

Injury data collection:

An effective tool for helping to cut the societal costs of injuries

A summary of available evidence

1. Introduction

Injury data are essential for making informed decisions about a country's priorities and in developing effective policies and actions. They are also critical in harnessing political will, public support and the funding needed to undertake actions. And after all, data are required to evaluate the success and the cost-effectiveness of actions.

On accidents that occur in the workplace and on the road ample information is available owing to specialised reporting system through the inspectorates for safety at work and the police for road traffic accidents. However, none of these dedicated reporting systems collects information on HLAs, while three-quarter of all injuries are due to home and leisure accidents, affecting in particular vulnerable groups such as children, older people and people with disabilities.

Reliable and up-to-date accident and injury data are of great importance to a wide range of stakeholders at national, regional and European level. Examples are governments, designers, manufacturers, retailers, service providers, standards developers, enforcement authorities, prevention agencies and civil society organisations.

Injury data are essential for raising awareness of the magnitude and complexity of injuries due to HLAs; for integrating proper injury prevention measures in the daily business of administration; and in the production and provision of products and services at home, in schools and in leisure time activities.

The mere availability of data will lead to injury-reduction initiatives and benefits exceeding the additional cost of data collection by a multiple, by:

- Lower health care costs
- Lower social expenditures due to disabilities caused by injury
- Increased productivity due to fewer medium and long-term absences from work
- Lower compensation costs

In order to illustrate the clear added value of injury data collection, in particular by gathering information from patients treated in emergency departments at hospitals, this report summarises a few studies that has been carried out recently as to the assessment of cost benefits of injury data collection.

In a final chapter, the (marginal) cost of data collection will be compared to the overall societal costs of injuries based on information gathered from three different countries that have a well established injury surveillance system in place over more than a decade.

2. Good practice example: Vorarlberg region (Austria)

Vorarlberg is the most western located province ('Bundesland') in Austria counting around 400.000 inhabitants in a mountainous area of 2600 Km² (141 inh./km²). In 1993, it had injury rates that were similar to other regions in Austria and that was one of the reasons to initiate a so-called Safe Community programme in 1993. A Safe Community Fund had been established that in collaboration with relevant institutions in the regions started to work on priority issues with a view to reduce the number of home and leisure accidents in the region (www.sicheregemeinden.at).

The so-called Safe Community programme is based on a number of internationally (WHO) acknowledged principles, such as having:

- A local partnership and collaboration that is governed by a cross-sectional group responsible for safety promotion in the local community.
- A long term sustainable program of actions that cover both genders and all ages, based on the available evidence as to the frequency and causes of injuries.

The documentation of the frequency and causes of injuries is a critical component within this set of principles: injury prevention measures have to be strictly related to key priority issues in the local community (i.e. specific vulnerable groups and high risk settings).

Over the past 17 years (1993-2009) the Safe Community Fund in Vorarlberg invested 7 million euro in data collection and actions on injury prevention¹. Today, the region of Vorarlberg is the safest province in Austria (by an average 20% lower rate compared to the entire country over past 5 years) and reduced its number of hospitalised injuries in the region by around 15% compared to 1993 (see Figure).

The downward trend since 1993 resulted in a total number of 102.000 bed-days less than could be expected by the national figures, which equals a cost saving of 43 million euro over that period: i.e. for each euro invested a return of investment of around 6 euro has apparently been achieved in hospitalisation costs, leaving aside other cost savings in care and social assistance.

