Injury Database – Minimum Data Set (IDB-MDS)

on injuries treated in emergency departments, source of

- **ECHI 29(b) "Home, leisure and school injuries: register-based incidence"**
- **ECHI 30(b) "Road traffic injuries; register based incidence"**
- **ECHI 31 "Workplace injuries"**

Reference Metadata in Euro SDMX Metadata Structure (ESMS) 2.0

Compiling agency: EuroSafe

1. Contact	Top
1.1. Contact organisation	EuroSafe - European Association for Injury Prevention (data controller) on behalf of the national IDB data providers. www.eurosafe.eu.com
1.2. Contact organisation unit	EuroSafe, coordinator of the network of IDB data providers
1.5. Contact mail address	secretariat@eurosafe.eu.com

2. Metadata update	Top
2.1. Metadata last certified	Metadata are not certified yet.
2.2. Metadata last posted	April 2015
2.3. Metadata last update	Juni 2020

3. Statistical presentation	Top
3.1. Data description	

The European Injury Database (IDB) is based on national registers, collecting data on injuries (due to accidents, acts of self-harm and interpersonal violence) from emergency departments (EDs) in national samples of hospitals.

Beside some characteristics of the injury itself, the IDB Minimum Data Set (IDB-MDS) covers causes and circumstances of the injury event, which information is indispensable for targeted prevention actions and policies.

The information elements of IDB-MDS are contained in usual patient's histories. Therefore IDB-MDS can be completed without noteworthy additional burden for patient and hospital staff, when its extraction is supported by hospital's administrative routines and IT systems. It is recommended to countries to implement IDB-MDS in every hospital and to record IDB-MDS for every patient who visits an hospital-based ED for an injury. If this is not possible, countries are required to establish national samples of reference hospitals, which are representative at national or at least at region level.

Representativeness of the sample shall be validated at least regarding age and gender of patients, type of injuries treated and the relation between ambulatory and inpatient treatments. Reference hospitals shall report all cases of acute physical injuries that are attending their EDs.

Visits related to disease complaints or due to complications of medical/surgical care are excluded. A case is registered only once; a next visit for follow up treatment is not recorded as a new case.

The mandatory IDB-MDS data elements are as follows:

- *Recording country - Country that provides the data*
- *Unique national record number - Number of the ED case or record*
- *Age category of patient - Person's age group at the time of the injury*
- *Sex of patient – Gender of person injured*
- *Date of injury - The date the injury was sustained*
- *Time of injury - The time the injury was sustained*
- *Month of attendance - The month the injured person attended the ED*
- *Year of attendance - The year the injured person attended the ED*
- *Treatment and follow-up - Status of treatment after attendance at the ED*
- *Nature of injury 1 – Type of primary injury sustained*
- *Nature of injury 2 – Type of eventual secondary injury*
- *Part of body injured 1 - Region or part of the body where the primary injury is located*
- *Part of body injured 1 - Region or part of the body where an eventual secondary injury is located*
- *Intent - Whether an injury was accidental or caused by an act carried out on purpose by oneself or by another person(s) with the goal of injuring*
- *Location of occurrence – Broad categories of places where the injured person was when the injury event occurred*
- *Mechanism of injury - The way in which the injury was sustained, i.e. how the person was hurt*
- *Activity when injured - Broad categories of the type of activity the injured person was engaged in when the injury occurred*

Optional data elements are:

- *Provider (hospital) code – Unique Number of the hospital which provides the data*
- *Country of permanent residence - Person's country of residence at the time of the injury*
- *Narrative - Description of the event leading to the injury*

3.2. Classification system

The IDB classification in its full scope (Full Data Set IDB-FDS) is based on the WHO International Classification for External Causes of Injuries (ICECI) and the former EHLASS (European Home and Leisure Accident Surveillance System) coding manual. It has been established in 2005, when the former EHLASS (European Home and Leisure Accident Surveillance System) has been expanded to all injuries, i.e. including all accidental injuries, interpersonal violence and self-harm.

For the purpose of collecting injury data at large, a substantially condensed version of the IDB-FDS classification has been developed: The IDB-Minimum Data Set Data Dictionary.

Various commonly used coding systems for injuries can be transcoded into IDB-MDS: In several countries (e.g. Austria, Czech Republic, Germany, Latvia, Luxembourg, Malta, Portugal, Slovenia and Turkey) national injury surveillance systems are based on IDB-FDS data; most Nordic countries (e.g. Denmark, Norway and Sweden) use the NOMESCO-classification for injury; other countries have their own injury surveillance systems developed before IDB (e.g. the Netherlands), and again other countries use ICD-10 (e.g. Estonia, Finland, Italy, Lithuania). All these countries did not have to change their systems but can convert their data into IDB-MDS compatible data.

3.3. Sector coverage

Not applicable.

