

The Rural Injury Problem (and Solutions) in North Carolina

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Injury in North Carolina

*According to the Trust for America's Health and
The Robert Wood Johnson Foundation*

- North Carolina has the 19th highest rate of injury deaths in United States
- 66 per 100,000 North Carolinians suffer a death from injury every year.
National rate is 57.9 per 100,000
- For each year of injuries in North Carolina, total lifetime medical costs due to fatal injury are nearly \$60 million.

Leading Causes of Chronic Disease and Injury Death and Years of Life Lost: N.C., 2010

Cause of Death	Total Deaths	Average Years of Life Lost *	Total Years of Life Lost *
Cancer	18,013	3.45	62,167
Heart Disease	17,090	2.61	44,582
Injury	5,983	18.68	111,774
Chronic Lower Respiratory Diseases (Asthma, COPD)	4,490	1.26	5,635
Stroke	4,281	1.91	8,176
Alzheimer's disease	2,813	0.04	104
Diabetes Mellitus	2,036	3.54	7,207
Nephritis/Kidney Disease	1,886	2.30	4,330
Chronic Liver Disease	930	7.67	7,132
Hypertension	840	2.41	2,027
Total Deaths (all causes)	78,604	4.68	368,181
Chronic Disease Deaths	52,549	2.69	141,512

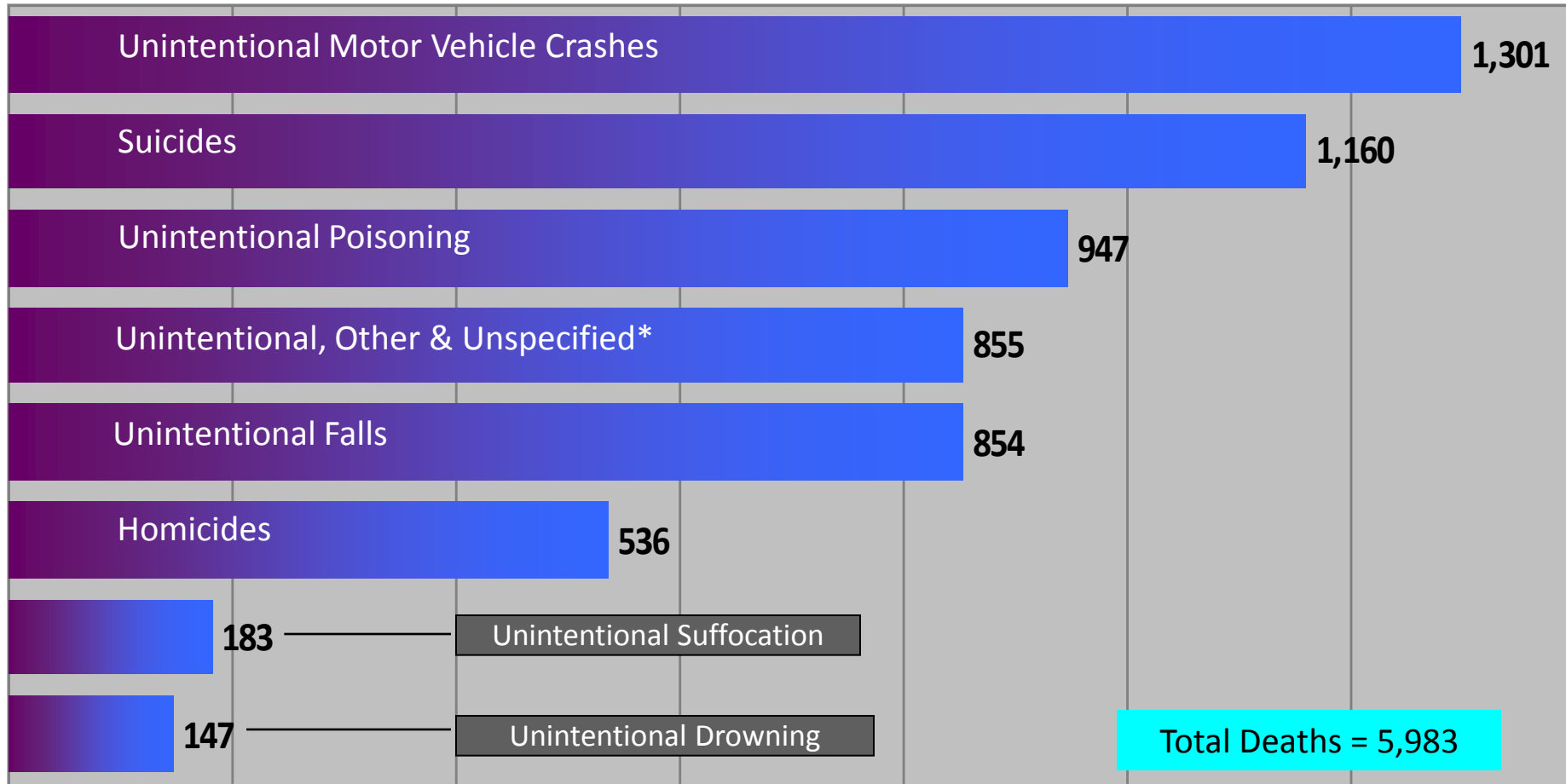
For 87% of the North Carolina population (ages 1 to 64), Injury is the leading cause of death.

* Based on deaths that occurred prior to age 65

Source: N.C. State Center for Health Statistics, 2009

Leading Causes of Injury Deaths

(by Number of Deaths, All Ages, North Carolina Residents: 2010)

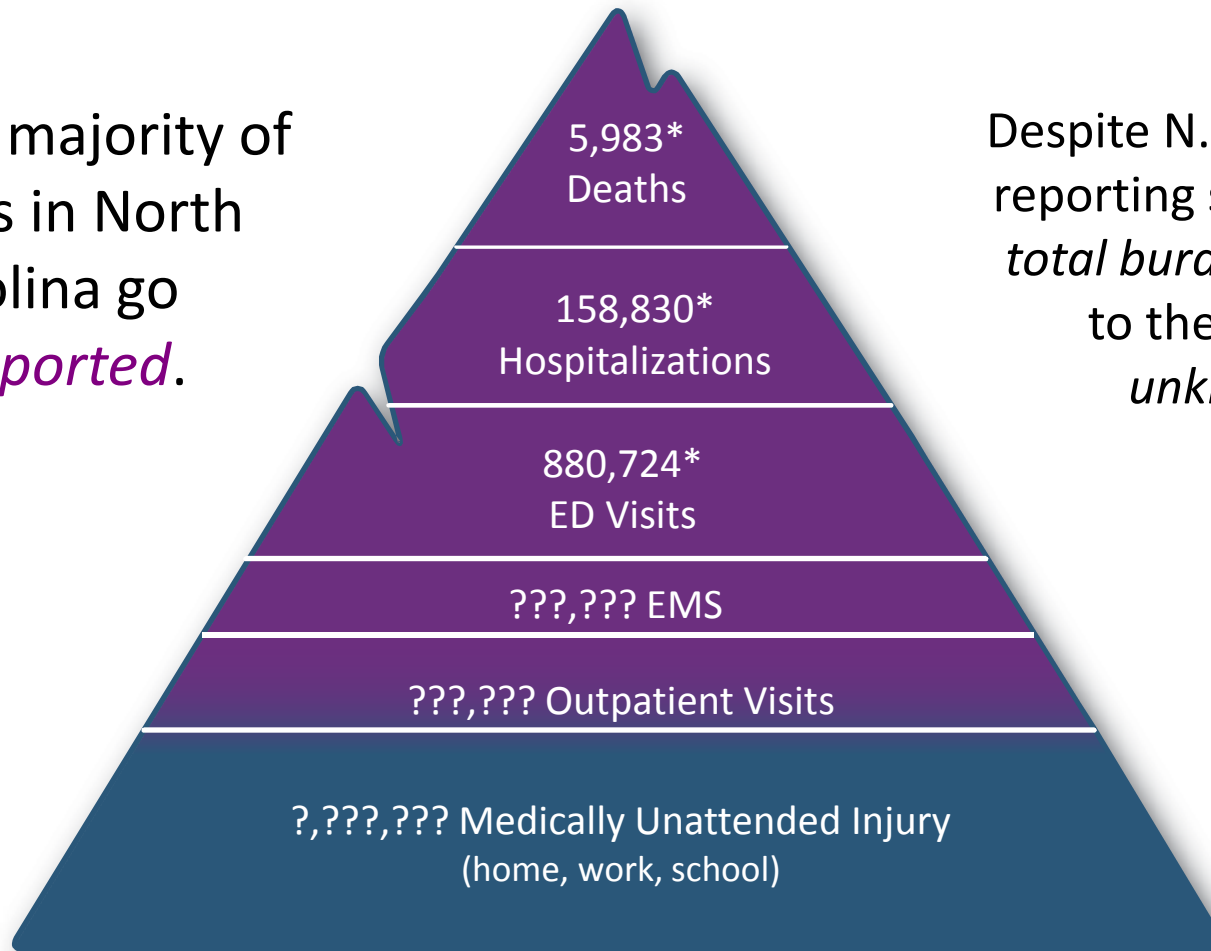


* *Unintentional Other* and *Unintentional Unspecified* are two separate categories. *Other* comprises several smaller defined causes of death, while *Unspecified* refers to unintentional deaths that were not categorized due to coding challenges.

Deaths from Injury and Violence are Only the Tip of the Iceberg

The vast majority of injuries in North Carolina go *unreported*.

Despite N.C.'s excellent reporting systems, the *total burden* of injury to the state is *unknown*.



INJURY ICEBERG

* 2010 death file, 2009 hospitalization discharge and 2010 NC DETECT (Emergency Department visits)

Top 6 Leading Causes of Death (All Races, Both Sexes) by Age Groups, North Carolina: 2010

Age Groups										
<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	All Ages
Low Birthweight 177	Unintentional Injury 32	Cancer 15	Motor Vehicle Injury 14	Motor Vehicle Injury 282	Unintentional Injury 259	Cancer 437	Cancer 1,716	Cancer 3,632	Heart Disease 13,076	Cancer 18,013
Congenital Anomalies 173	Motor Vehicle Injury 21	Motor Vehicle Injury 14	Cancer 14	Unintentional Injury 149	Motor Vehicle Injury 229	Heart Disease 336	Heart Disease 1,197	Heart Disease 2,318	Cancer 12,020	Heart Disease 17,090
SIDS 53	Homicide 13	Unintentional Injury 14	Heart Disease 8	Homicide 133	Homicide 163	Unintentional Injury 317	Unintentional Injury 452	Chronic Lower Respiratory Disease 522	Chronic Lower Respiratory Disease 3,787	Chronic Lower Respiratory Disease 4,490
Pregnancy Related 51	Congenital Abnormalities 12	Congenital Abnormalities 4	Unintentional Injury 7	Suicide 132	Suicide 159	Suicide 212	Suicide 290	Cerebro-Vascular Disease 282	Cerebro-Vascular Disease 3,588	Cerebro-Vascular Disease 4,281
Placental, Cord, & Other Complications 45	Cancer 9	Homicide 3	Homicide 7	Heart Disease 40	Cancer 134	Motor Vehicle Injury 211	Chronic Liver Disease & Cirrhosis 245	Diabetes Mellitus 373	Alzheimer's Disease 2,788	Alzheimer's Disease 2,813
Circulatory System 27	Heart Disease 5	In-situ/ Benign Neoplasms 2	Congenital Abnormalities 5	Cancer 36	Heart Disease 95	HIV 78	Cerebro-Vascular Disease 213	Unintentional Injury 306	Nephritis 509	Unintentional Injury 2,762

