

State of the State: Injury and Violence Overview

NC IOM Prevention Task Force
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Scott K. Proescholdbell, MPH
Injury Epidemiology and Surveillance Unit
Injury and Violence Prevention Branch
Chronic Disease and Injury Section
N.C. Division of Public Health



Overview

- Injury and violence are major public health problems.
- Scope and magnitude of the injury problem in North Carolina.
- Injuries are predictable thus preventable.
- Making injuries and violence socially unacceptable (changing social norms).

From a public health perspective what we have learned to date:

Injuries are NOT:

- “random acts of nature”
- “accidental”
- “destiny”
- “chance”
- “bad luck”
- “unavoidable”

Injuries ARE:

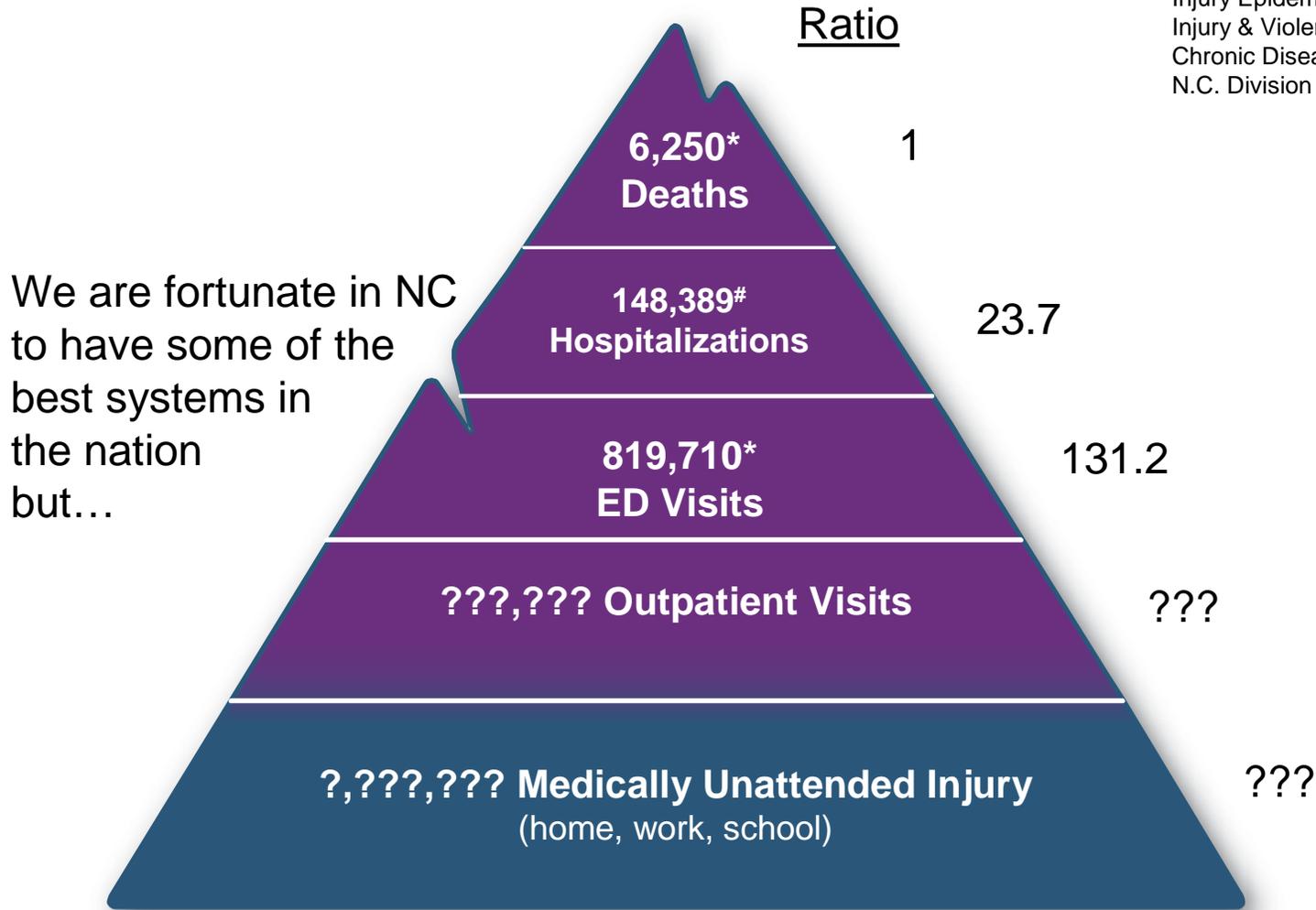
- Predictable
- Preventable
- Have known risk factors
- Opportunities for prevention

**Table 1: 2007 NC Ten Leading Causes of Death:
Total Deaths and Years of Life Lost**

RANK	CAUSE	Total Deaths	Average Years of Life Lost	Total Years of Life Lost
1	Heart Disease	17,500	6.2	108,610
2	Cancer	17,425	8.7	152,171
3	Stroke	4,335	4.5	19,383
4	Chronic lower respiratory diseases	4,228	4.8	20,476
5	Other unintentional injuries	2,546	22.5	57,360
6	Alzheimer's disease	2,449	0.6	1,563
7	Diabetes	2,150	8.5	18,251
8	Motor vehicle injuries	1,787	35.6	63,571
9	Nephritis, nephrotic syndrome, nephrosis	1,717	6.0	10,320
10	Pneumonia & influenza	1,644	4.2	6,874
Total Deaths – All Causes		75,803	9.6	729,461

Combined = 4th at 4,333, slightly less than stroke. If you combined all injury = 6,250 – solid third.

North Carolina's Injury Iceberg - NC Residents



INJURY ICEBERG

* 2007 death file and 2007 NC DETECT # 2006 Hospitalization Discharge



Unintentional Injury Defined

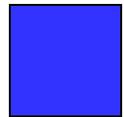
- Occurs in a relatively short period of time.
- Harmful outcome was not sought.

Unintentional injuries account for more than
2/3 of all injury deaths

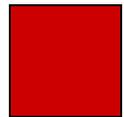
Intentional Injury Defined

- The active, deliberate use of force over another person or against one's self
- Intentional injuries account for less than 1/3 of all injury deaths

