Road traffic accidents statistics

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European Commission
The “-50%” objective

- A political & global commitment
- 43% achieved (2001 – 2010)
Victims and accidents 2001 - 2010

- 43% on fatalities
- 36% on seriously injured
- 26% on injured
- 24% on accidents
EU fatalities

Source: - CARE (EU road accidents database)
Fatality rates 2014 (deaths/million inhabitants)
A target for reduced number of road deaths

- First target 2001-2010: almost reached!
- Second target 2011-2020
- Long-term: Vision Zero
- Strategic, aspirational, not legally binding
- International best practice: transparency, benchmarking and comparisons, mobilising actions
A strategy to reduce number of serious injuries

- Serious injuries decrease less than fatalities; higher number of injured than killed on the roads
- A common EU definition: MAIS+3
- Data collection – how?
Evaluation at half-time: will the target be reached?

- Framework and target remain relevant; EU has contributed to outcomes
- 7.8% annual fatality reduction now needed: challenging but not impossible
- Actions needed on EU and Member State level; more attention to vulnerable road users
- Fatality target only addresses part of road safety problem
Common definition by police

Seriously injured: no based on medical diagnosis at least 24 hours at the hospital
Big differences between countries

Ratio: Seriously injured as reported / Fatalities
New Common definition

Seriously injured: based on medical diagnosis

MAIS3+
AIS - Abbreviated Injury Scaling

Abbreviated Injury Score © – copyright by AAAM

AAAM - ASSOCIATION FOR THE ADVANCEMENT OF AUTOMOTIVE MEDICINE

Dedicated to limiting injuries from motor vehicle crashes
What is AIS?

Severity assignment assumes single injury
Consensus based

Multiple dimensions of severity
Threat to life
Tissue injury
Cost
Length of stay
Temporary or permanent impairment/disability
What is AIS?

Internationally accepted scale for injury severity scoring
Based on anatomic disruption
Internationally accepted standard for describing severity of injury

Abbreviates description of injury severity to a number

1 = minor
2 = moderate
3 = serious
4 = severe
5 = critical
6 = maximal
(9 = unknown)
Description of the AIS and MAIS

The Abbreviated Injury Scale (AIS) severity score is on an ordinal scale of 1-6, with one indicating a minor injury and six being maximal (currently untreatable). An AIS code of 9 is used to describe injuries where not enough information is available for more detailed coding. The maximum AIS (MAIS) indicates the most severe injury that a patient sustains.
AIS codification

Direct codification on hospital registry from experts using AIS dictionary

Conversion from ICD codes to AIS using mapping table

The decision remains to each country
Contract with AAAM
(Association for the Advancement of Automotive Medicine)

AAAM has developed and is the owner and licensee of injury coding products including the AIS2005 update-2008 code and the AIS coding manual/DVD. All individuals using the AAAM injury coding products in this project agree that they will use the given product only for use in this project and not for their own or institution’s purposes unless they have a separate license agreement with AAAM.
Contract with AAAM

Two different mappings for International Classification of Diseases (ICD) versions 9 and 10 into the code 3+, <3, or indeterminable.
## ICD9 Mapping

### 2.500 records

<table>
<thead>
<tr>
<th>CODE</th>
<th>DESCRIPTION</th>
<th>1 = AIS 3, 4, 5, 6</th>
<th>0 = AIS 1, 2</th>
<th>9 = cannot determine</th>
</tr>
</thead>
<tbody>
<tr>
<td>800</td>
<td>Fracture Of Vault Of Skull</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>800.0</td>
<td>Closed Fracture Of Vault Of Skull Without Mention Of Intracranial Injury</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>800.00</td>
<td>Closed fracture of vault of skull without mention of intracranial injury;</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>unspecified state of consciousness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>800.01</td>
<td>Closed fracture of vault of skull without mention of intracranial injury;</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>with no loss of consciousness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>800.02</td>
<td>Closed fracture of vault of skull without mention of intracranial injury;</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>with brief [less than one hour] loss of consciousness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>800.03</td>
<td>Closed fracture of vault of skull without mention of intracranial injury;</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>with moderate [1-24 hours] loss of consciousness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>800.04</td>
<td>Closed fracture of vault of skull without mention of intracranial injury;</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>with prolonged [more than 24 hours] loss of consciousness and return to</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>pre-existing conscious level</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
# ICD10 Mapping

## 16.500 records

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
<th>Code Description</th>
<th>1 = AIS 3, 4, 5, 6</th>
<th>0 = AIS 1,2</th>
<th>9 = cannot determine</th>
</tr>
</thead>
<tbody>
<tr>
<td>S00.00</td>
<td>Superficial injury of head</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S00.0</td>
<td>Superficial injury of scalp</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S00.00</td>
<td>Unspecified superficial injury of scalp</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S00.01</td>
<td>Abrasion of scalp</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S00.02</td>
<td>Blister (nonthermal) of scalp</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S00.03</td>
<td>Contusion of scalp</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S00.04</td>
<td>External constriction of part of scalp</td>
<td>9</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
How to use IAS mapping

Hospital discharges datafile

- National
- Representative sample
Sample of countries

Ratio: MAIS+3/ Fatalities

7.4

BE 4
ES 3
FR 10
IT 3
NL 11
AT 3
SE 4
UK 18
How to use IAS mapping

Hospital discharges datafile

- National
- Representative sample
How to use IAS mapping

Traffic data

- Subset of traffic accidents
  By specific code or payment code (insurance ...)
- Only admissions from Emergency room
  To avoid double counting
How to use IAS mapping

Extract ICD codes

- Convert to IAS
- Calculate MAIS by person
How to use IAS mapping

Calculate totals

- MAIS < 3
- MAIS 3 or +
Research

H2020 Safetycube project
New target > new focus
New target > new focus
From passenger cars to VRU

Fatalities on rural areas
- 33% car + taxi
- 60% VRU
- 7% other

Serious on urban areas
- 70% car + taxi
- 26% VRU
- 4% other
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