indiana Kentucky Louisiana Maine Minnesota Nevada New Mexico Oregon Rhode Island Virginia	Alabama Arkansas Connecticut Georgia Illinois Kansas Massachusetts Oklahoma Utah Vermont Wisconsin	Arizona D.C. Idaho Maryland Michigan Mississippi New Hampshire North Dakota Pennsylvania	Nebraska Ohio South Carolina South Dakota Texas Wyoming	Florida Iowa Missouri Montana

Data for the 10 indicators were drawn from a number of sources, including CDC; the Governors Highway Safety Association; the National Highway Traffic Safety Administration; the American Academy of Pediatrics (AAP); the Administration for Families and Children; the PDMP Center for Excellence at Brandeis University; the Network for Public Health Law; and the Center for Health Policy Research at the Milken Institute School of Public Health at the George Washington University.

<b>INJURY PREVENTION REPORT CARD: 10 Indicator Key Finding</b>		
<b>Motor Vehicle Injuries</b>	<b>Indicator 1:</b> Does the state have a primary seat belt law?	34 states and D.C. have primary seat belt laws.
<b>Motor Vehicle Injuries</b>	<b>Indicator 2:</b> Does the state require mandatory ignition interlocks for all convicted drunk drivers, even first-time offenders?	21 states require mandatory ignition interlocks for all convicted drunk drivers, even first-time offenders.
<b>Motor Vehicle Injuries</b>	<b>Indicator 3:</b> Does the state require car seats or booster seats for children up to at least the age of 8?	35 states and D.C. require that children ride in car seats or booster seats up to at least the age 8.
<b>Motor Vehicle Injuries</b>	<b>Indicator 4:</b> Does the state restrict teens from nighttime driving after 10 p.m. (Most states have a Graduated Drivers License (GDL) with some time and passenger restrictions, but this indicator requires a 10 p.m. restriction)?	11 states restrict nighttime driving for teens starting at 10 p.m. in their Graduated Driver Licensing laws.
<b>Other Vehicle Injuries</b>	<b>Indicator 5:</b> Does the state require bicycle helmets for all children?	21 states and Washington, D.C. require bicycle helmets for all children.
<b>Violence-Related Deaths</b>	<b>Indicator 6:</b> Does the state have fewer homicides than the national goal established by the U.S. Department of Health and Human Services (HHS)?	31 states have homicide rates at or below the national goal of 5.5 per 100,000 people.
<b>Child abuse and neglect</b>	<b>Indicator 7:</b> Does the state have a child abuse and neglect rate at or below the national rate?	25 states have child abuse and neglect rates at or below the national rate of 9.1 per 1,000 children.
<b>Injuries from Falls</b>	<b>Indicator 8:</b> Does the state have fewer deaths from falls than the national goal established by HHS?	13 states have fewer fall-related deaths than the national goal of 7.2 per 100,000 people.
<b>Injuries from Drug Overdose</b>	<b>Indicator 9:</b> Does the state require mandatory use of data from the prescription drug monitoring program (PDMP) by at least some healthcare providers?	25 states require mandatory use of PDMPs for healthcare providers in at least some circumstances.
<b>Injuries from Drug Overdose</b>	<b>Indicator 10:</b> Does the state have laws in place to expand access to, and use of, naloxone, an overdose rescue drug?	34 states and D.C. have a law making it easier for medical professionals to prescribe and dispense naloxone and/or for lay administrators to use it without the potential for legal ramifications.

## STATE INDICATORS

State	(1) Seat Belts: Have primary seat belt laws <small>Source: Governors Highway Safety Association</small>	(2) Drunk Driving: Mandatory ignition interlocks for all convicted drunk drivers, even first offenders <small>Sources: Governors Highway Safety Association</small>	(3) Booster Seats: Require booster seats up to at least the age of eight—Meet AAP standards <small>Source: Governors Highway Safety Association</small>	(4) Diver Licensing for Teens: Restricts teens from nighttime driving after 10 p.m. <small>Source: Governors Highway Safety Association</small>	(5) Bicycle Helmet Use: Requires bicycle helmets for all children <small>Source: American Academy of Pediatrics</small>	(6) Preventing Homicide: Homicide Rate at or below National Goal of 5.5 per 100,000 people <small>Source: Healthy People 2020</small>	(7) Child Abuse and Neglect: Rates at or Below the National Rate of 9.1 per 1,000 Children (in 2013) <small>Source: Administration of Children, Youth and Families Children's Bureau</small>	(8) Preventing Falls: Deaths from Falls Below National Goal of 7.2 per 100,000 People <small>Source: Healthy People 2020</small>	(9) Prescription Drug Monitoring: State run Prescription Drug Monitoring electronic database <small>Source: PDMP Center for Excellence at Brandeis University</small>	(10) Naloxone Prescribing and Dispensing: State laws to overcome barriers for using naloxone in emergency situations <small>Source: Network for Public Health Law</small>	Total Score
Alabama	✓				✓		✓	✓		5	
Alaska	✓	✓	✓			✓		✓	✓	6	
Arizona		✓	✓				✓	✓		4	
Arkansas	✓	✓					✓	✓	✓	5	
California	✓		✓		✓	✓	✓		✓	7	
Colorado		✓	✓			✓	✓	✓	✓	6	
Connecticut	✓	✓			✓	✓			✓	5	
Delaware	✓	✓	✓	✓	✓		✓	✓	✓	8	
D.C.	✓		✓		✓				✓	4	
Florida	✓				✓					2	
Georgia	✓		✓		✓		✓		✓	5	
Hawaii	✓	✓	✓		✓	✓	✓			6	
Idaho				✓		✓	✓		✓	4	
Illinois	✓	✓	✓					✓	✓	5	
Indiana	✓		✓			✓	✓	✓	✓	6	
Iowa	✓					✓				2	
Kansas	✓	✓	✓			✓	✓			5	
Kentucky	✓		✓			✓		✓	✓	6	
Louisiana	✓	✓			✓		✓	✓		6	
Maine	✓	✓	✓		✓	✓			✓	6	
Maryland	✓		✓		✓				✓	4	
Massachusetts			✓		✓	✓		✓	✓	5	
Michigan	✓		✓	✓					✓	4	
Minnesota	✓		✓			✓	✓	✓	✓	6	
Mississippi	✓	✓						✓	✓	4	
Missouri			✓				✓			2	
Montana						✓	✓			2	
Nebraska		✓				✓	✓			3	
Nevada				✓		✓	✓	✓	✓	6	
New Hampshire		✓			✓	✓	✓			4	
New Jersey	✓		✓		✓	✓	✓	✓	✓	7	
New Mexico	✓	✓	✓		✓			✓	✓	6	
New York	✓	✓	✓	✓	✓	✓	✓	✓	✓	9	
North Carolina	✓		✓	✓	✓		✓	✓	✓	7	
North Dakota				✓		✓		✓	✓	4	
Ohio			✓					✓	✓	3	
Oklahoma	✓		✓	✓				✓	✓	5	
Oregon	✓	✓	✓		✓	✓			✓	6	
Pennsylvania			✓		✓		✓		✓	4	
Rhode Island	✓		✓		✓	✓		✓	✓	6	
South Carolina	✓			✓			✓			3	
South Dakota				✓		✓	✓			3	
Tennessee	✓	✓	✓		✓		✓	✓	✓	7	
Texas	✓		✓			✓				3	
Utah	✓	✓	✓			✓			✓	5	
Vermont			✓			✓	✓	✓	✓	5	
Virginia		✓	✓			✓	✓	✓	✓	6	
Washington	✓	✓	✓			✓	✓	✓	✓	7	
West Virginia	✓		✓	✓	✓	✓		✓	✓	7	
Wisconsin	✓		✓			✓	✓		✓	5	
Wyoming			✓			✓	✓			3	
<b>Total States</b>	<b>34 &amp; D.C.</b>	<b>21</b>	<b>35 &amp; D.C.</b>	<b>11</b>	<b>21 &amp; D.C.</b>	<b>31</b>	<b>25</b>	<b>13</b>	<b>25</b>	<b>34 &amp; D.C.</b>	

## FATAL INJURY RATES 2011-2013 (AGE-ADJUSTED RATES PER 100,000)

State	Injury Rates, Total Intents (All Intents) (95% Confidence Interval*)	Rankings of State by Injury Rate (All Intents)	Fall Rates (Unintentional)	Drug Overdoses (All Intents)	Rankings of State by Drug Overdose (All Intents)	Motor Vehicle Overall (All Intents)	Suicide	Homicide	Children 0-19 (All Intents, not age adjusted)	Child Maltreatment Rates, 2013**
Alabama	73.3 (+/- 1.4)	13	4.1	12.2	36	18.8	14.1	8.6	24.5	7.9
Alaska	83.5 (+/-3.9)	6	5.4	15.3§	17	10.3	21.8	5.1	25.3	13.0
Arizona	73.4 (+/-1.2)	12	11.6	17.8§	10	12.7	17.5	6.1	18.4	8.1
Arkansas	75.3 (+/-1.8)	10	7.0	12.3	35	20.0	16.5	7.7	23.0	14.6
California	44.6 (+/-0.4)**	48	5.7	10.7§	41	8.3	10.2	5.0	11.3	8.2
Colorado	70.7 (+/-1.3)	16	15.1	15.5§	16	9.9	18.5	3.7	16.1	8.2
Connecticut	49.6 (+/-1.3)	46	7.8	13.1§	29	7.4	9.5	3.8	10.6	9.3
Delaware	60.0 (+/-2.8)	32	6.5	17.1§	12	11.9	12.2	6.0	15.3	9.4
D.C.	53.7 (+/-3.2)	41	8.8	13.8§	21	5.9	5.7	12.7	18.7	18.4
Florida	61.3 (+/-0.6)**	29	8.9	13.7§	23	12.4	14.0	6.3	17.7	12.0
Georgia	58.1 (+/-0.9)**	35	7.8	10.7	41	13.0	11.8	6.4	16.1	7.7
Hawaii	48.8 (+/-2.0)	47	7.3	11.4§	39	8.3	12.4	1.7	11.7	4.3
Idaho	69.1 (+/-2.4)	18	12.0	12.7	33	14.4	18.9	2.0	19.7	3.9
Illinois	50.0 (+/- 0.7)	45	6.5	11.8§	38	8.5	9.6	6.4	16.2	9.8
Indiana	63.7 (+/-1.1)*	25	5.9	16.0§	15	12.1	14.0	5.5	19.2	13.7
Iowa	56.4 (+/-1.4)*	38	11.5	8.8	48	11.9	13.7	2.0	15.4	15.7
Kansas	65.0 (+/-1.5)*	22	10.2	11.2	40	13.9	15.2	4.1	18.3	2.8
Kentucky	81.7 (+/-1.5)*	7	6.3	24.6§	2	17.1	15.6	4.8	19.2	19.7
Louisiana	75.2 (+/-1.4)**	11	5.5	14.5§	20	18.4	12.4	12.0	26.8	9.1
Maine	60.1 (+/-2.3)	31	7.6	12.2§	36	11.9	16.2	2.3	15.4	14.6
Maryland	53.4 (+/-1.1)**	42	8.7	13.3§	26	8.8	9.2	7.2	13.7	9.2
Massachusetts	42.9 (+/-0.9)	50	7.4	13.8§	21	5.5	8.4	2.4	7.6	14.6
Michigan	60.6 (+/-0.9)*	30	7.8	14.6§	18	10.3	12.5	7.2	18.9	15.1
Minnesota	54.9 (+/-1.1)*	40	14.4	9.3§	47	8.6	12.2	2.1	12.6	3.3
Mississippi	81.0 (+/-1.9)	8	8.4	10.7	41	23.3	13.4	10.3	25.3	10.1
Missouri	72.4 (+/-1.2)	15	8.9	16.2§	14	13.8	15.3	7.1	23.2	1.3
Montana	85.1 (+/-3.2)	4	11.0	13.6	25	21.5	22.9	3.0	24.2	6.3
Nebraska	52.5 (+/-1.9)	43	8.6	7.2	49	12.2	11.6	3.8	15.5	8.6
Nevada	67.1 (+/-1.8)**	19	6.9	21.6§	4	10.1	18.4	4.9	17.4	8.2
New Hampshire	56.6 (+/-2.2)*	37	12.6	14.6§	18	9.1	13.6	1.5	9.9	3.0
New Jersey	44.0 (+/-0.8)*	49	4.4	13.2§	27	6.9	7.6	4.9	9.7	4.7
New Mexico	92.7 (+/-2.4)**	2	13.4	24.6§	2	16.7	20.7	7.0	21.3	12.9
New York	40.3 (+/-0.5)*	51	6.1	10.4§	44	6.6	8.1	3.8	10.4	15.2
North Carolina	62.1 (+/-0.9)**	26	9.2	13.2§	27	1.3	12.5	5.8	16.5	8.7
North Dakota	59.3 (+/-3.2)	33	7.6	2.6	51	18.8	15.8	2.2	22.6	9.3
Ohio	63.9 (+/-0.8)*	24	8.4	19.2§	8	10.1	12.7	5.7	17.0	10.4
Oklahoma	88.4 (+/-1.7)*	3	12.2	20.0§	6	19.2	17.8	7.1	24.4	12.2
Oregon	61.8 (+/-1.4)	28	13.0	12.4§	34	9.0	17.0	2.7	14.7	12.0
Pennsylvania	64.3 (+/-0.8)*	23	8.7	18.9§	9	10.5	12.9	5.6	16.6	1.2
Rhode Island	58.6 (+/-2.5)*	34	10.8	19.4§	7	6.9	10.2	2.5	9.6	14.6
South Carolina	69.9 (+/-1.4)	17	7.0	12.9§	32	17.6	13.8	7.5	20.5	9.6
South Dakota	67.1 (+/-3.1)*	19	13.2	6.5	50	15.7	16.9	2.7	25.6	4.7
Tennessee	76.7 (+/-1.2)	9	8.9	17.7§	11	15.8	14.8	6.9	20.3	7.0
Texas	55.3 (+/-0.5)**	39	7.4	9.6	45	13.6	11.7	5.0	15.3	9.2
Utah	72.8 (+/-1.9)*	14	9.9	21.5§	5	9.4	20.6	1.9	14.3	10.4
Vermont	66.0 (+/-3.5)	21	16.3	13.0§	31	10.9	16.0	1.6	18.9	6.1
Virginia	52.0 (+/-0.9)	44	7.9	9.6	45	9.6	12.5	4.1	13.0	3.1
Washington	57.1 (+/-1.0)	36	11.2	13.7§	23	7.6	14.2	2.9	13.7	4.5
West Virginia	97.9 (+/-2.6)*	1	10.4	33.5§	1	18.7	16.5	5.3	21.3	12.3
Wisconsin	62.0 (+/-1.1)*	27	15.5	13.1§	29	10.7	13.1	3.1	15.1	3.5
Wyoming	84.6 (+/-4.3)	5	10.1	16.4	13	18.0	24.8	3.6	27.6	5.2
<b>U.S. Total</b>	<b>58.4</b>		<b>8.2</b>	<b>13.4</b>		<b>11.2</b>	<b>12.5</b>	<b>5.3</b>	<b>15.8</b>	<b>9.1</b>

¥ 95% Confidence Interval has been rounded off to one-decimal point. § Indicates that poisoning death rate, all intents, for the state is greater than overall motor vehicle accidents for 2011 to 2013. **NOTE:** Red and \* indicate a statistically significant increase; green and \*\* indicate a statistically significant decrease compared to four years ago (2007-2009 three-year averages). For rankings, 1 = Highest rate of injury. All data 2011-13 averages from CDC's Web-based Injury Statistics Query and Reporting System (WISQARS), except Child Maltreatment rates are 2013 from the Agency for Families and Children. \*\* Nevada's total injury rate is rounded to 67.1 from 67.11. For more on the methodology, please see Appendix A.

## A. VEHICLE-RELATED INJURIES

Research has shown that a number of strategies can greatly reduce the number of injuries caused by crashes involving vehicles, bicycles and pedestrians. Public education can help individuals to understand how to protect themselves and their families, and laws relating to injury also play a crucial role by providing incentives for following safe practices and protecting individuals from harm caused by others, such as drunk drivers or speeders.

This section includes four indicators featuring policies that have made a significant difference in reducing motor vehicle-related injuries in the United States — seat belt laws, mandatory ignition interlocks for convicted drunk drivers, graduated driver licenses for teenagers and child car seat requirements.

Motor vehicle deaths have declined by 25 percent over the past 10 years — but the number of deaths remains high at more than 33,000 per year.<sup>38</sup>

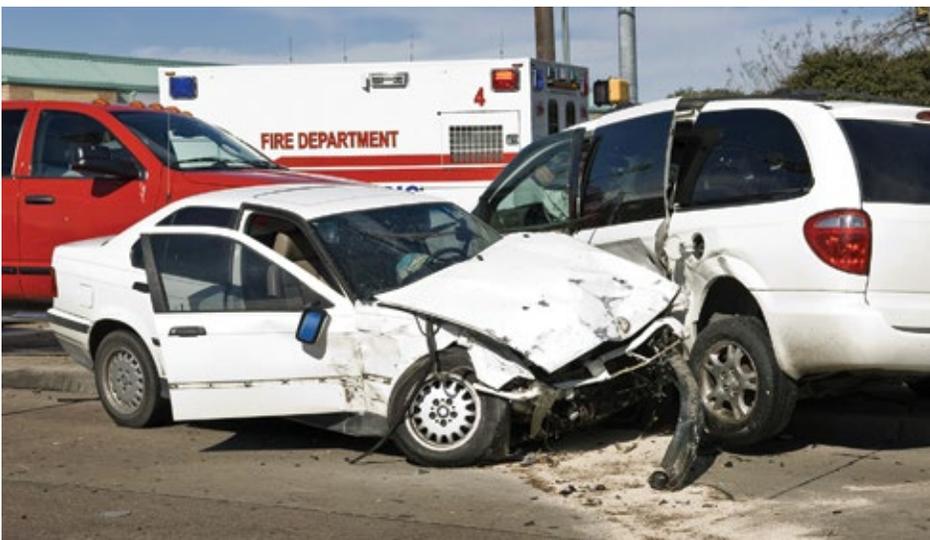
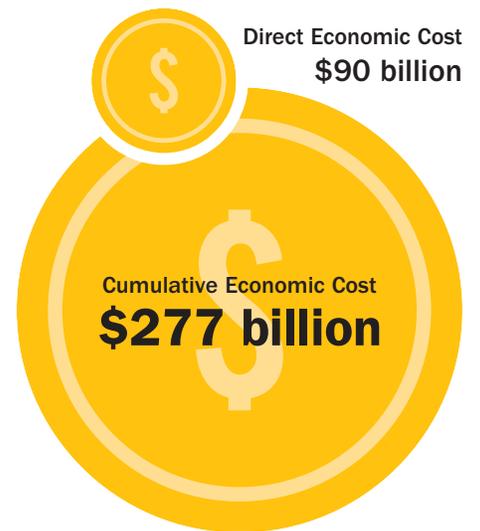
- Men die in motor vehicle crashes nearly three times as often as women, and there are more than double the number of motor vehicle fatalities among American

Indians and Alaska Natives than there are among Whites, Blacks and Latinos.

- About 2.3 million adult drivers and passengers in 2013 were treated in hospital emergency departments after being injured in motor vehicle crashes.
- Motor vehicle crashes result in about \$90 billion in direct medical costs and lost productivity annually.<sup>39</sup> If additional factors are considered, including legal and court, emergency medical service (EMS), insurance administration, congestion, property damage and workplace loss costs, along with direct medical spending and lost productivity, the economic costs are \$277 billion.<sup>40</sup>
- Motor vehicle deaths have historically declined during recession periods, as they did from 2006 to 2010, since people drive less, according to an analysis by the National Safety Council.<sup>41</sup>

In addition, this section examines distracted driving, speeding and motorcycle injury prevention policies as well as bicycle and other non-motorized vehicle and pedestrian safety — including the effectiveness of bicycle helmets and Complete Streets initiatives.

### Economic Cost of Vehicle Crashes



## INDICATOR 1: SEAT BELTS

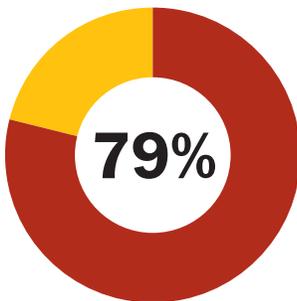
**FINDING:** 34 states and Washington, D.C. have primary seat belt laws.

34 states and D.C. have primary seat belt laws. (1 point)			16 states do NOT have primary seat belt laws. (0 points)	
Alabama	Iowa	North Carolina	Arizona	New Hampshire*
Alaska	Kansas	Oklahoma	Colorado	North Dakota
Arkansas	Kentucky	Oregon	Idaho	Ohio
California	Louisiana	Rhode Island	Massachusetts	Pennsylvania
Connecticut	Maine	South Carolina	Missouri	South Dakota
Delaware	Maryland	Tennessee	Montana	Vermont
D.C.	Michigan	Texas	Nebraska	Virginia
Florida	Minnesota	Utah	Nevada	Wyoming
Georgia	Mississippi	Washington		
Hawaii	New Jersey	West Virginia		
Illinois	New Mexico	Wisconsin		
Indiana	New York			

Source: Governors Highway Safety Association.<sup>42</sup> Puerto Rico (\$50 fine), Guam (\$100 fine) and the U.S. Virgin Islands (\$25 to \$250 fine) have a primary seat belt use law.

\*New Hampshire is the only state without mandatory primary or secondary seat belt laws.

### Mortality Rate of People Who are Ejected From a Vehicle During a Crash



Seat belt use is the most effective way to reduce the severity of injuries in motor vehicle crashes.<sup>43</sup> According to the National Highway Traffic Safety Administration (NHTSA), seat belts reduce the risk of fatal injury to front seat passengers by 45 percent and the risk of moderate-to-critical injury by 50 percent.<sup>44</sup>

Nearly half of drivers and passengers killed in motor vehicle crashes were not wearing seat belts.<sup>45</sup> In addition, people not wearing a seat belt are 30 times more likely to be thrown from a vehicle during a crash, and more than 79 percent of those who are ejected during a crash die from their injuries.<sup>46</sup> According to NHTSA, air bags provide added protection but are not a substitute for seat belts since proper seat belt use is essential for air bags to work as intended.

Since the 1960s, state governments and the federal government have enacted a series of laws that require manufacturers to include seat belts in their vehicles and drivers and passengers to wear belts.

Thirty years ago, only around 10 percent of Americans used seat belts. But laws, education and technology have helped increase usage to nearly 85 percent. Seat belts saved an estimated more than 300,000 lives between 1975 and 2012.<sup>47</sup> Researchers estimate that in 2012 alone, seat belts saved almost 12,000 lives.

Currently, however, an estimated one in seven adults still do not wear a seat belt on every trip.<sup>48</sup> Studies have found that:<sup>49</sup>

- People between the ages of 18 to 24, who are a group at high risk of injury, are less likely to wear seat belts than those 35 or older;
- Men are 10 percent less likely to wear seat belts than women; and
- Adults who live in rural areas use seat belts 78 percent of the time while those in urban and suburban areas use them 87 percent of the time.

According to NHTSA, if all drivers and passengers wore seat belts, nearly 3,000 additional lives could be saved annually.<sup>50</sup>

## PRIMARY SEAT BELT LAWS AND REDUCING MOTOR VEHICLE CRASHES

The Guide to Community Preventive Services, which conducts reviews of all evidence-based prevention research, has found that laws help increase safety belt use and reduce fatal and non-fatal injuries and, therefore, recommends primary over secondary belt laws as a strategy to reduce injury and death.<sup>51</sup>

“Primary” seat belt laws allow law enforcement officers to stop drivers and issue tickets because someone is not wearing a seat belt, without any other traffic offense taking place. Thirty-four states, Washington, D.C., Puerto Rico, Guam and the U.S. Virgin Islands have adopted primary seat belt laws, although these laws can vary by the age of the driver, whether passengers are riding in the front or back seats, and the amount of the fines.<sup>52</sup> Two states, Utah and West Virginia, have been added to the list of states adopting primary seat belt laws since 2012. Only 16 of the 34 states, Washington, D.C., Puerto Rico and Guam have primary laws that cover all passengers of all ages.

Seventeen states, Washington, D.C., Puerto Rico and Guam levy fines of more than \$30 (or more than \$30 in fines plus court fees) for adult seat belt violations. The states are

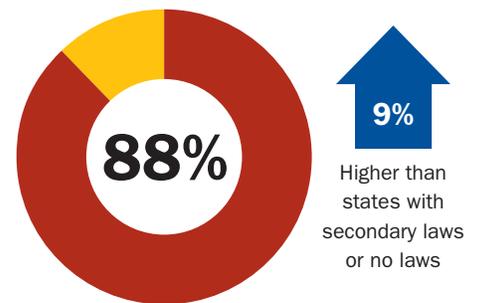
California, Connecticut, Florida, Hawaii, Iowa, Kansas, Maine, Maryland, Minnesota, New Jersey, New York, North Carolina, Oregon, Rhode Island, Tennessee, Texas and Washington. An NHTSA analysis found that raising the fine for not wearing a seat belt from \$25 to \$100 can increase belt use by more than 10 percent and that boosting the fine from \$25 to \$60 can increase use by 3 percent to 4 percent.

