SafetyCube

Physical and psychological consequences of serious road traffic injuries

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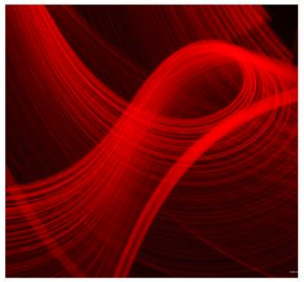
SafetyCube – Serious road injuries

Serious injury = MAIS3+

- Estimation of the number of serious road injuries
- **Health impacts of serious road injuries**
- Cost related to serious road injuries
- Risk factors associated with serious road injuries



Practical guidelines for the registration and monitoring of serious traffic injuries

Deliverable 7.1

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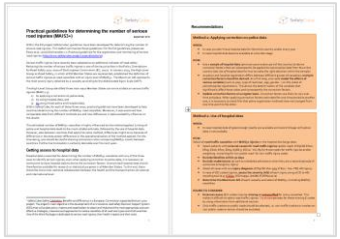

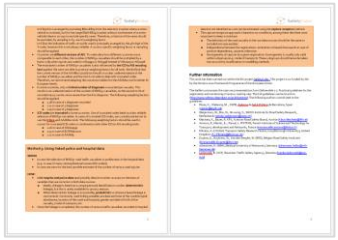

Physical and psychological consequences of serious road traffic injuries

Deliverable 7.2

Costs related to serious road injuries

Deliverable 7.3

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Physical and psychological consequences of serious road traffic injuries

Physical and psychological consequences of serious road traffic injuries

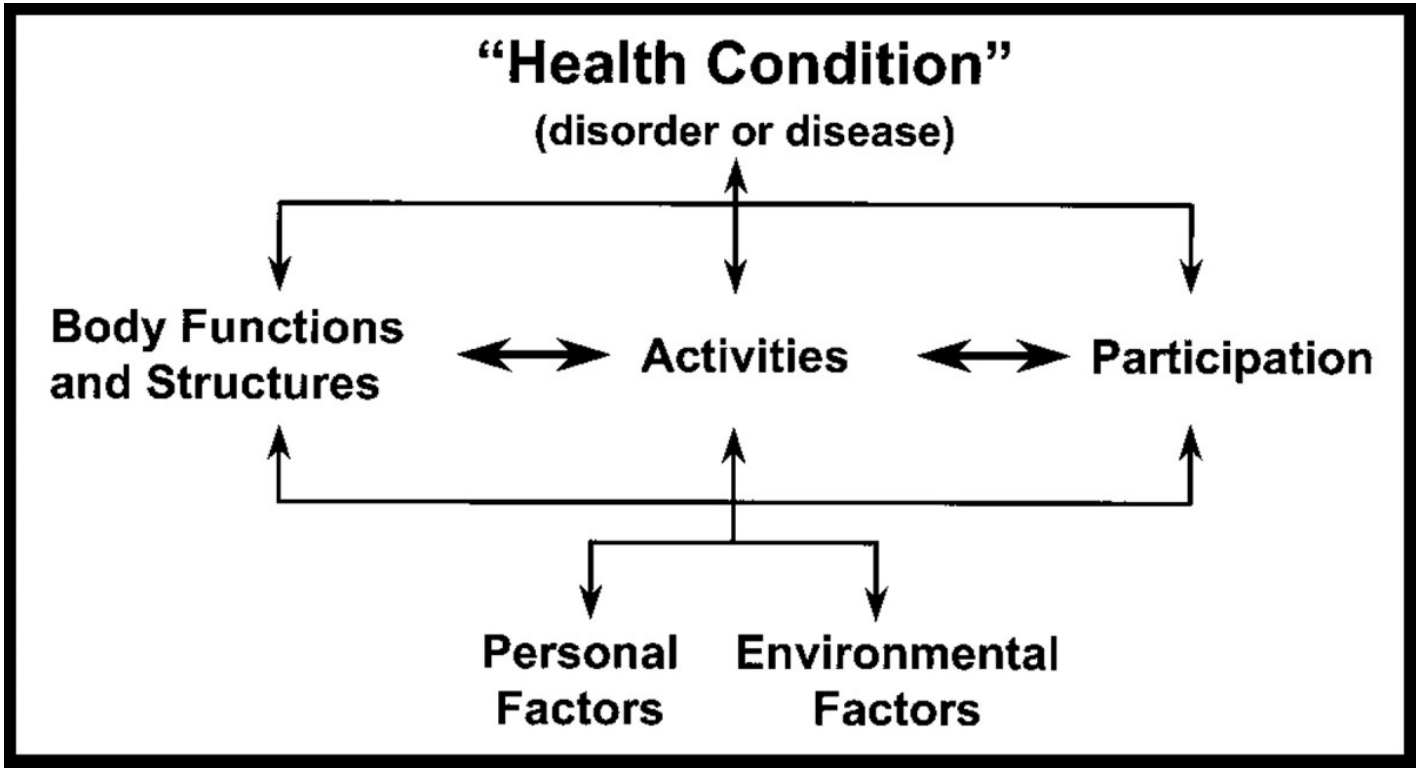
Deliverable 7.2

Introduction & method

- Impacts of (serious) road injuries on lives of casualties
  - *Literature review*
  - *Analysis of additional studies and data, e.g. ESPARR cohort study*

