



Preventing injury and violence in North Carolina

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- Review a few additional facts about injuries & related costs (US & NC) & prevention context
- Review state injury program expenditures
- Suggest where we need to go from here



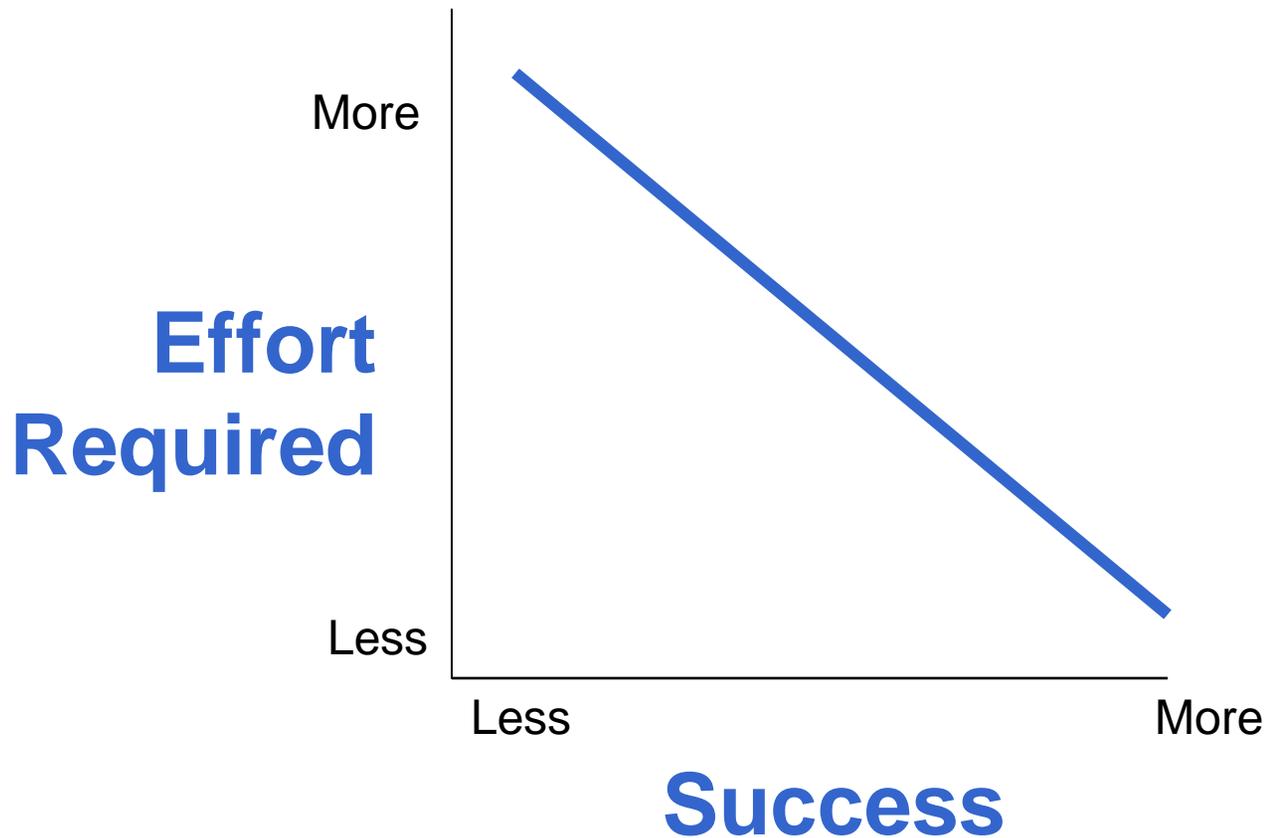
- Injury issues are very broad & addressed in many sectors (e.g., transportation, labor, agriculture, justice, education, health care, mental health, social services, public health)
- Public health attention to injury is recent
 - **1985:** *Injury in America* report from IOM named CDC as lead agency
 - **1987:** Injury prevention research centers founded (including UNC), as regional resources
 - **1988:** state programs funded (including NC)
- Support remains grossly disproportional to the size of the problem



- Focus on primary prevention, but assure good trauma care
- Establish priorities & allocate resources based on:
 - good surveillance & research evidence
 - effective interventions & evaluation techniques
 - universal approaches, as possible
- Environmental (“passive”) change generally more successful than behavior change