3.4. Statistical concepts and definitions

For each data providing country the number of ED treated injury patients are available as recorded in the sample of hospitals. The IDB counts are used for calculating estimated crude incidence rates (adjusted for age and gender) and national projections. The national extrapolation rates for age- and gender-groups is defined by the relation of admitted IDB cases to all admitted injuries, as reported by national hospital discharge statistic. Coherent inclusion/exclusion criteria are defined for IDB and hospital discharge statistic. For national projections the estimated rates for a certain year is applied to the estimated population per 1st of January as published by Eurostat.

For public health policies it is important to distinguish between major groups of injuries, for which different distinct policy domains bear the main responsibility for prevention. To some extent the ECHI list of European Core Health Indicators corresponds to these policy needs. Injuries related to the major domains of prevention can be selected from IDB-MDS data elements as follows:

- Home, leisure & school accidents (ECHI 29b): *Intent* = 1 (accident) & *Mechanism* = 2 - 8 (all specified mechanisms except road traffic injury) & *Activity* = 2 or 8 (all specified activities but paid work)
- Road traffic accidents (ECHI 30b): *Intent* = 1 (accident) & *Mechanism* = 1 (road traffic injury)
- Workplace accidents (ECHI 31): *Intent* = 1 (accident) & *Activity* = 1 (paid work)
- School (educational settings) accidents: *Intent* = 1 (accident) & *Location* = 2 (educational establishment)
- Sport accidents: *Intent* = 1 (accident) & *Activity* = 2 (sports)
- Interpersonal violence: *Intent* = 3 (assault)
- Deliberate self-harm: *Intent* = 2 (deliberate self-harm)
- Child accidents: *Intent* = 1 (accidents) & *Age-group* = 1 – 4 (0 to 14 years of age)
- Fall related injuries of seniors: *Intent* = 1 (accidents) & *Mechanism* = 2 (fall) & *Age-group* = 15 – 19 (65+ years of age)

In combination with other information sources IDB estimates are further used for establishing indicators for the health burden of injuries (e.g. DALYs – disability adjusted life years) or cost indicators (e.g. direct costs of hospital treated injuries).

3.5. Statistical unit

Unit is the first visit of a physical person seeking treatment in an emergency department of a hospital after having sustained an acute injury (chronic injuries and injuries due to medical interventions are excluded).

3.6. Statistical population

All individuals living within one of the EU member states, EFTA or EU candidate countries.

3.7. Reference area

Status 2020:

- 36 countries: 27 EU member states, 3 EFTA countries (Norway, Switzerland, Liechtenstein), UK, 5 candidate countries (Iceland, Macedonia, Montenegro, Serbia, Turkey)
- Aggregates: EU-25 for 2005 and 2006; EU-27 for 2007-2012; EU-28 for 2013-2019 ; EU-27 for 2020.

3.8. Time coverage

The latest ten years IDB contains data from the following countries:

- 2009 : AT, CY, CZ, DK, GE, IT, LV, MT, NL, PT, SE, SI,
- 2010 : AT, CY, CZ, DK, GE, IS, IT, LV, MT, NL, PT, SE, SI, UK
- 2011 : AT, CY, CZ, DK, FI, GE, IS, IT, LT, LV, MT, NL, PT, SE, SI, UK
- 2012 : AT, CY, CZ, DK, EE, FI, GE, GR, IS, IT, LT, LU, LV, MT, NL, PT, SE, SI, TR, UK
- 2013 : AT, CY, CZ, DK, EE, FI, GE, HU, IS, IE, IT, LT, LU, LV, MT, NL, NO, RO, PL, PT, SE, SI, SP, TR, UK

- 2014 : AT, CY, DK, EE, FI, GE, IE, IT, LT, LU, LV, MT, NL, NO, PT, SI, SE, TR, UK
- 2015 : AT, CY, DK, EE, FI, GE, IT, LT, LU, LV, MT, NL, NO, PT, SI, SE, TR, UK
- 2016 : AT, CY, DK, EE, FI, GE, LT, LU, LV, MT, NL, NO, PT, SI, SE, TR, UK
- 2017 : AT, CY, DK, EE, FI, LT, LU, LV, NL, NO, PT, SI, SE, TR, UK
- 2018 : AT, CY, DK, EE, LT, LU, NL, PT, SI, SE, TR, UK

3.9. Base period

Not applicable.

4. Unit of measure Top

Injuries are reported by country and year as

- No. of registered cases (records in the sample),
- Crude incidence rate, adjusted for age-group and gender,
- Estimated absolute number of ED treated injuries.

These measures are provided at the EU IDB web-gate either for all injuries or for deliberately selected subgroups.

5. Reference period Top

The reference period is one calendar year, usually current year N-2.