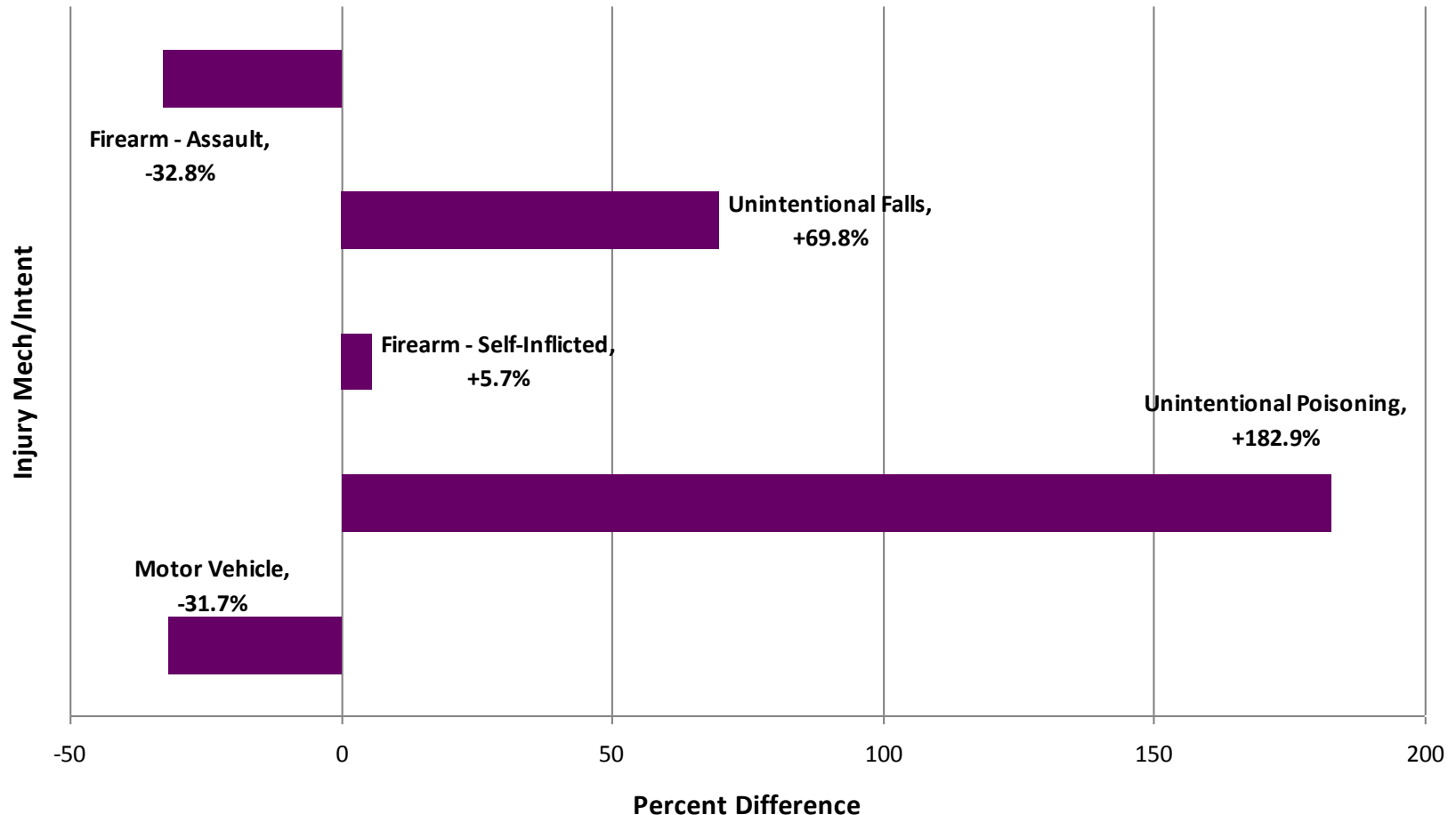
Source: NC State Center for Health Statistics, Death file 2010; Analysis by Injury Epidemiology and Surveillance Unit

An 'average' injury day in NC

- 17 deaths
- 423 hospitalizations
- 2,383 ED visits
- ??? unattended

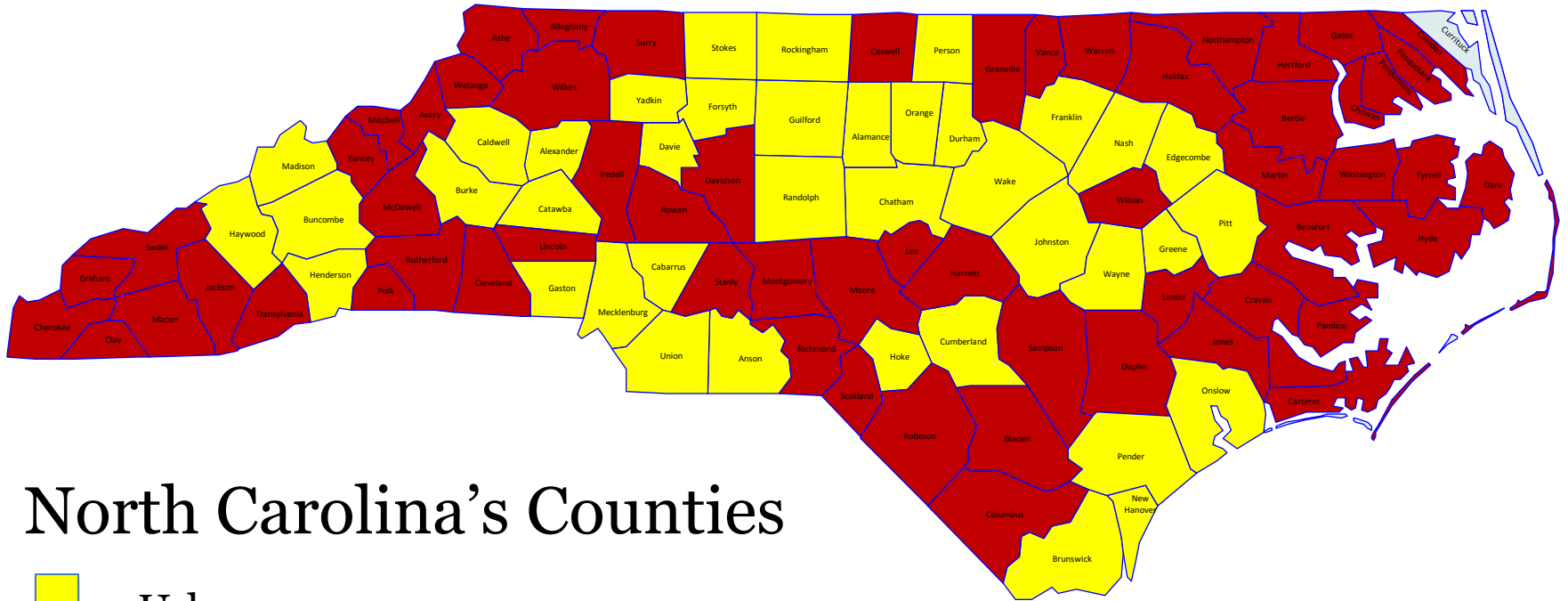


Percent Change in Rates Between 1999 and 2010 Leading Causes of Injury Deaths: N.C. 1999 to 2010*



Source: N.C. State Center for Health Statistics, Vital Statistics-Deaths, 1999-2010
Analysis by Injury Epidemiology and Surveillance Unit