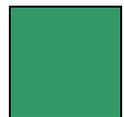
Color Coding for Tables & Charts



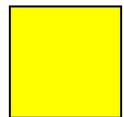
- Blue = Unintentional Injury



- Red = Intentional Injury- assault



- Green = Intentional Injury- self-inflicted



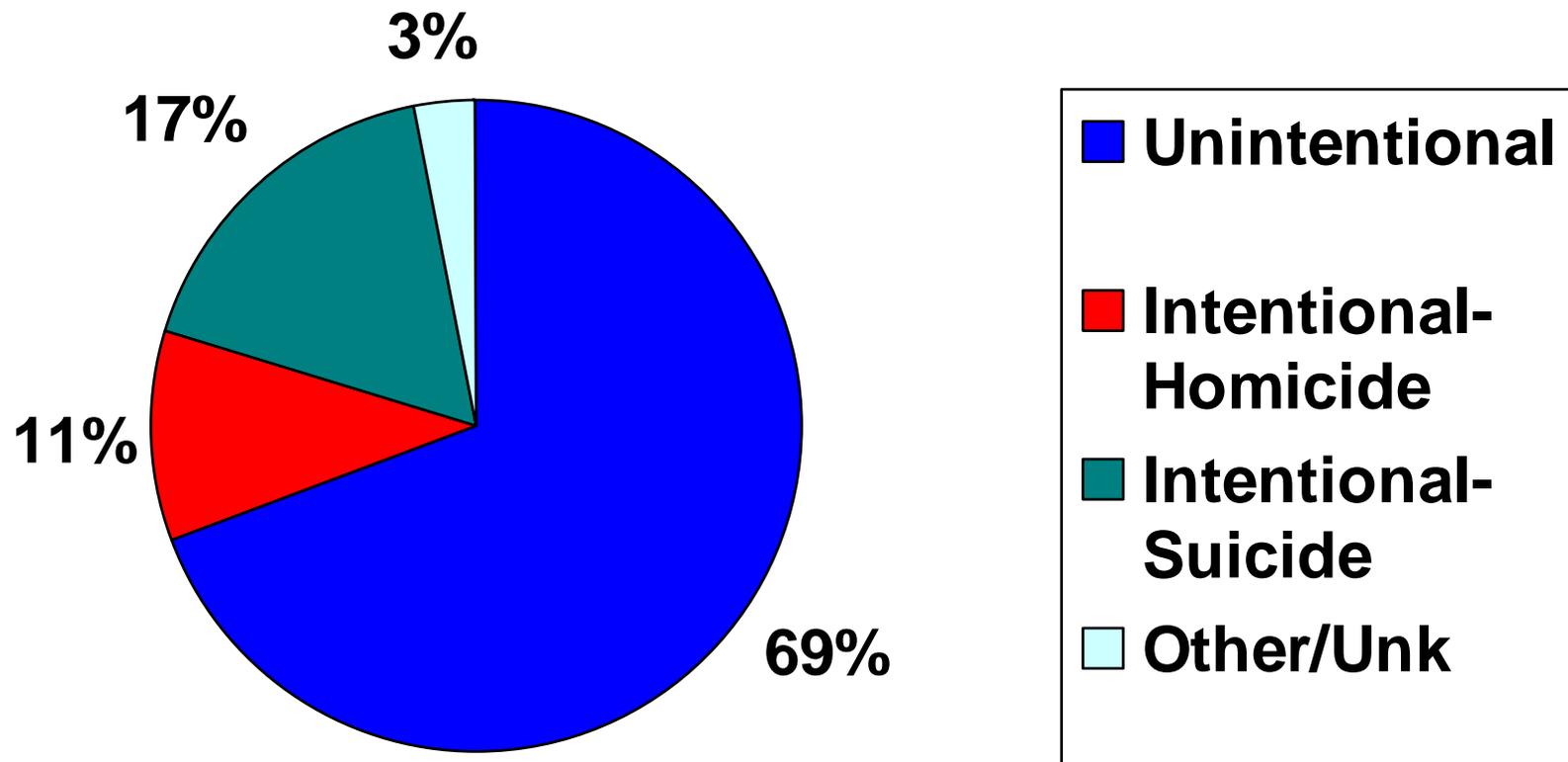
- Yellow = Missing E-code



- Gray = Other injuries

The presentation is data heavy. Please focus on overall trends and themes rather than on any one set of specific numbers.

Proportion of Unintentional and Intentional Injury Deaths, NC: 2007

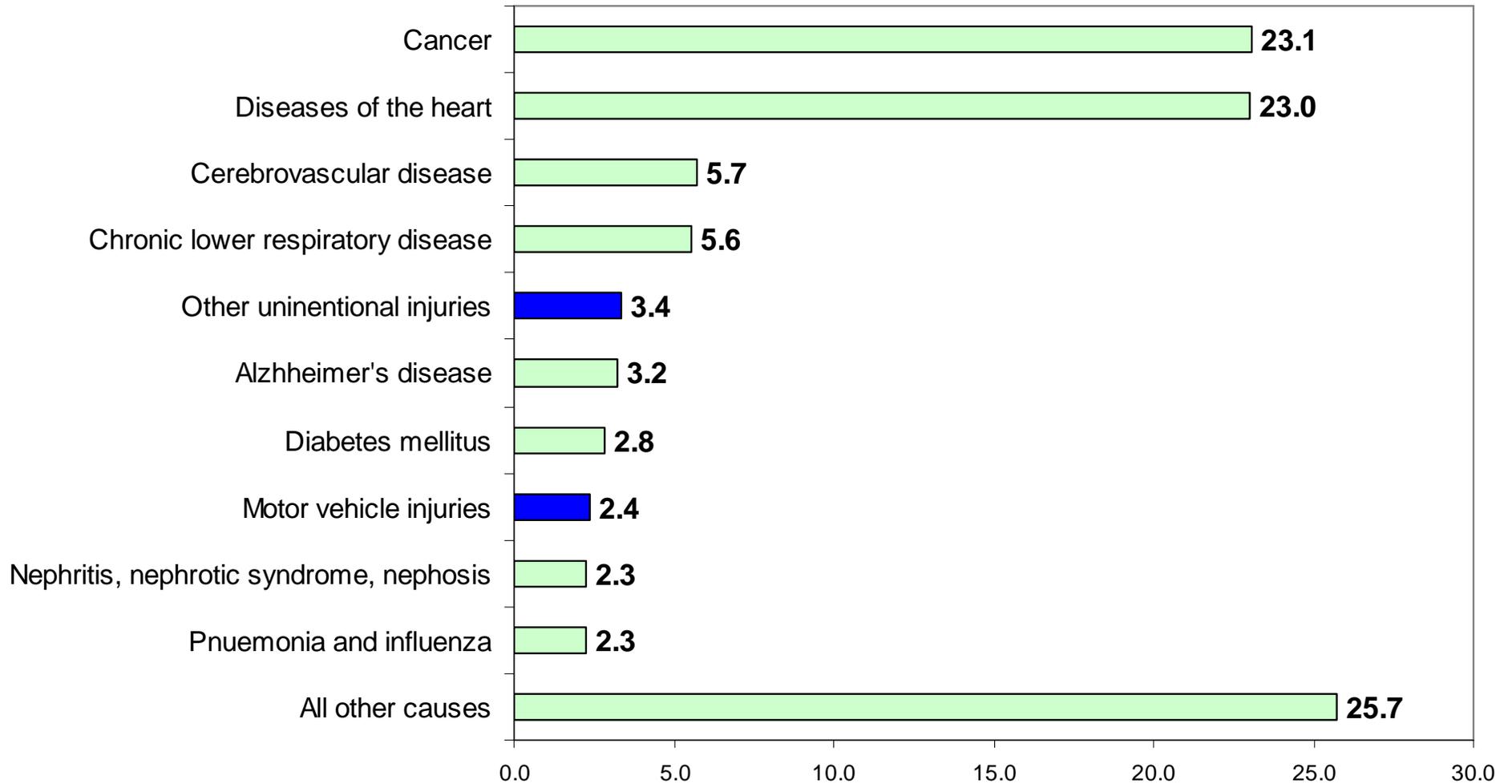


N= 6,250

Other includes: legal intervention, undetermined, and all others not classified

Source: NC State Center for Health Statistics, Death file 2007; Analysis by Injury Epidemiology and Surveillance Unit

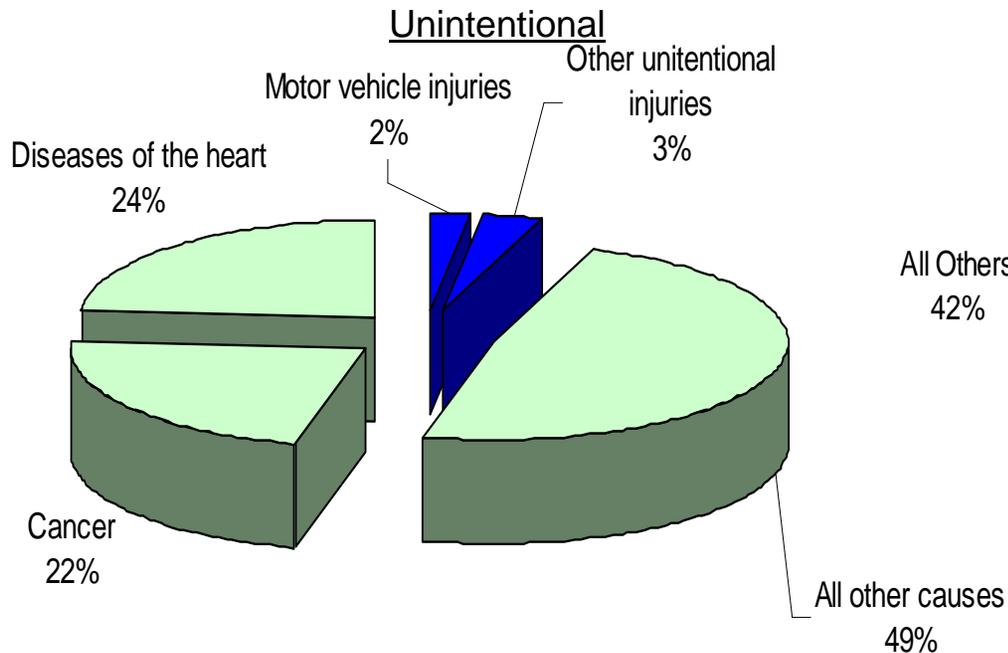
Leading Causes of Death, All Ages, North Carolina: 2007 (Total Deaths = 75,803)



