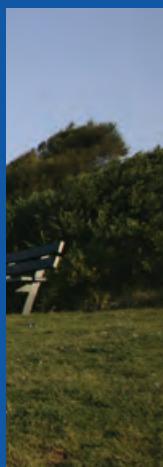


Injuries in the European Union

Summary of injury statistics
for the years 2008-2010

Working together to make Europe a safer place



Issue 4

Injuries in the European Union

Summary of injury statistics
for the years 2008-2010



ACKNOWLEDGEMENTS

The fourth edition of "Injuries in the European Union" presents an EU-level summary of the most recent injury statistics, mainly related to the years 2008-2010. In addition to data from EuroStat and WHO-Europe, this report also presents data derived from the European Injury Data Base (IDB).

The IDB is a unique data source that contains standardised cross-national data on the external causes and circumstances of injuries treated in emergency departments. Thanks to IDB we can present a comprehensive picture of the entire spectrum of accidents and injuries and the wide range of risk factors involved. This is much needed for guiding prevention actions.

EuroSafe acknowledges with thanks Robert Bauer und Rupert Kissner (Austrian Road Safety Board KFV) and Steven Macey and Daniel Thayer (Swansea University) for collating all the statistics and IDB-data presented in this publication and for producing the fourth edition of the report on Injuries in the European Union.

The members of the Joint Action on Injury Monitoring in Europe (JAMIE) are also to be congratulated for their efforts to enhance the production of injury data in their countries, in particular the members who could actually provide for this report the data from their national sample of emergency departments.

This report has been produced in the framework of the JAMIE-project which has received funding from the European Union, in the framework of the Health Programme.

Wim Rogmans,
General secretary EuroSafe,
JAMIE-project leader

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Despite the harmonisation efforts undertaken by the data providers, the injury statistics presented may not always be completely comparable between countries due to differences in national health systems and differences in procedures for data collection and reporting. All reasonable precautions have been taken by EuroSafe to verify the information contained in this publication. However, the published information is being distributed without warranty of any kind, either expressed or implied. The responsibility for the interpretation and use of the material lies with the reader. In no event shall EuroSafe be liable for damages arising from its use.

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INJURY DATA: FOUNDATION FOR BETTER SAFETY POLICIES

We all want a society where people of all ages can live to their full potential. To a large extent, this can be achieved by increasing our efforts in promoting safety and in preventing accidents. In all age-groups the quality of life can be significantly improved by a higher level of safety, e.g. in living and working environments, of vehicles, buildings, consumer products and by promoting the use of personal protective equipment.

Injuries¹ are an important and largely preventable public health problem. In fact, with almost one quarter of a million fatalities each year, injury is after cardiovascular disease, cancer and respiratory disease the fourth most common cause of death within the EU. Accidents and injuries are the leading cause of death in children, adolescents and young adults.

The information that is available tends to focus on fatal injuries. However, as will be explained in chapter 2, injury-deaths are only ‘the tip of the ice-berg’:

- For every person killed, many more are seriously injured and a large proportion of them will be permanently disabled as a result.
- Taking all age groups together, one out of twelve hospital admissions in the EU relates to an injury.
- Across the board, injuries take a significant share in the total health care expenditures in today’s society. More than 50 million days of hospital care represent about 9% of all days of hospital care [1].
- The number of cases treated in emergency departments outstrips by a factor of six the number of injury patients admitted to hospitals [2].
- The direct medical care costs of all hospital treated injuries (inpatients and outpatients) in the EU is estimated to be at least 78 billion Euro each year.

Thus, injury is a major cause of mortality as well as morbidity and is an important contributor to ever-rising health care costs. While the health burden of communicable diseases is reducing owing to better prevention and treatment, injury morbidity remained almost unchanged over the past decades, resulting into an increased share of injuries in the total burden of ill health.

Data needs

Injury data are essential for making prevention actions more effective. It is a critical tool for activating stakeholders, for targeting high risk groups and for addressing high risk products and environments.

Figure 1.1: The cycle of action for injury prevention.



Injury data are important in order to (see Figure 1.1):

- enable proper assessment of the health burden of injury at regional, national- and EU-level
- identify risks related to specific age-groups, activities, settings or environments, and responsible policy or legal domains
- facilitate decision making on priority issues and target groups to address
- identify the proper mix of prevention measures that tackle the actual risk factors and target audiences
- and to measure whether the targets of prevention policies and actions are being met

Injury data are relevant for a wide range of decision makers and organisations, such as: the European Commission services and national governmental departments and agencies; European and national standardization and certification bodies; health and social insurers; professionals in the public health sector; care and social services providers; manufacturers and designers; hospitality service providers; and civil society organisations.

In the fields of work safety and road safety, the need for injury information has been acknowledged long ago and dedicated reporting systems have been in place for a number of decades and are used at the EU-level. For work safety, accident reports from public, social or private insurance organisations and labour inspectorates provide the basis for the European statistics on accidents at work (ESAW) [3]. For road traffic injuries, in all member states information is being collected by police and these police reports provide the basis for the data shared through the Community database on Accidents on the Roads in Europe (CARE) [4].

¹An injury is usually defined by intention. The main causes of unintentional (accidental) injuries are motor vehicle accidents, falls, poisoning, drowning, and burns. Intentional injuries (or violence) can be divided into the categories of self-directed violence (suicide or self harm), inter personal violence (e.g. against children, intimate partner, elder persons, acquaintances, or strangers), collective violence (in war and by gangs), and other intentional injuries (including injuries due to legal intervention). Injuries due to medical interventions are not taken into account. In addition to intention and cause, injuries can also be described according to the setting in which they occur – such as home, sports and leisure, workplace or road.

These sources of data are most helpful, but far from complete as many accidents still go un-reported. For instance, studies based on data from emergency departments reveal that police statistics seriously underestimate the true number of road injury victims as they cover less than half of the pedestrian and bicycle injuries that are actually treated in emergency departments.

As for home and leisure accidents, which are the predominant causes of injury related hospitalisation and emergency care, the picture is even bleaker. In most countries in Europe only meagre information is available on the magnitude and characteristics of this important category of injury causes. Thus, most governments are still in the dark over how to address the increasing contribution of injuries to rising health care expenditures and to decline in productivity.

Fortunately, some national initiatives have been taken to start with collecting injury data from emergency departments at hospitals and to exchange data at a European level.

EU-concern

Under the Treaty [5], EU actions aim to improve public health, prevent human illness and diseases, and identify sources of danger to human health. More specifically to injury prevention, the Council Recommendation on the Prevention of Injury and the Promotion of Safety [6] issued in 2007, explicitly highlights the socio-economic burden of injuries in Europe. It invites member states, amongst others, 'to develop a national injury surveillance and reporting system, which should provide comparable information on injuries, monitors the evolution of injury risks and the effects of prevention measures over time and assesses the needs for introducing additional initiatives on product and service safety'.

The Regulation on Community statistics on public health [7] also identifies 'accidents and injuries' as one of the core subjects to be included in the European Statistical System of Eurostat. The ECHI (European Community Health Indicators) project has specified which indicators should be provided by all member states and how this should be done. Regarding home, leisure and school injuries (ECHI-29), detailed monitoring in emergency departments of hospitals as well as general capture in the European Health Interview System (EHIS) is recommended [8,9].

More specifically related to consumer product safety, the Regulation on requirements for accreditation and market surveillance of the marketing of products [10] requires member states 'to establish adequate procedures in order to monitor accidents and harm to health which are suspected to have been caused by products'.

Over the past years, the European Commission stimulated several projects with a view to facilitate EU-level exchange of injury data. At present, fewer than half of the member states have developed a monitoring system in emergency departments in a sample of hospitals. This has resulted in the European Injury Data Base (IDB), which allows for deriving incidence rates of injuries according to place of occurrence, e.g. home, transportation, school, sport and leisure activities [11]. It also delivers data, in line with the so-called IDB-methodology and ECHI indicator 29b requirements [9], for uploading to the Commission's web site (DG Sanco section) [2].

Joint action of MSs

In 2010, competent governmental authorities from 22 countries signed up for a Joint Action for Injury Monitoring in Europe (JAMIE) aiming to have by 2015 one common hospital-based injury data collection system in their countries/ regions. By the end of the action, at least 22 countries are expected to report IDB-data in a sustainable manner and in accordance with an harmonised methodology [12]. Such a system is intended to become integrated part of the existing programme for exchange of Community Statistics on Public Health. At present, twelve member states are routinely collecting injury data in a sample of hospitals. With an additional ten member states currently starting up similar injury surveillance systems, the IDB is making progress in achieving full EU-coverage in the coming years.

IDB report - 4th edition

In this report, the most recent IDB data from the currently participating member states are being presented in combination with European injury data made publicly accessible through Eurostat and WHO. The report also presents a snapshot picture of the eight priority topics for injury prevention that are highlighted in the Council Recommendation on Injury Prevention and Safety Promotion of 2007 [6].

Chapter 2 presents the broader picture of the total number of injuries according to severity, i.e. fatal injuries, hospital admissions and treatment in Emergency Departments (ED's), and according to main categories of injury. Chapters 3-12 present key data for the eight successive priority areas for injury prevention, which are related to the respective age-groups at risk (children, adolescents and older people), specific risk settings (vulnerable road users, sports environment and the use of products and services) and to violence and self-harm. The final chapter concludes on the value of injury data collection and the way ahead in view of ensuring continued EU-level exchange of vital injury data with an increasing number of participating countries from mid-2014 onwards.

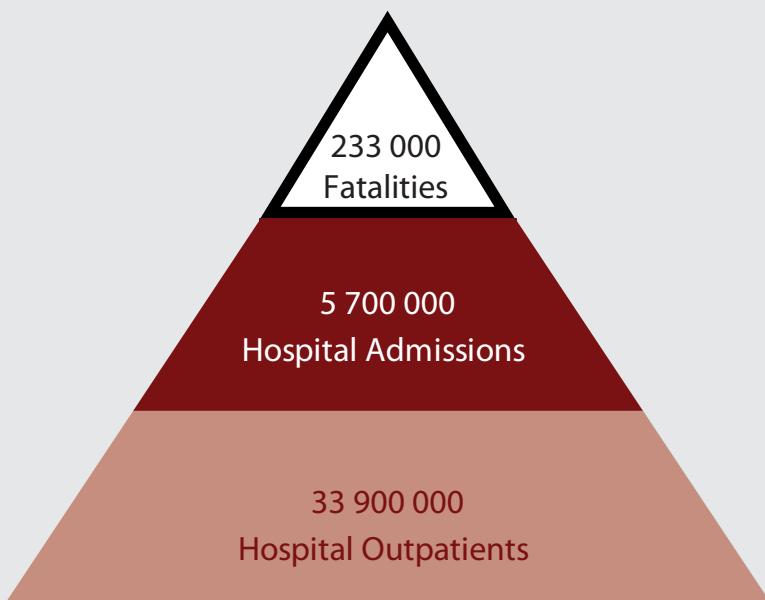
THE BIGGER PICTURE



Injuries due to accidents and violence are a major public health problem, killing more than 230 000 people in the EU-27 each year (annual average 2008-2010) and disabling many more. Injuries are the fourth most common cause of death, after cardiovascular diseases, cancer, and respiratory diseases.

Every two minutes one EU-citizen dies of an injury. For each fatal injury case, 25 people across the EU are admitted to hospital, 145 are treated as hospital outpatients and many more seek treatment elsewhere, e.g. by family doctors. This means that each year a staggering 5.7 million people are admitted to hospital and 33.9 million people are treated as hospital outpatients as a result of an accident or violence related injury (see figure 2.1).

Figure 2.1: The injury pyramid for the European Union



Source: WHO – mortality database, WHO – Health for All database, Eurostat – hospital discharge statistics, EU IDB. See Annex "List of figures and tables" for more details.

The EU injury pyramid – additional facts

- The direct medical cost of injuries treated in accident and emergency rooms including hospitalization, rehabilitation and additional care facilities, is estimated at € 78 billion [14, 15, 16]. This is 7.8% of total curative care costs in the EU-27 of 1003 billion [13].
- The cost due to loss of earnings, loss of productivity, quality of life damage and property damage adds greatly to the total societal costs related to injuries [15, 16].
- Currently, every year injuries leave an estimated 1 million people permanently disabled in the EU [17, 18].
- In addition to hospital treatments, many injuries are treated by general practitioners and paramedical staff without being referred to a hospital. In the Netherlands for instance, about one third of all injury patients are treated in hospitals and two thirds are seeking consultation in the office of a general practitioner [15]. The European Health Interview Survey (EHIS) [19] provides a preliminary estimate as to the total number of injuries reported by respondents over a period of twelve months, which is more or less the same as the IDB EU-estimate. However the EHIS suffers from severe underreporting problems due to its methodology [20].

Every
2 minutes
someone dies of an
injury in the EU-27

Table 2.2: Comprehensive view on injuries in EU-27 by injury prevention domain

	Road traffic	Work-place	School	Sports	Home, leisure	Total of unintentional injuries	Homicide, assault	Suicide, self-harm	Total of all injuries
Fatalities	38 119 16%	4 961 2%	1 250 1%	7 000 3%	98 891 42%	150 221 65%	4 704 2%	57 614 25%	232 869 100%
Hospital admissions	668 000 12%	252 000 4%	32 000 1%	419 000 7%	3 914 000 69%	5 285 000 93%	202 000 4%	213 000 4%	5 700 000 100%
Hospital outpatients	3 524 000 10%	3 553 000 10%	792 000 2%	5 644 000 17%	18 951 000 56%	32 465 000 96%	1 231 000 4%	205 000 1%	33 900 000 100%
All hospital patients	4 192 000 11%	3 805 000 9%	824 000 2%	6 063 000 14%	22 865 000 59%	37 750 000 95%	1 433 000 4%	418 000 1%	39 600 000 100%

Source: WHO – mortality database, WHO – Health for All database, Eurostat – hospital discharge statistics, EU IDB. See Annex "List of figures and tables" for more details.

Comprehensive view on injury

The responsibility for injury prevention is quite dispersed over a variety of policy sectors - depending on the setting in which they occur and the circumstances. Table 2.2 depicts the key figures of the main unintentional and intentional injury categories according to place of occurrence and injury outcomes in terms of severity (death, hospital admission or outpatient treatment). This "comprehensive view of injuries" provides a common view for the stakeholders of the main domains of prevention and indicates potential synergies between sectors.

