

Protecting People from Motor Vehicle-related Deaths and Injuries:

*Keeping People Safe on the Road –
Every Day*

May 2016



U.S. Department of Health and Human Services
Centers for Disease Control and Prevention

Preventing motor vehicle injuries and deaths is a CDC “Winnable Battle”

- Tobacco use
- Nutrition/obesity (including food safety)
- HIV
- Healthcare-associated infections
- **Motor vehicle crashes**
- Teen pregnancy

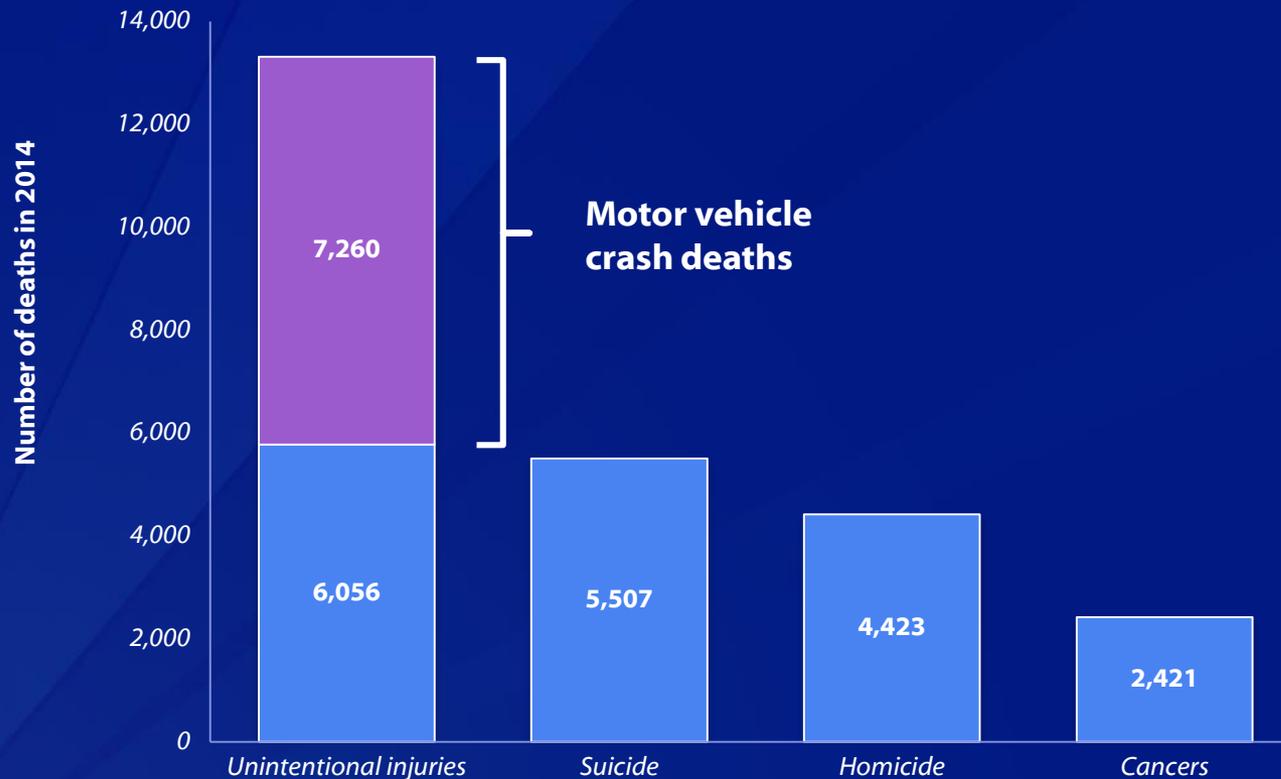
Crashes are the second leading cause of injury death

- **Motor vehicle crashes are the leading cause of death in the first three decades of American's lives**
- **Motor vehicle crashes killed over 32,600 people in 2014 – that's about 90 people every day**
- **Motor vehicle-related injuries send more than 2.3 million people to hospital emergency departments every year**

Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reporting System (WISQARS) [online]. www.cdc.gov/injury/wisqars.