Source: NC SCHS Vital Records, 2007

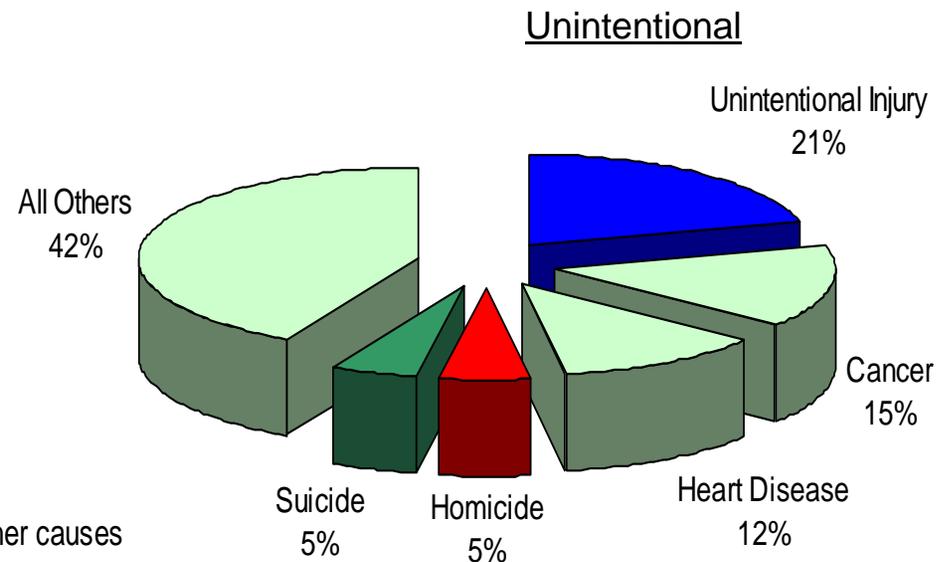
Mortality Indicators, 2005

Percent of Deaths, 2005



5% Injury-related

Percent YPLL <65, 2005



Intentional

31% Injury-related

Total= 74,376 Resident Deaths

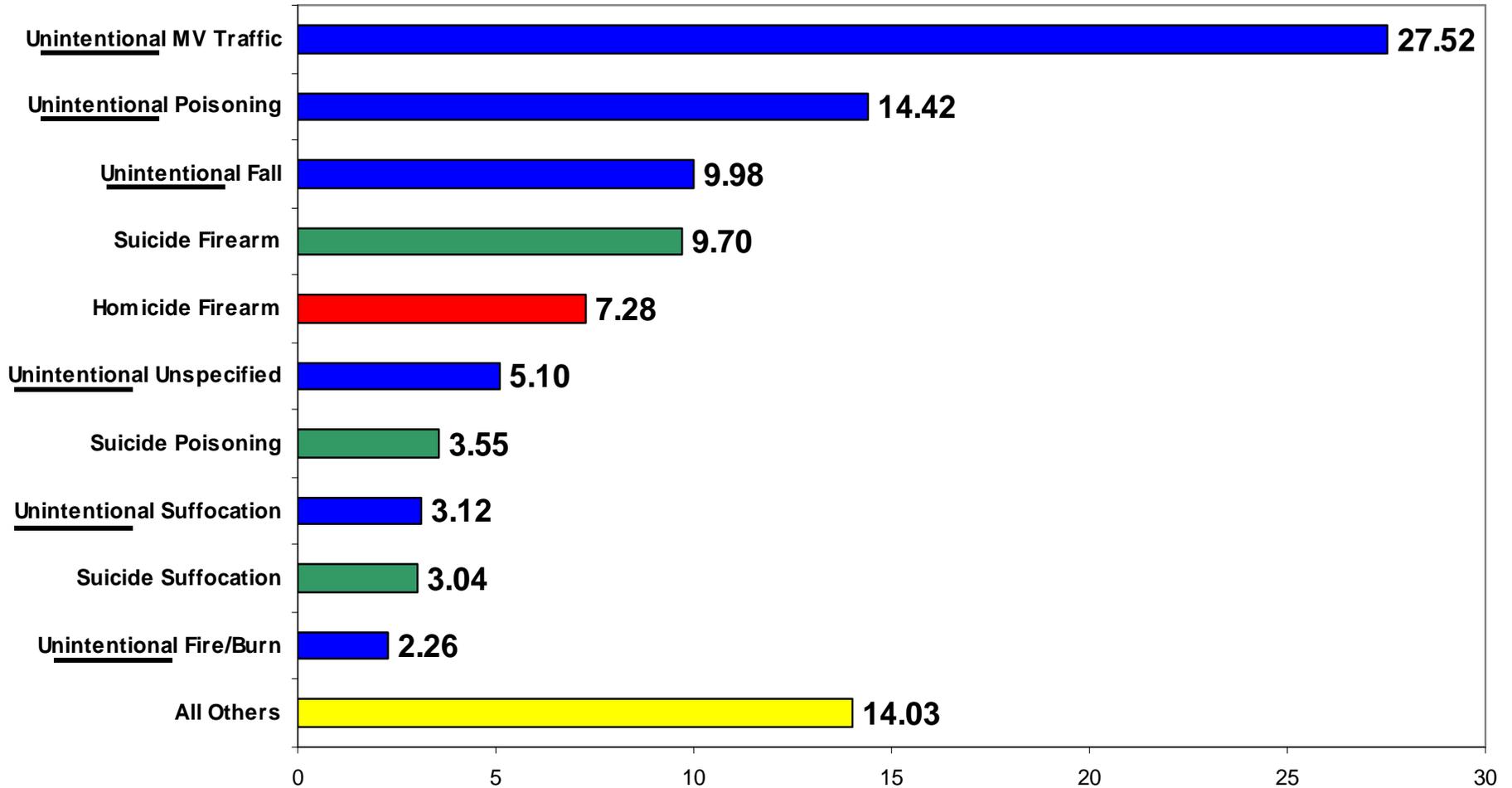
Years of potential life lost (YPLL) is a measure of premature mortality.

Top 6 Leading Causes of Death (All Races, Both Sexes) by Age Groups, North Carolina: 2007

Age Groups										
<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	All Ages
Prenatal Conditions 585	Unintentional Injury 27	Motor Vehicle Injury 20	Motor Vehicle Injury 33	Motor Vehicle Injury 416	Motor Vehicle Injury 349	Cancer 480	Cancer 1,702	Cancer 3,544	Heart Disease 13,742	Heart Disease 17,858
Congenital Anomalies 209	Motor Vehicle Injury 21	Unintentional Injury 20	Unintentional Injury 15	Unintentional Injury 190	Unintentional Injury 242	Heart Disease 444	Heart Disease 1,279	Heart Disease 2,210	Cancer 11,848	Cancer 17,762
Unintentional Injury 43	Congenital Anomalies 20	Cancer 10	Cancer 13	Homicide 177	Homicide 180	Unintentional Injury 379	Unintentional Injury 420	Chronic Lower Respiratory Disease 514	Cerebro-Vascular Disease 3,728	Cerebro-Vascular Disease 4,461
Heart Disease 21	Cancer 13	Heart Disease 7	Homicide 11	Suicide 124	Suicide 160	Motor Vehicle Injury 285	Motor Vehicle Injury 282	Cerebro-Vascular Disease 412	Chronic Lower Respiratory Disease 3,553	Chronic Lower Respiratory Disease 4,286
Septicemia 12	Heart Disease 12	Congenital Anomalies 6	Heart Disease 6	Cancer 52	Heart Disease 110	Suicide 243	Chronic Liver Disease & Cirrhosis 254	Diabetes Mellitus 387	Alzheimer's Disease 2,430	Unintentional Injury 2,651
Homicide 12	Homicide 9	In-situ/Benign Neoplasms 5	Suicide 6	Heart Disease 27	Cancer 99	HIV 129	Cerebro-Vascular Disease 228	Unintentional Injury 261	Diabetes Mellitus 1,496	Alzheimer's Disease 2,471