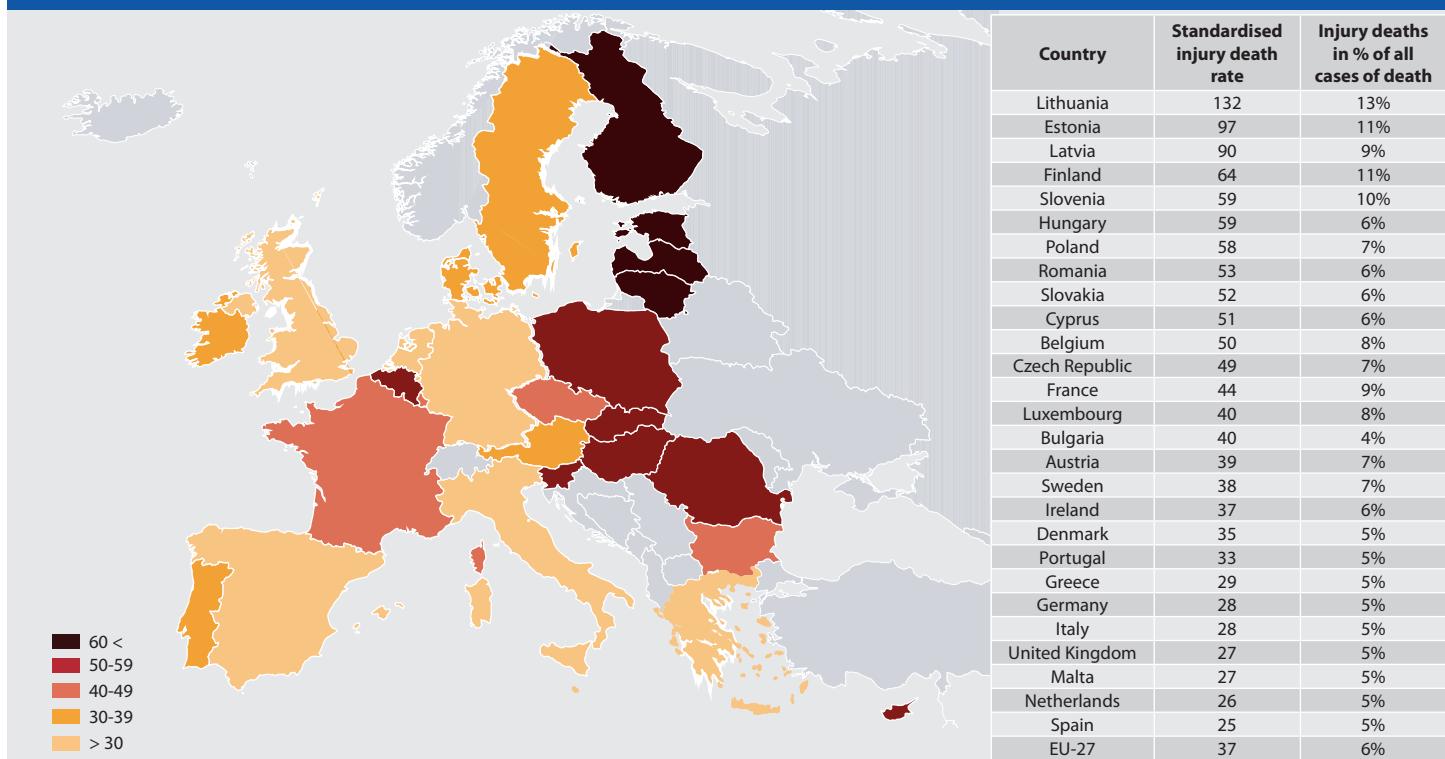
- Unintentional injuries are responsible for about three-quarters of all injury deaths and intentional injuries for the remaining one-quarter.
- Suicide and road injuries account for the highest number of fatalities, both in absolute and relative terms (in relation to the number of hospital treated injuries, i.e. lethality).
- Most of the severe injuries in the EU are treated in hospitals making them the proper place for injury surveillance.
- With 73% of all hospital treated injuries, home, leisure and sports is by far the biggest share, which is in contrast to the fact, that home and leisure injury prevention programmes appear as far less resourced than programmes for road and work-place safety. In general, the tangible and intangible consequences of home, leisure, and sport injuries are also less well covered by insurance systems compared to the compensation schemes for road and work accidents [21].
- The EU-IDB estimates that road injuries account for 10% of all hospital treated injuries or a total of 4.2 million victims annually. Compared to just 1.7 million injuries reported by the police, this indicates a significant underreporting of the problem in official road traffic statistics and the need for complementary information on road injuries treated in health facilities [4,22].
- Injury data collected by the health sector provide comparable indicators for the various sectors, and valuable additional information to sectorial monitoring systems operated by police, justice, labour inspections and consumer safety authorities.

Home, leisure and sports injuries account for **73%** of all hospital treated injuries

Fatal injuries

- There are enormous differences in the rate of fatal injuries throughout the EU (Table 2.3). It is estimated that almost 100 000 lives could be saved each year if every country in the EU-27 reduced its injury mortality rate to the same level as in the Netherlands or Spain which currently have the lowest rate of fatal injuries in the EU.
- There are also huge differences between EU countries as to the main causes of injury deaths, which is of course related to geographic circumstances (the abundant presence of open water for instance), and are relevant for considering national priorities in injury prevention (Table 2.4).
- Suicides, road accidents and falls are the three main causes of fatal injuries, together representing 58% of all injury deaths (Figure 2.5).
- In almost all age groups, males bear a considerably higher risk of fatal injury than females. Injuries are a leading cause of death for young people, from early childhood, until middle age. Although the relative percentage of fatal injuries is decreasing in higher ages, their absolute number increases sharply from an age of about 75 years (Figure 2.6).
- Homicides, fatal road and work-place accidents show the most favourable trends over the past years. Much less impressive is the decrease of suicides and home and leisure accidents (Table 2.7).
- The number of fatal home and leisure injuries, mainly attributed to falls among the elderly, is increasing at a faster rate than demographic trends.

Figure 2.3: Fatal injuries in EU countries: Standardized death rate per 100 000 inhabitants and percentage of injury deaths



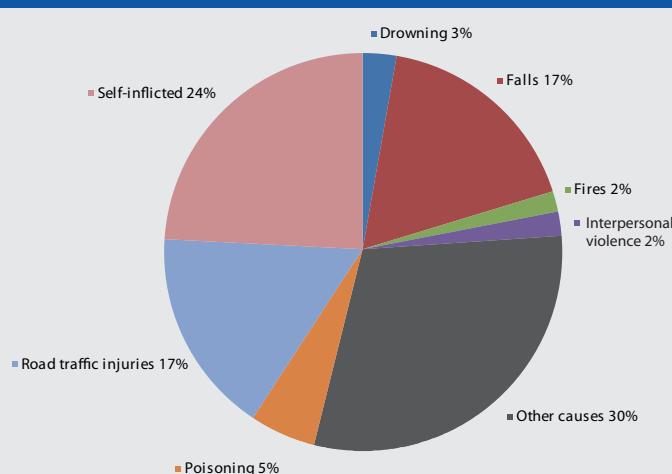
Source: Eurostat – cause of death statistics. See Annex "List of figures and tables" for more details.

Table 2.4: Fatal injuries by causes of death: Lowest and highest percentage of fatal injuries by country

	Fires	Interpersonal violence	Drowning	Poisoning	Falls	Road traffic	Self-inflicted	Other causes
EU-27	2%	2%	3%	5%	17%	17%	24%	30%
Lowest	0,4% (LU)	0,7% (SI)	1,0% (LU)	0,6% (AT)	7,5% (LV)	7,6% (SE)	4,2% (CY)	12,1 % (FI)
Highest	6,4% (EE)	6,8% (LV)	9,0% (CY)	19,4% (FI)	35,2% (SI)	51,7% (GR)	32,7% (LT)	43,6% (IT)

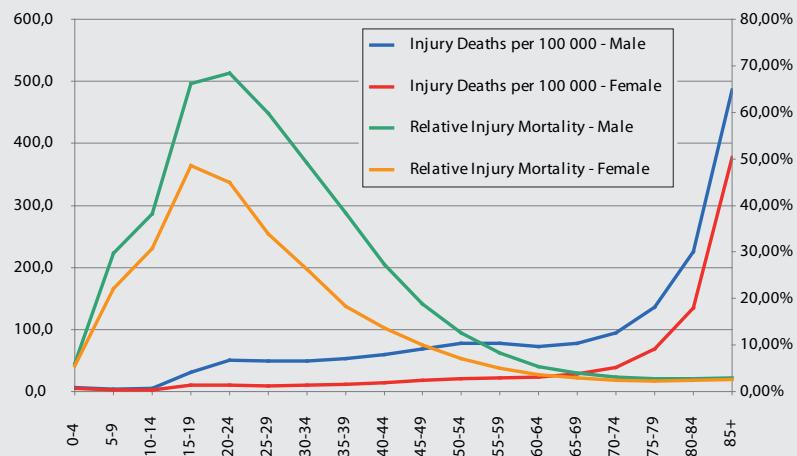
Source: WHO – mortality database. See Annex "List of figures and tables" for more details.

Figure 2.5: Fatal injuries by causes of death in the EU-27



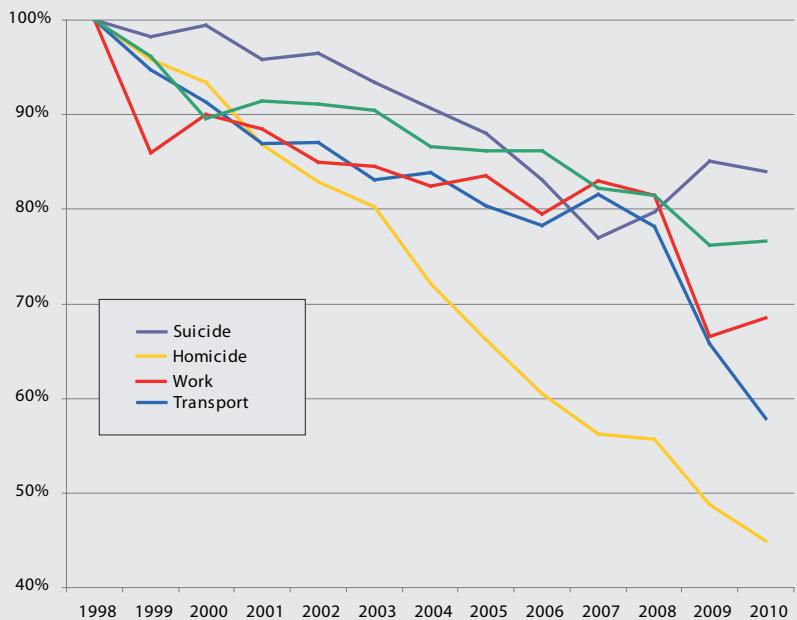
Source: WHO – mortality database. See Annex "List of figures and tables" for more details.

Figure 2.6: Injury death rate (per 100 000 persons) and relative injury mortality (injury deaths in % of all causes of death) in the EU-27 by age groups and gender



Source: Eurostat – cause of death statistics. See Annex "List of figures and tables" for more details.

Figure 2.7: Fatal injury trends by injury prevention domain (1998–2010, 1998 = 100%) in the EU-27



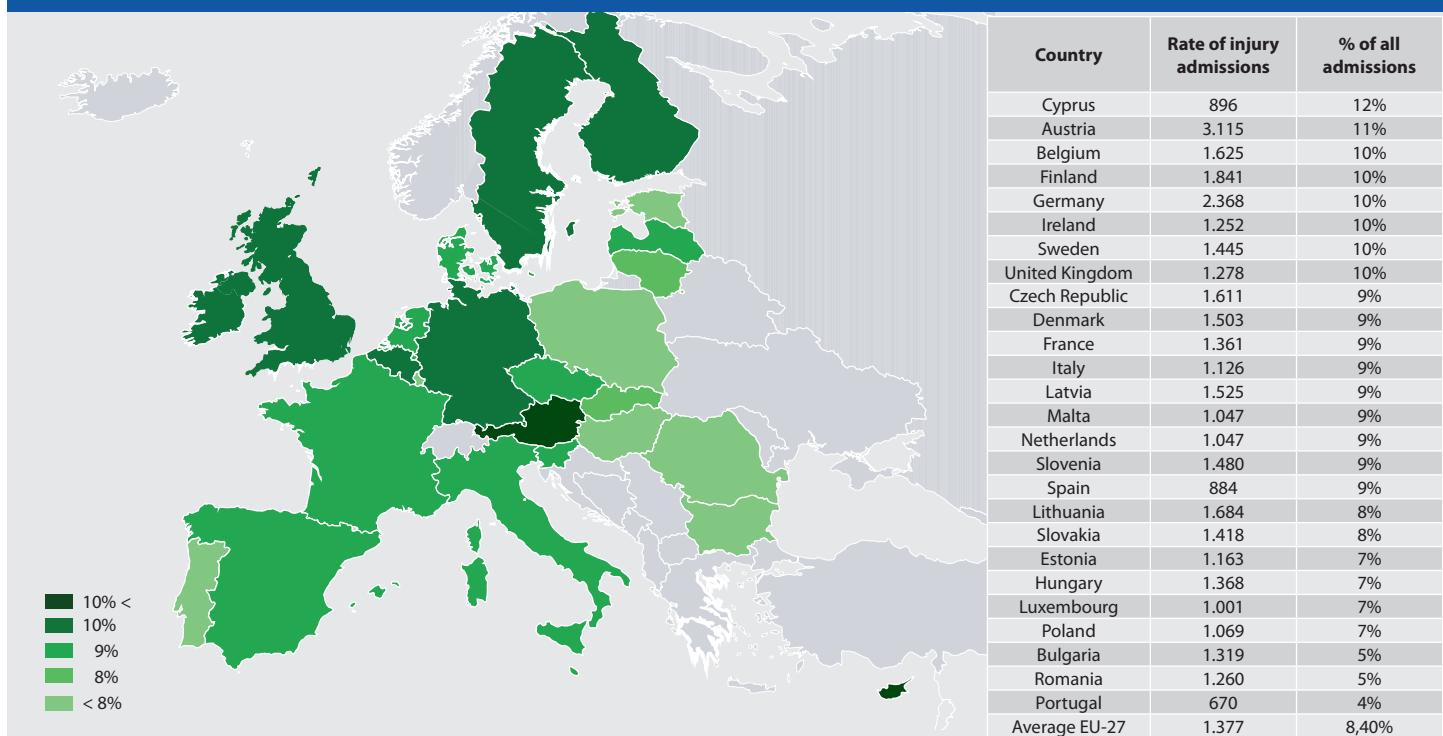
Source: WHO – Health for All database. See Annex "List of figures and tables" for more details.

Hospital admissions

A total of more than 53 million hospital days is being spent in the EU each year for treating injury patients, which represents 9% of all hospital days [23].

Days of hospital care is the most prominent cost bearer in European health systems. The absolute numbers of days in hospital care are a less meaningful indicator for morbidity as these numbers highly depend on the organisation of national health care systems and geographical conditions. Nevertheless, the percentage of injuries of all admissions (so-called discharges) can serve as rough indicator for injury burden to the health system. There is an enormous difference in the percentage of injury related admissions throughout the EU (Figure 2.8).

Figure 2.8: Hospital discharges for injuries per 100 000 inhabitants and percentage of injury related discharges



Source: Eurostat – Hospital discharge statistics. See Annex “List of figures and tables” for more details.

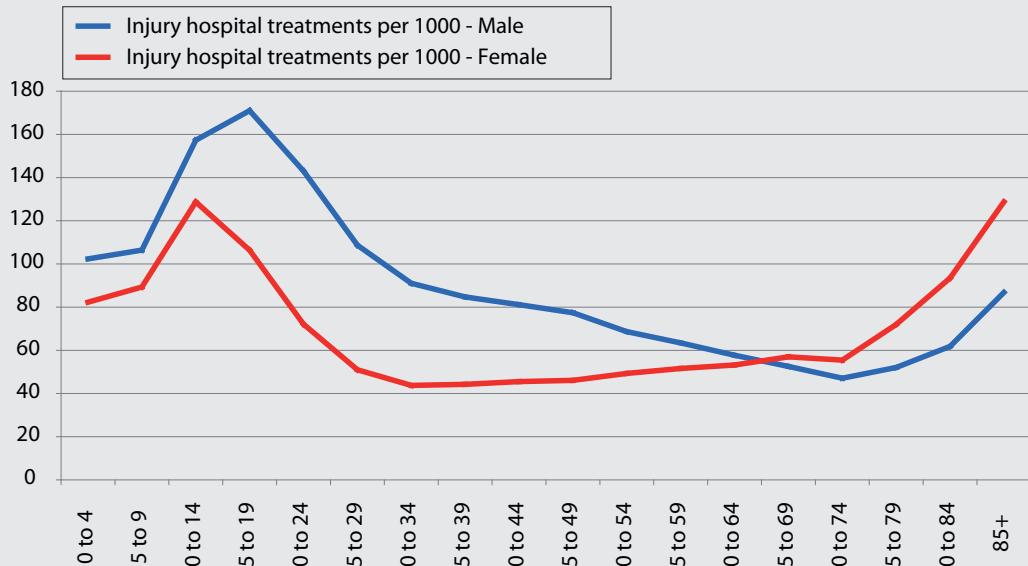
Unfortunately, neither Eurostat hospital discharge statistics nor the WHO Health for All database allow for further analyses of the causes of injury as provided for fatalities (figure 2.5). Due to data gaps it is also not possible to establish time series with a similar validity as for fatalities (figure 2.7). Therefore, for most of the further analysis the EU Injury Data Base (IDB) data has been used, which comprises admissions as well as ambulatory treatments.

Injuries treated in emergency departments

While death is the most tragic result of an injury, non-fatal injuries impose a huge burden to health care and social costs and often result in disabilities and a significant reduction in quality of remaining life.

