

# Prevention Status Report | 2013

## Motor Vehicle Injuries

## North Carolina

The Prevention Status Reports (PSRs) highlight—for all 50 states and the District of Columbia—the status of public health policies and practices designed to prevent or reduce important health problems. This report focuses on motor vehicle crash injuries and deaths and briefly describes why they are a public health problem, both for North Carolina and the United States as a whole. It also provides an overview of solutions (i.e., evidence-based or expert-recommended policy and practice options) for preventing or reducing motor vehicle injuries and deaths and reports the status of these solutions in North Carolina.

### PSR Framework

The PSRs follow a simple framework:

- Describe the public health **problem** using public health data
- Identify potential **solutions** to the problem drawn from research and expert recommendations
- Report the **status** of those solutions for each state and the District of Columbia

### Criteria for Selection of Policies and Practices

The policies and practices included in the PSRs were selected because they

- Can be monitored using state-level data that are readily available for most states and the District of Columbia
- Meet one or more of the following criteria:
  - Supported by systematic review(s) of scientific evidence of effectiveness (e.g., *The Guide to Community Preventive Services*)
  - Explicitly cited in a national strategy or national action plan (e.g., *Healthy People 2020*)
  - Recommended by a recognized expert body, panel, organization, study, or report with an evidence-based focus (e.g., Institute of Medicine)

### Ratings

The PSRs use a simple, three-level rating scale to provide a practical assessment of the status of policies and practices in each state and the District of Columbia. It is important to note that the ratings reflect the *status of policies and practices* and do not reflect the *status of efforts* by state health departments, other state agencies, or other organizations to establish or strengthen those policies and practices. Strategies for improving public health vary by individual state needs, resources, and public health priorities.

### More Information

For more information about public health activities in North Carolina, visit the North Carolina Department of Health and Human Services website (<http://www.ncdhhs.gov/>). For additional resources and to view reports for other health topics, visit the CDC website (<http://www.cdc.gov/stltpublichealth/psr/>).

### Suggested Citation

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[www.cdc.gov/stltpublichealth/psr](http://www.cdc.gov/stltpublichealth/psr)



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

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### Public Health Problem



Motor vehicle crashes are a leading cause of death in the United States for people aged 30 years or younger (1).

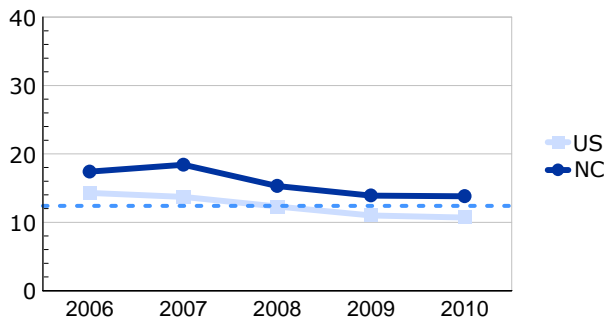


In 2011, motor vehicle crashes killed more than 32,000 people in the United States and injured more than 2.6 million (1,2).



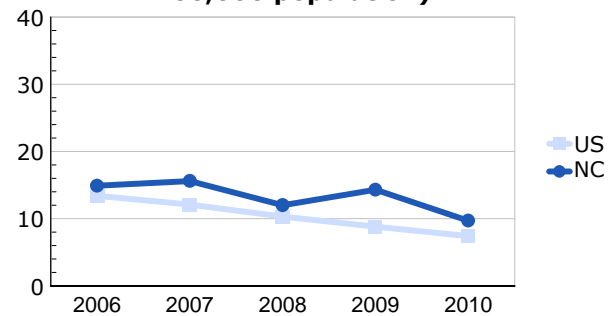
In 2005 alone, motor vehicle crashes cost Americans \$99 billion in medical care, rehabilitation, and lost wages (3).

