



Introduction to the functioning of the European IDB-database

Published by:
EuroSafe
Overschiestraat 65
1062 XD Amsterdam
<http://www.eurosafe.eu.com>

August 2020.

Introduction

Injuries are an important and largely preventable health problem. The European Injury Data Base (IDB) provides users with relevant information for public health and consumer safety policies and actions within the EU (1). The database contains data on accidents and injuries such as home accidents, sports and leisure injuries, workplace and road traffic accidents and on injuries due to violence and self-harm.

Over the past years, the European Commission stimulated several projects with a view to facilitate EU-level exchange of injury data. The latest project, called JAMIE-Joint Action on Monitoring Injuries in Europe, included 26 countries that collected data on injury patients treated in accident and emergency departments in hospitals (2). The Network of injury-data collecting countries continues to collaborate and to pool national injury data on a voluntarily base.

The IDB contains standardised cross-national information on the external causes of injuries treated in emergency departments (EDs) in the EU. This information is collected in accordance with an harmonised methodology and quality assurance programme, in line with the quality principles as defined in the European Statistical Code of Practice (3) and agreed among the participating countries. The IDB-manual (4) describes comprehensively the agreed methodology and the principles for data exchange and access to data provided to the data owners and third parties.

This brochure on the EU-Injury Database summarises the methodology and principles of EU-level data exchange and access, as documented in the comprehensive IDB-manual (4).

Purpose of IDB

The purpose of the European Injury Data Base is to facilitate targeted injury prevention policies and programmes at EU- and member state level. It provides information on frequency, main causes, circumstances and consequences of non-fatal injuries that are treated in accident and emergency departments across Europe.

IDB covers all unintentional injuries, i.e. those due to home and leisure accidents, accidents at work or in traffic, as well as intentional injuries due to violence and self-harm. IDB data are complementary to general fatal injury statistics, hospital discharges statistics and health surveys as well as to dedicated registers on road and workplace accidents.

IDB provides users with the best available information about the magnitude of injuries and their characteristics taking into account age groupings and gender of casualties, type and mechanism of injuries, intent and setting in which they occur (home, school, sport, leisure, work and road). Furthermore, it provides information about objects, products and substances triggering the incidence or causing the injuries – information, which can be in particular helpful for improving the use or design of products like toys, electric appliances, tools or building components.

Legal base

The need for enhanced investments in injury surveillance has been recognised in the EU-Council Recommendation on the prevention of injuries and the promotion of safety (5), the EU Regulation on accreditation and market surveillance relating to the marketing of products (6), the EU-Regulation on Community statistics on public health and health and safety at work (7) and in the Parliament's Initiative Report (8) on the Revision of the General Product Safety Directive and Market Surveillance.

The European Commission together with the member states has defined a coherent list of indicators for monitoring of health: the European Core Health Indicators (ECHI), a shortlist of 88 health indicators. Regarding home, leisure and school injuries, detailed monitoring in emergency departments of hospitals based on IDB as well as general capture of self-reported injuries

through the European Health Interview System (EHIS) is recommended and defined in the list as ECHI-29a and 29b.

Also within the wider European region of the World Health Organisation, injuries have been identified as a major threat to the economic and social development of region: injuries and violence account for 9% of all causes of death in the WHO-European region, with about 800.000 people losing their lives to injury-related causes each year. To support countries in addressing this problem more comprehensively, the WHO-office for the European Region issued Resolution 2005/55 on the Prevention of injuries in the WHO European Region (9), which helps to place violence and injury prevention more firmly on the public health agenda in the wider European region.

IDB network

Almost all member states' governments, i.e. their Ministries of Health, have designated an internal unit or an affiliated agency with the task to enhance national injury surveillance efforts and to participate in EU level data exchange. These designated centers are the data owners and represent their country in the EU-Network of National Data Administrators (NDAs) for the IDB-exchange. The IDB-Network brings together 26 member states and their competent authorities who signed up for a joint commitment to enhance injury surveillance efforts.

The IDB is under control of this network of National Data Administrators (NDAs). It operates under a set of house rules and decides on standards related to the data exchange such as updating the classification, methodology of data capture and extrapolation, quality control requirements and conditions for data access.

The European Association for Injury Prevention (EuroSafe) is mandated to coordinate the Network, in collaboration with the IDB Advisory Board that includes experts from Austrian Road Safety Board, Brandenburg authority of Environment, Health and Consumer protection, Danish Institute of Public Health, NL-Consumer Safety Institute, Centre de Recherche Public de la Santé Luxembourg, Centre for E-Health Research at Swansea University and the Italian Institute of Health in Rome.

The Italian Institute of Health (ISS) in Rome provides the physical hub for IDB-data exchange, i.e. hosts the databank, processes the national data files and assists the Network in analysing and reporting on IDB-data.

Data source

The European Injury Data Base (IDB) is based on injury surveillance efforts in European countries, collecting accident and injury data from selected hospitals and their emergency departments (EDs). In some countries the basic IDB data is being collected as a matter of routine in all hospitals, but in the majority of countries this is being done in a limited number of hospitals, either nationwide or in one or two regions.