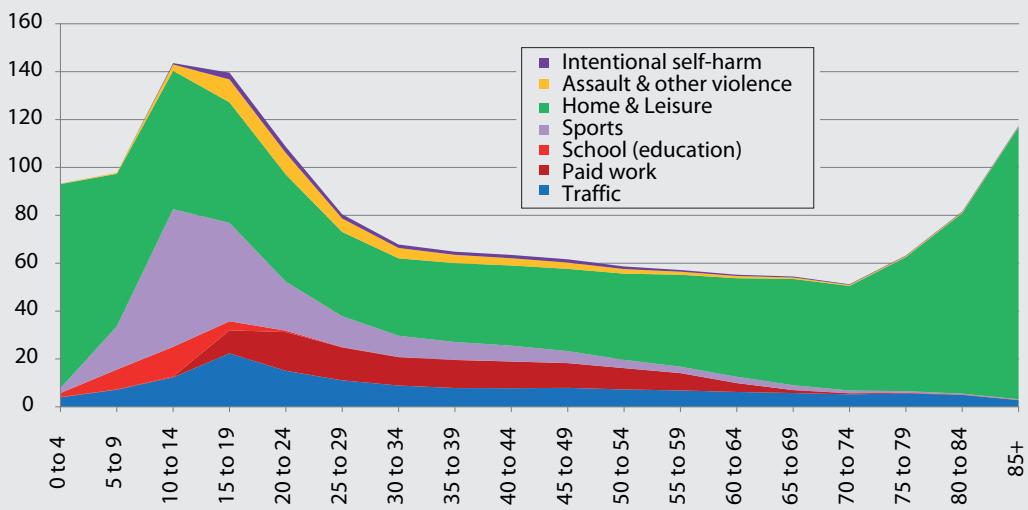
- Almost 40 million people have to receive hospital treatment for injuries each year of which 5.7 million have to be admitted for severe injuries - more than 112 000 people each day (Figure 2.1).
- The number of disabled people is expected to rise as a consequence of declining lethality rates owing to improved emergency services and care and increasing non-fatal injuries.
- The injury risk for males exceeds the risk for females in younger ages. Nevertheless from about 70 years onward, women bear the higher risk (mainly due to falls) (figure 2.9).
- Children, adolescents, and persons in advanced age bear the highest risk for injury (figure 2.10).

Figure 2.9: Hospital treated injuries per 1 000 by age group and gender, EU-27



Source: EU IDB 2008-2010. See Annex "List of figures and tables" for more details.

Figure 2.10: Hospital treated injuries per 1000 by injury prevention domain and age group, EU-27



Source: EU IDB 2008-2010. See Annex "List of figures and tables" for more details.

Trends

- Injury fatalities are decreasing. Compared to the past report, there was a general decline of 9% in just three years, though with considerable differences: The largest relative reductions took place in the areas of road traffic (-25%), work place (-13%) and homicide (-15%), while the suicide rate remained almost the same.
- Also the number of hospital admissions shows a downward trend in the three past years. However, this is true for the total number admissions (all diseases), and eventually the result of a general tendency of European health care systems to strengthen primary care. The percentage of injuries of all admissions (8.4%) remained unchanged.
- The number of injuries treated in emergency departments is slightly less (-2.5%) than in the last report (covering the years 2005-2007), which is within the statistical range of inaccuracy.

HOTSPOT CHILDREN

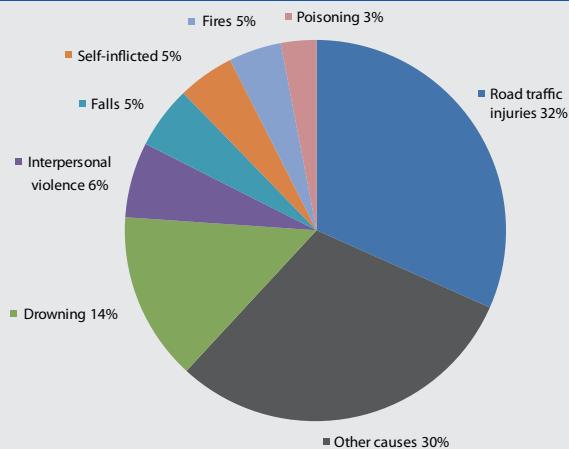


Behind the numbers

October 2012, Rožnov, Czech Republic. A woman became an eye-witness of a dramatic scene. In an open window on the first floor of the neighbouring house stood a small child, trying to sit down but then standing up again. It slipped with one foot from the window sill and fell down from a twenty foot height.

Neighbours took care of the crying child, called the emergency service, and contacted the mother and grandmother who had not noticed the accident. Paramedics brought the two-year old boy to the hospital, where he remained hospitalized for observation. "He was extremely lucky as he fell on dense grass. There were some abrasions but otherwise he seems to be fine", said a police spokeswoman. "I thought, he would be dead", said the eye-witness.

Figure 3.1: Leading causes of death and causes of fatal injuries in children up to 14 years



Source: WHO MDB. See Annex "List of figures and tables" for more details.

Table 3.2: Rank order of cause of death of children 1 – 14 years

Rank order	Cause of death for children 1–14 years (ICD-10 codes)	% of all causes of deaths
1	External causes of morbidity and mortality (V01-Y89): injuries	28
2	Malignant neoplasms (C00-C97)	18
3	Congenital malformations, deformations and chromosomal abnormalities (Q00-Q99)	11
4	Diseases of the nervous system and the sense organs (G00-H95)	10
5	Diseases of the respiratory system (J00-J99)	7

Source: Eurostat COD. See Annex "List of figures and tables" for more details.

Facts & impacts

In this age group in particular, an injury and its disabling consequences have a tremendous impact on the child, the child's family and society at large.

For children older than 1 year of age, injuries are the main cause of death.

Fatal injuries

- Around 3000 children die from injury each year in the EU leaving parents, relatives and friends in deep sorrow and grief. Nevertheless, the number of fatal child accidents has decreased substantially in past years.
- Injury is the leading cause of childhood death in the EU, accounting for 28 % of all deaths of children between 1 and 14 years of age.
- Five types of accidents – road traffic, drowning, violence and neglect, falls (from height), and fires – account for 62% of all fatal child injuries up to 14 years of age (Figure 3.1).
- These five main causes are known to be preventable by appropriate measures, e.g. improving parenting skills and a wider application of child restraint systems, pool fencing, smoke alarms and window guards [24].
- Starting from birth, boys are at a higher risk of incurring a fatal injury than girls. Boys at the age of 14 are almost twice as much at risk of incurring a fatal injury than girls.
- There are considerable differences in the injury fatality rates of children between EU member states. For example, injury fatalities in children account for 19% of the total number of child deaths in the United Kingdom, 23% in Sweden, a staggering 45% in Lithuania and 44% in Estonia. The important question to pose is to what extent are these differential rates due to serious disparities in implementing good practices such as the ones mentioned above?

1

Rank order of injuries as cause of death in children in the EU.*

*Children 1-14 years of age

European initiatives – European Child Safety Alliance

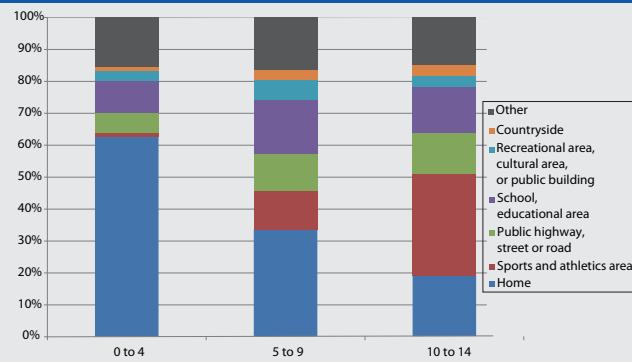
The European Child Safety Alliance was launched in 2000. Child safety experts from more than 30 countries across Europe are now working together to reduce the leading cause of death and disability to children in every Member State in the region. These experts come from diverse fields and settings including medicine, public health, psychology, education, engineering and government to share and advocate for what works in child injury prevention to benefit children and their families.

The Alliance members are working together to provide better information, practical tools and resources to support adoption and implementation of evidence-based good practices for the prevention of injury to children and youth in Europe. The current core-project of the European Child Safety Alliance, called TACTICS, runs from April 2011 through to March 2014 and builds on the successful work of previous EU-funded projects such as the Child Safety Action Plan (CSAP) project (2004-2010).

More at: www.childsafetyeurope.org



Figure 3.3: Main places of occurrence of non-fatal child injuries by age group



Source: EU IDB. See Annex "List of figures and tables" for more details.

Table 3.4: Mechanisms of home injuries in children under 5 years of age

Rank order	Mechanism	Percentage
1	Falls from height	34%
2	Other falls	24%
3	Piercing/penetrating force	6%
4	Thermal mechanisms	6%
5	Exposure to chemical or other substances	4%

Source: EU IDB. See Annex "List of figures and tables" for more details.

Non-fatal injuries

- According to EU IDB estimates 7.9 million children under the age of 15 have to be treated for an injury in EU hospitals each year. This represents 19% of all hospital treated injuries, whereas children under the age of 15 represent only 16% of the total population [25].
- This means that 1 out of 10 children in the EU each year experiences an injury requiring emergency medical attention. 19% of these children have to be admitted to hospital due to the severity of the injury (EU IDB estimate).
- In children under 5 years of age more than 60% of all injuries occur at home, with falls being the most frequent injury mechanisms (Figure 3.3).
- Public roads are the place of injury occurrence for about 11% of all child injuries, with more severe consequences compared to other injuries: head injuries were diagnosed in 23% of all transport related child injuries, which is the same dimension as for other child injuries (26%). The main role of children in traffic injuries is as riders (59%), passengers (29%), and pedestrians (10%; EU IDB estimates).
- About 139 000 children in the EU require emergency medical treatment each year due to injuries related to playground equipment. A further 57 000 child injuries are related to toys and 35 000 cases to infant or child articles. "Infant or child products", mainly used in the home environments such as cots, baby prams, changing tables and high chairs are expected to comply with high safety standards as they are meant to be used by or for a very vulnerable user group, but still appear in the top-ten list. The figures suggest there is still much room for improvement.

Table 3.5: Top 10 "Infant or child products" involved in child injuries (under 5 years of age)

Rank order	Product
1	Swing
2	Slide, sliding board
3	High chair, booster seat
4	Toys
5	Changing table
6	Playground climbing apparatus
7	Baby pram, buggy etc.
8	Other specified playground equipment
9	Marble, bead
10	Tricycle, ride-on toy

Source: EU IDB. See Annex "List of figures and tables" for more details.

Trends

- Injuries are by far the main cause of childhood deaths right throughout Europe. However there is an impressive downward trend in child fatalities in past years. It can be assumed that this is largely the effect of intensive child safety programmes which have taken place in all EU countries, focusing on fatal risks (e.g. promotion of child restraint systems, pool fencing, smoke alarms, and window lockers).
- In spite of the decrease in fatal child injuries, the frequency of hospital treated injuries shows an upward trend. This indicates that most severe child injuries can be increasingly prevented, but that there is a growing tendency to consult emergency departments even with minor injuries to children.

HOTSPOT ADOLESCENTS

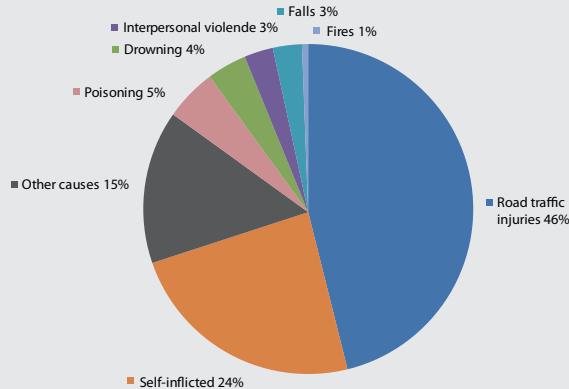


Behind the numbers

August 2012, Rimini, Italy. An 18 year old tourist from Germany suffered severe head and spine injuries, when he jumped from the cliffs at a beach resort close to Rimini, Italy. His head hit the rocky seafloor. Other tourists rescued him quickly when he emerged floating unconsciously. After first aid he was brought to a hospital in Rimini where he was taken into intensive care, according to a police-spokesman.

Eye-witnesses reported that the young man actually may not have intended to jump, but was exploring the dangerous cliffs by foot and may have lost balance at some stage. At the date of the report, it was not yet known whether the young man would remain permanently disabled.

Figure 4.1: Leading causes of death and causes of fatal injuries in adolescents between 15–24 years



Source: WHO MBD. See Annex "List of figures and tables" for more details.

Table 4.2: Leading causes of death and causes of fatal injuries in adolescents between 15–24 years

Rank order	Cause of death for children 1–14 years (ICD-10 codes)	% of all causes of deaths
1	External causes of morbidity and mortality (V01-Y89): injuries	62
2	Malignant neoplasms (C00-C97)	10
3	Diseases of the circulatory system (I00-I99)	5
4	Diseases of the nervous system and the sense organs (G00-Q99)	5
5	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (R00-R99)	5

Source: Eurostat COD. See Annex "List of figures and tables" for more details.

Facts & impacts

Compared to children, young people are expanding their radius of action significantly wider, which is also reflected by the diversity of settings in which injuries among young people tend to occur, e.g. in school, at work, in traffic, at home and during leisure time activities.

Injuries in this age group also tend to be increasingly related to the lifestyles of young people. Due to their commencing to participate in motor vehicle traffic and in work environments, injury rates peak between the age of 15 and 24: injuries are by far the number one killer in this age group.

Fatal injuries

- Annually, the lives of 16.100 young people between 15 and 24 years of age are taken away by injuries. Statistically, this translates to 27 deaths per 100 000 or 1 injury-death per 3 700 adolescents each year.
- These dramatic statistics make injury the leading cause of death among adolescents, accounting for 62% of all deaths in this age group (relative injury mortality).
- The risk of a fatal injury increases significantly after the age of 14, especially for boys, and leads to a relative injury mortality rate of 68% in males between 20 to 24 years of age, and 46% for females (figure 2.6).
- Two main causes account for over 70% of all fatal injuries among adolescents: road injuries (46%) and suicides (24%; Figure 4.1).
- For both causes the rates per 100 000 adolescents are approximately 4 times higher for boys (road: 19, suicide: 11) than for girls (road: 5, suicide: 3).
- Poisoning, mainly through medication and alcohol, ranks third on the cause of death list for adolescents. The share of 5%, represents around 800 victims annually. This does not include deaths due to psychotropic drugs that are often classified under the categories for "mental and behavioural disorders" of the WHO ICD-10 cause of death catalogue.
- There are considerable differences between countries in the injury fatality rates for adolescents. For example, injury in young people between the age of 15 and 24 accounts for 49% of the total number of deaths in Portugal or 54% in Spain while in Finland and Estonia it is the cause of 76% of fatalities in this group.

68%

Percentage of deaths among adolescent boys and young men in the EU that are caused by injuries.*

*Male adolescents between 15 and 24 years of age

EU Initiatives: AdRisk – a joint action

Safety regulations and awareness campaigns have significantly contributed to reduce the number of injuries in young people between 15-24 years of age over the last few decades, particularly in the fields of road safety and safety at work. However, compared with the age group of children, there is relatively little understanding of the developmental aspects of youth risk taking and associated behaviours.



The European "Action on Adolescents and injury Risk" (AdRisk) took the available evidence on risk perception of young people and communicating with adolescents into account. Working together with youth and seeing them as a resource was the core principle applied in this action, which led to the production of a range of support materials for strengthening youth competence to tackle risk and cope with challenges and peer-group pressure.

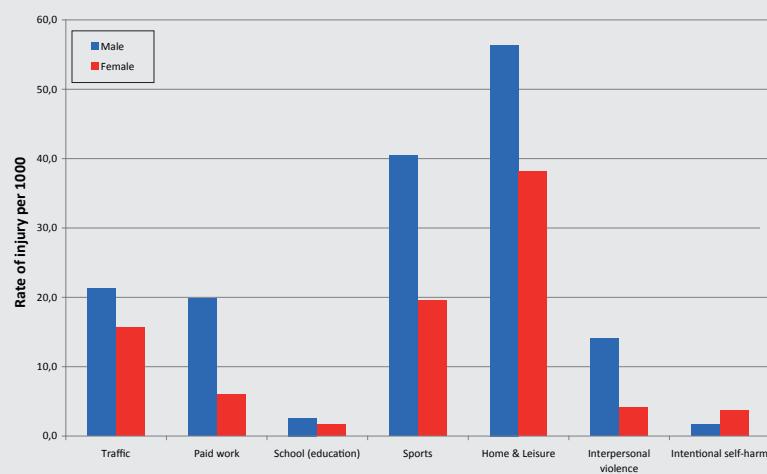
The "split second", in which a young person decides whether or not to take a certain risk, is essential. Therefore, the AdRisk core message is, "a split second can change your life". The so-called "Split the Risk" tools and videos are helping young people to become aware of instances of increased risks. The AdRisk-programme is being implemented in a number of countries including Austria, Finland, Hungary, Italy, the Netherlands and the UK.

