

# Impaired Driving and Ignition Interlocks

Division of Public Health  
Injury and Violence Prevention Branch

January 11, 2019

# Overview

- **Alcohol-Impaired Driving Data**
- **Research and Recommendations**
- **North Carolina's Ignition Interlock Laws**

# Alcohol-Impaired Driving Data

# Alcohol-Impaired Driving

Average alcohol-impaired driver has driven under the influence of alcohol over **80 times** before their first arrest.

**30,380 convictions for DUI** (North Carolina, 2017)

**201** were under 18 years old

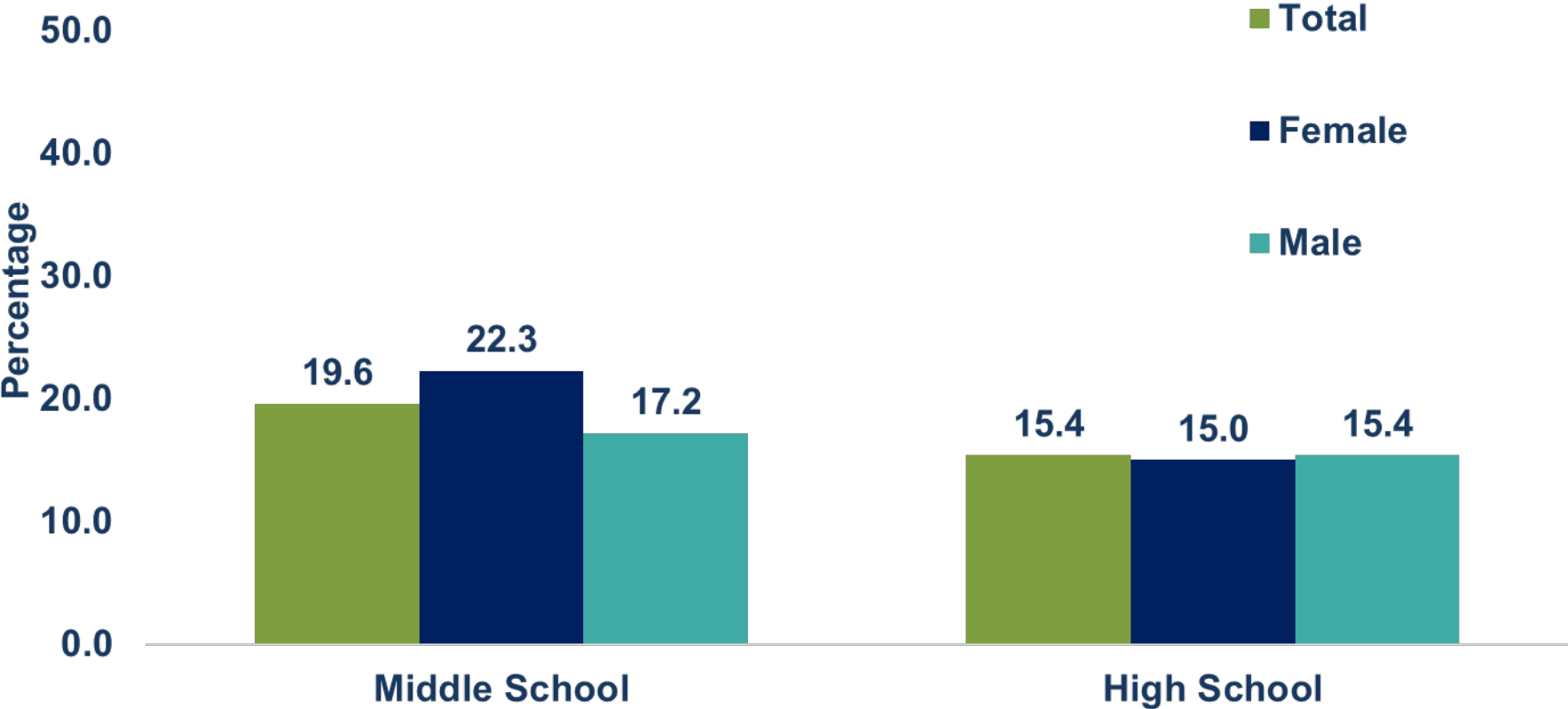
**1,233 children were killed in crashes** (Nationally, 2016)