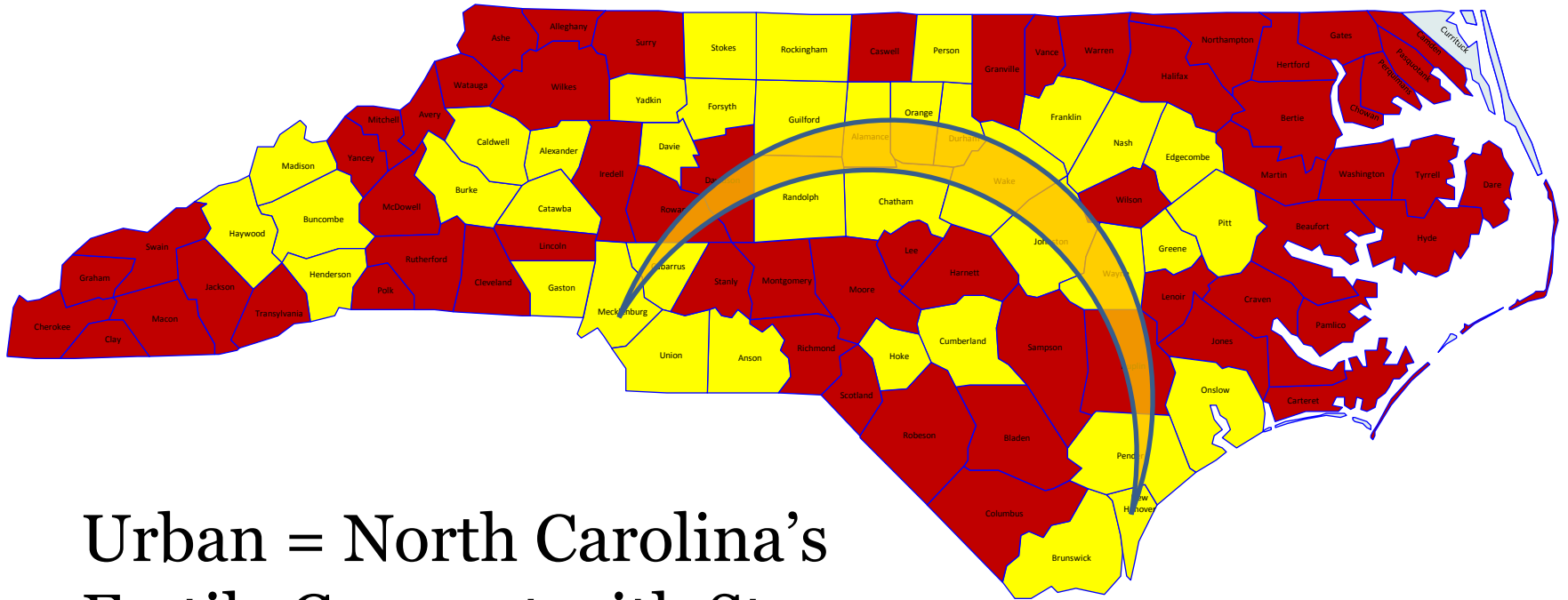
Urban versus Rural



North Carolina's Counties

-  Urban
-  Rural

Urban versus Rural



Urban = North Carolina's
Fertile Crescent with Stars

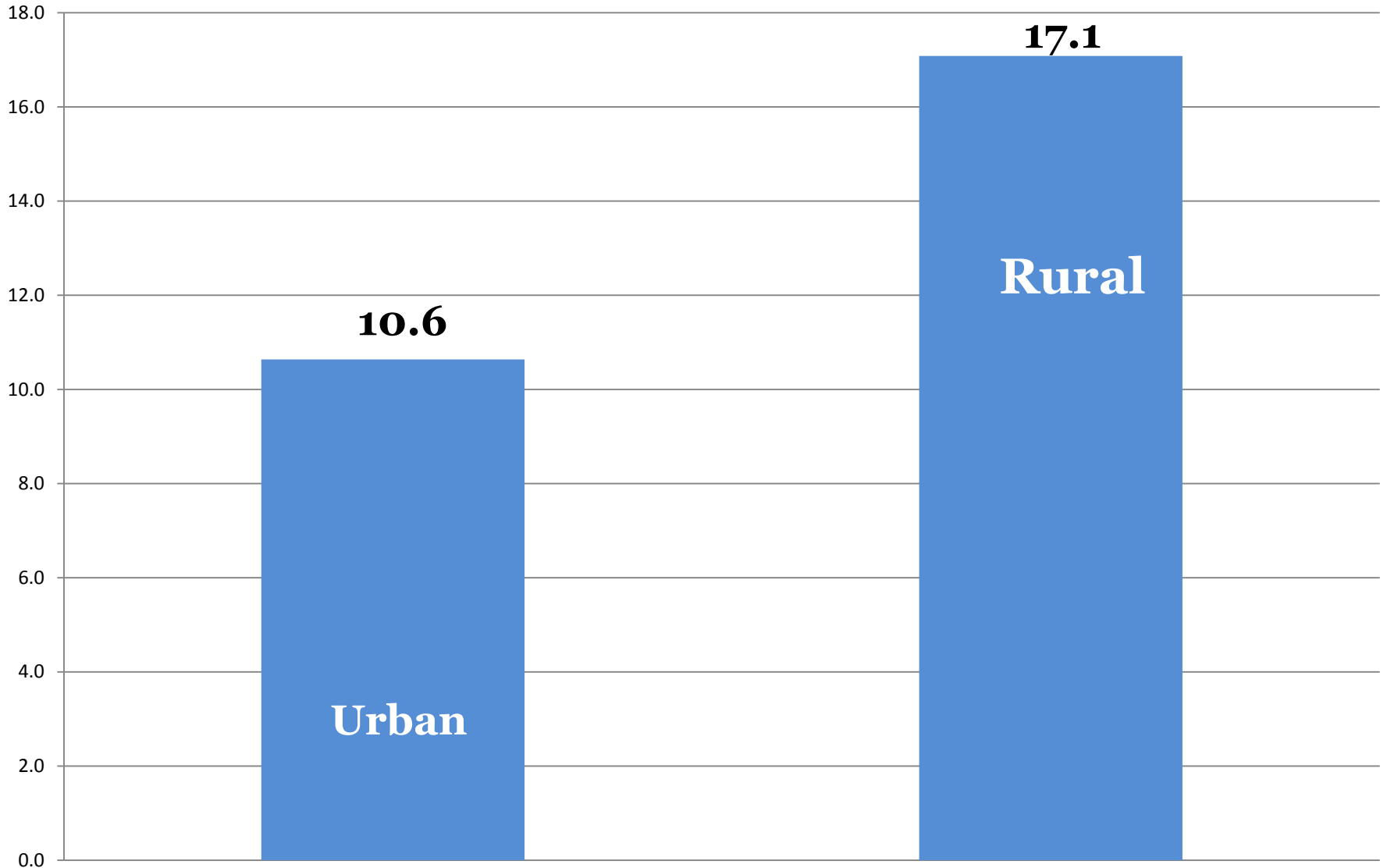
North Carolina's Most Pressing Rural Injury Issues

- Motor vehicle crashes
- Poisoning
- Falls
- Suicide
- Injuries on the farm

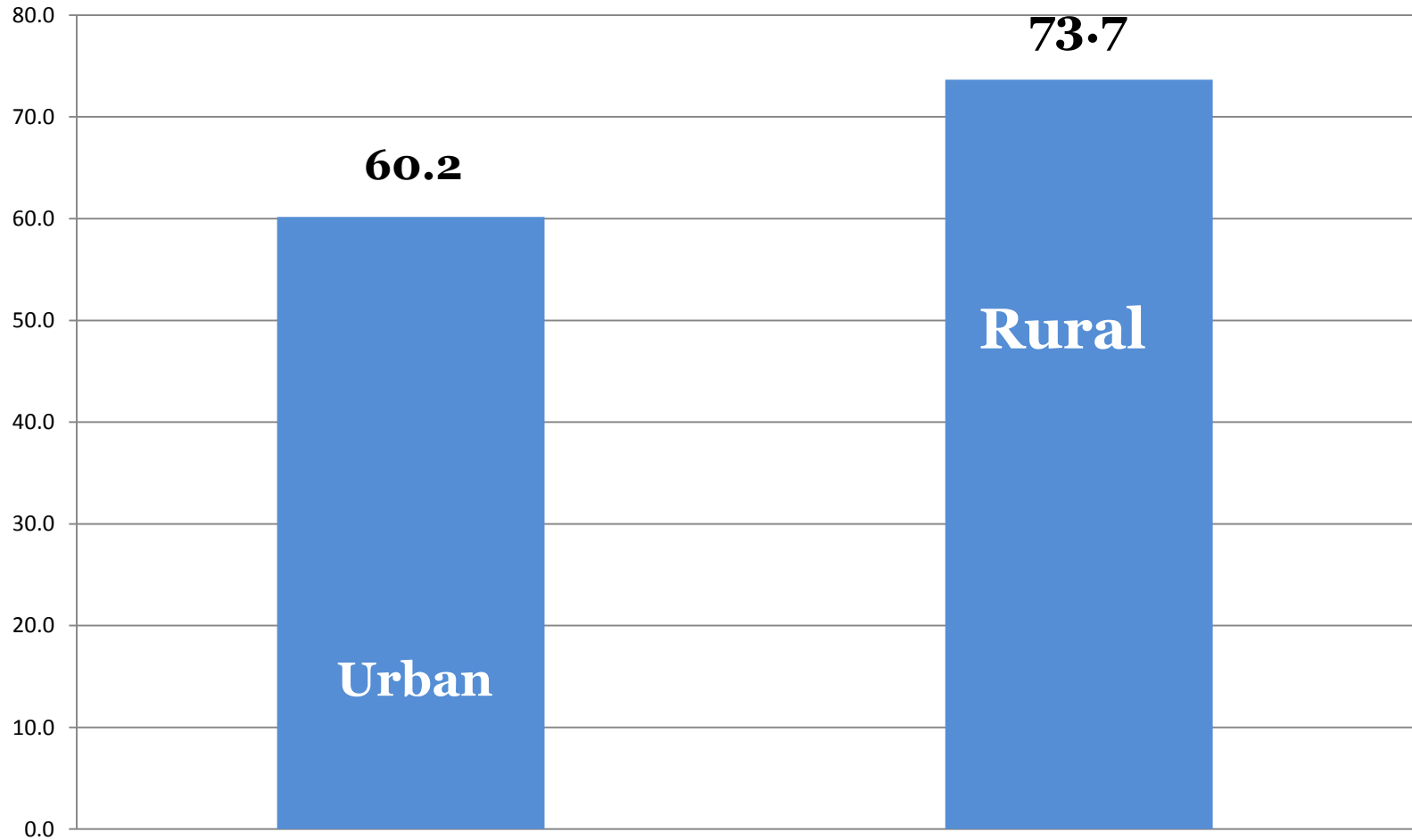
Motor Vehicle Crashes



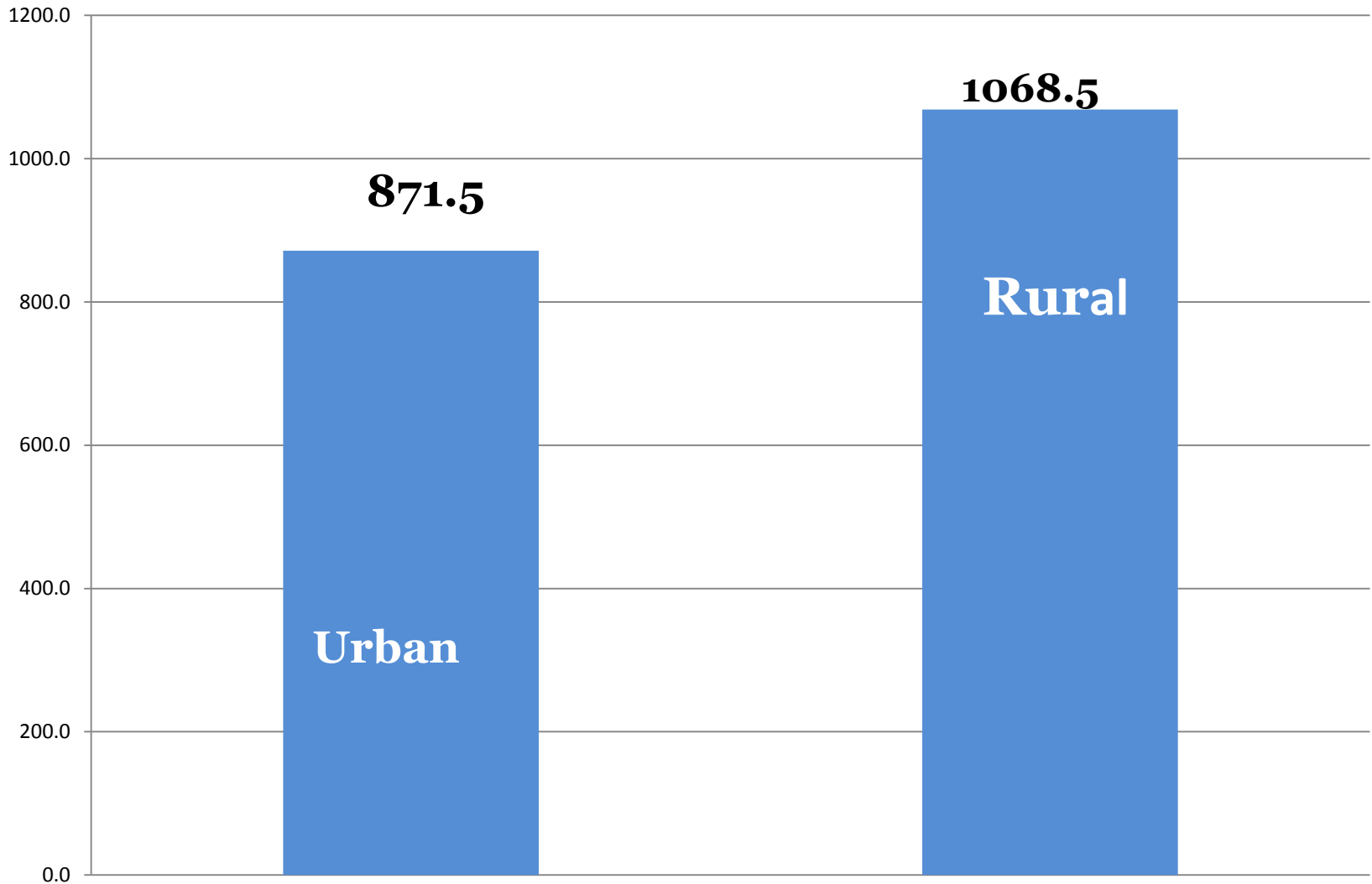
Motor Vehicle Crash Deaths



Motor Vehicle Crash Hospitalizations



Motor Vehicle Crash ED visits



A Great History



CLICK IT
OR TICKET.