National Highway Traffic Safety Administration. (2016, April). Summary of Motor Vehicle Crashes: 2014 data. (Traffic Safety Facts. Report No. DOT HS 812 263). Washington, DC: National Highway Traffic Safety Administration. <http://www-nrd.nhtsa.dot.gov/Pubs/812263.pdf>

Motor vehicle crashes are the leading cause of death for children and young adults (ages 5-24)



Centers for Disease Control and Prevention. Web-based Injury Statistics Query and Reporting System (WISQARS) [Online]. (2014). National Center for Injury Prevention and Control, Centers for Disease Control and Prevention (producer). www.cdc.gov/injury/wisqars.

Preventing crash-related deaths involves five priority areas



Impaired Driving

Increase Restraint Use



Tribal Motor Vehicle Safety

Safe Transportation for Older Adults



Data Linkage



IMPAIRED DRIVING

Nearly 1 in 3 crash deaths involve an alcohol impaired driver

- **In 2014, almost 10,000 people died in alcohol-impaired crashes**
- **In 2014, 19% of the motor vehicle deaths among children aged <15 occurred in alcohol-impaired driving crashes**
 - 56% of these children were riding with a driver who had a BAC .08 g/dL or higher

In fatal crashes in 2014, the highest percentage of drivers with BACs \geq .08 g/dL were aged 21-24 (30%) followed by 25-34 (29%) and 35-44 (24%)

Sobriety checkpoints reduce alcohol-impaired driving

- **What are sobriety checkpoints?**
 - At sobriety checkpoints, law enforcement officers stop vehicles systematically to assess the driver's level of alcohol impairment
- **Do they work?**
 - Yes – checkpoints reduce impaired driving crashes and deaths by a median of 9%
- **What can be done?**
 - Local and state law enforcement can use sobriety checkpoints to improve enforcement and deter impaired driving

Zero tolerance laws reduce teen drinking and driving crashes

- **What are zero tolerance laws?**
 - Zero tolerance laws set a lower legal blood alcohol concentration (BAC), usually between any detectable BAC and 0.02%, for drivers under 21
- **Do they work?**
 - Yes – zero tolerance laws lower fatal crash rates between 9 to 24%
- **What can be done?**
 - States can actively enforce zero tolerance laws and maintain the current minimum legal drinking age at 21

Ignition interlocks keep DUI offenders from offending again

- **What are ignition interlocks?**
 - Ignition interlocks are devices installed in vehicles for a period of time following a DUI conviction to prevent people from driving after consuming alcohol
- **Do they work?**
 - Yes – use of interlocks reduces the re-arrest rate of convicted DUI offenders by about 70% during the time they are installed
- **What can be done?**
 - States can implement ignition interlocks for everyone convicted of a DUI, even on a first offense

Elder RW, Voas R, Beirness D, Shults RA, Sleet DA, Nichols JL, Compton R, Task Force on Community Preventive Services. [Effectiveness of ignition interlocks for preventing alcohol-impaired driving and alcohol-related crashes: a Community Guide systematic review](#). *Am J Prev Med* 2011;40(3):362–76.

CDC Prevention Status Reports <http://www.cdc.gov/psr/>

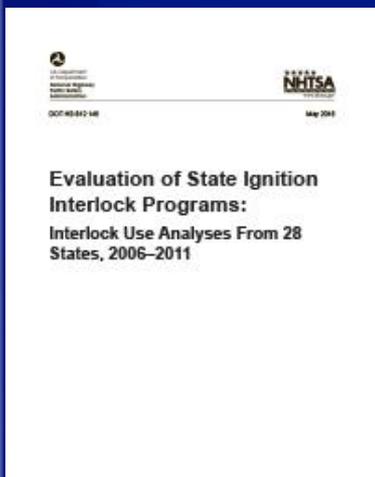
To support efforts to keep impaired drivers off the road, CDC's Injury Center

- Released in partnership with NHTSA the "Evaluation of the State Ignition Interlock Programs"

http://www.cdc.gov/motorvehiclesafety/impaired_driving/ignition_interlock_states.html

