Community of Practice on Traumatic Brain Injury

Second Meeting
October 15, 2013, 3:00-4:00 PM ET

For audio, please call 866-835-7973. Your phone line is currently muted.
Today’s Agenda

• Overview of TBI Data Systems & Components
• TBI Surveillance
• TBI Registry
• Discussion
If you are having any technical problems joining the webinar please contact the Adobe Connect hotline at 1-800-416-7640 or email csninfo@edc.org

Type any additional questions or comments into the Chat box on the left.
TBI Data Systems

Why is data so important?

- Identify target populations
- Support Policy and Legislative Decision
- Measure the impact of programs and strategies
- Sustainability
TBI Data Systems: Components

1. Emergency Department Visit Data
2. Hospitalization Data
3. Death Data
National Average 2010

Emergency Department Visits:
• 681/100,000

Hospitalizations:
• 96.6/100,000

Fatal Traumatic Brain Injuries:
• 16.84/100,000

Source: http://healthypeople.gov/2020/Data/
# Fatal TBI By State (2004-2010)

<table>
<thead>
<tr>
<th>State</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>22.41</td>
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<tr>
<td>Alaska</td>
<td>19.65</td>
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<tr>
<td>Connecticut</td>
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<td>Delaware</td>
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<td>Iowa</td>
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<td>Kentucky</td>
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<td>Minnesota</td>
<td>14.25</td>
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<td>Missouri</td>
<td>23.35</td>
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<tr>
<td>Nebraska</td>
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<tr>
<td>New Jersey</td>
<td>10.24</td>
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<tr>
<td>New Mexico</td>
<td>22.56</td>
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<tr>
<td>New York</td>
<td>11.63</td>
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<tr>
<td>North Carolina</td>
<td>20.65</td>
</tr>
<tr>
<td>North Dakota</td>
<td>22.28</td>
</tr>
<tr>
<td>Tennessee</td>
<td>21.38</td>
</tr>
</tbody>
</table>

TBI Data Systems: Gaps

- Existing TBIs are not captured
- TBI not resulting in ED visits are not captured
- TBI presenting at Indian Health Services, Veteran Health Services or other agencies, may not be captured
National TBI Data Sources

- CDC
  - Fatal Injury Mapping
  - Cost of Injury Reports
- Healthy People 2020
  - Indicators IVP-2.1-3
- HealthIndicators.gov
TBI Data Systems

Registry
v.s.
Surveillance
Definition: “routine, ongoing collection of data about people who sustained a TBI”

Components:
• Data Collection
• Data Analysis

Cost: In 2005 CDC provided $80,000 per year for TBI surveillance in 11 states

Source: Traumatic Brain Injury in the United States: The Future of Registries and Data Systems
**Definition:** “A collection of data about a particular group of people who share a common personal characteristic, for example, development of the same disease.” (Feinstein 1998, p. 475)

**Components:**
- Data collection
- Identification
- Linkage to Services
- Follow-up data collection

**Cost:** Depends on the state and services. Ranges from estimates of $75,000 (Florida- just data collection), to $125,000 (Virginia)
TBI Data Systems: Surveillance

New York
Michael Bauer
THE EPIDEMIOLOGY OF TRAUMATIC BRAIN INJURIES IN NEW YORK STATE

Michael Bauer, Sarah Sperry
New York State Department of Health, Bureau of Occupational Health and Injury Prevention
Injuries are not Accidents

- Traumatic Brain Injuries are not random, uncontrollable acts of fate but rather occur:
  - In highly predictable patterns
  - With recognizable risk factors
  - Among identifiable populations

A TBI is a predictable and preventable event!