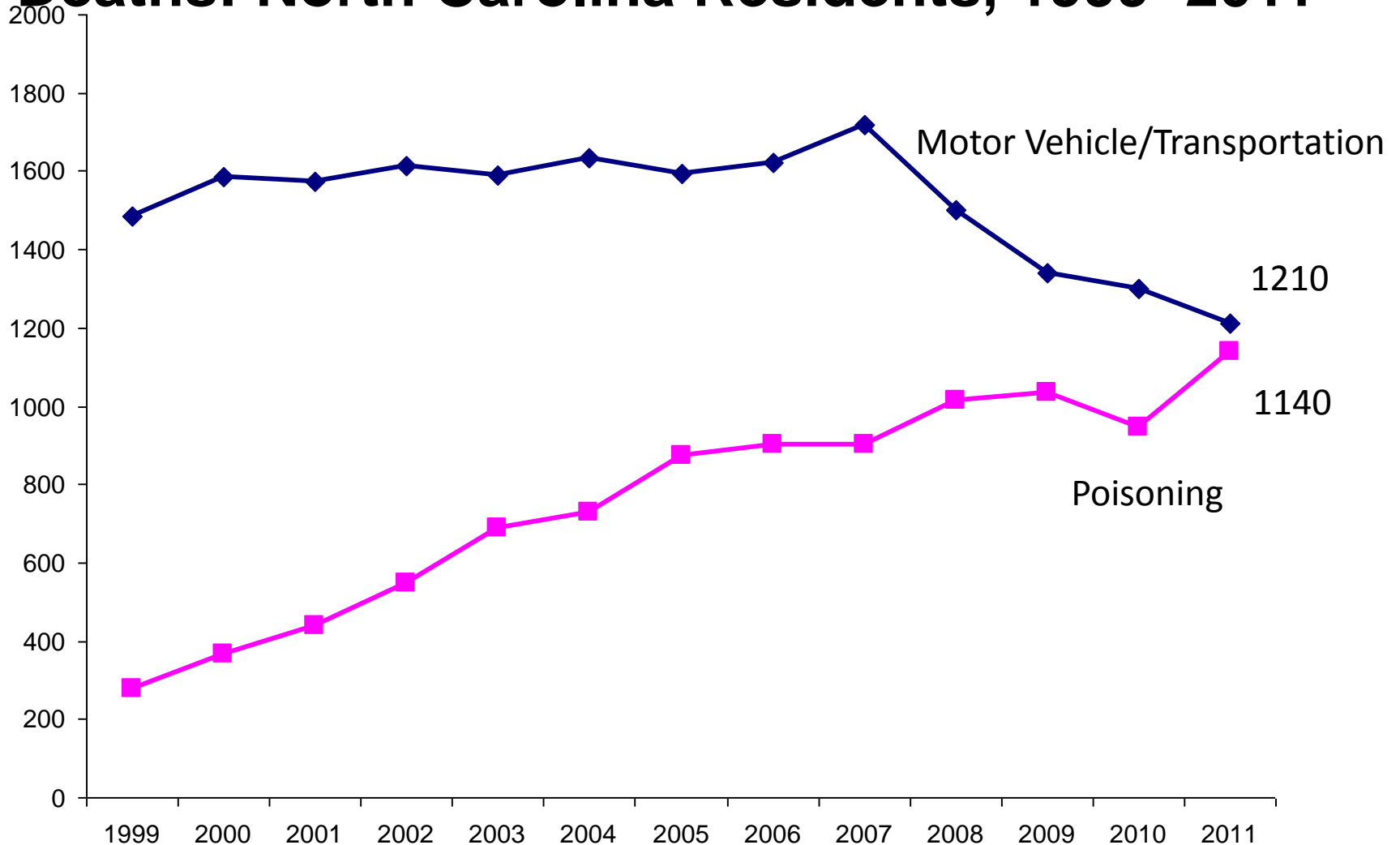
MVC Prevention – Next Steps for Rural North Carolina

Ignition Interlocks for All DWI Offenders



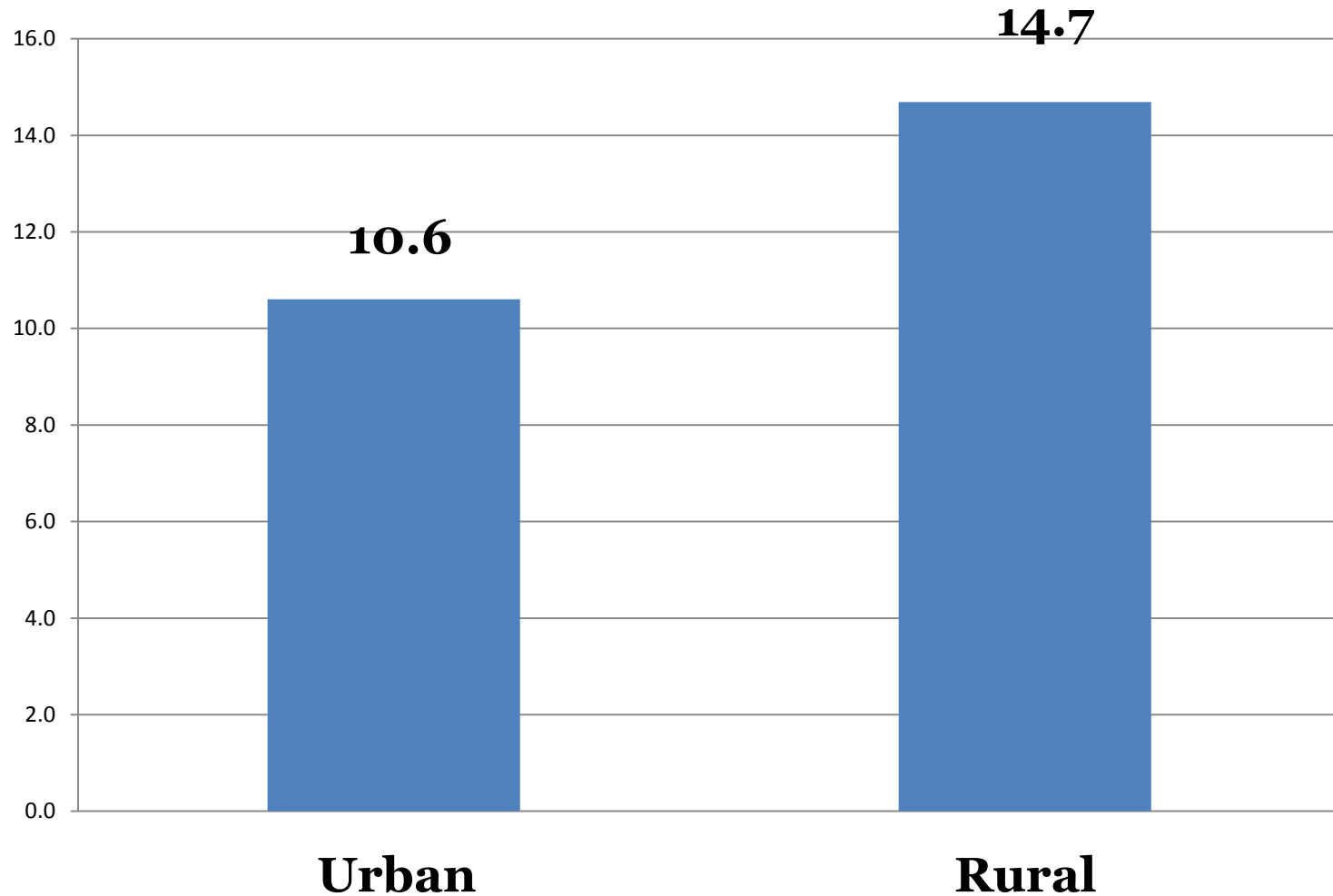
Center Line Rumble Strips

Unintentional Poisoning and Motor Vehicle Deaths: North Carolina Residents, 1999–2011



Source: Death files 1999-2011, State Center for Health Statistics
Analysis by Injury Epidemiology and Surveillance Unit