More at: www.eurosafe.eu.com

Non-fatal injuries

- According to EU IDB estimates each year, 7.5 million adolescents between 15 and 24 years of age have to be treated for an injury in EU hospitals. This represents 19% of all hospital treated injuries, whereas adolescents only represent 12% of the total EU population [25].
- The rate of hospital treated injuries in young people is highest in the domains of "home & leisure" and sports injuries, with a significantly higher rate for men (Figure 4.3).
- For men, the rates of road traffic, paid work and assault are in a relatively similar range between 14-22 injuries per 1 000. The tables 4.4 and 4.5 provide some additional details about road and sport injuries of young people as available in the EU IDB.
- For some injuries the significant differences between boys and girls reflect behavioural preferences leading to different exposure patterns. In sports, for instance, this has been confirmed by various surveys: there are clearly more European boys than girls (15-24 years of age) practicing sport (71% compared to 50%) [26].
- For traffic injuries, differences in risk taking behaviours and time spent in traffic seem be more relevant for explaining sex differences in injury numbers. As it is in most countries that young men and young women possess driver licenses in roughly equal numbers.
- The share of intentional injuries is about 9% for both sexes together. In young women self-harm and assault take an equal share, but in young men there are many more injuries through assault than through self-harm (Figure 4.3).

Figure 4.3: Injury rates (per 1 000) of adolescents (15-24 years), by injury prevention domain and gender



Source: Source: EU IDB. See Annex "List of figures and tables" for more details.

Table 4.4: Mode of transport of adolescents (15 -24) involved in road injuries (% of all road injuries in this age group)

Four wheels motor vehicle	32%
Two wheels motor vehicle	28%
Pedal cycle	26%
Pedestrian	4%

Source: EU IDB. See Annex "List of figures and tables" for more details.

Table 4.5: Injury ranking of ball team sports in adolescents (15- 24; % of all ball team sports in this age group)

Soccer	70%
Basketball	9%
Volleyball	7%
Handball	5%

Source: EU IDB. See Annex "List of figures and tables" for more details.

Trends

- In contrary to the general downward trend in road traffic injuries and work-place accidents, the share of home, leisure and sport injuries in adolescents remains unchanged which calls for reinforced actions for improving risk competencies of adolescents, e.g. through programmes at schools and in sport clubs.
- It is evident that alcohol and also drug use is on the rise among adolescents and both substances are an important underlying contributor to injuries.

HOTSPOT OLDER PEOPLE

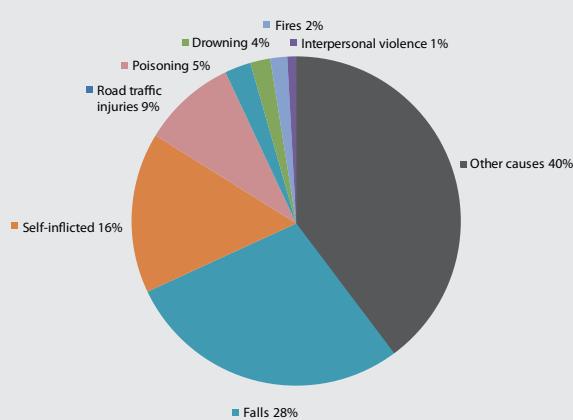


Behind the numbers

April 2012, London Borough of Richmond. A 72-year-old woman fell and broke her hip. She slipped near a large tree where the roots had pushed up the path and caused it to slope. A witness, 40, who waited until the ambulance arrived, said the woman was on her way to visit her new-born great-grandchild when she had the accident.

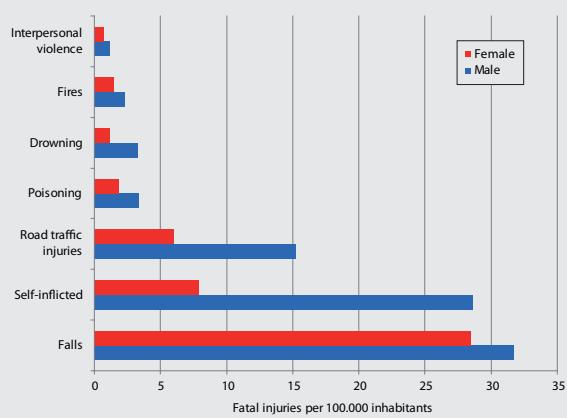
A neighbour said she wrote to the Council last month complaining that the pavement was dangerous as broken tiles forced wheelchair users and mothers with pushchairs to go into the road in order to get along. A council spokeswoman said: "we inspect all residential roads and pavements on a regular basis and any defects that are deemed hazardous or dangerous are repaired by the council's highway teams within specified timescales".

Figure 5.1: Fatal injuries amongst older people (60+) by causes of death



Source: WHO MDB. See Annex "List of figures and tables" for more details.

Figure 5.2: Fatal injuries amongst older people (60+) by causes of death and gender



Source: WHO MDB, Eurostat COD. See Annex "List of figures and tables" for more details.

Facts & impacts

The highest injury mortality rates relate to people at age 60 and above, falls being a major cause of these deaths. Fall-injuries also account for a higher than average hospitalisation rate and an excess share in the direct medical cost due to injuries in this age group.

A "greying" Europe calls for increased investments in injury prevention for older people as indicated by the following figures.

Fatal injuries

- Annually, 123 000 people in the EU aged 60 and above die from the consequences of injuries, which represents 53% of all injury deaths. Nevertheless, the 123 000 fatalities represent 2.8% of all deaths in this age group.
- The injury fatality rates (per 100 000) rise sharply after the age of 70 for both women (from 39 to 135 in the age group 80 to 85) and men (from 95 to 226; Figure 2.6).
- Falls are the main cause (28%) of fatal injuries among older people, in particular for women. Suicides (16%) and road traffic (9%) rank second and third (Figure 5.1).
- More than one quarter of all people suffering a hip fracture die within a year of falling and another 50 percent never return to their prior level of mobility and independence [27].
- Also in the senior population differences exist in injury fatality between the EU member states - e. g. the share of injury deaths to all deaths of people above 65 years of age ranges from 1% in Greece to 6% in Slovenia).

82%

The percentage of victims of fatal fall injuries that are 60 years and older.

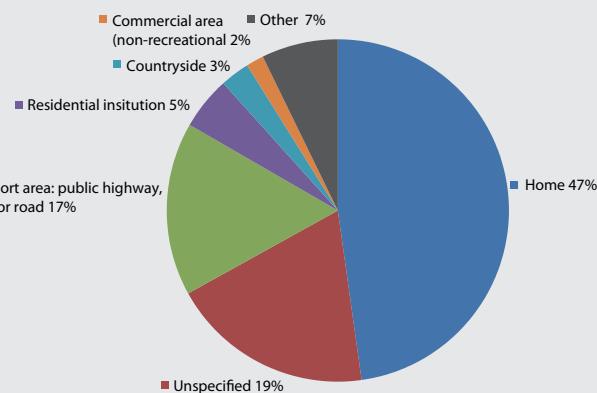
European initiatives: Falls Prevention Network

The EU-Strategic Plan for Innovation Partnership on Active and Healthy Ageing has been launched by the Commission in 2012. This plan contains various elements, one of them aiming to have by 2015 validated and operational programmes for early diagnosis and prevention of falls implemented in at least 15 different regions of the EU. These programmes should use innovation in organisation, delivery and business models, injury risk registers and services. The ultimate objective of the EU-innovation plan is to add an average of two active healthy life years to the lives of European citizens by 2020.

The ProFouND-project, "Prevention of Falls Network for Dissemination", is one of the projects supported by the EC in this framework. This project raises awareness of the importance of the issue and will enhance the availability of proven tools and guidance for multidisciplinary care, early diagnosis (risk assessment) and falls prevention management. It will support Member States, regions/municipalities, care organisations and insurance companies to invest in their individual programmes by providing guidelines, toolkits and evidence-based standards of care.

Website: www.fallsprevention.eu

Figure 5.3: Places of occurrence of non-fatal injuries among older people (60+)



Source: EU IDB. See Annex "List of figures and tables" for more details.

Table 3.5: Top 10 "Infant or child products" involved in child injuries (under 5 years of age)

General walking	74%
Leisure	67%
Cooking, cleaning	78%
Personal hygiene	72%
Maintenance of home or garden	52%
Do-it-yourself	19%

Source: EU IDB. See Annex "List of figures and tables" for more details.

Non-fatal injuries

- The total of older people (60 years of age and plus) that have to be treated for an injury in EU hospitals is estimated to be 6.7 million each year (EU IDB estimates). The burden of treatment, rehabilitation and care is tremendous, both for society and the respective families.
- According to EU IDB estimates a hospital contact for an injury is required each year by 57 of 1 000 persons in the age of 60 or above. From an age of about 70 years, the rate increases considerably for both sexes, but faster for women. Women between 80 to 84 years bear a risk which is 50% higher than that of men of the same age.
- About one third of all hospital contacts after an injury leads to admission (EU IDB estimate). As the average length of stay in hospital increases with age (by 1 day for every 5-year age group from 60 years onwards), older people "consume" 74% of all injury related hospital days [23]. For women this share is even higher at 78%, their share in the total population is 23% [25].
- Home (almost 48%) and "public road" (16%) are the most relevant places for occurrence of non-fatal injuries amongst older people (Figure 5.3).
- Significant gender differences exist in particular in activities related to home injuries (see Figure 5.4) which seem to primarily reflect differences in roles men and women fulfil at home.
- Gender differences in the rates of hip fractures are generally attributed to osteoporosis as a predisposing factor in women for sustaining fractures. About 30% of injury discharges of women in the age group over 65+ are diagnosed with "hip fracture" (ICD-10 codes S72) as opposed to "only" 20% for men [23]).

Trends

- Since 1997 the share of people between 65 and 79 years of age has grown from 11.6 % to 12.7% in the EU-27 population in 2011; the population older than 79 years from 3.5 to 4.8 % [25]. If this trend continues, 24% of the EU-27 population will be 65 years or older by the year 2030 [28].
- Age is also the biggest risk factor for long term dependency on care. According to a prognosis of the FELICIE-study (Future Elderly Living Conditions in Europe) dependency on care until 2030 will increase by 20% for women and by 80% for men after the age of 75 [29].
- The share of older people in all fatal injuries in the EU has been steadily rising by approximately 1% every two years (from 38% in 1990 to 49% in 2010).

HOTSPOT VULNERABLE ROAD USERS

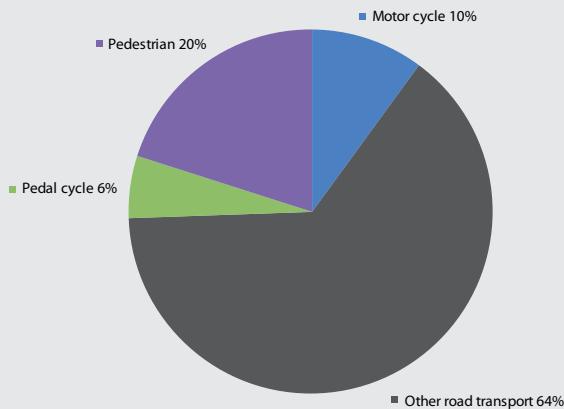


Behind the numbers

September 2012, Baia Mare, Romania. A 45 year old male car driver was not attentive when he turned left and hit a 22 year old cyclist who fell and hit the ground. The victim suffered multiple injuries and was transported by ambulance to the Emergency Department.

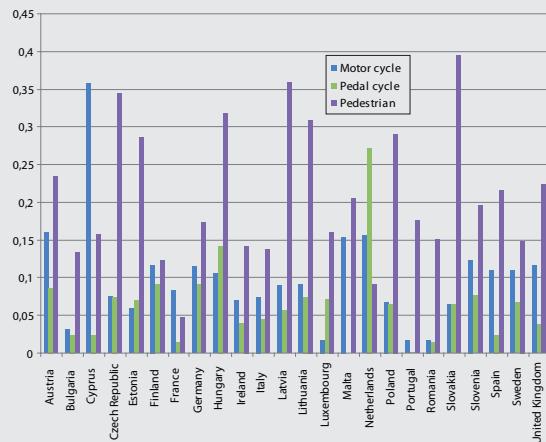
The car driver declared that he didn't see the cyclist due to the fact that his vision was impaired by sun glare. "I did not see the cyclist. I do not know where he came from. From the road, the sidewalk, I just do not know. I drove extremely carefully. He came and jumped over me" declared the car driver. "He failed to give the right of way to a bicyclist who drove according to traffic rules on the opposite lane. The car driver was tested for alcohol and the results were negative" declared a representative of the Traffic Police Department.

Figure 6.1: Road fatalities by type of road user



Source: WHO MDB. See Annex "List of figures and tables" for more details.

Figure 6.2: Road fatalities by type of road user and EU country



Source: WHO MDB, Eurostat COD. See Annex "List of figures and tables" for more details.

Facts & impacts

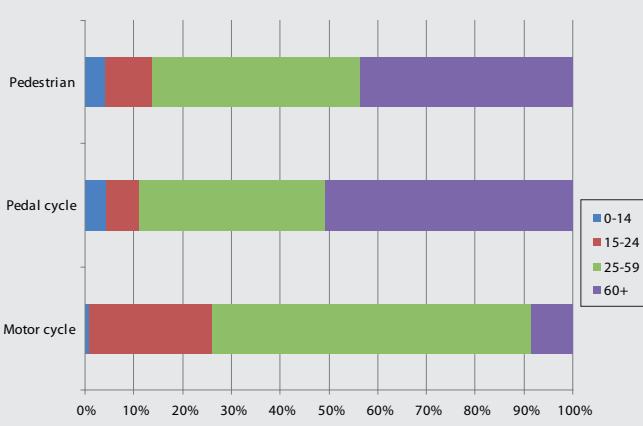
Between 1991 and 2009 the number of passenger cars per 1 000 inhabitants in EU27 territory has increased by 42% [30]. As a consequence, road transport is one of the most dangerous systems that people have to deal with on a daily basis. Bikers, bicyclists and pedestrians and in particular children, seniors, frail persons and persons with disabilities are at above average risk of road traffic injury. Moreover, these groups bear a considerable risk of accidents that occur without an immediate counterpart being involved [31]. These risk groups deserve to be prioritised in current actions for road safety [32].

It is well established that physical activities such as cycling and walking provide health benefits and should be promoted as healthy alternatives to car use for short journeys. However, these alternative modes of transportation need to be significantly improved as to the levels of safety provided to their users.

Fatal injuries

- Deaths in road transport account for 16% of all injury fatalities (Table 2.2). According to WHO mortality figures, the recent toll of road transport in the EU is about 38.000 fatalities per year.
- On average in the EU one-third of these transport injury victims are vulnerable road users (VRU; Table VRU): 19% pedestrians, 9% motorcyclists and 6% pedal cyclists (Figure 6.1).
- Considerable differences exist between EU countries in the percentage of VRU of all road transport injuries: the highest percentages are 39% for pedestrians in Slovakia, 36% for motorcyclists in Cyprus and 27% for pedal cyclists in the Netherlands (Figure 6.2). It is obvious, in particular from the figure for bicyclists in the Netherlands that these differences reflect differences in exposure.
- On EU average, 44% of pedestrian and 51% of bicycle fatalities are recorded in the age group 60 and above (Figure 6.3); these percentages are clearly not in proportion with their share of the population.

Figure 6.3: Road fatalities by type of road user and age group



Source: WHO MDB, Eurostat COD. See Annex "List of figures and tables" for more details.



EU Initiatives: EU Transport Safety Policy

The new EU road safety policy aims to cut European road deaths by 50% by 2020 compared to 2010. To do so, it seeks to make users, vehicles and infrastructure safer through a mix of measures – national cooperation, sharing best practices, research and studies, awareness campaigns and possibly regulation. More specifically this would involve: creating a European road safety education and training strategy; implementing EU-wide road safety legislation to ensure all EU nationals are treated equally when traffic rules are broken; making vulnerable road users safer by improving communication; and improving tools for collecting and analysing accidents [33].

The European Transport Safety Council, which counts around fifty transport safety knowledge centres across Europe, serves as an important source of expert advice on transport safety matters to countries and the EC. It seeks to identify and promote effective measures on the basis of international scientific research and best practice in areas which offer the greatest potential for a reduction in transport crashes and casualties. It provides factual information, in the form of scientific reports, fact sheets and newsletters, in support of high safety standards in EU harmonisation, the implementation of best practices and transport safety research.