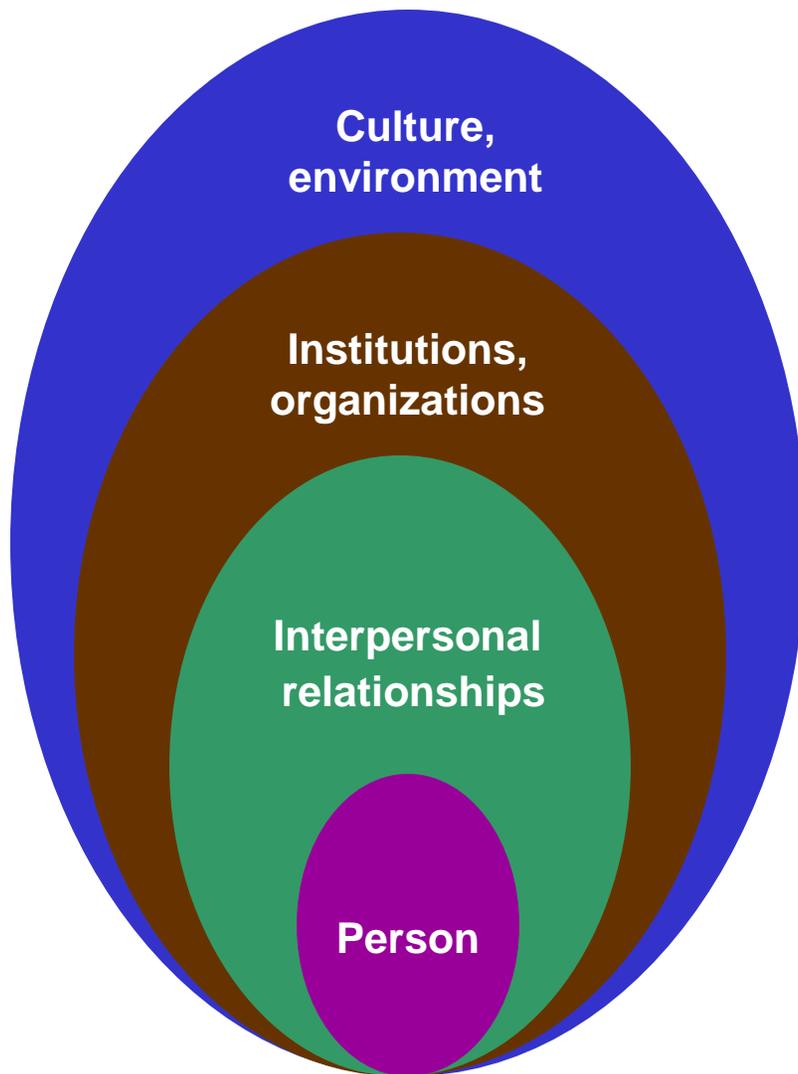


Generally speaking.... the less the individual effort required, the greater the likelihood of success...





Risk factors & approaches



Culture, environment -- POLICY

- Economic opportunity
- Living conditions
- Roadways
- Alcohol availability, cost

Institutions, organizations – POLICY

- Health organizations
- Workplaces
- Schools
- Trauma & rehab care

Interpersonal relationships (POLICY & PROGRAMS)

- Family members
- Co-workers
- Teachers-students
- Doctors-patients

Person (POLICY & PROGRAMS)

- Behavior (driving, anger mgmt, substance use)
- Biology (strength)



In perspective

**NC injury deaths in just ONE YEAR
(5,849) equivalent to the crashes
of 14 jumbo jets with 400 people
killed in each crash**





Total medical expenses (2003) for selected causes of health conditions, U.S.

