Global Road Safety: Epidemiology and Risk Factors

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A monthly publication supporting the CDC Winnable Battles (and other high impact public health issues)
Vital Signs: Motor Vehicle Injury Prevention – United States and 19 Comparison Countries

How Is the United States Doing?
Background

- Reducing motor vehicle crash deaths was 1 of 10 great public health achievements of the 20th Century
- However, motor vehicle crashes remain a leading cause of death for Americans aged 1–54 years
- Each year in the US
  - >35,000 deaths in 2015
  - >2.4 million nonfatal injuries
  - Hundreds of millions of dollars in direct medical costs
- How does the US compare to other high-income countries?

http://www.cdc.gov/injury/wisqars
Study Purpose

▪ Describe motor vehicle death data for the
  – United States
  – Other high-income countries
▪ Report the percentage of deaths that involved
  – Alcohol-impaired driving
  – Speeding
▪ Report national seat belt use by seating location
Data Sources

- World Health Organization’s (WHO’s) Global Status Report on Road Safety 2015
  - Alcohol-impaired driving deaths, reported seat belt use, number of registered vehicles

- International Road Traffic and Accident Database
  - Vehicle miles traveled and deaths related to speeding

- United States 2013 data
  - National Highway Traffic Safety Administration (NHTSA)

- Canadian 2013 data
  - Transport Canada’s National collision Database


Country Inclusion

- Membership in the Organisation of Economic Co-operation and Development (OECD)
- High income (defined by World Bank)
  - Gross national income per capita >= $12,736
- >1 million population
- Report annual number of
  - Motor vehicle crash deaths
  - Vehicle miles traveled
- Difference between the country-reported motor vehicle crash death rate and the WHO-estimated rate could not exceed 1 death per 100,000 population

http://www.oecd.org/
Countries Included: United States and 19 Comparison Countries

- **The Americas**
  - United States and Canada

- **Europe**
  - Austria, Belgium, Denmark, Finland, France, Germany, Ireland, the Netherlands, Norway, Slovenia, Spain, Sweden, Switzerland, the United Kingdom

- **Asia**
  - Israel and Japan

- **Oceania**
  - Australia and New Zealand
Results
Motor Vehicle Crash Deaths per 100,000 Population
20 High-Income Countries, 2000 and 2013
Motor Vehicle Crash Deaths per 100,000 Population
20 High-Income Countries, 2000 and 2013
Motor Vehicle Crash Death Rates per...

- **100 million miles traveled**
  - United States: 1.10  (1.13 in 2015)
    - Fifth-highest rate
  - Average: 0.85
  - Range: Sweden 0.54-1.22 Japan and Spain

- **10,000 registered vehicles**
  - United States: 1.24
    - Highest rate
  - Average: 0.68
  - Range: Finland 0.44--1.04 Belgium
Countries with the Highest Percentage of Crash Deaths Involving Alcohol or Speed

<table>
<thead>
<tr>
<th></th>
<th>Alcohol</th>
<th>Speed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canada</td>
<td>34%</td>
<td>42%</td>
</tr>
<tr>
<td>United States</td>
<td>31%</td>
<td>40%</td>
</tr>
<tr>
<td>New Zealand</td>
<td>31%</td>
<td>39%</td>
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<tr>
<td>Australia</td>
<td>30%</td>
<td>35%</td>
</tr>
<tr>
<td>Slovenia</td>
<td>30%</td>
<td>33%</td>
</tr>
<tr>
<td>France</td>
<td>29%</td>
<td>33%</td>
</tr>
<tr>
<td>Belgium</td>
<td>25%</td>
<td>30%</td>
</tr>
<tr>
<td>Finland</td>
<td>22%</td>
<td>29%</td>
</tr>
<tr>
<td>Sweden</td>
<td>19%</td>
<td>28%</td>
</tr>
<tr>
<td>Netherlands</td>
<td>19%</td>
<td>26%</td>
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</tbody>
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19 countries reported the percentage of deaths involving alcohol and 15 countries reported the percentage of deaths related to speeding.

National Seat Belt Use

Rear seat belt use
- United States: 78%
  - 13/18 reporting
- Germany: 97%
- Austria: 65%
- Average: 82.1%

Among US occupant deaths
- 49% unrestrained

Progress Made, More to Do

- 31% reduction in US crash death rate 2000 to 2013
  - 90 people killed each day and thousands injured (*up to 96 in 2015*)
  - Resulting in hundreds of millions of dollars in direct medical costs

- Compared with 19 other high-income countries, the US:
  - Most motor vehicle crash deaths per 100,000 population and per 10,000 registered vehicles
  - Second-highest percentage of alcohol impaired driving deaths
  - Third-lowest national front seat belt use
  - Lowest percentage decline in the rate of crash deaths 2000 to 2013
What Can Be Achieved

If the United States had the same motor vehicle crash death rate as:

- Belgium (second-highest death rate)
  - 12,000 fewer lives would have been lost in 2013 and an estimated $140 million in direct medical costs would have been averted

- The average in the 19 comparison countries
  - 18,000 fewer lives would have been lost and an estimated $210 million in direct medical costs would have been averted.

- Sweden (the best performing country)
  - At least 24,000 fewer lives would have been lost and an estimated $281 million in direct medical costs would have been averted
We Know What Works: Immediate Impact

- **Restraint use**
  - Primary enforcement seat belt laws that cover occupants in all seating positions
  - Car seats and booster seats for motor vehicle passengers through at least age 8 years

- **Alcohol-impaired driving**
  - Publicized sobriety checkpoints
  - Ignition interlocks for all convicted offenders
  - Having lower blood alcohol concentration limits
  - Maintaining and enforcing the minimum legal drinking age of 21
Learn More

- **Vital Signs:** [www.cdc.gov/vitalsigns](http://www.cdc.gov/vitalsigns)
- **Prevention Status Reports:** [www.cdc.gov/psr](http://www.cdc.gov/psr)
- **CDC’s MV PICCS:** [www.cdc.gov/motorvehiclesafety/calculator](http://www.cdc.gov/motorvehiclesafety/calculator)
- **Link to MMWR article:** [https://www.cdc.gov/mmwr/volumes/65/wr/mm6526e1.htm?s_cid=mm6526e1_e](https://www.cdc.gov/mmwr/volumes/65/wr/mm6526e1.htm?s_cid=mm6526e1_e)
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