- This presentation will demonstrate some of these patterns in NYS.
Traumatic Brain Injury

- TBI data is like an iceberg.
  - Death data is just the tip of the problem
  - Hospitalization Discharge Data
  - Emergency Department (ED) Visit Data
  - Other medical treatment, or Untreated?
The rate of TBI hospitalizations have been increasing over time.
The rate of TBI ED Visits have increased each year since the data has been collected.
Gender Differences with TBI

- **73% of deaths were males**
  - Mean annual frequency male = 1,569 (16.7 per 100,000)
  - Mean annual frequency female = 585 (5.9 per 100,000)

- **62% of hospitalized TBI patients were male**
  - Mean annual frequency male = 11,526 (122.7 per 100,000)
  - Mean annual frequency female = 7,103 (71.2 per 100,000)

- **55% of ED Visits TBI patients were male**
  - Mean annual frequency male = 45,190 (481.1 per 100,000)
  - Mean annual frequency female = 37,192 (373.0 per 100,000)
Incidence of Unintentional Traumatic Brain Injuries Hospitalizations
New York State Residents§, 2006-2008

Legend

New York State Counties
Age-Adjusted Rate per 100,000 County Residents
Quartiles

- 36.9 - 65.9
- 66.0 - 97.8
- 87.9 - 111.1
- 111.2 - 169.5

Source: NYSDOH, Bureau of Injury Prevention
www.health.ny.gov/injury_prevention
SPARCS January 2010

§This data does not include patients that were treated in hospitals outside of NYS, therefore, the burden of injuries in border counties may be underrepresented.
Incidence of Unintentional Traumatic Brain Injuries
Emergency Department Visits†
New York State Residents§, 2006-2008

Legend
New York State Counties
Age-Adjusted Rate per 100,000 County Residents
Quartiles
- 260.1 - 420.0
- 420.1 - 582.4
- 592.5 - 811.4
- 811.5 - 1013.6

†The incidence of ED visits does not include patients who were subsequently admitted into the hospital.
§This data does not include patients that were treated in hospitals outside of NYS, therefore, the burden of injuries in border counties may be underrepresented.

Source: NYSDOH, Bureau of Injury Prevention
www.health.ny.gov/injury_prevention
SPARCS January 2010
Traumatic Brain Injury - Charge Information
New York State, 2006-2008

- Mean charge for hospitalizations = $37,839
  - Mean charge for non-TBI hospitalizations = $28,502

- Mean length of stay = 7 days

\[ \text{Yearly average hospitalization charges} = \$700 \text{ Million} \]

- Mean charge for ED Visits = $1,909
  - Mean charge for non-TBI ED Visit = $1,044

\[ \text{Yearly average ED charges} = \$160 \text{ Million} \]
Traumatic Brain Injury - Deaths
New York State Residents, 2007-2008

Early twenties and adults older than 65 have the highest rates.
Traumatic Brain Injury - Hospitalizations
New York State Residents, 2006-2008

Children less than one and adults older than 65 have the highest rates.


Children 0-4 and 15-19 have the highest rates.

