SafetyCube

MAIS3+ assessment:
Current practices around Europe

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Data collection (EU & EFTA)

- Overview of data and procedures that are applied across EU Member States

- Building on a survey by

The SafetyCube data collection sheet

Questions in detail 1

Responsibilities in the police & health data sector

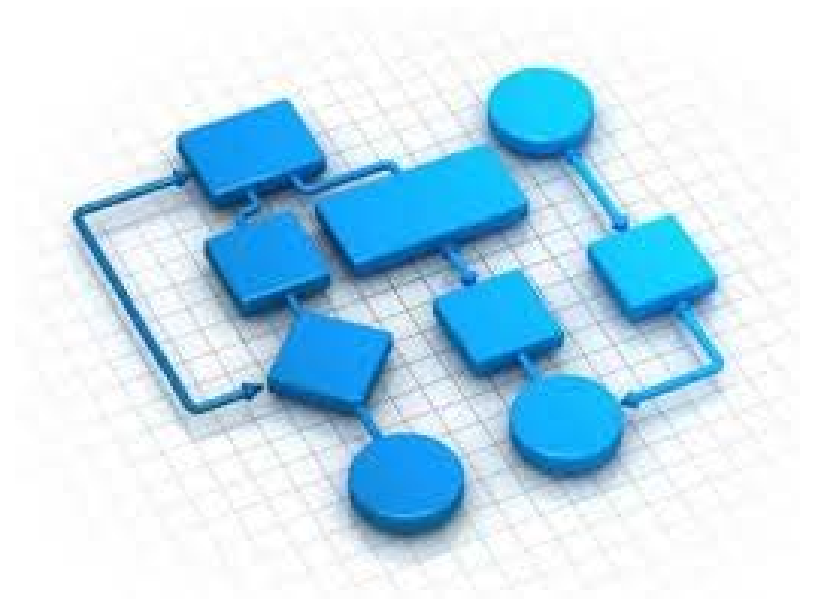- Collection
- Analysis
- Publication

Questions in detail 2

MAIS3+ methodology

- Which of the method proposed by EC is in use?
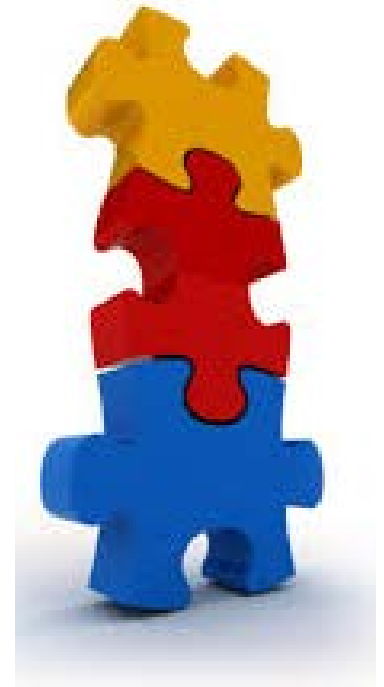
- Changes in methodology planned?

Questions in detail 3

Information of health/hospital data

- Data sources
- Inclusion criteria (e.g. outpatients, day care patients, re-admissions, scheduled admissions, fatalities within 30 days)
- ICD version
- Nr. of diagnoses & nr. of digits
- Conversion algorithm
- Proportion of failed transformations (ICD > MAIS)
- ICD injury codes
- Codes on external causes
- …

Questions in detail 4

Details on EC methods 1, 2, 3

- Correction coefficient on police data
  - *Estimation & application of coefficient*
  - *Available by age, gender, road user type, …*
- Use of hospital data alone
  - *Description of method*
  - *Representative?*
- Link police / hospital data
  - *Which databases?*
  - *Method?*
  - *Assessment of underreporting?*

Questions in detail 5

Crash & Serious injury figures

- Nr. of fatalities
- (serious) injuries
  - *Police*
  - *MAIS3+*
- Gender?
- Age groups?
- Different MAIS levels available?

Responses

- From ~~23~~ **26** countries
- Missing: ~~IE~~, ~~LV~~, LT, MT, RO, SK, ~~SE~~, IS

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Care Experts

MAIS3+ data availability: 15!