- 214 (17%) were killed in alcohol-impaired crashes
- **115 (54%)** were passengers of vehicles with alcohol-impaired drivers

Source: National Department of Transportation, *Repeat DWI Offenders in the United States*, Feb 1995. National Highway Traffic Safety Administration, *Traffic Safety Facts: Children*, February 2018. <https://crashstats.nhtsa.dot.gov/Api/Public/ViewPublication/812491>; Foundation for Advancing Alcohol Responsibility <https://www.responsibility.org/get-the-facts/state-map/state/north-carolina/>

North Carolina  
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# Students riding with a driver who had been drinking\*, NC Middle and High School Students, 2017



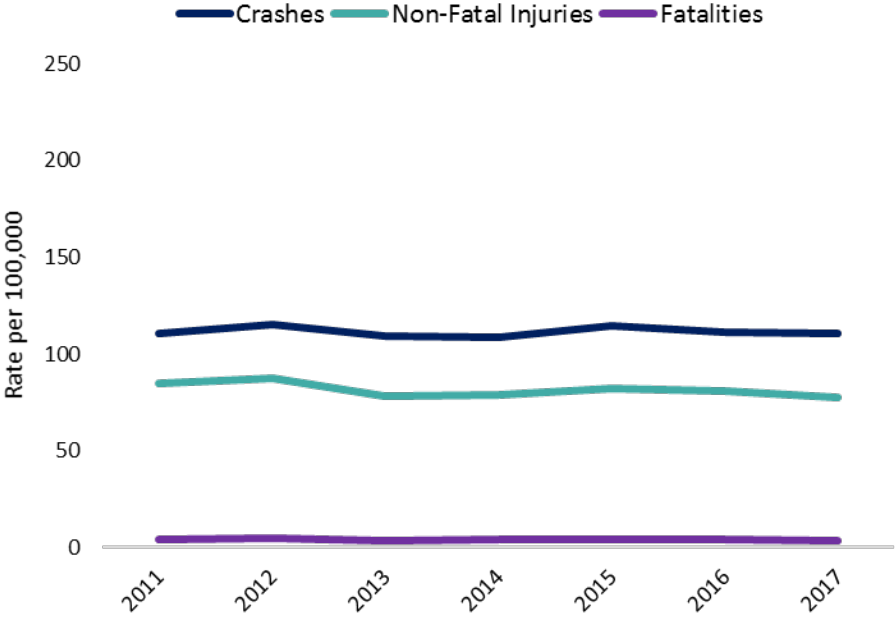
\*Percent of NC High School students who reported riding in a vehicle driven by someone who had been drinking alcohol one or more times during the past 30 days; Percent of NC Middle School students who reported ever having ridden in a car driven by someone who had been drinking alcohol

Source: NC Department of Public Instruction, YRBS 2017  
 Analysis by Injury Epidemiology and Surveillance Unit

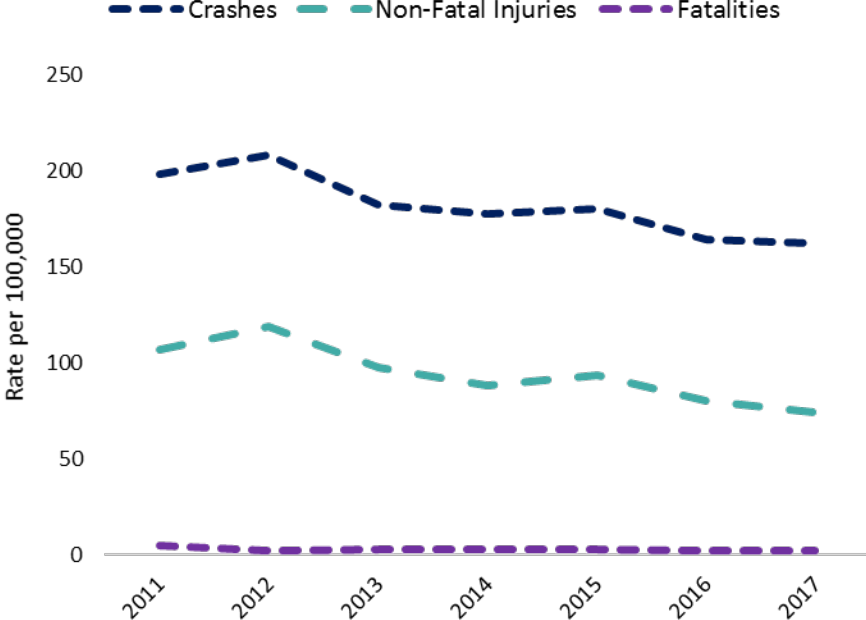
# Alcohol-Related Crash, Non-Fatal Injury, and Fatality Rates

In 2017, **Alcohol-related** crashes accounted for **4%** of all crashes, but **26%** of fatal crashes in North Carolina.

