Crash and Health Outcome Data Linkage: Project Updates

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Agenda

- Current projects
- A selection of our latest results
- What’s next
Data Linkage Project Timeline

NC Governor’s Highway Safety Program-funded pilot and demonstration projects

- Pedestrian/Bicyclist Project (CSCRS)
- NC Crash Injury Surveillance System (CDC)

We are here

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Data linkage methodology was designed to be ongoing.

- Deterministic linkage methodology
- Linkages to ED visit data and death certificates coded by team member Mike Fliss.
- Linkage to the North Carolina Trauma Registry (NCTR) done by Sharon Schiro in consultation with Mike Fliss
- Linkage code available to link additional years of data

www.pedbikeimages.org / Laura Sandt
The linked datasets span the range of injury severity levels in the 2018 crash report data.

(N=1,479 crash/death; N=90,497 crash/ED visit data)*

*Excludes linked records missing law enforcement-reported injury severity
Data Linkage Analysis: 2018 Crash/ED Visit Data

N=91,766
95% of linked crash/ED visit records were for motor vehicle occupants. (N=91,699*)

*67 records with ‘other’ or ‘unknown’ as the road user type were excluded
Motorcyclists were the most likely road user type to be admitted to the hospital. (N=91,699*)

- Motorcyclist: 30%
- Pedestrian: 20%
- Bicyclist: 17%
- Driver: 4%
- Passenger: 3%

*67 records with ‘other’ or ‘unknown’ as the road user type were excluded
37% of the linked crash-ED visits were for persons who appeared uninjured at the crash scene.

*(N=90,497*)

*Excludes 1,269 records with no law enforcement-reported injury severity*
Admittance to hospital broadly reflects law enforcement-reported injury severity, but misses some serious injuries.

(N=90,497*)

<table>
<thead>
<tr>
<th>Law enforcement-reported injury severity</th>
<th>Percentage admitted to hospital</th>
</tr>
</thead>
<tbody>
<tr>
<td>K-Fatal injury</td>
<td>44%</td>
</tr>
<tr>
<td>A-Serious injury</td>
<td>58%</td>
</tr>
<tr>
<td>B-Minor injury</td>
<td>12%</td>
</tr>
<tr>
<td>C-Possible injury</td>
<td>2%</td>
</tr>
<tr>
<td>O-No injury</td>
<td>1%</td>
</tr>
</tbody>
</table>

*Excludes 1,269 records with no law enforcement-reported injury severity
Only 42% of linked crash-ED visits for patients younger than 65 had private insurance as the primary payor. (N=83,018 linked ED visits*)

*Excludes 443 linked records with no entry for the primary payor
**Includes 371 'no charge' ED visits
Crash victims with no reported injury took longer to visit the ED*. (N=89,386 linked ED visits*)

**Excludes 1,234 records with an unreported injury severity rating**
Data Linkage Analysis: 2018 Crash/Death Certificate data

N=1,483
50 fatalities were reported as non-fatal in the crash reports.

(N=50)

Percentage of linked records reported as non-fatal

<table>
<thead>
<tr>
<th>Law enforcement-reported injury designation</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-Serious injury</td>
<td>30%</td>
</tr>
<tr>
<td>B-Minor injury</td>
<td>28%</td>
</tr>
<tr>
<td>C-Possible injury</td>
<td>20%</td>
</tr>
<tr>
<td>O-No injury</td>
<td>14%</td>
</tr>
<tr>
<td>Unknown</td>
<td>8%</td>
</tr>
</tbody>
</table>
Almost half of 50 missed fatalities had dates of death a week or more after the crash. (N=50)
Veteran Pedestrian Fatalities
North Carolina Counties
2014-2018

Number of Fatalities

- 0
- 1 - 2
- 3 - 6
- 8 - 9
- 13 - 16

VA Hospitals
Military Bases
We are posting our results online!

14 Reports

7 Factsheets

7 Presentations/Posters

http://cchi.web.unc.edu/transportation-health-data/
Next steps
FY 2020-2021

GHSP-funded work:
- Establish a Motor Vehicle Crash and Health Data Advisory Group
- Develop a public facing, interactive Web-based dashboard
- Analyze crash/North Carolina Trauma Registry data and share results

CDC-funded work:
- Analyze 2018 data, linked in the 2019-2020 project year, to assess health outcomes, risk and protective factors, and/or evaluations of data linkage activities
- Disseminate findings through reports and other products
- Take steps to add additional years of data
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NC DPH Data Attribution & Disclaimer

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Thank You!

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