Measuring serious injuries on European roads

Robert Bauer, KFV - Austrian Road Safety Board

EUPHA 2017, Stockholm | 2.11.2017 |

Cube

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Area of expertise

Kuratorium für Verkehrssicherheit > Area of expertise

The KFV has been at the heart of accident prevention since 1959 and is Austria's leading independent non-profit association regarding the promotion of safety and prevention of accidents. We facilitate research and offer advice and information in the following areas of accident prevention:

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The KFV provides professional expertise of the highest scientific level and advises government agencies and private bodies. It plays a key role in various regional and national networks and has established itself as a renowned and innovative project partner.

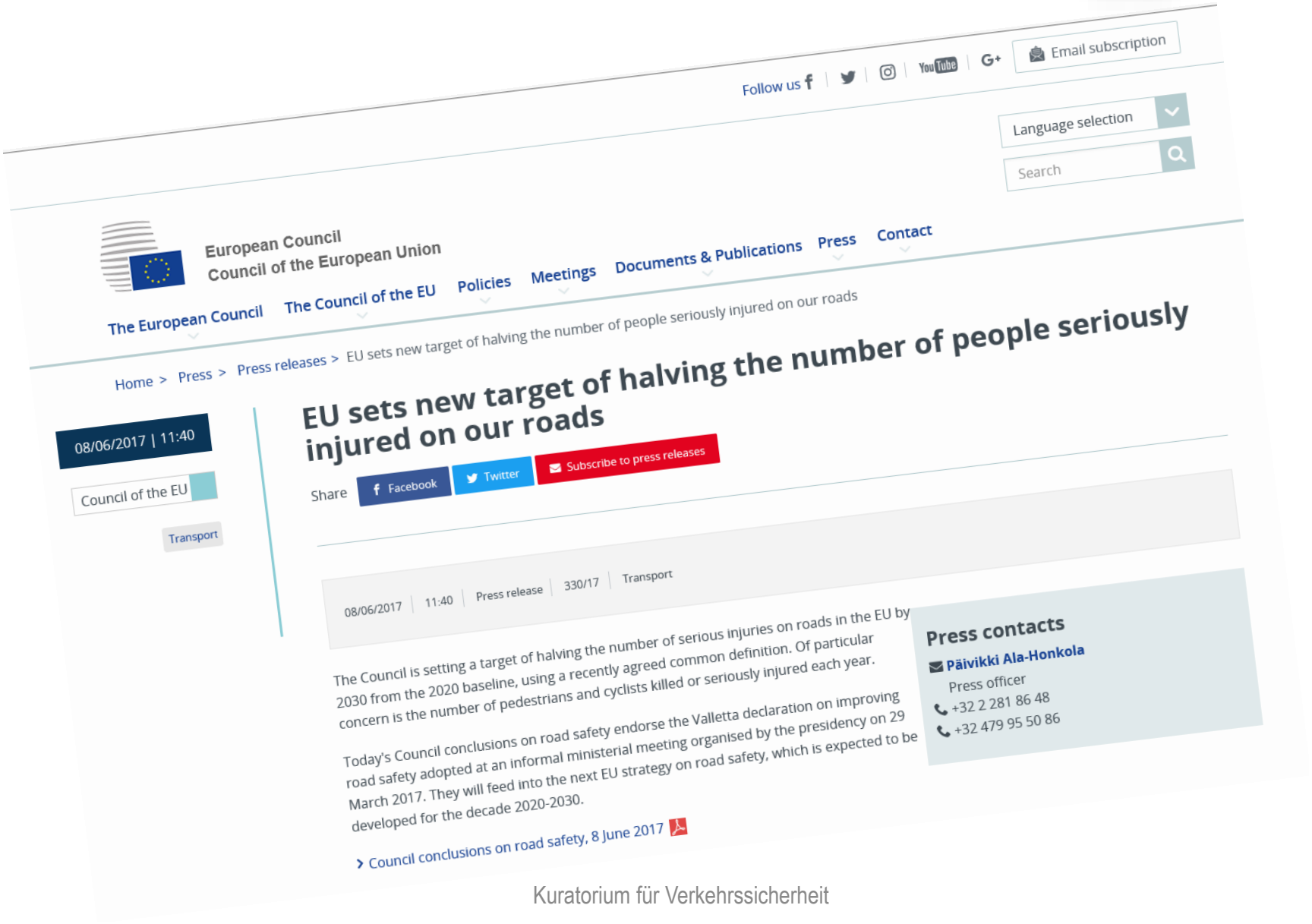
The KFV takes account of the latest technological developments and social changes. Based on the findings derived from our research, new strategies and measures are adopted. The KFV works tirelessly at reducing accidents and improving the lives of people living in Austria.