The combined EU-level sample of injury reporting hospitals includes large as well as middle-size hospitals, urban as well as rural areas. It includes general hospitals as well as specialised hospitals, e.g. children's hospitals. Specialised departments within the selected hospitals, such as pediatric departments, dental departments, ophthalmologic departments and burn units, are also included in the system in order to make sure that all injury-patients that are entering a participating hospital are included.

Countries are expected to report cases of acute physical injuries attending EDs for diagnosis or treatment. This means that only visits are included, for which the reason of attendance is related to an injury. Visits related to disease complaints or due to complications of medical/surgical care are excluded from the register. Visits for follow up treatment are not recorded as a new case.

The total number of hospitals in the EU-sample is sufficiently large and representative for deriving incidence rates at EU-level, even for quite specific groups of injuries as selected by age, intent,

setting, or type of injury. Millions of cases a year are being collected from over one hundred hospitals in the countries that currently are participating in the EU-level exchange.

Classification

The IDB classification 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. The common IDB classification has been agreed in 2005. Two separate Data Dictionaries are used:

- The Minimum Data Set (MDS), a more limited set of codes (10) used by all participating countries; and
- The Full Data Set (FDS) which is quite detailed as to the circumstances and the role of products in the causation of injuries used in around 18 participating countries (11).

The MDS has been developed for public health policy monitoring purposes with the aim to produce accurate incidences and national estimates. In view of that, it is envisaged to have all EU-countries soon capable of collecting and providing data at MDS-level in a substantial number of hospitals, if not in all hospitals.

The FDS has been developed in particular for consumer policy and research purposes. It is recommended to have each country collecting the Full Data Set in one or more reference hospitals in addition to the MDS-set of data. FDS-level data provides more detailed information as to the circumstances of injury events and on products that are involved. These data are collected for injury research and consumer safety purposes.

Both data sets are fully compatible: FDS-data is collapsible into MDS-level data presentations. In some countries injury surveillance systems existed before the IDB started. In these countries, the national data files are transcoded into IDB-format, e.g. in Denmark the national files are based on the NOMESCO-classification, in the Netherlands on a national classification related to ICECI and in other countries, e.g. Latvia, on ICD -10.

Core data elements

The core IDB-data elements, i.e. at MDS-level (10), are:

- Recording country - Country that provides the data
- Unique national record number - Number of the emergency department case or record
- Age of patient - Person's age at the time of the injury
- Sex of patient – Gender of person injured
- Country of permanent residence - Person's country of residence at the time of the injury
- Date of injury - The date the injury was sustained
- Time of injury - The time the injury was sustained
- Date of attendance - The date the injured person attended the emergency department
- Time of attendance - The time the injured person attended the emergency department
- Treatment and follow-up - Status of treatment after attendance at the emergency department
- 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
- Place 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
- Type of injury - Type of injury sustained
- Part of the body injured - Region or part of the body where the injury is located
- Narrative (optional) - Description of the event leading to the injury

For further details on the classification structure and coding, see the IDB MDS Data Dictionary (10). For additional data elements prescribed for the Full Data Set see the IDB FDS Data Dictionary (11).

Hospital selection

Ideally, national injury statistics should include all hospitals in a country. However, for several reasons it may not be possible to record injury information in all hospitals in a given country. This counts in particular for the Full Data Set (FDS), but it may also apply to the Minimum Data Set (MDS). In that case, injury data may be collected in a sample of hospitals.

As a matter of principle, countries with more than one million inhabitants are required to report MDS-level data from at least three hospitals and FDS-data from at least one reference hospital (4). Over time, the selection of hospitals shall become more balanced and the number of hospitals become large enough to ensure sufficient representativeness of the data at national level. This would allow sufficiently accurate national incidence estimates at five years age group level and according to main category of places of occurrence and activity.

In countries where the responsibility for surveillance is devolved to regions, it is accepted that data is being reported from one or two regions only. While the incidence rates generated are actually only valid for the region(s) involved, such rates could for the time being be taken as “best guess” for the entire country. In the current data set this is for instance the case for Germany.

National estimates

The MDS-level data allows to retrieve data in three ways: in absolute counts, crude incidence rates per 100.000 persons of the resident population (corrected for age and gender), and national estimates.

The calculation base for the incidence rate is the reference population that is covered by the actual national data samples. If an IDB sample covers e.g. 5% of all hospital treated injuries in a country, the fictive reference population is 5% of the entire national population. For most countries only the share of admissions is known from the hospital discharge statistics, while the share in all ambulatory treatments may be unknown. In this case the sample ratio for admissions is taken as best available estimate for all hospital treated injuries (admissions and ambulatory treatments). National estimates are based on the crude incidence rate and the national population for January 1st as published by EuroStat.

The crude incidence rate of the combined category of ‘unintentional home, leisure, sport and school injuries’ provides also the European Health Indicator-ECHI 29b: ‘Injuries: home, leisure, school: register-based incidence’. This indicator has been developed in the framework of the European Core Health Indicators (ECHI) project (12), which recommends EU-member states to monitor home, leisure and school injuries in emergency departments of hospitals, for all age-groups and to be derived from the IDB-system, as well as the general capture of self-reported injuries through the European Health Interview System (EHIS).