6. Institutional mandate Top

6.1. Legal acts and other agreements

There are a number of legal provisions that support EU-level exchange of injury data in an harmonised manner:

- Council of the European Union: Recommendation on the prevention of injury and the promotion of safety, Official Journal of the European Union 2007/C164/01 of July 18, 2007, which (a) recommends Member States to make better use of existing data and develop, where appropriate, representative injury surveillance and reporting instruments to obtain comparable information, monitor the evolution of injury risks and the effects of prevention measures over time and assess the needs for introducing additional initiatives on product and service safety and in other areas; and (b) invites the Commission to gather, process and report Community-wide injury information based on national injury surveillance instruments.
- Council of the European Union: Regulation setting out the requirements for accreditation and market surveillance relating to the marketing of products and repealing Regulation 2008/ L 218/30 of 13 August, 2008, which requires MSs to establish adequate procedures in order to follow up complaints or reports on issues relating to risks arising in connection with products subject to Community harmonization legislation; [and] monitor accidents and harm to health which are suspected to have been caused by those products […]. In practices, this requires Member States to continuously survey product related injuries in a way that facilitates the assessment of product related injuries and the circumstances in which they occur.
- Council of the European Union: Regulation on Community statistics on public health and health and safety at work 2008/ L 354/70 of 16 December 2008, which aims to harmonise reliable health information which supports Community actions as well as national strategies in statistics in the field of public health. Annex I to the Regulation identifies “accidents and injuries” as one of the core subjects to be covered within this common framework.
- “European Community Health Indicators and Monitoring” (ECHIM) and the list of health indicators as agreed with the member states' competent authorities under the Health Information programme. The home and leisure injury indicator 29b is being defined as injuries that have occurred in and around home, in leisure time and at school resulting in an injury that required treatment in a hospital. These data are expected to be provided from

national hospital discharge information systems as well as national injury surveillance systems in line with the IDB methodology.

The standardisation of the IDB system and the sharing of data take place in the framework of the network of IDB data providers. The bylaws of the network define the governance structure of the system. The assembly of data providers designates a network-coordinator, who is responsible for the daily business and acts as data controller on behalf of the network. Since 2010, the European Association for Injury Prevention and Safety Promotion is the network-coordinator (www.eurosafe.eu.com).

For many years, the IDB data collection was supported by EU-projects of the European Health Programme, e.g. from 1 May 2015 till 31 October 2017 by the BRIDGE-Health project, which aim was to maintain existing EU networks on data exchange and to develop a concept for a sustainable EU health information system (EAHC-agreement 2014 - 664691). Till December 2019, the European Commission, DG Health and Consumers hosted the IDB databank with dept. A4 (Information systems) and dept. C2 (Country knowledge and scientific committees) as data processor.

Since January 2020, the IDB data collection continues solely through the efforts of IDB network members and EuroSafe. At present the databank is hosted by the Health Data Research Institute UK (HDRUK) at Swansea University Medical School and shall be transferred to the Italian Institute of Health (Institute Superiore di Sanità) as new data processor, presumably from autumn 2020 onwards.

At present (April 2020), members of the IDB-Network are:

Country	**Organisation**	**Representative**	**E-Mail address**
Austria	Austrian Road Safety Board (KFV)	Robert Bauer	Robert.Bauer@kfv.at
Cyprus	Ministry of Health, Health Monitoring Unit	Vasos Scoutellas, Maria Athanasiadou	VScoutellas@mphs.moh.gov.cy MAthanasiadou@moh.gov.cy
Denmark	National Institute of Public Health	Bjarne Laursen	bla@si-folkesundhed.dk
Estonia	Ministry of Social Affairs of Estonia, Health Information and Analysis Dept.	Katre Vaarsi	katre.vaarsi@tai.ee.
Finland	National Institute for Health and Welfare (THL)	Anne Lounamaa, Kari Haikonen	anne.lounamaa@thl.fi kari.haikonen@thl.fi
Germany	State Office for Occupational Safety, Consumer Production and Health	Nicolai Savaskan Stefan Kropp	Nicolai.savaskan@lavg.brandenburg.de office@lavg.brandenburg.de
Ireland	National Suicide Research Foundation	Eve Griffin	EveGriffin@ucc.ie
Italy	Istituto Superiore della Sanità	Marco Giustini, Alessio Pitidis	marco.giustini@iss.it alessiop.dati@gmail.com
Latvia	Centre for Disease Prevention &	Jana Lepiksone, Annika Smilga	jana.lepiksone@spkc.gov.lv

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Lithuanian	Institute of Hygine, Health Information Center	Rita Gaidelyte, Milda Garbuviene	rita.gaidelyte@hi.lt Milda.Garbuviene@hi.lt
Luxembourg	Luxembourg's Institute of Health	Dritan Bejko	Dritan.Bejko@lih.lu
Malta	Ministry of Health, Dept. Elderly and Community Care	Audrey Galea	audrey.galea@gov.mt
Netherlands	Consumer Safety Institute (Veiligheid NL)	Huib Valkenberg	h.valkenberg@veiligheid.nl
Norway	Norwegian Public Health Institute	Johan Lund	johan.lund@nopha.no
Portugal	Ministério da Saude, Instituto Nacional de Saúde	Tatiana Alves	tatiana.alves@insa.min-saude.pt
Slovenia	Institute of Public Health of the Republic of Slovenia	Mateja Rok-Simon, Tina Zupanic	Mateja.Rok.Simon@nijz.si Tina.zupanic@nijz.si
Sweden	The National Board for Health Welfare - Socialstyrelsen	Pernilla Fagerström	pernilla.fagerstrom@socialstyrelsen.se
UK	Swansea University, College of Medicine, Health Information Research Unit	Ronan Lyons, Samantha Turner	r.a.lyons@swansea.ac.uk S.Turner@swansea.ac.uk
Turkey	Turkish National Public Health Agency, Dpt. International Relationships/ European Union and Projects	Bekir Keskinkilic, Secil Sis	bekir.keskinkilic@saglik.gov.tr secil.sis@saglik.gov.tr
EuroSafe	EuroSafe	Rupert Kisser, Wim Rogmans	rupertkisser@yahoo.de w.rogmans@eurosafe.eu.com

