Injury Hospitalizations and Socio- Economic Status

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Canadian Institute for Health Information
June 14, 2010
Why Injury?

- Injury is a common cause of hospitalization and a leading cause of death and disability around the world
  - Each year, injuries account for nearly one in 10 deaths worldwide and for ~ 12% of the world’s burden of disease
  - Canada, 2005 ~ 14,500 deaths (6.4% of all deaths) were caused by injury
  - Canada, 2004 – Injury cost $19.8 billion (> $600 /person)

- Injury is also considered one of the most preventable of major health problems
  - Preventive strategies such as educational programs, legislation, regulations and enforcements imposing injury-evading behaviors, have proven effective
Why Socio-Economic Context?

- Social stratification and income distribution have an impact on population health and safety.

- Injury burden is not evenly distributed among all population groups: evidence strongly indicates that people with low socio-economic status and people who live in less affluent areas die more often by injury than do people who live in more affluent areas.

- Understanding injuries in their socio-economic context could help to focus on areas where interventions are more needed.
Injury Hospitalizations and Socio-Economic Status

- **Analysis:**
  - Examine the relationship between injury hospitalizations and SES in Canada
  - Encourage jurisdictions to examine injury disparities at the local level

- **Socio-Economic Status:**
  - Neighbourhood income quintile - used as a measure of SES
  - Small geographic areas divided into 5 ~ equal population groups
  - Quintile 1 – least affluent, Quintile 5 - most affluent

- **Injury Hospitalizations:**
  - acute care hospitalizations due to injury resulting from the transfer of energy (age-standardized rates)
  - excluded poisoning and other non-traumatic injuries
Injury Hospitalizations in Canada, 2008-2009

- ~ **205,000** injury hospitalizations
- **Classification:**
  - 94% Unintentional injuries
  - 5.6% Intentional injuries
  - 0.4% Undetermined

<table>
<thead>
<tr>
<th>Overall</th>
<th>Unintentional Injury</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Canada Rate:</strong></td>
<td><strong>Canada Rate:</strong></td>
</tr>
<tr>
<td>534/100,000</td>
<td>495/100,000</td>
</tr>
<tr>
<td>Males:608/100,000</td>
<td>Males:549/100,000</td>
</tr>
<tr>
<td>Females:445/100,000</td>
<td>Females:428/100,000</td>
</tr>
</tbody>
</table>
Injury Hospitalizations in Canada by Neighbourhood Income Quintile, 2008-2009

Disparity Rate Ratio: 1.3
Potential Rate Reduction: 8%
Potential Hospitalizations Preventable: ~21,000

Sources
National Trauma Registry Minimum Data Set, Canadian Institute for Health Information; Fichier des hospitalisations MED-ÉCHO, ministère de la Santé et des Services sociaux du Québec; 2006 Census, Statistics Canada.
Unintentional Injuries: Hospitalization Rates by Neighbourhood Income Quintile and Sex, Canada, 2008-2009

Sources
National Trauma Registry Minimum Data Set, Canadian Institute for Health Information; Fichier des hospitalisations MED-ÉCHO, ministère de la Santé et des Services sociaux du Québec; 2006 Census, Statistics Canada.
Unintentional Injuries:
Hospitalization Rates by Mechanism of Injury and Neighbourhood Income Quintile, Canada, 2008–2009

<table>
<thead>
<tr>
<th>Mechanism of Injury</th>
<th>Quintile 1 (Least Affluent)</th>
<th>Quintile 2</th>
<th>Quintile 3</th>
<th>Quintile 4</th>
<th>Quintile 5 (Most Affluent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall</td>
<td>339 (335–343)</td>
<td>300 (296–304)</td>
<td>299 (295–303)</td>
<td>287 (283–291)</td>
<td>283 (280–287)</td>
</tr>
<tr>
<td>Motor Vehicle Traffic</td>
<td>60 (58–62)</td>
<td>54 (53–56)</td>
<td>54 (52–56)</td>
<td>51 (49–53)</td>
<td>47 (45–48)</td>
</tr>
<tr>
<td>Cutting/Piercing</td>
<td>12 (11–13)</td>
<td>10 (9–11)</td>
<td>10 (9–10)</td>
<td>9 (8–9)</td>
<td>7 (6–8)</td>
</tr>
</tbody>
</table>