Traumatic Brain Injury - ED Visits
New York State Residents, 2006-2008
<table>
<thead>
<tr>
<th>Rank</th>
<th>&lt;1</th>
<th>1-4</th>
<th>5-9</th>
<th>10-14</th>
<th>15-19</th>
<th>20-24</th>
<th>25-44</th>
<th>45-64</th>
<th>65+</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Homicide (\mu=9)</td>
<td>Homicide (\mu=9)</td>
<td>*</td>
<td>Homicide (\mu=3)</td>
<td>Homicide (\mu=30)</td>
<td>Homicide (\mu=54)</td>
<td>Suicide (\mu=146)</td>
<td>Suicide (\mu=152)</td>
<td>Fall (\mu=504)</td>
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<tr>
<td>2</td>
<td>*</td>
<td>MVT(^{\text{a}}), Pedestrian (\mu=3)</td>
<td>*</td>
<td>*</td>
<td>MVT(^{\text{a}}), Unspecified (\mu=20)</td>
<td>MVT(^{\text{a}}), Unspecified (\mu=34)</td>
<td>Homicide (\mu=126)</td>
<td>Fall (\mu=118)</td>
<td>Suicide (\mu=98)</td>
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<tr>
<td>3</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>MVT(^{\text{a}}), Occupant (\mu=19)</td>
<td>Suicide (\mu=31)</td>
<td>MVT(^{\text{a}}), Unspecified (\mu=45)</td>
<td>Homicide (\mu=51)</td>
<td>MVT(^{\text{a}}), Pedestrian (\mu=53)</td>
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<td>4</td>
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<td>*</td>
<td>*</td>
<td>Suicide (\mu=16)</td>
<td>MVT(^{\text{a}}), Occupant (\mu=21)</td>
<td>Fall (\mu=43)</td>
<td>MVT(^{\text{a}}), Unspecified (\mu=22)</td>
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<tr>
<td>5</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>Fall (\mu=6)</td>
<td>Fall (\mu=9)</td>
<td>MVT(^{\text{a}}), Motorcyclist (\mu=38)</td>
<td>MVT(^{\text{a}}), Occupant (\mu=25)</td>
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<td>6</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
<td>MVT(^{\text{a}}), Pedestrian (\mu=4)</td>
<td>MVT(^{\text{a}}), Pedestrian (\mu=8)</td>
<td>MVT(^{\text{a}}), Occupant (\mu=31)</td>
<td>MVT(^{\text{a}}), Occupant (\mu=24)</td>
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<td>*</td>
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<td>*</td>
<td>*</td>
<td>*</td>
<td>Pedestrian Non-Traffic (\mu=3)</td>
<td>MVT(^{\text{a}}), Motorcyclist (\mu=7)</td>
<td>MVT(^{\text{a}}), Pedestrian Non-Traffic (\mu=25)</td>
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<td>*</td>
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<td>*</td>
<td>Transport, Non-Traffic (\mu=3)</td>
<td>Transport, Non-Traffic (\mu=8)</td>
<td>Pedestrian Non-Traffic (\mu=12)</td>
<td>Struck by / Against (\mu=3)</td>
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<td>*</td>
<td>*</td>
<td>*</td>
<td>*</td>
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<td>*</td>
<td>Pedestrian Non-Traffic (\mu=6)</td>
<td>Poisoning (\mu=10)</td>
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<td>*</td>
<td>MVT(^{\text{a}}), Pedal Cyclists (\mu=6)</td>
<td>Transport, Non-Traffic (\mu=8)</td>
</tr>
</tbody>
</table>

\(\mu\) = Mean Annual Frequency

\(\text{MVT}^{\text{a}}\) = Motor Vehicle Traffic

* Means less than 3 are not reported

Source: NYSDOH, Bureau of Injury Prevention

www.nyhealth.gov/prevention/injury_prevention/

Vital Statistics Death Files May 2010

Deaths Due to Traumatic Brain Injury
Leading Causes by Age Group
New York State Residents, 2007-2008