	MAIS3+ estimations currently or soon available?	For which years are MAIS3+ data available?
Austria	**yes** (2016)	2014
Belgium	**yes** (2015)	2011-2014
Bulgaria	no	-
Croatia	no	-
Cyprus	no	-
Czech Republic*	yes	2014
Denmark	no	-
Estonia	no	-
Finland	**yes** (2015)	2010 & 2011, 2014
France	**yes** (preliminary figures)	2006-2014
Germany	**yes** (2015)	2014
Greece	no	-
Hungary	no	-
Ireland*	**yes**	2014
Italy	**yes** (2015)	2012-2014
Latvia	no	-
Lithuania	no	-
Luxembourg	no	-
Malta	no	-
Netherlands	**yes** (2015)	1993-2014
Poland	**yes** (2015)	2013
Portugal	**yes** (2015)	2010-2014
Romania	no	-
Slovakia	no	-
Slovenia	**yes** (2015)	2012-2014
Spain	**yes** (2016)	2000-2014
Sweden*	**yes**	2014
United Kingdom	**yes** (2016)	1999-2011 (soon up to 2015)
Iceland	no	-
Norway	no	-
Switzerland	**yes** (2016)	2011-2014

Methods and changes …

	1 Correction coefficient on police data	2 Use of hospital data alone	3 Using linked / matched police and hospital data	Other Methods	Changes planned?
Austria	(2015)	(from 2016)			Austria seeks to implement direct linking (mid-term)
Belgium	(from 2012)	(2008-2011)			Short term: refine method 1; long term: direct linking
Bulgaria	-	-	-	-	-
Croatia	-	-	-	-	-
Cyprus	-	-	-	-	-
Czech Republic				Direct AIS coding (source: FERSI Report)?	
Denmark	-	-	-	-	-
Estonia	-	-	-	-	-
Finland			x		no
France				A model is constructed on linked casualties between the Rhône police data and the Rhône road trauma registry >> generalisation to France	Mid-term: extend the Rhône road trauma registry to a wider geographical coverage
Germany				In-depth accident data (GIDAS) and hospital data of very seriously injured RTC victims (TraumaRegister DGU®) used to estimate the number of serious injuries >> generalisation to Germany	Ongoing optimisation
Greece	-	-	-	-	-
Hungary	-	-	-	-	-
Ireland		x			Mid-term: statistically match police and hospital data to estimate the level of underreporting (Source: FERSI Report).
Italy		x			no
Latvia	-	-	-	-	-
Lithuania	-	-	-	-	-
Luxembourg	-	-	-	-	-
Malta	-	-	-	-	-
Netherlands			x		change from ICD9/AIS1990 to ICD10/AIS2008
Poland		x			improvement of reliability of methodology sought
Portugal		x			mid/long term: linking police and hospital data
Romania	-	-	-	-	-
Slovakia	-	-	-	-	-
Slovenia			x		no
Spain		x			no
Sweden		x			
United Kingdom	UK (derived from hospital data from England)	England (Hospital data not available for rest of UK)			Work in progress. methodology isn't finalised
Iceland	-	-	-	-	-
pNorway	-	-	-	-	-

Details in hospital data …

- *Outpatients*
- *Day care patients*
- *Re-admissions*
- *Scheduled admissions*
- *ICD version*
- *ICD nr. of digits*
- *Nr. of diagnoses*
- *Conv. algorithm*
- *Failed transform.*

	Hospital data include …					ICD version used	How many ICD digits are used to derive AIS?	Number of diagnoses available	Conversion algorithm	Share of failed transformations ICD > MAIS
	Outpatients (non-hospitalised patients)	Day care patients (no overnight stay)	Re-admissions	Scheduled (non-urgent) admissions	Fatalities within 30 days					
Austria	no	yes	no	yes	no	ICD10	4	1	AAAM	19%
Belgium	no	no	no	yes	yes	ICD9-CM	5	1	ICDPIC	0.4%
Bulgaria	-	-	-	-	-	-	-	-	-	-
Croatia	-	-	-	-	-	-	-	-	-	-
Cyprus	-	-	-	-	-	-	-	-	-	-
Czech Republic	-	-	-	-	-	-	-	-	-	-
Denmark	yes	yes	y/n	yes	yes	ICD10	-	-	AAAM	-
Estonia	-	-	-	-	-	-	-	-	-	-
Finland	yes	yes	yes.	yes	no	ICD-10	5	All	AAAM	unknown
France	yes	yes	Yes	?	no	Direct coding to AIS	n/a	n/a	n/a	n/a
Germany	no	no	No	no	no	Direct coding to AIS	n/a	n/a	n/a	n/a
Greece	-	-	-	-	-	ICD9	-	-	-	-
Hungary	no	no	Yes	yes	yes	ICD10	5	?	-	-
Ireland	-	-	-	-	-	-	-	-	-	-
Italy	no	no	No	no	no	ICD-9-CM (2002)	5	1	AAAM	8%
Latvia	-	-	-	-	-	-	-	-	-	-
Lithuania	-	-	-	-	-	-	-	-	-	-
Luxembourg	-	-	-	-	-	-	-	-	-	-
Malta	-	-	-	-	-	-	-	-	-	-
Netherlands	no	yes	no	yes	no	ICD10	5	10	ICDmap90	~0%
Poland	no	yes	yes	Yes	no	ICD10	4	1	AAAM	21%
Portugal	no	no	yes	no	no	ICD9-CM	4	All	AAAM	0%?
Romania	-	-	-	-	-	-	-	-	-	-
Slovakia	-	-	-	-	-	-	-	-	-	-
Slovenia	no	yes	no	yes	yes.	ICD10	4	20	AAAM	unknown
Spain	no	no	no	no	no.	ICD9-CM	5	14	AAAM	1.6%
Sweden	-	-	-	-	-	-	-	-	-	-
UK	no	yes	no	no	no	ICD10	5	All	AAAM	6%
Iceland	-	-	-	-	-	-	-	-	-	-
Norway	-	-	-	-	-	-	-	-	-	-
Switzerland	no	no	no	no	no	ICD-10-GM	5	9	AGU	6%