Fifteen of the 16 states without primary laws have adopted “secondary” seat belt laws, which allow law enforcement officers to give a seat belt ticket only when there is another traffic offense. New Hampshire is the only state not to have a mandatory seat belt law for adults; it does have a law that requires all drivers and passengers under the age of 18 to wear seat belts.

In states with primary enforcement laws, 88 percent of people use seat belts — 9 percent higher than states with secondary laws or no laws.<sup>53</sup> Studies found that an estimated 7.3 million additional people would regularly use seat belts if states with secondary laws had the same rate of seat belt use as states with primary laws.

“Primary” seat belt laws allow law enforcement officers to stop drivers and issue tickets because someone is not wearing a seat belt, without any other traffic offense taking place.

Percent of People That Use Seat Belts in States With Primary Enforcement Laws



## RECOMMENDATIONS:

According to a study conducted by NHTSA, “primary laws, fines and enforcement are important factors in determining seat belt use, and none of these factors likely has maximum potential without the benefit of at least some paid media to support it.”<sup>54</sup>

TFAH and the report’s advisory committee recommend that:

- All states should have primary seat belt laws covering all ages, and the laws should apply to everyone in the car, not just those in the front seat;
- States should conduct high-visibility enforcement efforts for primary seat belt laws. To maximize the laws’ effectiveness, public education campaigns must be conducted so the public understands that seat belts are important and that the law will be enforced;
- States should use evidence-based research to determine the level of fines for lack of seat belt use; and
- States should promote safety culture, such as through “Towards Zero Deaths” and “Click It or Ticket” campaigns to raise awareness and public support.

## INDICATOR 2: DRIVING UNDER THE INFLUENCE

**FINDING: 21 states require mandatory ignition interlocks for all convicted drunk drivers, even first-time offenders.**

21 states require mandatory ignition interlocks for all convicted drunk drivers, even first-time offenders. (1 point)		29 states and D.C. do NOT require mandatory ignition interlocks for all convicted drunk drivers, even first-time offenders. (0 points)	
Alaska	Mississippi	Alabama*	Nevada
Arizona	Nebraska	California	New Jersey
Arkansas	New Mexico	D.C.	North Carolina
Colorado	New Hampshire	Florida	North Dakota
Connecticut	New York	Georgia	Ohio
Delaware	Oregon	Idaho	Oklahoma
Hawaii	Tennessee	Indiana	Pennsylvania
Illinois	Utah	Iowa	Rhode Island
Kansas	Virginia	Kentucky	South Carolina
Louisiana	Washington	Maryland	South Dakota
Maine		Massachusetts	Texas
		Michigan	Vermont
		Minnesota	West Virginia
		Missouri	Wisconsin
		Montana	Wyoming

Sources: Governors Highway Safety Association,<sup>55</sup> National Conference of State Legislatures.<sup>56</sup> [Note: Guam has discretionary interlocks; no information was provided for Puerto Rico]. \* Law for .15 BAL.

About one in three (31 percent) motor-vehicle fatalities are due to alcohol-impaired drivers. In 2013, more than 10,000 Americans died in alcohol-related crashes.<sup>57</sup>

From 2012 to 2013, 31 states had decreases in alcohol-impaired driving deaths, while 17 states, Washington, D.C. and Puerto Rico experienced increases, and two states had no change. Ohio had the largest decrease (118 fewer fatalities), while Texas had the biggest increase (47 more fatalities). Nationally, alcohol-impaired fatalities decreased by 2.5 percent from 2012 to 2013. Setting the federal minimum legal drinking age at 21 has been credited as one of the most effective interventions to reduce motor vehicle crash deaths for young people.

According to research from the Pacific Institute for Research and Evaluation, drunk driving cost the United States \$132 billion in 2009, including \$61 billion in financial costs and \$71 billion in quality-of-life losses. Federal, state and local governments paid almost \$8 billion of this, while employers paid almost \$11 billion.<sup>58</sup>

A CDC study found that U.S. adults drove under the influence about 112

million times in 2010, which was a 30-percent drop from 2006 rates.<sup>59</sup> In addition, the study found that:

- Men were responsible for more than 80 percent of alcohol-impaired driving;
- Men between the ages of 21 and 34 make up only 11 percent of the adult population, but they are responsible for almost a third of all drinking and driving; and
- About 85 percent of drinking and driving episodes are reported by people who also report binge drinking.

Nationally, there are about 1.4 million drunk-driving arrests each year. About one million of those arrested are convicted.<sup>60</sup> A study by NHTSA found that, on average, about one in every 88 individuals who is driving drunk is arrested.<sup>61</sup> All 50 states and Washington, D.C., currently have laws that make it illegal to operate a motor vehicle at or above a .08 percent blood-alcohol content (BAC) level.<sup>62</sup>

There are many national, state and local public education and designated-driver campaigns to help educate people about the dangers of drinking and

driving. Many states have passed laws to limit happy hours and other practices that encourage excessive alcohol consumption. They have also taken measures to penalize bars, restaurants and stores that sell alcohol to underage drinkers or to individuals who serve alcohol to underage drinkers.

In addition, many states use sobriety checkpoints, give breath tests to suspected drunk drivers, perform BAC tests for drivers in serious crashes and suspend or revoke licenses or require counseling or jail time for drunk driving. A number of states also conduct “saturation patrols,” which are concentrated enforcement efforts that target impaired drivers by observing moving violations such as reckless driving, speeding, aggressive driving and others. And some states conduct “roving patrols,” which target

impaired drivers by observing moving violations such as reckless driving, speeding and aggressive driving.

However, a number of states have outlawed checkpoints, including Idaho, Iowa, Michigan, Minnesota, Oregon, Rhode Island, Texas, Washington, Wisconsin and Wyoming.<sup>63</sup>

CDC has recommended that health professionals should routinely screen patients for risky drinking behaviors and provide a 10- to 15-minute counseling session for patients who screen positive. In addition, CDC has developed a set of recommendations for ways employers can help reduce drinking and driving among employees. These include providing education campaigns to employees and their families, and rescinding work-related driving privileges for employees arrested for DUI.<sup>64</sup>

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## IGNITION INTERLOCKS AND REDUCING DRUNK-DRIVING INJURIES

Twenty-four percent of alcohol-impaired drivers in fatal crashes in 2013 had their licenses suspended or revoked within the previous three years for alcohol- and non-alcohol-related offenses.<sup>65</sup>

Ignition interlocks have emerged as one of the best evidence-based strategies that experts have identified to reduce drunk driving. The Guide to Community Preventive Services recommends the use of ignition interlocks for people convicted of alcohol-impaired driving on the basis of strong evidence that the devices reduce re-arrest rates.<sup>66</sup>

Ignition interlocks work by preventing people from driving while under the influence. Before starting a vehicle, a driver must breathe into the device; if that person’s BAC is above the limit programmed into the interlock, the

device prevents the vehicle from starting. Researchers have found that without the use of interlocks, an estimated 50 to 75 percent of convicted drunk drivers continue to drive, even after having their licenses revoked or suspended.<sup>67</sup>

CDC’s Community Guide Branch reviewed 15 scientific studies on ignition interlocks and found that when these devices were installed, re-arrest rates for alcohol-impaired driving decreased, with reductions ranging from 50 to 90 percent.<sup>68,69</sup> In 2006, more than 100,000 ignition interlocks were installed nationwide on the vehicles of convicted drunk drivers. By the middle of 2013, the number had risen to nearly 300,000.<sup>70</sup>

This report uses mandatory, first-time-offender interlock laws as an indicator. Every state and Washington, D.C., has

some form of ignition interlock law, but only 21 states and four California counties have laws that apply to first-time offenders. This is an increase of five states from 2012: Delaware, Maine, Mississippi, New Hampshire and Tennessee.<sup>71</sup>

In addition, 11 states and Washington, D.C., give judges discretion over which offenders must use interlocks. Four states have made interlocks mandatory for those convicted of drunk driving with a particularly high BAC level, and eight states have made interlocks mandatory for those with repeat convictions.

New ignition interlock technology is being developed that allows vehicles to passively detect a driver’s BAC, such as through a dermal or breath sensor. The vehicle would not start if the driver is at an unsafe level.<sup>72</sup>

## RECOMMENDATIONS:

TFAH and the report's advisory committee recommend that every state require ignition interlocks for every convicted drunk driver, including first-time offenders, and that states take the following evidence-based measures:

- Enforce the .08 BAC level and minimum legal drinking-age laws;
- Expand the use of sobriety checkpoints, which can reduce impaired driving deaths by one-fifth, and targeted saturation patrols which can cover a wider area than a checkpoint;
- Promptly take away the driver's licenses of people who drive while intoxicated;
- Require ignition interlocks for everyone convicted of drinking and driving, even first-time offenders;
- Make efforts to reduce binge drinking, which is linked to drinking and driving;

- Pass primary enforcement seat belt laws that cover all vehicle occupants;
- Enforce a zero-tolerance law for drivers who have consumed alcohol who are under the legal drinking age of 21;
- Keep the federal minimum legal drinking age at 21 in place; and
- Require BAC testing when traffic crashes result in injury.

### Additional recommendations include:

- Invest in the research, development and evaluation needed to bring alcohol-sensing technology to the market; and
- Expand the use of DWI Courts, which use a model of accountability and long-term treatment and have been found to reduce recidivism. According to a Michigan study of three DWI Courts, offenders were 19 times less likely to be re-arrested than a DWI offender in a traditional court.<sup>73</sup>

## INTERLOCKS IN ACTION: NEW MEXICO

A decade ago, New Mexico had one of the highest rates of drunk-driving fatalities in the country.<sup>74</sup> In 2005, the state passed a law making interlocks mandatory for anyone convicted of drunk driving, including first-time offenders.<sup>75</sup> Alcohol-related crashes have dropped by 31 percent, alcohol-related injuries have dropped by 41 percent, and alcohol-related deaths have been reduced by 36 percent. In addition, convicted drunk drivers are 65 percent less likely to drink and drive again.



### INDICATOR 3: CHILD CAR SEATS AND BOOSTER SEATS

**FINDING:** 35 states and D.C. require that children must ride in a car seat or booster seat to at least the age of 8, meeting the standard set by the National Highway Traffic Safety Administration and the American Academy of Pediatrics.

35 states and D.C. require car seat or booster seat use to at least the age of 8, the standard set by the National Highway Traffic Safety Administration and the American Academy of Pediatrics. (1 point)			15 states do NOT require car seat or booster seat use to at least the age of 8. (0 points)	
Alaska	Maine	Oregon	Alabama	Montana
Arizona	Maryland	Pennsylvania	Arkansas	Nebraska
California	Massachusetts	Rhode Island	Connecticut	Nevada
Colorado	Michigan	Tennessee	Florida	New Hampshire
Delaware	Minnesota	Texas	Idaho	North Dakota
D.C.	Missouri	Utah	Iowa	South Carolina
Georgia	New Jersey	Vermont	Louisiana	South Dakota
Hawaii	New Mexico	Virginia	Mississippi	
Illinois	New York	Washington		
Indiana	North Carolina	West Virginia		
Kansas	Ohio*	Wisconsin		
Kentucky	Oklahoma	Wyoming		

Source: Governors Highway Safety Association.<sup>76</sup>  
NOTE: Fifteen states require the use of a booster seat until the age of 6: Alabama, Arkansas, Connecticut, Idaho, Iowa, Louisiana, Mississippi, Montana, Nebraska, Nevada, New Hampshire, New Mexico, North Dakota, Oklahoma and South Carolina.

\* Ohio notes that its booster seat law is not a primary law. As a result, there are gaps in enforcement ability and an exemption for child-care provider agencies.  
Guam and Puerto Rico require booster seat use until age 8 or higher; the U.S. Virgin Islands requires use until the age of 5.

**AGE 3**  
John's family minivan is hit head-on. State **child passenger restraint laws** had motivated his parents to buckle him in a car seat, so he is protected from harm.

Dollar amounts reflect lifetime medical costs for crash injuries that occurred in 2012

Children ages 0-14:  
**\$1.1 Billion**

Source: CDC

Seat belts work by absorbing the energy caused by a rapid deceleration in a crash, reducing the risk of ejection from a vehicle and spreading the forces from a crash over hard bones rather than softer internal organs. But they only work well if they fit properly.

Seat belts are not built to fit the small sizes of growing children. Engineers developed child safety seats and booster seats to better protect children during crashes. Child occupant seats provide a protective structure with internal harnesses that can

be adjusted to fit small children, typically children ages 0 to 4, as children grow booster seats help position children so that seat belts will fit them properly.

Experts have found that child safety seats and booster seats are effective ways to reduce the number of children hurt in car crashes. From 1975 to 2008, an estimated 8,959 lives were saved by child safety seats, booster seats and/or seat belts.<sup>77</sup> Motor vehicle deaths among children (ages 12 and under) decreased by 43 percent in the past decade.<sup>78</sup>

However, motor vehicle crashes are still a significant cause of death for children ages 0 to 3, and the second leading cause of death for children ages 4 to 14.<sup>79</sup>

More than 650 motor vehicle occupants aged 0 to 12 years died and 148,000 were injured in car crashes in 2011, and one-third of the deaths were among children who were unrestrained — without car seats, boosters or seat belts.

There is strong evidence that child safety seat laws, safety seat distribution and education programs, community-wide education and enforcement campaigns and incentive and education programs

can increase child safety seat use. NHTSA and the American Academy of Pediatrics recommend:<sup>80, 81, 82, 83</sup>

- Car seats for infants and toddlers, typically until a child reaches the age of 4. Car seats should be rear-facing until at least the age of 2. When used correctly, child safety seats can reduce fatal injuries by more than 70 percent for infants and more than 50 percent for toddlers;
- Booster seats typically for children ages 4 to 8, so that a seat belt will fit them properly. Without a booster seat, the seat belt typically will not effectively protect smaller children. Properly

used booster seats can reduce injuries by 59 percent. Car seats or booster seats have also been shown to reduce the risk of death for children ages 2 to 6 by 28 percent compared to using seat belts alone; and

- All children should ride in the back seat of cars until the age of 13.

This indicator found that 35 states and Washington, D.C. require the use of a booster seat until a child has reached the age of 8, or until a child is of the size where a safety belt fits correctly, or the child has reached the height and weight size to outgrow the car seat or booster.



#### REAR-FACING CAR SEAT

**Birth up to Age 2\***  
Buckle children in a rear-facing seat until age 2 or when they reach the upper weight or height limit of that seat.



#### FORWARD-FACING CAR SEAT

**Age 2 up to at least age 5\***  
When children outgrow their rear-facing seat, they should be buckled in a forward-facing car seat until at least age 5 or when they reach the upper weight or height limit of that seat.



#### BOOSTER SEAT

**Age 5 up until seat belts fit properly\***  
Once children outgrow their forward-facing seat, they should be buckled in a booster seat until seat belts fit properly. The recommended height for proper seat belt fit is 57 inches tall.



#### SEAT BELT

**Once seat belts fit properly without a booster seat**  
Children no longer need to use a booster seat once seat belts fit them properly. Seat belts fit properly when the lap belt lays across the upper thighs (not the stomach) and the shoulder belt lays across the chest (not the neck).

**Keep children ages 12 and under in the back seat. Never place a rear-facing car seat in front of an active air bag.**

*\*Recommended age ranges for each seat type vary to account for differences in child growth and height/weight limits of car seats and booster seats. Use the car seat or booster seat owner's manual to check installation and the seat height/weight limits, and proper seat use.*

## RECOMMENDATIONS:

TFAH and the report's advisory committee recommend a comprehensive child passenger safety law be passed in every state that would require:

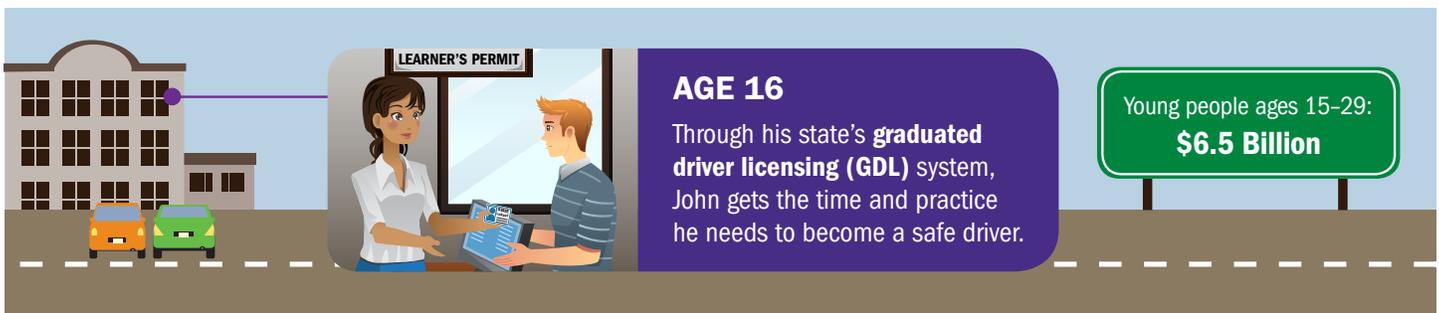
- Age- and size-appropriate car safety seats for most infants and children up to age 4, with car seats rear-facing until at least age 2;
- Belt-positioning booster seats for most children ages 4 to 8;
- Lap and shoulder seat belts for all children who have outgrown booster seats; and
- All children under age 13 to ride in the back seat.

## INDICATOR 4: GRADUATED DRIVER LICENSING FOR TEENS

FINDING: 11 states have Graduated Driver Licensing laws for teens that meet the recommendation to restrict nighttime driving after 10 p.m.

11 states restrict teens from nighttime driving after 10 p.m. (Most states have a Graduated Drivers License with some time and passenger restrictions, but this indicator requires a 10 p.m. restriction).	39 states and D.C. do NOT restrict nighttime driving for teens starting at 10 p.m. in their Graduated Driver Licensing law. (0 points)		
Delaware	Alabama	Kansas**	New Mexico
Idaho (sunset to sunrise)	Alaska	Kentucky	Ohio
Michigan	Arizona	Louisiana	Oregon
New York	Arkansas	Maine	Pennsylvania
Nevada*	California	Maryland	Rhode Island
North Carolina	Colorado	Massachusetts	Tennessee
North Dakota***	Connecticut	Minnesota	Texas
Oklahoma	D.C.	Mississippi	Utah
South Carolina	Florida	Missouri	Vermont
South Dakota	Georgia	Montana	Virginia
West Virginia	Hawaii	Nebraska	Washington
	Illinois	New Hampshire	Wisconsin
	Indiana	New Jersey	Wyoming
	Iowa		

Source: Governors Highway Safety Association.<sup>84</sup> \* Secondary enforcement only. \*\* 9 p.m. restriction only for first six months. Note: The U.S. Virgin Islands does not have a GDL program; no information available for Puerto Rico or Guam. \*\*\* North Dakota has a restriction of 9 p.m. or sunset, whichever is later, with exemptions if driving has to occur for school, work or religious activities.



Source: CDC

Motor vehicle crashes are the leading cause of death for U.S. teenagers — one-third of all teen deaths are from crashes.<sup>85</sup>

Teen deaths from motor vehicle crashes have decreased by 71 percent from 1975 to 2013, but more than 2,500 teens are still killed each year, and 290,000 are treated in emergency rooms for injuries from crashes.<sup>86</sup>

In just the past decade, teen motor vehicle deaths have decreased by more than half (from 5,718 in 2003 to 2,524 in 2013).<sup>87</sup>

The financial impact is also devastating — vehicle injuries and deaths among teenagers cost \$19 billion for males and \$7

billion for females in medical care and lost productivity. Two out of three teenagers killed in crashes are male. Other facts that illustrate increased concerns among teen drivers include that:

- Teen drivers are nearly three times more likely than adult drivers to crash (per mile driven);<sup>88</sup>
- Fifty-four percent of deaths of teenage passengers are in vehicles driven by another teenager;
- Teens have the lowest rate of seat belt use — only 55 percent of high school students report regularly wearing seat belts when driving with someone else;

- Twenty-three percent of teens in fatal motor vehicle crashes were drinking, and 37 percent of male teen drivers were speeding during fatal crashes;
- Compared with driving alone, 16- to 17-year-olds have a 40 percent increased risk of crashing when they have one teenage friend in the car, twice the risk with two passengers, and almost four times the risk with three or more teenage passengers;<sup>89</sup> and
- Nearly a third of deaths in crashes caused by teen drivers are to drivers in other vehicles.<sup>90</sup>

## GRADUATED DRIVER LICENSING

Graduated Driver Licensing systems are proven to be effective in reducing crash and injury rates among teen and new drivers.<sup>91</sup> NHTSA and the American Association of Motor Vehicle Administrators developed a three-stage program involving a learner's permit and an intermediate provisional license before the driver is awarded a full license to help give young and new drivers more time to learn the skills required to operate a vehicle, helping to address some key concerns including that:

- Crash rates are highest during the first year a teen is licensed. The risk of a crash is highest at age 16 to 17, when the crash rate per mile driven is twice as high as it is for 18- and 19-year-old drivers.<sup>92</sup>
- Crashes among teens are high during nighttime hours; 18 percent of teen crash deaths occurred between 6 p.m. and 9 p.m.; 17 percent occurred between

9 p.m. and midnight; and 16 percent occurred between midnight and 3 a.m.

All 50 states and Washington, D.C., have adopted a three-tier system — learner stage, intermediate stage and full privilege stage. All states except New Hampshire and Wyoming require at least a six-month learner's permit.

States that have adopted the most comprehensive graduated licensing programs have seen crash rates drop by about 40 percent among 16-year-old drivers.<sup>93</sup> Restrictions on nighttime driving and teen passengers and increasing licensing ages have also reduced crash rates.<sup>94</sup> Research has found that in states that ban driving at or before midnight, crash deaths for drivers between ages 15 and 17 dropped by 13 percent.<sup>95</sup>

This indicator examines which states met the recommendations by leading injury prevention experts for

Graduated Drivers Licenses to prohibit unsupervised teen driving after 10 p.m. during the entire intermediate stage of their license. While 47 states have night driving restrictions on unsupervised teens, only 11 of these states prohibit all unsupervised teen drivers from driving after 10 p.m. (or earlier) during the entire intermediate stage of their license: Delaware, Idaho, Michigan, Nevada, New York, North Carolina, North Dakota, Oklahoma, South Carolina, South Dakota and West Virginia. Ten other states have set the limit at 11 p.m. for all intermediate drivers: Arkansas, California, Connecticut, Hawaii, Louisiana, Montana, New Jersey, Pennsylvania, Tennessee and Wyoming. As teens move through the stages of the Graduated Licenses, they are given extra privileges, such as driving at night or driving with passengers.

## RECOMMENDATIONS:

CDC, NHTSA and the American Association of Motor Vehicle Administrators recommend a three-stage graduated driver's licensing policy:<sup>96, 97, 98</sup>

1. A learner's permit with a minimum age of 16 and a mandatory holding period of at least six months.

2. A probationary license with no unsupervised night driving from at least 10 p.m. to 5 a.m. This license would also allow a maximum of one teen passenger to accompany the driver without adult supervision. This limit would not include family members.

3. A full license, with a minimum age of 18.

**In addition, NHTSA also recommends:**

- Prohibiting cell phone use, both talking and texting, for teenage drivers;
- Allowing teenage drivers to be stopped and ticketed if they or their passengers are not wearing seat belts; and
- Vigorously enforcing zero-tolerance policies for underage drinking and driving.

## GRADUATED DRIVER LICENSING: SUCCESS STORIES

- Michigan's graduated licensing program reduced overall crash risks for 16-year-old drivers by 29 percent, and reduced the risk of a fatal crash by 44 percent and of a nighttime crash by 59 percent.<sup>99</sup>

- North Carolina's graduated licensing program helped reduce crash rates sharply for all levels of severity among 16-year-old drivers—fatal crashes decreased 57 percent, nighttime crashes decreased

43 percent, and daytime crashes decreased 20 percent.<sup>100</sup>

- Florida's program helped reduce reported drunk driving, as well as riding with drivers who had been drinking.<sup>101</sup>

## DISTRACTED DRIVING — INCLUDING CELL PHONES AND TEXTING

More than nine people are killed and more than 1,100 are injured in crashes involving a distracted driver every day in the United States.<sup>102</sup> In 2012, more than 3,300 Americans died and more than 420,000 were injured in distracted driving crashes.

Experts estimate that in nearly one in five crashes (17 percent) at least one driver is distracted.<sup>103</sup> Drivers who engage in non-driving activities are two-to-three times more likely to experience a near-crash or crash.<sup>104</sup>

Distracted driving can include anything that takes attention away from driving — such as eating, changing the radio and interacting with passengers — but cell phone use and texting have contributed to a major new source of driving distractions in the past 10 to 15 years. NHTSA has described the varieties of distractions: Visual, where the driver looks away from the road; manual, where the driver takes his or her hands off the steering wheel, such as to manipulate a device or eat or drink; and/or cognitive, where the driver is mentally distracted by such activities as talking on the phone or to passengers.

**Cell phone use:** About two-thirds of drivers report using a cell phone while driving, one-third of those report using a cell phone routinely, and about one-eighth of drivers report texting while driving.<sup>105</sup> An estimated 9 percent of drivers are using either a hand-held or hands-free phone while driving during the day, and 5 percent are holding cell phones to their ears while driving.

