Identifying Opportunities to Decrease Vehicle Occupant Fatalities

NHTSA COR(TO)
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• Some States are still lagging behind others in seat belt use, unbuckled fatality rates, and overall fatality rates per population

• Higher performing States may have organizations, strategies, or procedures that are more effective at increasing seat belt use than those employed by lower performing States
Objective

- Compare/contrast practices of high and low belt use States
- Examine:
  - Demographics and socioeconomics
  - Administration and management approaches
  - Enforcement approach
  - Communications and outreach
  - Data capabilities
- Identify practices that might improve the situation in the lower performing States
State Selection

• NHTSA selected 5 “high belt use” and 4 “low belt use” States based on:
  – Annual statewide belt observations
  – Percent of fatalities where occupant was unbuckled
  – Overall fatality rate per population
• Don’t ask me who the States are!
• All data “averaged” by State group for comparison purposes
Front Seat Occupant Belt Use

- Low Use
- High Use

Percent of Occupants Belted vs Year from 2007 to 2014.
Fatalities Where Occupant Was Unbelted

- **Low Use**
- **High Use**

Year:
- 2005
- 2006
- 2007
- 2008
- 2009
- 2010
- 2011
- 2012
- 2013

Percent Unbelted:
- 0%
- 10%
- 20%
- 30%
- 40%
- 50%
- 60%
- 70%
- 80%
- 90%
- 100%
Fatalities Per 100,000 Population

![Graph showing the fatality rate per 100,000 population over years.
- Low Use (red dashed line)
- High Use (green solid line)


Fatality Rate per 100,000 Population

- Low Use: Decreasing trend
- High Use: Decreasing trend
Data Gathering Approach

- Past research reports
- Highway safety plans (last 10 years)
- State web sites and publications
- US Census Bureau
- FBI crime statistics
- State health data
- FARS
- Direct contact with State Highway Safety Office staff member
Data Analysis

- Numerical data averaged by group where appropriate
  - Demographics, SES, health data, crime
  - Citations, grant and media expenditures, fines, staffing levels
- Counts by group provided for categorical variables
  - Occupant protection coordinator
  - Location of State Highway Safety Office
- Subjective assessments of
  - Importance of highway safety and occupant protection
  - Organization of plans and activities
<table>
<thead>
<tr>
<th>Race</th>
<th>High Belt Use Group</th>
<th>Low Belt Use Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>White (non-Hispanic)</td>
<td>73.48%</td>
<td>70.05%</td>
</tr>
<tr>
<td>African American</td>
<td>4.90%</td>
<td>22.03%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>12.64%</td>
<td>4.48%</td>
</tr>
<tr>
<td>Native American</td>
<td>1.42%</td>
<td>0.60%</td>
</tr>
<tr>
<td>Asian</td>
<td>5.54%</td>
<td>1.68%</td>
</tr>
<tr>
<td>2 or more Races</td>
<td>3.22%</td>
<td>1.70%</td>
</tr>
</tbody>
</table>
## Population Density

<table>
<thead>
<tr>
<th>Factors</th>
<th>High Belt Use Group</th>
<th>Low Belt Use Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size of State (mi(^2))</td>
<td>84,690</td>
<td>54,027</td>
</tr>
<tr>
<td>Cities with population 100k+</td>
<td>4.20</td>
<td>4.75</td>
</tr>
<tr>
<td>Urban population percent</td>
<td>79.32%</td>
<td>67.25%</td>
</tr>
<tr>
<td>Population density (persons per mi(^2))</td>
<td>57.60</td>
<td>110.00</td>
</tr>
</tbody>
</table>
## Health and Socioeconomics