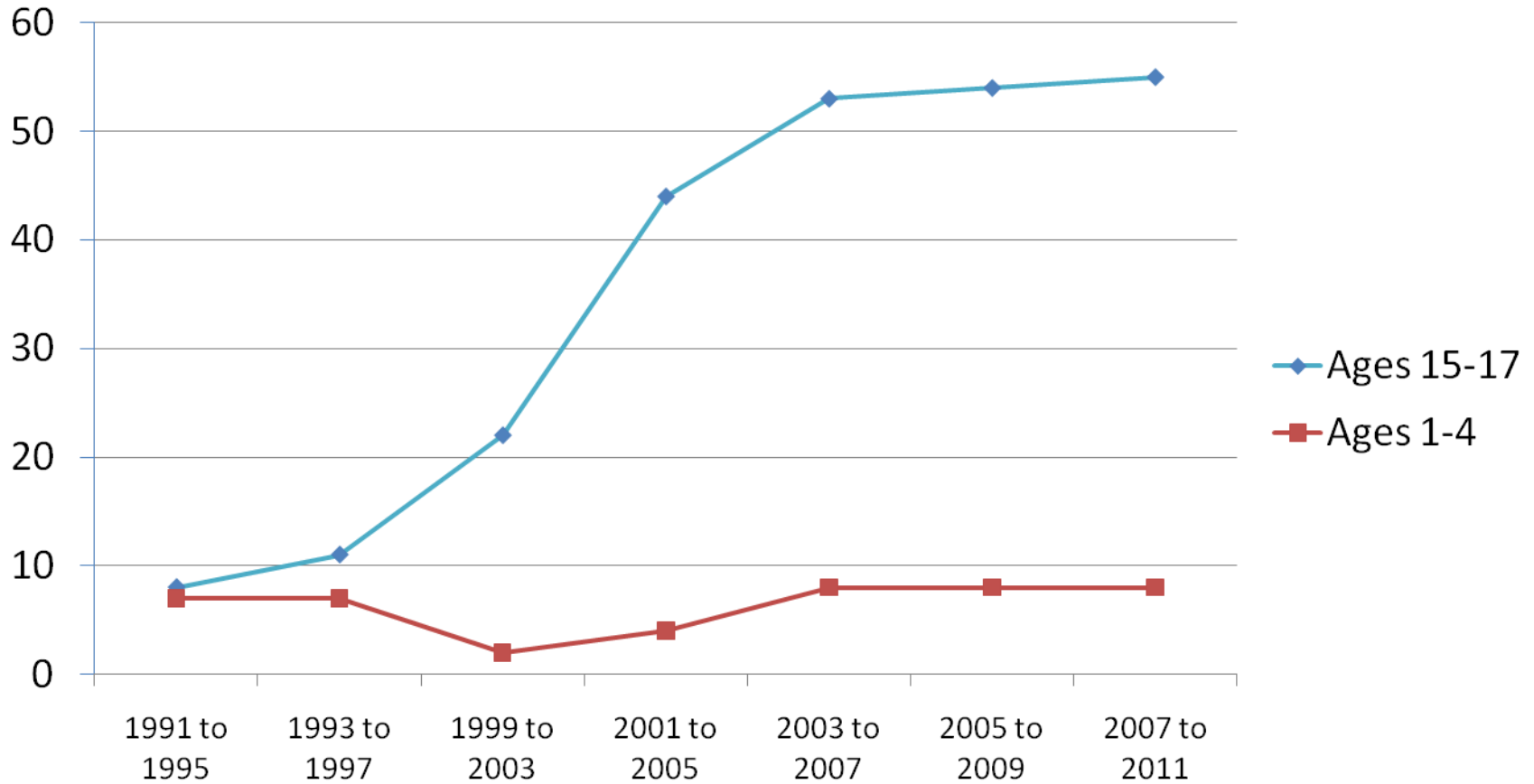
Unintentional Poisoning Deaths



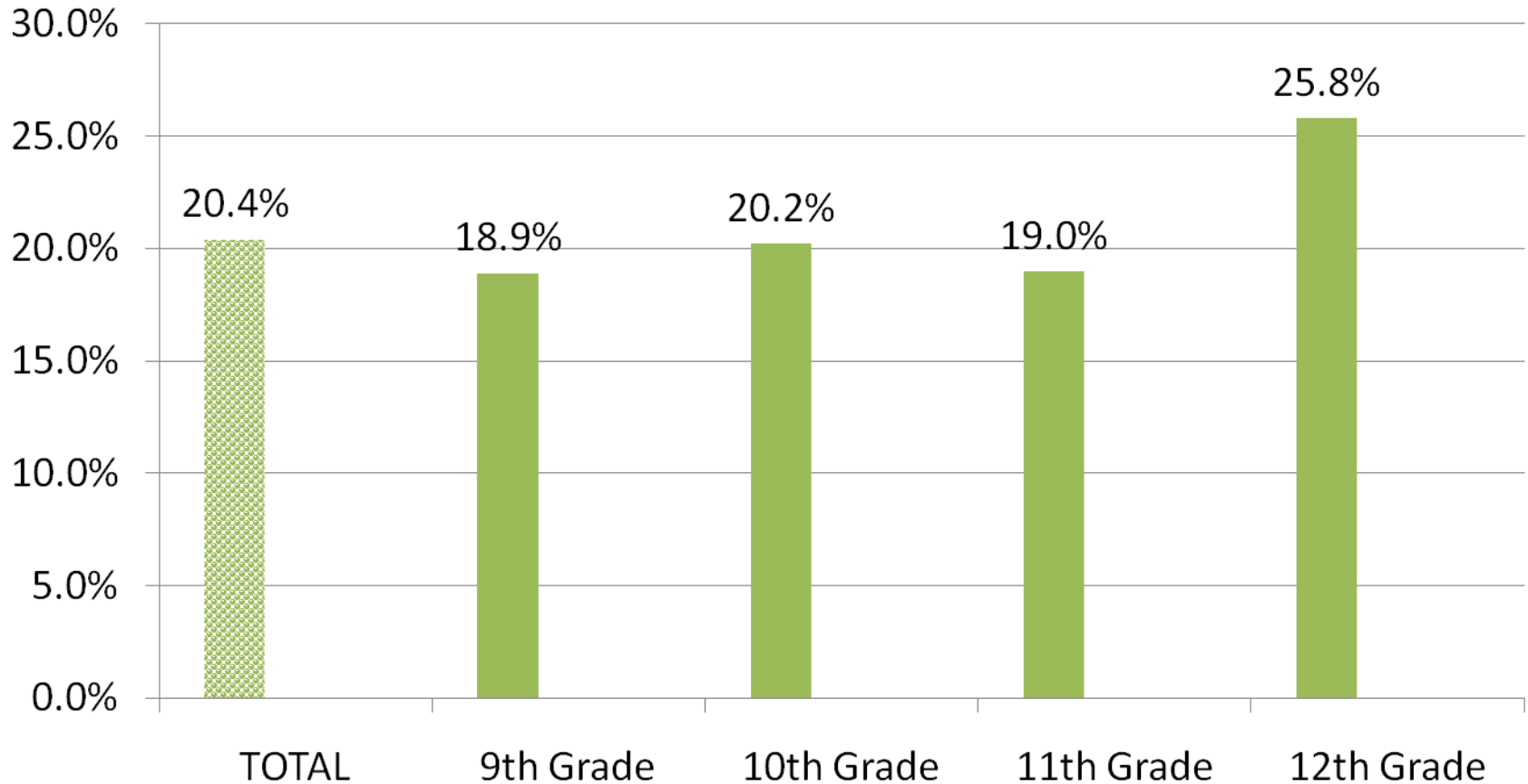
Poisoning Hospitalizations (2011)

	Urban	Rural
Self inflicted	57.8	49.1
Unintentional	39.5	49.3
Undetermined	13.3	15.0

Poisoning fastest growing cause of teen death



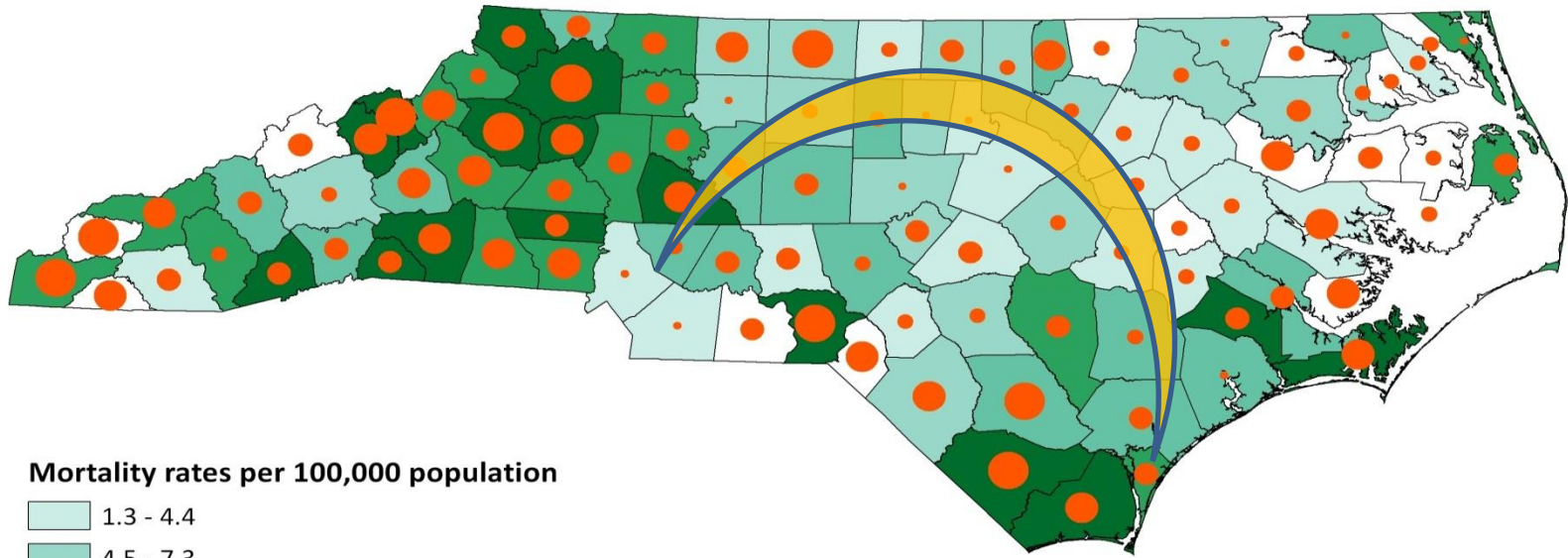
About One in Five N.C. High School Students Has Used a Prescription Drug Not Prescribed to Them



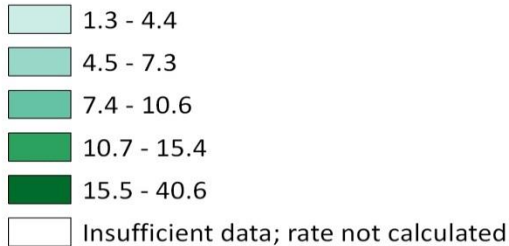
N.C. Youth Risk Behavior Survey, 2011, Public Schools of NC, DHHS

<http://www.nchealthyschools.org/docs/data/yrbs/2011/statewide/high-school.pdf>

Mortality Rates of Unintentional and Undetermined Opioid Overdoses and Dispensation Rates of Opioid Analgesics*: North Carolina Residents, 2009



Mortality rates per 100,000 population



Rates of opioid dispensation per 100,000 population



*Source:

Mortality data: State Center for Health Statistics, NC Division of Public Health, 2009
 Population data: National Center for Health Statistics, 2009
 Prescription dispensation data: Controlled Substances Reporting System, 2009

Analysis:

KJ Harmon, Injury Epidemiology and Surveillance Unit, Injury and Violence Prevention Branch, NC Division of Public Health

Poisoning Prevention Goal: Complement, not Duplicate



- Operation Medicine Drop
Operation Medicine Cabinet
- Project Lazarus – Community-Based OD Prevention and Opioid Safety (CCNC)
- Controlled Substances Reporting System
- Carolinas Poison Center
- Good Sam/Naloxone Access Billed Passed

Promote Permanent Drop Off Sites

- OMD has collected about 30 million doses of meds in episodic events
- Permanent drop-off sites allow people to drop off unneeded meds at their convenience without waiting months
- NC has some permanent sites; effort not coordinated
- Controlled substances must be turned over to law enforcement because of federal rules and law
- 2010 Safe and Secure Drug Disposal Act
http://www.deadiversion.usdoj.gov/drug_disposal/non_registrant/s_3397.pdf
- Administratively promote expanded placement of permanent drop boxes

NC's Controlled Substances Reporting System (CSRS)

- Tracks filled prescriptions of controlled substances
- Pharmacies **MUST** report into CSRS when they fill a prescription; they **MAY** check before filling it
- Doctors **MAY** report into CSRS if dispensing a medication; they **MAY** check before prescribing
- About 30% of doctors use CSRS regularly
- Doctor-seeking behavior has declined since the CSRS was implemented about 5 years ago
- Information will soon be connected among states
- Prescription fill reporting time is 7 days
- Controlled Substances can only report unusual patterns to the Attorney General

CSRS Enhancements

- Increase access to CSRS for prescribers
 - Require physician dispensed medications to be reported
 - Allow delegate accounts
 - Increase penalties for misuse (\$10,000 civil penalty)
- Allow reporting of aberrant practice (unsolicited alerts)
 - Report patient practices to physician of record
 - Report physician practices to Medical Board
 - Amend NC GS 90-5.2 (a)(7) to specifically allow the NC Medical Board to share their licensee e-mail information with DHHS for the purpose of implementing this feature
- Shorten required prescription-fill reporting time (\$54,000 R needed)