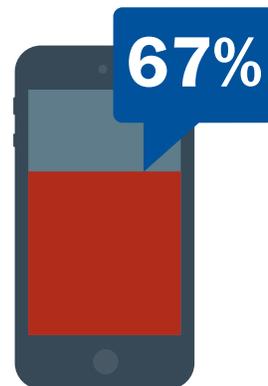
NHTSA estimates that between 2000 and 2009, the number of drivers on the road using cell phones increased from 4 to 9 percent at any typical moment during daylight hours, and that talking on a cell phone doubles or triples the risk of

crashes or near-crashes.<sup>106, 107</sup> An academic review of more than 34 cell phone studies found that talking on a cell phone increases crash risks, even when drivers used hands-free functions.<sup>108</sup>

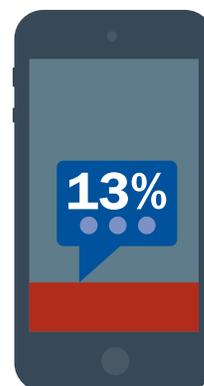
**Texting:** Texting while driving increases the rate of a high-risk driving event by 23 times compared to non-distracted driving.<sup>109</sup> A number of studies have documented an increase in texting while driving, particularly among younger drivers.

- Researchers at the Insurance Institute for Highway Safety (IIHS) surveyed more than 1,200 drivers from around the country. They found that 13 percent of drivers overall reported texting while driving, and 43 percent of drivers between the ages of 18 and 24 reported texting, compared to 2 percent of drivers between the ages of 30 and 59. Twelve percent of drivers in states with texting bans reported texting while driving, compared with 14 percent in states with no ban.<sup>110</sup>
- A survey of nearly 2,000 teen drivers in North Carolina high schools found that 30 percent had texted during their last driving trip. Four percent said they often initiated a text conversation while driving, 11 percent said they often replied to texts and 23 percent said they often read text messages. Among those who texted while driving, 58 percent said they often wait until it feels safe to read and reply to text messages.<sup>111</sup>
- A 2010 survey of 348 Kansas drivers between the ages of 18 and 30 found that only 2 percent said they never texted while driving. Seventy percent said they initiated texts while driving, 81 percent reported replying to texts and 92 percent reported reading texts.<sup>112</sup>

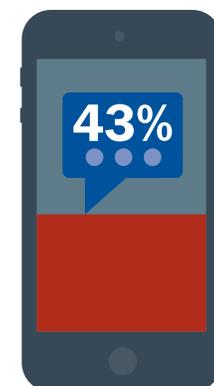
Percent of drivers overall using a cell phone while driving



Percent of Drivers Overall Texting While Driving



Percent of Drivers Ages 18 to 24 Texting While Driving



## Cell and Texting Bans

A number of states have passed laws limiting hand-held cell use and texting.

- Fourteen states, Washington, D.C., Puerto Rico, Guam and the U.S. Virgin Islands have primary laws that currently prohibit all drivers from using hand-held cell phones, an increase from 10 states in 2012. The 14 states are California, Connecticut, Delaware, Hawaii, Illinois, Maryland, Nevada, New Hampshire, New Jersey, New York, Oregon, Vermont, Washington and West Virginia.<sup>113</sup>
- Thirty-eight states and Washington, D.C., ban all cell phone use by novice drivers, and 20 states and Washington, D.C., restrict school bus drivers from all cell phone use.
- Forty-four states, Washington, D.C., Puerto Rico, Guam and the U.S. Virgin Islands ban text messaging for all drivers.

Currently, there is only limited research available to assess the impact of these policies. A 2010 review of cell-phone driving studies found that bans appeared to reduce use. After New York banned hand-held cell phone use in 2001, studies found that use dropped soon after by about 47 percent. Cell phone use subsequently increased, but, in 2008, use was almost a quarter

lower than would have been expected had there been no ban. After Washington, D.C., banned cell phone use in 2004, driver hand-held use dropped by 41 percent. In 2009, use was 43 percent lower than would have been expected without the ban.<sup>114</sup>

A 2010 study of bans by the Highway Loss Data Institute found that texting bans did not necessarily reduce collision claims. In fact, states that enacted texting bans saw a small rise in claims, compared to states without the bans. The researchers offered two possible explanations. Because the bans are hard to enforce, the laws may have no effect on texting rates. Or the bans may encourage drivers to hide their texting, which may make it more distracting because the act of hiding increases the distraction.<sup>115</sup>

In California in 2011, more than 460,000 people were convicted of talking on a hand-held cell phone while driving. California released a study in March 2012 showing that its 2008 ban on cell phones has reduced use and saved lives. The analysis, by researchers at the University of California, Berkeley, examined state crash records two years before and two years after the ban went into effect. After the ban, overall traffic deaths declined 22 percent, while deaths

caused by use of hand-held cell phones dropped by almost half. Researchers found that the ban also reduced injuries, as well as the use of hands-free cell phones.<sup>116</sup>

## Distracted Driving Countermeasures

Researchers, government officials, public health experts and private companies have developed and implemented a range of countermeasures designed to reduce distracted driving and its harmful effects, including:<sup>117</sup>

- Roadway countermeasures, such as rumble strips to alert drivers that they are drifting from their lanes;
- Laws that penalize distracting behavior such as cell phone use, texting and other non-driving activities;
- Public education campaigns to highlight the importance of avoiding distractions while driving;
- Education aimed at new and novice drivers, who are more likely to have trouble handling distractions while driving;
- Technology that blocks or limits cell phone reception when the device is in a moving vehicle; and
- Company policies that discourage employees from multitasking while operating company vehicles.

## RECOMMENDATIONS:

NHTSA has recommended that states ban use of all portable electronic devices while driving. The proposed ban includes hands-free and hand-held cell phones, as well as other devices such as iPods.<sup>118</sup>

In addition, the Governors Highway Safety Association recommends that states should take the following actions to reduce distracted driving:<sup>119</sup>

- Enact cell phone and texting bans for novice drivers;
- Enact texting bans for all drivers;
- Enforce existing cell phone and texting laws;
- Introduce programs that publicize existing cell phone and texting laws and communicate how drivers can avoid distractions;
- Help employers develop and implement distracted driving policies and programs;
- Implement effective distracted driving countermeasures such as edge line and centerline rumble strips on roads;
- Include “distracted driving” as a category in crash reports, to help evaluate distracted driving laws and programs; and
- Monitor the impact of existing hand-held cell phone bans before passing new laws. States that have not already passed hand-held bans should wait until more definitive research and data are available on these laws’ effectiveness.

TFAH and the report’s advisory committee recommend that more research should be conducted on how to encourage drivers to be more attentive, including expeditious research on the effectiveness of cell phone and texting bans, education campaigns and other strategies.

## OLDER DRIVERS

Once drivers reach the age of 65, the risk of being injured or killed in a crash increases. Age-related declines in vision and cognitive functioning, as well as physical changes, may affect the driving ability of some older adults. The aging process also reduces physical resilience to survive injuries in a crash. There were 23.6 million licensed drivers over the age of 70 in 2013,<sup>120</sup> a 30 percent increase from 1997. The number of senior drivers is expected to continue to grow as an increasing share of the Baby Boomer cohort reaches ages 65 and older.

Older drivers have relatively low rates of fatal crash involvement per licensed driver, but disproportionately high rates per vehicle mile traveled, especially after age 75. More than 5,560 older adults were killed in crashes in 2012 and more than 214,000 were injured.<sup>121</sup>

Older drivers are less likely to drink and drive than other drivers. Only 5 percent of older drivers involved in fatal crashes had a high BAC, compared to a quarter of drivers between the ages of 21 and 64. Drivers over 70 are more likely to be in crashes related to a failure to yield or involving multiple cars at an intersection.

## Limits on Older Drivers

Thirty-three states and Washington, D.C., currently have limits for mature drivers, including shorter gaps between renewals, restrictions on online or mailed renewals, required vision and road tests and reduced or waived renewal fees.<sup>122</sup> These states are: Alaska, Arizona, California, Colorado, Connecticut, Florida, Georgia, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Louisiana, Maine, Maryland, Massachusetts, Missouri, Montana, Nebraska, Nevada, New Hampshire, New Mexico, North Carolina, North Dakota, Oklahoma, Oregon, Rhode Island, South Carolina, Tennessee, Texas, Utah and Virginia.

## RECOMMENDATIONS:

TFAH and the report's advisory committee recommend that more research be conducted to study issues related to older drivers. The group recommends that:

- Research needs to be conducted to examine if the laws placing restrictions on older drivers have scientific merit, and to evaluate the quality of life and mental health impact of these restrictions;
- Steps should be taken to provide seniors with alternative, convenient modes of transportation such as expanded public transportation options and "neighbor care" ride programs; and
- Medical care providers should receive

education about older driver issues and talk to their patients about the risks and benefits of continued driving.

NHTSA recommends that states and municipalities make the following changes to reduce risks among older drivers:<sup>123</sup>

- Improve communications to older drivers and encourage them to adjust their driving habits as they age;
- Avoid passage of reactive, unscientific legislation that overly restricts driving privileges of older drivers;
- Further investigate the usefulness of older-driver training programs;

- Increase communication in and between states about older-driver safety;
- Develop and promote evidence-based, older-driver licensing programs and include medical advisory boards in the creation of these programs;
- Create a process by which potentially unsafe older drivers can be assessed by medical advisory boards;
- Train DMV personnel to recognize signs of potential cognitive or physical impairments in older drivers; and
- Train law enforcement personnel to recognize potentially unsafe older drivers and refer them to medical advisory boards.

## THE AMERICAN MEDICAL ASSOCIATION'S OLDER DRIVERS PROJECT

The American Medical Association, in cooperation with NHTSA, has developed a "Physician's Guide to Assessing and Counseling Older Drivers." The guide states: "By providing effective health care, physicians can help their patients

maintain a high level of fitness, enabling them to preserve safe driving skills later in life and protecting them against serious injuries in the event of a crash. By adopting preventive practices—including the assessment and counseling strate-

gies outlined in this guide—physicians can better identify drivers at risk for crashes, help enhance their driving safety and ease the transition to driving retirement if and when it becomes necessary."<sup>124</sup>

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## SPEEDING

Speeding was a factor in nearly a third of all fatal crashes in 2012, killing more than 10,000 people.<sup>125</sup> According to NHTSA, the cost of speed-related crashes is more than \$40 billion annually. Age, gender and alcohol are often related to crashes involving speeding—more than a quarter

of fatal crashes with male drivers involve speeding, compared to 15 percent among female drivers. For fatal crashes among young male drivers (ages 16 to 24), more than 35 percent involve speeding. More than 40 percent of drivers in fatal crashes who had high BACs were also speeding.

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## RECOMMENDATIONS:

The U.S. Department of Transportation (DOT) recommends that states and municipalities take the following steps to reduce the risk of speeding-related crashes and injuries:<sup>126</sup>

- Identify and promote engineering measures to better manage speed, including increasing the use of speed management techniques and technology that can be built into the current highway system;
- Increase public awareness of the dangers of speeding –if people are not aware of or do not understand the risks of speeding, they are less likely to adjust speeds for traffic and weather conditions or to drive within the speed limit;
- Identify and promote effective speed enforcement efforts; and

- Improve cooperation of stakeholders, including traffic court judges, prosecutors, safety organizations, health professionals and policymakers.

TFAH and the report's advisory committee recommend that more research should be conducted into the link between speed and safety and into new technologies to identify and ticket speeding drivers, including systems built into roadways and into vehicles. In addition, community design principles, such as those described in Complete Streets initiatives and health impact assessments, can be used to inform efforts to reduce speed and increase road safety. The physical design of roadways is an essential factor in speed choice and also in reducing crash risk at any given speed.



## SPEED AND RED LIGHT CAMERAS — AUTOMATED ENFORCEMENT

The Governors Highway Safety Association recommends that states use automated enforcement of red-light-running and speeding laws, encouraging that cameras be used appropriately and effectively. It recommends that:

- Cameras should be used at high-crash sites or in situations where traffic law enforcement personnel cannot be deployed safely. There should be a traffic engineering analysis of each site before traffic cameras are installed and citations issued.
- Cameras should not replace traditional law enforcement personnel or be used to mitigate safety problems caused by deficient road design, construction, or maintenance.
- Use of cameras should be preceded by a public information campaign, which should continue throughout the life of the automated enforcement program.

- Cameras should not be used as a revenue generator, and their use should be based only on their value as an automated traffic law enforcement system. Revenues derived should be used solely to fund highway safety functions.<sup>127</sup>

Currently, 12 states, Washington, D.C. and the U.S. Virgin Islands have speed cameras operating in at least one location. Thirteen states prohibit the use of speed cameras.<sup>128</sup>

In addition, 21 states, Washington, D.C. and the U.S. Virgin Islands have laws allowing some form of red-light camera use, and 10 states prohibit their use. Twenty-four states, Washington, D.C. and the U.S. Virgin Islands have red-light cameras operating in at least one location.

## HISTORY OF SPEED LIMITS<sup>129</sup>

Congress passed a law in 1973 that withheld highway funds from states that did not adopt a maximum limit of 55 mph as an energy conservation initiative during a gas shortage crisis. However, the National Research Council also found that the decreased limits reduced driving-related deaths by 4,000 lives in 1974, compared with the previous year.

Fifteen years later, Congress allowed states to increase speed limits on rural interstates to 65 mph. Eight years

after that, it repealed the maximum limit altogether. Since then, every state but Alaska has raised its speed limits in some way. Many states have since raised speed limits significantly.

Studies by the Insurance Institute of Highway Studies show deaths on rural interstates increased by 25 to 30 percent when states began increasing limits in 1987.

A study of the effects of the 1995 repeal found a 15 percent increase in fatalities on interstates and freeways. Another

study found that states that increased limits to 75 mph had 38 percent more deaths per million-vehicle-miles traveled than expected. States that increased limits to 70 mph saw a 35 percent rise.

A 2009 study examining the effects of the 1995 repeal found a 3 percent increase in fatalities due to higher speed limits on all road types. The scientists estimated that between 1995 and 2005, more than 12,000 deaths were caused by the increased speed limits.

## MOTORCYCLE INJURIES

More than 4,600 motorcyclists were killed in 2013, and 88,000 were injured.<sup>130</sup> Per vehicle mile traveled, motorcyclists were about 25 times more likely than passenger car occupants to die in a crash, and five times more likely to be injured.

- About 3 percent of registered motor vehicles are motorcycles, but motorcyclists account for 15 percent of all traffic fatalities.<sup>131</sup>
- In the past decade, motorcycle deaths increased by 33.5 percent and crashes by 38.8 percent, while the number of registered motorcycles rose by 58.5 percent.
- Thirty-four percent of all motorcycle riders involved in fatal crashes in 2012 were speeding, compared to 22 percent of passenger car drivers.

A number of studies have found that helmets decrease the severity of head injuries, number of deaths and the overall cost of medical care.

- NHTSA estimates that motorcycle helmets reduce the likelihood of crash fatalities by 37 percent, and that helmets saved the lives of more than 1,600 motorcyclists in 2013. It estimates that if all motorcyclists had worn helmets, more than 780 additional lives could have been saved.
- Forty-two percent of motorcycle drivers and 52 percent of passengers who died in crashes in 2012 were not wearing helmets.

- A 2009 Cochrane Review of a range of evidence-based studies estimated that helmets were 42 percent effective at preventing death and 69 percent effective at preventing head injuries.<sup>132,133</sup>

In 1967, the federal government required states to enact “universal” motorcycle helmet laws to qualify for certain highway safety funds. These laws required all motorcycle riders to wear helmets. By 1975, 47 states had complied. But the next year, Congress revoked federal authority to penalize states. Since then, many states have weakened their laws. These changes provided a natural laboratory for researchers to examine how different laws affect the use of motorcycle helmets, as well as how rates of helmet use affect motorcycle crash injury rates.

Currently, 19 states, Washington, D.C., Puerto Rico and the U.S. Virgin Islands have universal helmet laws, while 28 states have partial laws, usually requiring riders under the age of 18 to wear helmets. Eighteen states and Guam require riders under the age of 18 to wear helmets: Alaska, Arizona, Colorado, Connecticut, Hawaii, Idaho, Indiana, Kansas, Minnesota, Montana, New Mexico, North Dakota, Ohio, Oklahoma, South Dakota, Utah, Wisconsin and Wyoming. Delaware requires riders under the age of 19 to wear helmets.<sup>134</sup> Eight states require riders under the age of 21 to wear helmets: Arkansas, Florida, Kentucky, Michigan, Pennsylvania, Rhode Island, South Carolina and Texas. Three states — Illinois, Iowa and New Hampshire — do not have any helmet laws.

According to NHTSA, nearly 100 percent of motorcycle riders wore helmets in states with helmet laws, compared to about 50 percent in states without helmet laws or laws applying to only some riders.<sup>135</sup> According to studies in the American Journal of Public Health and Accident Analysis Prevention, motorcycle-related deaths are lowest in states with helmet laws that cover all riders, and lower in states with even partial laws than in states with no helmet laws.<sup>136</sup> States with universal laws also have lower rates of serious injury.

- There were 11 times as many unhelmeted motorcycle fatalities in states without universal helmet laws as in states with universal helmet laws in 2013.<sup>137</sup>
- In states without universal helmet laws, 62 percent of motorcyclists killed were not wearing helmets, compared to 9 percent in states with universal helmet laws.<sup>138</sup>

A number of studies have also shown that helmets can result in healthcare savings. One model found healthcare costs for non-helmeted drivers in motorcycle crashes is \$3,199 more in patient costs compared to helmeted motorcycle riders.<sup>139</sup> According to a review of existing studies on motorcycle crash injuries conducted by the Pacific Institute for Research and Evaluation, the mean finding was that healthcare costs for injuries of unhelmeted motorcyclists were 30 percent higher than helmeted drivers. The review also found that unhelmeted riders were likely to be uninsured, underinsured or publicly insured, and, therefore, the burden of these more expensive cases falls disproportionately on Medicaid and the public.<sup>140</sup>



## EXAMPLES OF EFFECTIVENESS OF MOTORCYCLE HELMET LAWS IN STATES

The experience of individual states also shows how helmet laws can decrease rates of death and injury.<sup>141</sup>

- In 1992, California imposed a universal law. Helmet use jumped from 50 percent to 99 percent, and motorcycle deaths dropped by 37.5 percent.<sup>142</sup>
- In 1989, Nebraska reinstated its universal law. The state had a 22 percent drop in serious head injuries among motorcyclists.
- After Kentucky repealed its universal helmet law in 1998, motorcycle deaths rose by 50 percent. When Louisiana did the same the next year, deaths doubled.
- In Texas, the law has changed several times over the past four decades. From 1968 to 1977, the state had a universal helmet use law. In 1977, when the law was changed to apply only to riders under the age of 18, motorcycle fatalities rose by more than a third. In 1989, the state reinstated a universal law. By the next year, the helmet use rate jumped to 98 percent from 41 percent before the change, and serious injuries decreased by 11 percent. In 1997, the state legislature weakened its helmet law by requiring helmets only for riders below the age of 21. By the next year, helmet use fell to 66 percent and motorcycle deaths rose by nearly a third.

## RECOMMENDATIONS:

The Guide to Community Preventive Services recommends universal motorcycle helmet laws (laws that apply to all motorcycle operators and passengers) based on strong evidence of effectiveness.<sup>143</sup>

TFAH and the report's advisory committee recommend every state adopt a universal motorcycle helmet law and NHTSA should incentivize universal helmet laws via its grant funding program.

These laws require all motorcycle riders and passengers of all ages to wear helmets whenever riding.<sup>144</sup> In addition, ensuring that helmets meet federal standards, encouraging the use of protective clothing and education and training can help reduce motorcycle injuries, along with effective highway engineering and installation of antilock braking systems.

## INDICATOR 5: OTHER VEHICLE INJURIES — DOES THE STATE REQUIRE BICYCLE HELMETS FOR ALL CHILDREN?

**FINDING:** 21 states and Washington, D.C. require bicycle helmets for all children.

21 states and Washington, D.C. require bicycle helmets for all children. (1 point)		29 states do NOT require bicycle helmets for all children. (0 points)	
Alabama	Massachusetts	Alaska	Nebraska
California	New Hampshire	Arizona	Nevada
Connecticut	New Jersey	Arkansas	North Dakota
Delaware	New Mexico	Colorado	Ohio
D.C.	New York	Idaho	Oklahoma
Florida	North Carolina	Illinois	South Carolina
Georgia	Oregon	Indiana	South Dakota
Hawaii	Pennsylvania	Iowa	Texas
Louisiana	Rhode Island	Kansas	Utah
Maine*	Tennessee	Kentucky	Vermont
Maryland	West Virginia	Michigan	Virginia
		Minnesota	Washington**
		Mississippi	Wisconsin
		Missouri	Wyoming
		Montana	

Source: American Academy of Pediatrics<sup>145</sup> \*Maine's law is for children up to age 16. \*\* Washington state notes that while they do not have a state law requiring bicycle helmet use by children, they have cities and counties that have adopted ordinances requiring helmet use by children.

Bicycle crashes lead to about 800 deaths and 515,000 emergency room visits a year, and result in lifetime medical costs and productivity losses of more than \$5 billion.<sup>146</sup>

Bicycle-related deaths have decreased by more than 50 percent since 1999.<sup>147</sup>

Males represent more than 88 percent of the bicyclists killed and nearly 80 percent of those injured. Sixty-nine percent of pedal-cyclist deaths are in urban areas.

About 9 percent of cyclist deaths and 20 percent of injuries are among children ages 15 and younger.<sup>148</sup>

### Bicycle Helmet Use

According to studies, wearing an approved helmet in the proper way provides up to an 88 percent reduction in the risk of head and brain injury for bicyclists of all ages.<sup>149</sup> Helmets are the most effective way to reduce death and head injuries from bike crashes. With the emergence of bike share programs in cities across the nation, there is concern that these programs often do not effectively support helmet use; a 2014 study found that bike-related head injuries have increased in North American cities with bike share programs.<sup>150</sup>

This indicator examines which states have laws that require children to wear bicycle helmets. Twenty-one states,

Washington, D.C. and the U.S. Virgin Islands have these laws. In addition, many local jurisdictions or counties within states have their own laws or requirements. Studies have found that education in combination with laws requiring the use of bicycle helmets — which are mostly focused on children — are effective in increasing helmet use and reducing head injuries.<sup>151, 152, 153, 154</sup>

Eight states require children to wear helmets when riding scooters and skateboards: California, Delaware, Maryland, Massachusetts, New Mexico, New York, Oregon and Rhode Island. Among children under 14, skateboard-related injuries accounted for more than

68,000 emergency department visits and 1,500 hospitalizations in 2009.<sup>155</sup>

A number of states and localities issue fines for violating bicycle helmet requirements. For instance, New Jersey issues a \$25 fine for first offenses and \$100 fines for subsequent offenses if it can be shown that the parent or guardian failed to exercise reasonable supervision or control over the person's conduct. Penalties may be waived if an offender or his/her parent or legal guardian presents suitable proof that an approved helmet was owned at the time of the violation or has been purchased since the violation occurred.

## RECOMMENDATIONS:

TFAH and the report's advisory committee recommend that every state adopt a law requiring bicycle helmet use for all children and teens combined with public education campaigns promoting the benefits of helmet use, and that all laws relevant to bicycle safety should be enforced. In addition, we recommend that adults should also be encouraged to use helmets. States and communities should also:

- Create bicycle paths;
- Incorporate designated bicycle paths that will allow people to travel around the community safely when new communities are being built;

- Consider how to create a safe environment for bicyclists when updating or modifying existing roads; and
- Include and encourage helmet use in bike-share programs and for school districts to require helmet use for riding to schools.

NHTSA has issued a set of recommendations that include a range of public education and policy steps including:<sup>156</sup>

- Creating "Share the Road" public education efforts;
- Including components on safe bicycling and sharing the road in driver education programs;

- Expanding school-based and community-based bicycle safety programs that include increasing access to affordable helmets for both children and adults;
- Creating bicycle helmet safety campaigns at national, state and local levels;
- Encouraging law enforcement agencies to enforce existing bicycle helmet laws;
- Monitoring and evaluating the effectiveness of existing helmet laws; and
- Improving the collection and quality of data on bicycle crashes and injuries.

## COMPLETE STREETS INITIATIVES

Streets without safe places to walk, cross, catch a bus, or bicycle put people at increased risk of injury.

More than 4,700 pedestrians were killed and about 76,000 were injured in traffic crashes in 2012.<sup>157</sup> About 73 percent of these fatalities were in urban settings, 70 percent were during nighttime hours, 70 percent were at non-intersections and 89 percent occurred during normal weather conditions.

Complete Streets are roadways that are designed and operated so users of all ages and abilities — including bicyclists, pedestrians, public transit riders and motorists — can safely travel along and across them.<sup>158</sup> There is a growing trend at both the state and local level of

governments adopting Complete Streets policies in order to promote safety, physical activity and healthy lifestyles and more environmentally friendly transportation use. Complete Streets policies require all new and renovated streets to be designed and built in a manner safe for all users.