**Motor vehicle-related death rate (per 100,000 population)**



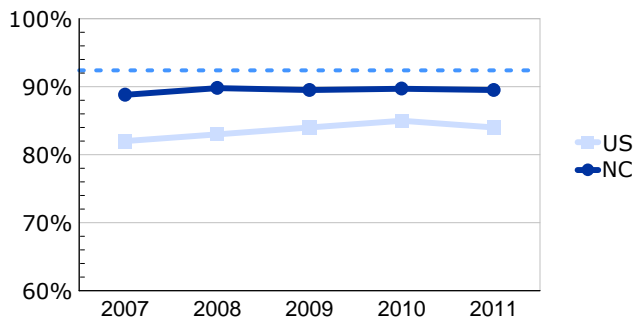
Source: National Highway Traffic Safety Administration (4)  
Healthy People 2020 Target: 12.4/100,000 (dotted blue line) (5)

**Motor vehicle-related death rate among drivers aged 15–20 years (per 100,000 population)**



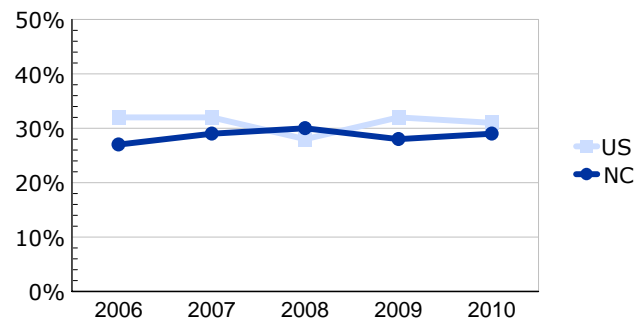
Source: National Highway Traffic Safety Administration (6)

**Observed seat belt use**



Source: National Highway Traffic Safety Administration (7)  
Healthy People 2020 Target: 92.4% (dotted blue line) (5)

**Percentage of crash-related deaths that involved alcohol-impaired drivers**



Source: National Highway Traffic Safety Administration (8)

## Policy and Practice Solutions

This report focuses on policies recommended by the Community Preventive Services Task Force and the National Highway Traffic Safety Administration on the basis of scientific studies supporting the policies' effectiveness in preventing or reducing crash-related injuries and deaths. These policies include 1) implementing primary seat belt laws, 2) improving laws mandating the use of appropriate child passenger restraints (e.g., car seats and booster seats) to cover children through at least age 8 years, 3) using comprehensive graduated driver licensing systems, and 4) requiring the use of ignition interlock devices for all convicted driving-while-intoxicated (DWI) offenders (9–16). For information about why certain motor vehicle injury-related indicators were selected, and for links to additional data and resources, visit the CDC website (<http://www.cdc.gov/stltpublichealth/psr/motorvehicle/>).

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### Status of Policy and Practice Solutions in North Carolina

#### Seat belt law

As of August 1, 2013, North Carolina had a primary enforcement seat belt law for only the front seating positions (17).

*Task Force on Community Preventive Services recommendation:* Primary enforcement seat belt laws are recommended on the basis of strong evidence that they are substantially more effective than secondary enforcement laws at reducing motor vehicle-related injuries and deaths (10,11). Rates of seat belt use are an average of 9–14 percentage points higher in primary enforcement states than in secondary states (10,11,18,19).



Rating	State had
Green	A primary enforcement seat belt law covering all seating positions
Yellow	<b>A primary enforcement seat belt law covering only the front seats</b>
Red	A secondary enforcement seat belt law or no law

#### Child passenger restraint law

As of August 1, 2013, North Carolina required that all motor vehicle passengers aged 7 years or younger be in a car seat or booster seat (17).

Evidence shows that laws mandating the use of car seats and booster seats increase their use (12). Increasing the required age for car seat or booster seat use is an effective way to keep children protected. For example, among states that increased the required age to 7 or 8 years, car seat and booster seat use tripled (13).