Total

Trauma-related conditions

\$71,571,000,000

Cardiovascular disease

\$67,801,000,000

Cancer

\$48,428,000,000



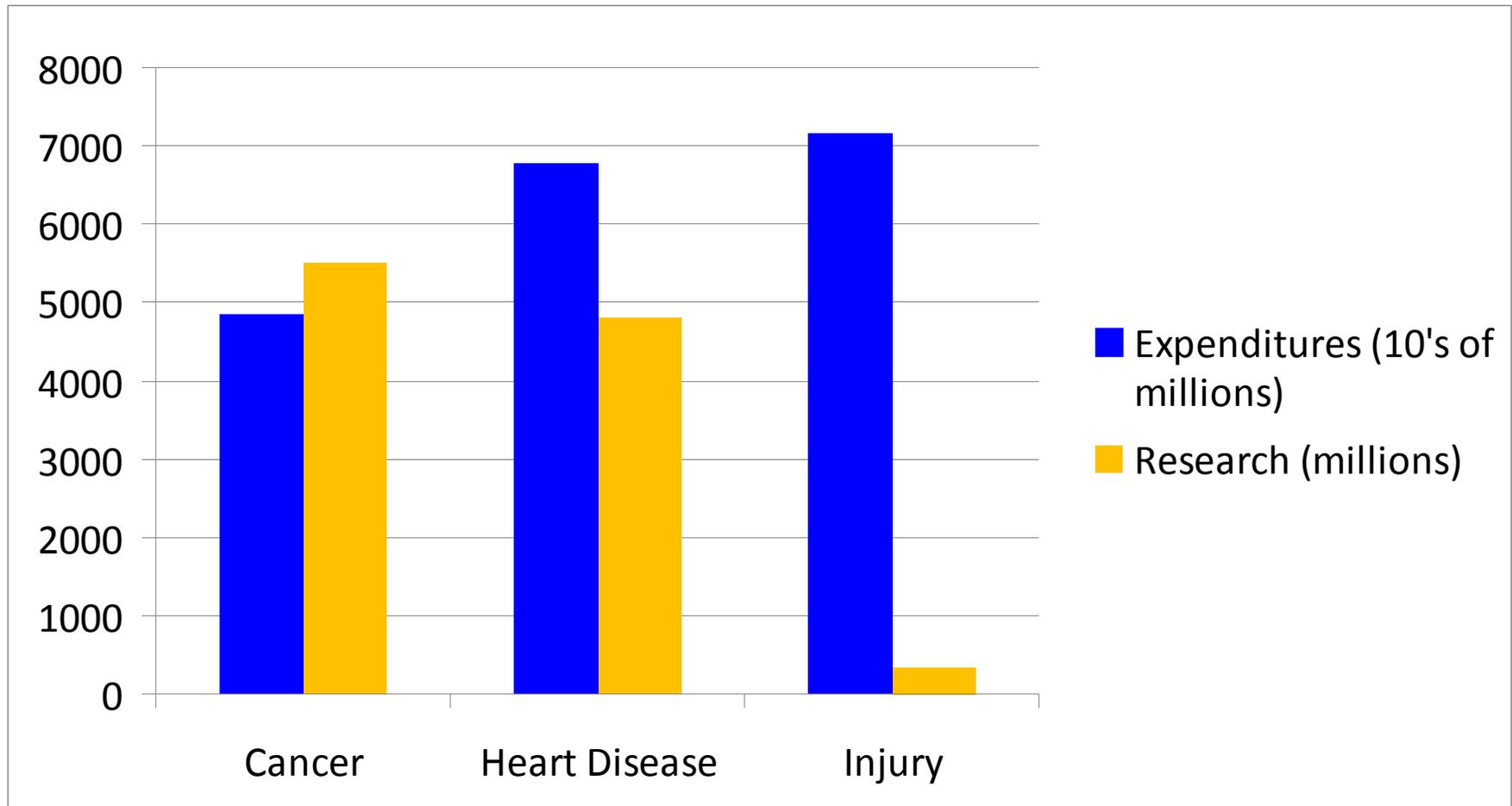


Total medical expenses for conditions by site of service: United States, 2003 (expenses reported in \$ millions)

| | Outpatient MD Visits | Hospital Inpatient Stays | ED Visits | Prescribed Meds | Home Health | Total |
|-------------------------------------|-------------------------|--------------------------------|--------------|--------------------|----------------|---------------|
| Trauma-related disorders | 22,042 | 36,334 | 7,830 | 1,931 | 3,433 | 71,571 |
| Heart conditions | 12,616 | 40,350 | 3,193 | 7,349 | 4,290 | 67,801 |
| Cancer | 23,206 | 20,422 | 233 | 1,675 | 2,891 | 48,428 |



