

Welcome

Office for State, Tribal, Local and Territorial Support
presents . . .

CDC Vital Signs

**Preventing Motor Vehicle Crash Injuries and Their
Associated Costs**

**October 14, 2014
2:00–3:00 pm (EDT)**



Centers for Disease Control and Prevention
Office for State, Tribal, Local and Territorial Support

Agenda

2:00 pm	Welcome & Introductions	Dan Baden, MD Associate Director for External Partner Outreach and Connectivity, Office for State, Tribal, Local and Territorial Support, CDC
2:04 pm	Presentations	David J. Ederer, MPH Researcher, McNeal Professional Services, Division of Unintentional Injury Prevention, National Center for Injury Prevention and Control, CDC Mark Kinde, MPH Director, Injury and Violence Prevention Unit, Minnesota Department of Health Jenny Johnson, MPH, CHES Unintentional Injury Coordinator and Public Information Officer, Violence and Injury Prevention Program, Utah Department of Health
2:30 pm	Q&A and Discussion	Dan Baden, MD
2:55 pm	Wrap-up	
3:00 pm	End of Call	



CDC
Vitalsigns™ Teleconference
to support STLT efforts and build
momentum around the monthly
release of CDC *Vital Signs*



Preventing Motor Vehicle Crash Injuries and Their Associated Costs

David Ederer, MPH

Researcher

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

Vital Signs Town Hall Teleconference
October 14, 2014



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Office for State, Tribal, Local and Territorial Support

Background

- ❑ Motor vehicle crashes are a leading cause of death and injury in the US
- ❑ Motor vehicle occupants account for most injuries
 - Occupants are car drivers and passengers
- ❑ The average American takes 6 car trips every day¹

¹US Department of Transportation, Federal Highway Administration. National Household Travel Survey. Washington, DC. 2014. Available at <http://nhts.ornl.gov>.

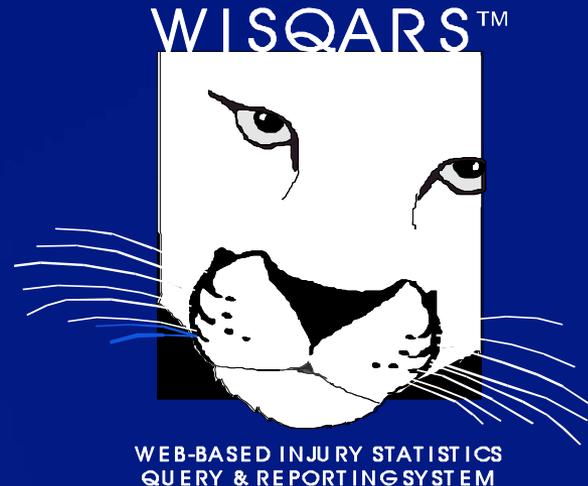
Purpose

- ❑ Quantify the health and economic burden of non-fatal crash injuries
- ❑ Highlight interventions that can prevent injuries and costs



Data

- ❑ National Electronic Injury Surveillance System – All Injury Program (NEISS-AIP)
- ❑ Healthcare Cost and Utilization Project Nationwide Inpatient Sample (HCUP-NIS)
- ❑ WISQARS cost module



*Lawrence BA, Miller TR. Medical and work loss cost estimation methods for the WISQARS cost of injury module. Calverton, MD: Pacific Institute for Research and Evaluation. 2014. Available at http://www.cdc.gov/injury/wisqars/pdf/wisqars_cost_methods-a.pdf.

Methods

- ❑ Estimate the number of non-fatal motor vehicle occupant crash injuries visiting the emergency department (ED)
 - Number of persons hospitalized and length of stay
 - Nature of injury
- ❑ Lifetime medical costs
 - Cost of initial ED visit and hospitalization, follow-up ED visits and hospitalizations, prescription drugs, etc.
- ❑ Work loss costs
 - Lost wages, fringe benefits, and value of household work
- ❑ Differences by age and sex

Results: Health Burden

- ❑ 2,519,471 non-fatal occupant crash injuries in 2012
 - 806 visits per 100,000 population overall
 - About 7,000 ED visits each day
- ❑ Visit rates varied by age group
 - 15- to 29-year-olds had the highest rate at 1,448 visits per 100,000
- ❑ 188,833 people were subsequently hospitalized
 - Average hospital stay was 5.6 days
 - 1,057,465 total hospital days

1M



Americans spend more than
1 million days in the hospital
each year from crash injuries.