Unintentional MVT  Other Unintentional  Intentional
<table>
<thead>
<tr>
<th>Rank</th>
<th>&lt;1</th>
<th>1-4</th>
<th>5-9</th>
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<th>45-64</th>
<th>65+</th>
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<tr>
<td>1</td>
<td>Fall</td>
<td>Fall</td>
<td>Fall</td>
<td>Fall</td>
<td>MVT^,</td>
<td>MVT^,</td>
<td>Fall</td>
<td>Fall</td>
<td>Fall</td>
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<tr>
<td></td>
<td>(\mu=316)</td>
<td>(\mu=282)</td>
<td>(\mu=149)</td>
<td>(\mu=161)</td>
<td>Occupant (\mu=435)</td>
<td>Occupant (\mu=432)</td>
<td>(\mu=862)</td>
<td>(\mu=1,879)</td>
<td>(\mu=5,762)</td>
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<tr>
<td>2</td>
<td>Assault</td>
<td>Struck By, Against</td>
<td>MVT^, Pedestrian</td>
<td>MVT^, Pedestrian</td>
<td>Assault</td>
<td>Assault</td>
<td>MVT^,</td>
<td>MVT^,</td>
<td>MVT^,</td>
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<tr>
<td></td>
<td>(\mu=59)</td>
<td>(\mu=52)</td>
<td>(\mu=67)</td>
<td>(\mu=120)</td>
<td>(\mu=306)</td>
<td>(\mu=307)</td>
<td>Occupant (\mu=830)</td>
<td>Occupant (\mu=597)</td>
<td>(\mu=407)</td>
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<td>3</td>
<td>Struck By, Against</td>
<td>MVT^, Pedestrian</td>
<td>MVT^, Pedestrian</td>
<td>MVT^, Pedestrian</td>
<td>MVT^,</td>
<td>MVT^,</td>
<td>MVT^,</td>
<td>MVT^,</td>
<td>MVT^,</td>
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<tr>
<td></td>
<td>(\mu=22)</td>
<td>(\mu=29)</td>
<td>(\mu=42)</td>
<td>(\mu=75)</td>
<td>Fall</td>
<td>Fall</td>
<td>Assault</td>
<td>Assault</td>
<td>Pedestrian</td>
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<tr>
<td></td>
<td>(\mu=179)</td>
<td>(\mu=181)</td>
<td>(\mu=760)</td>
<td>(\mu=399)</td>
<td>(\mu=224)</td>
<td>(\mu=399)</td>
<td>(\mu=5,082)</td>
<td>(\mu=407)</td>
<td>(\mu=224)</td>
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<td>5</td>
<td>MVT^, Occupant</td>
<td>Assault, Non-Traffic</td>
<td>MVT^,</td>
<td>MVT^,</td>
<td>MVT^,</td>
<td>MVT^,</td>
<td>MVT^,</td>
<td>MVT^,</td>
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<tr>
<td></td>
<td>(\mu=9)</td>
<td>(\mu=15)</td>
<td>(\mu=25)</td>
<td>(\mu=96)</td>
<td>(\mu=74)</td>
<td>(\mu=186)</td>
<td>(\mu=133)</td>
<td>(\mu=74)</td>
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<tr>
<td>6</td>
<td>*</td>
<td>Unspecified, Non-Traffic</td>
<td>MVT^,</td>
<td>Pedal Cyclist, Non-Traffic</td>
<td>Transport, Non-Traffic</td>
<td>Transport, Non-Traffic</td>
<td>Struck By, Against</td>
<td>Struck By, Against</td>
<td>Assault</td>
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<tr>
<td></td>
<td>(\mu=9)</td>
<td>(\mu=14)</td>
<td>(\mu=56)</td>
<td>(\mu=54)</td>
<td>(\mu=72)</td>
<td>(\mu=72)</td>
<td>(\mu=141)</td>
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<td>(\mu=70)</td>
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<td>Transport, Non-Traffic</td>
<td>MVT^,</td>
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<td>MVT^,</td>
<td>MVT^,</td>
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<td>(\mu=54)</td>
<td>(\mu=51)</td>
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<td>(\mu=35)</td>
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<td>Pedestrian, Non-Traffic</td>
<td>MVT^,</td>
<td>Transport, Non-Traffic</td>
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<td>MVT^,</td>
<td>MVT^,</td>
<td>MVT^,</td>
<td>MVT^,</td>
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<tr>
<td></td>
<td>(\mu=3)</td>
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<td>(\mu=26)</td>
<td>(\mu=37)</td>
<td>(\mu=28)</td>
<td>(\mu=37)</td>
<td>(\mu=69)</td>
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<tr>
<td>9</td>
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<td>Pedal Cyclist, Non-Traffic</td>
<td>MVT^,</td>
<td>Pedal Cyclist, Non-Traffic</td>
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<td>MVT^,</td>
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<tr>
<td></td>
<td>(\mu=2)</td>
<td>(\mu=6)</td>
<td>(\mu=13)</td>
<td>(\mu=36)</td>
<td>(\mu=18)</td>
<td>(\mu=52)</td>
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<td>MVT^,</td>
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<td>Unspecified</td>
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<td>(\mu=14)</td>
<td>(\mu=12)</td>
<td>(\mu=43)</td>
<td>(\mu=66)</td>
<td>(\mu=15)</td>
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</tbody>
</table>