A review by the National Conference of State Legislatures identified five state policy options that are most effective at encouraging safe biking and walking:<sup>159</sup>

1. Incorporating sidewalks and bike lanes into community design;
2. Providing funding for biking and walking in highway projects;
3. Establishing safe routes to school;

4. Fostering traffic-calming measures (e.g., any transportation design to slow traffic); and
5. Creating incentives for mixed-use development.

According to the National Complete Streets Safety Coalition, Complete Streets policies have been adopted in 665 jurisdictions and in 30 states and Puerto Rico.

## RECOMMENDATIONS:

TFAH and the report's advisory committee recommended that every state and local jurisdiction adopt Complete Streets policies that incorporate safety and physical activity concerns into the built environment.

## B. VIOLENCE-RELATED INDICATORS: Homicide, Suicide and Other Forms of Violence

This section of the report examines two violence-related indicators: homicide and child abuse and neglect. In addition, the section also reviews information about intimate partner violence, sexual violence, youth and school-related violence, bullying and suicide.

CDC and Prevention Institute developed *Connecting the Dots: An Overview of the Links Among Multiple Forms of Violence* that examines how different forms of violence are often interrelated and share the same root causes.<sup>160</sup> A range of research shows many factors, such as adverse childhood experiences, the toxic stress of living in poverty or unsafe environments and social beliefs can increase a person's likelihood to experience violence — and how protective factors can reduce the risk. Strategies to address root causes that contribute to violence focus on reducing the risks and promoting the protective factors, such as:

### ● Risk Factors:

- **Societal:** Cultural norms that support aggression toward others; media violence; societal income inequity; weak health, educational, economic and social policies/laws; and harmful norms around masculinity and femininity.
- **Community:** Neighborhood poverty; high alcohol outlet density; community violence; diminished economic opportunities/high unemployment rates; and poor neighborhood support and cohesion.
- **Relationship:** Social isolation/lack of social support; poor parent-child relationships; family conflict; economic stress; associating with delinquent peers; and gang involvement.

- **Individual:** Low educational achievement; lack of non-violent social problem-solving skills; poor behavioral control/impulsiveness; history of violent victimization; witnessing violence; psychological/mental health problems; and substance abuse.

### ● Protective Factors:

- **Community:** Coordination of resources and services among community agencies; access to mental health and substance abuse services; and community support/connectedness.
- **Relationship:** Family support/connectedness; connection to a caring adult; association with pro-social peers; and connection/commitment to school.
- **Individual:** Skills in solving problems non-violently.

Experts in violence prevention have developed evidence-based strategies that have been shown to be effective in reducing violence-related behavior and health outcomes. Many of these are focused on targeted concerns, such as intimate partner violence, youth and gang violence, school-based violence, bullying, and child abuse and neglect.

A public health approach, which has support from CDC and other experts, includes:<sup>161, 162</sup>

- An emphasis on primary prevention, that is, preventing violence before

it occurs. This requires reducing the factors that put people at risk or protecting them from becoming a victim or perpetrator of violence. This also includes strategies to strengthen relationships between parents and children and that promote safe communities as well as individual approaches.

- An understanding that while primary prevention is important, stopping individuals from engaging in repeat incidents — secondary prevention — is also essential and a potentially efficient use of resources since the target population of offenders is a fraction of the overall population.
- A focus on monitoring and tracking data using public health surveillance and other strategies, researching risk and protective factors and carefully evaluating interventions.
- An understanding that cooperation is crucial. Health, media, business, criminal justice, behavioral science, epidemiology, social science, faith, advocacy and education all can play a role in violence prevention.
- A population approach. Violence is a community problem, and its solutions need to integrate individual, family, community and societal-level approaches.

## INDICATOR 6: PREVENTING HOMICIDE

**FINDING:** 31 states have homicide rates at or below the national goal of 5.5 out of 100,000 people (based on 2011-13 three-year average).

31 states have homicide rates at or below the national goal of 5.5 out of 100,000 people. (1 point)		19 states and D.C. have homicide rates above the national goal of 5.5 out of 100,000 people. (0 points)	
Alaska (5.1)	New Hampshire (1.5)	Alabama (8.6)	Michigan (7.2)
California (5.0)	New Jersey (4.9)	Arizona (6.1)	Mississippi (10.3)
Colorado (3.7)	New York (3.8)	Arkansas (7.7)	Missouri (7.1)
Connecticut (3.8)	North Dakota (2.2)	Delaware (6.0)	New Mexico (7.0)
Hawaii (1.7)	Oregon (2.7)	D.C. (12.7)	North Carolina (5.8)
Idaho (2.0)	Rhode Island (2.5)	Florida (6.3)	Ohio (5.7)
Indiana (5.5)	South Dakota (2.7)	Georgia (6.4)	Oklahoma (7.1)
Iowa (2.0)	Texas (5.0)	Illinois (6.4)	Pennsylvania (5.6)
Kansas (4.1)	Utah (1.9)	Louisiana (12.0)	South Carolina (7.5)
Kentucky (4.8)	Vermont (1.6)	Maryland (7.2)	Tennessee (6.9)
Maine (2.3)	Virginia (4.1)		
Massachusetts (2.4)	Washington (2.9)		
Minnesota (2.1)	West Virginia (5.3)		
Montana (3.0)	Wisconsin (3.1)		
Nebraska (3.8)	Wyoming (3.6)		
Nevada (4.9)			

Source: *Healthy People 2020*.

The national homicide rate has dropped by 42 percent since 1994. However, rates of violence-related deaths remain high in the United States with approximately 16,000 homicides annually and one homicide every 30 minutes.<sup>163</sup> In addition, assaults are responsible for more than 1.6 million injuries annually.<sup>164</sup> Homicides resulted in more than \$20 billion in total medical and work loss costs in 2005.<sup>165</sup>

- About 90 percent of perpetrators are male, and more than three-quarters of the victims of homicide are male.<sup>166</sup> More than 80 percent of White victims are killed by Whites. About half of all murder victims are Black, and more than 90 percent of Black victims are killed by Blacks. Of female victims, about one-third are killed by an intimate partner.

- Sixty-nine percent of homicides are committed with a firearm, 11 percent by knives or sharp objects, 4 percent by blunt force or strangulation, 6 percent by other means and 11 percent via unknown mechanisms.

This indicator examines which states have homicide rates at or below the national goal established by *Healthy People 2020* of 5.5 or fewer deaths per 100,000 people. Thirty-one states meet the goal (based on using a three-year average from 2011 to 2013 to increase sample sizes and stabilize the data). The place with highest rate was Washington, D.C. at 12.7 per 100,000 people, and the state with the lowest reported rate was New Hampshire at 1.5 per 100,000 people. While many state rates are impacted by having large cities, a number of states with large urban areas were still below the *Healthy People* goal.

### Number of Homicides Per Day in the United States



## RECOMMENDATIONS:

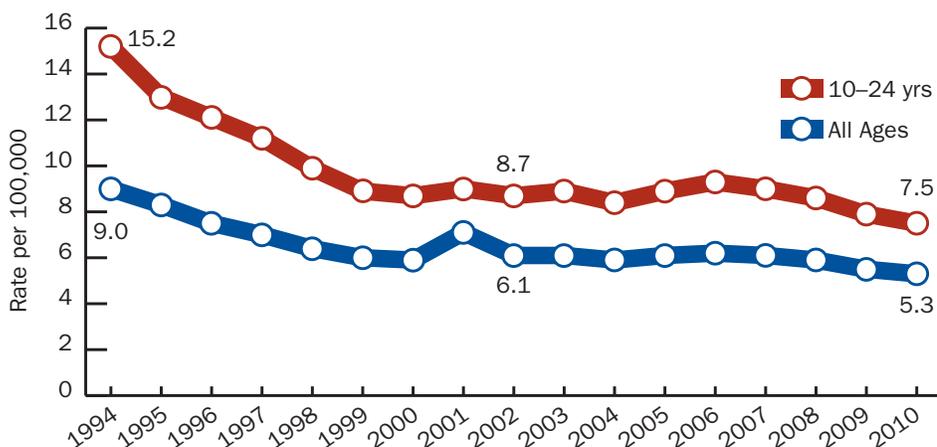
There are many public health and social service policies and programs that states can undertake to help reduce homicide rates. TFAH and the report's advisory committee recommend prioritizing a public health approach — working with partners across sectors — to prevent homicide and assault by addressing contributing social, economic and community factors and supporting programs aimed at reducing violence in high-risk populations and communities.

For instance, violence prevention efforts targeted toward teens and young adults have been shown to help reduce violence. CDC has identified key evidence-based prevention strategies, including:<sup>167</sup>

- Build children's and adolescents' skills and competencies to choose nonviolent, safe behaviors;
- Foster safe, stable and nurturing relationships between young people and their parents and caregivers;
- Build and maintain positive relationships between young people and caring adults in their community;
- Develop and implement school-wide activities and policies to foster social connectedness and a positive environment;
- Improve and sustain a safe physical environment in communities, and create spaces to strengthen social relationships;
- Build viable and stable communities by promoting economic opportunities and growth;
- Facilitate the social cohesion and collective efficacy of the community;
- Change societal norms about the acceptability of violence and willingness to intervene; and
- Change the social and structural conditions that affect youth violence and lead to health equity.



## YOUTH HOMICIDE DEATHS 1994-2012



\*Rates for All Ages are age-adjusted to the standard 2000 population; rates for 10-24 yrs age group is age-specific

Source: CDC

Homicides are nearly 10 times higher among Black male youth ages 10 to 24 than for the overall population.

## YOUTH HOMICIDE AND ASSAULT TRENDS

- Homicide rates are higher among teens and young adults aged 10 to 24 years than for all other age categories.<sup>168</sup>
- Homicide is the third leading cause of death among youth (ages 10 to 24).<sup>169</sup> More than 4,400 people between ages 10 to 24 died in acts of violence in 2013.<sup>170</sup> About 85 percent of these deaths were firearm homicides.<sup>171, 172</sup>
- Youth homicide deaths peaked in the United States in 1993 and decreased by 41 percent by 2000, but have remained between 7.5 and 9.3 per 100,000 people since then.<sup>173, 174</sup>
- Homicides are nearly six times higher among young males than females (12.3 versus 2.1 per 100,000 people), but it is still the fourth highest cause of death among female youth.
- Homicide is the leading cause of death for blacks between the ages of 10 and 24, exceeding motor vehicle fatalities.
- Homicides are nearly 10 times higher among Black male youth ages 10 to 24 than for the overall population (49.4 vs. 5.2 per 100,000 people).<sup>175</sup>
- Homicide is the second-leading cause of death for Hispanic youth and the third-leading cause of death for Asian-Pacific Islanders and American Indians/Alaska Natives.

Assaults led to:<sup>176</sup>

- Nearly 550,000 people ages 10 to 24 were treated for injuries related to a physical assault in emergency departments in 2013 (of which about two-thirds being males and one-third females).<sup>177</sup>
- An estimated \$19.8 billion in medical and lost productivity costs were related to physical and sexual assaults for individuals ages 10 to 24 in 2013, not including criminal justice and other societal costs.

### Other trends include:

- While males are responsible for a majority of youth-related violence, females represent nearly 20 percent of all violent crime arrests.<sup>178</sup>
- Youth who identify as lesbian, gay, bisexual, transgender, or are questioning their sexual identity (LGBTQ), are at heightened risk for violence. Forty-three percent of bisexual, 42 percent of gay or lesbian and 35 percent of questioning students reported being in a physical fight in the previous year, and a higher percent of LGBTQ youth experience bullying, harassment and fear of violence, which contributed to their avoiding school (absenteeism) due to safety concerns.<sup>179</sup>
- Youth violence is highest in cities (469 per 100,000 people) versus metropolitan counties (259 per 100,000) and suburban areas (252 per 100,000).<sup>180</sup>

## STRIVING TO REDUCE YOUTH VIOLENCE EVERYWHERE (STRYVE)<sup>181</sup>

CDC has launched a national initiative called STRYVE to prevent youth violence before it starts. STRYVE focuses on promoting youth's skills to solve conflicts peacefully, helping youth to develop supportive relationships with adults, and helping youth to develop the skills they need for success at school and in the workforce.

STRYVE also emphasizes collaboration among multiple sectors and disciplines, including justice, education, labor, social

services, public health and safety and youth-serving organizations. It provides tools to help build the capacity of health departments, other government agencies and community-based organizations to develop violence prevention programs tailored to the needs and strengths of individual communities.

STRYVE awarded four local health departments — Boston, Houston, Monterey County, California and Multnomah

County, Oregon — \$4.5 million over a five-year period (2011 to 2016) to create comprehensive, evidence-based violence prevention programs and to track and measure the programs' effectiveness.

CDC also leads a STRYVE Action Council that includes a network of more than 1,000 affiliate organizations and chapters that help champion youth violence prevention activities and policies around the country.

## SCHOOL-RELATED VIOLENCE

School-based programs to prevent violence have cut violent behavior among all students by 15 percent — and by 29 percent for high school students.<sup>182</sup> CDC has found that universal school-based violence prevention programs are “an important means of reducing violent and aggressive behavior.”<sup>183</sup>

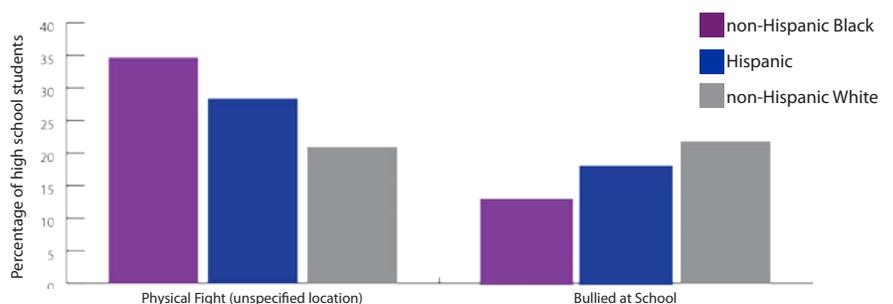
One in four high school students reported being in at least one physical fight, and one in 12 high school students reported fighting at least once on school property within the past year.<sup>184</sup> Reported rates are 35 percent among Blacks, 28 percent

among Latinos and 21 percent among Whites. Males are more likely to report being in a physical fight compared with females (30 percent versus 19 percent).

School violence is a serious concern. According to a 2013 national survey conducted by CDC:<sup>185</sup>

- Nearly one-quarter said they had been in a physical fight in the past year (30.2 percent of males and 19.2 percent of females). More than 8 percent reported being in physical fight on school property (10.7 percent of males and 5.6 percent of females).

## Physical Fighting and Bullying Among High School Students in the United States by Race/Ethnicity, 2013



Source: Youth Online: High School YRBS<sup>2</sup>

- Nearly 18 percent (28.1 percent of males and 7.9 percent of females) said they had carried a weapon, such as a gun, knife or club, at least once in the past 30 days — with 5.5 percent reporting carrying a gun (9.4 percent of males and 1.6 percent of females). More than 5 percent reported carrying a weapon on school property (7.6 percent of males and 3 percent of females), and 6.9 percent (7.7 percent of males and 6.1 percent of females) report being threatened by a weapon on school property; and
- More than 7 percent (5.4 percent of males and 8.7 percent of females) said they did not go to school at least once in the previous 30 days because they did not feel safe, either at school or on their way to or from school. Promoting increased safety is a key issue for reducing chronic absenteeism in schools.

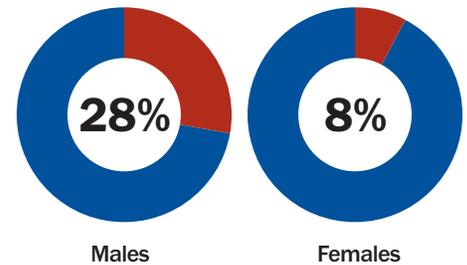
School violence is connected to a range of issues, such as family and interpersonal dynamics, the environment in any given school, the larger community around the school and societal attitudes toward violence. According to Prevention Institute, “Since the causes of violent behavior in

school are multi-faceted, strategies to address this issue must also operate on a variety of levels. Plans that are developed collaboratively by students, teachers, administrators, parents, health professionals, law enforcement officers, business and community leaders and other key community groups are more likely to succeed than those prepared by a single group of professionals acting alone.”<sup>186</sup>

In the past 15 years, more than 275 school districts around the country have received federal grants as part of the Safe Schools/Healthy Students Initiative.<sup>187</sup> The initiative is jointly sponsored by HHS, the U.S. Department of Education and the U.S. Department of Justice. Grantees must take a comprehensive approach to reducing school violence that includes:

- Safe school environments and violence prevention activities;
- Alcohol and other drug prevention activities;
- Student behavioral, social and emotional supports;
- Mental health services; and
- Early childhood social and emotional learning programs.

Percent of Students who Carried a Weapon in the Past 30 days, Males vs. Females



## RECOMMENDATIONS:

Prevention Institute has described the components of effective school-based violence prevention programs, which include:<sup>188</sup>

- Reaching all students and staff with the message that violence, harassment and intolerance are unacceptable in the school environment;
- Involving all students, staff, parents and interested community members in learning about violence and how to prevent it;
- Eliminating barriers to communication among groups of students;
- Involving students in violence prevention initiatives as critical and valued partners; and
- Collaborating closely and effectively with community, media and policing agencies.

Effective conflict resolution, peer mediation, full-service schools and peer and adult mentoring programs have all shown results in reducing some forms of violence.

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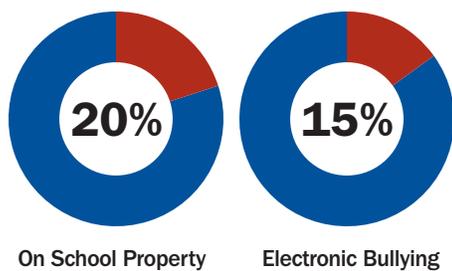
Victimized youth are at increased risk for depression, anxiety, sleep difficulties and poor school adjustment.

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Youth who bully others are at increased risk for substance use, academic problems and violence later in life

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Percent of Students who Report Being Bullied on School Property vs. Electronic Bullying



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## BULLYING

Bullying is a form of youth violence that can be inflicted physically, verbally, relationally or by damaging a young person's property. Specifically CDC defines bullying as, "any unwanted aggressive behavior(s) by another youth or group of youths who are not siblings or current dating partners that involves an observed or perceived power imbalance and is repeated multiple times or is highly likely to be repeated."<sup>189,190</sup> It can have a long-term negative psychological impact on victims. The underlying motivation for bullying behavior is not well understood.

According to a 2013 national survey conducted by CDC about 20 percent of high school students report being bullied on school property and 15 percent report being bullied electronically in the previous 12 months.<sup>191</sup> Reported rates are 22 percent among Whites, 18 percent among Latinos and 13 percent among Blacks.<sup>192</sup> Females are more likely to report being a victim of bullying (24 percent versus 16 percent of males.)

According to CDC, bullying can result in physical injury, social and emotional distress, and even death. Victimized youth are at increased risk for depression, anxiety, sleep difficulties and poor school adjustment. Youth who bully others are at increased risk for substance use, academic problems and violence later in adolescence and adulthood. In addition, research by the Cyberbullying Research Center has found that bullied students are nearly twice as likely to have attempted

suicide as those who had not experienced cyberbullying.<sup>193</sup>

Other studies have also shown the significant effects of bullying on victims:

- A review of studies of bullying and suicide found links between the two. Results indicated that bullying in any capacity was significantly associated with increased risk for suicidal ideation (e.g., thoughts of suicide) and behavior (e.g., attempts). Youth who bully others and who are bullied themselves were particularly likely to report risk for suicidal ideation/behavior.<sup>194</sup>
- A study from 2011 of more than 7,000 ninth-graders found that high schools with more bullying had lower average test scores. The researchers concluded that a bullying atmosphere may hinder learning.<sup>195</sup>
- A review study done in 2011 by researchers at the University of Pittsburgh found that lesbian, gay, bisexual and transgender youths were significantly more likely to be bullied and abused in a range of ways. The scientists concluded that these higher rates may contribute to this group's subsequent high incidence of mental health problems, substance abuse, risky sexual behavior and HIV.<sup>196</sup>
- A survey done in 2010 of more than 2,100 teenagers found that 29 percent had been the victims of Internet bullying in the past year.<sup>197</sup>

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## Anti-Bullying Laws

All 50 states, Washington, D.C., Guam, Puerto Rico and the U.S. Virgin Islands have anti-bullying laws or policies in place, according to the federal government Web site, [www.StopBullying.gov](http://www.StopBullying.gov).<sup>198</sup> However, only 19 states have comprehensive anti-bullying laws, according to the American Academy of Pediatrics.<sup>199</sup>

A review by the National School Board Association found that state anti-bullying statutes direct state education agencies to, among other things:

- Aggregate and report on information received from districts on incidents of bullying;
- Provide training or materials to districts;

- Review local policies;
- Develop curriculum and standards for school-safety specialist training;
- Develop teacher-preparation program standards on identification and prevention; and
- Develop model education and awareness programs and/or provide technical assistance to districts.

Some of these actions are in the form of administrative rule-making, to which local school boards will be subject. Of particular importance to local school boards is the requirement that the state agency issue a model policy that the local board must adopt in some form.



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## RECOMMENDATIONS:

[Stopbullying.gov](http://Stopbullying.gov), managed by HHS, includes a series of recommendations for how communities, schools, parents, teens, children and other individuals can help prevent bullying.<sup>200</sup>

In terms of developing effective laws, the Anti-Defamation League recommends that state laws should:<sup>201</sup>

- Include a strong definition of bullying, including cyberbullying;
- Address bullying motivated by race, religion, national origin, gender, gender identity, disability, sexual orientation and other personal characteristics;

- Include notice requirements for students and parents;
- Set clear reporting procedures; and
- Require regular training for teachers and students about how to recognize and respond to bullying and cyberbullying.

TFAH and the report's advisory committee recommend taking a public health approach to preventing bullying. We also recommend more research be conducted to understand cyberbullying, including what constitutes cyberbullying, who does it, against whom it's done, and how to prevent or stop it.

## GANG-RELATED VIOLENCE

Around one in five students ages 12 to 18 report having gangs in their schools. Many youth who join gangs report they do so as a perceived form of protection. Youth in gangs are more likely to be both victims and perpetrators of violence.<sup>202</sup>

From 2007 to 2012, each year, around 2,000 homicides have been gang-related — accounting for more than half of all youth homicides and around 13 percent of all homicides.<sup>203</sup> According to the National Gang Youth Survey, there were around 30,700 gangs and 850,000 gang members in the United States. Eighty-five percent of larger cities, 50 percent of suburban cities and 15 percent of rural counties reported gang activity.

A CDC analysis of gang homicides in Los Angeles; Oklahoma City; Oakland, California; Long Beach, California; and Newark, New Jersey, between 2002 and 2008 found that these cities had 856 gang murders and 2,077 non-gang murders during

that period.<sup>204</sup> The report found that the majority of gang homicides were unrelated to drugs, and concluded that most of these killings were likely “quick, retaliatory reactions to ongoing gang conflict.” According to the report:

- In Los Angeles and Oklahoma City, nearly a quarter of gang homicides were drive-by shootings, compared with between 1 and 6 percent of non-gang, drive-by homicides;
- In Long Beach, gang homicides accounted for 69 percent of youth murders; and
- In Los Angeles, gang homicides accounted for 61 percent of the murders among people between the ages of 15 and 24.

CDC concluded that “gang homicides are unique violent events that require prevention strategies aimed specifically at gang processes. Preventing gang joining and increasing youths’ capacity to resolve conflict nonviolently might reduce gang homicides.”

Intervention and containment efforts by law enforcement are often not enough to solve the youth gang problem in the United States. A new report by CDC and the National Institute of Justice (NIJ), *Changing Course*, outlines the need and process to prevent young people from joining a gang in the first place. Public health can play a role in the prevention of youth joining gangs through monitoring trends, researching risk and protective factors, evaluating interventions and supporting the dissemination and implementation of evidence-based strategies. *Changing Course* concludes with recommendations on how policymakers and practitioners can use public health and public safety resources to prevent youth from joining gangs through (1) building partnerships, (2) using data, (3) framing the issue, (4) creating a plan, (5) implementing the plan and (6) evaluating its effectiveness.<sup>205</sup>



## RECOMMENDATIONS:

TFAH and the report’s advisory committee recommend that evidence-based, comprehensive approaches in preventing and reducing gangs and gang violence be implemented across the country. Some key components of a comprehensive approach include:

- Involvement and support of high-level local government leaders;
- Collaboration with community leaders;
- Improving educational, vocational and social services as well as programs in schools and neighborhoods with high rates of violence.

Two evidence-based gang intervention programs — Cure Violence and Gang Reduction & Youth Development (GRYD) — being used in large urban areas have been shown to reduce gang joining and gang violence. In urban areas, such as Los Angeles, a majority of homicides of young men (ages 15 to 24) are gang related, and preventing youths from joining gangs or gang affiliations has significant potential for reducing youth homicides.

In addition, TFAH and the report’s advisory committee recommend continuing the promising research on cross-cutting policy strategies, such as a de-concentration of public housing and development of business improvement districts.