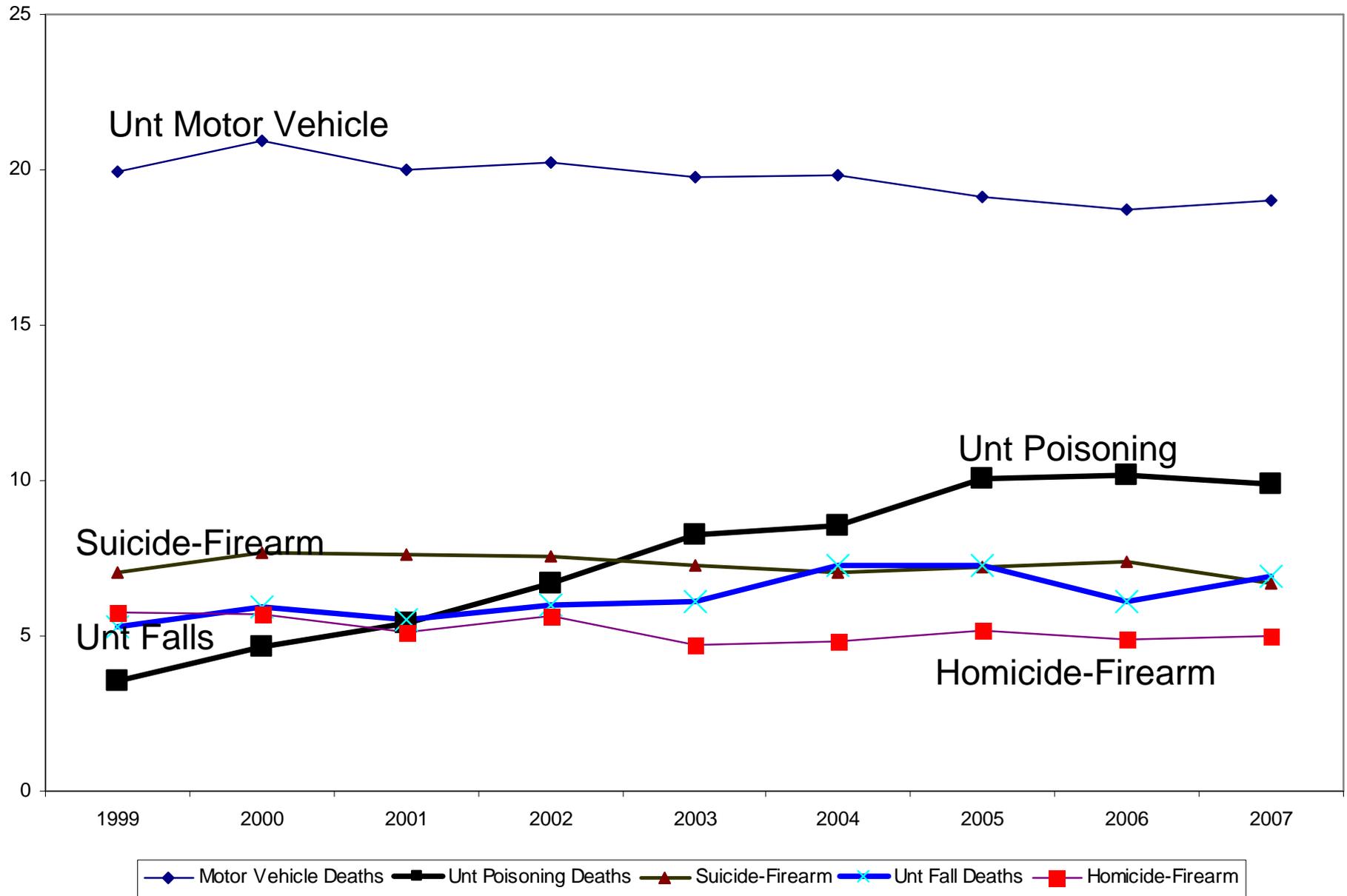
Source: NC State Center for Health Statistics, Death file 2007; Analysis by Injury Epidemiology and Surveillance Unit

Leading Causes of Injury Deaths, All Ages, North Carolina Residents: 2007 (Total Deaths = 6,250)



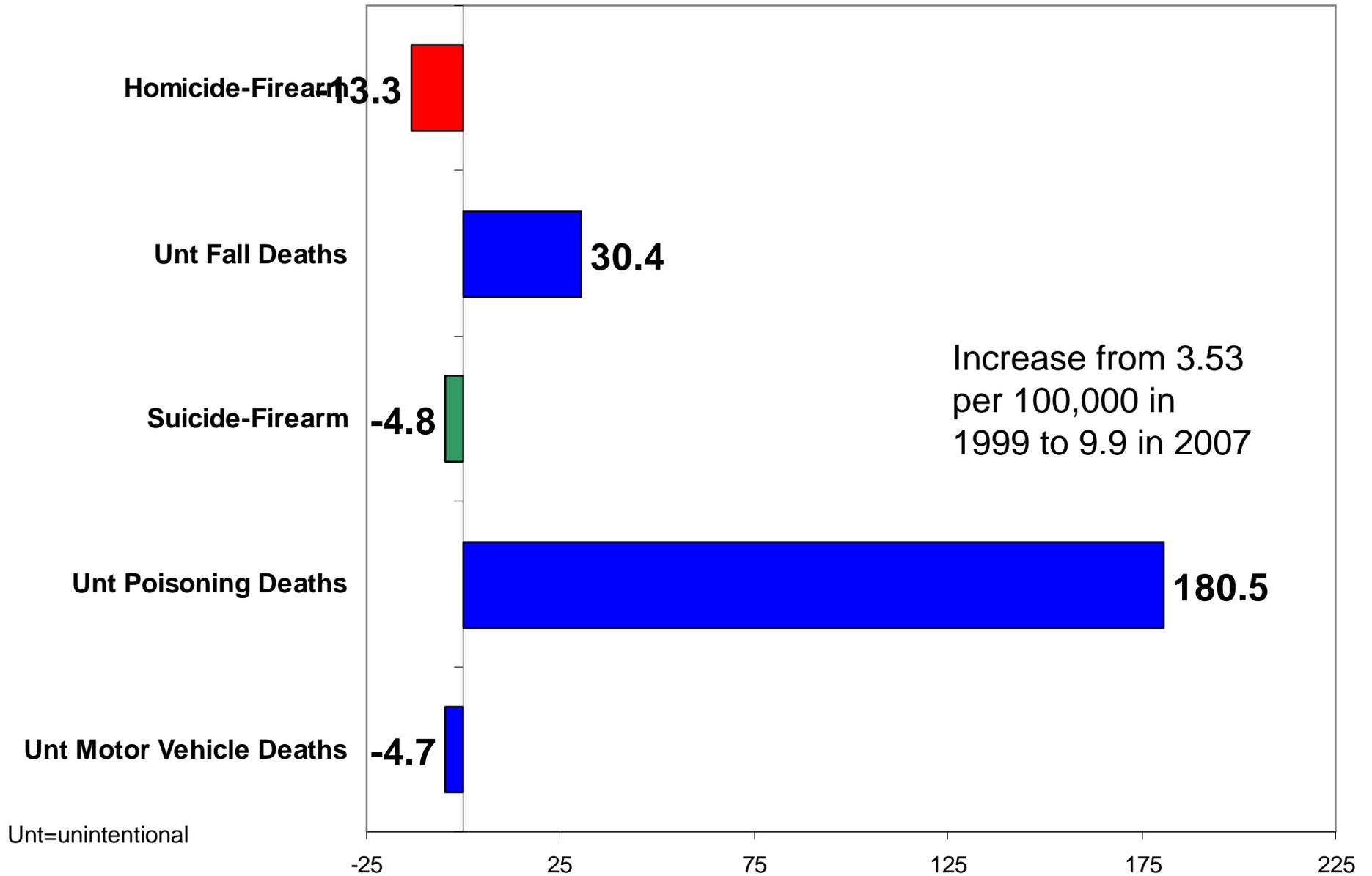
Source: NC State Center for Health Statistics, Death file 2006; Analysis by Injury Epidemiology and Surveillance Unit