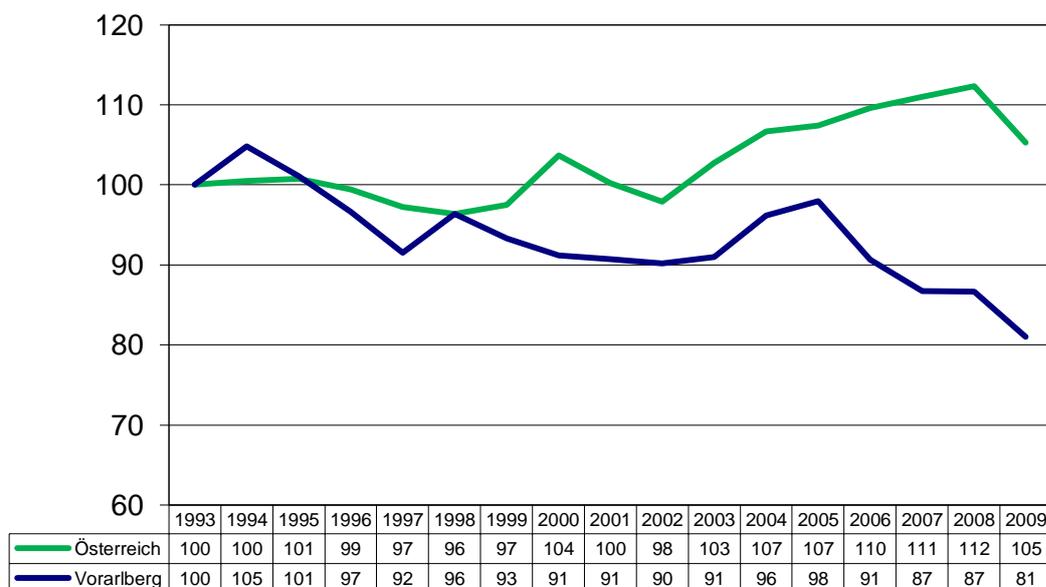


Figure – Trend in injury related bed-days in hospitals in Austria (green line) compared with bed-days in the region of Vorarlberg (1993 is 100). Source: Statistics Austria, Hospital discharge statistics.

¹ Kuratorium für Verkehrssicherheit, National Action Plan for promoting Home and Leisure Safety in Austria, KfV, Vienna 2012

3. Home and leisure injury prevention in Switzerland

A study by the Swiss Accident Prevention Council (bfu)² also indicates that injury prevention, if geared by robust injury data, is most cost-effective.

By Swiss law (the federal Act on Accident Insurance and the Decree on Accident Prevention) bfu is designated as the national coordinating body for the prevention of road traffic accidents as well as accidents that occur at home or in leisure time.

From the available annual budget (20 million SwFr) a quarter of the budget is being spend for home accidents (5.3 M) and a same share of the budget (5.3) is spent on preventing accidents in leisure or sport related activities. The social costs related to home and leisure injuries are estimated at 2.4 billion SwFr for home accidents and 1.9 billion SwFr for sport and leisure accidents.

The Swiss study analysed the available injury data for both categories of accidents over the period 1985-1994 and concludes that over these ten years per year:

- 73 less deaths and 12.000 less severe injuries related to accidents in sports and leisure reduced were counted in the national bfu-statistical database, which has led to an estimated saving on social costs of 160 million SwFr annually;
- Over the same period on average 10.000 less severe injuries due to home accidents per year were reported in the bfu-statistics, which stands for an annual 40 million SwFr saving annually on social costs in Switzerland.

The authors conclude that:

- the number of home and leisure accidents and the related social costs are still high compared to other injury domains;
- demographic changes, in particular the ageing society, will result in increasing injury and fatality rates; but last but not least it concludes that
- the cost-benefit ratio for injury control measures, in particular for those addressing home and leisure/ sport accidents, is most positive.

² "Verhütung von Nichtberufsunfällen: Bewertung der Unfallverhütungstätigkeit der bfu hinsichtlich Wirksamkeit und Effizienz" carried out by ECOPLAN and Basler & Partner on behalf of bfu http://www.bfu.ch/PDFLib/1306_48.pdf [only in German]

4. Successes in reducing home and leisure injuries in the Netherlands

The Ministry of Health has designated the Consumer safety Institute in the Netherlands as the national centre of expertise and for actions on promoting safety at home and in leisure time. An annual budget of 4 million euro is granted to the institute for injury surveillance and prevention programmes with a focus on three main risk groups: children, sports men and women and older people.

Regular trend analyses are carried out on the injury data that is being collected since the establishing of the institute in 1983. In the latest trend-report³ it is concluded that over the latest ten years that the report covers (2000-2009):

- The overall incidence of home and leisure injuries treated in EDs at hospitals have been reduced by 10 per cent over that period;
- Injuries in children 0-4 years of age decreased even by 27%, in particular those due to poisoning (- 32%), drowning (-41), buns (-35%) and falls (-23%);
- The number of sport-related injuries also dropped by 21 per cent over the very same ten years period; however
- The number of hip fractures among older people slightly increased in absolute numbers, but the population standardised figures shows an encouraging 5 per cent decrease over the five latest years.

It is interesting to underline that the reduction as identified in specific age groups (e.g. children/ sportsmen) and types of injury (e.g. burns/ falls) correlate with prevention programmes and actions initiated in the very same period by the institute in collaboration with the various stakeholders involved.

Examples of cost-effective measures include actions such as:

- Promotion use of ankle braces in sports
- Drowning prevention measures
- Parent counselling
- Scald prevention awareness campaigning
- Discourage doctors prescribing benzodiazepines (to prevent related falls)

It is estimated by the authors that;

- The reduction in sport injuries resulted in an annual 300 million euro saving on social costs (including medical cost and loss of productivity).
- The reduction in child injuries led to a reduction of costs of around 100 million a year.

An easily made calculation leads that in this showcase for each 1 euro invested a cost saving of 100 euro is being achieved.

³ Toet H, Schhoots W et al, Trends in Injuries – Successes in Prevention, Consumer Safety Institute, Amsterdam, March 2011 [only available in Dutch]

5. Cost of data collection compared to the overall cost of injuries

Almost all severe injuries, except those causing immediate death, will be seen in the emergency departments (EDs) at hospitals. This makes these EDs to be the proper place to record at least a minimum set of information as to the place where the accident occurred (the so-called IDB-Minimum Data Set), without additional costs.