Medical expenditures vs. NIH support

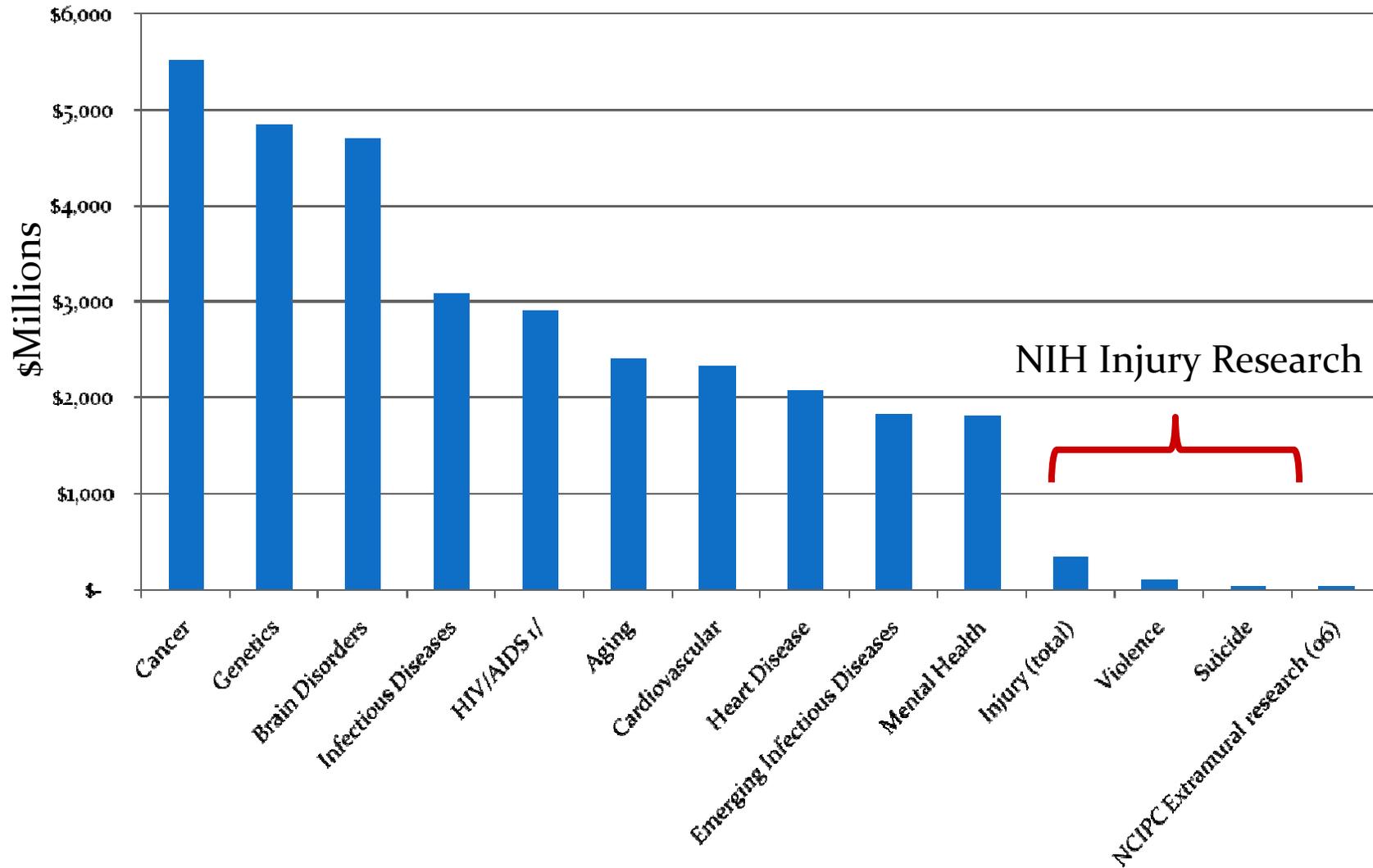


[Expenditures, 2003 AHRQ MEPS](#)

Research: NIH, February, 2007. Based on actual grants, contracts, research conducted at NIH, FY 2008 estimates
(<http://www.nih.gov/news/fundingresearchareas.htm>)