More at: www.etsc.eu

Table 6.4: Vulnerable road users and injury severity

Injury outcome	All road users	Vulnerable road users (VRU)	% VRU of all road users
Fatalities	38.000	14.000	36%
Hospital admissions	668.000	407.000	61%
Hospital outpatients	3.524.000	2.326.000	66%
All hospital patients	4.192.000	2.733.000	65%

Source: See Annex "List of figures and tables" for more details.

Non-fatal injuries

- According to EU IDB estimates 4.2 million road injuries per year have to be treated in EU hospitals (Table 2.2 and 6.4).
- On average in the EU almost two-thirds of these road injury victims are vulnerable road users (hospital admissions and outpatients): 6% pedestrians, 18% motorized two-wheelers, 40% pedal cyclists (Figure 6.5).
- Hospital data are an important complementary source to police records in particular for better assessing injury severity and long term consequences (disabilities) [34].
- Head injuries have a high share in all road injuries, in particular in the more severe ones which led to admissions. There are 36% for pedestrians, 34% for bicyclists, and 24% for two-wheeled motor vehicles (Figure 6.6).

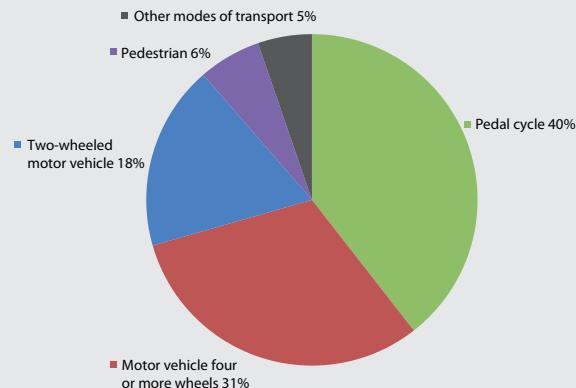
Trends

- Despite declining rates of road traffic deaths, the percentage of VRU fatalities remains stable in most EU countries (WHO MDB).
- The percentage of head injuries of admitted bicyclists is slowly decreasing (from average 40% in 2005-2007 to 34% in 2008-2010), which might be a result of increasing bicycle helmet wearing in Europe.

Underreporting of traffic injuries

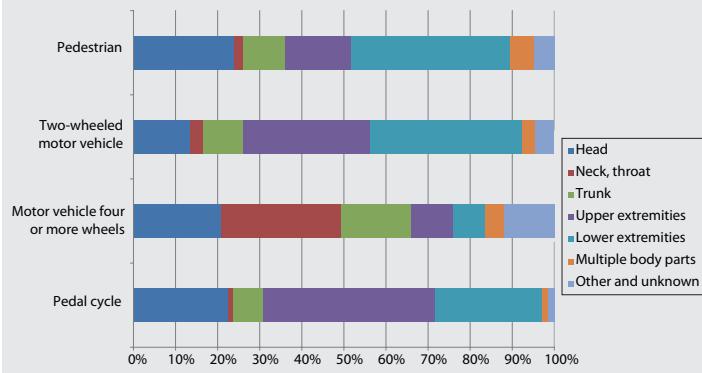
According to police records about 1.7 million road traffic users are injured in the EU each year, 1.4 million of which are slightly injured and 300 000 seriously injured [35]. However, compared to EU IDB based estimates of 4.2 million road traffic injuries, 668 000 of which have to be admitted to hospital (see Table 2.2), this indicates a considerable under-reporting of road traffic injuries in police records. Under-reporting in police records has been shown to be in particular high for pedestrians (by a factor of 1.35 for serious injuries up to 2.4 for moderate injuries) and cyclists without any counterpart involved (by a factor of 3.75 up to 8 for serious and moderate injuries, respectively [22]).

Figure 6.5: Non-fatal road injuries by type of road user



Source: EU IDB. See Annex "List of figures and tables" for more details.

Figure 6.6: Non-fatal road injuries by type of road user and body part injured (only admissions)



Source: EU IDB. See Annex "List of figures and tables" for more details.

34%

Percentage of head injuries among pedal cyclists admitted to hospital after a traffic accident.

HOTSPOT PRODUCT AND SERVICES RELATED ACCIDENTS



Behind the numbers

December 2012, the Netherlands. For more than forty years a 66 year old man from E., a small town in the south of the Netherlands, used to entertain neighbours and friends with fireworks at new year's eve, without any problem... until last year. "Last year, 2011, I was lightning my rockets as usual. One rocket did not go off; I thought the fuse had not ignited. When I went in for a closer look, the thing went off directly into my face."

The fractured cheekbone and broken nose healed within a couple of weeks, but in his right eye socket they had to implant an artificial eye. "I cannot judge distances anymore. Backward parking has become difficult. Recently in a supermarket I stumbled over a rack". This year the poor man will celebrate New Year's Eve quietly at home with his wife. "Of course I would prefer to join the outdoor party and watch the fireworks, but I better take care of the one eye I have left", he comments.

Figure 7.1: Fatal home injuries in which product safety can play a role

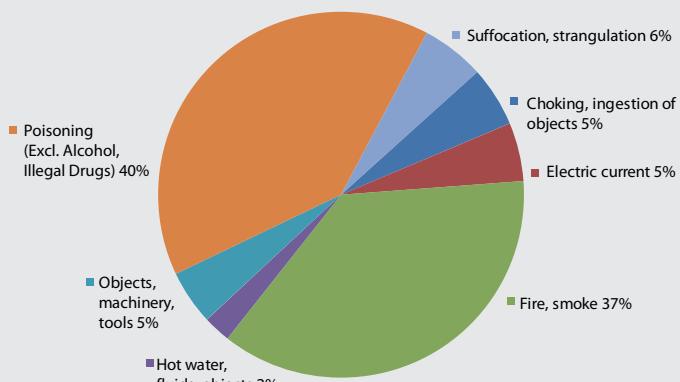
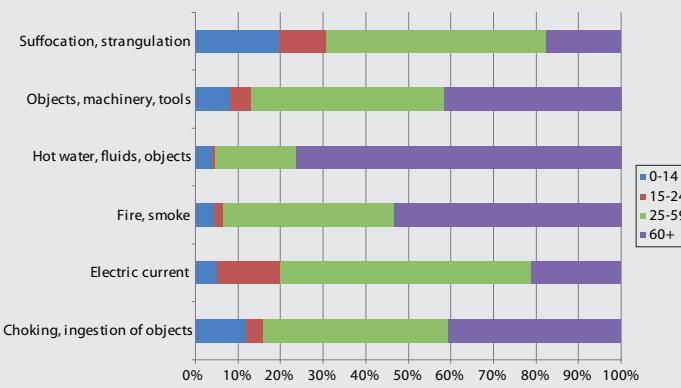


Figure 7.2: Product related causes of fatal home injuries by age group



Source: WHO MDB. See Annex "List of figures and tables" for more details.

Source: WHO MDB. See Annex "List of figures and tables" for more details.

Facts & impacts

The European Union aims to achieve high standards in non-food consumer products with a wide range of sectoral legislation and the General Product Safety Directive [36]. Nevertheless, accidents related to the use of consumer products and services continue to occur, partly also due to thoughtless behaviour and inexperienced use of products.

Fatal injuries

Information on fatal product related injuries cannot be retrieved from the national cause of death statistics. However, it is evident that a considerable number of injuries in private homes are related to fires or to hazardous products such as electric equipment and installations, tools, machines, toxic products, and hot substances:

- Almost 60% of fatal "home injuries", which are not falls or alcohol or drug related poisonings, are caused by mechanisms that are relevant for the product safety: e.g. fires, electric current, tools, or hot tap water (Figure 7.1).
- The proportion of product safety relevant causes in "home injuries" translates to an estimate of 5 400 consumer product related fatalities in the EU per year.
- Older people (aged 60 and above) are disproportionately affected by injuries related to fires and also by hot water/fluids; small children on the other hand are disproportionately affected by accidental suffocation (Figure 7.2).
- 6% of fatalities in home fires are caused by ignition or melting of clothing, or highly flammable material.

Non-Fatal injuries

- Home, leisure and school accidents (including sports) are causing 75% of all hospital treated injuries in the EU (Table 2.2).
- 18% of the home, leisure, sports, and school injuries are related to products such as buildings, building components, or related fittings (e.g. floor tiles), tools, machinery as used for DIY (e.g. chainsaws), equipment used for sports (e.g. trampoline), furniture (e.g. bunk bed), or mobile machinery (e.g. ride-on lawnmower) (figure 7.3).
- Judging from the place of occurrence categories of the EU IDB, 11% of the "home, leisure and sports" injuries are estimated to be potentially related to the provision of a service: e.g. injuries in residential institutions (e.g. senior residences), in sport area (e.g. public swimming pools), commercial area (e.g. hotels, or recreational area (e.g. amusement parks) (figure 7.4).

5 400

**Fatal home injuries in
which product safety
can play a role**



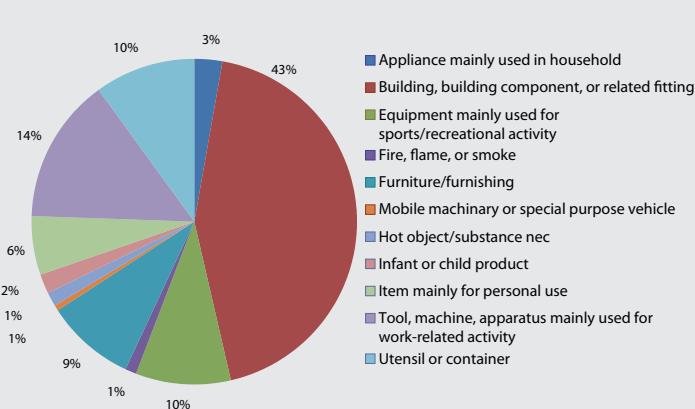
EU Initiatives: Collaboration in market surveillance

Effective regulations and coordinated market surveillance in Europe are essential for ensuring that a high level of consumer safety protection is warranted and that a level playing field is established for businesses within the EU. Much has been achieved in the domain of harmonising safety requirements and in ensuring general safety requirements applicable to all consumer products that are brought into circulation within the EU. However in regard to coordinated surveillance and enforcement in Europe, there is still a need for improvement. This has led to the creation of the PROSAFE-network, Product Safety Enforcement Forum of Europe.

PROSAFE is a non-profit organisation established by market surveillance officers across Europe. The main aim of the PROSAFE is to ensure a core set of best practice techniques and cross-sharing of information and expertise in market surveillance within the European region. It also coordinates a number of joint EU-wide surveillance actions, e.g. on child articles, fireworks, cigarette lighters and lawn mowers that are being put on the market in the region.

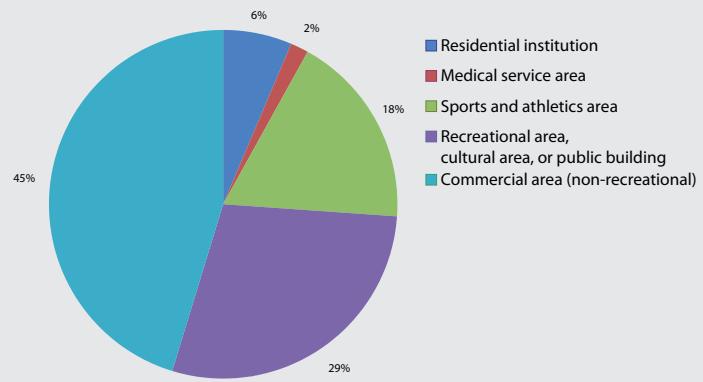
More at: www.prosafe.org

Figure 7.3: Product related non-fatal home and leisure injuries by product category



Source: EU IDB. See Annex "List of figures and tables" for more details.

Figure 7.4: Service related home and leisure injuries by place of occurrence



Source: EU IDB. See Annex "List of figures and tables" for more details.

Risk assessment with hospital emergency department data

Data from emergency departments have proven to be an effective means for fulfilling the product safety data needs [37]. The EU IDB provides the large number of incidents that are needed to measure the number of injuries associated with the thousands of different consumer products in the marketplace.

Although the system needs further improvement as in timeliness of reporting, geographical coverage and representativeness of the sample, the EU IDB has great potential for use in product safety policy development. Over 2008-2010, about 300.000 cases have been added annually to the database, containing many details about activity, place of occurrence, products that might be involved in the injury event and short descriptions of how the accident happened.

Table 7.5 gives an example of injury scenarios derived from the EU IDB data elements and narratives. Each of these "accident scenarios" can be further analysed by the demography of the victims and severity of injuries [38].

Table 7.5: Percentage of 10 product/substances causing thermal injuries to children at home (0-4 years of age)

Hot drink	30%
Boiling water (other than tap water, e.g. from electric kettle)	17%
Stove, oven, cooktop	6%
Other hot liquid (e.g. soup)	5%
Hot cooking oil or fat	4%
Hot tap water	4%
Unspecified fire or flame	3%
Electric or gas radiator, heater	3%
Clothes iron, press	1%
Pressurised kerosene/paraffin cooking stove	1%

Source: EU IDB. See Annex "List of figures and tables" for more details.



HOTSPOT SPORTS INJURIES



Behind the numbers

February 2012, Kitzbühel, Austria. For a 5 year old boy from Tyrol a skiing school class ended with severe injuries. The boy was travelling in a group of eight children when he was run over by an unknown adult male skier.

According to the police, the boy was skiing directly behind his instructor. The skier drove through both in fast and uncontrolled manner and also toppled. He did not care about the child and did not identify himself.

The boy remained unconscious for several minutes, and was brought to the city hospital by rescue helicopter. He suffered a double jaw fracture and cuts on his face. Owing to wearing skiing helmet more serious head injuries such as brain injuries were prevented.

Figure 8.1: Fatal sports injuries by type of sports (excluding swimming)

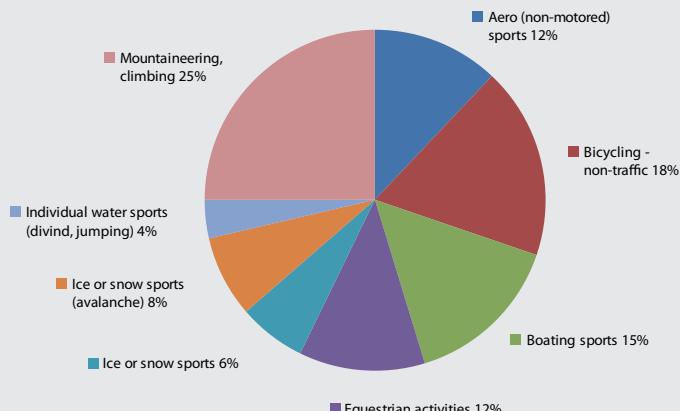
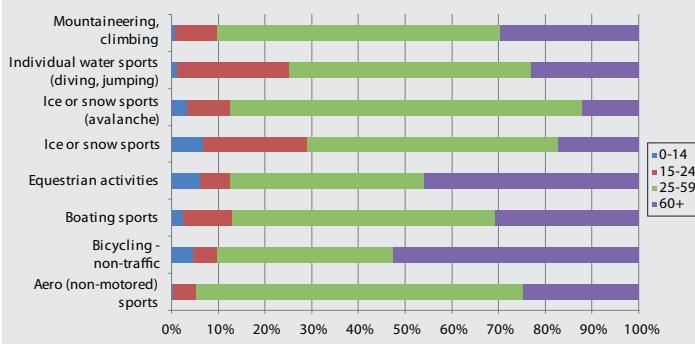


Figure 8.2: Fatal sports injuries by type of sports (excluding swimming) and age group



Source: WHO MDB. See Annex "List of figures and tables" for more details.

Source: WHO MDB. See Annex "List of figures and tables" for more details.

Facts & impacts

It has been proven that a lack of physical activity is a major risk factor for the development of a number of chronic illnesses. Therefore, physical exercise is an essential part of a healthy lifestyle. However, a sizable proportion of the expected health gains are lost due to sport injuries [39]. As safety concerns are a factor in the decision whether or not to participate, anticipated injury risks may also be a significant barrier to getting involved in sports.

Unfortunately, the usual health statistics poorly cover the incidence of sports injuries. For non-fatal injuries, the EU IDB proves to be a rich source of information on the frequency and patterns of non-fatal sports injuries due to a specific "IDB sports module" [40].

Fatal injuries

For a conservative estimate, about 1 000 unintentional fatal injuries can be related to sport activities, like rock climbing, boating sports, or equestrian related sports, as shown in Figure 8.1. These sports categories are roughly estimated from WHO ICD mortality codes like "hang-glider accident" (aero sports), fall from cliff" (climbing), or "fall involving ice-skates, skis" (ice or snow sports).