Leading Causes of Injury Death Rates per 100,000, NC 1999-2007

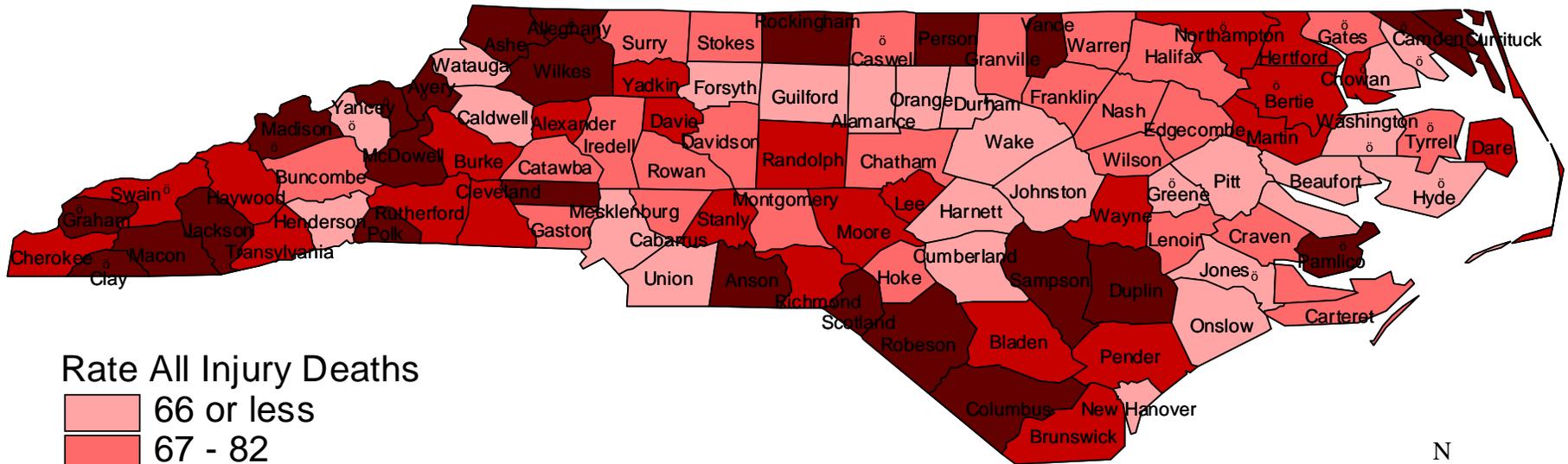


WISQARS™ Produced By: Office of Statistics and Programming, National Center for Injury Prevention and Control,
 Centers for Disease Control and Prevention Data Source: National Center for Health Statistics (NCHS), National Vital Statistics System
 NC State Center for Health Statistics Death file 2006-2007; NC Injury Epidemiology & Surveillance Unit

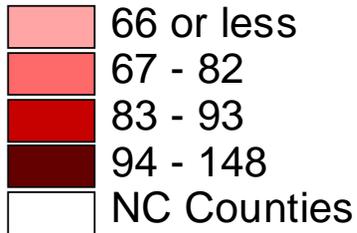
Percentage change in Rates per 100,000 of Injury Deaths NC 1999-2007



North Carolina Injury Death Rates per 100,000, by County: North Carolina, 2007



Rate All Injury Deaths

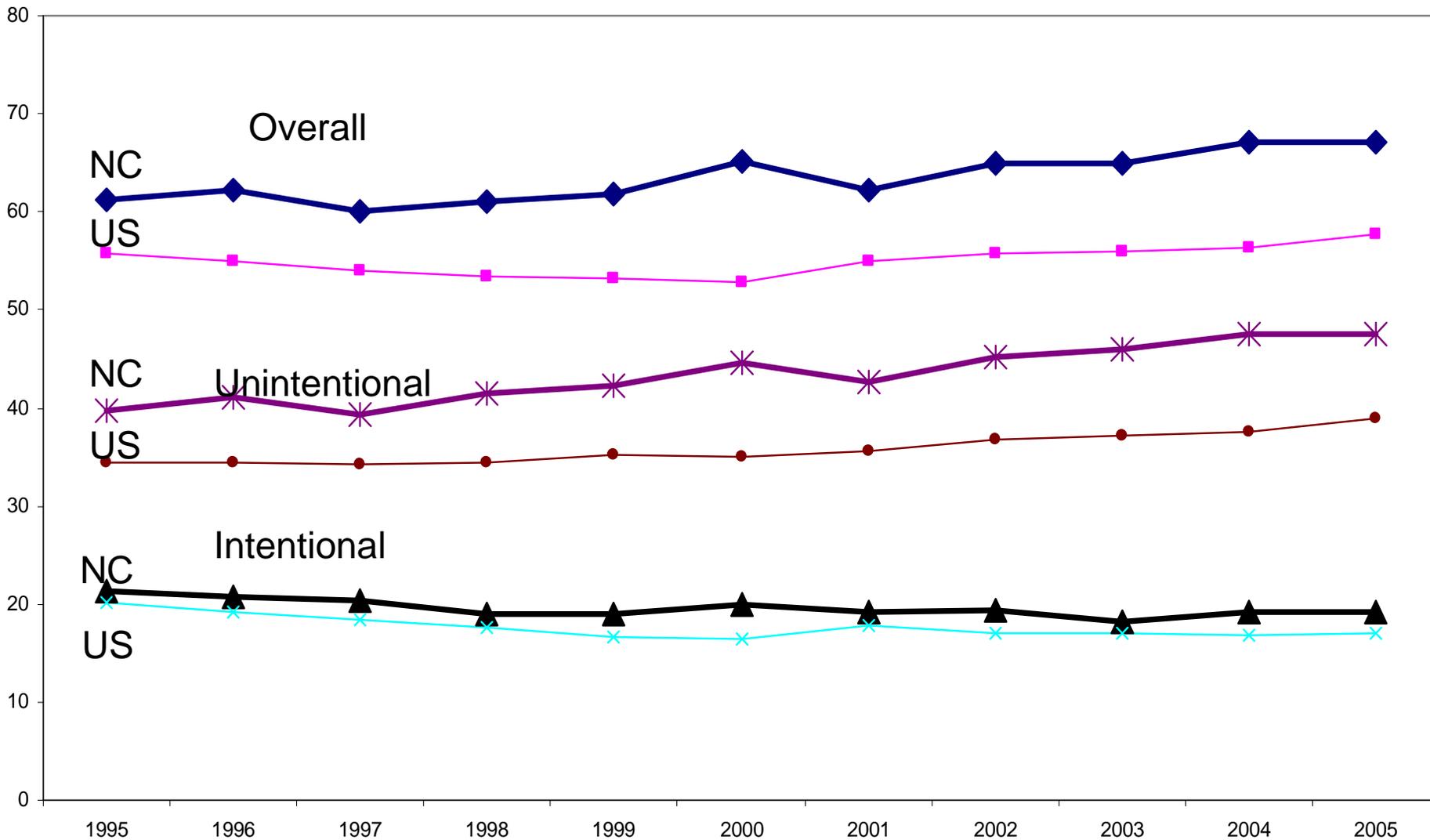


State Average = 68.9 per 100,000



Unadjusted for age

Age Adjusted Injury Death Rates, North Carolina and US: 1995-2005



◆ NC Injury Overall
 ■ US Injury Overall
 ▲ NC Intentional
 × US Intentional
 ✱ NC Unintentional
 ● US Unintentional

Role of alcohol in fatal injury

Cause of fatal injury	% with positive blood alcohol test*
Fires/ burns	49 %
Drowning	40 %
Homicide	38 %
MV crash	36 %
Suicide	29%
Falls	14%

* Of those age 15+ tested by NC Office of the Chief Medical Examiner, 2000-02

Leading Causes of Injury Hospitalizations

- 1) Adverse Effects of Medical Care (51,743)
- 2) Falls- Unintentional (24,920)
- 3) Motor Vehicle- Unintentional (7,669)
- 4) Poisoning- Self-inflicted (4,866)
- 5) Poisoning- Unintentional (3,308)
- 6) Unspecified- Unintentional (2,947)

Total Injury Hospitalizations 2006: 148,389

Top 6 Leading Causes of Injury Hospital Visits (All Races, Both Sexes) by Age Groups, North Carolina: 2006