Results: Costs

- ❑ \$18.4 billion in lifetime medical costs (2012)
 - \$3,362 for a person treated and released
 - \$56,674 for a hospitalized person
- ❑ \$32.9 billion in lifetime work loss costs





WHAT CAN BE DONE IN YOUR STATE?

What Can Be Done in Your State? Restraints

- ❑ Buckle up with age- and size-appropriate restraints
- ❑ States with primary seat belt laws have higher use rates²
- ❑ Child passenger safety laws increase restraint use³



²Shults RA, Beck LF. Self-reported seatbelt use, United States, 2002–2010: Does prevalence vary by state and type of seatbelt law? *J Safety Res*, 2012;43(5):417–420.

³Eichelberger AH, Chouinard AO, Jermakian JS. Effects of booster seat laws on injury risk among children in crashes. *Traff Inj Prev* 2012;13:631–9.

What Can Be Done in Your State? Teen Drivers

- ❑ Graduated Driver Licensing (GDL) systems
 - Helps new drivers gain the experience they need on the road
 - Reduced injury and medical cost⁴



⁴Pressley J, Benedicto CB, Trieu L, et al. Motor vehicle injury, mortality, and hospital charges by strength of graduated driver licensing laws in 36 states. *J Trauma*, 2009;67:S43–53.

What Can Be Done in Your State? Alcohol Impaired Drivers

- ❑ Publicized sobriety checkpoint programs
- ❑ Ignition interlocks for those with a DWI conviction



*Bergen G, Pitan A, Qu S, et al. Publicized sobriety checkpoint programs: a Community Guide systematic review. *Am J Prev Med*, 2014;46:529–39.

More Can Be Done

- ❑ Data sets should link risk factors and medical outcomes and costs
- ❑ Better data can help government, employers, and health and traffic safety organizations better understand how to prevent crash injuries

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



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SEARCH



CDC A-Z INDEX ▾

Injury Prevention & Control: Motor Vehicle Safety

Motor Vehicle Safety

[CDC](#) > [Motor Vehicle Safety](#) > [Costs & Prevention Policies](#)

State Data & Information

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

Costs & Prevention Policies -

Recommend Tweet Share

- ❑ Helps state decision makers prioritize and select from a suite of 12 effective interventions
- ❑ Calculates
 - Expected number of injuries prevented
 - Expected number of lives saved
 - Expected monetary costs and benefits of implementation

Welcome to the Motor Vehicle PICCS (Prioritizing Interventions and Cost Calculator for States). The Motor Vehicle PICCS is a web tool that helps you review the costs and benefits of different statewide interventions designed to prevent motor vehicle-related injuries and deaths. The Motor Vehicle PICCS selects the most cost-effective combination of interventions for implementation under a given budget and user identified parameters. Currently, twelve effective interventions are available for you to select.

Candidate Intervention	Currently Implemented ¹	Intervention Name	Benefit \$/year ²	Cost \$/year ³	Selected by Model
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Speed Camera	120,541,000	-72,338,000	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Red Light Camera	91,901,000	-5,781,000	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Alcohol Interlocks	52,535,000	123,000	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Motorcycle Helmet	393,994,000	2,900,000	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Primary Enforcement Seat Belt Law	252,192,000	6,388,000	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Bicycle Helmet	9,360,000	556,000	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Vehicle Impoundment	66,545,000	4,400,000	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Limits on Diversion	24,079,000	21,931,000	<input checked="" type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	License Plate Impound	59,102,000	-6,003,000	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Seat Belt Enforcement Campaign	194,548,000	2,688,000	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Sobriety Checkpoints	117,158,000	8,143,000	<input type="checkbox"/>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Saturation Patrols	162,385,000	14,605,000	<input type="checkbox"/>

Summary Results of the Interventions Chosen

Category	Value	Units
Total Cost	-41,822,000	\$ per year
Total Benefit	983,833,000	\$ per year
Total # of Fatalities Reduced	226	units
Total # of Injuries Reduced	26,932	units

Available online at: <http://www.cdc.gov/motorvehiclesafety/calculator>

Acknowledgements

- ❑ Gwen Bergen, PhD, MPH
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- ❑ Helen Kingery, MPH
- ❑ Erin Sauber-Schatz, PhD, MPH
- ❑ The Vital Signs and Transportation Safety Teams

Thank you!

Dave Ederer, dederer@cdc.gov

For more information, please contact CDC's Office for State, Tribal, Local and Territorial Support

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The findings and conclusions in this presentation are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.



