Identifying Non-Crash Fatalities Using the National Vital Statistics System

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ICD-10 External Cause of Injury

• **Mechanism of the event**
  - Transport accident (V01-V99)
  - Exposure to excessive natural heat (X30)
  - Caught, crushed, jammed or pinched in or between objects (W23)

• **Manner of injury**
  - Accident (V01-X59)
  - Intentional Self-Harm (X60-X84)
  - Assault (X85-Y09)
First Cut

- Include accidents and undetermined intent
  - Exclude self-harm and assault
- Exclude transport and firearm accidents
- 61,116 potential cases in 2003
- 63,978 potential cases in 2004
Identify Passenger Vehicle Deaths

- Wanted Non-Crash (Non-Transport) Deaths Involving Passenger Vehicle
- Perform character string searches of narratives for all cases in 1st cut
  - medical information
  - place of injury
  - description of how the injury occurred
Character String Search Keywords

• Body type identifiers
  ♦ CAR, AUTO, AUTOMOBILE, TRUCK, PICK-UP, PICKUP, SUV, VEHICLE, VAN, TAXI, JEEP, CONVERTIBLE and SEDAN

• 15 most common vehicle makes
  ♦ Identify other cases where these names (e.g., FORD or HONDA) were used
Review Remaining Narratives

- Approximately 3,000 cases identified for review
- Was a motor vehicle involved?
  - Reduce false positives such as “car” for cardiac
- Was motor vehicle a passenger vehicle?
  - Remove non-passenger vehicles such as garbage “truck”
What does “involved” mean?

- **Inside the vehicle**
  - Heat-related death inside vehicle
- **While entering or exiting**
  - Fall while exiting stationary vehicle
- **Outside the vehicle**
  - In contact with the vehicle
    - Crushed while working under vehicle
  - In contact with vehicle emission
    - Carbon monoxide poisoning in garage or house
NiTS 2007: Noncrash Fatalities
Source: NVSS 2003 & 2004

Annual Average = 588
Noncrash Child Fatalities
Source: NVSS 2003 & 2004

Children (14 and under)

- Hypothermia: 62%
- Vehicle Window Asphyxia: 11%
- Struck by Object: 9%
- Carbon Monoxide Poisoning: 9%
- Other: 9%

Annual Average = 44
Data Analysis Limitations

• Relies on narratives
  ◆ 17% records no injury description
    o Used medical narrative
  ◆ Keywords omitted or misspelled

• Relies on intent coding
  ◆ Cases where effect of external cause was heatstroke and sunstroke (T67)
  ◆ In 2007/2008, 22% coded intentional
    o Other assault or other maltreatment