Preventing injury and violence in North Carolina

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Outline

• 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 control in the US

• 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
Principles

• 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
<table>
<thead>
<tr>
<th>Condition</th>
<th>Total Expenses 2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trauma-related conditions</td>
<td>$71,571,000,000</td>
</tr>
<tr>
<td>Cardiovascular disease</td>
<td>$67,801,000,000</td>
</tr>
<tr>
<td>Cancer</td>
<td>$48,428,000,000</td>
</tr>
</tbody>
</table>

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

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

*Source: AHRQ MEPS*
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)
2008 CDC budget (in thousands)

- Infectious disease: $2,000,000
- Health promo & chronic disease: $800,000
- Occupational health / safety: $400,000
- Injury control: $0
We have focused today on:

- Motor vehicle crashes
- Falls
- Unintentional poisoning
- Family violence
  - Intimate partner violence
  - Child maltreatment
## Selected other injury issues in NC, 2005

<table>
<thead>
<tr>
<th>Selected problems</th>
<th>Deaths</th>
<th>Estimated nonfatal events</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firearm deaths</td>
<td>1,119</td>
<td>2,540 firearm injuries (inflicted &amp; unintentional)</td>
</tr>
<tr>
<td>Suicide</td>
<td>1,009</td>
<td>25,000 attempts</td>
</tr>
<tr>
<td>Homicide</td>
<td>671</td>
<td>2,684 assaults</td>
</tr>
<tr>
<td>Occupational injury</td>
<td>165</td>
<td>130,000 injuries</td>
</tr>
<tr>
<td>Drowning</td>
<td>101</td>
<td>125+ near drownings</td>
</tr>
<tr>
<td>Residential fires</td>
<td>99</td>
<td>800</td>
</tr>
</tbody>
</table>
Surveillance
Injury 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)
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

<table>
<thead>
<tr>
<th>Age Groups</th>
<th>&lt;1</th>
<th>1-4</th>
<th>5-9</th>
<th>10-14</th>
<th>15-24</th>
<th>25-34</th>
<th>35-44</th>
<th>45-54</th>
<th>55-64</th>
<th>65+</th>
<th>All Ages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical Care Adverse Effects</td>
<td>600</td>
<td>452</td>
<td>340</td>
<td>349</td>
<td>1,972</td>
<td>2,851</td>
<td>5,378</td>
<td>8,119</td>
<td>16,336</td>
<td>19,790</td>
<td>49,665</td>
</tr>
<tr>
<td>Unspec Unint</td>
<td>106</td>
<td>MVT Unint</td>
<td>137</td>
<td>Falls Unint</td>
<td>207</td>
<td>Poisoning Unint</td>
<td>991</td>
<td>Missing E-Code</td>
<td>1,342</td>
<td>MVT Unint</td>
<td>1,336</td>
</tr>
<tr>
<td>Fall Unint</td>
<td>74</td>
<td>Poisoning Unint</td>
<td>150</td>
<td>Missing E-Code</td>
<td>112</td>
<td>Missing E-Code</td>
<td>145</td>
<td>Missing E-Code</td>
<td>777</td>
<td>Poisoning Intentional</td>
<td>1,156</td>
</tr>
<tr>
<td>Other specified – Assault</td>
<td>46</td>
<td>Fire/Burn Unint</td>
<td>125</td>
<td>Struck Unint</td>
<td>65</td>
<td>Poisoning Intentional</td>
<td>101</td>
<td>Falls Unint</td>
<td>514</td>
<td>Falls Unint</td>
<td>669</td>
</tr>
<tr>
<td>Missing Mech Unint</td>
<td>32</td>
<td>Natul/Env CHR Unint</td>
<td>83</td>
<td>Natul/Envr Unint</td>
<td>60</td>
<td>Transport Unint</td>
<td>91</td>
<td>Other spec Unint</td>
<td>331</td>
<td>Other spec Unint</td>
<td>413</td>
</tr>
</tbody>
</table>

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 \textit{(Baker, et al., 2005)}

• Training in injury control more limited
  – < 25% of public health school grads have taken an injury course \textit{(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

<table>
<thead>
<tr>
<th>State</th>
<th>State Dollars for Injury Control</th>
<th>Population</th>
<th>Dollars per Capita</th>
</tr>
</thead>
<tbody>
<tr>
<td>OK</td>
<td>~$380,000</td>
<td>3.6 million</td>
<td>~$0.11 per capita</td>
</tr>
<tr>
<td>FL</td>
<td>~$587,600</td>
<td>18 million</td>
<td>~$0.03 per capita</td>
</tr>
<tr>
<td>NC</td>
<td>$47,000</td>
<td>8.8 million</td>
<td>~$0.005 per capita</td>
</tr>
</tbody>
</table>
# Funding for injury programs

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NC cancer prevention budget</strong></td>
<td>$5,097,608</td>
<td>$.58 per person</td>
<td>$304.80</td>
<td>$87.00</td>
</tr>
<tr>
<td><strong>NC injury prevention budget</strong></td>
<td><strong>$47,000</strong></td>
<td><strong>$.005 per person</strong></td>
<td><strong>$8.03</strong></td>
<td><strong>$.38</strong></td>
</tr>
<tr>
<td>Ratio of cancer : injury</td>
<td>108:1</td>
<td>116:1</td>
<td>38:1</td>
<td>229:1</td>
</tr>
</tbody>
</table>
State prevention expenditure per injury death is less than the cost of three coffees at Starbucks!
### What should we spend on injury prevention?

<table>
<thead>
<tr>
<th>Assumptions relative to cancer spending</th>
<th>Injury budget should be:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equivalent expenditure per capita</td>
<td>$5 million / year</td>
</tr>
<tr>
<td>Proportional to total numbers of deaths</td>
<td>$1.8 million/ year</td>
</tr>
<tr>
<td>Proportional to years of life lost before age 65</td>
<td>$10.6 million / year</td>
</tr>
</tbody>
</table>
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.
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.
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
Recommendation

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.