Age Groups										
<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	All Ages
Medical Care Adverse Effects 600	Medical Care Adverse Effects 452	Medical Care Adverse Effects 340	Medical Care Adverse Effects 349	MVT Unint 1,972	Medical Care Adverse Effects 2,851	Medical Care Adverse Effects 5,378	Medical Care Adverse Effects 8,119	Medical Care Adverse Effects 10,336	Medical Care Adverse Effects 19,790	Medical Care Adverse Effects 49,665
Missing E-Code 454	Fall Unint 198	Fall Unint 247	MVT Unint 213	Medical Care Adverse Effects 1,450	MVT Unint 1,407	Missing E-Code 2,463	Missing E-Code 3,884	Missing E-Code 5,162	Falls Unint 18,319	Missing E-Code 31,011
Unspec Unint 106	Missing E-Code 186	MVT Unint 137	Falls Unint 207	Poisoning Unint 991	Missing E-Code 1,342	MVT Unint 1,336	Falls Unint 1,964	Falls Unint 2,838	Missing E-Code 16,486	Fall Unint 26,106
Fall Unint 74	Poisoning Unint 150	Missing E-Code 112	Missing E-Code 145	Missing E-Code 777	Poisoning Intentional 1,156	Poisoning Intentional 1,325	MVT Unint 1,307	AdvEff:Drug Unint 906	AdvEff:Drug Unint 2,610	MVTI Unint 8,521
Other specified – Assault 46	Fire/Burn Unint 125	Struck Unint 65	Poisoning Intentional 101	Falls Unint 514	Falls Unint 669	Falls Unint 1,076	Poisoning Intentional 932	MVTI Unint 868	Unspec Unint 2,546	Unspec Unint 5,118
Missing Mech Unint 32	Natul/Envr Unint 83	Natul/Envr Unint 60	Transport Unint 91	Other spec Unint 331	Other spec Unint 413	Poisoning Unint 604	Poisoning Unint 710	Unspec Unint 716	Missing Mech Unint 1,785	AdvEff:Drugs 5,017

Source: NC State Center for Health Statistics, Hospital file 2006; Analysis by Injury Epidemiology and Surveillance Unit

Leading Causes of Injury ED Visits

- 1) Falls – Unintentional (168,803)
- 2) MVT- Unintentional (92,459)
- 3) Struck- Unintentional (73,918)
- 4) Overexertion- Unintentional (64,706)
- 5) Unspecified- Unintentional (53,133)
- 6) Cut/pierce- Unintentional (44,951)

Total Injury ED visits 2007: 819,710

Top 6 Leading Causes of Injury ED Visits (All Races, Both Sexes) by Age Groups, North Carolina: 2007

Age Groups										
<1	1-4	5-9	10-14	15-24	25-34	35-44	45-54	55-64	65+	All Ages
Fall Unint 1,929	Fall Unint 15,269	Fall Unint 12,405	Fall Unint 11,886	MVT Unint 26,680	MVT Unint 19,567	Missing E- Code 17,939	Fall Unint 17,154	Fall Unint 14,568	Fall Unint 44,831	Falls Unintentional 168,803
Missing E- Code 776	Missing E- Code 6,153	Struck Unint 6,998	Struck Unint 10,442	Missing E- Code 20,924	Missing E- Code 18,992	Fall Unint 17,111	Missing E- Code 16,084	Missing E- Code 12,475	Missing E- Code 29,512	Missing E-Code 135,494
Unspec Unint 470	Struck Unint 5,875	Missing E- Code 5,647	Missing E- Code 6,992	Struck Unint 17,801	Fall Unint 16,734	MVTI Unint 15,613	MVTI Unint 11,884	MVTI Unint 6,396	Adverse Effects- Medical 8,530	MVT Unintentional 92,459
Struck Unint 450	Other specified – Unt 3,962	Cut/pierce Unt 2,856	Overexertion Unt 4,414	Fall Unt 16,892	Overexertion Unt 15,010	Overexertion Unt 13,303	Overexertion Unt 8,872	Adverse Effects- Other 4,562	Unspec Unt 5,794	Struck Unintentional 73,918
Other specified – Unt 389	Natul/Envr Unt 2,730	Natul/Envr Unt 2,730	MVT Unt 3,392	Overexertion Unt 13,716	Struck Unt 11,329	Unspec Unt 9,493	Unspec Unt 7,396	Unspec Unt 3,974	MVTI Unt 5,062	Overexertion Unintentional 64,706
Natul/EnvrU nt 292	Unspec Unint 2,599	Other specified – Unt 2,506	Cut/pierce Unt 3,266	Cut/pierce Unt 10,087	Unspec Unt 10,226	Struck Unt 8,915	Struck Unt 5,850	Overexertion Unt 3,734	Struck Unt 3,314	Unspecified Unintentional 53,133

Source: NC DETECT, Emergency Department file 2006; Analysis by Injury Epidemiology and Surveillance Unit

Injury and Violence are costly

<i>Cost in \$Billions per year nationally</i>	Medical Costs	Productivity Costs	Total Costs
<i>Total</i>	\$80	\$326	\$406
MV/ Road	\$14	\$75	\$89
Falls	\$26	\$54	\$80
Struck by/ Against	\$11	\$37	\$48
Cut/ Pierce	\$3	\$12	\$16
Fire/ Burn	\$1	\$6	\$7
Poisoning	\$2	\$23	\$25
Drowning/ Submersion	\$1	\$5	\$6
Firearm/ Gunshot	\$1	\$35	\$36
Other/ Unclassified	\$19	\$76	\$96

Finkelstein EA, Corso PS, Miller TR, Associates. Incidence and Economic Burden of Injuries in the United States. New York: Oxford University Press; 2006.

Injury and Violence

- Injuries are the leading cause of death for ages 1-44 in North Carolina.
- The vast majority of injuries are preventable.
- Injury-related DEATHS, 2007: 1) unintentional motor vehicle, followed by 2) unintentional poisoning, 3) unintentional falls.
- Injury-related HOSPITALIZATIONS, 2006: 1) adverse effects of medical care 2) unt. falls; 3) unt. motor vehicle.
- Injury-related EMERGENCY VISITS, 2007: 1) unt. falls; 2) unt. Motor vehicle; 3) unt. Struck.

Injury and violence are major public health problems

- Prevention opportunities are available.
- Need to make injury socially unacceptable.
- Increasing injury awareness is critical.
- Put injury squarely on the public health map.
- Resources for surveillance and programs essential.
- Understanding the scope of the problem can help us reduce all types of injury-related morbidity and mortality in North Carolina.

Socially unacceptable: Flight 1549 Continental Connections Flight 3407

The New York Times

Sunday, January 18, 2009 Last Update: 1:38 PM ET

Investigators Examine Roles of Ice and Autopilot



US Airways Flight 1549 moored at Battery Park City on Thursday. Workers hope to lift it from the water with a crane on Saturday, and investigators also to look for data recorders in the tail section. *More Photos*

What if all injuries were viewed through the same perspective?
And investigated the same way?

Putting Injury & Violence prevention on the public health map

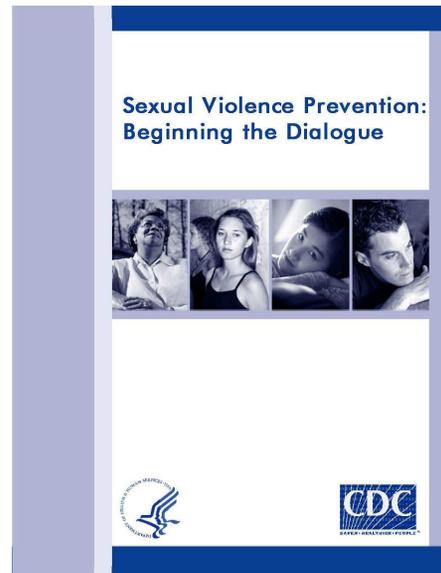


Major Injury Topics

- Unintentional Falls
- Unintentional Poisonings
- Unintentional Motor Vehicle Collisions (MVC)
- Family Violence
 - Domestic Violence
 - Sexual Violence
 - Child Abuse

Why Family Violence?