6.2. Data sharing

Not available.

7. Confidentiality Top

7.1. Confidentiality - policy

IDB is fully in line with the provisions of Regulation 2016/679 the General Data Protection Regulation of 27 April 2016. Single case data are anonymized and can only be analysed by the data providers, the data controller or the data processor. The data are collected for the purpose of public health and their use is restricted to this purpose.

7.2. Confidentiality - data treatment

Countries provide only anonymised records, wherein personal identifiers and hospital identifiers

are removed. Further physical and technological provisions are in place to protect the security and integrity of the data and to protect the privacy rights of individuals during the transfer of data, handling and use Results of analyses from IDB are made available only at aggregated level.

8. Release policy

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8.1. Release calendar

National data shall be uploaded by November in the consequent year (11 months later).

8.2. Release calendar access

By March of the year after the consequent year (15 months later) shall be available:

- Annually update of the compilation of IDB metadata forms
- Annually update of the report on IDB-data quality
- Annually update of the comprehensive set of IDB-MDS based indicators (estimated rates)

8.3. User access

Direct access is only for data providers, data processor and data controller. Third parties direct their queried either to the data provider (national data) or to the data controller (multi-country data).

Additionally, injury-related European Core Health Indicators (ECHI), e.g. ECHI 29b “Home & leisure, school & sport injuries” can be retrieved from the ECHI-website of DG SANTE.

9. Frequency of dissemination

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Annual.

10. Accessibility and clarity

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10.1. News release

No regular media information.

10.2. Publications

- EuroSafe (European Association for Injury Prevention and Safety Promotion): IDB Operating Manual. Amsterdam: EuroSafe. Current version: September 2016.
- EuroSafe (European Association for Injury Prevention and Safety Promotion): IDB Minimum Data Set (IDB-MDS) Data Dictionary. Amsterdam: EuroSafe. Current version: September 2016.
- EuroSafe (European Association for Injury Prevention and Safety Promotion): IDB Full Data Set (IDB-FDS) Data Dictionary. Amsterdam: EuroSafe. Current version: May 2017.
- EuroSafe (European Association for Injury Prevention and Safety Promotion): Injuries in the European Union, Issue 6, Summary of injury statistics for the years 2012-2014. Amsterdam: EuroSafe 2016.
- EuroSafe (European Association for Injury Prevention and Safety Promotion): Supplementary report to the 6th edition of “Injuries in the European Union” – report on trends in IDB data flow, country comparison and ECHI-injury indicators 2013-2016. Amsterdam: Eurosafe 2017.
- EuroSafe (European Association for Injury Prevention and Safety Promotion): Sustainability of the IDB data exchange. Amsterdam: Eurosafe 2017.
- EuroSafe (European Association for Injury Prevention and Safety Promotion): Compilation of IDB metadata 2009-2018. Amsterdam: Eurosafe 2020.
- EuroSafe (European Association for Injury Prevention and Safety Promotion): Quality of IDB data 2009-2018. Amsterdam: Eurosafe 2020.

See https://www.eurosafe.eu.com/key-actions/injury-data

10.3. On-line database

The former public access at https://webgate.ec.europa.eu/idb/ (DG SANTE) will be shut down in the course of 2020. After the shut-down there will be no direct access to the data. Analyses of data can be obtained by directing queries to the data controller EuroSafe secretariat@eurosafe.eu.com.

10.4. Micro-data access

There is no online access.

10.5. Other

Not applicable.

10.6. Documentation on methodology

The IDB methodology is laid down in detail in the IDB operating manual and the IDB-MDS data dictionary:

- EuroSafe (European Association for Injury Prevention and Safety Promotion): IDB Operating Manual. Amsterdam: EuroSafe. Current version: September 2016.
- EuroSafe (European Association for Injury Prevention and Safety Promotion): IDB Minimum Data Set (IDB-MDS) Data Dictionary. Amsterdam: EuroSafe. Current version: September 2016.

10.7. Quality documentation

Each data file (= set of all valid MDS cases from one country for one year) is accompanied by meta-data, the co-called national IDB file information form, reporting on the specificities of hospital sampling method applied and provides evidence as to the representativeness of the data provided and to the accuracy of estimated incidence rates. The compilation of metadata forms 2009-2018 can be requested from the data controller: secretariat@eurosafe.eu.com.