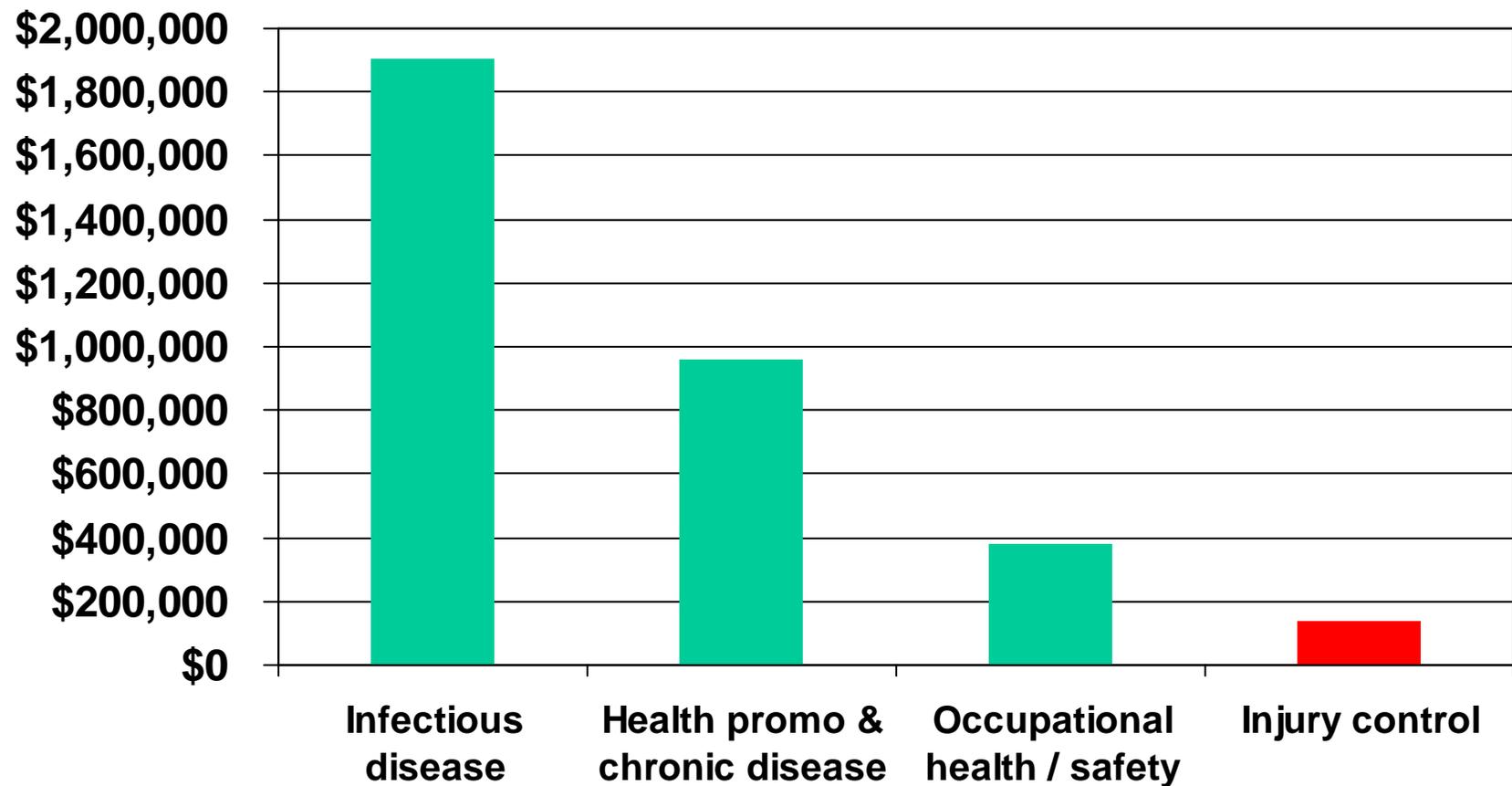
\$ millions NIH funding by problem, 2007



Source: NIH, February, 2007. Based on actual grants, contracts, research conducted at NIH, and other mechanisms of support in FY 2008 estimates (<http://www.nih.gov/news/fundingresearchareas.htm>).



2008 CDC budget (in thousands)





We have focused today on...

- Motor vehicle crashes
- Falls
- Unintentional poisoning
- Family violence
 - Intimate partner violence
 - Child maltreatment



| Selected problems | Deaths | Estimated nonfatal events |
|----------------------------|---------------|---|
| Firearm deaths | 1,119 | 2,540 firearm injuries (inflicted & unintentional) |
| Suicide | 1,009 | 25,000 attempts |
| Homicide | 671 | 2,684 assaults |
| Occupational injury | 165 | 130,000 injuries |
| Drowning | 101 | 125+ near drownings |
| Residential fires | 99 | 800 |