ÖSTERREICH

Minister will bei Verkehrsunfällen Schwerverletzte zählen

By apa • September 13, 2016

479 Menschen sind in Österreich im Jahr 2015 auf Österreichs Straßen gestorben. Wie viele Personen zwar überlebten, aber bei Unfällen schwer verletzt wurden, ist unklar. Denn bisher gibt es hierzulande keine derartige Auswertung. Verkehrsminister Jörg Leichtfried (SPÖ) plant nun ein Straßenverkehrsunfallstatistikgesetz. Dieses soll "noch heuer beschlussreif sein", sagte er bei einer Pressereise.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The Council is setting a target of halving the number of serious injuries on roads in the EU by 2030 from the 2020 baseline, using a recently agreed common definition. Of particular concern is the number of pedestrians and cyclists killed or seriously injured each year.
Today's Council conclusions on road safety endorse the Valletta declaration on improving road safety adopted at an informal ministerial meeting organised by the presidency on 29 March 2017. They will feed into the next EU strategy on road safety, which is expected to be developed for the decade 2020-2030.
Council conclusions on road safety, 8 June 2017
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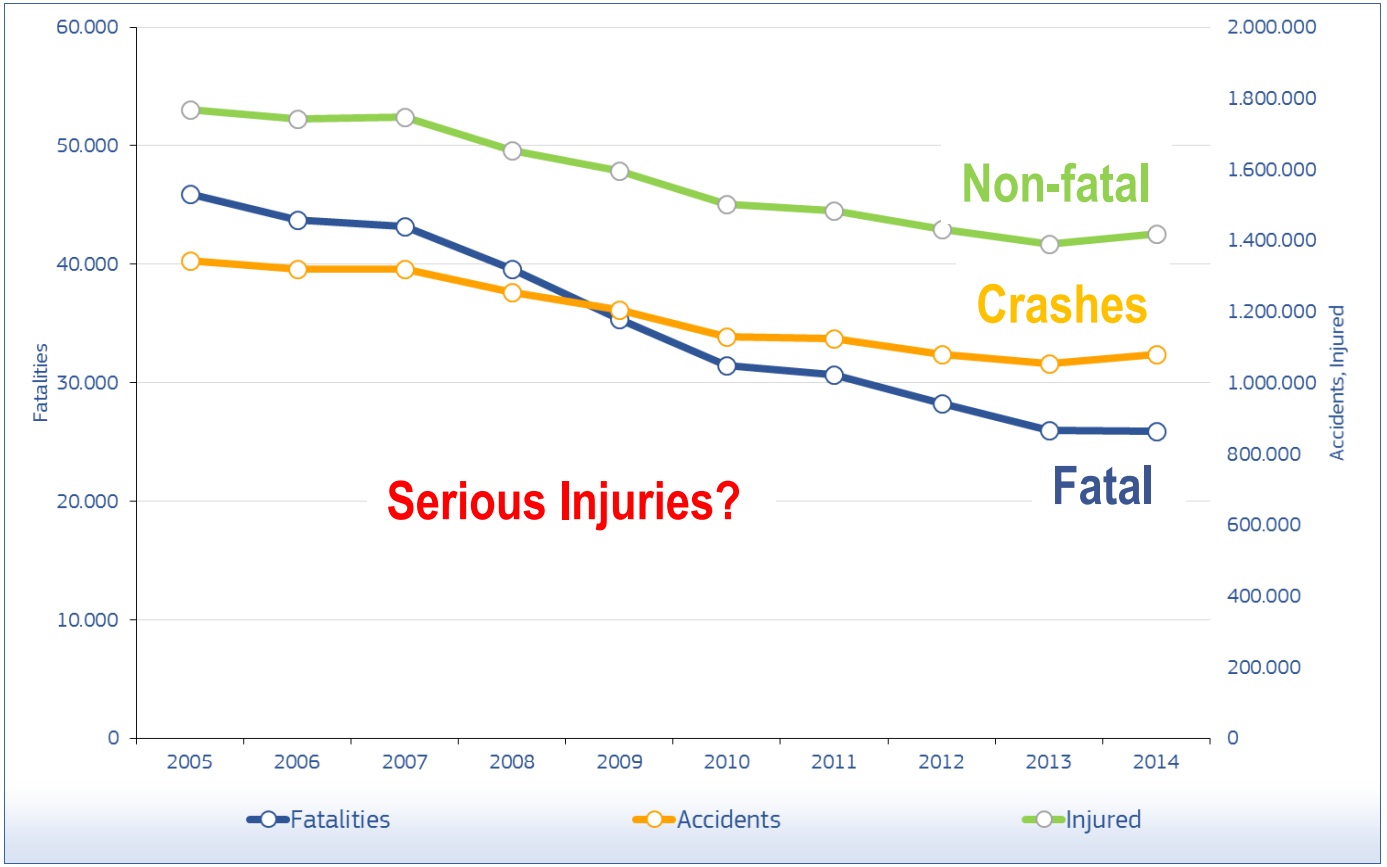
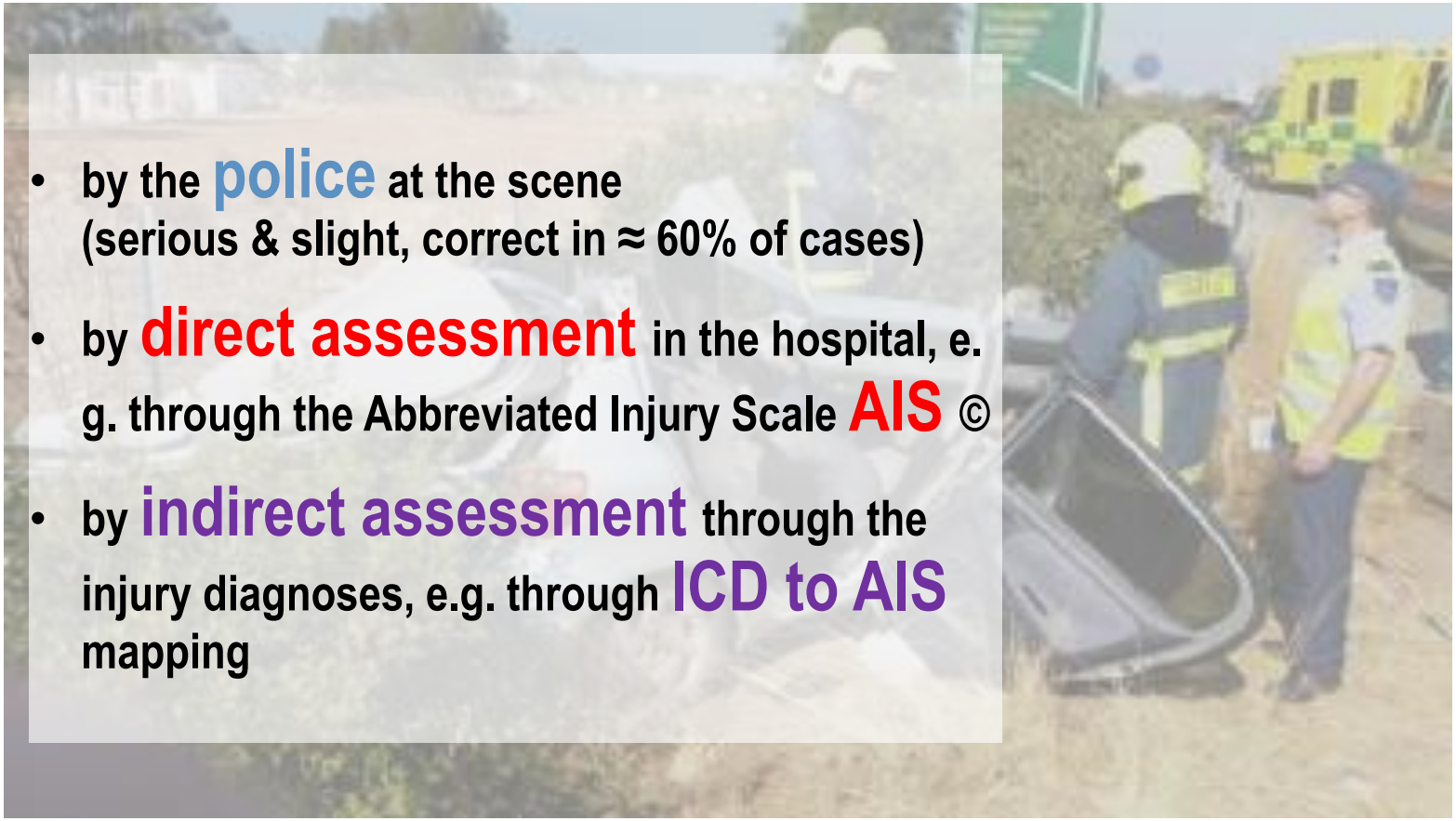
Annual number of road traffic crashes, non-fatal and fatal injuries in the EU



Source: CARE (EU road accidents database) or national publications. Last update: May 2016

How to assess injury severity?