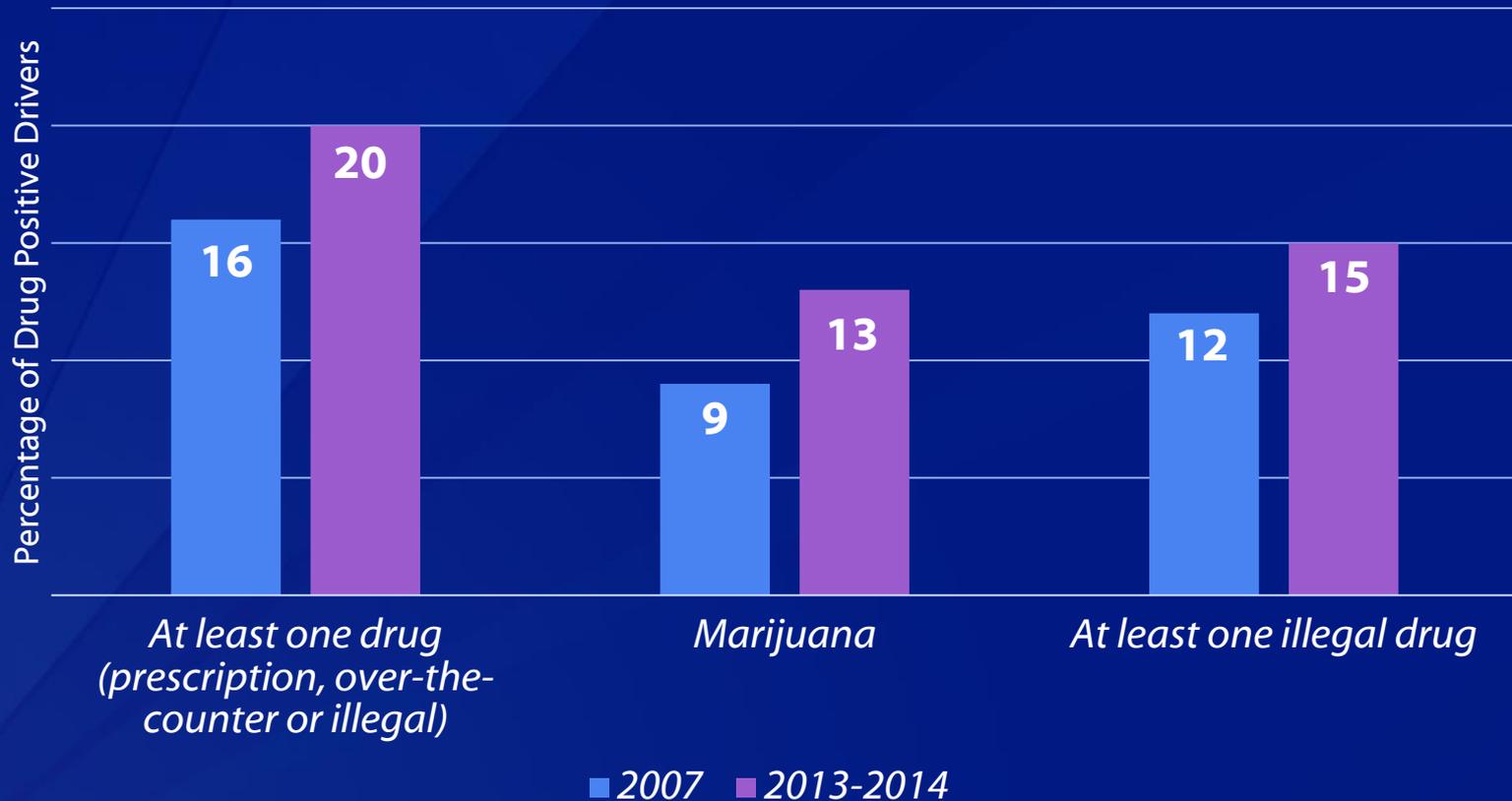
- Released "Increasing Alcohol Ignition Interlock Use: Successful Practices for States"

http://www.cdc.gov/motorvehiclesafety/pdf/impaired_driving/ignition-interlock_successful_practices_for_states-a.pdf



Drugged Driving is Rising

Percentage of Nighttime, Weekend Drivers Who Tested Positive for Drugs in the US
NHTSA National Roadside Survey,
2007 and 2013-2014



Marijuana Drugged Driving

- **Marijuana use can lead to loss of coordination, distorted perception, difficulty in problem-solving and loss of memory.***
- **What we don't know:**
 - Does marijuana impair driving, how and at what level?
 - Does marijuana use increase motor vehicle crash risk?
 - What proportion of drivers are impaired by marijuana?
 - If marijuana impairs driving, what are effective interventions for preventing marijuana-impaired driving?
 - How sensitive and reliable are current laboratory tests to detect marijuana in drivers?
 - Can laboratory tests that detect marijuana be adapted for roadside testing?