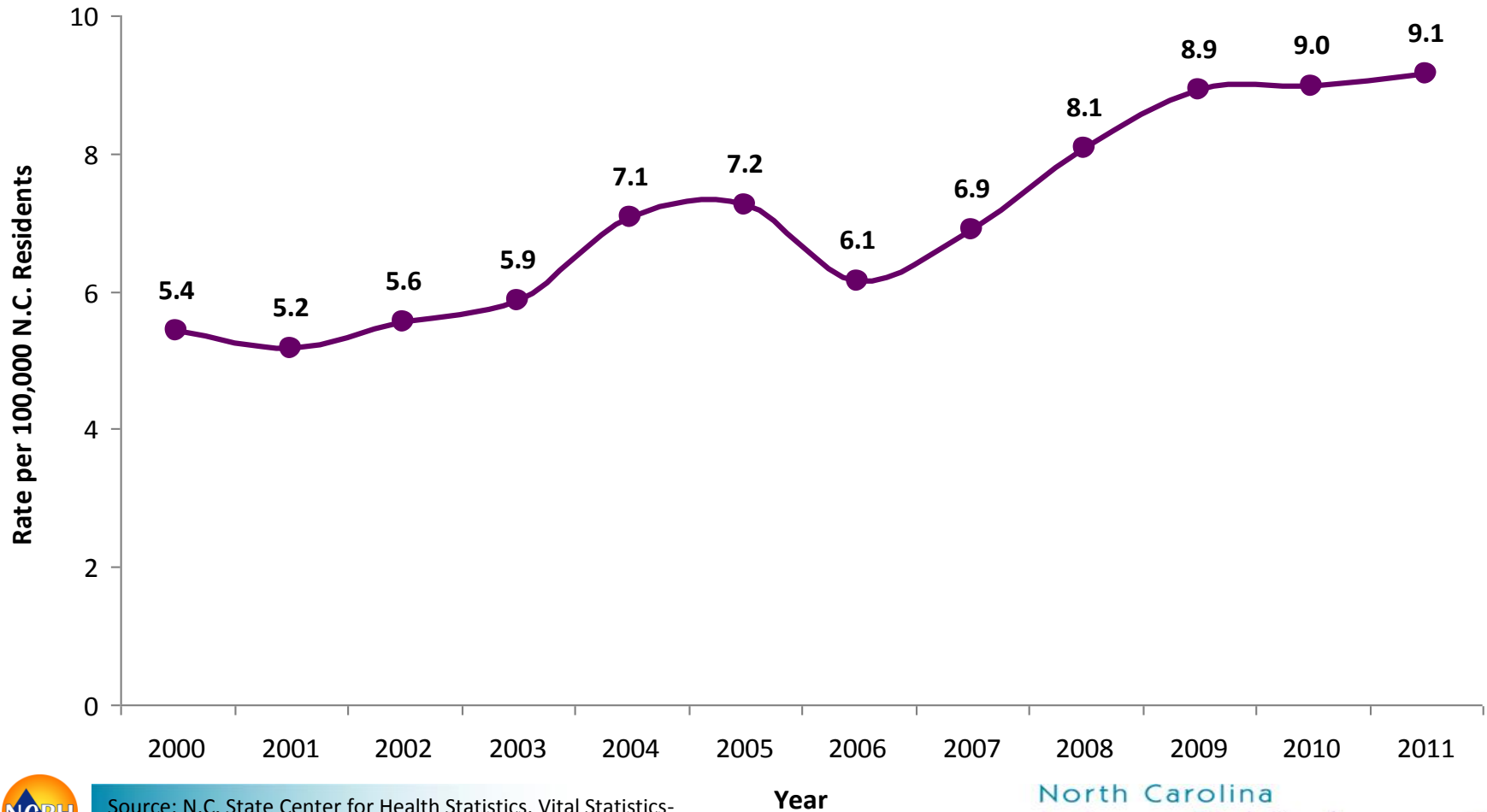


Every 18 seconds an older adult is in the emergency room because of a fall

Falls

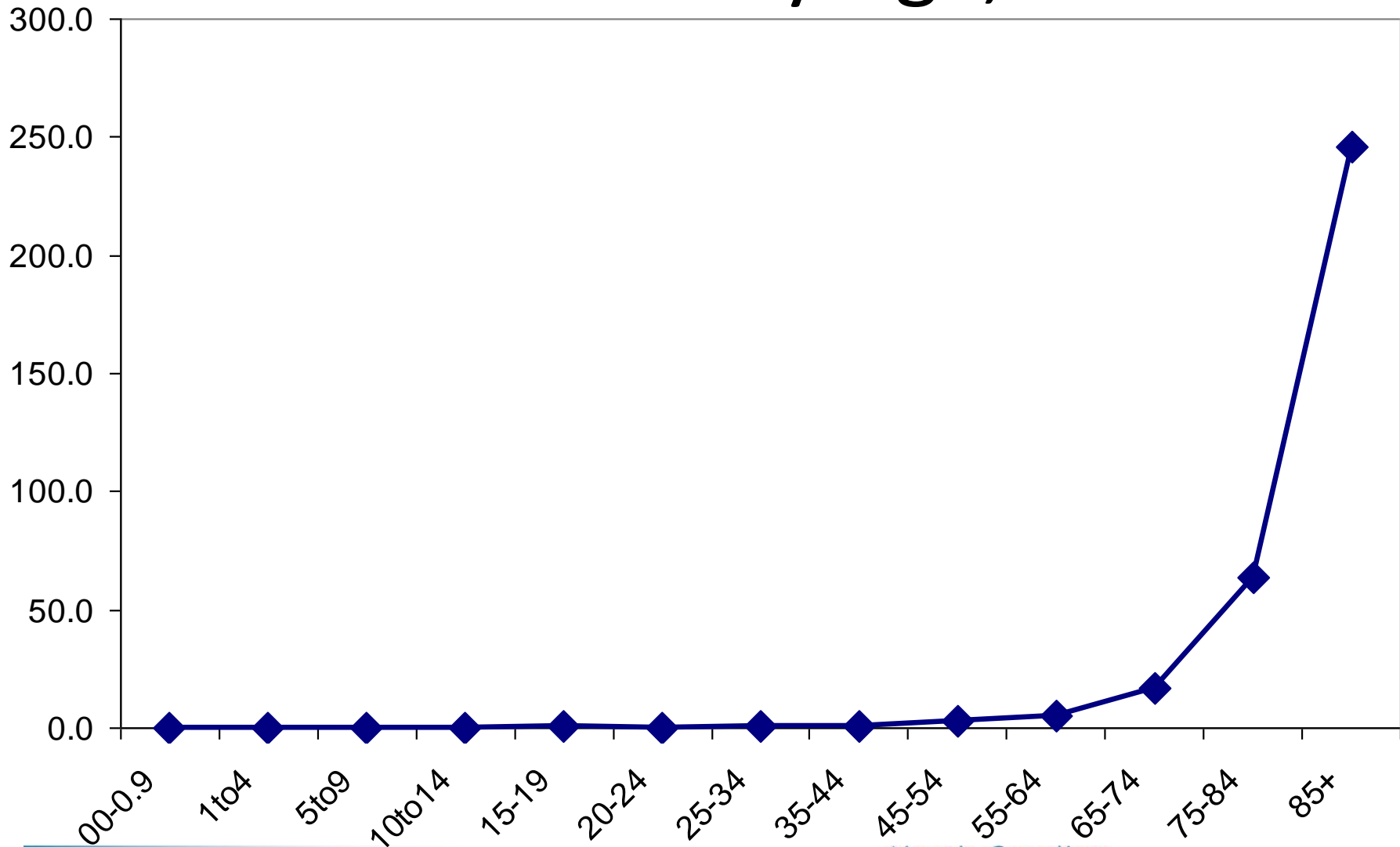


Rate of Deaths due to Unintentional Falls Since 2000: N.C., 2000-2011

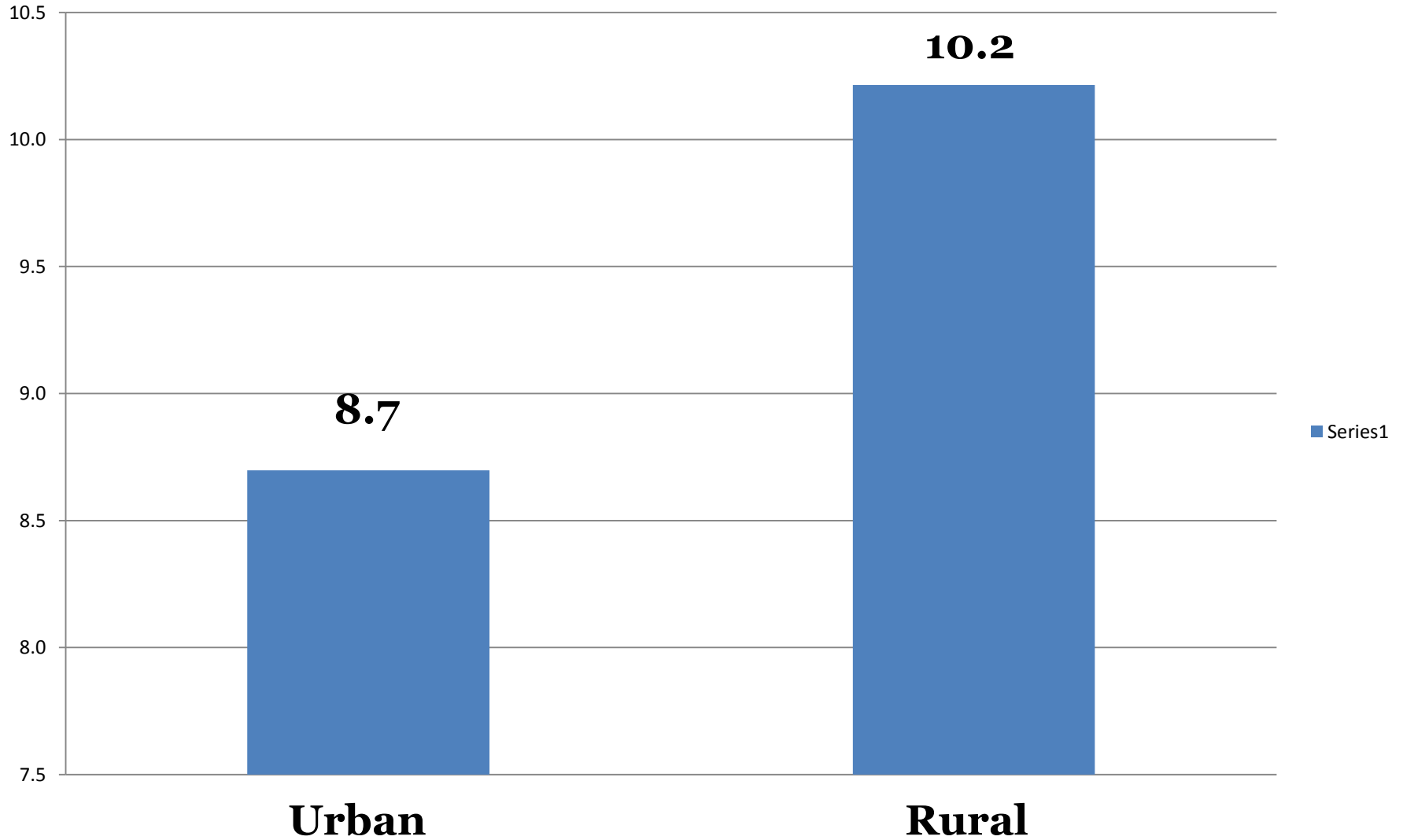


Source: N.C. State Center for Health Statistics, Vital Statistics-Deaths, 2000-2011
Analysis by Injury Epidemiology and Surveillance Unit