Overall Population, North Carolina



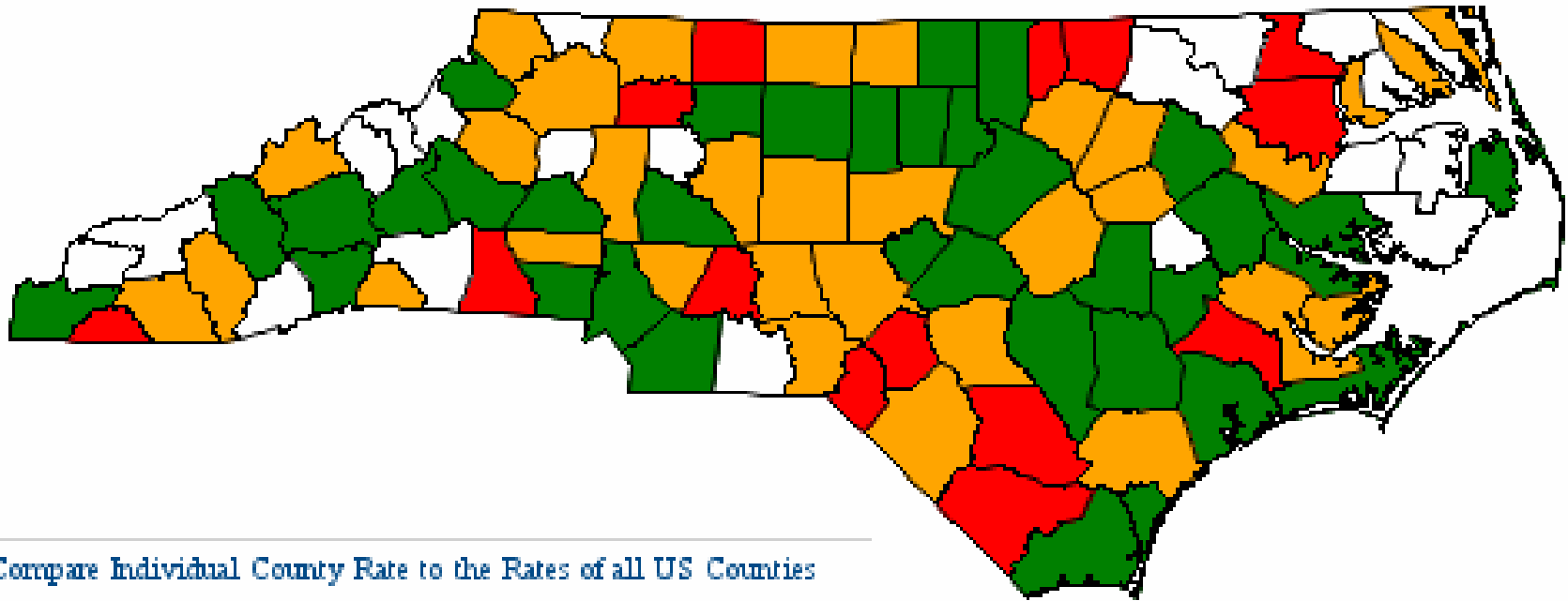
Teens (15-19), North Carolina



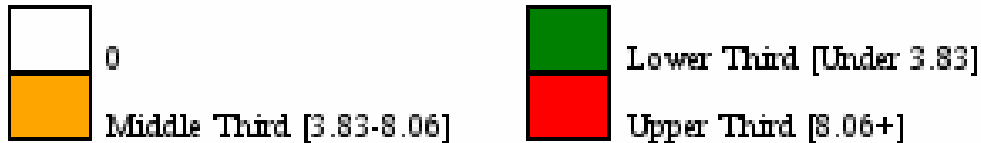
Source: North Carolina 2017 Traffic Crash Facts  
<https://connect.ncdot.gov/business/DMV/DMV%20Documents/2017%20Crash%20Facts.pdf>

# Fatalities in Crashes Involving an Alcohol-Impaired Driver by County, 2016

NC county rate compared to national County rates.