- by the police at the scene (serious & slight, correct in ≈ 60% of cases)
- by direct assessment in the hospital, e. g. through the Abbreviated Injury Scale AIS ©
- by indirect assessment through the injury diagnoses, e.g. through ICD to AIS mapping

DG Move focus on serious injuries

- Reducing the number of serious traffic injuries is one of the key priorities in the road safety programme 2011-2020 of the European Commission (EC, 2010)
- In January 2013, the High Level Group on Road Safety, representing all EU Member States, established the definition of serious traffic injuries as road casualties with an injury level of MAIS ≥ 3

What is MAIS3+?

AIS: Abbreviated Injury Scale **123456.7**

- 1 Body Region
- 2 Type of Anatomical Structure
- 3/4 Specific Anatomical Structure
- 5/6 Level
- 7 Severity Score

"7" Severity Score (AIS ©)

- 1 Minor
- 2 Moderate
- 3 Serious
- 4 Severe
- 5 Critical
- 6 Maximum

Severity Score Examples

1 superficial laceration

2 fractured sternum

3 open fracture of humerus

4 perforated trachea

5 ruptured liver with tissue loss

6 total severance of aorta

MAIS

- Maximum AIS for an occupant or body region; MAIS>2 = **MAIS3+**

© AAAM Association for the Advancement of Automotive Medicine

DG Move focus on serious injuries
Options for reporting

- The High Level Group identified three main ways Member States can collect data on serious traffic injuries (MAIS ≥ 3):
  1. by applying a correction on police data,
  2. by using hospital data and
  3. by using linked police and hospital data.
- Currently, EU member states use different procedures to determine the number of MAIS ≥ 3 traffic injuries, dependent on the available data.

What do we know?

→135,000 people seriously injured on Europe's roads in 2014 – approximated number!

→ the majority of those were vulnerable road users, pedestrians, cyclists and drivers of powered two-wheelers

→ while the number of deaths on European roads has fallen dramatically over the last decade, serious injuries seem to have declined at a much slower rate

→ Official targets to reduce serious injuries set in 2017

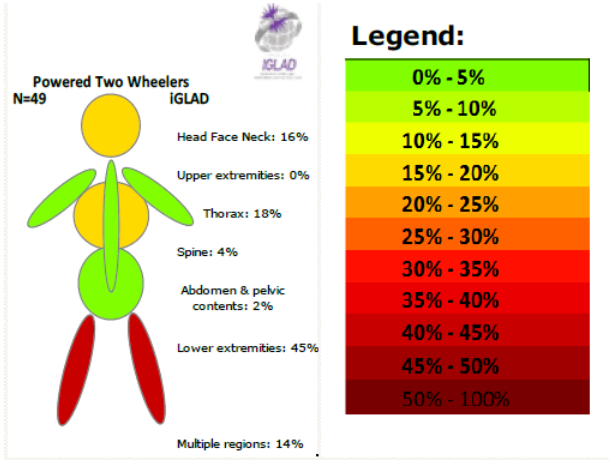
Source: *www.tispol.org* Published Sat, 30/04/2016 - 09:59

What do we expect?

→ The MAIS3+ new methodology should yield more reliable and comparable data than the old reporting system

→ In the longer term, the Commission will be able to monitor and benchmark Member State performance

→ Also, the new data (*) shows that fatal crashes and crashes resulting in serious injury have slightly different characteristics. This will help to see where more work is needed, such as on safety for vulnerable road users or safety in urban areas



* https://ec.europa.eu/transport/road_safety/sites/roadsafety/files/injuries_study_2016.pdf

SafetyCube survey results
Current practice in the EU

- Only 17 of the 26: MAIS ≥ 3 estimates to DG-MOVE

- Difficulties to get access to hospital discharge data

- 9 hospital data, 2 corrections to police data, and 4 record linkage of police and hospital data. France and Germany apply a combination

- The ratio of MAIS ≥ 3 casualties / fatalities differs considerably between these countries, from **0.6** MAIS ≥ 3 in Poland to **13.2** MAIS ≥ 3 in the Netherlands

Source: State of data collection on serious traffic injuries across Europe (June 2016). http://www.safetycube-project.eu

SafetyCube Conclusions

- A common definition is a very good first step
- Hospital data of good quality is essential
- All three methods for estimating the number of serious traffic injuries have both advantages and limitations
- Which method(s) to choose will depend on the context and constraints of each individual country
- Further harmonisation of methods over the next years is desirable in order to ensure that the estimated numbers of MAIS ≥ 3 road traffic injuries are comparable across Europe

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