## SUICIDE PREVENTION

Suicide is the 10th leading cause of death in the United States and is the second leading cause of death for teens and young adults.<sup>206, 207</sup>

- There were more than 41,000 suicides in 2013.
- Every 12.8 minutes, one American takes his/her own life.
- According to self-reported data, more than one million American adults attempt suicide each year.<sup>208</sup>
- Males are nearly four times as likely to die from suicide as females, but females in the younger age groups, specifically, attempt suicide three times as often.<sup>209</sup>
- Suicide costs the United States approximately \$50 billion a year in 2013 dollars, mostly from lost wages and productivity.<sup>210</sup>
- Suicides are more than double among Whites, American Indians and Alaskan Natives than among Blacks and Latinos.<sup>211</sup> Seventy percent of suicides in 2013 were among White men.

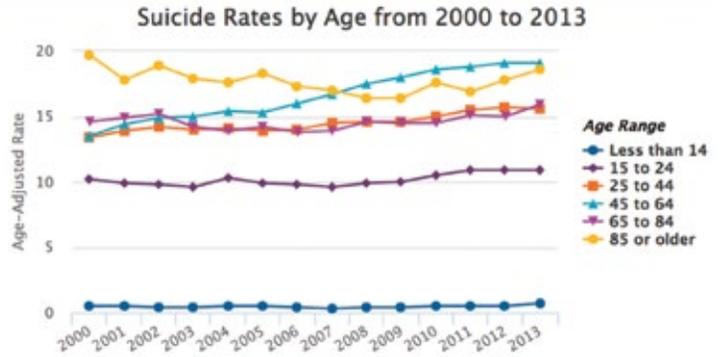
Suicide rates are similar to 20 years ago. There was a decrease from 1993 to 2000, from (12.1 per 100,000 in 1993 to 10.4 per 100,000 in 2000), but since then, rates increased to 12.6 per 100,000 people in 2013). Rates increased the most among 45- to 54-year-olds (36.8 percent increase between 1993 and 2013). The most common method of suicides in 2013 were firearms (51.5 percent); suffocation, including hanging (24.5 percent); and poisoning, including overdoses (16.1 percent).

According to the Youth Risk Behavior Surveillance (YRBS) survey of high school students, during the previous year:<sup>212</sup>

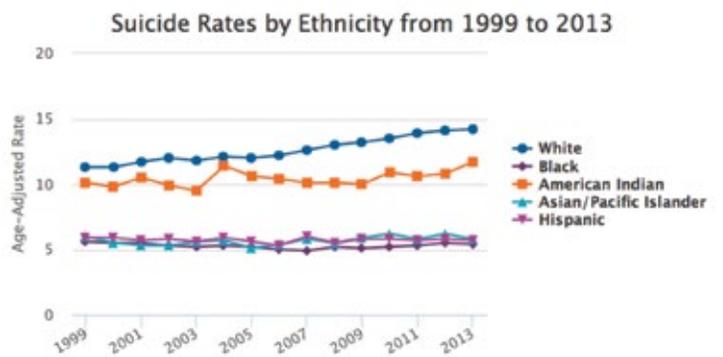
- Eight percent attempted suicide, 13.6 percent made a suicide plan and 17 percent seriously considered attempting suicide;
- Suicide attempts and consideration (ideation) were significantly higher among females than males, and among Latinos compared to Whites and Blacks;
- Nearly 30 percent reported feeling so sad or hopeless almost every day for two weeks or more in a row that it stopped them from doing some usual activities.

The American Foundation for Suicide Prevention and the Suicide Prevention Action Network are focusing on a number of measures states can take to help improve suicide prevention, including:

- Encouraging states to have suicide prevention plans and initiatives that address suicide prevention across all ages and be fully implemented and evaluated;



Source: AFSP



Source: AFSP

- Encouraging states to mandate suicide prevention training for teachers and all other school personnel who interact regularly with students, or, when possible, provide training materials as an option to satisfy those mandates;
- Encouraging states to pass anti-bullying and anti-cyberbullying legislation and promote safe school environments;
- Requiring parity for mental health and access to affordable mental health treatment; and
- Reducing access to firearms for persons at risk for suicide.

## RECOMMENDATIONS:

To prevent suicides, TFAH and the report's advisory committee recommend that states enact suicide prevention plans and programs and support school-based education programs, including anti-bullying efforts.

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## FIREARM SAFETY AND CHILDREN

Forty-two percent of Americans report they own a gun in their home or elsewhere on their property, according to a 2012 Gallup Poll.<sup>213</sup> Most Americans who own firearms use them safely and responsibly. Still, firearms were used in more than 11,200 homicides in 2013 and more than 21,000 suicides.<sup>214, 215</sup>

More than 2,400 children and young people under the age of 20 died from a firearm-related injury in 2013. Around 400 were under the age of 15.<sup>216</sup>

More than 15,500 children and teens under the age of 20 were non-fatally injured by a firearm in 2013; more than 3,000 of these injuries were unintentional.<sup>217</sup> In addition, more than 12,700 children and teens under the age of 20 were non-fatally injured by firearms in 2012, and more than 16,700 were injured by firearms in 2011.

According to a number of studies, including a 2005 article in *The Journal of the American Medical Association (JAMA)*, keeping guns locked and unloaded and storing ammunition in a locked and separate location can lower the risk of unintentional injuries and suicide among youth.<sup>218</sup>

A study in the *Journal of Pediatrics*, found that in 2002, there were substantial differences in household firearm and firearm-storage practices state-by-state.<sup>219</sup> The prevalence of adults reporting to have a firearm in the house range from 5 percent in Washington, D.C. to 63 percent in Wyoming. Those who reported having a loaded firearm in the house ranged from 1.6 percent in Hawaii, Massachusetts and New Jersey to 19 percent in Alabama. And those reporting

having a loaded and unlocked firearm in the house ranged from 0.4 percent in Massachusetts to 13 percent in Alabama.

Among adults with children under the age of 18, Massachusetts reported the lowest rates of loaded (1 percent) — and loaded and unlocked (0.3 percent) — firearms in the house; while Alabama reported the highest of loaded (13 percent) — and loaded and unlocked (7 percent) — firearms in the house. At the time of the study, based on 2002 data, an estimated 1.69 million children and youth in the United States under the age of 18 were living in households with loaded and unlocked firearms.

In seven states (Alabama, Alaska, Arkansas, Georgia, Louisiana, Mississippi, and Montana) the prevalence of loaded firearms in the household among adults with children less than 18 years of age was an estimated 10 percent; in six states (Alabama, Alaska, Arkansas, Idaho, Montana, and Wyoming), the prevalence of loaded and unlocked firearms in the household among adults with children under 18 years of age was more than 5 percent. Six states had approximately 75,000 children under the age of 18 living in households with a loaded and unlocked firearm (Alabama, California, Florida, Georgia, North Carolina and Texas).

A study from the *Archives of Pediatric and Adolescent Medicine* found that in almost three-quarters of firearm-related unintentional deaths, injuries, suicides and suicide attempts involving children and teens, the firearm involved was stored in the home of the victim, a relative or a friend.<sup>220</sup>

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## Firearm Laws

Since 1988, under the Brady Act, federally licensed firearm dealers are required to perform background checks on prospective firearm purchasers, maintain records of gun sales, make sales records available to law enforcement for inspection, report some types of multiple sales and report the theft or loss of a firearm.<sup>221</sup> Background checks are not required for private or unlicensed sales and there are no federal permit requirements.

In addition, most states have some laws related to the sales and/or background checks related to firearm safety that go beyond the Brady Law. For instance:

- Seventeen states and Washington, D.C. have extended the background check requirement beyond federal law to at least some private sales. Six states (California, Colorado, Connecticut, Delaware, New York and Rhode Island) and Washington, D.C. require universal background checks at the point of sale for all transfers of all classes of firearms, including purchases from unlicensed sellers; Maryland and Pennsylvania laws require universal background checks for handguns. Two states (Illinois and Oregon) require a background check whenever a firearm is sold at a gun show. Four states (Hawaii, Illinois, Massachusetts and New Jersey) require any firearm purchaser, including a purchaser

from an unlicensed seller, to obtain a permit issued after a background check, and four more states (Iowa, Michigan, Nebraska and North Carolina) require handgun purchasers to obtain a permit issued after a background check.<sup>222</sup>

- Twenty-three states and Washington, D.C. specifically prohibit the transfer, purchase or possession of firearms to persons convicted of certain designated misdemeanors, or define the disqualifying offenses to include some misdemeanors. Thirty-three states and the District of Columbia have laws that restrict access to firearms by persons who are mentally ill.
- Twenty-seven states and Washington, D.C. also prohibit drug abusers, persons convicted of drug-related misdemeanors, and/or persons under the influence of controlled substances from purchasing or possessing some or all firearms. Twenty-one states and the District of Columbia prohibit persons who are alcohol abusers, misdemeanants, and/or under the influence of alcohol, from purchasing or possessing firearms.
- Twenty-six states prohibit persons with certain juvenile convictions from purchasing or possessing firearms.
- Vermont is the only state with no category limits.<sup>223</sup>

- Ten states (California, Connecticut, Hawaii, Iowa, Maryland, Michigan, Nebraska, New Jersey, North Carolina and Rhode Island) and Washington, D.C. have permit-to-purchase laws that require prospective firearm purchasers to obtain a permit or license prior to the purchase of at least some firearms. In addition, Illinois and Massachusetts have license to own requirements for firearms and New York has a license to own a handgun requirement.<sup>224</sup> An analysis of the 2007 repeal of Missouri's permit-to-purchase handgun law by the Johns Hopkins Center for Gun Policy and Research found a 12 percent increase in the state's murder rate through 2012.<sup>225</sup>
- Ten states and Washington, D.C. have waiting periods that apply to the purchase of some or all firearms.<sup>226</sup>
- Twenty-eight states and Washington, D.C. have enacted some form of child firearm access prevention laws.<sup>227</sup> For instance, 14 states and Washington, D.C. have laws that impose criminal liability on persons who negligently store firearms, where minors could or do gain access to the firearm. Massachusetts is the only state that requires firearms be stored with locking devices to prevent accidental discharge.

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## RECOMMENDATIONS:

To help reduce fatal and non-fatal injuries related to firearms, TFAH and the report's advisory committee recommend that states and localities:

- Educate the public about safe storage of guns, including using lock boxes and gun locks and storing guns and ammunition separately;
- Expand funding for firearm safety research;
- Require private gun sales to be subject to the same background check provisions as sales by licensed dealers. In states where those laws exist, they must be enforced;
- Ensure existing laws are enforced to keep guns from prohibited persons, such as individuals subject to domestic-violence restraining orders and persons with criminal backgrounds diagnosed with clinical depression; and
- Repeal laws that restrict the ability of physicians and other healthcare providers to talk to families about firearms and firearm safety.

## INTIMATE PARTNER VIOLENCE

Nearly one in four women (27.3 percent) and almost one in nine men (11.5 percent) in the United States have experienced sexual violence,<sup>228</sup> physical violence or stalking with intimate partner violence-related impact by an intimate partner at some point in their lives, according to the 2011 National Intimate Partner and Sexual Violence Survey (NISVS).<sup>229</sup>

Violence by intimate partners resulted in more than 2,300 deaths in 2007. Women were 70 percent of the victims.<sup>230</sup> The medical care, mental health services, and lost productivity cost of violence by intimate partners was nearly \$6 billion in 1995, or around \$9 billion in today's dollars, adjusted for inflation.

In addition, according to the 2011 NISVS:<sup>231</sup>

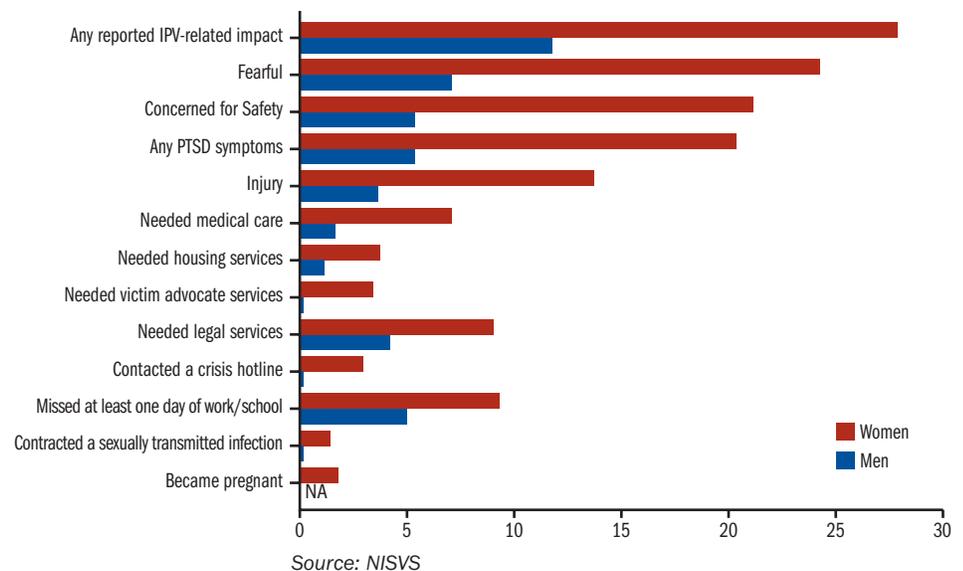
- 8.8 percent of women and 0.5 percent of men have been raped by an intimate partner in their lifetime, and 15.8 percent of women and 9.5 percent of men have experienced other forms of sexual violence other than rape by an intimate partner at some point in their lifetime;
- 31.5 percent of women have experienced physical violence by an intimate partner, with 22.3 percent experiencing severe physical violence (e.g., being hit with a fist or something hard, beaten, slammed against a wall or object) at some point in their lifetime, and 27.5 percent of men have experienced physical violence by an intimate partner, with 14 percent experiencing severe physical violence during their lifetime;
- 9.2 percent of women and 2.5 percent of men have been stalked by an intimate partner; and
- Nearly half of all women (47.1 percent) and men (46.5 percent) have experienced psychological aggression by an intimate partner in their lifetime.

Most IPV begins before the victims reach the age of 25 (71.1 percent for women and 58.2 percent for men). Of the women who have experienced IPV, 23.7 percent report being fearful; 20.7 percent report being concerned for their safety; 20 percent experienced one or more post-

traumatic stress disorder symptom; 13.4 percent were physically injured; 6.9 percent needed medical care; 3.6 percent needed housing services; 3.3 percent needed victim advocate services; and 8.8 percent needed legal services.



Source: CDC



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A public-health approach — focusing on preventing violence before it happens in the first place — has been shown to reduce IPV.<sup>232, 233</sup> Campaigns that reduce social acceptance of IPV, and programs that provide alternative solutions to conflict and violent behavior, are examples of primary prevention. Screening, counseling and social and legal services are also necessary to provide support for individuals at risk. In addition, studies have found that the risk of IPV is lower when victims can obtain final protective court orders.<sup>234, 235</sup> Forty-four states and Washington, D.C., allow adults in dating relationships to get protective orders.

### Screening and Counseling

The U.S. Preventive Services Task Force (USPSTF), which reviews preventive healthcare for effectiveness, has recommended health screening for IPV for all women of child-bearing age and provision of, or referral to, intervention services for women who screen positive.<sup>236</sup> However, referral to services alone are not effective;<sup>237</sup> more intensive approaches such as those used in

effective trials are recommended.<sup>238, 239</sup> The Affordable Care Act requires private insurance plans and Medicaid expansion plans to cover preventive services recommended by the Task Force without any patient cost-sharing.

Traditional Medicaid programs in states, however, continue to set their own policies for co-pays requirements for many preventive services. A Kaiser Family Foundation (KFF) review of Medicaid programs in 41 states and Washington, D.C. found that only 24 states required screening and counseling for interpersonal and domestic violence, and only 17 states did not require a co-payment for these services.<sup>240, 241</sup>

IPV screening and counseling can help identify individuals at risk, increase safety, reduce abuse and improve social outcomes.<sup>242</sup> Assessment for IPV can occur through part of an exam, survey or routine care; through recognition of signs or symptoms; or if concern is raised by a third party, such as police or emergency medical

services personnel. Tailored forms of counseling or interventions involve recognizing that a patient may be experiencing physical, sexual and/or psychological abuse; helping with ongoing patient safety, privacy and legal concerns; and recognizing the impact on children or other members of the family.

The Kaiser Permanente healthcare system provides one model of IPV screening. It includes frequent, brief, focused IPV training for health providers; a clear path for identification and response, including integration into electronic health record (EHR) tools; and a reliable referral process for on-site behavioral health and community advocacy services. This approach increased IPV identification eight-fold between 2000 and 2013 in Kaiser Permanente's Northern California region, increased clinician confidence and competence in IPV inquiry and intervention. In addition, patients have reported satisfaction with seeing IPV-related brochures and posters and having clinicians routinely ask about family relationships and IPV.<sup>243</sup>

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## RECOMMENDATIONS:

TFAH and the report's advisory group recommend that states, counties and municipalities take the following public-health approach to reducing intimate partner violence by focusing on stopping violence before it happens:

- Effective services for victims, such as shelters and legal aid, need to be maintained where they exist and expanded to serve those still in need;
- USPSTF should expand their recommendations for IPV screening for men as well as women;
- Services and programs must emphasize collaboration among federal, state and local governments and across agencies and types of services;
- Protection orders must be accessible to protect victims and their families;
- Data must include the collection of specific demographic information — such as race, ethnicity, disability status and sexual identity/orientation — which is consistent with new HHS standards for self-reported surveys. This will improve our understanding of patterns and help target prevention strategies more effectively;
- IPV assessments should be incorporated into EHRs, including support for development and implementation of EHR prompts, and an IPV assessment measure should be included in future meaningful-use requirements; and
- All state Medicaid programs should cover women's preventive healthcare services — including screening and counseling for IPV — with no out-of-pocket costs to the patient. All providers should ensure that screening and counseling for IPV victims are fully supported, implemented and evaluated for their impact on women's physical and mental health.

## TEEN DATING VIOLENCE

According to CDC, a quarter of adolescents are verbally, physically, emotionally, or sexually abused by a dating partner each year.<sup>244</sup>

According to the Youth Risk Behavior Surveillance survey of high school students, during the previous year:<sup>245</sup>

- One in 10 high school students report being physically hurt by a boyfriend or girlfriend;
  - These rates were similar across race and ethnicity — but were significantly higher among 12th graders (11.7 percent) compared to 9th graders (8.8 percent);
- One in 10 high school students also report being forced to do sexual things (kissing, touching or physically-forced intercourse) that they did not want to do.

Studies have found that:<sup>246</sup>

- A quarter of teens in a relationship say they have been called names, harassed or put down by their partner through cell phones and texting;
- Violent relationships in adolescence put victims at higher risk for substance abuse, eating disorders, risky sexual behavior, depression, academic underachievement, and suicide; and
- A quarter of adolescent mothers experience relationship violence before, during or just after pregnancy.

While all 50 states and Washington, D.C., have laws pertaining to interpersonal violence, the specificity and inclusiveness with respect to minors differ greatly. For instance, states differ in whether minors can obtain protective orders without adult consent, whether these orders can be obtained against minors and what sensitive services (such as STD treatment or testing) are available to minors.

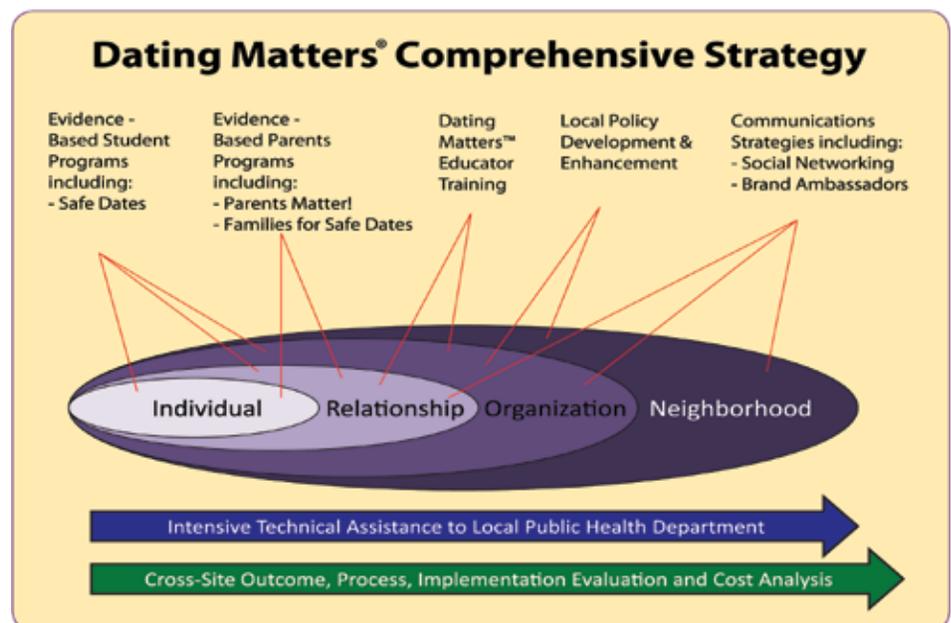
Break the Cycle, a nonprofit group that focuses on preventing teen dating violence, issued a report card in 2010 that involved a systematic review of state laws concerning access to civil protection orders, access to sensitive services and school response to teen dating violence.<sup>247</sup> Six states (California, Illinois, New Hampshire, Oklahoma, Rhode Island and Washington) and Washington, D.C., received an “A,” 15 states received a “B,” 16 states received a “C,” four states received a “D,” and nine states received an “F.”

TFAH and the report’s advisory committee also support Break the Cycle’s recommendations that states should provide prevention education about teen dating violence and pass laws that provide legal protection and services to ensure teens’ safety, and that all states should:<sup>248</sup>

- Allow people in dating relationships, including minors, to get civil protection orders;
- Offer victims of same-sex partner violence access to all civil domestic and dating violence remedies;

- Allow victims of intimate partner sexual abuse, stalking and harassment to get protection orders;
- Allow victims to petition for protective orders against minor abusers;
- Allow youth access to protection orders without the permission or knowledge of their parent or guardian;
- Allow minors to receive sensitive services needed to overcome the effects of abuse without parental involvement;
- Require schools to teach evidence-based dating violence prevention education; and
- Require school districts to adopt dating violence policies and provide resources to students.

CDC has developed *Dating Matters: Strategies to Promote Healthy Teen Relationships*, which promotes a comprehensive, community driven approach to stop violence before it starts.<sup>sa</sup>



Source: CDC

## RAPE AND SEXUAL ASSAULT

Sexual violence is a pervasive problem in the United States — there is one rape every 6.6 minutes and about one-third of women and more than 10 percent of men experience some form of unwanted sexual assault.<sup>250,251</sup>

CDC defines sexual violence as occurring when a perpetrator commits sexual acts without a victim's consent, or when a victim is unable to consent (e.g., due to age, illness) or refuse (e.g., due to physical violence or threats).<sup>252</sup> Due to the sensitivities and stigma associated with sexual violence, rates are likely undercounted — and many offenders are not arrested or prosecuted. Based on the latest lifetime prevalence data from the National Intimate Partner and Sexual Violence Survey:<sup>253</sup>

- One in five women (19.3 percent) and nearly one in 59 men (1.7 percent) have experienced an attempted or completed rape, defined as penetrating a victim by use of force or when a victim is too impaired or unable to give affirmative consent or refuse, such as in alcohol and/or drug-facilitated situations;
- One in 15 men (6.7 percent) have been made to penetrate a perpetrator;
- One in eight women (12.5 percent) and one in 17 men (5.8 percent) have experienced sexual coercion (non-physically pressured unwanted penetration);
- More than one-quarter of women (27.3 percent) and approximately one in nine men (10.8 percent) have experienced some form of unwanted sexual contact; and
- Nearly one-third of women (32.1 percent) and nearly one in eight men (13.3 percent) have experienced some type of non-contact, unwanted sexual experience.

Most victims know their assailants. For example among female victims of rape, 45.4 percent reported the perpetrator was a former or current intimate partner and 46.7 percent reported that the perpetrator was an acquaintance while 12.9 percent reported that the perpetrator was a stranger. Nearly 99 percent of perpetrators were reported as male.

Populations at increased risk include:

- Teenage females — 40.4 percent of first rapes of females occurred before the victims reached age 18 and 28.3 percent first occurred between the ages of 11 to 17;<sup>254, 255</sup>
- Young males — one-quarter of male rape survivors were first raped before the age of 10 and 21.3 percent were first made to penetrate a perpetrator before the age of 18;
- College students — one in five women are sexually assaulted while in college;<sup>256</sup> and
- Individuals with disabilities, the LGBT community, prison inmates (of both genders) and the homeless.<sup>257, 258</sup>

In 2014, the White House Council on Women and Girls issued the report *Rape and Sexual Assault: A Renewed Call to Action*, and the White House Task Force to Protect Students from Sexual Assault issued its first report, *Not Alone*, which included recommendations for preventing sexual violence. It also called for improving support for victims, improving the criminal justice system's response to sexually-related crimes, changing cultural norms to end tolerance of sexual violence and encouraging bystander intervention.<sup>259, 260</sup>

### One in Five Women Have Experienced an Attempted or Completed Rape



### One in Five Women are Sexually Assaulted While in College



Annual rates of domestic violence have decreased more than 60 percent since the Violence Against Women Act was first enacted in 1994. This law has supported strengthened criminal justice measures against sexual violence, such as tougher penalties, increased arrests and prosecutions, easier access to and improved enforcement of protection orders and increased resources and support for victims. The law also led to the creation of the Sexual Assault Services Program and multidisciplinary sexual assault response teams.