Compare Individual County Rate to the Rates of all US Counties



# Research and Recommendations



# Alcohol Ignition Interlocks

- Alcohol ignition interlocks are breath test devices installed in a motor vehicle to prevent operation of the vehicle by a driver who has a blood alcohol concentration (BAC) over a pre-set low limit (usually 0.02-0.04 BAC)
- All 50 states have some type of ignition interlock programs and laws, yet only about one-fifth of those arrested for DWI have interlocks installed



Source: Insurance Institute for Highway Safety Highway Loss Data Institute. *Status Report*, Vol. 51, No. 5, May 2016. CDC Injury Prevention & Control: Motor Vehicle Safety, Increasing Alcohol Ignition Interlock Use, September 2016; Insurance Institute for Highway Safety Highway Loss Data Institute. *Status Report*, Vol. 51, No. 5, May 2016. CDC Injury Prevention & Control: Motor Vehicle Safety, Increasing Alcohol Ignition Interlock Use, September 2016.

Search The Community Guide

search the guide



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[Home](#) » Systematic Review

## Systematic Review



Topic

[Motor Vehicle Injury](#)

Recommended

April 2006

# Motor Vehicle Injury – Alcohol-Impaired Driving: Ignition Interlocks

[www.thecommunityguide.org/findings/motor-vehicle-injury-alcohol-impaired-driving-ignition-interlocks](http://www.thecommunityguide.org/findings/motor-vehicle-injury-alcohol-impaired-driving-ignition-interlocks)

## Community Guide's Systematic Review

- While installed, interlocks reduced re-arrest rates by **67%**
- After removing interlocks, re-arrest **rates reverted** to rates similar to those of people convicted of DUI who had not used interlocks
- Drivers with interlocks **had fewer alcohol-related crashes** than those who only had licenses suspended for a DUI conviction
- Overall crash rates for drivers with interlocks installed were **similar to the crash rates for the general driving population**

Source: The Community Guide, *Reducing Alcohol-Impaired Driving: Ignition Interlocks*, September 2013.

# The Task Force on Community Preventive Services' Recommendation:

“The Community Preventive Services Task Force  
recommends:

**Use ignition interlocks** for people convicted of alcohol-  
impaired driving on the

**Strong evidence of their effectiveness** in reducing re-arrest  
rates while the interlocks are installed.

# Impact of State Ignition Interlock Laws on Alcohol-Involved Crash Deaths in the United States

*Elinore J. Kaufman, MD, and Douglas J. Wiebe, PhD*

*Objectives.* To investigate the impact on alcohol-involved crash deaths of universal ignition interlock requirements, which aim to prevent people convicted of driving under the influence of alcohol from driving while intoxicated.

*Methods.* We used data from the National Highway Traffic Safety Administration for 1999 to 2013. From 2004 to 2013, 18 states made interlocks mandatory for all drunk-driving convictions. We compared alcohol-involved crash deaths between 18 states with and 32 states without universal interlock requirements, accounting for state and year effects, and for clustering within states.

**Mandated universal interlocks were associated with 15% fewer alcohol-involved crash deaths.**

## Mandating Treatment Based on Interlock Performance: Evidence for Effectiveness

**Background:** Vehicle alcohol ignition interlocks reduce alcohol-impaired driving recidivism while installed, but recidivism reduction does not continue after removal. It has been suggested that integrating alcohol use disorder (AUD) treatment with interlock programs might extend the effectiveness of interlocks in reducing recidivism beyond their removal. This study evaluated the first implementation of a Florida policy mandating AUD treatment for driving under the influence (DUI) offenders on interlocks. Treatment was required when the offender accumulated 3 violations (defined as 2 “lockouts” within 4 hours; a lockout occurs when the device prevents a drinking driver from starting the vehicle).

**Methods:** Cox regression was used to compare alcohol-impaired driving recidivism during the 48 months following the interlock removal between 2 groups: (i) 640 multiple DUI offenders who received AUD treatment while interlocks were installed; and (ii) 806 matched offenders not mandated to treatment while interlocks were installed.