An overview over the data quality of all data files from all countries and years provides the report on IDB-data quality, which is based on the metadata-forms:

- EuroSafe (European Association for Injury Prevention and Safety Promotion): Compilation of IDB metadata 2009-2018. Amsterdam: Eurosafe 2020.

11. Quality management

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11.1. Quality assurance

The national IDB data providers are responsible for the quality of shared data. The quality assurance requirements are laid down in the IDB Operating Manual. It requires amongst others that all national IDB data suppliers shall be qualified and experienced in handling statistical data and must have passed a specific training in the IDB methodology as provided by the Network of National IDB Data Administrators.

Data suppliers must proof compliance with the methodological and quality requirements in their national file information form (national meta data form). For each data set delivered they must confirm that the basic quality requirements are met, i.e. the selection of reference hospitals is done with a view to collect data which are representative for a country or specified region thereof, that all cases concern injuries, all cases are recorded in emergency departments of hospitals, all codes are valid and in accordance with the data dictionaries, the average percentage of “unspecified” data elements is not higher than 5%. Any shortcomings of deficiencies in methodology and/ or quality of data delivered must be clearly identified in the national file information form. If national incidence rates are provided, data suppliers must declare, how the estimates has been derived, how far the representativeness of the sample has been validated, and how far eventual discrepancies of case definition between IDB sample and reference statistic have been ironed out.

Before upload, the network coordinator checks the submitted data for conformity with the data

dictionary, the completeness of the national file information form, and the compliance with the minimum quality requirements for national estimates. Non-compliant data sets will not be uploaded. After compiling the set of quality approved data sets, the network coordinator produces and publishes the updated IDB Data Quality Report and updates the container with all national meta-data forms.

11.2. Quality assessment

The quality of national implementations is being assessed by means of national IDB-implementation score card, completed by the network coordinator in collaboration with the national data supplier. The national score card reports assess not only on the quality of the data and the national estimates, but also the sustainability of the national system and the reliability of the collaboration.

The overall quality of the system has been assessed in the latest IDB-implementation report, which has been produced by the end of the BRIDGE-Health project (November 2017):

- EuroSafe (European Association for Injury Prevention and Safety Promotion): Sustainability of the IDB data exchange. Amsterdam: Eurosafe 2017.

A rough quality assessment is done annually through the update of the IDB-data quality report. This report puts “warning flags” to each national data file, which does not cover the entire scope of injuries, or which is based on a biased sample or a sample too small for accurate estimates. The scope of data can be restricted e.g. to certain age groups, only admitted cases, or home and leisure injuries (omitting road traffic and violence related injuries).

- EuroSafe (European Association for Injury Prevention and Safety Promotion): Quality of IDB data 2009-2018. Amsterdam: Eurosafe 2020.

12. Relevance

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12.1. User needs

The IDB is in particular designed to provide the injury related ECHIs (European Core Health Indicators), i.e. 29b (home, leisure, school, sport injuries), 30b (road traffic injuries), 31 (work-place injuries) and, to a limited extend, 32 (injuries due to self-harm). However, IDB provides more indicators as child injuries, fall related injuries of seniors or injuries due to interpersonal violence (assault). And the system allows also the projection of ED treatments as well as admissions and it provides basic figures for the direct costs of medical care or the health burden of injury (disability adjusted life years DALYs).

IDB data serve a range of potential data users. The information is used for policy purposes by a variety of stakeholders, e.g.:

- Commission services, i.e. DG SANTE (public health), DG JUST (consumer safety, violence prevention), DG MOVE (road safety), DG EMPL (health and safety at work), DG EAC (sport safety, school safety) and Eurostat;
- National governmental departments such as the Ministries of Health, for Transport, Consumer Policy, Justice, Social Affairs, Employment, Sport and respective enforcement agencies and safety inspectorates;
- EU-consultative committees, such as the workgroup of governmental experts on injury prevention, the Consumer Safety Network and the Network of IDB data suppliers;
- Representative bodies such as consumer organizations like BEUC and ANEC, victim organizations, and dedicated agencies for injury prevention as for child safety, consumer safety, road safety, workplace safety and sport safety.

See also: Kisser R et al. (2009): Injury data needs and opportunities in Europe. Int. Journal of Injury Control and Safety Promotion, 16:2, 103-112.

12.2. User satisfaction

Surveys among users of the EU IDB web-gate are not in place. User satisfaction surveys are being undertaken among those users, who requested specific analysis and reports from the "IDB clearing house" services.