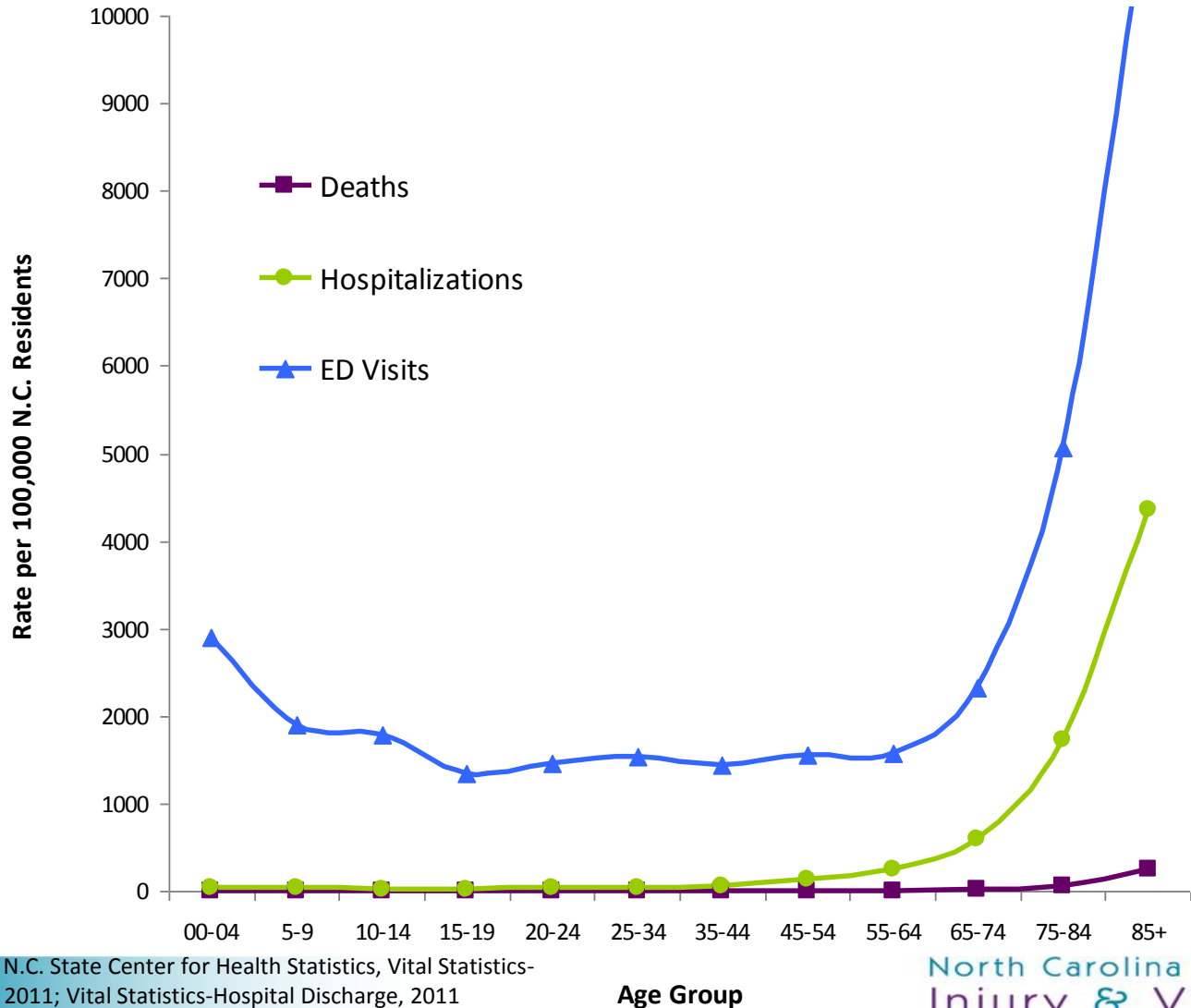
Fall Death Rates by Age, 2011



Unintentional Fall Deaths



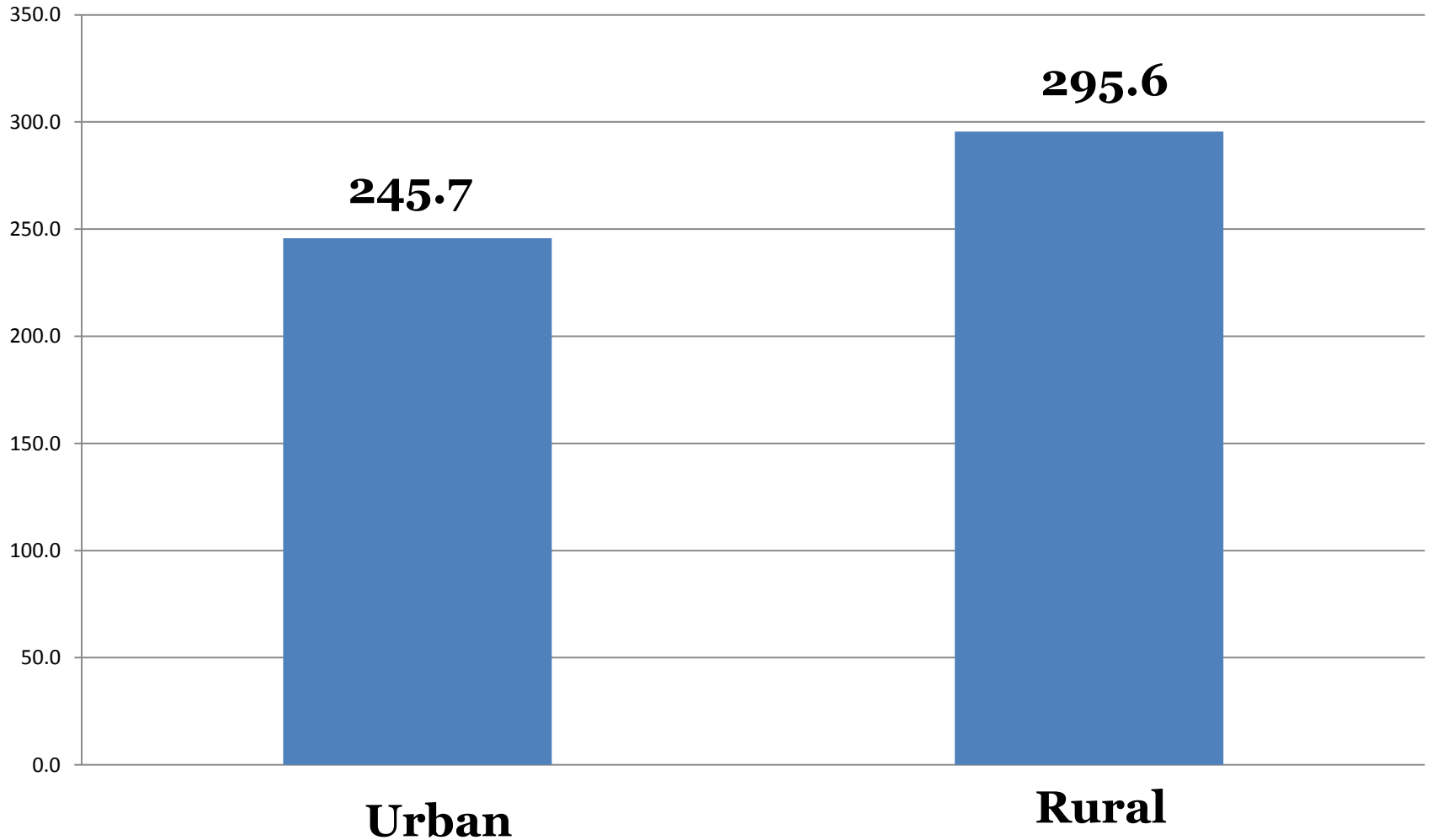
Rates Deaths, Hospitalizations, and Emergency Department (ED) Visits Due to Unintentional Falls by Age: N.C., 2011



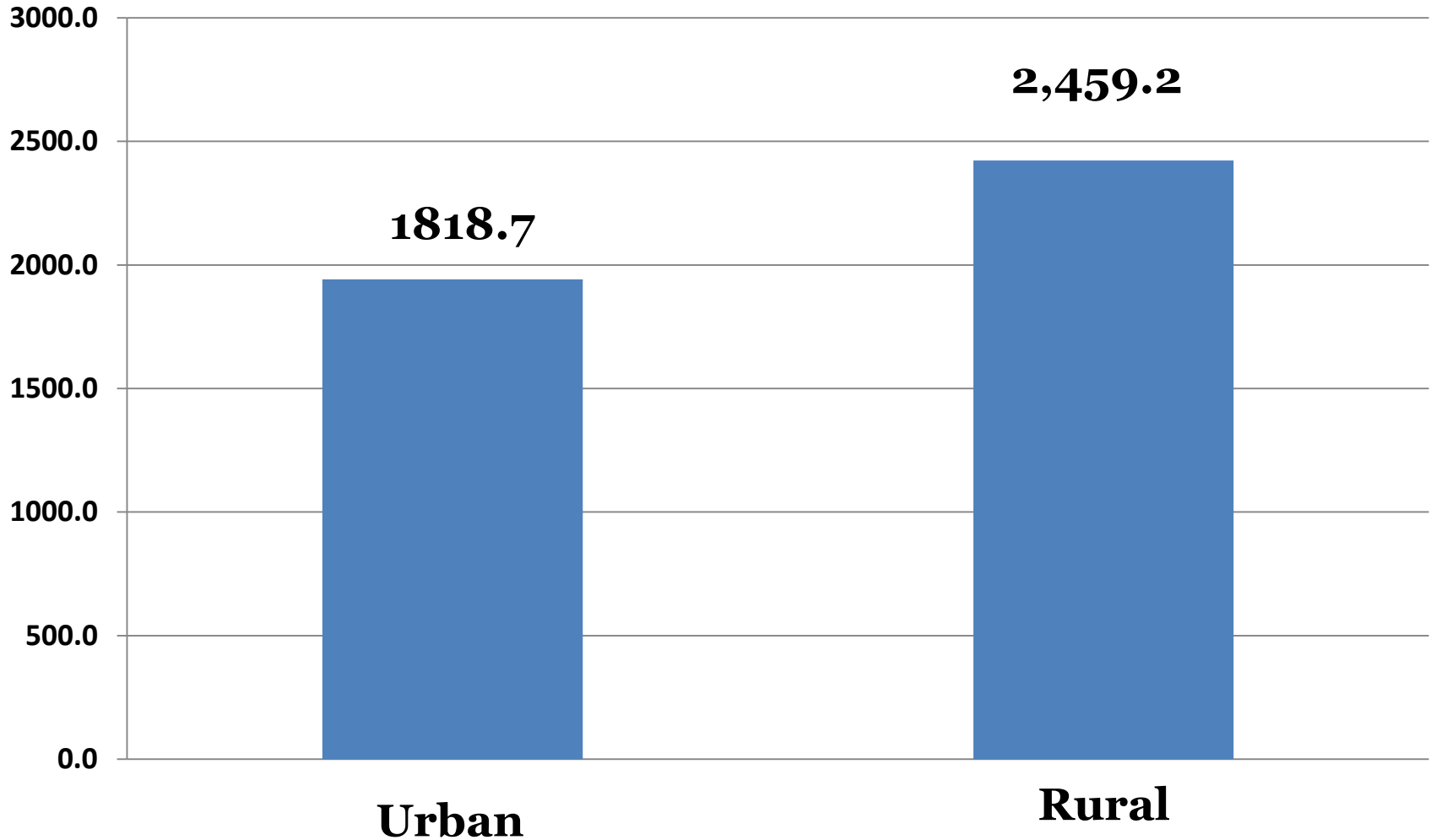
Source: N.C. State Center for Health Statistics, Vital Statistics-Deaths, 2011; Vital Statistics-Hospital Discharge, 2011
 NC DETECT-ED, 2011
 Analysis by Injury Epidemiology and Surveillance Unit



Unintentional Fall Hospitalizations



Falls ED Visits

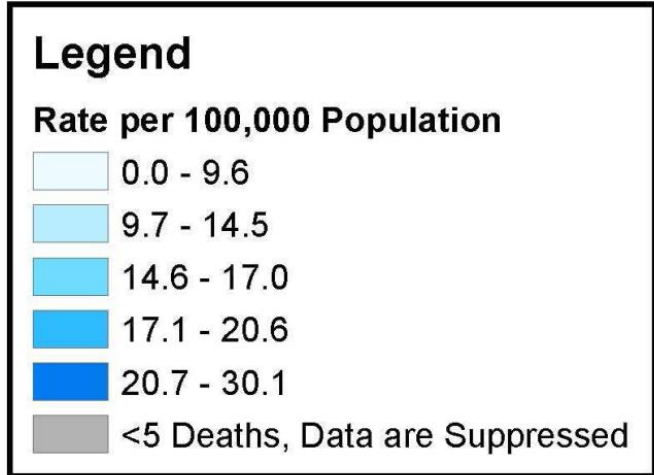
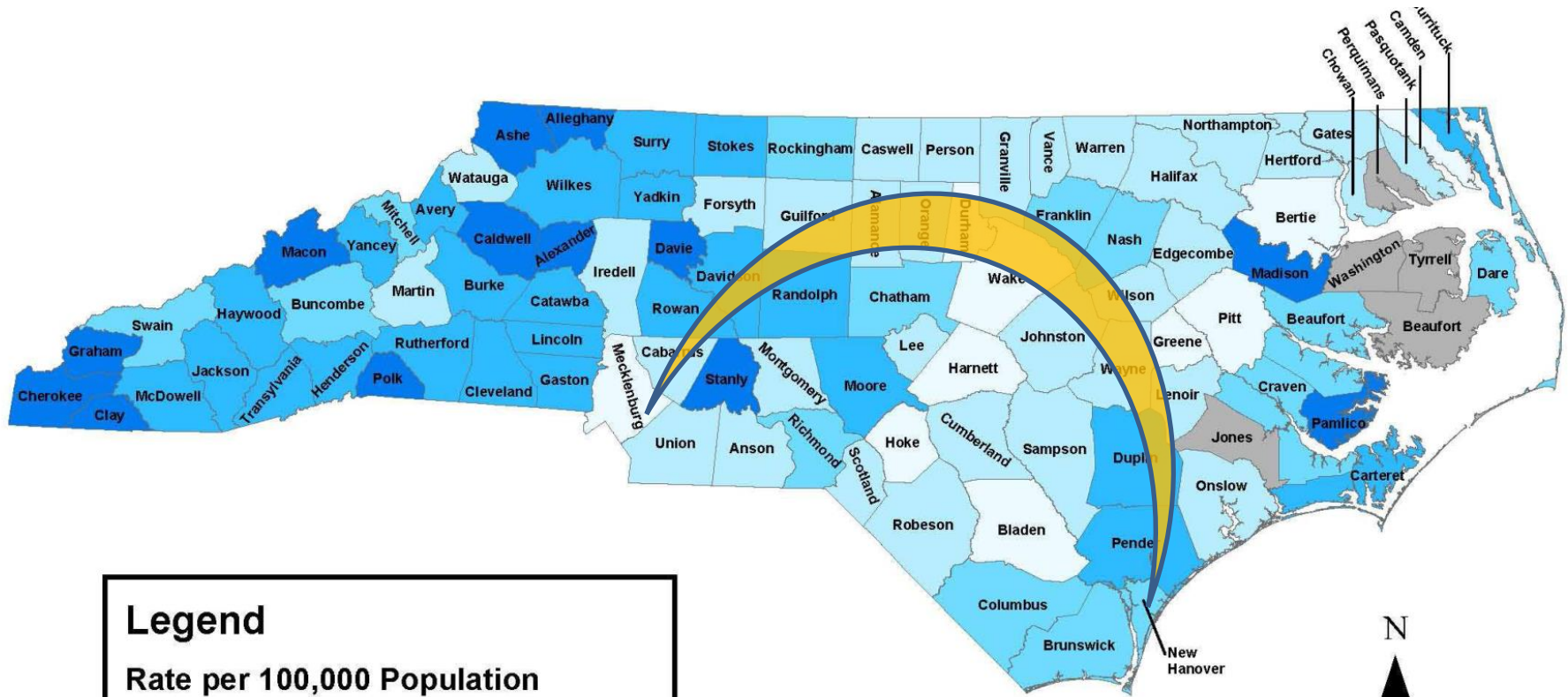