- For a more general estimate, when certain types of drowning (in natural water and swimming pools) and off-road bicycle accidents are included, about 5 in 1 000 unintentional injuries can be related to recreational and sports activities. This rate translates in to an estimate of 7 000 fatalities per year in the EU-27 (about 85% of cases being related to swimming and drowning).
- Figure 8.2 illustrates that adolescents between 15 and 24 years of age are over-represented particularly in "individual water sports" (mainly jumping into water) and "ice or snow sports", a fact that should be taken in to consideration when targeting injury prevention among adolescents (see also hotspot "Adolescents").
- A main target group for the prevention of drowning while swimming (in natural water and swimming pools), should be people above the age of 60 as they account for 27% of all swimming related fatalities (children 1-14: 7%; adolescents 15-24: 12%).

7 000

Estimate of annual fatalities in the EU-27 during sports and recreational activities like swimming and off-road bicycling.



EU Initiatives: Safety in Sports Network

Regular physical activity is essential for keeping fit and staying in good health. However participating in sports also carries a risk of being injured. Fortunately, there are many possibilities to prevent sports injuries, e. g. through making sports infrastructures safer, using protective equipment, and focussing training and coaching practices explicitly on injury prevention. As governing bodies of sports organisations have a major responsibility for identifying and managing the risks sports men and women are exposed to, they play a key role in implementing available research evidence and best practices.

The EU-“Safety in Sports” network aims to share knowledge on the prevention of acute and overexertion sports injuries and to enhance exchange among European experts from science and practice. It is developing and pilot testing programmes for safety management in a wide range of sport activities, such as snow sports and ball sports and supports the wider implementation of good practices by local, national and EU-level sport organisations.

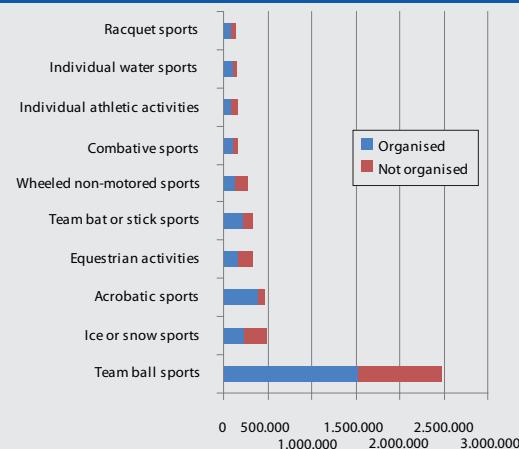
More at: www.safetyinsports.eu/

Table 8.3: 10 popular sports with the highest shares of head injuries by type of sports and share of head injuries

Team bat or stick sports	24%
Individual water sports	22%
Equestrian activities	12%
Combative sports	11%
Wheeled non-motored sports	10%
Racquet sports	10%
Ice or snow sports	10%
Team ball sports	7%
Individual athletic activities	6%
Acrobatic sports	5%

Source: EU IDB. See Annex “List of figures and tables” for more details.

Figure 8.4: EU-27 estimates of hospital treated sports injuries by type of sports and participation (organised / not organised)

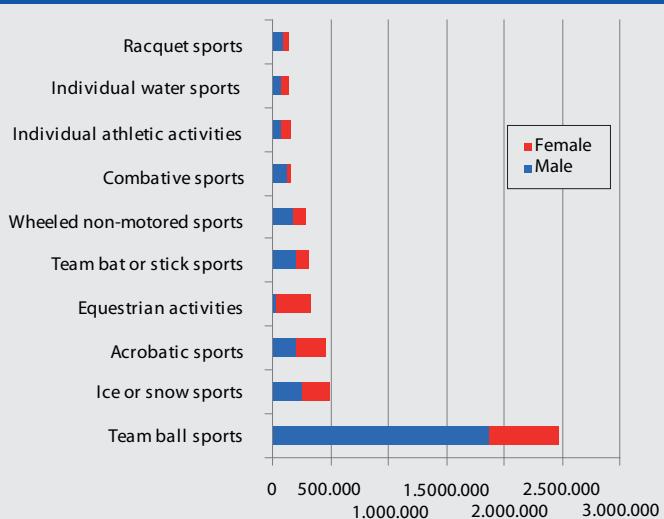


Source: EU IDB. See Annex “List of figures and tables” for more details.

Playing sports in the EU

- 4 out of 10 Europeans aged 15 years and over participate in sport at least once a week.
- To improve health is the most common reason for practicing sport (6 out of 10 sportspersons), followed by improving fitness and relaxing.
- Men exercise more than women: 43% of men interviewed claim they participate in sport at least once a week, while the proportion of women is 37%.
- The main reasons for not participating in any sport are lack of time (45%), disability or illness (13%) and a general dislike of competitive activities (7%).
- While 61% of the 15-24 old age group participate in sport at least once a week, the proportion decreases to 33% for the 55-69 category.

Figure 8.5: EU-27 estimates of hospital treated sport injuries by sports and gender



Source: EU IDB. See Annex “List of figures and tables” for more details.

Trends

- The number of sport injuries is increasing, probably due to increased participation in sport.
- The share of women injured in sports injuries has been steadily increasing in the past years (from 26% in 1996 to 36% in 2010), which probably reflects the increasing participation of women.

Non-fatal injuries

- Annually, about 6.1 million people are being treated in hospital for a sports injury as defined by the EU IDB catalogue of sports (table 2.2). Of those about 7% (or 420 000 cases) have to be admitted for further treatment.
- 32% of sports injuries affect adolescents and young adults (15-24 years of age): see also box for figures about “playing sports” for this age group.
- “Team ball sports” account for about 44% of all hospital treated sports injuries (Figure 8.4); by specific type of ball sports the ranking is: Soccer (71%), Handball (9%), Basketball (6%), Volleyball (6%).
- The majority of sports injuries (60%) result from participation in organised sports according to the EU IDB records (Figure 8.4).
- For most types of sports more men are injured than women (Figure 8.5); notable exceptions are acrobatic sports (57% women) and horse riding (90% women). This of course reflects gender preferences in the types of sports.
- The specific injury patterns for each type of sport are important to know in order to adequately address for instance the issue of wearing personal protection equipment in sports, e.g. helmets. As an example, Figure 18.4 ranks the main type of sports by their share of head injuries.

HOTSPOT INTERPERSONAL VIOLENCE

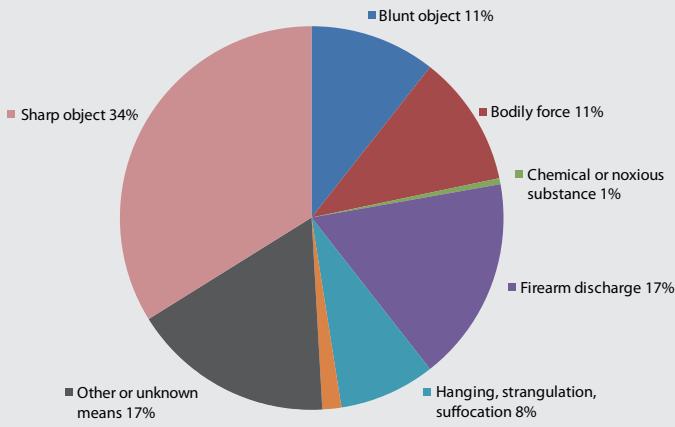


Behind the numbers

January 2013, Dublin, Ireland. Nine people were stabbed during a show of a popular electro house band at Phoenix Park. A 23-year old man was arrested. According to a news agency he is only one of a number of suspects that the police are searching for in the stabbing spree, which was part of what officials are calling a „significant number“ of unprovoked attacks at the show. Investigators believe the suspect in custody stabbed as many as four people and that the other victims' injuries were a result of fights with knives and broken bottles.

A spokesman for the event said that closed-circuit TV footage had been handed over to police, adding that ticket holders were subject to searches before entering the site. „Every precaution, as far as possible, was taken to ensure the safety and security of the audience at all times“. An Irish newspaper reported that three men remained in hospital, with two in serious but stable condition. The sister of one of the men said that her brother had been stabbed four times in the back by the still unknown assailant and later suffered a collapsed lung.

Figure 9.1: Fatalities through interpersonal violence by means of assault



Source: WHO MBD. See Annex "List of figures and tables" for more details.

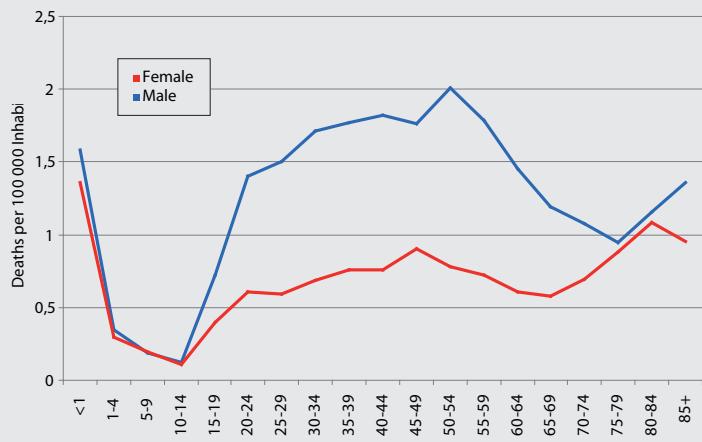
Facts & impacts

Interpersonal violence is an issue of growing public concern and includes domestic violence, child abuse, elder abuse and youth violence. Interpersonal violence takes many forms (physical, mental and sexual) and occurs in different environments (in the family, between intimate partners, in the community, in institutions and at work). It undermines the social and economic conditions in society. Addressing violence requires collaboration across all sectors, including health, education, labour, justice, and human rights. One role the public health sector can play is in making data available about violence-related injuries from routine data systems.

Fatal injuries

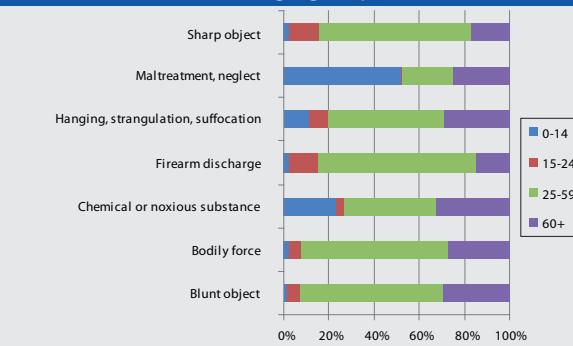
- About 2% of all fatal injuries in the EU-27, or about 4 600 cases annually, that are recorded in the national cause of death registers are related to homicide (Table 2.2).
- The current homicide rate in the EU is highest in the Baltic region (above 5.5 per 100 000 in all three countries); among the other EU member states the rate ranges from to 2.4 in Romania to 0.3 in the United Kingdom.
- The average rate of homicide is 1.3 per 100 000 for males and 0.7 for females (the average for both sexes is 1.0).
- The most common means in homicides are sharp objects as knives (Figure 9.1).
- The peak in homicide rate for babies (under one year of age) of both sexes highlights the grave problem of fatal child abuse ("maltreatment" in Figure 9.2).
- The highest proportion of adolescent homicide victims (15 to 24 years) can be found in the categories "sharp objects" (14%) and "firearm discharge" (13%) (Figure 9.3).
- To improve the mortality data coverage, it would be useful to conduct specific studies on homicides through other complementary data (police, media, etc.), and to better identify and code homicides [41].

Figure 9.2: Fatalities through interpersonal violence by gender and age group



Source: WHO MBD. See Annex "List of figures and tables" for more details.

Figure 9.3: Fatalities through interpersonal violence by means of assault and age group



Source: WHO MBD. See Annex "List of figures and tables" for more details.

100

fatalities per year due to abuse and neglect of children younger than one year in the EU.

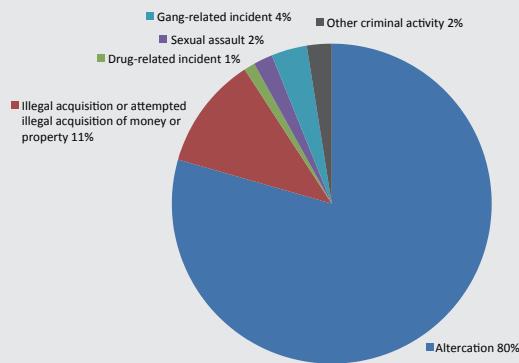
EU Initiatives: Violence Prevention Alliance

The Violence Prevention Alliance (VPA) is a global network of WHO Member States and civil society organizations working to prevent violence. VPA participants share an evidence-based public health approach that targets the risk factors leading to violence and promotes multi-sectoral cooperation. Its aims to unify the efforts of the main actors in international violence prevention and identify a set of priorities for the field with a view to prioritize violence prevention within the global public health agenda; to build strong foundations for on-going violence prevention efforts; and to promote the implementation of evidence-informed violence prevention strategies on parenting, life-skills, social norms, alcohol, the risks of firearm-related deaths and injuries and services for victims. As part of their contribution to the Alliance, the UK-Centre for Public Health at Liverpool John Moores University has developed a web based resource. The purpose of this website is to provide a violence prevention resource for policy makers, practitioners and others working to tackle and prevent violence. The website includes abstracts of systematically reviewed literature providing evidence of measures that can work to prevent violence, including key publications and resources on violence prevention.



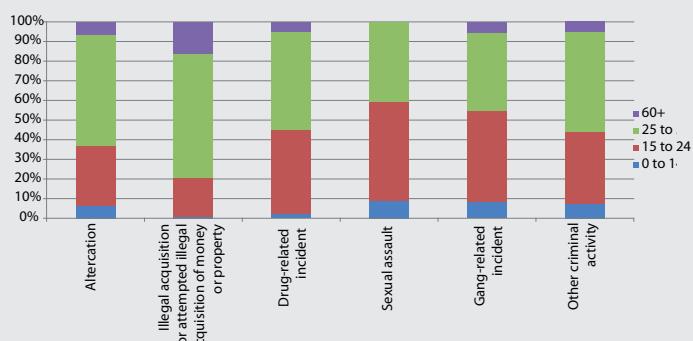
More at: www.preventviolence.info/

Figure 9.4: Hospital treated cases of interpersonal violence by context of assault



Source: EU IDB. See Annex "List of figures and tables" for more details.

Figure 9.5: Hospital treated cases of interpersonal violence by context of assault and age



Source: EU IDB. See Annex "List of figures and tables" for more details.

Non-fatal injuries

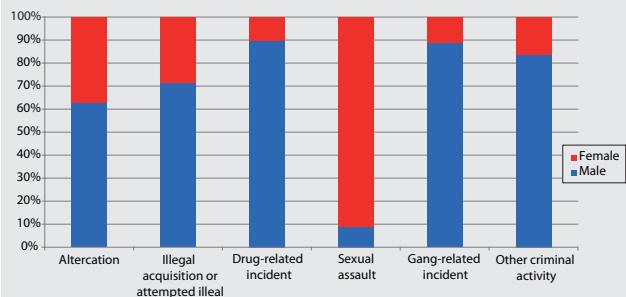
Data from hospital emergency departments provide valuable insight into the current problems of interpersonal violence, e.g. by monitoring the basic epidemiological patterns by means of a specific "IDB violence module" [40]:

- The average proportion of intentional injuries due to interpersonal violence in the EU IDB sample is about 4% (IDB categories "assault" or "other violence"; Table 2.2); and it ranges from 1% (Austria) to 10% (Latvia) among the eight IDB countries that use the "IDB violence module".
- The share of 4% translates into an approximate EU estimate of 1.4 million people that have to be treated in hospital for interpersonal violence (1 hospital-treated injury per 1 000 inhabitants); thereof, about 14%, or 200 000 cases have to be admitted for further treatment as inpatients (Table 2.2).
- Altercation ("violent dispute") is the most frequently mentioned context of assault (Figure 9.4). Within this category, as well as in all other categories, adolescent victims between 15 and 24 years are clearly over-represented compared to their share of 12% of the population (Figure 9.5).
- Except for sexual assault (91% of victims are women), the vast majority of interpersonal violence victims are male (Figure 9.6).
- Also the perpetrators of "violent disputes" are predominately male (92%). 24% of the perpetrators are adolescents (15-24 years) and, 68% are adults.
- The relation of the victim to the perpetrator is stated as intimate (spouse or partner) in 19%, as acquaintance or friend in 20%, and as stranger in 50% of "violent dispute" cases.