12.3. Completeness

Since the end of EU-co-funded projects the number of participating countries has eroded. Currently, 15 of the eligible 36 countries collect and share IDB-data, whereof 12 countries are EU member states:

- 2017: AT, CY, DK, EE, FI, LT, LU, LV, NL, NO, PT, SI, SE, TR, UK
- 2018: AT, CY, DK, EE, LT, LU, NL, PT, SI, SE, TR, UK (upload for 2018 not yet completed)

13. Accuracy and reliability

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13.1. Overall accuracy

Quality control on accuracy of data is being undertaken prior, during and after the data is submitted. Such control measures at EU-level include:

- Rigorous process of training and regular exchange of experiences by annual meetings of national data administrators
- Ongoing support of national data providers and expert feedback on queries about coding, sampling and estimation accuracy
- Rigorous check of data for conformity with the data dictionary and for logical contradictions and duplicates and the extent of incompleteness (% missing/unspecified)
- Check for errors or inadequacies of the national estimates (incidence rates)
- Comparison of new data loads with old data loads to ensure data appear reliable

Validity checks are currently applied in all countries by either:

- Comparison of logical inconsistencies between narrative and coded fields; or/and
- Audits by the NDA-team, or other external expert team, of a day's workload of cases in each of the hospitals by having these cases independently coded by the NDA-team and compared with the local codes, which will result in a list of true positives/ false positives/ false negatives and offers an opportunity to produce a "completeness score"; or/and
- Comparison of between the entire data sets, and/ or individual records, of inpatients submitted by each of the participating hospitals for the national IDB-data set and the set/ records submitted to the national HDR-system

13.2. Sampling error

Insufficiently balanced hospital samples are a threat to accuracy of national IDB statistics. Initiatives to have IDB-MDS data mandatory being collected as a matter of routine in all EDs have been initiated in some countries, but these are not implemented yet. In case there are no monetary or legal incentives to collect such data, the selection of hospitals tends to be dictated by willingness of hospitals to provide injury data on a voluntary base which may bias the selection of EDs towards hospitals that are above average interested in research, i.e. university hospitals.

Main quality indicators for each national data set per year are:

- No. of reference-hospitals,
- geographical distribution of hospitals over the reporting country,
- rational procedure of selection of hospitals in order ensure representativeness; and
- if sampling within hospitals is applied: procedure to eliminates within hospital sampling bias as to weekdays and time of day recording tends to take place.
- Validation of the national IDB sample at least by age, gender and mechanism (cause) of injury.

Nevertheless, there will be variations in accuracy of national IDB statistics, mainly due to variations in size and quality of the sample of hospitals. While some countries are able to provide data from a large and well stratified sample, with a good geographical distribution over

the country, others might only meet requirements as to the minimum size of the sample and no. of cases. There are no publications yet available assessing the impact of such imperfections on data accuracy.

13.3. Non-sampling error

Under-reporting: In general, patients and accompanying persons are willing to provide information on the injury event and the circumstances. In particular, if they are informed about the purpose of collecting this information, i.e. gaining knowledge on how to prevent such incidences. Therefor the refusal rate is low.

Over-reporting: Double reporting of follow-up treatments is possible, but the IDB-Operating Manual contains the explicit rule that only the first visit shall be recorded.

Coding errors: Coding errors may affect the estimates for sub-groups. All national data suppliers have to provide initial training of all interviewers as well as supervision of coders. Some acts of violence may be reported by victims as “accidents”, e.g. in order to protect the perpetrator. The interviewers in EDs are trained to check with the respondent any obvious inconsistency in their verbal description of the injury event, but finally they will have to accept the statement by the patient/ by-stander.

In order to avoid errors when data are handled, in particular when extracted and transcoded from other data (e.g. ICD-10, NOMESCO, or IDB-FDS data), software tools have been provided, which can be used by national data suppliers without charge.

Data can only be uploaded, when they pass a check for formal quality criteria as to the validity of codes, the completeness of all compulsory data elements, and basic logic criteria (such as no duplicate case numbers and correct year of reporting).

Missing specification: Unspecified data elements lead to an underestimation of many indicators. One important quality indicator in the national file information form informs about the average percentage of “unknown” or “unspecified” for compulsory data elements.

14. Timeliness and punctuality

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14.1. Timeliness

Data upload to the EU IDB-database takes place once a year. As long as IDB is not part of the European Statistical System, the IDB-Network coordinator assists with data control and upload. A “call for data” is sent out in the third quarter of the year that follows the year that the data has been collected, with a view to upload the data by November to the databank.

For some countries it is not be possible to provide their data within that time frame due to administrative reasons, e.g. because hospital data are firstly processed by intermediate institution. Their data will be uploaded as soon as available. For some countries it is not possible to provide national estimates in time, e.g. when the reference statistic (hospital discharge statistic) gets published only with a delay greater than 12 months.

14.2. Punctuality

In practice, some countries are not able to meet the deadline due to various reasons, and the Commission services may also be not able to upload the data immediately after submission. The experiences of the past years show that a delay of a few months can occur, but most of the provided data are published with a time lag of altogether not more than 18 months after the end of the reference year.

15. Coherence and comparability

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15.1. Comparability - geographical

Standards for data definitions and methodologies to calculate incidence rates by country are provided by the IDB Operating Manual. These standards are agreed by all participating countries and increase coherence and validity of cross-country comparisons.