Rating	State law covered
Green	Children through age 8 years
Yellow	<b>Children through age 6 or 7 years only</b>
Red	Children aged 5 years or younger only

#### Graduated driver licensing (GDL) system

As of August 1, 2013, North Carolina fulfilled both the recommended nighttime driving and passenger limit restrictions and the learner's permit mandatory holding period component. North Carolina did not fulfill the other two GDL components (20).

Research indicates that more comprehensive GDL systems prevent more crashes and save more lives compared with less comprehensive GDL systems. Based on this evidence, the following five components are recommended for more comprehensive GDL systems: 1) minimum age of 16 years for a learner's permit, 2) mandatory holding period of at least six months for a learner's permit, 3) restrictions against nighttime driving between 10:00 pm and 5:00 am (or longer), 4) limit of zero or one for the number of young passengers without adult supervision, and 5) minimum age of 18 years for full licensure (9,14,15).



Rating	State policy
Green	Required all five of the GDL components
Yellow	<b>Required both nighttime driving and young passenger limits but not all five components</b>
Red	Lacked either the nighttime driving or young passenger limits, or both

#### Ignition interlock law

As of August 1, 2013, North Carolina required ignition interlocks for convicted repeat DWI offenders and first-time offenders who had a particularly high blood alcohol concentration (BAC) (21).

*Task Force on Community Preventive Services recommendation:* Use of ignition interlocks is recommended for all people convicted of alcohol-impaired driving on the basis of strong evidence of interlocks' effectiveness in reducing re-arrest rates while the interlocks are installed (16).



Rating	State had
Green	A law requiring ignition interlocks for all convicted DWI offenders (i.e., offenders with blood alcohol concentrations [BAC] $\geq 0.08$ g/dL, which includes both first-time and repeat offenders)
Yellow	<b>A law requiring ignition interlocks for convicted repeat DWI offenders or first-time offenders with a particularly high BAC (e.g., BAC <math>\geq 0.15</math> g/dL)</b>
Red	No law requiring ignition interlocks for any convicted DWI offenders

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### Simplified Rating System

A more detailed explanation of the rating system for motor vehicle injuries is available at <http://www.cdc.gov/stltpublichealth/psr/motorvehicle/>.

#### Green

The policy or practice is established in accordance with supporting evidence and/or expert recommendations.

#### Yellow

The policy or practice is established in partial accordance with supporting evidence and/or expert recommendations.

#### Red

The policy or practice is either absent or not established in accordance with supporting evidence and/or expert recommendations.

### Indicator Definitions

**Seat belt law:** A primary enforcement seat belt law allows police to stop a vehicle solely because a driver or passenger is not wearing a seat belt. A secondary enforcement seat belt law requires police to have another reason for stopping a vehicle before citing a driver or passenger for not buckling up. The most comprehensive policies are primary seat belt laws that cover all occupants, regardless of where they are sitting. Some states have primary laws that cover only the front seat occupants.

**Child passenger restraint law:** A law that requires child passengers to travel in appropriate child passenger restraints, such as car seats or booster seats, until adult seat belts fit them properly. All 50 states and the District of Columbia have some form of child passenger restraint laws; however, the ages covered vary.

**Graduated driver licensing (GDL) system:** Policy that helps new drivers gain experience under low-risk conditions by granting driving privileges in stages. As teens move through GDL stages, they are given additional privileges, such as driving unsupervised or with a passenger.

**Ignition interlock law:** A law that mandates the use of ignition interlocks for drivers convicted of DWI. An ignition interlock is a device that analyzes a driver's breath and prevents the vehicle from starting if alcohol is detected.