Sources
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Unintentional Injuries:
Hospitalization Rates by Mechanism of Injury and Neighbourhood Income Quintile, Canada, 2008–2009

Sources
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Taking health information further
À l'avant-garde de l'information sur la santé
Unintentional Falls:
Hospitalization Rates by Age and Neighbourhood Income Quintile, Canada, 2008–2009

Sources
National Trauma Registry Minimum Data Set, Canadian Institute for Health Information; Fichier des hospitalisations MED-ÉCHO, ministère de la Santé et des Services sociaux du Québec; 2006 Census, Statistics Canada.

Taking health information further
À l'avant-garde de l'information sur la santé
**Motor Vehicle Traffic Injuries:**
Hospitalization Rates by Neighbourhood Income Quintile, Canada, 2008–2009

<table>
<thead>
<tr>
<th>Type of Injury</th>
<th>Age-Standardized Rates per 100,000 Population and 95% Confidence Intervals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Quintile 1 (Least Affluent)</td>
</tr>
<tr>
<td><strong>Occupant of Any Type of Vehicle (Including Driver or Passenger)</strong></td>
<td>38 (37–40)</td>
</tr>
<tr>
<td><strong>Pedestrian Injured in Collision With Vehicle</strong></td>
<td>11 (10–11)</td>
</tr>
<tr>
<td><strong>Motorcycle Rider</strong></td>
<td>6 (6–7)</td>
</tr>
<tr>
<td><strong>Pedal Cyclist Injured in Collision With Vehicle</strong></td>
<td>3 (3–4)</td>
</tr>
<tr>
<td><strong>Unspecified/Other</strong></td>
<td>2 (2–2)</td>
</tr>
<tr>
<td><strong>Total Motor Vehicle Traffic Injuries</strong></td>
<td>60 (58–62)</td>
</tr>
</tbody>
</table>

**Sources**
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Hospitalizations for Intentional Injuries

- Account for ~ 5.6% of all injury hospitalizations in Canada

- **Assault** - most prevalent type of hospitalization for intentional injury:
  - 4.4% of all injury hospitalizations
  - Canada rate: 29/100,000 population
  - Rates in males 4x higher than in females (47 vs. 10/100,000)
  - Rates in least affluent income quintiles 3x higher than those in most affluent areas (56 vs. 18/100,000)

- **Suicide** – second most common type
Assault-Related Injury: Hospitalization Rates by Neighbourhood Income Quintile and Sex, Canada, 2008-2009

Sources
National Trauma Registry Minimum Data Set, Canadian Institute for Health Information; Fichier des hospitalisations MED-ÉCHO, ministère de la Santé et des Services sociaux du Québec; 2006 Census, Statistics Canada.
Concluding Remarks

- Hospitalizations for injuries present a consistent association with socio-economic status: the lower the residential neighbourhood affluence, the higher the rate of hospitalizations for injury.

- Understanding how socio-economic characteristics are related to injury hospitalizations could:
  - Assist policy-makers, legislators, researchers and community partners in identifying areas for improvement.
  - Lead to development of interventions that target at-risk population groups.
  - Provide baseline for assessing improvements over time.
Limitations

- Data limitations
  - Missing income or residential information - 1.6% of all injury hospitalizations were not assigned to a neighbourhood income quintile
  - 2006 Census data includes income information only for non-institutional residents - Residents of long-term care facilities could not be assigned to a neighbourhood income quintile
  - Rural areas – postal codes cover larger geographical areas which convey a less accurate assignment of neighbourhood income quintile
Acknowledgements

- Health Indicators Team, CIHI
- National Trauma Registry Team, CIHI
- Russell Wilkins - Statistics Canada
Thank you!

Questions?

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