Drivers who received treatment experienced a **32% decrease in re-arrest** compared to those who did not attend rehab.

## Benefits of treating ignition interlock users:

- **Lowered recidivism by 32%**
- **Prevented**
  - **45 arrests**
  - **14 motor vehicle crashes**
  - **~ 10 injuries**

### **Economic benefit**

**Treated 640 DUI offenders at a cost of \$192,000**

**Prevented \$905,000 in crash costs**

**Net benefit = \$713,000**

# The Centers for Disease Control and Prevention's Recommendation:

“Ignition interlocks are ***highly effective*** at preventing repeat offenses while installed.

Mandating interlocks for all offenders, ***including first-time offenders***, will have the greatest impact.”



# NC's Ignition Interlock Laws

## Ignition interlock law

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

**As of July 1, 2015, North Carolina required ignition interlocks for repeat offenders convicted of alcohol-impaired driving and first-time offenders with a particularly high blood alcohol concentration (30).**

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 (20).

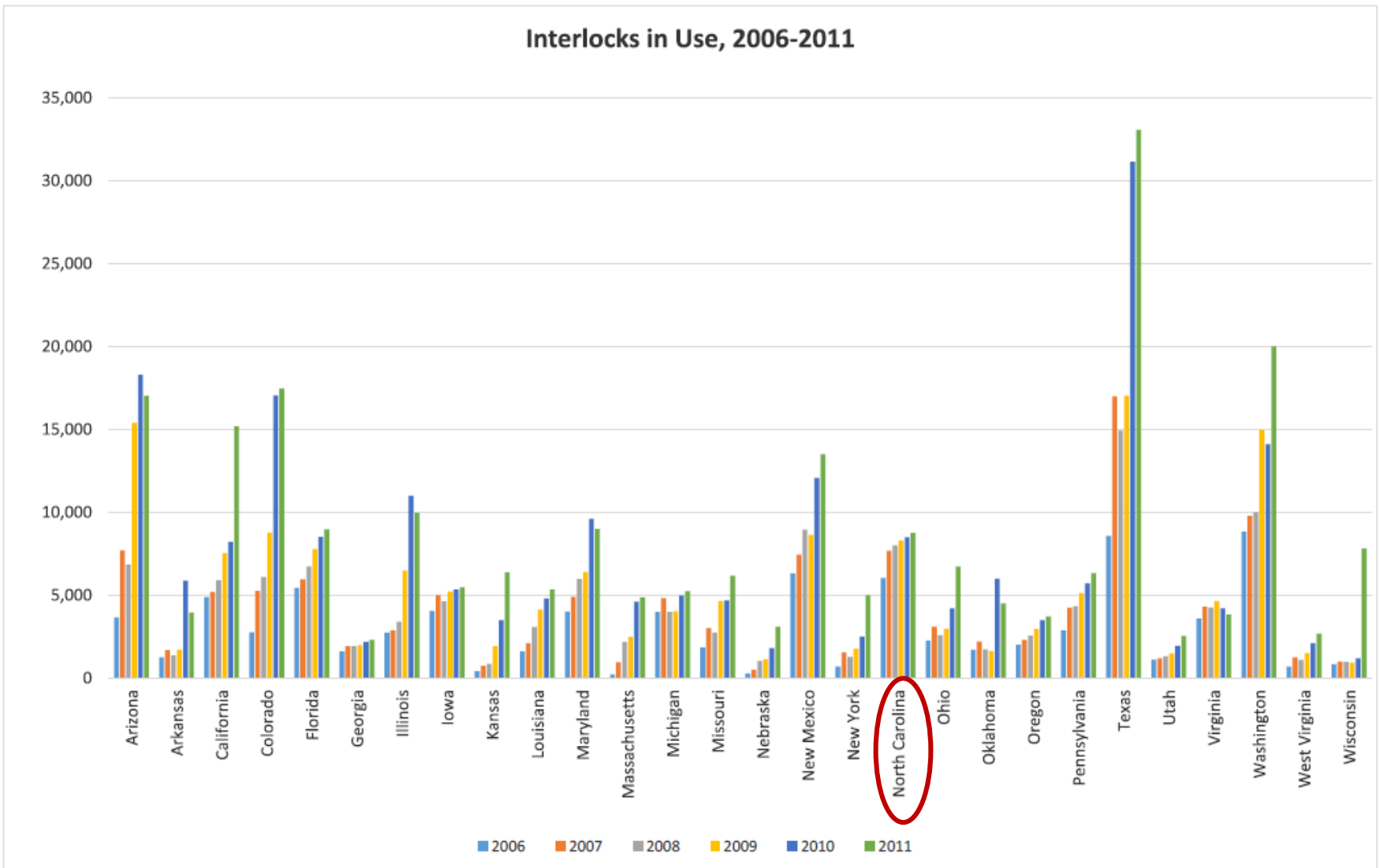
Rating	State ignition interlock law
Green	Ignition interlocks required for all offenders convicted of alcohol-impaired driving (i.e., driving with a blood alcohol concentration [BAC] $\geq 0.08$ g/dL), which includes both first-time and repeat offenders
Yellow	<b>Ignition interlocks required for repeat offenders convicted of alcohol-impaired driving or first-time offenders with a particularly high BAC (e.g., BAC <math>\geq 0.15</math> g/dL)</b>
Red	Ignition interlocks not required for any offenders convicted of alcohol-impaired driving