- Burden of (serious) road injuries to society → YLD
  - *Literature review*
  - *Calculation of YLD for a number of countries*

Impacts for individual casualties



ICF framework (*http://www.who.int/classifications/icf/icfbeginnersguide.pdf?ua=1*)

Results (1)

- Non-fatal road injuries can have a major impact on lives of casualties (and their families):
  - *Pain, fatigue, mobility problems, sick leaves*
  - *Psychological consequences, e.g. PTSD*
  - *Socio-economic consequences, e.g. financial problems*

- ESPARR cohort study: 75% of MAIS3+ casualties report not to be fully recovered three years post-crash
- Reported prevalance of disabilities varies widely between studies (11% - 80%), depending on for example time period, types of disabilities and casualties taken into account

Results (2)

- Consequences vary in time and between casualties:
  - *Age, gender, socio-economic status, comorbidity*
  - *Treatment in the hospital, compensation process*
  - *Injury (severity)*

- Injury (severity):
  - *In general more severe injuries have a higher impact, but also minor injuries can have high impacts*

Burden of injury – concept

- Health burden: Disability Adjusted Life years (DALYs)
  - *YLL: years of life lost*
  - *YLD: Years lived with Disability*

- YLDs are calculated using INTEGRIS method, (Haagsma et al, 2012)
  - *Patients are assigned to (39) EUROCOST injury groups*
  - *Weights and proportions of lifelong disability are available for each EUROCOST group*

INTEGRIS method

Injury group	DW acute		% lifelong		DW lifelong
	ED	HDR	ED	HDR	
Concussion	0.015	0.100	4%	21%	0.151
Other skull-brain injury	0.090	0.241	13%	23%	0.323
Open wound on head	0.013	0.209	-	-	-

DWs and % lifelong based on Dutch study on functional outcomes of injury patients:

- EQ-5D
- 2.5, 5, 9, 24 months
- 8500 injury patients, > 15 years, all injuries!

Application of INTEGRIS

- Applied earlier in Belgium (Dhondt et al, 2013) and The Netherlands (Polinder et al, 2015, Weijermars et al, 2016)

1. Assign casualty to EUROCOST group
2. Calculate YLD of casualty: DWa + Pl*DWl*RemLife
3. Sum YLDs of individual casualties

- YLD calculated for: Austria, Belgium, England, The Netherlands, Rhone region (France) and Spain