Federal laws — Title IX and the Clery Act — also require that all schools and colleges that receive federal funding or participate in federal aid programs take measures to reduce sexual assault, develop prevention policies, ensure basic rights of victims and report annual statistics on crime on or near campuses.

Many other federal programs and policies also focus on reducing sexual violence. These include the “1 is 2 Many” campaign and efforts to change policies and norms to address sexual assault in the military. The Office on Violence Against Women at the U.S. Department of Justice offers a series of prevention and criminal justice programs, CDC maintains the Rape Prevention and Education (RPE) program and grants and CDC and the Department of Justice have increased surveillance and reporting of sexual violence.<sup>261, 262, 263, 264</sup>

In 2014, California was the first state to pass an affirmative consent — or “Yes Means Yes” law — as a standard for the state’s college campuses. A number of colleges around the country have also adopted affirmative consent standards.

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## RECOMMENDATIONS:

TFAH and the report’s advisory committee recommend that preventing sexual violence must start with policies and initiatives that stress cultural change and education, leading to healthy, non-violent norms, attitudes, beliefs and practices. This is in addition to improved risk screening and counseling, including screening and support to avoid re-perpetration and re-victimization. Efforts like the Rape Prevention Education grants help start the promotion of age-appropriate education for elementary, middle and high school students, college students and adults.<sup>265</sup>

There must also be increased special focus on preventing and reducing sexual violence on college campuses. This must include

the adoption of affirmative consent policies; improving campus security; increasing education about and supporting acceptable behavior norms; engaging male students as partners in solutions and culture change; supporting bystander intervention; developing standard definitions of sexual misconduct and protocols for responding to offenses; establishing fair disciplinary procedures; improving data collection and reporting transparency; and providing comprehensive services for victims.

Improvements must also be made in policies and services to provide comprehensive health, mental health and justice system support for survivors and comprehensive sexual education in schools.

## INDICATOR 7: PREVENTING AND REDUCING CHILD ABUSE AND NEGLECT

**FINDING:** 25 states have child abuse and neglect victimization rates at or below the national rate of 9.1 per 1,000 children (in 2013).

25 states have child abuse and neglect victimization rates at or below the national rate of 9.1 per 1,000 children. (1 point)		25 states and D.C. have child abuse and neglect rates above the national rate of 9.1 per 1,000 children. (0 points)	
Alabama (7.9)	Nevada (8.2)	Alaska (13.0)	Michigan (15.1)
Arizona (8.1)	New Hampshire (3.0)	Arkansas (14.6)	Mississippi (10.1)
California (8.2)	New Jersey (4.7)	Connecticut (9.3)	New Mexico (12.9)
Colorado (8.2)	North Carolina (8.7)	Delaware (9.4)	New York (15.2)
Georgia (7.7)	Pennsylvania (1.2)	D.C. (18.4)	North Dakota (9.3)
Hawaii (4.3)	South Dakota (4.7)	Florida (12.0)	Ohio (10.4)
Idaho (3.9)	Tennessee (7.0)	Illinois (9.8)	Oklahoma (12.2)
Kansas (2.8)	Vermont (6.1)	Indiana (13.7)	Oregon (12.0)
Louisiana (9.1)	Virginia (3.1)	Iowa (15.7)	Rhode Island (14.6)
Minnesota (3.3)	Washington (4.5)	Kentucky (19.7)	South Carolina (9.6)
Missouri (1.3)	Wisconsin (3.5)	Maine (14.6)	Texas (9.2)
Montana (6.3)	Wyoming (5.2)	Maryland (9.2)	Utah (10.4)
Nebraska (8.6)		Massachusetts (14.6)	West Virginia (12.3)

Source: Administration on Children, Youth and Families Children's Bureau \*Puerto Rico's rate was 10.9 per 1,000. Note: Ages 0 to 18 (versus most CDC childhood injury data, which are ages 0 to 19)

More than 678,000 children were victims of maltreatment, and another 1,520 children died from child maltreatment in the United States in 2013.<sup>266</sup> More than 3.1 million children information received child protective services during 2013 (in the 47 states which reported information).

More than one-third of the victims of child abuse or neglect and 79 percent of those who die from abuse are under the age of 4.<sup>267</sup>

Total lifetime estimated cost associated with one year of confirmed cases of child maltreatment is approximately \$124 billion.<sup>268</sup> Of this amount, 69.2 percent was attributed to lost productivity over the lifetimes of the children, 20.2 percent was attributed to health-care costs, 3.7 percent to special education costs, 3.6 percent to child welfare costs and 3.2 percent to criminal justice costs.<sup>269</sup>

Child maltreatment includes all types of abuse and neglect of a child under the age of 18 by a parent, caregiver, or another person in a custodial role that results in harm, potential for harm, or threat of harm to a child.<sup>270</sup> Child abuse and neglect occurs at every socioeconomic level, across ethnic and cultural lines, within all religions and at all levels of education.<sup>271</sup>

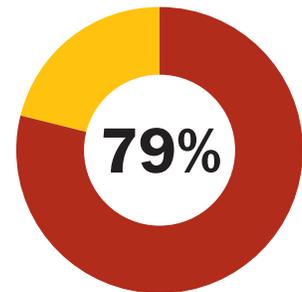
While neglect accounts for four-fifths (78.3 percent) of child maltreatment cases, 18.3 percent are physically abused, 9.3 percent are sexually abused and 8.5 percent are psychologically maltreated.<sup>272</sup> Children are most at risk of maltreatment if their families have multiple problems, such as inadequate income, joblessness, inadequate housing, emotional stress, drug or alcohol abuse, mental illness or domestic violence.<sup>273</sup> Children whose parent(s) abuse alcohol and other drugs are three times more likely to be abused and more than four times more likely to be neglected than children from non-abusing families.<sup>274</sup>

This indicator examines which states had child abuse and neglect victimization rates at or below the national rate of 9.1 per 1,000 in 2013 — with 25 states and Washington, D.C. with rates above and 25 states with rates below.<sup>275</sup> The Healthy People 2020 national goal is to reduce child maltreatment deaths to 8.5 per 1,000, but the victimization rate has been a long-term marker for reviewing trends over time and is used as the measure for this indicator.<sup>276</sup>

More than One-third of Victims of Maltreatment are Under Four Years of Age



Percent of Those Who Die from Abuse That are Under Four Years of Age



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**Research shows that childhood trauma survivors are more likely to have long-term health problems such as diabetes or heart disease, and to die at an earlier age.**

Child protective service workers screen reports and investigate and provide additional services as necessary. Depending upon the situation, child welfare systems then provide a number of services to families, including assistance with protecting and caring for their children; arranging for children to live with kin or with foster families when they are not safe at home; and/or arranging for reunification, adoption, or other permanent family connections for children leaving foster care.

Child abuse and neglect can have both short-term consequences — immediate harm from an injury — and a long-term health impact. All forms of child maltreatment are considered to be adverse childhood experiences, which can increase a person’s risk for developing a range of physical and mental health problems later in life. The specific effects of the maltreatment depend on a variety of factors including the age of the baby or child at the time of the abuse or neglect; whether the maltreatment was a one-time incident or chronic; the identity of the abuser; whether the child had a dependable, nurturing individual in his or her life; the type and severity of the abuse; and how long the maltreatment lasted.<sup>277</sup>

Some of the specific long-term effects of abuse and neglect on the developing brain can include diminished growth in the left hemisphere, which may increase the risk for depression; irritability in the limbic system, which can lead to the emergence of panic disorder and post-traumatic stress disorder; smaller growth of the hippocampus and limbic abnormalities, which can increase

the risk for dissociative disorders and memory impairments; and impairment in the connection between the two brain hemispheres, which has been linked to symptoms of attention-deficit/hyperactivity disorder.<sup>278</sup>

Research shows that childhood trauma survivors are more likely to have long-term health problems such as diabetes or heart disease, and to die at an earlier age. Trauma-related stress can also lead to increased use of health and mental health services and increased involvement with the child welfare and juvenile justice systems. Adult survivors of traumatic events may have difficulty in establishing fulfilling relationships, maintaining employment and becoming productive members of society.<sup>279</sup>

The Children’s Bureau within the Administration on Children and Families at HHS works with state and local agencies to help develop programs that focus on preventing abuse and neglect by strengthening families, protecting children from further maltreatment, reuniting children safely with their families, or finding permanent families for children who cannot safely return home. The Child Abuse Prevention and Treatment Act (CAPTA), which was reauthorized for FY 2011 through FY 2015 at just over \$1 billion, provides for federal funding to states in support of prevention, assessment, investigation, prosecution and treatment activities, along with grants to public agencies and nonprofit organizations.<sup>280, 281</sup> However, actual appropriations for CAPTA has been around \$93 million per year (\$93.8 in FY 2015).

Federal responsibilities also include helping to provide research, evaluation, technical assistance, data collection and setting a minimum standard definition of child abuse and neglect. CAPTA included an emphasis on improving program operation and data collection over time; improving systems for supporting and training individuals who prevent, identify and respond to reports of neglect, abuse and maltreatment; and strengthening coordination among providers who address

the challenges associated with child abuse and neglect, as well as domestic violence.

Each state maintains its own child welfare system — which includes both public and private child and family services and justice systems — and specific procedures vary widely by state. These systems are often underfunded or understaffed, leading to problems with investigations and assessments, and then inadequate remedies.

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In traditional child welfare programs, reports of potential maltreatment trigger an investigation with the binary response of determining whether a child should be removed from their current home and placed with other family members or in foster care. With limited resources available, the large majority of child welfare budgets goes to supporting the care and housing of children in the foster care.

A number of states have moved toward implementing a differential response within the child welfare system — which allows child protective services to respond in multiple ways to different situations and levels of risk.<sup>282</sup> This approach is more inclusive of responding effectively and appropriately to low- and moderate-risk cases — where there is no immediate safety concern, but where a child and their family could benefit from additional services and support. In these cases, family assessments can be conducted in a non-adversarial or accusatory way — and provides mechanisms for providing help in situations where taking the extreme measure of removing a child from the home is not advised or warranted. Some advocates have expressed concern that this approach may not do enough to

protect the safety of children and may lead to cases where a child is left in an unsafe environment.<sup>283</sup> Differential response models, however, are developed to take into account, screen for and respond to situations involving safety concerns as well as traditional investigations have, while also expanding the welfare system's ability to serve more children and families experiencing different levels of needs.<sup>284, 285, 286</sup> More than 30 states and communities have adopted some level of differential response approach and the Administration on Children, Youth and Families (ACYF) has supported ongoing research to support and expand the evidence base for differential response to assess the social and emotional wellbeing of children as well as safety and permanency.



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## RECOMMENDATIONS:

TFAH and the report’s advisory committee recommend that the most important approach to reducing child maltreatment is to focus on prevention — providing sufficient support to families and identifying children who may be at-risk.

According to *New Directions in Child Abuse and Neglect Research* conducted by the IOM, some successful and promising approaches include: early home visiting programs; public awareness campaigns; parenting education and support programs; and professional practice reforms. Effective programs include providing social, mental health and substance abuse services to families and within communities to help reduce risk factors and promote protective factors that children face.

The first step of a prevention approach is to place a much higher emphasis on providing support to families, particularly in families with young children and — providing strong community, social service and healthcare support — to help reduce factors that increase risk for maltreatment. Key strategic investments in early childhood wellbeing include: quality, accessible, affordable healthcare for children and their parents — including both physical and mental support; parenting support — with evidence-supported home visiting and parental education programs; social services — including income, nutrition and housing assistance programs — and the child welfare system; and quality, affordable child care and early education programs.

Identifying and reducing toxic stress in families can reduce risk and provide buffers against maltreatment. Toxic stress can include prolonged exposure to or risk for violence in the home, including witnessing or being the victim of domestic abuse, or in the community, as well as living in prolonged economic hardship. The Center for the Developing Child at Harvard University defines toxic stress as being “associated with strong and prolonged activation of the body’s stress management system in the absence of the buffering protection of adult support. Precipitants include extreme poverty in conjunction with continuous family chaos, recurrent physical or emotional abuse, chronic neglect, severe and enduring maternal depression, persistent parental substance abuse or repeated exposure to violence in the community or within the family. The essential feature of toxic stress is the absence of consistent, supportive relationships to help the child cope and thereby bring the physiological response to threat back to baseline.”<sup>287</sup>

There are many promising policy strategies to prevent child abuse and neglect that focus on strengthening families and communities and supporting parents, ranging from longer paid maternity leave time to stronger social and economic supports for parents to

improving access to quality, affordable child care. CDC has issued a child maltreatment prevention framework, *Essentials for Childhood: Assuring Safe, Stable, Nurturing Relationships and Environments for All Children*. It promotes increased education and culture change to build protective environments and sustained, healthy relationships for children and the greater use of data by social services. *Essentials for Childhood* encourages work in each of four goal areas: raising awareness and commitment, using data to inform prevention action, and creating the context for safe, stable, nurturing relationships and environments through norms change, programs, and policies.<sup>288</sup>

More research is needed to understand the cost-benefit and effectiveness of prevention approaches and evaluations of system-level approaches for community prevention strategies.

Prevent Child Abuse America, a non-profit group, recommends that states take the following actions:<sup>289</sup>

- Increase evidence-based education programs for parents and other caregivers to improve their parenting skills. These programs should focus particularly on single parents, teen parents and parents otherwise at greater risk of child abuse and neglect;
- Implement home visitation programs, in which public-health workers visit pregnant mothers and families with new babies or young children in order to strengthen parenting skills;



- Implement respite and crisis-care programs, which offer short-term child care to help parents and other caregivers in stressful situations;
- Implement programs to prevent and reduce instances of Shaken Baby Syndrome, which involves violently shaking an infant or young child. These programs should include education as well as instruction in coping strategies; and
- Create a statewide child maltreatment prevention strategy, which includes a plan for developing family resource centers and enforcement of existing state laws.

In addition, Casey Family Programs, the nation's largest operating foundation

focused entirely on foster care and improving the child welfare system, has identified the need for research-based, culturally-competent safety and risk assessment methods, highly trained child protective services staff, strong networks of alternative/differential response agencies, and an array of effective family support agencies offering evidence-based services.<sup>290</sup>

The Department of Justice's Office of Juvenile Justice and Delinquency Prevention also recommends that states require basic screening practices, pass laws authorizing criminal record checks and encourage education and training designed to prevent child abuse and neglect.<sup>291</sup>

## C. FALLS, DROWNING AND RECREATION- AND HOME-RELATED INJURIES

A significant number of injuries are related to daily life and recreational activities or are home-related. Examples of some major causes of these types of injury include falls, drowning and fires.

### INDICATOR 8: PREVENTING FALLS

**FINDING:** In 13 states, deaths from unintentional falls are under the national goal of 7.2 per 100,000 people (based on 2011-13 three-year average).

13 states have deaths from unintentional falls under the national goal of 7.2 per 100,000 people	37 states and D.C. have deaths from unintentional falls above the national goal of 7.2 per 100,000 people		
Alabama (4.1)	Arizona (11.6)	Michigan (7.8)	Pennsylvania (8.7)
Alaska (5.4)	Colorado (15.1)	Minnesota (14.4)	Rhode Island (10.8)
Arkansas (7)	Connecticut (7.8)	Mississippi (8.4)	South Dakota (13.2)
California (5.7)	D.C. (8.8)	Missouri (8.9)	Tennessee (8.9)
Delaware (6.5)	Florida (8.9)	Montana (11)	Texas (7.4)
Illinois (6.5)	Georgia (7.8)	Nebraska (8.6)	Utah (9.9)
Indiana (5.9)	Hawaii (7.3)	New Hampshire (12.6)	Vermont (16.3)
Kentucky (6.3)	Idaho (12)	New Mexico (13.4)	Virginia (7.9)
Louisiana (5.5)	Iowa (11.5)	North Carolina (9.2)	Washington (11.2)
Nevada (6.9)	Kansas (10.2)	North Dakota (7.6)	West Virginia (10.4)
New Jersey (4.4)	Maine (7.6)	Ohio (8.4)	Wisconsin (15.5)
New York (6.1)	Maryland (8.7)	Oklahoma (12.2)	Wyoming (10.1)
South Carolina (7)	Massachusetts (7.4)	Oregon (13)	

Sources: Healthy People 2020.

Falls are the most common cause of nonfatal injuries and hospital admissions for trauma in the United States. They are the leading cause of fatal and nonfatal injuries among older Americans. One in three Americans over the age of 64 experiences a serious fall each year.<sup>292</sup>

Indicator 8 examines the number of states that have rates of fall-related deaths under 7.2 out of every 100,000 people, which is the national goal established in Healthy People 2020.<sup>293</sup> Only 13 states are below the national goal (based on an average of three-year data from 2011 to 2013 to increase sample sizes and stabilize the data). Some ways states and localities can help reduce unintentional fall injuries and deaths include supporting public health fall-prevention campaigns, physical activity programs, osteoporosis

legislation (to support programs, policies and payment for services that support increasing bone strength) and mandated Medicaid coverage and safety measures.

Falls can cause injuries such as hip fractures and head traumas, and can increase the risk of death. The chances of falling and of being seriously injured from a fall increase with age.

- Emergency departments treated 2.5 million nonfatal fall injuries among older Americans in 2013; about 734,000 of these patients were hospitalized. The direct medical cost of fall injuries among older Americans is estimated to be \$30 billion;<sup>294</sup>
- Nearly 23,000 older adults died from fall injuries in 2011;

- More than 250,000 Americans suffer hip fractures annually; more than 95 percent are caused by falls. The rate for women was almost three times the rate for men. People 85 and older are 10 to 15 times more likely to fracture a hip than 60- to 65-year-olds. By 2030, the number of hip fractures is projected to reach 289,000, an increase of 12 percent;
- More than 10 million Americans over the age of 50 are estimated to have osteoporosis, and another 34 million are at risk for the disease. Osteoporosis increases risk for bone fractures and breaks;<sup>295</sup> and
- Medicare costs per fall averages between \$13,797 and \$20,450 (in 2012 dollars).<sup>296</sup>

The number of fall injuries among older Americans is expected to sharply increase as the Baby Boomers age. CDC estimates that if the rate of increase in falls is not slowed, the annual direct and indirect cost of fall injuries by 2020 will reach \$67.7 billion (in 2012 dollars).<sup>297</sup>

According to the Nursing Home Data Compendium of the more than 15,600 nursing homes that participated in Medicare or Medicaid in 2012 — out of 1.4 million nursing home residents, 11.3 percent had a reportable fall and 5.3 percent were injured in a fall.<sup>298</sup> The rates varied significantly by state, with as high as 10.4 percent experiencing injurious falls in Wyoming to a low of 2.5 percent in Washington, D.C.

Falls are also a concern for children. Each year, around 100 children

under the age of 14 die from fall-related injuries, and there are around 2.3-million nonfatal fall-related injuries among children.<sup>299</sup> Falls are the leading cause of unintentional injury for children ages 14 and under. Around 45 percent of nonfatal and 56 percent of fatal childhood fall injuries were among children aged 4 and under.

Young children are at risk for falls from windows, furniture, stairs and playground equipment. Children and teens are also at risk for sports- and recreation-related falls. Effective ways to protect children include window guards, stair gates and appropriate equipment and energy-absorbing surfacing on playgrounds.

The National Council on Aging has launched the Falls Free® Initiative, a national collaborative effort to educate the public and support and expand evidence-based programs and interventions to help communities, states, federal agencies, non-profits, businesses and older adults and their families to prevent falls.<sup>300</sup>

Eight states have enacted laws to address falls in older adults: California, Connecticut, Florida, Illinois, Massachusetts, Minnesota, Texas and Washington.<sup>301</sup> At least 34 states have enacted laws relating to osteoporosis prevention programs and at least 14 have mandated insurance coverage of diagnosis and treatment.<sup>302</sup> The Affordable Care Act provides for annual wellness visits that include screening for fall risks, and the “Welcome to Medicare” visit also screens seniors for fall risk.



Source: CDC

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## RECOMMENDATIONS:

TFAH and the report's advisory committee recommend that additional research should be conducted to help create stronger policies and effective programs to prevent falls.

- To prevent falls in older Americans, states and localities should adopt multi-strategy initiatives that assess and address known risk factors, such as problems with gait and balance, use of psychoactive medications, severely low blood pressure and visual or foot problems. Effective strategies include exercise programs that address strength, gait and balance; management of medications; home-hazard modification; and educating individuals, caretakers, families and healthcare providers about ways to reduce risks.<sup>303</sup>
- To prevent childhood falls and fall-related injuries, efforts should be

made by pediatricians, public health professionals and policymakers to communicate information about safety to parents and to ensure that local and state ordinances include playground safety standards. Education and prevention steps that should be taken include:

- Education about window and stair safety coupled with access to window guards and stair gates that includes affordable options for lower-income families;
- Compliance with baby-walker recommendations from the Consumer Product Safety Commission; and
- Appropriate equipment and protective surfacing under and around playground equipment.

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## PREVENTING FALLS IN OLDER AMERICANS

According to CDC, primary care providers can help reduce falls in older Americans by taking three steps to:<sup>304</sup>

- **ASK** patients if they have fallen in the past year, feel unsteady, or worry about falling.
- **REVIEW** medications and stop, switch, or reduce the dose of prescriptions that increase fall risk.
- **RECOMMEND** Vitamin D supplements of at least 800 IU/day with calcium (for older Americans with vitamin D deficiency or who are at increased risk for falls).

## TRAUMATIC BRAIN INJURIES (TBI)

TBI is a contributing factor in more than 30 percent of all injury-related deaths in the United States. About three-quarters of all TBIs are concussions or other forms of mild TBI.<sup>305</sup>

Falls are the most common cause of TBIs, while many TBIs are sports- and recreation-related. Each year, emergency departments treat more than 173,000 sports- and recreation-related TBIs, including concussions, among children and youth younger than 19.<sup>306</sup> Over the last decade, such emergency department visits have increased by 60 percent. Overall, children and teens between the ages of 10 and 19 account for more than 70 percent of sports- and recreation-related TBI emergency department visits.

- TBIs occur most often in football (more than 55,000 TBI injuries, a rate of .47 per 1,000 athlete exposures) and girls' soccer (more than 29,000 TBI injuries, a rate of .36 per 1,000 athlete exposures);
- Males account for almost three-quarters of all sports- and recreation-related TBI emergency department visits. For males between the ages of 10 and 19, these TBIs occurred most often while bicycling or playing football; and
- For females between the ages of 10 and 19, sports- and recreation-related TBIs occurred most often while bicycling or playing soccer or basketball.

Repeated mild TBIs over a long period can result in cumulative neurological and cognitive deficits. Repeated TBIs occurring within hours, days or weeks can cause serious problems or even death. TBIs can cause epilepsy and increase the risk for degenerative illnesses such as Alzheimer's disease and Parkinson's disease.<sup>307</sup>

**BRAIN INJURY IN KIDS**

**ALMOST half A MILLION KIDS** are treated in an emergency department each year for traumatic brain injury\*, including concussion.

\* alone or along with other injuries or conditions.

**THAT'S MORE THAN 5,000** OF THE NATION'S LARGEST SCHOOL BUSES FILLED TO CAPACITY.

**SOME BRAIN INJURY SIGNS AND SYMPTOMS**

- Headache
- Dizziness
- Blurred Vision
- Difficulty Thinking Clearly
- Sensitivity to Noise & Light

**LEARN MORE SYMPTOMS @**  
[www.cdc.gov/TraumaticBrainInjury](http://www.cdc.gov/TraumaticBrainInjury)

**50%** of BRAIN INJURIES AMONG KIDS ARE DUE TO FALLS

**WHAT TO DO if you think a child has A BRAIN INJURY**

- ASSESS** THE SITUATION
- BE ALERT** FOR BRAIN INJURY SIGNS AND SYMPTOMS
- CONTACT** A HEALTH CARE PROFESSIONAL

Source: CDC

### Preventing Concussions and Reducing the Impact of Concussions

A number of measures — including use of proper protective equipment — can be taken to help prevent concussions or to limit the harm caused by a concussion or suspected concussion.

All 50 states have youth-sport concussion safety laws, including 48 states and

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Washington, D.C., that have passed the Zackery Lystedt law (first passed by Washington state in 2009), which includes three principle components:

- Informing and educating youth athletes and their parents about concussions and requiring them to sign a concussion information form;
- Removing a youth athlete who appears to have suffered a concussion from play

or practice at the time of the suspected concussion; and

- Requiring a youth athlete to be cleared by a licensed healthcare professional trained in the evaluation and management of concussions before returning to play or practice.

Implementation and enforcement of these laws are still of concern.

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### RECOMMENDATIONS:

TFAH and the report's advisory group recommend that state laws relating to concussions and youth sports should have the following requirements:

- Use validated screening tools that measure individuals suspected of having a concussion;
- Remove from play if an athlete is suspected of having a concussion, and requiring written authorization from a medical or healthcare professional before returning to play;

- Refer to a medical professional trained in the diagnosis and management of concussions and TBI;
- Educate and train coaches, physical education teachers, parents, athletes and others about how to prevent concussions and understand the signs, symptoms and possible long-term consequences of concussions; and
- Address peer and cultural pressures so it becomes acceptable to sit out games instead of returning to play when injured.