Centers for Disease Control and Prevention

Office for State, Tribal, Local and Territorial Support



At Last!
Every Person, Every Seat, Every Time
Using Linked Data to Support
Passage of the Primary Seat Belt Law in Minnesota

Mark Kinde, MPH
Injury & Violence Prevention Unit Supervisor
Minnesota Department of Health

Vital Signs Town Hall Teleconference
October 14, 2014

Purpose & Partners

- Use linked data to support efforts to upgrade Minnesota's seat belt law
- Partners
 - Transportation
 - Public Safety
 - Safety Council
 - Advocates



Data Used

- Linked crash & hospital data from 2004–2005
- Passenger vehicle occupants
- Imputed missing links and values

Analysis: What Are the Questions?

- How does seat belt use affect injury outcomes (deaths and severe injuries)?
- How does seat belt use affect hospital costs?
- Can we estimate the injuries prevented, lives saved, and costs saved if the seat belt law were to be upgraded?

Injury Outcomes by Belt Use

(2004–2005, Unadjusted)

Injury outcomes	Belted (n=33,607)	Unbelted (n=6,777)
Injury severity (ISS 4+ or killed)	17%	35%
Traumatic brain injury	10%	23%
Mean length of stay (inpatient)	5.6 days	6.7 days
Median hospital charges	\$887	\$1,435
Mean hospital charges	\$260	\$416

Impact: Data to Policy

- Kathryn Swanson Seat Belt Safety Act
 - Signed May 21, 2009
 - Upgraded seat belt law to primary enforcement
 - Minnesota: 29th state to pass primary law
 - Effective June 9, 2009

“Don’t send flowers; just pass Primary!”

The Signing



Why Did Primary Legislation Pass?

- Personal stories of trauma
- Impact on state trauma centers
- Cuts to healthcare
- Federal funds as incentive
- Costs to the state general fund

Since Primary Passed—So What?

- Estimated savings: \$67 million through 2012
 - Including \$16 million to Medicare & Medicaid
- Increased belt use (95%)
- From June 2009–December 2013
 - 136 lives saved
 - 434 severe injuries prevented
 - 1,270 moderate injuries prevented



Contact

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Don't Drive Stupid

Using data to keep teens safe on Utah roads

Jenny Johnson, MPH, CHES
Injury Prevention Coordinator
Utah Department of Health



Teen Driving & CPS Partners

zero
Fatalities

A Goal We Can All Live With

IN PARTNERSHIP WITH
UTAH'S LOCAL HEALTH DEPARTMENTS

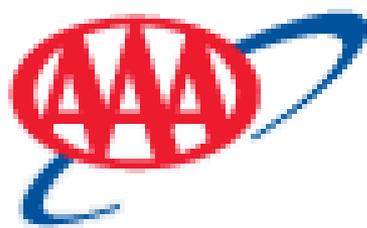
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udot.utah.gov

 Utah STATE OFFICE of Education

UTAH
DL
Driver License Division

 Intermountain Primary Children's Hospital



UTAH SAFETY COUNCIL



Data Sources

- Vital records
- Hospital discharge & ED
- Crash reports
- Seat belt observations
- Focus groups
- Surveys (BRFSS, YRBS, etc.)
- Community assessments
- Child Fatality database



Teen Driving

- Teens are 8% of licensed drivers but 20% of crashes and nearly 14% of fatal crashes
- 73% of teens killed in 2013 were not buckled up



Teen Driving Efforts

CUT YOUR TEEN DRIVER'S CRASH RISK IN HALF

Find out how



UTAH DEPARTMENT OF HEALTH

DON'T DRIVE STUPID

DRIVING STUPID CAN REALLY MAKE YOU LOOK BAD

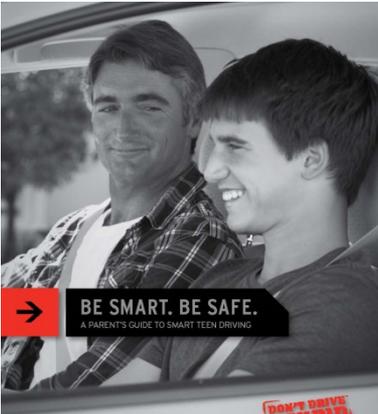


Always Wear a Seatbelt
Make Your Passengers Wear Their Seatbelt
Don't Use Your Cell Phone While Driving
Keep a Safe Distance, Don't Tailgate
Plan Ahead, Don't Be in a Rush
Never Drive Under the Influence of Drugs or Alcohol
Be Familiar with Your Car
Dont-Drive-Stupid.com

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ZERO Fatalities

DON'T DRIVE STUPID



BE SMART. BE SAFE.
A PARENT'S GUIDE TO SMART TEEN DRIVING

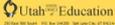
DON'T DRIVE STUPID



Utah State Office of Education
core standards
for
DRIVER EDUCATION

The Utah State Board of Education, in compliance with state and federal laws, has adopted the Utah Core Standards for Driver Education. These standards are designed to ensure that all students who graduate from Utah secondary schools are prepared to drive safely and responsibly. The Utah State Board of Education requires that all Utah Core Standards, which parents, teachers, and local school board members must ensure are met, be met in their local schools.