*Substance Abuse and Mental Health Administration . Cannabis. 2015 6/2/2015 [cited 2015 7/17/2015]; Available from: <http://www.samhsa.gov/atod/cannabis>.

Marijuana Drugged Driving – Finding Answers

- **Federal agencies are supporting research at national and state levels targeting marijuana use.**
- **For example:**
 - CDC is increasing surveillance efforts to understand the public health impact of marijuana;
 - National Institutes of Health (NIH) supports research on marijuana use and its effects on driving;
 - Substance Abuse and Mental Health Services Administration (SAMHSA) is conducting research to understand the behavioral health impact of marijuana; and
 - The National Highway Traffic Safety Administration (NHTSA) is conducting research to determine the scope of marijuana use and driving, the impact of marijuana on driving (including impairment and crash risk), the impact of legalization of marijuana on the impaired driving system, and countermeasures to address drug-impaired driving.

INCREASE RESTRAINT USE

Seat belts save thousands of lives each year

- **Seat belts saved over 12,800 lives in 2014**
- **49% occupants who died in crashes were unrestrained**
 - Teens and young adults have the highest percent of unrestrained deaths
- **Observed seat belt use still varies widely**
 - From 68.9% in South Dakota to 97.8% in Oregon

If everyone had worn a seat belt on every trip in 2014, more than 2,800 additional lives would have been saved

Primary enforcement seat belt laws increase seat belt use

- **What are they?**

- Primary enforcement seat belt laws allow law enforcement to pull over a motorist solely for not wearing a seat belt

- **Do they work?**

- Yes – states with primary enforcement seat belt laws achieve significantly higher seat belt use than secondary law states

In 2016, sixteen states still did not have a primary enforcement law

Dept of Transportation (US), National Highway Traffic Safety Administration (NHTSA). Traffic Safety Facts 2014 Data: Occupant Protection. Washington (DC): NHTSA; 2016. <http://www-nrd.nhtsa.dot.gov/Pubs/812262.pdf>

Beck LF, West BA. Vital Signs: Nonfatal, Motor Vehicle –Occupant Injuries (2009) and Seat Belt Use (2008) Among Adults—United States. Centers for Disease Control and Prevention. MMWR 59(51); 1691-1686. 2011. http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5951a3.htm?s_cid=mm5951a3_w

Insurance Institute of Highway Safety (IIHS). Safety belt and child restraint laws. <http://www.iihs.org/laws/SafetyBeltUse.aspx>

CDC Prevention Status Reports <http://www.cdc.gov/psr/>

Child passenger restraints prevent serious injury and death

- **Motor vehicle crashes are a leading cause of death for children**
- **Child safety seat use reduces the risk for death to infants (aged <1 year) by 71%; and by 54% for toddlers (aged 1-4 years)**
- **Among children under age 5, an estimated 3,197 lives were saved by car seat/booster seat use from 2005-2014**

Sauber-Schatz, EK; West, BA; Bergen, G. Vital Signs: Restraint Use and Motor Vehicle Occupant Death Rates Among Children Aged 0–12 Years — United States, 2002–2011. *Morbidity and Mortality Weekly Report*. 2014 Feb 7;63(5):113-8.

http://www.cdc.gov/mmwr/preview/mmwrhtml/mm63e0204a1.htm?s_cid=mm63e0204a1_w

Dept of Transportation (US), National Highway Traffic Safety Administration (NHTSA). Traffic Safety Facts 2014 Data: Occupant Protection. Washington (DC): NHTSA; 2016. <http://www-nrd.nhtsa.dot.gov/Pubs/812262.pdf>

TRIBAL MOTOR VEHICLE SAFETY

Burden

- **Motor vehicle crashes are the leading cause of death for American Indians and Alaska Natives (AI/AN) ages 1–44.**
- **AI/AN people have the highest alcohol-related motor vehicle crash death rates of all racial groups.**
- **AI/AN people use car seats, booster seats, and seat belts at a rate much lower than the national rate**

CDC. Web-based injury statistics query and reporting system. Atlanta, GA: U.S. Department of Health and Human Services, CDC; 2014. Available at <http://www.cdc.gov/injury/wisqars>. Accessed January 22, 2015.