<table>
<thead>
<tr>
<th>Factors</th>
<th>High Belt Use Group</th>
<th>Low Belt Use Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low birth weight</td>
<td>6.78%</td>
<td>9.60%</td>
</tr>
<tr>
<td>Adult smoking rate</td>
<td>17.40%</td>
<td>22.50%</td>
</tr>
<tr>
<td>Adult obesity</td>
<td>27.00%</td>
<td>32.50%</td>
</tr>
<tr>
<td>Adult hypertension</td>
<td>30.24%</td>
<td>37.73%</td>
</tr>
<tr>
<td>Adult dental visits</td>
<td>67.92%</td>
<td>59.48%</td>
</tr>
<tr>
<td>Children in poverty</td>
<td>18.80%</td>
<td>26.00%</td>
</tr>
<tr>
<td>At/below minimum wage</td>
<td>3.02%</td>
<td>6.05%</td>
</tr>
<tr>
<td>Per capita income</td>
<td>$28,416</td>
<td>$24,795</td>
</tr>
<tr>
<td>Median household income</td>
<td>$54,837</td>
<td>$44,951</td>
</tr>
</tbody>
</table>
## Violent Crime

<table>
<thead>
<tr>
<th>Factors</th>
<th>High Belt Use Group</th>
<th>Low Belt Use Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of violent crimes</td>
<td>13,681.40</td>
<td>27,841.25</td>
</tr>
<tr>
<td>Violent crime rate / 100k inhabitants</td>
<td>331.14</td>
<td>498.35</td>
</tr>
<tr>
<td>Murder and non-negligent manslaughter rate / 100k inhabitants</td>
<td>2.80</td>
<td>7.08</td>
</tr>
<tr>
<td>Factors</td>
<td>High Belt Use Group</td>
<td>Low Belt Use Group</td>
</tr>
<tr>
<td>--------------------------------------------------</td>
<td>---------------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Primary law average max seat belt violation fine</td>
<td>$120.38</td>
<td>$25.00</td>
</tr>
<tr>
<td>Primary law average max child safety seat violation fine</td>
<td>$119.75</td>
<td>$58.33</td>
</tr>
<tr>
<td>Secondary law max seat belt violation fine</td>
<td>$25</td>
<td>$10</td>
</tr>
<tr>
<td>Secondary law max child safety seat violation fine</td>
<td>$500</td>
<td>$50</td>
</tr>
</tbody>
</table>
## Click It or Ticket: Citations

<table>
<thead>
<tr>
<th>Year</th>
<th># of Citations</th>
<th>High Belt Use Group</th>
<th>Low Belt Use Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>4,284</td>
<td>6,386</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9.6</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>2008</td>
<td>4,091</td>
<td>10,576</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9.4</td>
<td>20.3</td>
<td></td>
</tr>
<tr>
<td>2009</td>
<td>3,937</td>
<td>10,252</td>
<td></td>
</tr>
<tr>
<td></td>
<td>9.2</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>2010</td>
<td>7,902</td>
<td>8,565</td>
<td></td>
</tr>
<tr>
<td></td>
<td>17.1</td>
<td>16.3</td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td>5,299</td>
<td>8,779</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12.6</td>
<td>17</td>
<td></td>
</tr>
</tbody>
</table>
Click It or Ticket: Media

- Media reporting is questionable
  - One low use State reported extremely high counts of media activities in some years
  - Some high use States reported no paid or earned media
- Reach and frequency data were not readily available
- No conclusions could be reached regarding the impact of quantity or quality of media activities based on prior reports
Review of Highway Safety Plans

• Reviewed 10 years of plans for each State
• High Belt Use States have better organized plans relating to:
  – General content and highway safety topics
  – Specific program plans
  – Budgets and justifications
• Both groups plan similar numbers of programs each year
  – Half plan 10 or more occupant protection programs
  – Half plan 2 to 4 occupant protection programs
Discussions with Highway Safety Offices

• Reported Occupant Protection Priority
  – Very high in all 5 High Use States
  – Low in 3 of 4 Low Use States (result of political factors and funding)

• Staffing
  – High Use States average 18 employees
  – 2 Low Use States average 18 employees and 2 average 7 employees
  – All High Use States have/had occupant protection coordinator with long tenure
  – Only 1 Low Use State has occupant protection coordinator
Discussions with Highway Safety Offices