Most of these EDs have developed state-of-the-art systems for recording data related to diagnosis, treatment and rehabilitation, so information on the type and severity of injury is readily available. In order to make an accurate assessment of risk factors and effective prevention measures, it is also essential to know the causes and the circumstances of the accident. For such information a more comprehensive set of data needs to be recorded systematically and routinely in at least a representative sample of EDs. This requires additional efforts on behalf of EDs.

Analysis of data collection cost in three of the most advanced countries⁴ revealed that for collecting a comprehensive data set in EDs (the so-called IDB-Full Data Set) the cost will be at average 13 euro a case (see table).

If collected only in a 10% sample of all EDs in a country, this cost is only marginally compared to the overall direct medical costs as a result of these injuries. Actually, they represent an almost negligible 0.03 % of the total direct medical cost while the mere availability of these data will spark off significant injury reduction initiatives and benefits exceeding the data collection cost by a multiple.

Table Share of cost of injury data collection in the overall direct medical costs of injuries for three countries*

	National estimate of annual number of ED-cases	Estimated direct medical costs of injuries X 1.000 €	Average costs** of data collection per case	Estimate cost of collecting IDB-data on a 10% sample of ED-cases X 1.000 €	Share of IDB-data collection in total direct medical cost
AT (2006-2010)	824.000	3.400.000	€ 13.00	€ 1.071	0.3 ‰
NL (2006-2010)	880.000	2.400.000	€ 8.50	€ 748	0.3 ‰
SE (2009-2010)	710.000	3.500.000	€ 17.00	€ 1.207	0.3 ‰

* Sources: KfV, Vienna 2012/ CSI, Amsterdam, 2011/ Ekman. R, Karlstad 2012

** Relates to the total cost of data collection, processing and reporting work, including the direct contribution to local hospitals for their data capture work, which is in all 3 countries around 4-5 € per case or record delivered to the national coordinating body.

For the entire EU-region the overall direct medical costs are conservatively estimated at 78 billion euro annually. The cost of collecting a comprehensive set of data about causes and circumstances from a representative sample of injury patients treated in EDs would be insignificant compared with the costs of treating these injuries: less than 5 eurocents per citizen compared with the 150 euros per citizen spent annually on making the medical facilities available.

⁴ Lyons R, Bloemhoff A, Ellsaesser G et al, JAMIE-Manual, EuroSafe, Amsterdam August 2012
[http://www.eurosafe.eu.com/csi/eurosafe2006.nsf/wwwAssets/11498398F0475DD5C1257A010052C0BE/\\$file/A.%20IDB-JAMIE%20MANUAL%207%20August%202012.pdf](http://www.eurosafe.eu.com/csi/eurosafe2006.nsf/wwwAssets/11498398F0475DD5C1257A010052C0BE/$file/A.%20IDB-JAMIE%20MANUAL%207%20August%202012.pdf)

6. Conclusion

The in chapters 2-4 summarised cost-benefit studies provide substantial evidence as to the positive net outcome of actions to reduce the number and severity of injuries at home and in leisure time. The benefit of those actions, if clearly targeted at relevant risk groups and accident risks, even outsize the investments by a multiple, ranging from 4-6 times the original investment if only medical and social costs are taken into account. If all other costs such as lost productivity are included the benefits will increase to almost one hundred times the investment.

These conclusions are corroborated by the practical experiences in all countries that are currently collecting hospital treated injuries in a systematic manner⁵⁶: the mere availability and publication of injury data help to increase awareness and concern amongst relevant stakeholders and triggers actions on their behalf.

As the majority of injuries occur due to inexperienced and/ or thoughtless behaviour of people, awareness raising and promoting safer behaviour remain key to injury prevention and injury data provide the leverage for such processes taking place and for making society at large more risk aware and safety-minded. All the same, these data also provide essential information for analysing the risks of consumer products and environmental features that are involved in injuries and generate actions with a view to improve product design and design of built environments. For that reason, a coalition of twenty-eight European umbrella organisations, representing a broad social and economic spectrum in Europe, issued in April 2013 a Joint Call urging European Institutions and the Member States to create an EU-funded accident & injury data system under the co-ordination of the European Commission.

In conclusion, it should be stated that there is no excuse for national and regional authorities to neglect opportunities for using existing injury data and invest into efforts to enhance the specificity of such data for injury prevention policies in countries.

⁵ EuroSafe, Injuries in the European Union, Amsterdam 2013

⁶ ANEC, The need for a pan-European accident and injury data system, Brussels, April 2013.

<http://www.eurosafe.eu.com/csi/eurosafe2006.nsf/wwwVwContent/568E7F06A55EC7DAC1257B59002C3A74?opendocument&context=7B3169936F37235DC12571E2002B4F02>