### How This Rating Was Determined

The rating reflects the extent to which the state required use of ignition interlocks for drivers convicted of alcohol-impaired driving. Ratings are based on data collected from the Insurance Institute for Highway Safety (IIHS) on July 1, 2015, and therefore reflect IIHS's interpretation of each state's policy at that time (30). The "as of" date referenced—July 1, 2015—is the date CDC assessed the policy. The date does not reflect when the law was enacted or became effective.

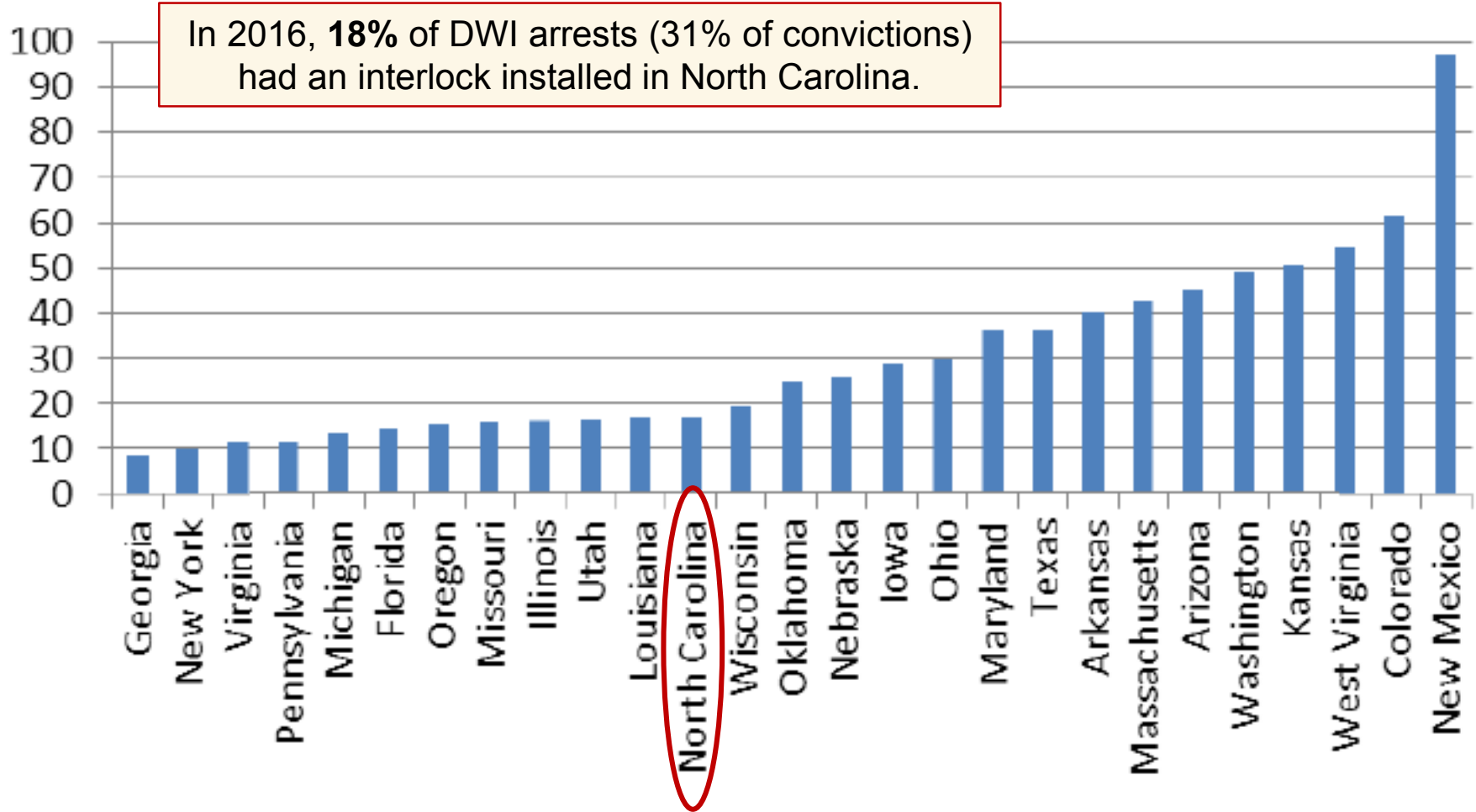
Source: National Conference of State Legislatures, *State Ignition Interlock Laws*, June 2016.