Unintentional MVT  Other Unintentional  Intentional

\(\mu\) = Mean Annual Frequency

MVT\(^{\land}\) = Motor Vehicle Traffic

*Means less than 2 are not reported

Source: NYSDOH, Bureau of Injury Prevention

www.nyhealth.gov/prevention/injury_prevention/

SPARCS January 2010
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<th>65+</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Fall, µ=2,998</td>
<td>Fall, µ=6,762</td>
<td>Fall, µ=2,749</td>
<td>Struck By, Against, µ=2,486</td>
<td>Struck By, Against, µ=2,893</td>
<td>Assault, µ=1,899</td>
<td>Fall, µ=4,463</td>
<td>Fall, µ=5,791</td>
<td>Fall, µ=10,529</td>
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<td>Struck By, Against, µ=394</td>
<td>Struck By, Against, µ=1,897</td>
<td>Struck By, Against, µ=1,737</td>
<td>Fall, µ=2,357</td>
<td>Assault, µ=2,151</td>
<td>Fall, µ=1,438</td>
<td>Assault, µ=3,751</td>
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<td>Struck By, Against, µ=755</td>
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<td>Unspecified, µ=192</td>
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<td>Assault, µ=793</td>
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<td>Pedal Cyclist, Non-Traffic, µ=351</td>
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<td>Assault, µ=1,370</td>
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<td>MVT, Occupant, µ=293</td>
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<td>Unspecified, µ=165</td>
<td>Unspecified, µ=491</td>
<td>Unspecified, µ=371</td>
<td>Assault, µ=151</td>
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<td>Transport, Non-Traffic, µ=6</td>
<td>MVT, Pedestrian, µ=46</td>
<td>Assault, µ=102</td>
<td>Transport, Non-Traffic, µ=293</td>
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<td>MVT, Pedestrian, µ=181</td>
<td>MVT, Pedestrian, µ=108</td>
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<td>MVT, Pedestrian, µ=196</td>
<td>MVT, Pedestrian, µ=81</td>
<td>MVT, Pedestrian, µ=211</td>
<td>MVT, Pedestrian, µ=211</td>
<td>Transport, Non-Traffic, µ=180</td>
<td>Transport, Non-Traffic, µ=51</td>
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<tr>
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<td>Natural, Environmental, µ=2</td>
<td>Cut/Pierce, µ=29</td>
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<td>MVT, Pedestrian, µ=90</td>
<td>MVT, Pedestrian, µ=101</td>
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<td>Pedal Cyclist, Non-Traffic, µ=190</td>
<td>Pedal Cyclist, Non-Traffic, µ=164</td>
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<td>Cut/Pierce, µ=21</td>
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<td>MVT, Unspecified, µ=68</td>
<td>MVT, Unspecified, µ=73</td>
<td>MVT, Unspecified, µ=182</td>
<td>MVT, Unspecified, µ=104</td>
<td>Pedal Cyclist, Non-Traffic, µ=29</td>
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<tr>
<td>10</td>
<td>Pedal Cyclist, Non-Traffic, µ=2</td>
<td>Pedestrian, Non-Traffic, µ=16</td>
<td>MVT, Pedestrian, µ=19</td>
<td>Overexertion, µ=18</td>
<td>MVT, Pedestrian, µ=57</td>
<td>MVT, Motorcyclist, µ=56</td>
<td>MVT, Motorcyclist, µ=124</td>
<td>MVT, Motorcyclist, µ=77</td>
<td>Cut/Pierce, µ=23</td>
</tr>
</tbody>
</table>

† The incidence of Emergency Department visits does not include patients that were subsequently admitted into the hospital.

Unintentional MVT | Other Unintentional | Intentional

MVT = Motor Vehicle Traffic

*Means less than 2 are not reported

Source: NYSDOH, Bureau of Injury Prevention

www.nyhealth.gov/prevention/injury_prevention/

SPARCS January 2010
Percent of Deaths by Intent with Traumatic Brain Injury
New York State Residents, All Ages, 2007-2008

Age group

- Unintentional
- Homicide
- Suicide

Percentage:

- Males
- Females
Percent of Hospitalizations by Intent with Traumatic Brain Injury
New York State Residents, All Ages, 2006-2008

Age group

- Unintentional
- Assault
- Self Inflicted

Males
Females
Percent of ED Visits* by Intent with Traumatic Brain Injury
New York State Residents, All Ages, 2006-2008

*Does not include patients admitted into hospital
TBI Hospitalizations - Place of Injury
NYS Residents, 2006-2008

Ages 0-64 Years
- Home: 31%
- Unspecified: 16%
- Other: 20%
- Residential Institution: 4%
- Public Building: 6%
- Place for Sports and Recreation: 6%
- Street of Highway: 17%

Ages 65+ Years
- Home: 55%
- Unspecified: 9%
- Other: 11%
- Residential Institution: 14%
- Public Building: 3%
- Street and Highway: 7%
- Place for Sport and Recreation: 1%
TBI Patient Hospital Discharge Location
NYS Residents, 2006-2008