• Grants
  – All High Belt Use States made extensive use of occupant protection grants for law enforcement in the past, but monetary support is not necessarily required now to motivate
  – Occupant protection is a low priority for grants in Low Use States, and the States have made little use of funding in the past
    • 2 States have extensive grants programs for other safety areas
    • 2 States are starting to use more funding for media and enforcement activities
    • Staffing levels severely limit the management capabilities of 2 States
Discussions with Highway Safety Offices

• Law Enforcement
  – All High Belt Use States have buy-in from law enforcement
    • Took a long time to get statewide buy-in
    • High fines appear to motivate
    • Traffic safety is an important part of the job
    • Strong LEL presence in 4 States
    • Most held/hold statewide conferences that emphasize occupant protection
  – Low Belt Use States have limited buy-in
    • Low fines make it “not worth the effort”
    • Personal freedom cited as reason for not citing drivers
    • Shortage of traffic officers
    • Good LEL programs but occupant protection is not a focus
    • 3 States have problems getting Sheriffs to participate
Discussions with Highway Safety Offices

• Research
  – 4 of 5 High Belt Use States have research capabilities within the Highway Safety Office
    • Staff can conduct and interpret analyses
    • Use feedback to guide programs
    • Work with universities and other partners
    • Make extensive use of occupant protection and crash data
    • Feedback observation results and encourage local agencies to utilize data
    • Some States go well beyond minimum observation requirements
  – No Low Belt Use States have in-house research capabilities
    • Some work with universities or analysts from other agencies
    • Staffing shortages make research a low priority in 2 States
    • Oversight of seat belt observations is limited
Discussions with Highway Safety Offices

• Media Management
  – High Belt Use States report extensive media management activities for occupant protection
    • Substantial paid media efforts
    • Strong emphasis on earned media
    • A non-government “champion” appears to be vital for getting out messages and lobbying the State legislatures
  – Low Belt Use States report very little paid or earned media efforts in the past
    • 2 States are stepping up media efforts
    • 1 is focusing some efforts on African Americans
Discussion

• Population differences may be contributing to low belt use
  – High Belt Use States indicate that the “personal freedom” issue can be overcome
  – Very little has been done to target media messages at specific demographic groups in any of the States

• Higher fines appear to be vital
  – Higher fines may motivate law enforcement and lead to general deterrence among the public
  – Most of the Low Belt Use States indicate that they have been trying to increase fines, but to no avail
Discussion (continued)

• It’s not clear if reported numbers of citations or media efforts are related to seat belt use
  – Fewer “quality” stops with higher fines may be better
  – Localized media (paid and earned) appears important
• Having in-house research and data analysis capabilities appears very important to monitoring programs and providing feedback to stakeholders
• Having a large and experienced staff appears vital
  – A dedicated occupant protection coordinator is necessary to manage a quality occupant protection program
  – 2 of the low performing States are greatly understaffed
Potential Ways to Increase Belt Use

• Build political, enforcement, and community support
  – Create the position of occupant protection coordinator
  – Work with a “champion” from the general public
  – Hold statewide and local “conferences” for law enforcement

• Increase enforcement of seat belt laws all year
  – Additional encouragement was still considered essential to ensure high levels of enforcement throughout the year and for nighttime seat belt enforcement activities in particular
  – Reduce the reporting burden for seat belt enforcement grant recipients through automated and/or real-time reporting systems
Potential Ways to Increase Belt Use

• Develop in-house research and data analysis capabilities
  – Monitor seat belt use all over the State not just in the areas dictated by the national standards for statewide seat belt use estimates
  – Feed results back to law enforcement agencies
  – Require local agencies receiving grants to monitor seat belt use before and after enforcement efforts in their jurisdictions

• Determine what motivates a State’s population
  – Conduct surveys or focus groups with sub-populations of interest to gauge responses to media and law enforcement approaches.
  – Localize media efforts