Underreporting of violence

There is abundant evidence of the substantial extent to which violence that results in injury is neither investigated nor reported by the police [42]. The UK government, for instance, has indicated that its plans to tackle community violence will be based not just on information about offences but also on injury data derived from emergency departments. The results of the IDB "violence module" reveal that information about some aspects of interpersonal violence such as "violent dispute" can be quite well obtained in the emergency room setting. On the other hand, details about the "context of assault" and "age and sex of perpetrator", for instance, were obtained only in about 20% of cases of interpersonal violence. This situation could certainly be improved through a better training of staff in extracting this information from patients, as well as increased awareness among the public of the violence issue and willingness to provide contextual information.

Figure 9.6: Hospital treated cases of interpersonal violence by context of assault and gender of victim



Source: EU IDB. See Annex "List of figures and tables" for more details.

HOTSPOT SUICIDE AND SELF-HARM

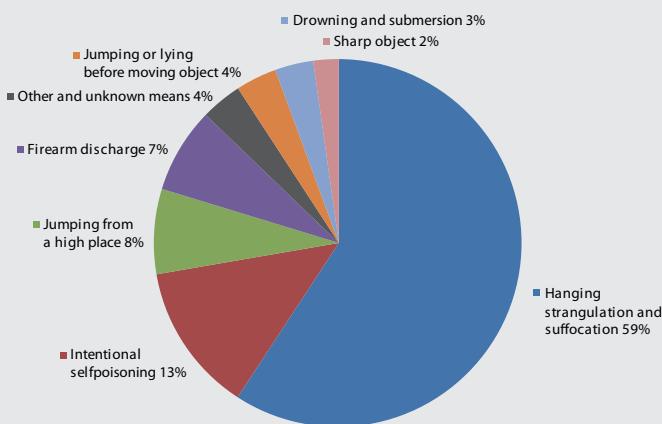


Behind the numbers

January 2013, Dunaújváros, Hungary. The second tallest building in Dunaújváros, the 10 floor high city hall was chosen by a 53 years old teacher for committing suicide. An eye-witness saw the woman preparing to jump and immediately called the emergency number. Only a few minutes later the police appeared on the scene but were not able to prevent the tragedy.

"She did not want to talk to anybody and appeared very determined. When I came up, she sat back on the windowsill with her back toward the open window", said the police witness, "Before we reached her, she let herself fall. The elementary school teacher was described as in love with life, highly competent and well-liked by children and parents". "Although she experienced some disappointments and expressed herself sometimes bitterly, there was no sign that something was substantially wrong in her life", said a colleague.

Figure 10.1: Suicides by means of self-harm



Source: WHO MDB. See Annex "List of figures and tables" for more details.

Facts & impacts

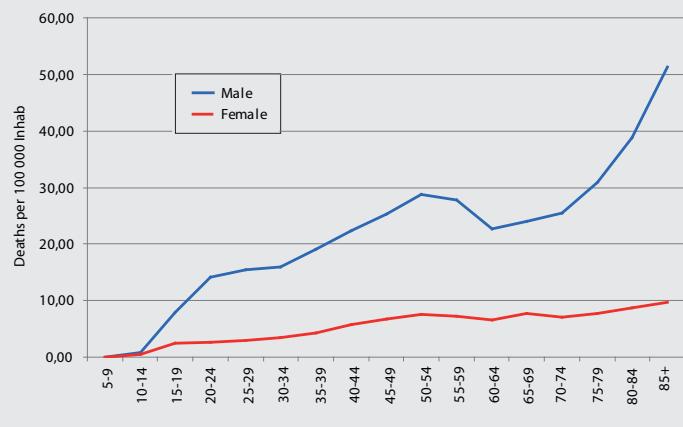
Suicide and self-harm are important causes of premature death and of hospitalisation. Suicidal behaviour is often the consequence of a number of factors that have interacted, including acute stressors and negative life events (e.g., bereavement, loss of employment, separation, illness), symptoms associated with an acute episode of mental illness or substance use disorder (e.g., psychosis, depression, intoxication), personality characteristics, social and/or economic circumstances.

While not itself a mental disorder, suicidal behaviour is highly correlated to mental illness and addiction. Studies indicate that more than 90% of suicide victims have a diagnosable mental illness or substance use disorder [43].

Fatal injuries

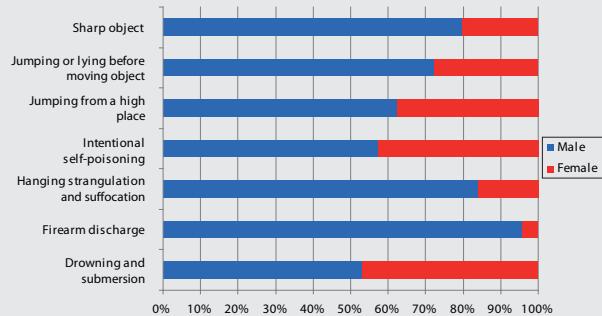
- Suicide in the EU is among the three leading causes of death in the age group 15–44 for both men and women.
- 25% of all fatal injuries, or about 57 000 cases annually, recorded in the national cause of death registers in the EU-27 are related to suicides (Table 2.2).
- The majority of suicides are committed by strangulation, hanging or suffocation (Table 10.1)
- The average rate of suicides is 20 per 100 000 for males and 5 for females (the average for both sexes combined is 12 per 100 000; Figure 10.2)
- For both sexes the rate of suicides is increasing with the age. There is a first peak in the age of 50–54, and a second one in the old age of 85+ (Figure 10.2).
- On average, the suicide rate in the EU member states is higher in most of the new member states, while southern EU countries together with the United Kingdom have the lowest suicide rates. The current suicide rate is highest in Lithuania (33) and Slovenia (21). The lowest suicide rates were registered in Cyprus (4) and Greece, Italy and Malta (6).
- Marked sex differences exist in the choice of the methods of suicide (Figure 10.3).

Figure 10.2: Suicide rate (per 100 000 inhabitants) by age group and gender



Source: WHO MDB. See Annex "List of figures and tables" for more details.

Figure 10.3: Suicides by means of self-harm and gender



Source: WHO MDB. See Annex "List of figures and tables" for more details.

57 000

**Number of suicides
committed in the
EU-27 every year.**

EU Initiatives: Suicide prevention, a joint action

OSPI-Europe - Optimised Suicide Prevention Programmes and their Implementation in Europe - aims to review and evaluate current strategies for suicide prevention in order to develop and implement multifaceted suicide prevention intervention programmes across Europe.



OSPI-Europe is a collaborative research project. The groundwork for OSPI-Europe has been laid through implementation of a multifaceted intervention programme for suicide prevention in Nuremberg, Germany (Nuremberg Alliance Against Depression). The Nuremberg intervention resulted in a significant reduction of the number of suicidal acts. The action will deliver an evidence based prevention concept and best practice-tools for a wider application of the available evidence by professionals across the EU.

More at: www.ospi-europe.com/

Trends

- Until 2007 the suicide rate in the EU had been steadily declining. Since 2008, probably due to the economic crises, the rate has been increasing again.
- The Central Statistics Office figures confirm that suicides among men in Ireland rose sharply as the economy went into severe recession in 2008.

Non-fatal injuries

Data from hospital emergency departments provide additional insights in to the problem of self-injury and suicide attempt, for instance, by monitoring the numbers and the basic epidemiological patterns. Here are some results of the EU IDB "intentional self-harm module" [40]:

- The share of intentional self-harm cases of all EU IDB cases is 1.3% (Table 2.2). This proportion translates in to an EU estimate of 418 000 people that have to be treated in hospital for intentional self-harm (0.8 hospital-treated injury per 1 000 inhabitants). A relatively high proportion of these cases (51% or 213 000 cases) have to be admitted for further treatment as inpatients.
- More than 60% of self-harm victims are female; the respective share among adolescents is even higher than 70% (Figure 10.5).
- According to the EU IDB, especially adolescents between 15 and 24 years of age (30%) are over-represented in the recorded cases as compared to their share of the population of only 12%.
- Poisoning accounts for the vast majority of injuries diagnosed as intentional self-harm (67% in men as well as women); the use of "piercing/penetrating force", resulting in open wounds, ranks second. The latter type of injuries (open wounds are more likely to be cases of "self-harm" rather than suicidal acts, a distinction which is not yet clearly feasible within the EU IDB "intentional self-harm module".
- "Psychological/psychiatric condition" and "conflict in relationships" are stated by the patients as the most recent crises that led to the self-harm incident (so-called "proximal risk-factor"; Figure 10.4).
- 59 in 100 patients reported that there was a previous episode of intentional self-harm.

The IDB intentional self-harm module

The first results of the IDB "intentional self-harm module" indicate the potential of this surveillance tool for obtaining broader evidence about the problem of self-injury and suicide attempt. Still, specific information about the "proximal risk-factor" and also "previous intentional self-harm", for instance, could be obtained only in about 7% of cases of intentional self-harm.

This is due to confidentiality of information on patient history as well as the inappropriateness of the ED-setting to establish social and psychological diagnoses in the early stages of the emergency. This situation could be improved if more attention were given to the sensitization and training of the persons working in EDs and increased collaboration with the mental health and social care sectors.

Figure 10.4: Non-fatal injuries through self-harm by proximal risk-factor

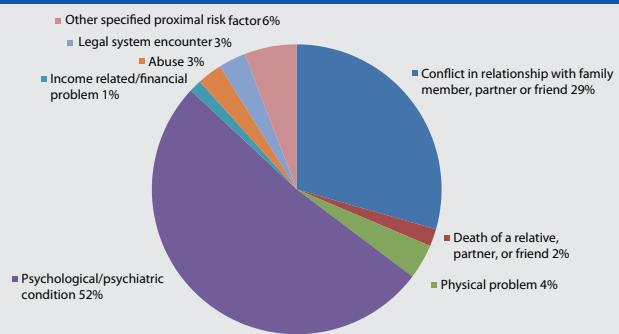
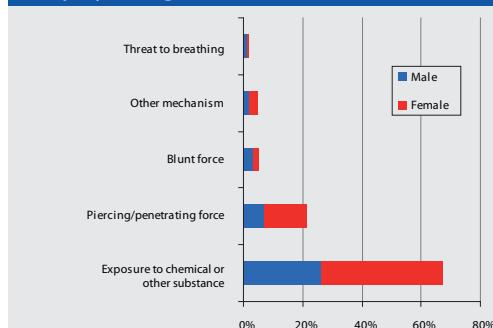


Figure 10.5: Intentional self-harm by gender and age group



Figure 10.6: Self-harm injuries by mechanism of injury and gender



Source: EU IDB. See Annex "List of figures and tables" for more details.

CONCLUSIONS AND THE WAY AHEAD

Accidents and injuries place a huge burden on societies and individuals in the Community. In addition to the immense human costs in terms of premature death and years of life lived with disability, a substantial proportion of annual health care costs are related to injuries and European growth and prosperity are being threatened as a result of lost productivity.

Challenges

A number of European and national initiatives have been taken in the past to reduce the frequency of injuries due to accidents and violence. We have been particularly successful in reducing road fatalities, workplace accidents, chemical accidents and some categories of consumer product-related injuries, as for instance is the case for electrical appliances and for toxic household products. Also pre-hospital and hospital trauma care have improved significantly over the past decades and resulted in a sharp decline in death due to injury trauma.

However, the development of non-fatal injuries and long-term disabilities due to injuries has been much less favourable. There is still scope for more effective action to reduce the huge social toll of accidents and injuries, in particular by addressing risk settings that have until now received less attention, such as those occurring at home or in leisure time and those affecting high risk groups such as adolescents and older people.

The 2013-report identifies a few trends in home and leisure accident statistics since the latest report in 2009:

- In particular injury-related deaths in children decreased significantly over the past few years. This certainly is the result of enhanced child safety programmes and campaigns carried out in all EU-countries, focussing in particular on the most serious and life-threatening accidents in childhood. Hopefully these efforts will, in due course, also lead to decreasing injury morbidity in children.
- However, the number of injuries in adolescents and the number of sport injuries seems to have risen over the past five years. This is certainly due to the increased popularity of sports and other leisure outdoor activities, which in itself is an encouraging development. It is evident that the health gains of sports and physical activities can be optimised by proper safety promotion measures.
- The share of the older population in fatal accidents and non-fatal injuries also increased over the past five years. This reflects of course the process of our population growing older, in particular the share of those 75 years and above.

The significant differences in accident and injury rates between member states and within their populations also indicate that there is still great potential for reducing the burden of injuries in countries and in the Community as a whole. Therefore, we need better data for countries to assess the actual health and economic burden and, in that way, to assist them in developing proper prevention policies. These data should be collected in a harmonised manner in order to allow comparability between countries, identify trends and assess the impact of various policies and actions.

A particular challenge is that the political responsibility for injury prevention is vested in diverse policy domains. Thus, while injury is an important determinant of ill health, there are other policy domains, such as consumer protection, sports, education, welfare, transport, employment, justice and research that carry most of the responsibilities for preventive action. Nevertheless, the health sector has its responsibility for health information and for health protection, giving it an important role to play in injury prevention, complementary to other policy sectors [44].

Injury data: a health sector priority

The health sector plays a key role in injury prevention as:

- the health sector's mandate includes preventing and responding to all major health threats and causes of mortality and morbidity including injury; and as
- a substantial proportion of direct cost related to injury is absorbed by the health sector.

The health sector is uniquely positioned to collect data, analyse risk factors and to generate multi-sector prevention efforts across a range of sectors.

It is obvious that emergency departments at hospitals provide the best setting for collecting information as this information relates to severe cases, while less severe cases are treated by family doctors or school nurses for instance. Information can also be obtained easily in hospitals on a large number of cases and at low cost. Household surveys, for instance, are more expensive and suffer serious deficiencies and significant underreporting due to memory decay and non-response. Technological developments in medical administration and data linkage, also offer new opportunities for recording information that is relevant for injury prevention.

When looking into the costs of injury data collection, one has to come to the conclusion that the additional costs are only marginally compared to the overall direct medical costs as a result of these injuries [43]. When a comprehensive set of information about causes and circumstances is being collected from a representative sample of injury patients treated in Emergency Departments (EDs), the total direct medical cost of treating injuries will increase by only a marginal 0.2-0.3 pro mille per annum. While at the same time the mere availability of these data will spark off significant injury reduction initiatives and the benefits from such actions will exceed multiple times the additional marginal cost of data collection!

The way ahead

The JAMIE-methodology [12] allows countries to collect accident and injury data from a representative sample of emergency departments and to use a standardized classification for coding the circumstances of the injury-event and its outcome. It complements existing data sources such as the routine causes of death statistics, hospital discharge registers and data sources specific to injury areas, including road accidents and work related accidents.

The proposed two-level system involves the implementation of emergency department datasets at different levels of sophistication:

- the Full injury surveillance Data Set (FDS), previously implemented as the IDB data set; and
- the new Minimum Data Set (MDS).

The combination of much larger amounts of cases at a lower level of detail as to the injury circumstances with data at high levels of detail from a relatively small number of hospitals provides information for a wide range of policy makers and health, transportation and consumer protection authorities.

The MDS is designed to be implemented in many different ways, by using check boxes in existing or newly designed patient records. The simple MDS for Europe supports the development of high level EU and member state injury indicators, being feasible to implement in member states with wide variation in existing practice. The proposed Full Data Set (FDS) reflects the responsibility of a wide variety of agencies and bodies involved in prevention, maximizing the potential to support prevention and research.

It is envisaged that by the end of the Joint Action JAMIE by mid-2014, in at least 22 countries IDB data will be collected in a sustainable manner. Four more countries are expected to have implementation plans in place endorsed by the competent authorities.

However, this is a daunting task, as the participating countries have only consented to implement the JAMIE-approach for a limited period of time. As recession and consequent austerity policies are restricting the perspectives of decision makers in public services, it is a hard time to get new policies embraced, even though these require only modest pre-investments with the assurance of huge returns on investments within a short time period.

A strong political commitment from EU-institutions and member states governments is therefore desperately needed at this stage, including a binding arrangement for all countries to provide ED-based injury data, in order to ensure a continued EU-level exchange of vital injury data from mid-2014 onwards.

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Please note: All web-links have been checked in January 2013.