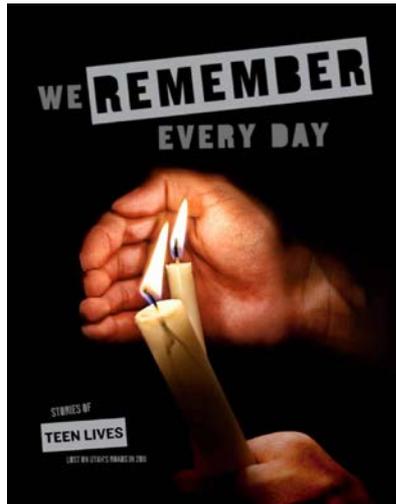
The Utah Core Standards are aligned to successfully meet core standards. They show high quality expectations through national competencies and expectations for all students. The standards are organized into four levels of difficulty, from basic to advanced, and are designed to be met at each grade level, or within a critical competency. The standards provide a foundation for ensuring learning within the classroom.

 Utah Department of Education

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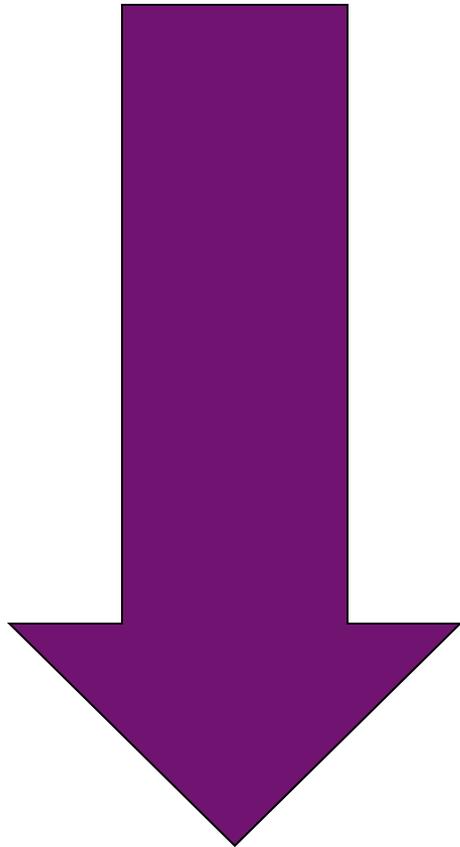


Teen Memorials





Is it working?



62% drop in the
rate of teens killed in motor
vehicle crashes since Utah's
GDL law was first enacted in
1999!



Problems with Data

- Sometimes having a lot of data can also be a downfall
- Helping partners see the “big picture” and get out of their silos
- Driver license data has some issues making analysis of state laws difficult
- Quick turnaround times for analysis
- Finding the right story to go with the data to make it meaningful



Thank you!

Jenny Johnson, MPH, CHES

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Violence and Injury Prevention Program

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<http://health.utah.gov/vipp>



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Vital Signs interactive buttons and banners

www.cdc.gov/vitalsigns/SocialMedia.html

Public Health Practice Stories from the Field

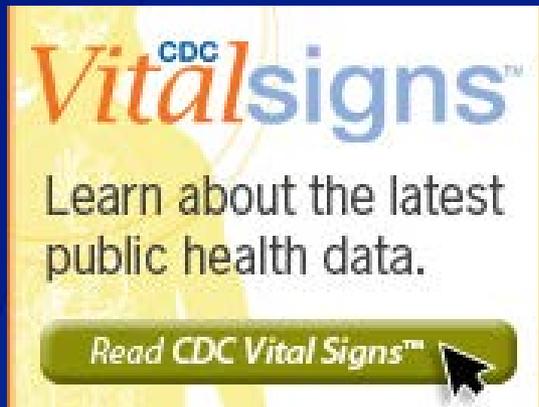
- Stories about the implementation of Public Health Practice Stories from the Field



www.cdc.gov/stltpublichealth/phpracticestories

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Please mark your calendars for the next
Vital Signs Town Hall Teleconference

November 12, 2014

2:00–3:00 pm (EST)

For more information, please contact Centers for Disease Control and Prevention.

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