Injury indicators: challenges of country-level comparison

Rupert Kisser, EuroSafe

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• Injuries is just one group of illnesses. General public health policies need the bigger picture, e.g. in terms of comparable rates.

• For guiding EU-level action in the field of public health and monitoring the outcome of such actions, and for supporting national strategies: EU-regulation 1338/2008 on public health statistics

• Requested are relevant, valid, reliable indicators on the burden of injury, at reasonable costs
European Core Health indicators (ECHI)

- ECHI project (2010) proposed a short list of 88 indicators (health status, health determinants, health care): relevant and feasible


- Recommended methodology of each indicator: http://www.echim.org/docs/documentation_sheets_2012.pdf
### Recommended information sources for European core injury indicators

<table>
<thead>
<tr>
<th>Indicator (ECHI-No.)</th>
<th>Home leisure, school, sport (29b)</th>
<th>Road traffic injuries (30b)</th>
<th>Injuries in the workplace (31)</th>
<th>Suicide attempts (32)</th>
<th>Injuries due to assault</th>
<th>All injuries</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Deaths</strong></td>
<td>DMDB</td>
<td>CARE DMDB</td>
<td>ESAW HFADB</td>
<td>DMDB</td>
<td>DMDB</td>
<td>DMDB</td>
</tr>
<tr>
<td><strong>Admissions</strong></td>
<td>IDB</td>
<td>IDB HDR</td>
<td>IDB ESAW</td>
<td>IDB*</td>
<td>IDB</td>
<td>IDB</td>
</tr>
<tr>
<td><strong>ED cases only</strong></td>
<td>IDB</td>
<td>IDB</td>
<td>IDB ESAW</td>
<td>IDB*</td>
<td>IDB</td>
<td>IDB</td>
</tr>
<tr>
<td><strong>All hospital cases</strong></td>
<td>IDB</td>
<td>IDB</td>
<td>IDB ESAW</td>
<td>IDB*</td>
<td>IDB</td>
<td>IDB</td>
</tr>
<tr>
<td><strong>Non-hospital cases</strong></td>
<td>EHIS</td>
<td>EHIS</td>
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</tr>
</tbody>
</table>
The IDB Minimum Data Set (IDB-MDS)

• Developed during 2010-2013, based on many previous experiences and models
• IDB-MDS can be recorded without noteworthy additional burden to ED staff and patients
• Can be extracted from existing more comprehensive registers (e.g. ICD-10 XX, NOMESCO, IDB-FDS)
• Collected by 26 European countries during 2012-2014, at varying level of quality
Components of the IDB-MDS

Medical history of patient: Intent, injury mechanism, setting, activity

Diagnosis (type of injury, injured body part, further treatment)

Admin data (age, sex, country of residence)
## IDB-MDS key data elements

<table>
<thead>
<tr>
<th>Intent</th>
<th>Setting</th>
<th>Mechanism</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accidental</td>
<td>Road</td>
<td>Road traffic injury</td>
<td>Paid work</td>
</tr>
<tr>
<td>Deliberate self-Harm</td>
<td>Education</td>
<td>Fall</td>
<td>Sports</td>
</tr>
<tr>
<td></td>
<td>establishment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Assault</td>
<td>Home</td>
<td>Cut/Pierce</td>
<td>Other</td>
</tr>
<tr>
<td>Unknown</td>
<td>Other</td>
<td>Poisoning</td>
<td>Unknown</td>
</tr>
<tr>
<td>Unknown</td>
<td>Unknown</td>
<td>Thermal mechanism</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Other</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Unknown</td>
<td></td>
</tr>
</tbody>
</table>
Working together to make Europe a safer place

26 countries with MDS-data, 22 with estimated incidence rates
Injuries in the EU

- 232,000 deaths
- 5,332,000 hospital admissions
- 32,491,000 emergency departments attendances (only ambulatory care)
## Injuries in the EU (6th edition)

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</tr>
</thead>
<tbody>
<tr>
<td>Deaths</td>
<td>113,861</td>
<td>31,069</td>
<td>4,386</td>
<td>60,017</td>
<td>4,175</td>
<td>232,451</td>
</tr>
<tr>
<td>Admissions</td>
<td>3,539,816</td>
<td>624,868</td>
<td>274,423</td>
<td>200,963</td>
<td>110,529</td>
<td>5,331,962</td>
</tr>
<tr>
<td>ED cases only</td>
<td>21,034,087</td>
<td>2,759,579</td>
<td>2,844,140</td>
<td>194,082</td>
<td>898,210</td>
<td>32,490,500</td>
</tr>
<tr>
<td>All hospital cases</td>
<td>24,573,903</td>
<td>3,384,447</td>
<td>3,118,562</td>
<td>395,045</td>
<td>1,008,739</td>
<td>37,822,462</td>
</tr>
</tbody>
</table>
All injury incidence rate between 32.6 – 116.8 per 1000 (EU average 77.8)

Working together to make Europe a safer place
Home & leisure accident rate (ECHI-29) between 19.6 – 84.1 (EU average 53.7)
Road traffic accident rate between 1.0 – 30.5 (EU average 7.32)
Workplace accident rate between 0.9 – 36.3 (EU average 8.0)

EU ECHI31
National estimate ECHI 31
(Workplace accidents)
Self-harm injury rate between 0.1 – 3.4 (EU average 0.9)
Assault injury rate between 0.5 – 22.7 (EU average 2.3)
Age standardized injury death rates between 21.0 – 109.9 (EU average 43.6)
Environmental influence factors besides morbidity

- Particularities of the health care system, e.g. different accessibility of hospital EDs
- Share of non-residents (tourists, non-resident employees) treated in EDs
- Cultural differences, e.g. regarding willingness to document self-harm or interpersonal violence
Sampling and coding quality

- Legal obligations, e.g. toward home & leisure or accidents
- Biased hospital sample, e.g. toward age-groups, types of injuries, severity
- Completeness of recording: Percentage of „unknown“
- Biased sampling in hospitals, e.g. regarding severity, certain day-time or days of the week, certain departments
- Different understanding of certain terms, e.g. „work“
Inequacies of projection, beside biased HDR or simple errors

Differences in case definition between IDB sample and reference statistic (hospital discharge statistic)

- ICD-10 chapter XIX (type of injury: S00-T98) or XX (external cause: V01-Y98)
- Complications of medical treatment (T80-T88 & T98.3 or Y40-Y84 & Y88)
- Exclusion/inclusion of follow-up treatments
- Suspected/diagnosed injury, diagnosed/treated injury
- Differences in definition of „hospital“: Public/private, primary/tertiary
Conclusions

1. There is room for improvement of estimates (reducing sampling and projection errors)
2. Only the publication of estimates makes issues visible and attackable
3. Collaboration of data providers & central support necessary
4. Reliable, sustained injury surveillance is most important at national level, which bears the main responsibility for injury control
5. National injury surveillance system using a common methodology is actual EU law
Further information

- Eurosafeweb-gate: http://www.eurosafew.eu.com
Questions? Comments?

Rupert Kisser
rupertkisser@yahoo.de