Naimi TS, Cobb N, Boyd D, Jarman DW, Espey D, Snedrud P, Chavez P. Alcohol-attributable deaths and years of potential life lost among American Indians and Alaska Natives—United States, 2001–2005. *MMWR* 2008;57(34):938–941.

LeTourneau RJ, CE Crump, Bowling JM, Kuklinski DM, Allen CW. Ride Safe: A child passenger safety program for American Indian and Alaska Native children. *Maternal Child Health* 2008. DOI 10.1007/s10995-008-0332-6.

Efforts

- Although each AI/AN community is politically and culturally unique, evidence based measures can be tailored to meet the specific needs of tribes
- CDC's Injury Center works with tribal nations to implement motor vehicle injury prevention programs
- Check out CDC's new [Tribal Road Safety Tool Kit](#) and share the materials to help reduce crash-related injuries and deaths among members of tribal nations.

A Tribal Example: Decreasing Drinking and Driving

- **The San Carlos Apache Tribal Motor Vehicle Injury Prevention Program focused on reducing drunk driving among tribal members.**
- **Key parts of the program included media campaigns, sobriety checkpoints, enhanced law enforcement, and local events.**
- **The results: The San Carlos Tribal community experienced an increase in arrests for driving under the influence (DUI) and a decrease in the number of vehicle crashes after implementing a .08 BAC policy.**

Guide to Community Preventive Services. Motor vehicle-related injury prevention: reducing alcohol-impaired driving. www.thecommunityguide.org/mvoi/AID/index.html. Last updated: 09/12/2014. Community Guide: <http://www.thecommunityguide.org/mvoi/AID/index.html>

Piontkowski SR, Peabody JS, Reede C, Velascosoltero J, Tsatoke G, Shelhamer T, et al. Reducing motor vehicle-related injuries at an Arizona Indian reservation: ten years of application of evidence-based strategies. *Glob Health Sci Pract.* 2015;3(4):619-629. <http://dx.doi.org/10.9745/GHSP-D-15-00249>.

SAFE TRANSPORTATION FOR OLDER ADULTS

Older Adults and Transportation Safety

- **In 2013, almost 5,700 older adults were killed and 222,000 were injured in motor vehicle crashes.**
 - This amounts to 16 older adults killed and 608 injured in crashes on average every day.
- **Mobility-related deaths (including both motor vehicle- and fall-related) are the leading cause of injury death for older adults (aged ≥ 65 years).**

National Highway Traffic Safety Administration, Department of Transportation (US). Traffic Safety Facts 2013 Data: Older Population. Washington (DC): NHTSA; 2015. <http://www-nrd.nhtsa.dot.gov/Pubs/812199.pdf>

Kramarow E, Chen LH, Hedegaard H, Warner M. Deaths from unintentional injury among adults aged 65 and over: United States, 2000-2013. NCHS data brief, no 199. Hyattsville, MD: National Center for Health Statistics. 2015. <http://198.246.124.22/nchs/data/databriefs/db199.pdf>

Older Adult Mobility

- **Older adult mobility is important for quality of life, access to healthcare, and independence.**
- **To avoid motor vehicle- and fall-related injuries, older adults may stop or limit driving and reduce activity. Reduced mobility can lead to adverse health outcomes and has not been shown effective at reducing injury.**

Existing Protective Factors for Older Adult Drivers and Passengers

- **Older Adults have:**
 - High incidence of seat belt use
 - Tendency to drive when conditions are the safest
 - such as daytime hours
 - Lower incidence of impaired driving

National Highway Traffic Safety Administration, Department of Transportation (US). Traffic Safety Facts 2014. Washington, DC: NHTSA; 2016. <http://www-nrd.nhtsa.dot.gov/Pubs/812261.pdf>

National Highway Traffic Safety Administration, Department of Transportation (US). Traffic Safety Facts 2013 Data: Older Population. Washington (DC): NHTSA; 2015. <http://www-nrd.nhtsa.dot.gov/Pubs/812199.pdf>