Surveillance



- Multiple systems for monitoring deaths, nonfatal injuries, trauma care outcomes
- Varying strengths & weaknesses
- Prevention relies on understanding of causes
 - i.e., need external cause of injury codes (E codes)



Cause of injury codes (E codes)

- E codes differentiate cause of a given injury, critical for prevention
 - (e.g., Was the concussion from a MV crash, a football injury, or assault by a domestic partner?)
- 27 of 50 states, **including NC (as of 2005)**, have hospital ED surveillance systems with E coding mandated
- 26 of 50 states mandate E codes in hospital records
 - **NC does not**



Top 6 Leading Causes of Injury Hospital Visits (All Races, Both Sexes) by Age Groups, NC, 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



State injury program capacity



Survey data from STIPDA national survey (2007):

- Staff of state injury programs throughout the US are relatively new to the field
 - Half had worked in the field < 4 years.
- 12 states had a mandated injury prevention program
 - NC is not one of them



- Many (~40%) of employees in health depts. throughout the US are NOT trained in public health (*Baker, et al., 2005*)
- Training in injury control more limited
 - < 25% of public health school grads have taken an injury course (*ASPH report, 2004*)
 - Consequently, most health departments have few individuals with training in injury control
 - Pool of qualified candidates is limited



Imagine...



- Persons performing open heart surgery who have not been trained in anatomy or surgery...



- Airplanes being flown by persons with no pilot training...