External causes

- *E/V-Codes to determine road accident*
- *Proportion of missing external causes*

	ICD external causes	Proportion of unknowns with respect to external causes among all injuries
Austria	Austria-specific codes for external causes: only two codes for all traffic accidents (work or non work-related: U11, U12)	35%
Belgium	E810-E819, E826, E827, E829	16%
Bulgaria	-	-
Croatia	-	-
Cyprus	-	-
Czech Republic	-	-
Denmark	-	-
Estonia	-	-
Finland	external causes in the hospital data are not used to determine involved in road traffic accidents	undetermined
France	n/a	n/a (would be 80% if hospital database were used)
Germany	n/a	n/a
Greece	-	-
Hungary	V00-V89	5%
Ireland	-	-
Italy	E800-E819, E826	unknown
Latvia	-	-
Lithuania	-	-
Luxembourg	-	-
Malta	-	-
Netherlands	Conversion V00-V89 back to ICD9 and selection E810-E816, E818-E819 + E826, E827, E829	5%
Poland	V02-V04, V09, V12-V14, V20-V79, V82-V87, V89	38%
Portugal	E810-E819, E826	unknown
Romania	-	-
Slovakia	-	-
Slovenia	V00 - V89	0% (coding external causes is mandatory)
Spain	E810-E819, E826	17.5%
Sweden	-	-
United Kingdom	V01 to V89, excluding V81	unknown
Iceland	-	-
Norway	-	-
Switzerland	n/a	n/a

Fatalities vs. serious injuries

- *Substantial variation*

	Fatalities 2014	Serious Injuries MAIS3+ 2014	Proportion between MAIS3+ injuries and fatalities
Austria	430	1410	3.3
Belgium	727	2979	4.1
Bulgaria*	901		
Croatia	308		
Cyprus	45		
Czech Republic	688		
Denmark	182		
Estonia	78		
Finland	229	519	2.3
France[1]	3700	25000-35000	6.8 - 9.5
Germany	3377	14645	4.3
Greece***	879		
Hungary	626		
Ireland***	188		
Italy	3381	14943	4.4
Latvia	212		
Lithuania	267		
Luxembourg	35		
Malta**	13		
Netherlands	570	7500	13.2
Poland[2]	3357	1859	0.6
Portugal	638	2046	3.2
Romania	1818		
Slovakia***	321		
Slovenia***	108	not available yet	
Spain	1688	available in April 2016	
Sweden	270		
United Kingdom	1854	not available yet	
Iceland	4		
Norway	147		
Switzerland	243	available in July 2016	

In summary: big spread!

- **Varied methods to determine MAIS3+** across the countries
  - *1: AT (formerly), BE (based on method 2 for years 08-11), UK*
  - *2: AT (now), NL, PT, ES, England,*
  - *3: FIN, SLO, CH,*
  - *Other: FR (combination of 1 and 3 and 4), DE (GIDAS)*
- **Number of diagnoses**: 1 (AT, BE, IT) .. 9/10/14/20.
- **Number of digits**: 4 (AT, PT, SLO) .. 5
- **Conversion algorithm**: AAAM!, ICDPIC (BE), ICDmap90 (NL), AGU (CH), Trauma 1 (CY)
- **MAIS3+ per fatalities**: 0.6 (PL) to 13.2 (NL)
- Several countries are only in early phases of the process

Towards 28 + 4 countries: SafetyCube Guidelines!

- Your experiences?
- How can the SafetyCube guidelines support the process?

Discussion