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### DROWNING

Drowning is the second leading cause of death for children ages 1 to 14, after motor vehicle crashes.<sup>308</sup> Children ages 1 to 4 are at highest risk, and most of these drowning deaths occur in swimming pools.

Around 10 Americans die each day from drowning, including two children under the age of 15. Annually, this amounts to over 3,500 deaths. Nearly 80 percent of drowning deaths involve males.

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### RECOMMENDATIONS:

TFAH and the report's advisory committee recommend public education and safety campaigns to help Americans understand how to reduce the risk of drowning, including the importance of close supervision of children, swimming lessons, fences around

swimming pools, alarms on doors and windows providing access to a swimming pool, use of life jackets in recreational boating, the use of cardiopulmonary resuscitation to improve outcomes in drowning victims, and other measures.

## FIRE-RELATED INJURIES

There is one fire-related death every 2.4 hours and a fire-related injury every 33 minutes in the United States (numbers exclude firefighters and first responders).<sup>309</sup>

Overall, in 2013, there were about 1.2 million fires in the United States. About 3,240 Americans died and nearly 16,000 were injured from fires (numbers exclude firefighters and first responders), and fires contributed to an estimated \$11.5 billion in direct property loss.<sup>310</sup> Fire and burn injuries cost \$7.5 billion each year.<sup>311</sup>

Deaths from fires and burns are the third-leading cause of fatal home injury. Most fire victims die from smoke or toxic gases, not from burns. Cooking is the primary cause of residential fires, while smoking is the leading cause of fire-related deaths. Alcohol use contributes to about 40 percent of residential fire deaths. Most residential fires occur in winter.<sup>312</sup>

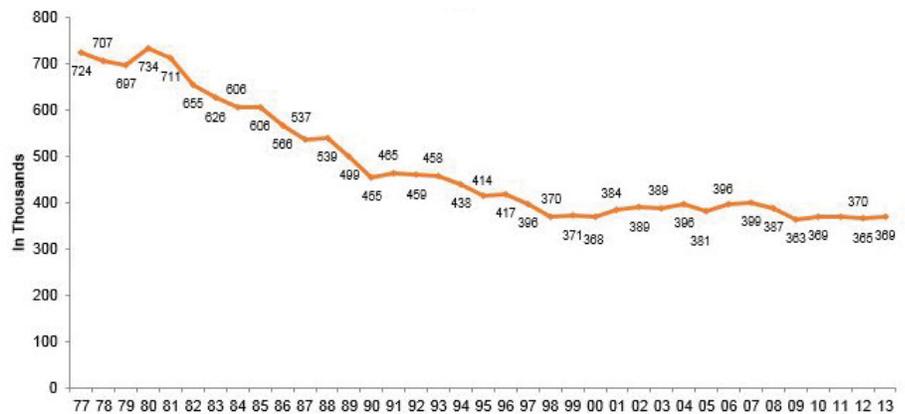
Groups at increased risk of fire-related injuries and deaths include children under 5; adults over 64; Blacks and Native Americans; those with the lowest-incomes; people living in rural areas; and people living in manufactured homes or substandard housing.

### Alarms and Sprinklers

Smoke alarms have long been recommended as a way to quickly detect and alert people about fires so they can immediately vacate a building. A number of policies exist, such as requiring landlords to install smoke detectors to meet National Fire Protection Association standards for all rental units. Another policy requires smoke alarms to be installed in all new residential buildings. Most of these policies are city or local ordinances, although a few states have detector laws.

Working smoke alarms reduce the risk of death in a house fire by at least 50 percent. However, while a majority of Americans think

## Fire Loss in the United States 2013



Source: *Fire Loss in the United States during 2013* Michael J. Karter, Jr. NFPA, September 2014 and previous reports in the series.

they have working smoke alarms, follow-up home observations show that only about half of them are actually working.<sup>313, 314</sup>

Among homes with smoke alarms, most have too few alarms, incorrectly placed alarms, or non-working alarms. Between 2005 and 2009, smoke alarms were present in 72 percent of reported home and apartment fires, but they sounded warnings in only 51 percent of these fires.<sup>315</sup>

- Twenty-four percent of home-fire deaths were caused by fires in which smoke alarms were present but failed to operate. Smoke alarm failures are usually caused by missing, disconnected or dead batteries.
- In 37 percent of fire deaths, smoke alarms sounded. One percent of the deaths were caused by fires too small to activate the smoke alarm.
- Thirty-eight percent of home-fire deaths result from fires in dwellings without alarms.

There is strong evidence that residential sprinklers are highly effective in quickly dampening the spread of fires and preventing injuries and deaths. For more than 100 years, sprinkler systems have been used in commercial properties, and for decades they have been used with great success in hotels and multi-family

residences. Sprinklers can help save the lives of families and firefighters, limit the damage and cost of damage from a fire and are environmentally friendly.<sup>316</sup>

The 2009 International Residential Code (IRC) has adopted sprinklers as a requirement. Currently only two states have adopted the code (California and Maryland) while 14 states have prohibited the adoption of the IRC sprinkler mandate, including Alaska, Alabama, Arizona, Georgia, Hawaii, Idaho, Kansas, Louisiana, Michigan, New Hampshire, North Dakota, Pennsylvania, South Dakota and Wisconsin.<sup>317</sup> Some officials and builders have expressed concern over the costs of putting in residential sprinklers.

A 2007 report by the U.S. Department of Commerce's National Institute of Standards and Technology office, found that from 2002 to 2005, houses equipped with smoke alarms and a fire sprinkler system experienced 100 percent fewer civilian fatalities, 57 percent fewer civilian injuries and 32 percent less direct property losses and indirect costs resulting from fire than houses equipped only with smoke alarms.<sup>318</sup> In addition, homeowners of dwellings with fire sprinkler systems received an 8 percent reduction in their homeowner insurance premium per year. This report

concluded that the monetized value of a residential fire sprinkler system, over a 30-year analysis period, to yield homeowners \$4,994 in present value benefits.

- The value costs of installation of a multipurpose network sprinkler system were estimated to be \$2,075 for a colonial-style house, \$1,895 for a townhouse and \$829 for a ranch-style

house; and the results of a benefit-cost analysis estimated the expected value of net benefits to be \$2,919 for the colonial-style house, \$3,099 for the townhouse and \$4,166 for the ranch-style house.

## RECOMMENDATIONS:

TFAH and the report's advisory committee recommend that:

- All states should adopt the 2009 International Residential Code requirement that all new one- and two-family homes include a residential sprinkler system;

- States should also encourage installing sprinklers in existing homes;

- There should be widespread public education to regularly change batteries and use 10-year lithium batteries instead of alkaline batteries; and

- All states should require all landlords to install smoke alarms that meet National Fire Protection Association standards in all rental units; that smoke alarms be mandatory in all new residential buildings; and that smoke alarm installation be mandatory before changes in ownership of single-family homes.

## CARBON MONOXIDE

Carbon monoxide (CO) is an odorless, colorless gas produced when fossil fuels are burned in a furnace, vehicle, generator, grill, or elsewhere. The gas can build up in enclosed or semi-enclosed spaces and can cause sudden illness and death if enough is breathed in by an individual.<sup>319</sup>

Unintentional CO exposure in the United States annually accounts for about 500 deaths and 15,000 emergency department visits.<sup>320</sup> The average daily number of CO-related deaths is greatest in January and December, and lowest in July and August. Nebraska has the highest CO mortality rate of any state.

Municipal fire departments responded to an estimated 61,100 CO incidents in 2005, excluding incidents where nothing was found or there was a fire. The peak time for these incidents was between 6 p.m. and 10 p.m.<sup>321</sup>

According to a review by the National Council of State Legislatures, as of January 2015, 29 states had enacted laws regarding carbon monoxide detectors: Alaska, California, Colorado, Connecticut, Delaware, Florida, Georgia, Illinois, Maine, Maryland, Massachusetts, Michigan, Minnesota, Montana, New Hampshire, New Jersey, New York, North Carolina, Oregon, Pennsylvania, Rhode Island, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia and Wisconsin.<sup>322</sup>

The laws vary by state. Alaska requires detectors approved by the state fire marshal be installed in all dwellings. Connecticut requires them in all new construction, as does Georgia and New Hampshire, Oregon, Pennsylvania, Rhode Island, Utah, Vermont, Washington and West Virginia. Florida also requires them in new construction, and in every room with a boiler. Illinois requires a detector

within 15 feet of every sleeping room. Massachusetts and Minnesota require them within 10 feet. Maryland requires them in new construction and all public school buildings. New Jersey requires them installed at occupancy. New York amended its Fire Prevention and Building Code to require detectors in new construction. North Carolina and West Virginia require them in every dwelling with a fossil fuel burning heater, fireplace or attached garage.

Texas requires a carbon monoxide detector in day care centers. Montana requires them in rental units. Wisconsin requires them in public buildings that sleep people. Delaware, Maryland and Virginia prohibit the tampering of detectors installed by landlords. Tennessee requires carbon monoxide detectors in recreational vehicles that are rented or leased.

## D. INJURIES FROM DRUG MISUSE AND ABUSE

More than 48,000 Americans die from poisoning — including drug overdoses — each year.<sup>323, 324</sup> Nine out of 10 of these deaths (nearly 44,000) are due to drugs. There are 120 drug overdoses a day and 6,700 emergency department visits for misuse or abuse of drugs.<sup>325</sup> More than 22,000 overdose deaths involve prescription drugs, which have sharply increased in the past 15 years.

From 2009 to 2013, drug overdoses have surpassed traffic-related crashes as the leading cause of injury death in the United States.<sup>326</sup>

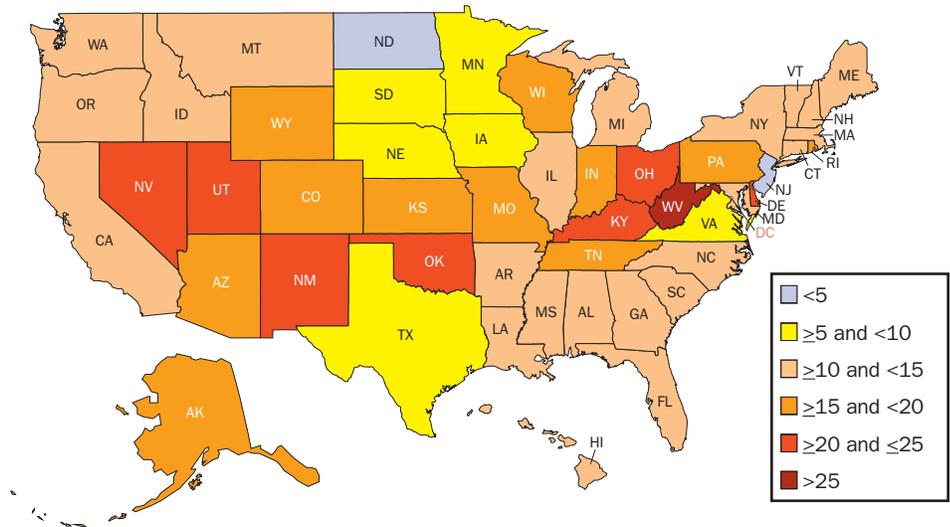
- Drug overdose deaths exceed the number of traffic-related crashes as the leading cause of injury nationally in the United States
- Children visit emergency departments twice as often for taking medications found in the home — than for poisonings from household products. More than 70,000 children go to the emergency department due to medication poisoning every year.<sup>327</sup> Most of these visits were because an unsupervised child found and consumed the medication—usually a prescription medication.<sup>328, 329</sup>

Deaths from drug overdoses range dramatically by state — they were nearly nine times higher in West Virginia (33.5 percent) compared to the lowest rate of 2.6 percent in North Dakota (based on an average of three-year data from 2011 to 2013). West Virginia's rate increased from 20.3 per 100,000 people in 2007 to 2009 to 33.5 percent in 2011 to 2013, a 65 percent increase.

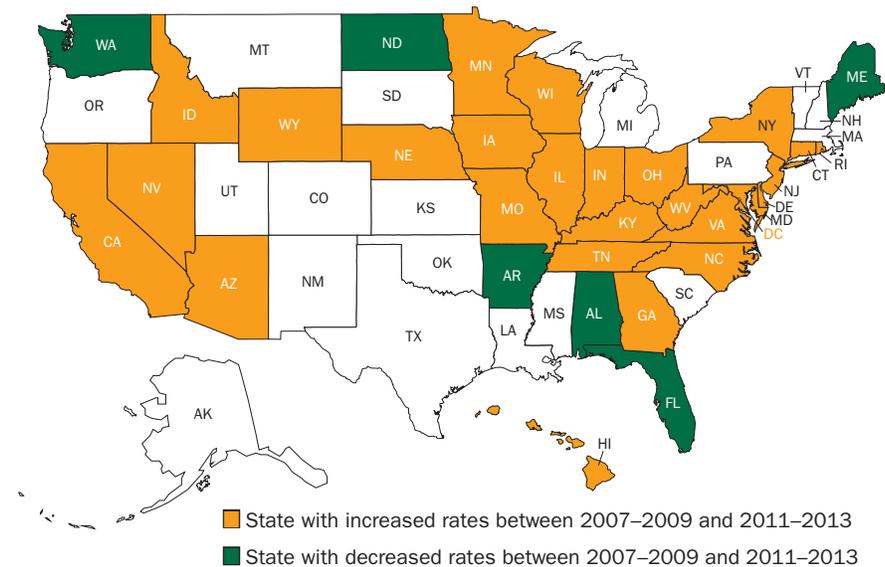
- Five states had rates exceeding 20 deaths per 100,000 people. Kentucky (24.6), Nevada (21.6), New Mexico (24.6), Utah (21.5), West Virginia (33.5).

The number of overdose deaths increased significantly in 26 states and Washington, D.C., including in: Arizona, California, Connecticut, Delaware, Georgia, Hawaii,

**Drug Overdose Mortality Rates per 100,000 People 2011-2013 Averages**



**State Drug Overdose Fatalities, Three Year Averages, Differences between 2007-2009 and 2011-2013**



Idaho, Illinois, Indiana, Iowa, Kentucky, Maryland, Minnesota, Missouri, Nebraska, Nevada, New Jersey, New York, North Carolina, Ohio, Rhode Island, Tennessee,

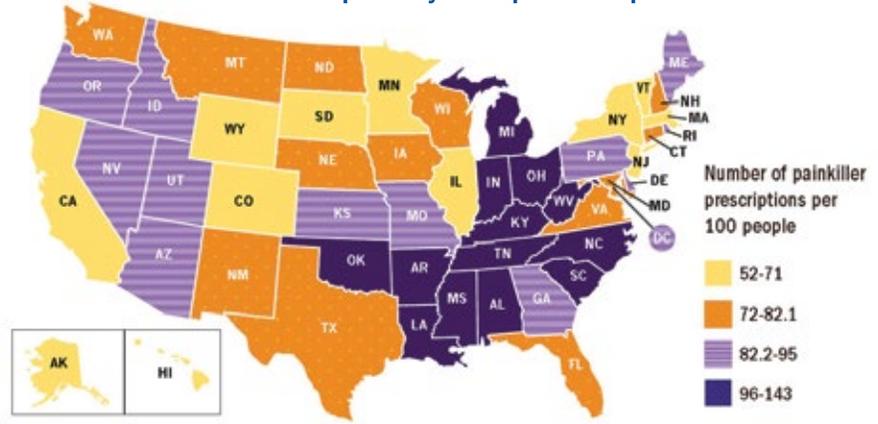
Virginia, West Virginia, Wisconsin and Wyoming. The rates decreased significantly in Alabama, Arkansas, Florida, Maine, North Dakota and Washington.

## PRESCRIPTION DRUG OVERDOSE OR MISUSE

In the past two decades, there have been many advances in bio-medical research, including new treatments for individuals suffering from pain, Attention Deficit Hyperactivity Disorder, anxiety and sleep disorders.<sup>330</sup>

At the same time, however, there has been a striking increase in the misuse and abuse of these medications, where individuals take a drug in a higher quantity, in another manner or for another purpose than prescribed, or take a medication that has been prescribed for another individual.

Painkiller Prescriptions by State per 100 Population



SOURCE: IMS, National Prescription Audit (NPA™), 2012.

2013 Drug Overdose Death Rates (Crude), All Intents, Opioid Pain Relievers vs. Illicit Drugs by Age Category

Age Cat.	Rx Opioid Pain Relievers	Illicit Drugs
15-24	2.6	3.7
25-34	7.5	8.9
35-44	8.6	7.9
45-54	10.6	8.7
55-64	7.5	5.2
65+	1.6	0.6
<b>Total</b>	<b>5.1</b>	<b>4.7</b>

Source: CDC

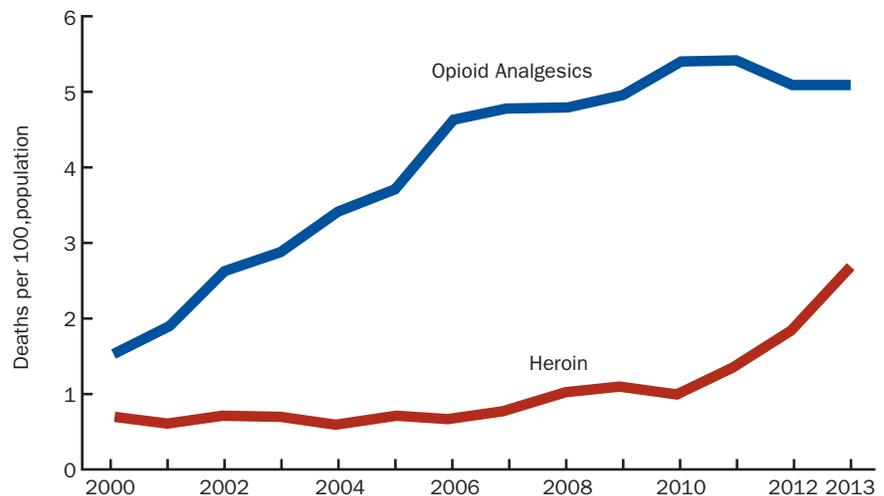
### • Magnitude:

- Approximately 2 million Americans abuse or misuse prescription drugs.<sup>331</sup>
- Prescription drugs are responsible for more than 22,700 deaths each year; 16,000 of these are due to prescription painkillers and nearly 7,000 are due to anti-anxiety, sleep and other related medications.<sup>332</sup>
- Around 1.4 million emergency department visits in 2011 were due to prescription drug misuse or abuse, including 420,000 due to prescription painkillers and 501,000 due to anti-anxiety, sleep and other related medications.

### • Rapid Rise:

- Sales of prescription painkillers per capita quadrupled from 1999 to 2011 — and the number of fatal poisonings

Age-Adjusted Rates for Drug-poisoning Deaths, by Type of Drug, United States, 2000 – 2013



NOTES: The number of drug poisoning deaths in 2013 was 43,982, the number of drug poisoning deaths involving opioid analgesics was 16,235 and the number of drug poisoning deaths involving heroin was 8,257. A small subset 1,342 deaths involved both opioid analgesics and heroin. Deaths involving both opioid analgesics and heroin are included in both the rate of deaths involving opioid analgesics and the rate of deaths involving heroin. Source: CDC/NCHS, National Vital Statistics System, Mortality

due to prescription pain medications nearly quadrupled.<sup>333,334</sup>

- Enough prescription painkillers were prescribed in 2010 to medicate every American adult continually for a month.<sup>335</sup>
- The rate of opioid/painkiller-related deaths continues to increase. The rate of increase has slowed from 2006 to 2011, but overall drug poisoning deaths continues to steadily rise.
- Emergency department visits for prescription drug misuse and abuse

more than doubled between 2004 and 2011. The most commonly involved drugs were anti-anxiety and insomnia medications and prescription painkillers (160.9 and 134.8 visits per 100,000 population, respectively).<sup>336</sup>

### • Costs:

- Prescription painkiller misuse costs an estimated \$55.7 billion a year in lost productivity (46 percent), healthcare costs (45 percent) and criminal justice costs (9 percent).<sup>337</sup>

## INDICATOR 9: PRESCRIPTION DRUG MONITORING PROGRAMS

**FINDING:** 25 states require mandatory use of Prescription Drug Monitoring Programs for healthcare providers.

25 states require mandatory use of PDMPs for healthcare providers (1 point)		25 states and D.C. do NOT require mandatory use of PDMPs for healthcare providers (0 points)	
Alabama	New Mexico	California	Missouri
Alaska	New York	Connecticut	Montana
Arizona	North Carolina	D.C.	Nebraska
Arkansas	North Dakota	Florida	New Hampshire
Colorado	Ohio	Georgia	New Jersey
Delaware	Oklahoma	Hawaii	Oregon
Indiana	Rhode Island	Idaho	Pennsylvania
Kentucky	Tennessee	Illinois	South Carolina
Louisiana	Vermont	Iowa	South Dakota
Massachusetts	Virginia	Kansas	Texas
Minnesota	Washington	Maine	Utah
Mississippi	West Virginia	Maryland	Wisconsin
Nevada		Michigan	Wyoming

Source: PDMP Center for Excellence at Brandeis University, October 2014.<sup>338</sup>

Note: Includes any form of mandatory use requirement.

Prescription Drug Monitoring Programs are state-run electronic databases used to track the prescribing and dispensing of controlled prescription drugs to patients. They hold the promise of being able to quickly identify problem prescribers and individuals misusing drugs, not only to stop overt attempts at “doctor shopping,” but also to allow for better treatment of individuals who are suffering from pain and drug dependence. They also can quickly help identify inadvertent misuse by patients or inadvertent prescribing of similar drugs by multiple doctors. Based on the system in a given state, physicians, pharmacists, law enforcement officials and other designated officials can have access to the information to help identify high-risk patients.

The National Drug Control Strategy and CDC have identified PDMPs as a key strategy for reducing prescription drug misuse.<sup>339,340</sup> The Prescription Drug Monitoring Program Center of Excellence at Brandeis University, the National Alliance for Model State Drug Laws, the Alliance of States with Prescription Monitoring Programs, the School of Medicine and Public Health at the University of Wisconsin-

Madison, the American Cancer Society and other organizations have stressed the importance of PDMPs in fighting prescription drug diversion (including prescription fraud and forgeries) and improving patient safety. They have also issued a variety of recommendations and best practices for PDMPs, including interstate operability, mandatory utilization, expanded access, real-time reporting, use of proactive alerts and integration with electronic health records.

A review by the Congressional Research Service found that the available evidence suggests that PDMPs are effective in reducing the time required for drug diversion investigations, changing prescribing behavior, reducing doctor shopping and reducing prescription drug abuse, but notes that the research is still limited since PDMPs are relatively new.<sup>341</sup>

PDMPs vary among states, including differences in the information collected; who is allowed to access the data and under what circumstances; and the requirements for use and reporting, including timeliness of data collection, the triggers that generate reports and the enforcement mechanisms in place

for noncompliance. States finance PDMPs through a variety of sources including the state general fund, state and federal grants and licensing and registration fees.

The specific use requirements can also vary significantly by state. For instance, in Nevada, the requirement is for a prescriber to access the PDMP data if there is a “reasonable belief” that the patient wants the prescription for a nonmedical purpose. In Tennessee, prescribers must check the database when first prescribing opioids and benzodiazepines for more than seven days and at least annually thereafter if prescribing continues.<sup>342</sup>

Every state except Missouri and Washington, D.C. have passed legislation authorizing a PDMP, which is the first step necessary for states to benefit from this potentially useful tool.

While having an authorized PDMP is important, there are major differences in what is required in terms of use, availability, timeliness and other factors that significant impact on their potential effectiveness in combating the problem of prescription drug abuse.

Indicator 9 identifies the states that require mandatory use of PDMPs by healthcare providers. In most states with operational PDMPs, enrollment and utilization are voluntary for prescribers and dispensers of prescription drugs. One way to ensure broader use is to make enrollment in a PDMP mandatory for certain practitioners or in certain circumstances. The National Alliance for Model State Drug Laws recommends that health licensing agencies or boards establish standards and procedures for their licensees regarding access to and use of PDMP data.

Currently, 25 states mandate use of the state’s PDMP by providers — and in some cases dispensers — in at least some circumstances. The requirements vary significantly — from some states requiring to check for every “schedule II” prescription painkiller prescription to some only requiring methadone treatment programs to check.

Updated and mandated use of PDMPs has been rapid. As of 2012, only two states — Arizona and Utah — required prescribers to register with the PDMP, but, by 2015, more than 20 states have a mandatory use requirement.

While this indicator examines mandated use requirements, it does not measure the actual usage and whether providers are trained to effectively recognize individuals who may be misusing or abusing prescription medications.