### References

1. CDC. WISQARS (Web-based Injury Statistics Query and Reporting System) [database]. Accessed Jun 5, 2013.
2. National Highway Traffic Safety Administration. Traffic Safety Facts, 2011 Data: Overview. Washington, DC: US Department of Transportation; 2013.
3. Naumann RB, Dellinger AM, Zaloshnja E, et al. Incidence and total lifetime costs of motor vehicle-related fatal and nonfatal injury by road user type, United States, 2005. *Traffic Injury Prevention* 2010;11:353-60.
4. National Highway Traffic Safety Administration, Fatality Analysis Reporting System [database]. US Department of Transportation, Washington, DC. Accessed Dec 7, 2012.
5. US Department of Health and Human Services. Injury and violence prevention. In: *Healthy People 2020*. Rockville, MD: US Department of Health and Human Services. Updated Oct 30, 2012.
6. National Highway Traffic Safety Administration. Traffic Safety Facts, 2010 Data: Young Drivers. Washington, DC: US Department of Transportation; 2012.
7. National Highway Traffic Safety Administration. Traffic Safety Facts, Crash, Stats: Seat Belt Use in 2011—Use Rates in the States and Territories. Washington, DC: US Department of Transportation; 2012.
8. National Highway Traffic Safety Administration. Traffic Safety Facts, 2010 Data: State Alcohol-Impaired Driving Estimates. Washington, DC: US Department of Transportation; 2012.
9. Goodwin A, Kirley B, Sandt L, et al. Countermeasures That Work: A Highway Safety Countermeasures Guide for State Highway Safety Offices. 7th edition. (Report No. DOT HS 811 727). Washington, DC: National Highway Traffic Safety Administration; 2013.
10. Shults RA, Nichols JL, Dinh-Zarr TB, et al. Effectiveness of primary enforcement safety belt laws and enhanced enforcement of safety belt laws: a summary of the Guide to Community Preventive Services systematic reviews. *Journal of Safety Research* 2004;35(2):189-96.
11. Shults RA, Elder RW, Sleet DA, et al. Primary enforcement of seat belt laws are effective even in the face of rising belt use rates. *Accident Analysis and Prevention* 2004;36(3):491-3.
12. Zaza S, Sleet DA, Thompson R, et al. Reviews of evidence regarding interventions to increase the use of child safety seats. *American Journal of Preventive Medicine* 2001;21(4S):31-47.
13. Eichelberger AH, Chouinard AO, Jermakian JS. Effects of booster seat laws on injury risk among children in crashes. *Traffic Injury Prevention* 2012;13:631-9.
14. Baker SP, Chen LH, Li G. National evaluation of graduated driver licensing programs. Washington, DC: US Department of Transportation; 2006.
15. Williams AF, Tefft BC, Grabowski JG. Graduated driver licensing research, 2010-present. *Journal of Safety Research* 2012;43(3):195-203.
16. Elder RW, Voas R, Beirness D, et al. Effectiveness of ignition interlocks for preventing alcohol-impaired driving and alcohol-related crashes. *American Journal of Preventive Medicine* 2011;40(3):362-76.
17. Insurance Institute for Highway Safety/Highway Loss Data Institute. Safety Belt and Child Restraint Laws. Arlington, VA: Insurance Institute for Highway Safety/Highway Loss Data Institute; 2013.
18. Beck LF, West BA. Vital signs: nonfatal, motor vehicle-occupant injuries (2009) and seat belt use (2008) among adults—United States. *MMWR* 2011;59:1681-6.
19. Shults RA, Beck LF. Self-reported seatbelt use, United States, 2002-2010: does prevalence vary by state and type of seatbelt law? *Journal of Safety Research* 2012;43(5-6):417-20.
20. Insurance Institute for Highway Safety/Highway Loss Data Institute. Young Driver Licensing Systems in the U.S. Arlington, VA: Insurance Institute for Highway Safety/Highway Loss Data Institute; 2013.
21. Insurance Institute for Highway Safety/Highway Loss Data Institute. DUI/DWI Laws. Arlington, VA: Insurance Institute for Highway Safety/Highway Loss Data Institute; 2013.