Ages 0-64 Years
- Home: 81%
- Hospital: 9%
- Nursing Facility: 3%
- Died: 3%
- Against Medical Advice: 4%

Ages 65+ Years
- Home: 46%
- Nursing Facility: 32%
- Hospital: 11%
- Died: 10%
- Against Medical Advice: 1%
NYS DOH, BOHIP

Injury Surveillance System

• Crash Outcome Data Evaluation System (CODES) is a linked database
  - Matches individual records from Accident Information System data to Pre-Hospital Care Report data
  - Matches individual records from Accident Information System data to Hospital Discharge and Emergency Department data
# Selected Risk Factors

## Crash Types and Contributing Factors

<table>
<thead>
<tr>
<th>Type of Crash or Contributing Factor</th>
<th>Total Number of People Involved</th>
<th>Number of People Hospitalized</th>
<th>TBI (Percent of Hospitalizations)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol-Related</td>
<td>20,255</td>
<td>1,000</td>
<td>40.7%</td>
</tr>
<tr>
<td>Speed-Related</td>
<td>68,762</td>
<td>2,040</td>
<td>36.5%</td>
</tr>
<tr>
<td>Driver Distraction</td>
<td>132,251</td>
<td>1,811</td>
<td>28.0%</td>
</tr>
<tr>
<td>Failure to Yield</td>
<td>106,273</td>
<td>1,889</td>
<td>28.7%</td>
</tr>
<tr>
<td>Following Too Closely</td>
<td>116,355</td>
<td>773</td>
<td>22.7%</td>
</tr>
<tr>
<td>Passing / Lane Violations</td>
<td>51,922</td>
<td>872</td>
<td>31.9%</td>
</tr>
<tr>
<td>Traffic Control Disregarded</td>
<td>31,734</td>
<td>738</td>
<td>33.9%</td>
</tr>
</tbody>
</table>
## Selected Risk Factors – Traffic Injuries

### Role Types

<table>
<thead>
<tr>
<th>Type of Crash or Contributing Factor</th>
<th>Total Number of People Involved</th>
<th>Number of People Hospitalized</th>
<th>TBI (Percent of Hospitalizations)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bicyclists</td>
<td>5,745</td>
<td>413</td>
<td>44.9%</td>
</tr>
<tr>
<td>Motorcyclists</td>
<td>5,845</td>
<td>1,101</td>
<td>29.4%</td>
</tr>
<tr>
<td>Motor Vehicle Occupants</td>
<td>719,548</td>
<td>8,696</td>
<td>28.2%</td>
</tr>
<tr>
<td>Pedestrians</td>
<td>16,415</td>
<td>1,810</td>
<td>38.4%</td>
</tr>
<tr>
<td>Other</td>
<td>35,265</td>
<td>170</td>
<td>15.1%</td>
</tr>
</tbody>
</table>

- **NYS Helmet Laws:**
  - Bicyclists under the age 14 must wear an approved helmet
  - All motorcycle riders (drivers and passengers) must wear a DOT-approved helmet
## Selected Risk Factors – Traffic Injuries
### Restraint Use

<table>
<thead>
<tr>
<th>Type of Crash or Contributing Factor</th>
<th>Total Number of People Involved</th>
<th>Number of People Hospitalized</th>
<th>TBI (Percent of Hospitalizations)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Restraint Used</td>
<td>24,357</td>
<td>1,040</td>
<td>41.1%</td>
</tr>
<tr>
<td>Restraint Used</td>
<td>563,621</td>
<td>6,611</td>
<td>26.7%</td>
</tr>
<tr>
<td>Unknown</td>
<td>131,570</td>
<td>1,044</td>
<td>25.1%</td>
</tr>
</tbody>
</table>

- Occupants that did not use restraints:
  - Were almost 4 times more likely to require hospitalization
    - The average hospital charge was over $20,000 higher!
  - Were almost 3 times more likely to be diagnosed with a TBI

- NYS seat belt law:
  - Every occupant in the front seats, the driver and each passenger must wear a seat belt.
  - Every occupant of a motor vehicle being operated by the holder of a Learner Permit, or Junior Driver License must be restrained by a safety restraint.
  - Each passenger under age 16 must wear a seat belt or use an appropriate child safety restraint system.
Conclusions

We look at:

- Extent
- Patterns
  - Risk Factors
  - Populations at greatest risk
  - Time Trends
Conclusions

- While it is difficult to grasp the extent of TBI incidence and prevalence (NYS does not have a TBI registry), the data does show patterns in the occurrence of TBI.