However, a number of countries are not able to implement all requirements yet, e.g. in 2014

- GE provided data only for one of its 16 federal states;
- CZ provided only data on children 0-18 (no other age groups);
- PT provided only data on home and leisure accidents (no road and workplace accidents, no acts of interpersonal violence and self-harm)

Such restrictions to the comparability of incidence rates are flagged in the IDB-data quality report:

- EuroSafe (European Association for Injury Prevention and Safety Promotion): Quality of IDB data 2009-2018. Amsterdam: Eurosafe 2020.

IDB-based indicators are ED-presentation rates and no morbidity indicators in the narrow sense. Multi-country comparison in terms of morbidity is limited due to differences between countries in the way health service systems operate, which is the case for all register-based indicators for health status. E.g. the relatively low ED-based incidence rates reported by the Netherlands is partly caused by the NL-policy to have the primary care services to serve as gate keeper for specialised care in hospitals and GP's to treat a major share of the total volume of injury cases. The relatively high incidence rates reported by Austria are partly caused by the low financial and logistic barriers to directly seek treatment in an ED. However, such impairments of comparability are valid for almost all indicators stemming from health care facilities.

15.2. Comparability - over time

Originally the scope of IDB data was restricted to home & leisure accidents (unintentional injuries at home and during leisure activities). In 2005 it has been decided to expand the scope to all injuries, and to include also road accidents, workplace accidents and acts of deliberate self-harm and interpersonal violence. A new MDS-Data Dictionary has been issued, and all older data has been transcoded to the new system. All countries except PT have implemented this change during the years 2006 – 2009. For countries which have switched to "all injuries", an according "jump" of the incidence rate can be observed. All older data sets which contain only home and leisure accidents are highlighted, when users access the respective data sets.

15.3. Coherence - cross domain

As IDB statistics are relatively new, there are no comprehensive studies dealing with coherence of IDB with other statistics yet available. In particular to be considered are the relations to (national) hospital discharges statistics, to road accident statistics, to workplace accidents statistics, and to estimated incidences based on household surveys.

Emergency department statistics: In countries, where such registers exist (e.g. FI, DK, SE, LV, LT), IDB data are a subset of all ED treatments, and there are only random variations.
Hospital discharges statistics: The rates for admitted IDB cases are quite similar to the rates of injury patients derived from hospital discharge statistics. Slight differences can be caused by differences of inclusion/exclusion of cases e.g. by re-admissions, non-residents or medical induced injuries.

Road accident statistics are based on police reports, and the methodological differences are substantial. There is an under-reporting of road injuries in police statistics. Generally, the probability that a road accident is recorded is higher for severe collisions, while single vehicle accidents (e.g. of bicyclists) are substantially underreported. The police on site can hardly assess the severity of an injury; some as slightly injured recorded persons do not seek medical care, while others detect their injury only at later stage.

National workplace accident statistics are established using quite different methodologies, ranging from surveys to sick-leave registers or dedicated accident statistics based on reports to

labour inspectorates, which makes the comparison of indicators hardly possible. Moreover, many of the milder work-related injuries which are reported to the responsible insurers do not need medical care nor are reported to the labour inspectorates.

Household surveys seriously suffer recall biases, at least this is the case for injuries, and lead to a substantial under-reporting. The accuracy of the national estimates is low, as only a few percent of all citizens suffer an injury in one year, which leads to relatively small basic populations for the projections. This is for instance the case for data derived from the European Interview Survey data (EHIS-1, 2006-2008). As the costs per case of collecting injury data are much higher for household surveys than for register based data collection, household surveys are usually performed in greater intervals (EHIS: every five years) and with a very basic set of questions (significantly less specific compared with IDB-MDS).

15.4. Coherence - internal

The IDB methodology requires that participating hospitals to record all patients seeking assistance for an acute injury, 24 hours a day, 7 days a week, 12 months a year. It is the responsibility of national data suppliers to ensure that no bias due to daytime, day of the week or season as a result of in-hospital sampling occurs. E.g. if recording is not possible every day, an intermittent data collection procedure can be established. If it is not possible to record IDB data in all EDs of a country, the sample of hospitals must ensure that all age groups and mechanism of injuries are consistently covered. E.g. if dedicated child clinics have a relevant share of child injury treatments, such child clinics must be included in the sample. As the system is relatively new, there are no studies on the internal coherence of IDB statistics yet available.

16. Cost and burden

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The IDB-MDS data can be collected by means of a very few simple questions to the patient (or accompanying person): What happened, why, where, and how did it happen? These questions are usually asked anyway during the anamnesis. IDB requires that the answers get coded in a few categories of answers and recorded. This involves hardly any additional burden to the patients. The additional burden for the recording staff member (nurse or doctor) is negligible when the patient's history is recorded electronically as a matter of routine and get combined with the diagnoses and admin data. Cost and burden of data collection depend on how the IDB data collection is implemented and supported by the hospital's IT system. However, finally IDB data must be handled, checked, de-identified and transmitted to the responsible national agency serving as national IDB data supplier, which means a few percent of one qualified employee.