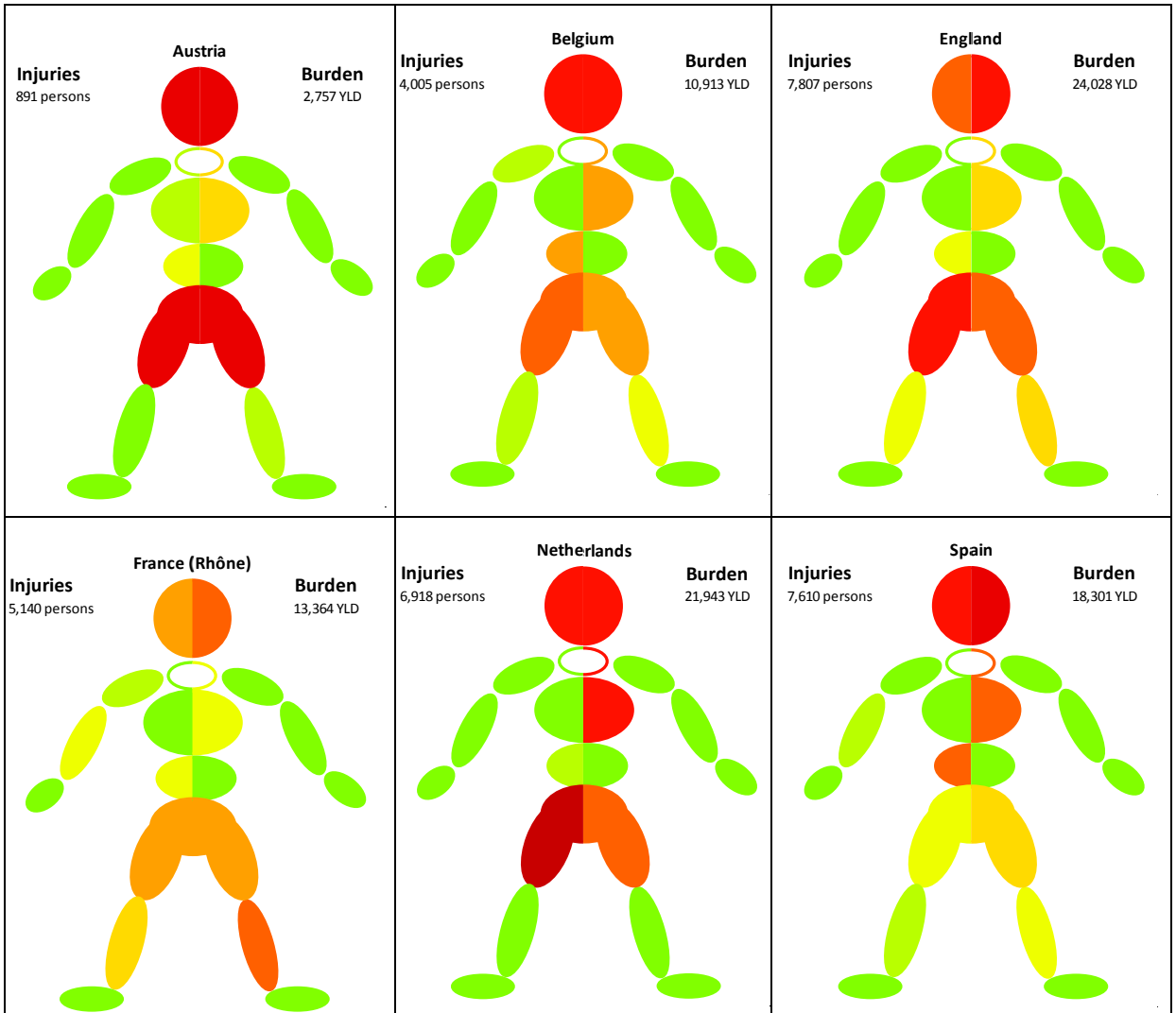
Burden of injury – results (1)

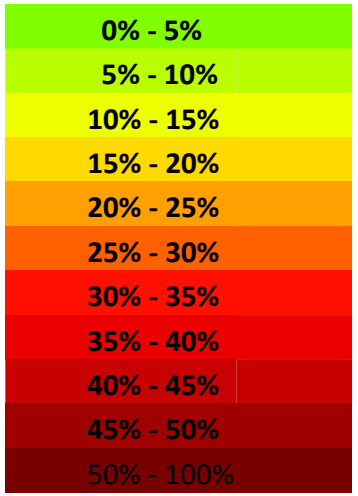
- Average burden per casualty: 2.8 YLD (2.4 – 3.2)
- 19% (Spain) to 33% (Netherlands) of MAIS3+ casualties encounter lifelong disabilities
- 90% of YLD due to lifelong disabilities

Burden of injury – results (2)

- Average burden per casualty differs by:
  - *Injury type: spinal cord injuries*
  - *Transport modes: cars highest, cyclists lowest, but results differ between countries*
  - *Gender: men*
  - *Age: decreases with age*

Burden of injury – results (3)





Burden of injury – results (4)

- Burden of injury differs between countries due to
  - *Differences in age distribution of casualties*
  - *Differences in distribution over EUROCOST injury groups*

→ Be careful with translating results to other countries/ Europe in general

- MAIS3+ casualties are responsible for less than half of the total burden of non-fatal road traffic injury

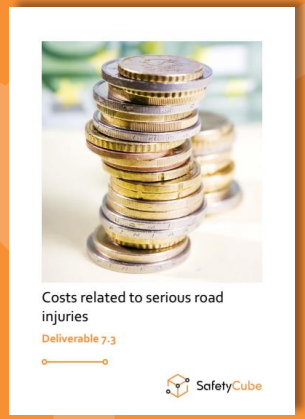
Costs related to serious road injuries

Method & Results

- Survey among 32 EU countries
  - *Joint effort between SafetyCube and InDeV*

- Costs per serious road injury: €28,000 - €975,000
- 14% - 77% of total costs of road crashes
- 0.04% - 2.7% of GDP

Main lessons learned from SafetyCube



Main lessons

1. Be careful when comparing MAIS3+ estimates from different countries
2. Good quality hospital data is inevitable for the estimation of the number of MAIS3+ casualties
3. As AIS3+ injuries can have major impacts on casualties' lives, pose a burden to society and result in considerable costs, it is important to reduce the number of MAIS3+ casualties
4. From a burden of injury perspective, less serious injuries are as relevant as serious injuries

Thank you!

http://www.safetycube-project.eu/

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