- Continued surveillance efforts will increase our knowledge of TBI occurrence.

- Prevention programs focused on evidence-based strategies and best practices will help to prevent traumatic brain injuries among New Yorkers!
For additional questions please contact me:

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www.health.state.ny.us/prevention/injury_prevention
TBI Data Systems: Registry

Minnesota
Mark Kinde
Minnesota’s TBI Registry

TBI Community of Practice Webinar

Leslie Seymour, MD, MPH, Mark Kinde, MPH
& the Minnesota CoP Team

October 15, 2013
Registry Purposes

- Provide timely service information

- Describe the epidemiology of TBI in Minnesota and “do prevention”

- Redefine the unacceptable …
144.662 TRAUMATIC BRAIN INJURY AND SPINAL CORD INJURY REGISTRY.
The commissioner of health shall establish and maintain a central registry of persons who sustain traumatic brain injury or spinal cord injury. The purpose of the registry is to:
(1) collect information to facilitate the development of injury prevention, treatment, and rehabilitation programs; and
(2) ensure the provision to persons with traumatic brain injury or spinal cord injury of information regarding appropriate public or private agencies that provide rehabilitative services so that injured persons may obtain needed services to alleviate injuries and avoid secondary problems, such as mental illness and chemical dependency.

History: 1991 c 292 art 2 s 6
Registry Function

- Who reports?
- How do they report?
- What do they report?
- How are the data used?
- How is data quality addressed?
Brain Injury Epidemiology, MN

• When & where do brain injuries happen?
• To whom?
• What are the leading causes?
• What other illnesses or injuries occur in conjunction with brain injury?
• What do we know about outcomes?
• How much do brain injuries cost?
• Who pays?
Resource Facilitation (RF) for Brain Injury
Resource Facilitation

"Resource facilitation is a partnership that helps people and communities choose, get and keep information, services and supports to make informed choices and meet their goals."

"Connect survivors with services"
Resource Facilitation

- Introduced to Minnesota, 1989
- Mailing to Registry Cases, 1993
- Strengthened and expanded, 1997
- Telephone Outreach, 2004

- Purpose: To link individuals with traumatic brain injury to information about available services
- Connection strategies: mail, hospital referral, telephone, email and Web
Who’s Doing RF?
How Does RF Work?

RF Activities

- Assess
- Plan
- Identify
- Negotiate
- Monitor
- Reassess
- Outreach
- Educate & Train

RF Costs

~ $1M/yr in Minnesota

Persons Served

- ~1000+/yr in Minnesota
- 16+ States
Persons served

• Resource Facilitation:
  – 2011: 13,877
  – 2010: 14,236
  – 2009: 13,633

• All persons served:
  – 2011: 27,062
  – 2010: 23,962
  – 2009: 21,568
More than 10,000 Minnesotans receive hospital care each year due to TBI

TBI Causes

Overall
- Falls *(Most Common)* (unintentional)
- Motor vehicle traffic
- Sports & recreation
- Assaults

By Age group
- **0-4**: Falls/assaults
- **15-29**: Motor vehicle traffic/sports & recreation
- **65+**: Falls (unintentional)
Is income related to brain injury?

Graph showing the TBI rate by median income by zip:
- $0-$24,999: [Graph bar]
- $25k - $49,999: [Graph bar]
- $50k - $74,999: [Graph bar]
- $75k+: [Graph bar]

Legend:
- ED
- Hospital
Malec Model for TBI Prevalence

- Do you use services?
- Do you need services?
- Have you been told you need services?
Thanks!

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- Anna.gaichas@state.mn.us
- Mark.kinde@state.mn.us
- davidk@braininjurymn.org

And the whole Team!
Thank you for your participation

Please take a moment to complete our short evaluation

https://www.surveymonkey.com/s/tbi_cop_101513

Questions or Comments? Contact:

Rhunt@edc.org
617-618-2178