17. Data revision

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17.1. Data revision - policy

There is no data revision policy yet.

17.2. Data revision - practice

In practice, the national data providers send their data to the network coordinator by using data validation and upload software tool, which performs formal check for consistency and completeness. Only correct and complete data can pass. The reference population data files are checked by the coordinator for their formal functionality. Once the data are uploaded and published through the IDB web-gate, they always can be recalled and replaced on short notice, if errors are detected at a later stage. All uploads are reported by the network coordinator in his/her "upload report" which is also published at the web-gate.

18. Statistical processing

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18.1. Source data

Data are collected in emergency departments at hospitals that provide around the clock emergency services. Collection takes place as a matter of routine for all patients seeking

medical assistance for an acute injury for the first time. In some countries IDB-MDS data are extracted from general hospital statistics or health insurance data covering all ED presentations.

However, for most countries it not possible to record injury information in all hospitals. If sampling is needed, it needs to be a representative sample. The minimum sample size is 10.000 cases a year (except for small countries, which observe in total less attendance). Special attention is given to the geographical distribution of the sample hospitals and to specialisation of the hospitals. The sample shall represent all specialisations and major regions in a country. Further, it shall be stratified by hospital size. This means that the sample shall include both large and smaller hospitals because the types of injuries treated at large hospitals may be different from those treated as smaller hospitals. The coherence of the sample and the reference statistic needs to be assured, and the representativeness of the sample shall be evaluated being a random sample, at least for age and gender and the mechanism of injury. The representativeness needs to be documented describing the characteristics of the hospital sample compared to all hospitals in the country. The meta-data for each annual data set shall get published in the annually updated “quality report”:

- EuroSafe (European Association for Injury Prevention and Safety Promotion): Compilation of IDB metadata 2009-2018. Amsterdam: Eurosafe 2020.
- EuroSafe (European Association for Injury Prevention and Safety Promotion): Quality of IDB data 2009-2018. Amsterdam: Eurosafe 2020.

18.2. Frequency of data collection

Continuous collection; 24h a day, 7 days a week, 12 months a year.

18.3. Data collection

There is no one single procedure for data capture in EDs, as the most appropriate procedure highly depends on the actual setting and processes within the concerned hospitals or emergency departments. Neither there are rules as to how interviews with patients should be conducted or how the provided information gets transferred into electronic data sets,

Usually a two-step procedure is being applied:

- The first step consists of recording the patient’s report on causation and circumstances.
- The diagnoses and follow-up treatment, i.e. the medical report, are often added at a later stage.

Less severe cases can be interviewed in the waiting room, while severely injured patients can be interviewed only at a later stage or by proxy interviews. The data can be recorded by paper & pencil administration or with the help of a special data entry software, e.g. with drop-down menus on hand-held PCs.

The national data administrators collect the data from hospitals daily or weekly. National data sets are transferred to the network coordinator once in a year (annual “call for IDB-data”).

18.4. Data validation

Validity checks are currently applied in a all countries by either:

- Comparison of logical inconsistencies between narrative and coded fields; or/and
- Audits by the IDB-NDA-team, or other external expert team, of a day’s workload of cases in each of the hospitals by having these cases independently coded by the IDB-NDA-team and compared with the local codes, which will result in a list of true positives/ false positives/ false negatives and offers an opportunity to produce a "completeness score"; or/and
- Comparison of between the entire data sets, and/ or individual records, of inpatients submitted by each of the participating hospitals for the national IDB-data set and the set/ records submitted to the national HDR-system

For upload the data need to pass a formal check for the correct format, correct year of recording, correctness of codes, completeness of the compulsory data elements, and duplication of cases.

18.5. Data compilation

IDB statistics are derived from the actual IDB counts by using a reference population table and national population data (population per January 1 of the concerned year, as published by Eurostat). The reference population data table per country and year is based on the estimated sample ratio per age and sex, and contains the multipliers for calculating crude incidence rates, adjusted for age and sex. The reference population table, which determines the national IDB rates, is provided by the national data administrator.

National estimates are then calculated by the data operator. There is a standard set of 252 indicators for each country and year, consisting of 28 indicators (intent and setting, type and cause of injury) with 9 breakdowns by gender, age-group, ambulatory/inpatient treatment. These indicators shall be reported annually in the future. At present, these reports on “injuries in the European Union” are available:

- EuroSafe (European Association for Injury Prevention and Safety Promotion): Injuries in the European Union, issue 5 – Summary of injury statistics for the years 2012-2014. Amsterdam: EuroSafe 2016.
- Eurosafe (European Association for Injury Prevention and Safety Promotion): Injury in the European Union 2013-2015/ Supplementary report to the 6th edition of “injuries in the EU”. Amsterdam: EuroSafe 2017.

See https://www.eurosafe.eu.com/key-actions/injury-data.

18.6. Adjustment

There are no adjustment procedures.

19. Comment

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Related Metadata

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ECHI 29a (home, leisure and school injuries, self-reported incidence)
ECHI 30a (road traffic injuries, self-reported incidence)