All data for the calculation of national estimates (the IDB data sets and the reference population data) are provided by the participating national bodies, who therefore bear the responsibility for the quality of the generated incidence rates and national estimates.

Representativeness and comparability

IDB-rates are highly affected by significant differences between countries as to health care consumption, clinical practice of treating injuries and in data collection procedures within participating hospitals. IDB-rates are not ‘incidence rates’ in the pure epidemiological sense, but rates of ‘hospital presentations’ and shall be interpreted as indicators for the actual incidence rates of injuries that require specialised medical treatment.

Country comparison is further complicated by some sampling differences, e.g. not all participating countries have sufficiently large and comprehensive samples of hospitals. Moreover, in some countries, the scope of case selection is restricted to a limited patient-group or injury category: e.g. Lithuania collects only inpatients and Portugal only home & leisure accidents. The specific characteristics of national data collection systems are reported in the IDB-metadata-form and summarized in the IDB-Data Quality Report (13).

Therefore, country comparison requires due caution: analyses based on the entire dataset, i.e. at the level of ALL participating countries together, provide the best available insight into the injury spectrum in the entire EU-region.

Quality control

Continuous training and supervision of coding staff and on-going feedback on questions related to coding accuracy are a prerequisite for optimising the quality of data that is being provided. Data has also to pass a formal check for completeness of the compulsory data elements, absence of duplications and consistency with the Data Dictionary, before being accepted for upload.

For all data, additional quality control measures are implemented by cross-checking the codes entered, a check on inconsistencies between data variables and on-going feedback on issues related to coding accuracy.

Some countries also carry out validity audits, i.e. regular audits by the national IDB-team of one day's workload of cases which are coded anew and compared with codes used by the local team, resulting in a list of true positives/ false positives/ false negatives and an overall "completeness score".

Data upload

Data upload to the EU IDB-database takes place once a year under the coordination of the IDB-coordinating center. The annual call for data requests the national data administrators (NDAs) to deliver four files, i.e. three files for the Minimum level Dataset and three files related to the Full level Dataset:

- The IDB MDS-data file, consisting of all cases for one year at MDS level;
- The reference population data related to the data delivered which is the basis for estimating IDB-rates. (Alternatively, countries can also deliver a comprehensive set of rates, for pre-defined settings, population groups and levels of injury severity);
- The national IDB-metadata-form describing methodology, content and quality of the MDS data delivered.
- The IDB FDS-data file, consisting of all cases for one year at FDS level;

Confidentiality

IDB is fully in line with the standards of the European Data Protection Directive (14). Physical and technological provisions are in place to protect the security and integrity of statistical databases and to protect the privacy rights of individuals. Only anonymised records are provided by the countries, wherein personal identifiers and hospital identifiers are removed. Moreover, statistics and figures from IDB are made available to third parties only at aggregated level.

For reasons of data protection, third parties cannot not get:

- any single case records;
- narrative descriptions of the course of the accidents that can be linked to individual cases;
- age groupings more detailed than into 5-years age groups; nor
- display of specified cases of which there are less than 5 in the database.

Clearinghouse service

The IDB database delivers information that is crucial to the development of effective injury prevention and safety promotion policies and actions and provides an immense opportunity for research and analysis. This information is of great relevance to state and local government departments, health and injury prevention organisations, business and industry, education institutes, research groups and media.

IDB data shaped many EU-led consumer safety initiatives. IDB data have substantially supported the implementation of the General Product Safety Directive and other directives

regulating safety of child-care articles and children's furniture; toys; low voltage appliances; and the Machinery Directive. For assessing specific risks, e.g. related to products that are involved in injuries, the analysis of FDS-data is of immense value.

IDB-generated information is also being used to carry out injury prevention studies, to underpin national and local injury prevention policies, and to develop and evaluate prevention actions and measures. These measures include community awareness initiatives and education, legislative and regulatory changes and safety-related environmental and product design improvements.

How to get your IDB-data analysis?

In order to receive a tailor-made analysis of IDB-data, please complete the "Request for IDB data query"-form and send it together with a signed "Terms of use"-statement to secretariat@eurosafe.eu.com. These documents can be found on web page: <https://www.eurosafe.eu.com/key-actions/injury-data/toolbox>.

The secretariat will check completeness of the request and technical feasibility. The analyses themselves are subject to a cost-covering fee.

After review and approval of request, a customised report will be produced that provides information on the number of specific cases, registered in emergency departments of hospitals, as well as breakdowns by country, reporting year, age, sex, location, activity, involved products or substances and other interesting IDB-data elements. If possible, the report will also include an estimated number of cases annually in the entire EU.

Further information?

Please consult the [EuroSafe website](#), in particular the pages devoted to the [European Injury Database](#) and contact EuroSafe by sending an E-mail to: secretariat@eurosafe.eu.com.

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