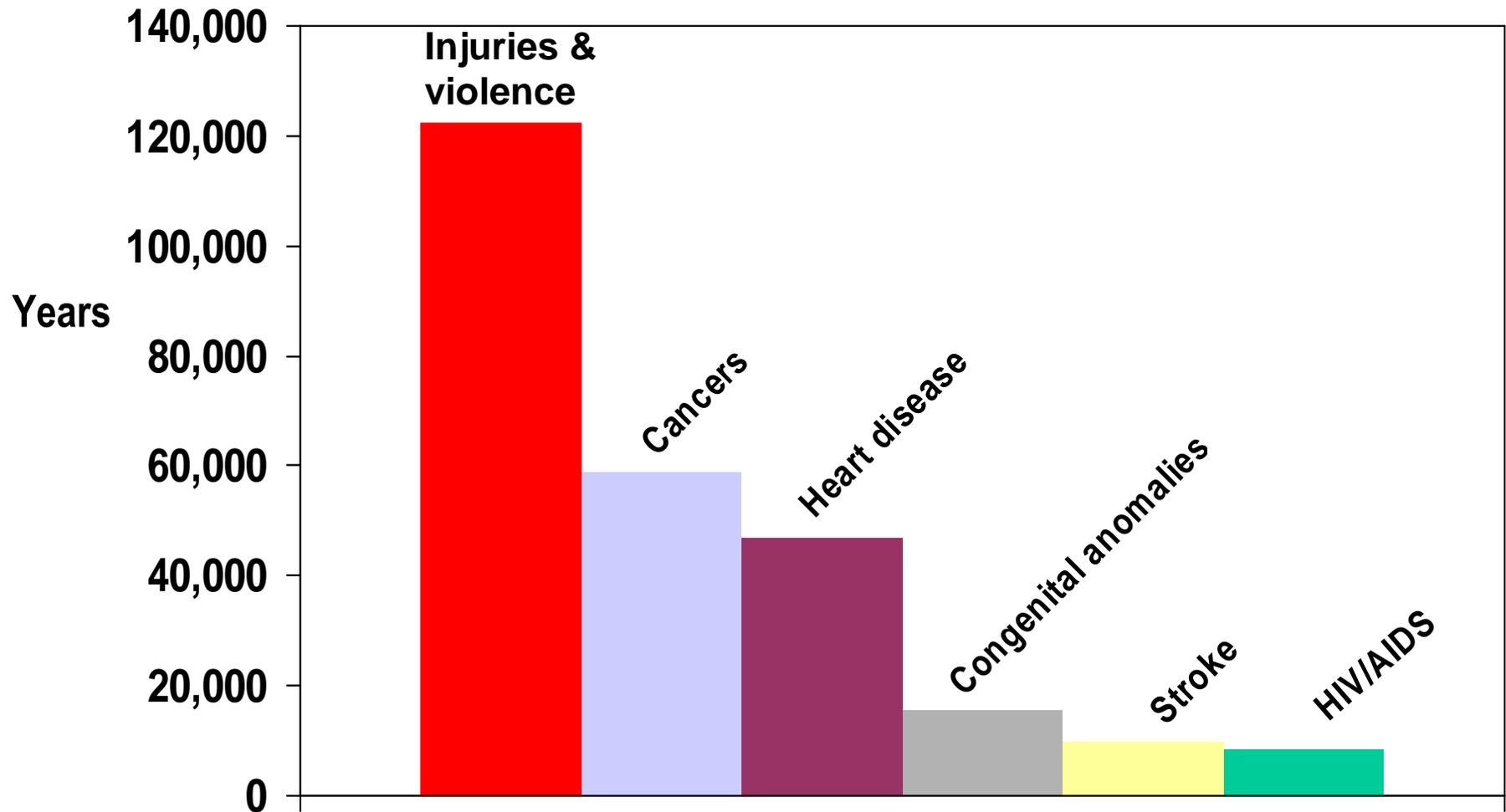


Funding for injury programs

| | State dollars for injury control | Population | Dollars per capita |
|-----------|----------------------------------|--------------------|---------------------------|
| OK | ~\$380,000 | 3.6 million | \$.11 per capita |
| FL | ~\$587,600 | 18 million | \$.03 per capita |
| NC | \$47,000 | 8.8 million | \$.005 per capita |



Years of life lost before age 65, NC, 2005





Funding for injury programs

| | Total annual Appropriation (2007) | Appropriation per person | Expenditure per death (all ages, 2005) | Expenditure per year of life lost before age 65 (2005) |
|------------------------------------|-----------------------------------|--------------------------|--|--|
| NC cancer prevention budget | \$ 5,097,608 | \$.58 per person | \$304.80 | \$87.00 |
| NC injury prevention budget | \$47,000 | \$.005 per person | \$8.03 | \$.38 |
| Ratio of cancer : injury | 108:1 | 116 : 1 | 38:1 | 229:1 |



**State prevention
expenditure
per injury death**



**is less
than**



**the cost of
three
coffees at
Starbucks!**



| Assumptions relative to cancer spending | Injury budget should be: |
|--|---------------------------------|
| Equivalent expenditure per capita | \$5 million / year |
| Proportional to total numbers of deaths | \$1.8 million/ year |
| Proportional to years of life lost before age 65 | \$10.6 million / year |



Recommendations



The NC General Assembly should address the effects of alcohol on injury by increasing the excise tax on alcohol.

(as already recommended by the NC IOM)



Recommendation

- The NC General Assembly should increase its allocation to \$1 million annually to support evidence-based surveillance, intervention and evaluation efforts directed at preventing unintentional injury and violence, with immediate priority directed at preventing motor vehicle crash injury, falls, poisoning, and violence.

A portion of the revenue to support these efforts should be generated from increased fines for traffic violations, from DWI re-licensing fees, and from increased taxes on alcohol.



Recommendation

- The NC General Assembly and private foundations, working with the UNC Injury Prevention Research Center, should facilitate training of state and local personnel in public health and related organizations responsible for injury and violence prevention so they can achieve or exceed competency in injury control consistent with national guidelines developed by the National Training Initiative for Injury and Violence Prevention.



Recommendations

The NC General Assembly, in collaboration with private foundations, the NC Institute of Medicine, and the Division of Public Health Injury and Violence Prevention Branch should organize a task force to examine, in depth, and provide ongoing oversight for planning, monitoring, and advocacy efforts aimed at addressing the full range of injury problems in NC, with subcommittees addressing the topics for initial focus (e.g., falls, poisoning, MVC's and family violence).



The General Assembly should expand NC's primary seat belt law to require usage in all seating positions, coupled with promotional campaigns and increased fines for noncompliance.



- NC law enforcement agencies should actively enforce traffic safety laws including:
 - speeding, red-light running, & aggressive driving laws, using speed and red-light cameras supported by violator fines;
 - drunk driving laws by actively enforcing DWI laws throughout the year, including regular checkpoints
 - seat belt usage



Improve injury surveillance through:

- mandating the inclusion of cause of injury codes in the hospital discharge records for all patients treated for injuries in NC hospitals;
- creating a data system to monitor the various forms of family violence;
- monitoring of poisonings, including improved data collection, coding, sharing and reporting.



Recommendation

The NC Institute of Medicine should convene a task force to develop medical and community-based plans for optimizing medical treatment of pain and offer strategies for improving survival in the event of a drug overdose.