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## RECOMMENDATIONS:

TFAH and the report’s advisory group recommend states and municipalities take strong action to prevent and curb prescription drug misuse and abuse, including focusing on:

- **Prevention:** A renewed emphasis should be placed on primary prevention and early intervention, concentrating on investments in screening, brief intervention and referral to treatment. Evidence-based strategies to prevent opioid misuse and abuse and save lives should be developed and disseminated. Additional research is needed into how best to address pain through a more integrated approach that would reduce the potential for misuse.
- **Strengthening PDMPs:** Use of PDMPs should be mandated, and PDMPs should be modernized and fully funded so that they are real-time, can communicate across state lines and across different types of providers, and are incorporated into electronic health records.
- **Education for patients and expanded take-back programs:** Many people assume that prescription drugs are safe because they were at some point prescribed by a doctor. Public education should be expanded to ensure people understand the risks of misusing prescription medications, as well as how to safely store and dispose of potentially addictive drugs.
- **Education for providers:** Efforts should be increased to ensure responsible prescribing practices from every medical professional with the ability to prescribe opioids. This includes increasing education of healthcare providers and prescribers to better understand how medications can be misused and to identify the signs of addiction so patients who need treatment can be referred for it.
- **Access to treatment:** States and insurance providers should increase access to substance abuse treatment programs, which can help reduce overdose injuries and deaths, avoid relapses and support ongoing recovery.

## INDICATOR 10: RESCUE DRUG USE

34 states and D.C. have laws in place to expand access to, and use of, naloxone by making prescribing and dispensing easier and/or for lay administrators to use it without the potential legal repercussions (1 point)			16 states do NOT have laws in place to expand access to, and use of, naloxone by making prescribing and dispensing easier and/or for lay administrators to use it without the potential legal repercussions (0 points)	
Arkansas	Maryland	Oklahoma	Alabama	Missouri
California	Massachusetts	Oregon	Alaska	Montana
Colorado	Michigan	Pennsylvania	Arizona	Nebraska
Connecticut	Minnesota	Rhode Island	Florida	New Hampshire
Delaware	Mississippi	Tennessee	Hawaii	South Carolina
D.C.	Nevada	Utah	Iowa	South Dakota
Georgia	New Jersey	Vermont	Kansas	Texas
Idaho	New Mexico	Virginia	Louisiana	Wyoming
Illinois	New York	Washington		
Indiana	North Carolina	West Virginia		
Kentucky	North Dakota	Wisconsin		
Maine	Ohio			

Source: Network for Public Health Law, as of May 8, 2015

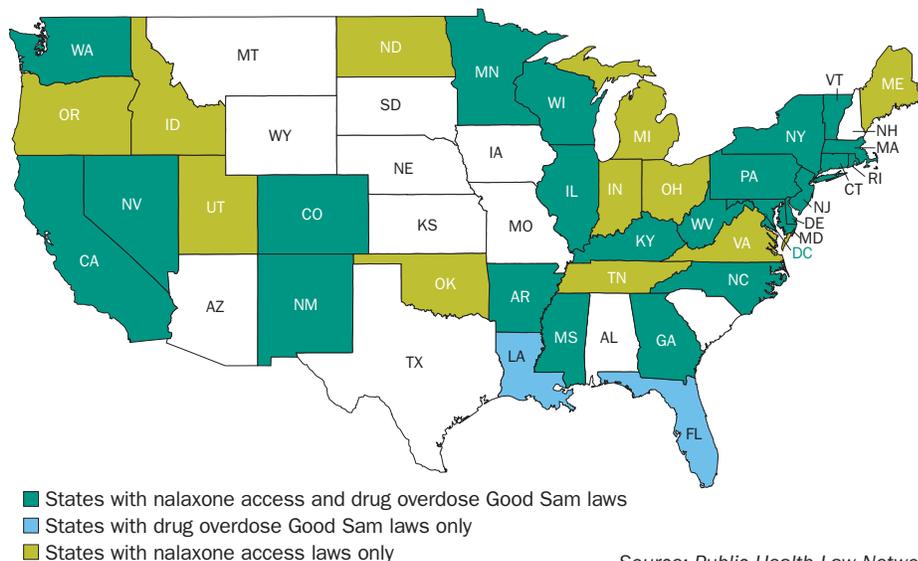
**FINDING:** 34 states and D.C. have a law in place to make it easier for medical professionals to prescribe and dispense naloxone and/or for lay administrators to use it without the potential for legal repercussions.

Naloxone — a form of “rescue drug” — is an opioid antagonist and can be used to counter the effects of a prescription painkiller or other opioid (including heroin) overdose. It has been approved by the Food and Drug Administration (FDA) and its brand name is Narcan. Administration of naloxone counteracts life-threatening depression of the central nervous system and respiratory system, allowing an overdose victim to breathe normally. It may be injected in the muscle or vein, under the skin, or sprayed into the nose. It is a temporary drug that wears off in 20 to 90 minutes.<sup>343</sup> Although naloxone is a prescription drug, it is not a controlled substance and has no abuse potential. Furthermore, it can be administered by minimally trained laypeople.

A growing number of states and communities equip ambulances with naloxone and many community-based overdose prevention programs now distribute naloxone. A 2010 review by CDC of 188 communities that provided training and distribution of naloxone to more than 50,000 people found it helped lead to more than 10,000 overdose reversals.<sup>344</sup>

Expanding access to naloxone has been supported by the U.S. Conference of Mayors (2008 resolution), the American Medical Association (2012 resolution), the American Public Health Association and a range of public health, law enforcement and other organizations. In a survey of states’ naloxone and “Good Samaritan” laws conducted by the Network for Public Health Law, the group concluded that, “it is reasonable to believe that laws that encourage the prescription and use of naloxone and the timely seeking of emergency medical assistance will have the intended effect of reducing opioid overdose deaths,” and found “such laws have few if any foreseeable negative effects, can be implemented at little or no cost, and will likely save both lives and resources.”<sup>345</sup>

State laws have been necessary to overcome barriers that often prevent use of naloxone in emergency situations. Laws have been implemented to both encourage increased prescribing of such medication to those at risk of an overdose, and to protect those who administer naloxone to an overdosing individual from civil or criminal repercussions. Some states may be able to accomplish this through regulations.



Indicator 10 examines which states have passed laws to make it easier for medical professionals to prescribe and dispense naloxone and for lay administrators to use it without the potential for legal repercussions.

- According to a review from The Network for Public Health Law, 34 states and Washington, D.C., have passed some form of measure, although they vary in scope.<sup>346</sup> For instance, some states remove civil liability for prescribers or allow for lay administration (that it is not considered unauthorized practice of medicine); some allow for third-party prescriptions; some remove civil and/or criminal liability for prescribers.
- In addition, 26 states and Washington, D.C., have passed Good Samaritan laws or have other mitigation protections to encourage bystanders to provide help

and summon medical assistance in the event of an overdose without fear of criminal or liability repercussions. These states are Alaska, California, Colorado, Connecticut, Delaware, Florida, Georgia, Illinois, Kentucky, Louisiana, Maryland, Massachusetts, Minnesota, Mississippi, Nevada, New Jersey, New Mexico, New York, North Carolina, Pennsylvania, Rhode Island, Utah, Vermont, Washington, West Virginia and Wisconsin).

It is important to note that having a law in place does not measure how well it is being implemented.

### RECOMMENDATIONS:

TFAH and the report’s advisory committee recommend expanding access to rescue medications. This includes making them more widely available by equipping first responders

with naloxone; increasing access to take-home naloxone; and by providing legal immunity for individuals experiencing an overdose, bystanders who help them, and providers who prescribe naloxone.

## MASSACHUSETTS'S NALOXONE DISTRIBUTION PILOT PROGRAM

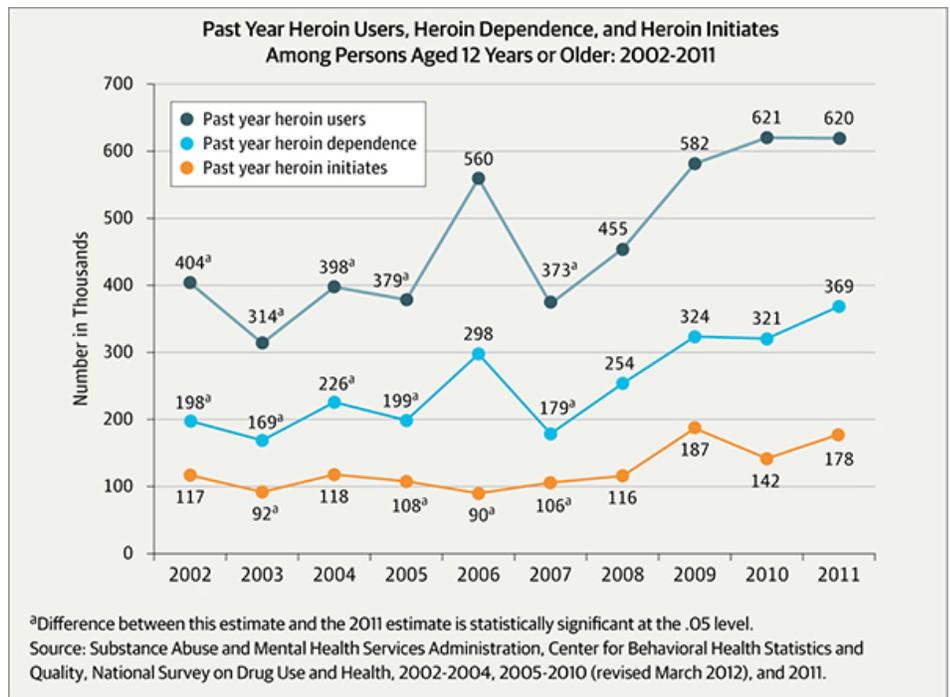
Over the last six years, the Massachusetts Department of Public Health has implemented overdose education and naloxone distribution programs across the state which train drug users, family members and friends on how to reduce overdose risk, recognize signs of an overdose, access emergency medical services and

administer naloxone. Since its inception in 2007, the program has trained more than 10,000 individuals and resulted in more than 2,000 prescription painkiller overdose reversals.<sup>347</sup> The Massachusetts Department of Public Health has a system for distribution by approved trainers under a standing order by its medical director.

## RISE IN HEROIN

There are growing accounts in many states and communities that the increase in prescription drug abuse is also contributing to a rise in heroin addiction. Since heroin is cheaper and often easier to buy, there are concerns that some prescription drug users are transitioning to heroin use.<sup>348, 349</sup>

- Around 681,000 Americans reported using heroin in 2013, with 169,000 using it for the first time, which was nearly double the number of first-time users in 2006.<sup>350</sup>
- More than 79 percent of new heroin users had abused prescription pain medication in the previous year. There is an approximately 4 percent estimated conversion rate from nonmedical prescription drug use to heroin among those who frequently abuse pain relievers.<sup>351</sup>
- New heroin use (heroin initiation) was 19 time higher among individuals who had previously been using prescription painkillers compared to those who had not between 2002 and 2011.<sup>352</sup>



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## POISON CONTROL CENTERS

Poison control centers provide free, immediate, expert information and treatment advice, 24/7/365, through the national Poison Help line—1-800-222-1222—when people are exposed to hazardous substances or overdoses.

Calls are answered primarily by certified specialists in poison information (e.g., specially trained nurses, toxicologists, pharmacists and physicians). Poison control centers also serve as an important community educational resource in poisoning prevention and treatment.

The nation's 55 poison control centers handled more than 3.1 million calls in 2013, an average of nearly 9,000 per day — and provided treatment advice for over 2.2 million poison exposures.<sup>353</sup>

The poison center system saves over \$1.8 billion per year in medical costs and lost productivity and every dollar spent on poison control centers saves \$13.39.<sup>354</sup>

Children younger than 6 account for about half of all of the calls to the centers and account for about 2 percent of the deaths.<sup>355</sup> Adults aged 20 and older accounted for

92 percent of all poisoning deaths. Adults between the ages of 50 and 59 (18.6 percent) have the highest number of poisoning deaths. Approximately 70 percent of the 2.2 million poison exposure cases reported to poison centers were treated at home, saving millions of dollars in medical expenses. In addition, doctors and nurses also use the expertise of poison control centers to guide treatment of patients—more than 440,000 calls (over 20 percent of total calls) were placed from a health-care facility in 2013.

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## RECOMMENDATIONS:

TFAH and the report's advisory committee recommend that all poison control centers should perform a defined set of core activities supported by federal funding, including:

- Managing telephone-based poison exposure and information calls;
- Preparing and responding to all-hazards emergency needs, especially biological or chemical terrorism or other mass-exposure events;
- Capturing, analyzing and reporting exposure data;
- Training poison control center staff;

- Carrying out continuous quality improvement; and
- Integrating services into the public health system.

In addition:

- The Poison Prevention and Control System should be fully funded and integrated into public health infrastructure at the federal, state and local levels;
- Poison control centers should be fully funded at the federal, state and local level and collaborate with state and local health departments to develop, disseminate, and evaluate public and professional education activities;

- HHS and the states should establish a Poison Prevention and Control System that integrates poison control centers with public health agencies, establishes performance measures, and holds all parties accountable for protecting the public;
- CDC, the Health Resources and Services Administration and states should continue to build an effective infrastructure for all-hazards emergency preparedness, including bioterrorism and chemical terrorism; and
- HHS should increase health providers' awareness of the importance of keeping information on poisoning private so that callers are not reluctant to call or follow up.

## Conclusions

Thousands of injuries could be prevented and billions of dollars could be saved in medical costs each year with wider implementation and increased investments in proven, evidence-based, public health policies and strategies for reducing injury rates.

### ■ Increased Resources and Workforce are Needed for Injury Prevention

Currently, public health departments and researchers do not have the support they need to fully implement many promising strategies. Funding for public health has dramatically decreased in the past several years, and the public health system has been chronically underfunded for decades. Yet injury prevention efforts require dedicated resources and staff in place to be effective.

The nation's public health system is responsible for improving the health of Americans. But analyses from the IOM, The New York Academy of Medicine, CDC and a range of other experts have found that federal, state and local public health departments have been hampered due to limited funds and

have not been able to adequately carry out many core functions, including programs to prevent injuries and disease and prepare for health emergencies.<sup>356</sup>

While increased targeted support for preventing prescription drug abuse very important, the nation also still needs to invest in making sure there is a sound structure in place to deal with the wide range of ongoing injury and violence concerns. There needs to be a strong investment the core system and baseline capabilities across every state to ensure there is a strong, effective foundation in place — and then supplemental investments to target priority problems — like the surge in prescription drug abuse — can then have their intended impact.



### ■ Increased Investment is Needed for Injury Prevention Research

Research has generated strong evidence that a number of strategies can reduce a wide range of injuries. These strategies include surveillance data on injury problems, studies of the risk and protective factors, the development and evaluation of innovative solutions and the widespread dissemination of effective programs and policies.

However, limited resources mean limits on the ability to collect, analyze and evaluate data to move the field forward. For instance, more information is needed to evaluate whether bans on hand-held devices and texting help reduce crashes, or if these bans actually

encourage more distraction for drivers as they try to hide their devices while they continue to use them.

And when there is a proven, effective policy, we need to know the best ways to implement it and disseminate it as widely as possible. For example, Graduated Driver Licensing policies reduce teen deaths and injuries, but more research could help reveal the key factors that make them effective. If we understood those factors, it might encourage more states to adopt this life-saving policy. Answering these and many other injury prevention questions are essential to more fully protecting the public in the future.

### ■ Partnerships Between Public Health and Other Sectors Must Continue to Be Strengthened

Injuries have a wide range of causes. While harm to a person's well-being or even death are what defines an injury, it takes health experts working with other fields to identify and implement effective prevention strategies. For instance, motor vehicle policies and programs involve working with transportation officials, other experts and members of the motor vehicle

industry, while violence reduction efforts can involve community organizations, social services, education, law enforcement, the judicial system and other areas. While the public health perspective must be integral in any effort to find solutions, collaborations are critical to success and can create win-win policy approaches that cut across sectors.

## Appendix A: Rates Methodology

State death rates from injury include deaths for all ages and for injuries caused by both accidents and violence (unintentional and violence-related causes). In the rankings, states with a higher ranking had a higher rate of injury-related death. In other words, a state with the rank of “1” has the highest rate of injury fatalities, while a state with the rank of “51” has the lowest rate (the rankings include Washington, D.C.) The rates and rankings are based on combined data for the years 2011-2013 to “stabilize” the death rates for comparison purposes. The data come from CDC’s Web-based Injury Statistics Query and Reporting System (WISQARS). The data are age-adjusted using the year 2000 as the reference point. The use of age-adjusted rates, which is recommended by CDC, accounts for differences in age distribution between states. The rates refer to deaths per 100,000 people. The overall childhood injury rates refer to state residents under the age of 20 and are not age adjusted.

State death rates from injury include deaths for all ages, for injuries caused by both accidents and violence (unintentional and violence-related causes). The rates are based on combined data for the years 2011-2013 to “stabilize” the death rates for comparison purposes.

State death rates for All Intentions and Drug overdose for the years 2011-2013 were individually compared with the state death rates for All Intentions and Drug overdose for the years 2007-2009 to determine if the state had a significant increase or decrease between the two group years. This was done by individually calculating the difference between the state rate (2011-2013 and 2007-2009), standard error (S.E.), confidence intervals (C.I.) and standard error of the differences between the two state rates, expressed as proportions, using the following formulas:

$$S.E. = R / \text{square root of } N$$

$$C.I. = R \pm (1.96 * S.E.)$$

$$\sqrt{\frac{p_1 q_1}{n_1} + \frac{p_2 q_2}{n_2}}$$

Where R is equal to age-adjusted rates, N is number of deaths, p is equal to number of deaths per births and q is equal to 1-p and n is the number of births. The differences between the two rates were regarded as statistically significant at the 95% confidence level by determining if confidence intervals were overlapping, not overlapping, and if the difference between the rates exceeded 1.96 standard errors.

Data is available at: [http://www.cdc.gov/injury/wisqars/fatal\\_injury\\_reports.html](http://www.cdc.gov/injury/wisqars/fatal_injury_reports.html), WISQARS, Fatal Injury Reports 1999-2013, for National, Regional, and States (RESTRICTED).

For All intents: Choose All Intentions, All injury, Choose State, Years of report 2011-2013, Submit Request

For Fall: Choose All Intentions, Fall, Choose State, Years of report 2011-2013, Submit Request

For Drug Overdose: Choose All Intentions, Poisoning, Choose State, Years of report 2011-2013, Submit Request

For Motor Vehicle overall: Choose All Intentions, All injury, Choose State, Years of report 2011-2013, Submit Request

For Suicide: Choose Suicide, All injury, Choose State, Years of report 2011-2013, Submit Request

For Homicide: Choose Homicide, All injury, Choose State, Years of report 2011-2013, Submit Request

For Children 0-19: Choose All Intentions, All injury, Choose State, Years of report 2011-2013, Choose Custom age range >1 to 19, Submit Request

# Rates Methodology

## Appendix B:

CDC INJURY PREVENTION FUNDING							
State	2014 Census Population Estimates	2006	Nominal 2014	2014 Per Capita	Nominal % change 06-14	Real 2014 (adjusting for inflation-in 2006 dollars)	Real % change 06-14 (adjusting for inflation-in 2006 dollars)
Alabama	4,849,377	\$1,647,829	\$598,333	\$0.12	-63.7%	\$509,540	-69.1%
Alaska	736,732	\$642,278	\$779,576	\$1.06	21.4%	\$663,887	3.4%
Arizona	6,731,484	\$1,088,401	\$1,164,497	\$0.17	7.0%	\$991,686	-8.9%
Arkansas	2,966,369	\$522,485	\$423,510	\$0.14	-18.9%	\$360,661	-31.0%
California	38,802,500	\$11,978,652	\$6,159,589	\$0.16	-48.6%	\$5,245,506	-56.2%
Colorado	5,355,866	\$3,172,098	\$3,032,862	\$0.57	-4.4%	\$2,582,785	-18.6%
Connecticut	3,596,677	\$736,656	\$670,731	\$0.19	-8.9%	\$571,195	-22.5%
Delaware	935,614	\$352,638	\$578,888	\$0.62	64.2%	\$492,981	39.8%
D.C.	658,893	\$1,315,862	\$1,557,610	\$2.36	18.4%	\$1,326,461	0.8%
Florida	19,893,297	\$2,973,747	\$3,043,539	\$0.15	2.3%	\$2,591,878	-12.8%
Georgia	10,097,343	\$3,102,855	\$2,779,086	\$0.28	-10.4%	\$2,366,670	-23.7%
Hawaii	1,419,561	\$1,413,011	\$540,825	\$0.38	-61.7%	\$460,567	-67.4%
Idaho	1,634,464	\$186,607	\$707,037	\$0.43	278.9%	\$602,113	222.7%
Illinois	12,880,580	\$3,202,406	\$3,486,024	\$0.27	8.9%	\$2,968,698	-7.3%
Indiana	6,596,855	\$868,260	\$1,402,464	\$0.21	61.5%	\$1,194,338	37.6%
Iowa	3,107,126	\$1,842,645	\$1,377,787	\$0.44	-25.2%	\$1,173,323	-36.3%
Kansas	2,904,021	\$1,263,239	\$950,238	\$0.33	-24.8%	\$809,223	-35.9%
Kentucky	4,413,457	\$1,073,024	\$1,397,073	\$0.32	30.2%	\$1,189,747	10.9%
Louisiana	4,649,676	\$755,525	\$924,742	\$0.20	22.4%	\$787,510	4.2%
Maine	1,330,089	\$300,658	\$468,946	\$0.35	56.0%	\$399,354	32.8%
Maryland	5,976,407	\$5,453,917	\$3,680,893	\$0.62	-32.5%	\$3,134,648	-42.5%
Massachusetts	6,745,408	\$4,823,129	\$1,885,128	\$0.28	-60.9%	\$1,605,375	-66.7%
Michigan	9,909,877	\$4,545,341	\$4,832,960	\$0.49	6.3%	\$4,115,749	-9.5%
Minnesota	5,457,173	\$1,524,316	\$1,260,380	\$0.23	-17.3%	\$1,073,340	-29.6%
Mississippi	2,994,079	\$437,445	\$428,329	\$0.14	-2.1%	\$364,765	-16.6%
Missouri	6,063,589	\$878,534	\$584,338	\$0.10	-33.5%	\$497,622	-43.4%
Montana	1,023,579	\$477,171	\$302,806	\$0.30	-36.5%	\$257,870	-46.0%
Nebraska	1,881,503	\$362,797	\$621,001	\$0.33	71.2%	\$528,844	45.8%
Nevada	2,839,099	\$403,669	\$403,308	\$0.14	-0.1%	\$343,457	-14.9%
New Hampshire	1,326,813	\$178,324	\$830,079	\$0.63	365.5%	\$706,895	296.4%
New Jersey	8,938,175	\$1,473,069	\$1,271,580	\$0.14	-13.7%	\$1,082,878	-26.5%
New Mexico	2,085,572	\$574,664	\$524,822	\$0.25	-8.7%	\$446,938	-22.2%
New York	19,746,227	\$6,191,453	\$6,265,931	\$0.32	1.2%	\$5,336,067	-13.8%
North Carolina	9,943,964	\$4,142,136	\$4,646,443	\$0.47	12.2%	\$3,956,911	-4.5%
North Dakota	739,482	\$362,286	\$278,089	\$0.38	-23.2%	\$236,821	-34.6%
Ohio	11,594,163	\$2,754,889	\$3,482,664	\$0.30	26.4%	\$2,965,837	7.7%
Oklahoma	3,878,051	\$1,716,690	\$1,393,588	\$0.36	-18.8%	\$1,186,780	-30.9%
Oregon	3,970,239	\$2,295,298	\$2,053,155	\$0.52	-10.5%	\$1,748,467	-23.8%
Pennsylvania	12,787,209	\$6,405,867	\$4,957,435	\$0.39	-22.6%	\$4,221,752	-34.1%
Rhode Island	1,055,173	\$969,185	\$1,643,392	\$1.56	69.6%	\$1,399,513	44.4%
South Carolina	4,832,482	\$3,243,390	\$819,853	\$0.17	-74.7%	\$698,187	-78.5%
South Dakota	853,175	\$109,833	\$286,369	\$0.34	160.7%	\$243,872	122.0%
Tennessee	6,549,352	\$1,932,586	\$1,855,942	\$0.28	-4.0%	\$1,580,520	-18.2%
Texas	26,956,958	\$3,731,166	\$3,248,622	\$0.12	-12.9%	\$2,766,526	-25.9%
Utah	2,942,902	\$889,997	\$1,868,259	\$0.63	109.9%	\$1,591,009	78.8%
Vermont	626,562	\$205,798	\$197,379	\$0.32	-4.1%	\$168,088	-18.3%
Virginia	8,326,289	\$3,199,708	\$2,194,317	\$0.26	-31.4%	\$1,868,680	-41.6%
Washington	7,061,530	\$3,308,127	\$2,129,272	\$0.30	-35.6%	\$1,813,288	-45.2%
West Virginia	1,850,326	\$1,133,434	\$1,640,306	\$0.89	44.7%	\$1,396,885	23.2%
Wisconsin	5,757,564	\$2,373,326	\$919,432	\$0.16	-61.3%	\$782,988	-67.0%
Wyoming	584,153	\$72,655	\$202,865	\$0.35	179.2%	\$172,760	137.8%
<b>U.S. Total</b>	<b>318,857,056</b>	<b>\$104,609,076</b>	<b>\$88,752,294</b>	<b>\$0.28</b>	<b>-15.2%</b>	<b>\$75,581,454</b>	<b>-27.7%</b>

Note: Inflation percent from U.S. Bureau of Labor Statistics CPI Inflation Calculator, <http://data.bls.gov/cgi-bin/cpicalc.pl> (accessed May 2015).

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