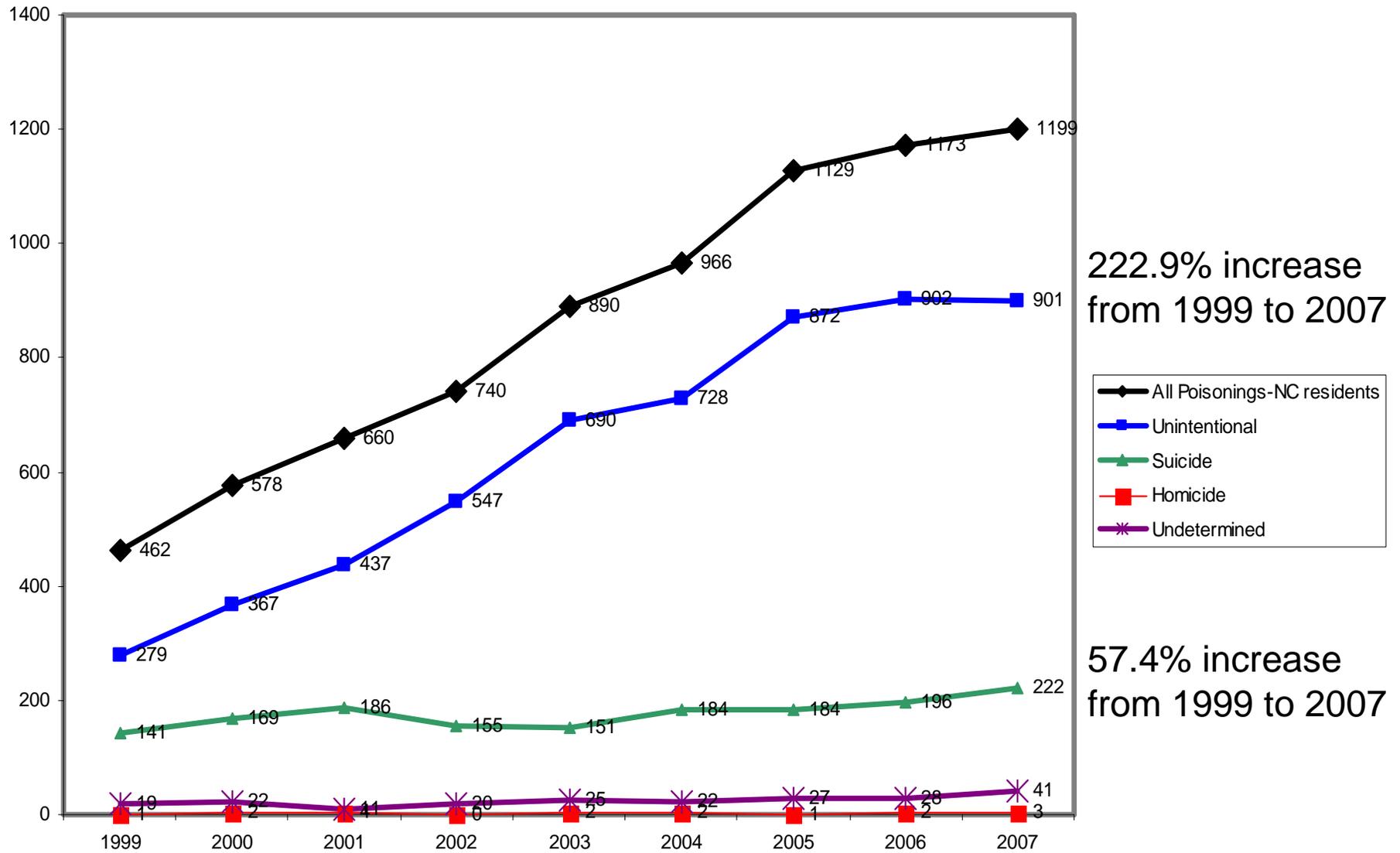
- Zero is the only acceptable number!
- Every case is unnecessary.
 - Domestic Violence
 - Sexual Violence
 - Child Abuse



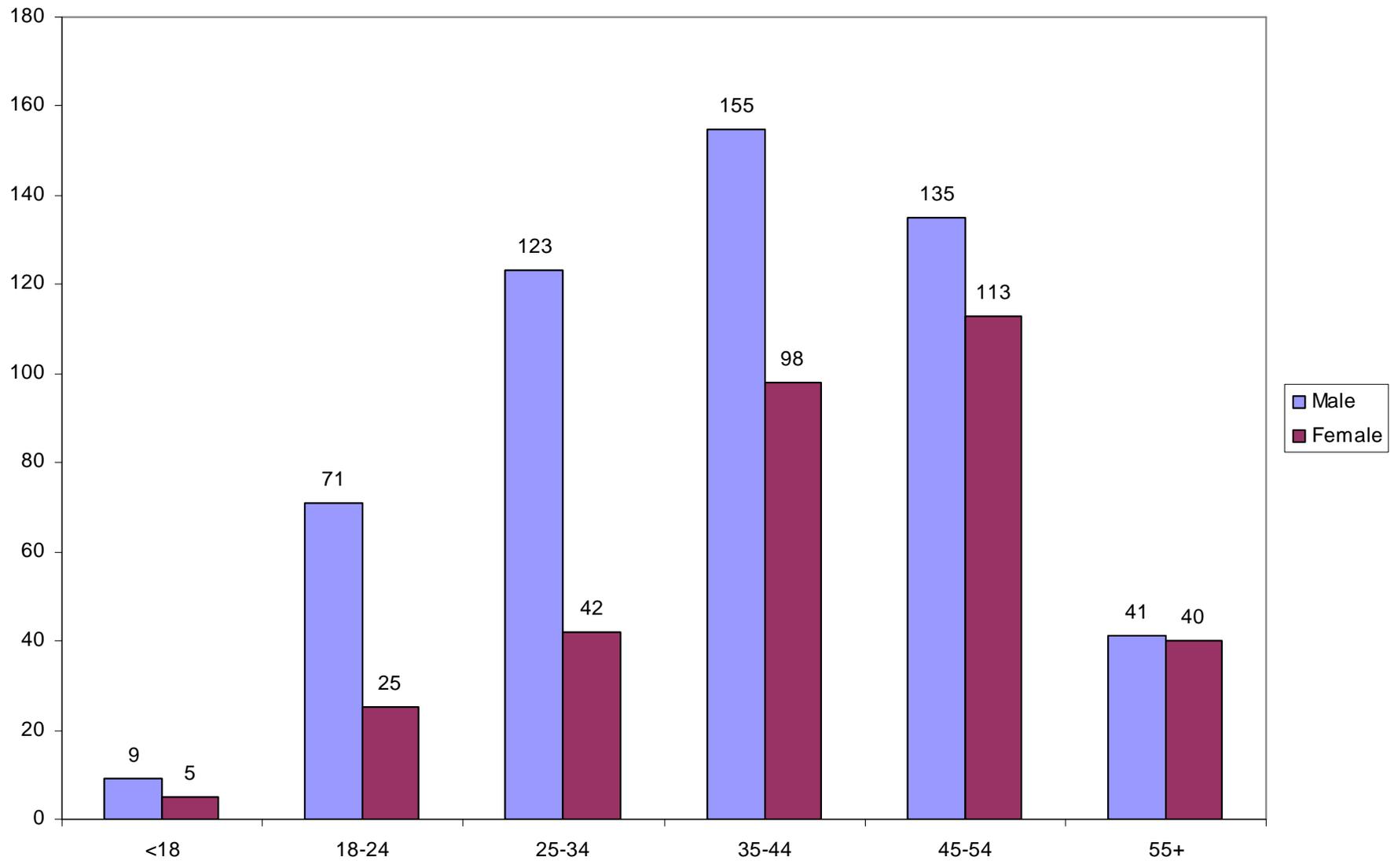
The big picture: North Carolina motor vehicle injury in 2007

- Traffic fatalities: 1,675
- Per VMT: 1.62 (100 million)
- Per population: 18.49 (100 thousand)
- Traffic injuries: about 60 for each fatality
- So about 100,000 in 2007