### Interlocks in Use, 2006-2011



Source: National Highway Traffic Safety Administration, Evaluation of State Ignition Interlock Programs, Interlock Use Analyses From 28 States, 2006-2011, May 2015

# Interlocks in use per 100 DWI arrests, 2011



Source: National Highway Traffic Safety Administration, Evaluation of State Ignition Interlock Programs, Interlock Use Analyses From 28 States, 2006-2011, May 2015; Traffic Injury Research Foundation, Annual Ignition Interlock Survey <http://tirf.us/wp-content/uploads/2018/05/2016-2017-AIIPA-TIRF-USA-Annual-Interlock-SurveyReport-24.pdf>



# Alcohol Data Resources

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DHHS > DPH > Chronic Disease and Injury Section > IVP Branch > Data > Alcohol Use

## Injury and Violence Prevention Branch

### Alcohol Use and Related Injuries

#### [+ Data and Surveillance Navigation](#)

[Fact Sheet: Excessive Alcohol Use in North Carolina](#) (PDF, 255 KB) - **Updated 01/07/19**

Excessive alcohol use can put you at risk for many harmful health outcomes including chronic conditions (like liver disease and cancer), motor vehicle crashes, injuries, and violence. Excessive alcohol use includes:

- Binge drinking: 4 or more drinks during a single occasion for women, 5 or more drinks during a single occasion for men
- Heavy drinking: 8 or more drinks per week for women, 15 or more drinks per week for men
- Any alcohol consumed by pregnant women
- Any alcohol consumed by those under age 21

### Surveillance Data

Data from vital records, hospital discharge data, emergency department data, and other sources are used to better understand and address the negative outcomes of excessive alcohol use.

### Behavioral Risk Factor Surveillance System (BRFSS): Alcohol and Drinking and Driving

- [2015 Heavy Drinking among Adults \(BRFSS\)](#) (PDF, 350 KB)
- [2015 Binge Drinking among Adults \(BRFSS\)](#) (PDF, 351 KB)
- [2014 Heavy Drinking among Adults \(BRFSS\)](#) (PDF, 350 KB)
- [2014 Binge Drinking among Adults \(BRFSS\)](#) (PDF, 352 KB)
- [2014 Drinking and Driving \(BRFSS\)](#) (PDF, 209 KB)
- [2013 Heavy Drinking among Adults \(BRFSS\)](#) (PDF, 250 KB)
- [2013 Binge Drinking among Adults \(BRFSS\)](#) (PDF, 332 KB)
- [2012 Drinking and Driving \(BRFSS\)](#) (PDF, 126 KB)
- [2011 Heavy Drinking among Adults \(BRFSS\)](#) (PDF, 124 KB)
- [2011 Binge Drinking among Adults \(BRFSS\)](#) (PDF, 159 KB)

See also: [Behavioral Risk Factor Surveillance System \(BRFSS\) Injury Data](#)

