Analysis of Motorcyclist Safety Data in Texas

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Today’s objectives

Project overview

Selected preliminary findings
Project goal

Understand crash complexity

Prioritize points for intervention

Prevent death & injury
Project Components

Crash database

Detailed analyses
Part I: Crash database

• 2010 – forward
• All crashes (all severities)
• CRIS data
  – Narratives
• Other sources
Part II: Statistical analysis

Detailed plan

– 26 questions
– Hurt Report
– Beyond CRIS
  • GIS (home/alcohol outlets)
  • Training / endorsement
  • Estimating VMT
  • At fault
  • Road geometry
  • Engine size
Selected preliminary findings
NUMBER OF MOTORCYCLE OPERATORS IN CRASHES BY INJURY SEVERITY AND YEAR

<table>
<thead>
<tr>
<th>Year</th>
<th>Fatality</th>
<th>Incapacitating Injury (A)</th>
<th>Non-incapacitating Injury (B)</th>
<th>Non Injury</th>
<th>Unknown Injury</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>1,031</td>
<td>1,646</td>
<td>3,178</td>
<td>403</td>
<td>1,512</td>
</tr>
<tr>
<td>2011</td>
<td>1,042</td>
<td>1,817</td>
<td>3,608</td>
<td>460</td>
<td>1,787</td>
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<tr>
<td>2012</td>
<td>1,180</td>
<td>1,883</td>
<td>3,748</td>
<td>447</td>
<td>2,057</td>
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<tr>
<td>2013</td>
<td>1,159</td>
<td>1,796</td>
<td>3,410</td>
<td>465</td>
<td>1,842</td>
</tr>
<tr>
<td>2014</td>
<td>1,196</td>
<td>1,820</td>
<td>3,273</td>
<td>433</td>
<td>1,947</td>
</tr>
<tr>
<td>2015</td>
<td>1,173</td>
<td>1,688</td>
<td>3,017</td>
<td>429</td>
<td>1,668</td>
</tr>
</tbody>
</table>
Motorcycle registrations

Registered Motorcycles by Year

Rate of Fatal & Incapacitating Injuries

2015
431,505 registrations  4.92/1000 registrations

Next: rates per VMT
Person type

Killed & Incapacitated
9 operators to every 1 passenger
Helmet use & age

Helmet use among operators & riders, all severities, 2015

More helmet users are young
Next:
After accounting for other factors, is helmet use associated with more severe injury?
Alcohol & helmet use

Percent of operators using helmets by alcohol result, 2015

Helmet use higher in non-drinkers
Alcohol

Percent of operators who died by manner of collision & alcohol result

SMV | SAME DIRECTION | ANGLE | OPPOSITE DIRECTION
---|---|---|---
45% | 55% | 63% | 76%
4% | 3% | 5% | 9%

Positive | Negative

8x higher

Next:
How does alcohol interact with other factors to increase crash severity?
At fault
Vehicle At Fault
Motorcycle Fatalities, 2014

- 78% Motorcycle
- 22% Car

Next: Is this the same for nonfatal crashes?
Engine size
Motorcycle Category Operator Fatalities, 2015

Next: Compare with nonfatal crashes. CC & HP: increase crash severity?
Curve involvement
What are the characteristics of curves where crashes & deaths are occurring?
Closing

September 2016

III. 2016. Motorcycle Crashes. Available at: http://www.iii.org/issue-update/motorcycle-crashes