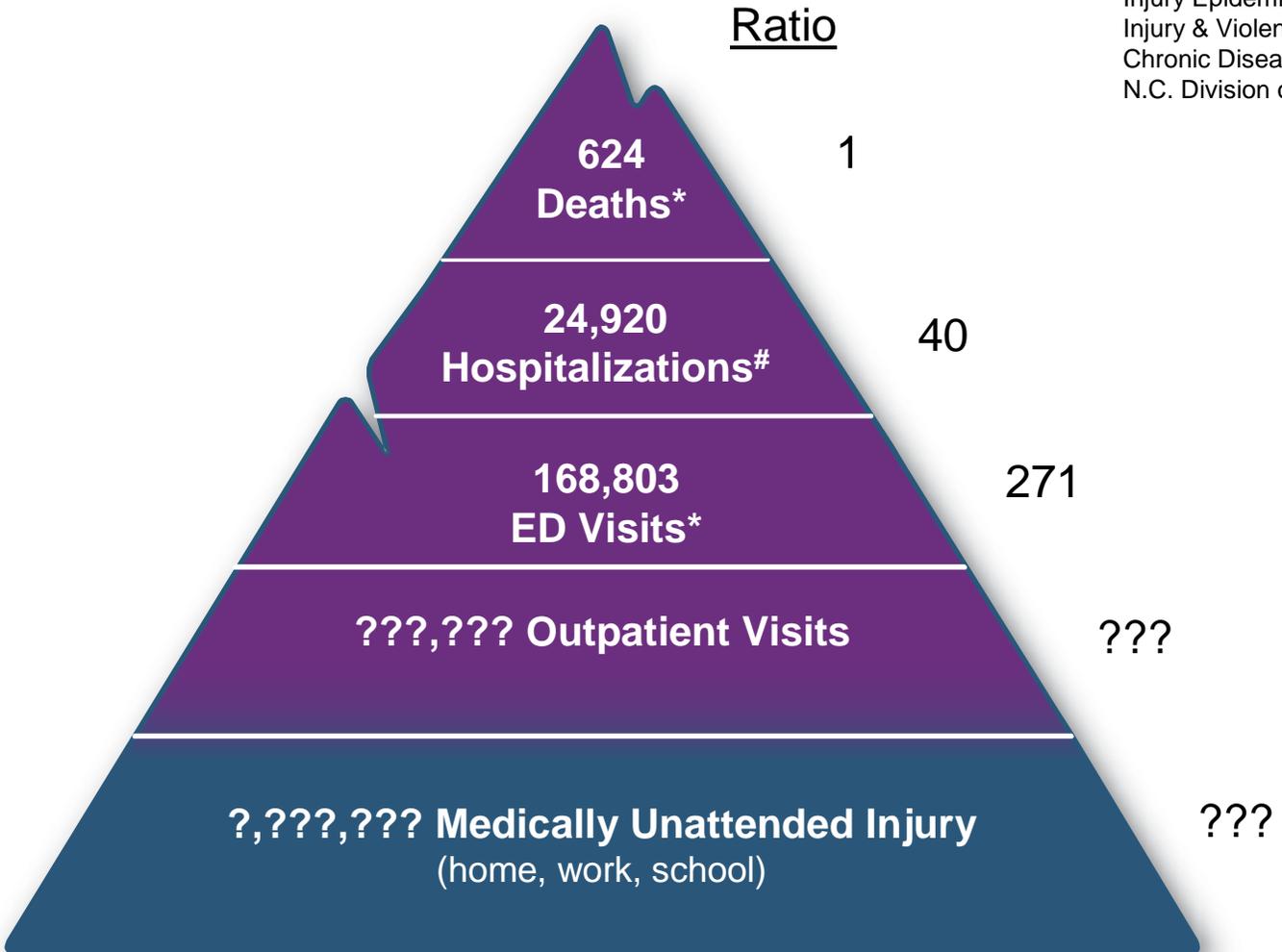
Number of Fatal Poisonings by Manner of Death: NC Residents, 1999-2007



NC Unintentional Poisonings Deaths (X40-X44) by age group and gender: 2007



North Carolina's Unintentional Falls-NC Residents

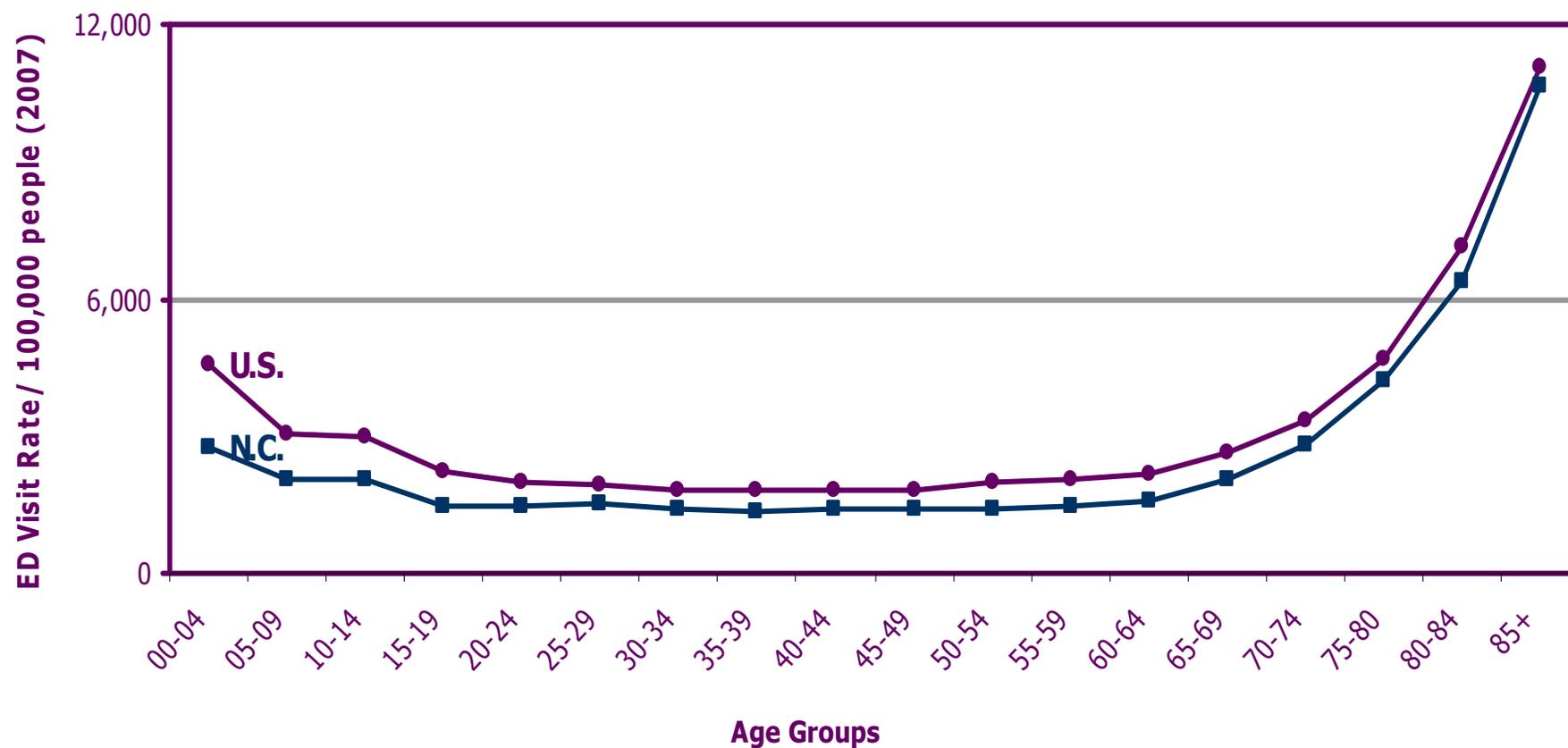


INJURY ICEBERG

* 2007 death file and 2007 NC DETECT # 2006 Hospitalization Discharge



Falls- 4th leading cause of injury death, 2nd leading cause of injury hospital, 1st injury ED (624 Deaths, 24,920 Hospitalizations, 168,803 ED Visits)



Questions/Discussion

www.injuryfreenc.ncdhhs.gov

Scott Proescholdbell, MPH

Injury Epidemiology and Surveillance Unit

Scott.proescholdbell@ncmail.net

919-707-5442