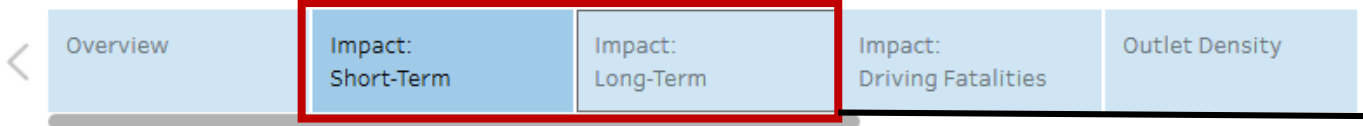
### Pregnancy Risk Assessment Monitoring System (PRAMS): Drinking During Pregnancy

- [2012 Drinking in the Last Three Months of Pregnancy \(PRAMS\)](#) (PDF, 202 KB)
- [2011 Drinking in the Last Three Months of Pregnancy \(PRAMS\)](#) (PDF, 133 KB)



# Dashboard Layout

## Alcohol & the Public's Health in North Carolina



Public Health Impact demonstrated as short- and long-term

### Public Health Impact of Excessive Alcohol Use in North Carolina

Excessive alcohol use impacts all age groups, though the related health outcomes shift as people age.

Overall, alcohol outcomes can be sorted into two categories: **short-term** and **long-term**. Short term outcomes (acute events like alcohol poisoning and crashes) primarily affect younger people under 50. Long term outcomes (chronic diseases like alcohol dependency and liver disease) typically affect adults over 50.

### Short Term Outcomes for Young People

Underage drinking is a continued concern in North Carolina. In 2017, 12.4% of high school students reported binge drinking in the past 30 days (YRBS, 2017).

Easier alcohol access impacts youth safety. 95% of violent crimes

County Selector  
McDowell

**26,000**  
years of potential life lost each year to young NC adults due to excessive alcohol consumption

*North Carolinians aged 20-34 experience the greatest years of life lost due to excessive alcohol use. Between 2006 and 2019, this group averaged 25,958 years of potential life lost. Years of life lost are early deaths before average life expectancy (not really. FIX)*

Some data will be available by county

Alcohol-Related ED Visits (< 21)	
McDowell	25
NC	4,746



# Dashboard Layout

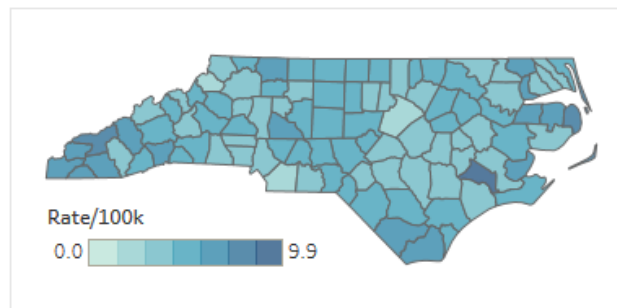
## Data Tab

Available data stratified by county will be available here. Includes ED, death, density, and cost of excessive alcohol use.

## MAPS

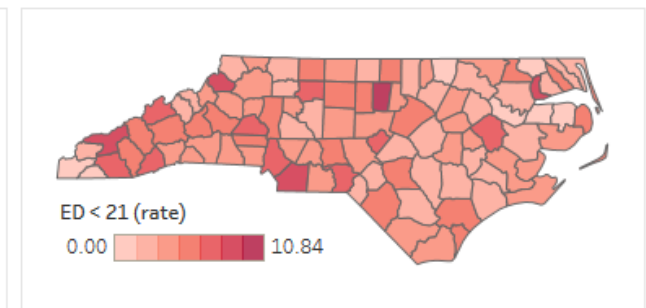
### Alcohol-Related Deaths

3,994 NC deaths in 2,017



### Emergency Department Visits (<21)

2,235 ED Visits, age < 21 in 2017 (2017 data only)



## COUNTY DATA

### Alcohol-Related Deaths

McDowell County

■ McDowell  
■ NC



### County Data Table

	McDowell	NC
Total Death #	289	52,137
Deaths (rate)	5.56	3.95
Deaths (count)	25	3,770
ED < 21 (rate)	5.6	5.0
ED < 21 (count)	25	4,746
Economic Cost	\$33M	\$7,034M

Footer text. Injury Epi. Etc.



# Thank you!

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Injury and Violence Prevention Branch  
NC Division of Public Health

[www.injuryfreenc.ncdhhs.gov](http://www.injuryfreenc.ncdhhs.gov)