CDC Efforts to Improve Safe Transportation for Older Adults

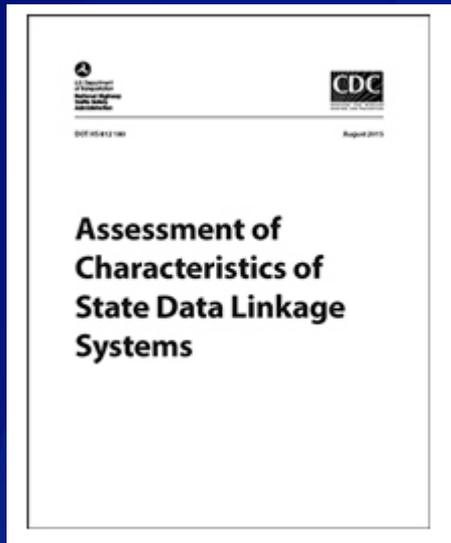
- **Conducting research to better understand factors associated with driving and the transition to non-driving**
- **Develop, validate, and evaluate tools to help older adults plan for changes in mobility**
- **Identify effective interventions or promising practices for increased safety and continued mobility**

DATA LINKAGE

Creating a complete picture through linking data

- **Linking data from police, EMS, medical providers, coroners, and medical examiners provides critical information before, during, and after a crash.**
- **High quality, reliable linked data are needed to**
 - show the total impact of crash injuries (e.g., medical and costs)
 - support states in identifying crash risk factors (e.g., restraint use)
 - design and implement effective strategies
 - evaluate implemented strategies
- **Data linkage can be complex, but improved safety will be based on a deeper understanding of crashes that only linked data can provide.**

CDC Efforts around Data Linkage



- **CDC and NHTSA conducted a joint study to increase knowledge about state data linkage systems*, including NHTSA's Crash Outcome Data Evaluation System (CODES).**
 - <http://www.cdc.gov/motorvehiclesafety/linkage>
- **CDC is beginning work on a state data linkage implementation manual.**

*Data linkage systems link crash report data to medical data.

Assessment of Characteristics of State Data Linkage Systems: <http://www.cdc.gov/motorvehiclesafety/linkage/>

For More Information, Visit...

- **Motor Vehicle Safety:**
www.cdc.gov/motorvehiclesafety
- **CDC's Prevention Status Reports:**
<http://www.cdc.gov/psr/>
- **Seat Belts:**
www.cdc.gov/motorvehiclesafety/SeatBelts
- **Child Passenger Safety:**
www.cdc.gov/Motorvehiclesafety/Child_Passenger_Safety
- **Alcohol-Impaired Driving:**
www.cdc.gov/Motorvehiclesafety/Impaired_Driving
- **Tribal Motor Vehicle Safety:**
<http://www.cdc.gov/motorvehiclesafety/native/>
- **Older Adults:**
www.cdc.gov/motorvehiclesafety/older_adult_drivers/

CDC's Injury Center shares evidence on seat belts and child restraints

- “Buckle Up: Restraint Use Fact Sheets” for states

- <http://www.cdc.gov/motorvehiclesafety/seatbelts/states.html>

- MV PICCS* for states

- <http://www.cdc.gov/motorvehiclesafety/calculator>

- CDC Surveillance Summary

- <http://www.cdc.gov/mmwr/preview/mmwrhtml/ss6408a1.htm>

- CDC Vital Signs on child passenger safety

- <http://www.cdc.gov/vitalsigns/childpassengersafety>

* Motor Vehicle Prioritizing Interventions and Cost Calculator for States (MV PICCS)



Vital signs™
February 2014

Child Passenger Safety

Buckle up every age, every trip

43% ↓
Motor vehicle deaths among children age 12 and under decreased by 43% in the past decade.

9,000
Still more than 9,000 children age 12 and under died in crashes in the past decade.

1 in 2 👤 👤
Almost half of all black (45%) and Hispanic (46%) children who died in crashes were not buckled up (2009 - 2010).

Motor vehicle crashes are a leading cause of death for children in the US. Buckling up is the best way to save lives and reduce injuries.

Child passenger restraint laws result in more children being buckled up. Only 2 out of every 100 children live in states that require car seat or booster seat use for children age 8 and under.

A third of children who died in crashes in 2011 were not buckled up. We—especially parents and caregivers—can do more to protect children on the road.

Parents and caregivers can keep children safe by:

- Knowing how to use car seats, booster seats, and seat belts.
- Using them on every trip, no matter how short.
- Setting a good example by always using a seat belt themselves.

→ See page 4
Want to learn more? Visit www.cdc.gov/vitalsigns

National Center for Injury Prevention and Control
Division of Unintentional Injury Prevention