Fall Prevention – The Big Four

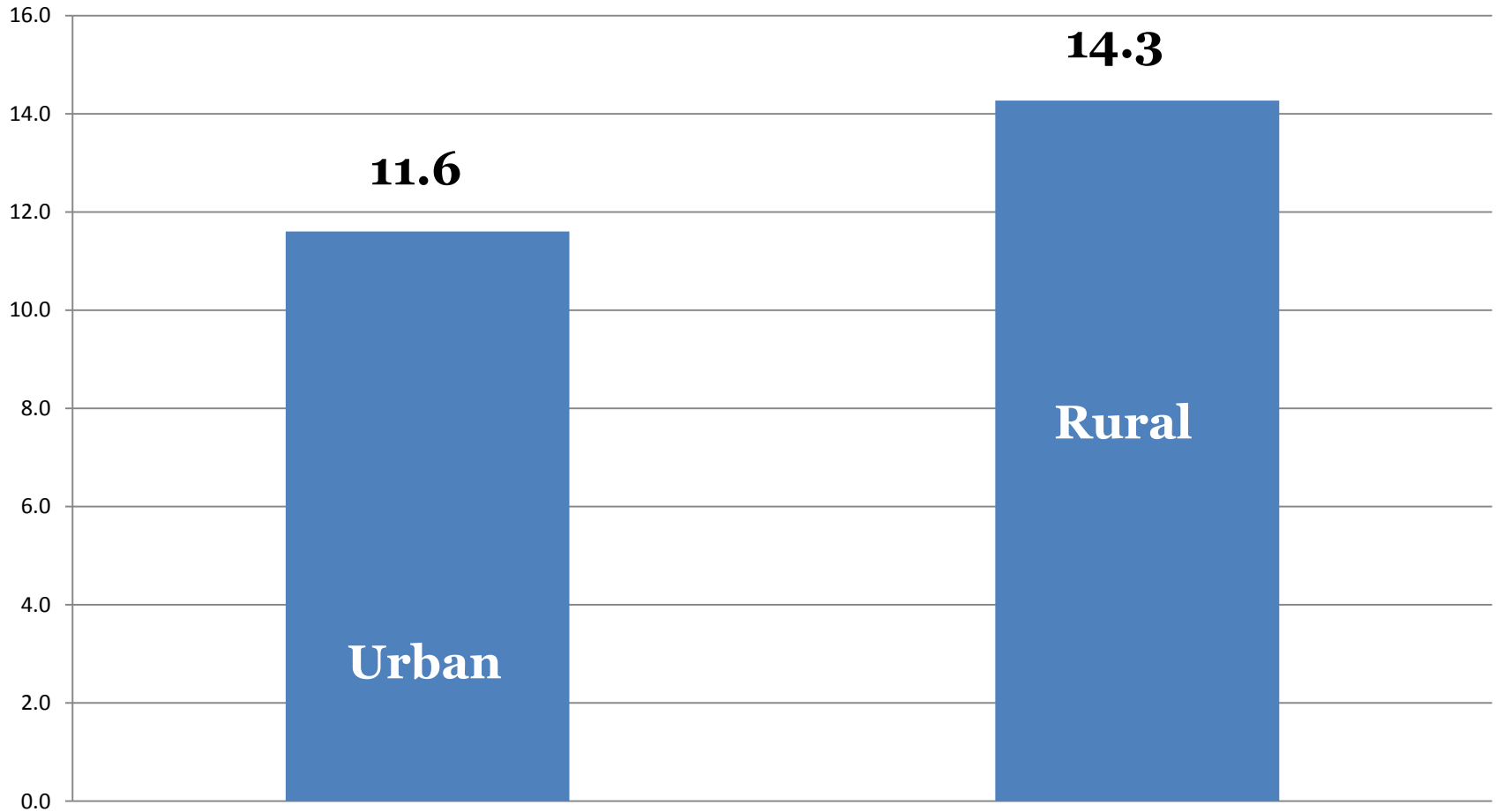
- Increase physical activity
 - Antifragile
 - Church Tai Chi
- Review and use medications safely
- Identify and screen vision problems
- Increase home safety
 - Per Dr. Kate Queen: partner with EMS for referrals to home health for home assessment & services

Kate Queen, MD – Haywood County

Suicide & Self-Inflicted Injuries



Suicide Deaths



Suicide Prevention

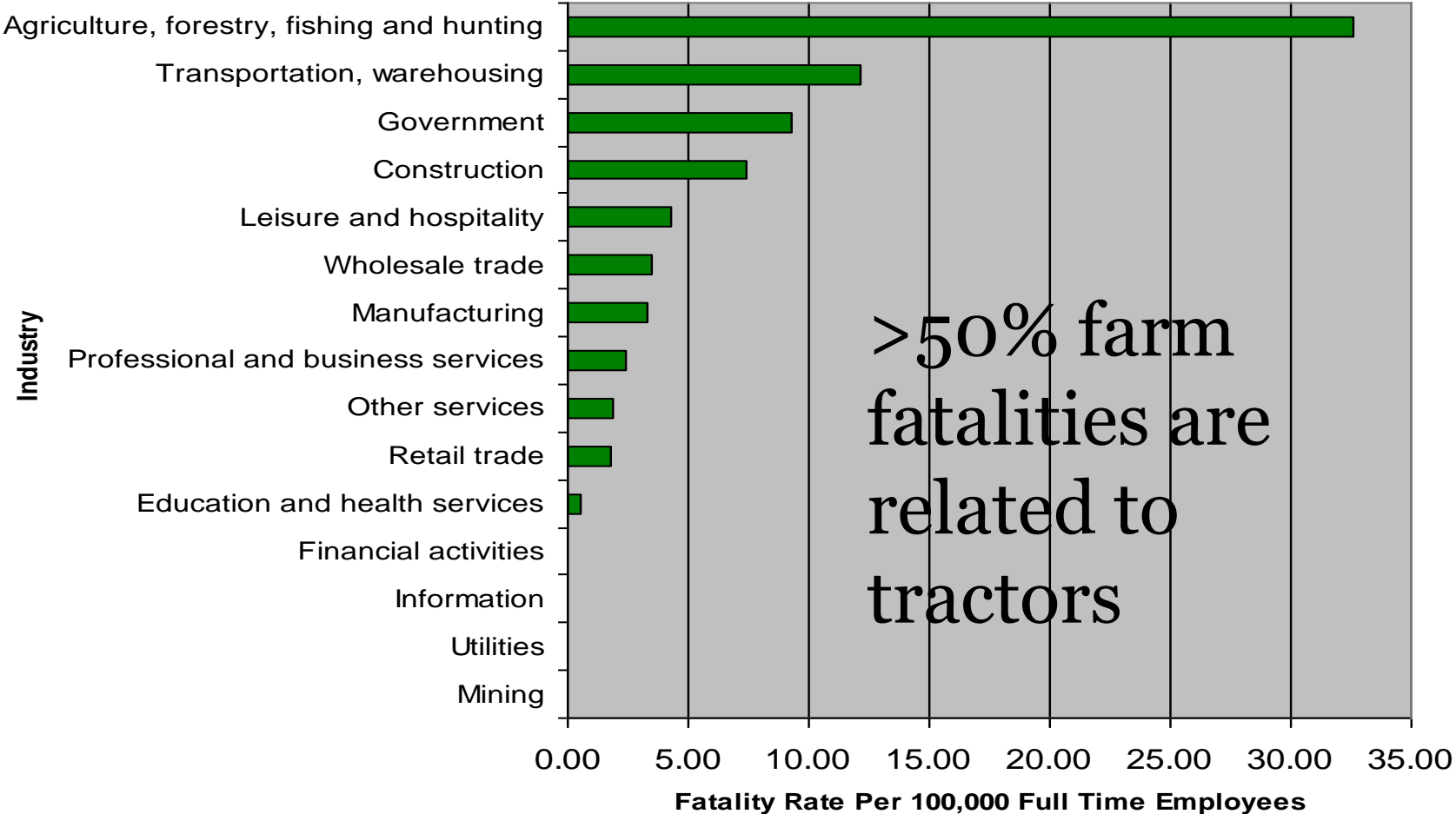
1. Promote awareness that suicide is a public health / preventable problem
2. Develop and implement community-based suicide prevention programs
3. Promote efforts to reduce access to lethal means and methods of self-harm
4. Implement training for recognition of at-risk behavior and delivery of effective treatment
5. Improve community linkages and individual's access to mental health and substance abuse services



FARM
MACHINERY

Work-Related Fatalities by Industry: Rates per 100,000 FTEs

Figure 6: Work-related fatality rates by industry, North Carolina, 2009



CSF & AgriSafe in NC = Collaboration



Johnston, Sampson, Duplin County Centers



Outreach and education

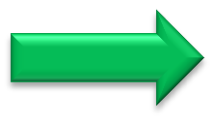


Health screenings
PPE selection/fit

On-farm safety review

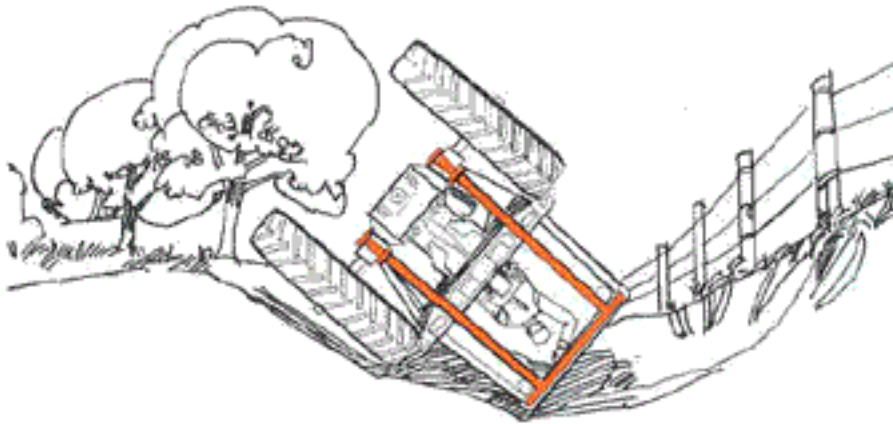


Cost-share incentive



ROPS to CROPS

- Cost-effective Roll Over Protection System



The Intersection of
Injury Prevention and Health =
Built Environments - physical
environments designed with health
and wellness as integral parts. How
neighborhoods are created can affect
both the physical activity and mental
health of the communities' residents.

- Studies have shown that built environments that were expressly designed to improve physical activity are linked to higher rates of physical activity.
- Neighborhoods with more walkability have lower rates of obesity as well as increased physical activity among its residents.
- They also had lower rates of depression and less alcohol abuse. Walkability features in these neighborhoods include safety, sidewalk construction, as well as destinations in which to walk.

Crosswalk Signage Alert



Bike Crossing Signage



Buried Utility Lines/Poles



Bulb Out for Crosswalk



Wide Sidewalks, Pedestrian Lighting



Mid-Block Crosswalk with Signage/Alert



Pedestrian Refuge Island



Grassed Median, Transit Service



Green Springs Greenway, Greenville