ANNEX: LIST OF FIGURES AND TABLES

Please note:

- Eurostat COD: Eurostat Cause of deaths statistics
- Eurostat HDS: Eurostat Hospital discharge statistics
- Eurostat POP: Eurostat population statistics
- WHO MDB: WHO Mortality Data Base, causes of death
- WHO HFA-DB: WHO European Health for All Data Base
- EU IDB: European Injury Data Base
- ICD-9: data according International Classification of Diseases, 9th revision
- ICD-10: data according International Classification of Diseases, 10th revision
- IDB 2008-2010: Valid EU IDB records from AT, CY, CZ, DK, DE, IT, LV, MT, NL, SI (years 2008, 2009, 2010) and SE (2008), as available by 30th of September 2012 (all together 804 310 records).
- Codes regarding to IDB are referring to IDB Coding Manual 1.1 (2005).

Figure 2.1: The injury pyramid for the European Union

Fatal injuries: WHO MDB, ICD-10, external causes of injury and poisoning (V01-Y89). Absolute number 2008-2010, countries with available data, population adjusted to yearly deaths in EU-27.

Hospital Admissions: EU IDB. Basis is the estimated absolute number of all treatments in emergency departments of hospitals (inpatients and outpatients). This estimate is done on the basis of the average IDB injury incidence rates (ECHI 29b) from AT, CY, DE, DK, LV, MT, NL, SE (2008-2010) and average EU-27 population in the same years. The consequent estimation of the number of admissions (inpatients) as well as ambulatory treatments (outpatients) is done by the ratio of the IDB 2008-2010 cases. Estimated absolute numbers, rounded to 1 000.

Hospital Outpatients: See above.

Table 2.2: Comprehensive view on injuries by injury prevention domain

Fatal injuries: Total: WHO MDB, ICD-10, external causes of injury and poisoning (V01-Y89). Road traffic: WHO MDB (V01-V89, V99, Y850).

Work Place: WHO HFA-DB, deaths due to work-related accidents. Assault, homicide: WHO MDB (X85-Y09, X871). Suicide/self-harm: WHO MDB (X60-X84, Y870). School: WHO MDB, place of occurrence = 2. Sports: WHO MDB (V100-V189, V800, V904-909, V914-919, V924-929, V934-938, V944-949, W020-029, W158-159, W168-169, X368-369, V951, V960-969, V972, W698-699, W708-709, W738-739, W748-749).

Home & leisure: Total of fatal injuries (232 869) minus cases of all other categories, minus cases of undetermined intent (20 330). Absolute numbers, rounded to 1000, 2008-2010, countries with available data, population adjusted to yearly deaths in EU-27.

All hospital patients: EU IDB, 2008-2010. Estimated absolute numbers, rounded to 1000. Estimation is based on the average IDB injury incidence rates (ECHI 29b) from AT, CY, DE, DK, LV, MT, NL, SE (2008-2010) and average EU-27 population in the same years. Numbers and percentages by domain are estimated on the basis of all IDB cases 2008-2010.

Hospital admissions: EU IDB, 2008-2010. Estimation of percentages and absolute numbers for EU-27 is done by IDB ratio of outpatients and hospital admissions. Estimates rounded to 1000.

Hospital Outpatients: EU IDB, 2008-2010. Estimation of percentages and absolute numbers for EU-27 is done by IDB ratio of outpatients and hospital admissions. Estimates rounded to 1000.

Figure 2.3: Fatal injuries in EU countries: Standardized death rate per 100 000 inhabitants and percentage of injury deaths

Eurostat COD, ICD-10. All causes of death (A00-Y89) and external causes of injury and poisoning (V01-Y89) per region. Standardized death rate (per 100 000 inhabitants), percentage of injury deaths of all fatalities, EU-27, 3 years average of the latest available years.

Table 2.4: Fatal injuries by causes of death: Lowest and highest percentage of fatal injuries by country

WHO MDB, ICD-9 (Greece only) and ICD-10: External causes of injury and poisoning (V01-Y89): road traffic injuries (V01-V89, V99, Y850), poisoning (X40-X49), falls (W00-W19), fires (X00-X09), drowning (W65-W74), other unintentional injuries (V90-V98, W20-W64, W75-W99, X10-X39, X50-X59, Y40-Y86, Y88, Y89), self-inflicted (X60-X84, Y870), interpersonal violence (X85-Y09, X871), other injuries (other codes of external causes of injury and poisoning). ICD-9: external causes of injury and poisoning (B47-B56) road traffic injuries (B47), poisoning (B48), falls (B50), fires (B51), drowning (B521), self-inflicted (B54), interpersonal violence (B55), other injuries (other codes of external causes of injury and poisoning). Percentage of all injury deaths by country, EU-27, 3 years average of latest available years.

Figure 2.5: Fatal injuries by causes of death in the EU-27

WHO MDB, ICD-9 (Greece only) and ICD-10. Categories as in Table 2.4. Percentages based on absolute numbers, EU-27, 3 years average of latest available years.

Figure 2.6: Injury death rate (per 100 000 persons) and relative injury mortality (injury deaths in % of all causes of death) in the EU-27 by age groups and gender

Eurostat COD, ICD-10. All causes of death (A00-Y89) and external causes of injury and poisoning (V01-Y89) by age-group and gender. Injury death rate per 100 000 inhabitants, share of injury fatalities of all fatalities, EU-27, 2008-2010.

Figure 2.7: Fatal injury trends by injury prevention domain (1998–2010, 1998 = 100%) in the EU-27

WHO HFA-DB, ICD-10, 1998–2010 (1998=index). All external causes of injury and poisoning (V00-V99, W00-W99, X00-X99).

Suicide: suicide and self-inflicted injury (X60-X84).

Homicide: homicide and intentional injury (X85-X99, Y00-Y09). Transport: transport accidents (V01-V99).

Work: deaths due to work-related accidents.

Home and leisure: standardised death rate for home and leisure accidents is estimated as the remainder to all external causes of injuries minus the defined injury prevention domains (All injuries minus Suicide minus Homicide minus Transport minus Work).

Standardised death rate per 100 000, EU-27.

Figure 2.8: Hospital discharges for injuries per 100 000 inhabitants and percentage of injury related discharges

Eurostat HDS, ICD-10. All hospital discharges (A00-Z99) and hospital discharges due to injuries, poisoning and certain other consequences of external causes (S00-T98) per country. Rate per 100 000 inhabitants and percentage of injury related discharges, EU-27, 3 years average of latest available years.

Figure 2.9: Hospital treated injuries per 1 000 by age group and gender, EU-27

EU IDB, 2008–2010. Cases by age-group and gender. Rate per 1 000 inhabitants, EU-27, population 2010.

Figure 2.10: Hospital treated injuries per 1000 by injury prevention domain and age group, EU-27.

EU IDB, 2008–2010. Cases by age-group and prevention domain. Rate per 1 000 inhabitants, EU-27, population 2010.

Figure 3.1: Leading causes of death and causes of fatal injuries in children up to 14 years

WHO MDB, ICD-9 (Greece only) and ICD-10. Cases with age = 0-14. ICD-10: external causes of injury and poisoning (V01-Y89). Road traffic injuries (V01-V89, V99, Y850--traffic-related subcategories only), poisoning (X40-X49), falls (W00-W19), fires (X00-X09), drowning (W65-W74), self-inflicted (X60-X84, Y870), interpersonal violence (X85-Y09, X871), other causes (other codes of external causes of injury and poisoning). ICD-9: external causes of injury and poisoning (B47-B56) road traffic injuries (B47), poisoning (B48), falls (B50), fires (B51), drowning (B521), self-inflicted (B54), interpersonal violence (B55), other injuries (other codes of external causes of injury and poisoning). Percentage of absolute numbers, EU-27, 3 years of latest available years.

Table 3.2: Rank order of cause of death of children 1 – 14 years

Eurostat COD, ICD-10. Cases with age = 1-14 by main chapters. Percentages based on absolute numbers, EU-27, 2008–2010.

Figure 3.3: Main places of occurrence of non-fatal child injuries by age group

EU IDB, 2008–2010. Cases with age = 0-14, by age group and places of occurrence. Percentages based on absolute numbers.

Table 3.4: Mechanisms of home injuries in children under 5 years of age

EU IDB, 2008–2010. Cases with age = 0-4 by mechanisms of injury. Percentages based on absolute numbers.

Table 3.5: Top 10 “Infant or child products” involved in child injuries (under 5 years of age)

EU IDB, 2008–2010. Cases with age = 0-4 and product involved = infant or child product. Percentages based on absolute numbers.

Figure 4.1: Leading causes of death and causes of fatal injuries in adolescents between 15–24 years

WHO MDB, ICD-9 (Greece only) and ICD-10. Age 15-24. ICD codes as in figure 3.1. Percentage of absolute numbers, EU-27, 3 years of latest available years.

Table 4.2: Leading causes of death and causes of fatal injuries in adolescents between 15-24 years

Eurostat COD, ICD-10. All causes of deaths (A00-Y89) by ICD-10 main chapters, age 15-24. Percentages based on absolute numbers, EU-27, 2008–2010.

Figure 4.3: Injury rates (per 1 000) of adolescents (15-24 years), by injury prevention domain and gender

EU IDB, 2008–2010. Cases with age 15-24, by domain and gender. Rates per 1 000 inhabitants, EU-27, population 2010.

Table 4.4: Mode of transport of adolescents (15 -24) involved in road injuries (% of all road injuries in this age group)

EU IDB, 2008–2010. Cases with age 15-24 by mode of transport (transport module). Percentages based on absolute numbers.

Table 4.5: Injury ranking of ball team sports in adolescents (15- 24; % of all ball team sports in this age group)

EU IDB, 2008–2010. Cases with age 15-24 and type of sport activity = 1 (team ball sport, sports module), selected sports (with highest numbers of injuries). Percentages based on absolute numbers.

Figure 5.1: Fatal injuries amongst older people (60+) by causes of death

WHO MDB, ICD-9 (Greece only) and ICD-10. Age 60+. ICD codes as in Figure 3.1. Percentage of absolute numbers, EU-27, 3 years of latest available years.

Figure 5.2: Fatal injuries amongst older people (60+) by causes of death and gender

WHO MDB, ICD-10. Age 60+, by gender. ICD codes as in Figure 3.1. Percentage of absolute numbers, EU-27, 3 years of latest available years.

Figure 5.3: Places of occurrence of non-fatal injuries among older people (60+)

EU IDB, 2008–2010. Cases with age 60+ by place of occurrence. Percentages based on absolute numbers.

Table 5.4: The share of women (60+) in injuries by activities at home leading to injuries

EU IDB, 2008-2010. Cases with age 60+ and place of occurrence = home, by gender and activity. Percentages based on absolute numbers.

Figure 6.1: Road fatalities by type of road user

WHO MDB, ICD-10. Transport injuries (V01-V89, V99, Y85) by means of transport. Pedestrian (V01-V09), pedal cycle (V10-V19), motor cycle (V20-V29), other road transport (V30-V89, V99, Y85). Traffic-related subcategories only. Percentage of absolute numbers, EU-27, 2008-2010.

Figure 6.2: Road fatalities by type of road user and EU country

WHO MDB, ICD-10. Transport injuries (V01-V89, V99, Y85) by means of transport and country. Pedestrian (V01-V09), pedal cycle (V10-V19), motor cycle (V20-V29), other road transport (V30-V89, V99, Y85). Traffic-related subcategories only. Percentage based on absolute numbers, EU-27, 2008-2010. Only countries with available ICD-10 data 2008-2010 shown.

Figure 6.3: Road fatalities by type of road user and age group

WHO MDB, ICD-10. Transport injuries (V01-V89, V99, Y85) by means of transport and age group. Pedestrian (V01-V09), pedal cycle (V10-V19), motor cycle (V20-V29), other road transport (V30-V89, V99, Y85). Traffic-related subcategories only. Percentage based on absolute numbers, EU-27, 2008-2010.

Table 6.4: Vulnerable road users and injury severity

Column “all road users”: see table 2.2.

Column “vulnerable road users”:

Fatal injuries: WHO MDB, ICD-10. Pedestrian (V01-V09), pedal cycle (V10-V19), motor cycle (V20-V29), other road transport (V30-V89, V99, Y85). Percentage of absolute numbers, EU-27, 3 years of latest available years.

All hospital patients: EU IDB, 2008-2010. Cases with place of occurrence = public road, by mode of transport (transport module). Percentages and accordingly estimated absolute numbers for EU-27.

Hospital admissions, hospital outpatients: EU IDB. Cases as described above, by admission module (yes/no). Percentages and accordingly estimated absolute numbers for EU-27.

Figure 6.5: Non-fatal road injuries by type of road user

EU IDB, 2008-2010. Cases with place of occurrence = public road, by mode of transport (transport module). Percentages based on absolute numbers.

Figure 6.6: Non-fatal road injuries by type of road user and body part injured (only admissions)

EU IDB, 2008-2010. Cases with place of occurrence = public road, by mode of transport (transport module) and injured body part. Percentages based on absolute numbers.

Figure 7.1: Product and non-product related causes of fatal home injuries

WHO MDB, ICD-10. Cases where fourth digit (place of occurrence) = 0 (home), by selected groups of product related external causes. Suffocation, strangulation (W75, W76), choking, ingestion (W80, W81, W83, W84), electric current (W85-W87), fire, smoke (X00-X09), hot water, fluids (X10-X19), machinery, tools (W21-W29). Percentage of absolute numbers, EU-27, 2008-2010.

Figure 7.2: Product related causes of fatal home injuries by age group

WHO MDB, ICD-10. ICD codes as in Figure 7.1. Percentage of absolute numbers, EU-27, 2008-2010.

Figure 7.3: Product related non-fatal home and leisure injuries by product category

EU IDB, 2008-2010. Cases without modules transport, violence, self-harm, and without activity = 1 (paid work) by product causing injury; selected groups of products. Percentages based on absolute numbers.

Figure 7.4: Service related home and leisure injuries by place of occurrence

EU IDB, 2008-2010. Cases with selected places of occurrence (places which are probably involving services: 2, 3, 5, 10, 11). Percentages based on absolute numbers.

Table 7.5: Percentage of 10 product/substances causing thermal injuries of children at home

EU IDB, 2008-2010. Cases with age 0-14, place of occurrence = home, type of injury = burns, scalds, by product causing the injury. Percentages based on absolute numbers.

Figure 8.1: Fatal sports injuries by type of sports (excluding swimming)

WHO MDB, ICD-10. Selected categories for non-traffic bicycling (V100-V189, non-traffic subcategories only), equestrian activities (V800), boating (V904-909, V914-919, V924-929, V934-939, V944-949), ice/snow (W020-029), mountaineering/climbing (W158-159), diving (W168-169), avalanche (X368-369), aero (V951, V960-969, V972). Excluded categories for swimming (W698-699, W708-709, W738-739, W748-749). This leads to rough approximations of sports fatalities only, as the categories don't refer specifically to sports. Percentages based on absolute numbers, EU-27, 2008-2010.

Figure 8.2: Fatal sports injuries by type of sports (excluding swimming) and age group

WHO MDB, ICD 10. Selected sport-related categories (see above) by age group. Percentages based on absolute numbers, EU-27, 2008-2010.

Table 8.3: 10 popular sports with the highest shares of head injuries by type of sports and share of head injuries

EU IDB, 2008-2010. Cases with sports module by part of body injured and type of sport. Percentages based on absolute numbers.

Figure 8.4: EU-27 estimates of hospital treated sports injuries by type of sports and participation (organised / not organised)
EU IDB, 2008-2010. Cases with sports module by type of sport and activity ("organised"= 3.1, 4.1). Percentages based on absolute numbers.

Figure 8.5: EU-27 estimates of hospital treated sport injuries by sports and gender
EU IDB, 2008-2010. Cases with sports module by type of sports and gender. Percentages based on absolute numbers.

Figure 9.1: Fatalities through interpersonal violence by means of assault
WHO MDB, ICD-10. Assaults (X85-99, Y00-Y09, Y871), Sharp object (X99), Firearm discharge (X93-X95), Bodily Force (Y04, Y05), Blunt object (Y00), Hanging, strangulation, suffocation (X91), Maltreatment, neglect (Y06, Y07), Chemical or noxious substance (X85-X90), Other (any other assault codes). Percentages based on absolute numbers, EU-27, 2008-2010.

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EU IDB, 2008-2010. Cases with self-harm module by mechanism of injury and gender. Percentages based on absolute numbers.



http://ec.europa.eu/health/data_collection/databases/idb/index_en.htm





This report is the fourth edition of a series of annual summaries of key figures on injuries in the European Union, combining available data on mortality and morbidity. It provides a comprehensive view about this important public health problem, in particular for health policy makers, researchers in the area of public health and safety, and safety practitioners.

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