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Preface

In 2002, 800,000 deaths occurred due to accidents in the European region[1], which accounts for 8.3% of the total number of deaths. In the same year, disability adjusted life years (DALY)[2] have been estimated at 14% due to accidents in Europe. [1]

In the member states of the European Union,[3] injuries occurring as a result of accidents, acts of violence, or attributable to external causes, cost 250,000 lives every year[4]. Two-thirds of these cases are inadvertent accidents, while one-third is the result of violence. The number of injuries requiring hospital care reaches nearly 7 million in the EU27 countries. Outpatient and emergency healthcare services are provided in 34.2 million cases due to trauma. In addition, another 18.3 million persons contact healthcare services for injuries requiring care. [2]

In the European countries, in terms of deaths, inadvertent accidents and acts of violence are third and fourth on the list of the causes of death. In the 1-45 age group, accidents are the leading cause of death. 8-10% of hospital care costs are attributable to accident-related injuries. Every year nearly 10% of the adult population suffers injuries that require some form of medical care (with the rate being higher for younger and more elderly persons). Traffic accidents alone cause losses of 2% of the GDP every year.

In addition to the facts listed above, it is important to note that even if an accident is "inadvertent", most probably it could have been prevented using the appropriate prevention methods.

Recognizing this, the European Regional Committee of the World Health Organization (WHO) adopted a resolution (Regional Committee Resolution EUR/RC55/R9 on the Prevention of Injuries in the WHO European Region) at its 55th session held in Bucharest on September 12-15, 2005. In this Resolution, the WHO encourages the governments of the region to develop injury data collection, draw up national accident prevention plans, and to increase capacities in order to be able to prevent accidents as well as to exchange related knowledge and experiences. In 2007, the Directorate General for Health and Consumer Affairs (DG SANCO) launched an initiative asking all the healthcare ministries or competent authorities in all the Member States of the European Union to draw up strategic accident prevention plans. The relevant document was published as Council Recommendation of 31 May 2007 on the Prevention of Injury and the Promotion of Safety (2007/C 164/01).

The majority of the preparatory works underlying this document (situation analysis, development of the accident monitoring system, analysis of best practices, drafting of recommendations) have been realized under the two-year framework agreement concluded between the Ministry of Health and the WHO (agreement number: EU 08 080 088) at the Epidemiology of Non-infectious Diseases Department of the National Centre for Healthcare Audit and Inspection. The Department, in turn, drew up the Accident Prevention Strategy Plan for government purposes and for realising interventions.

The action plan determining the implementation and monitoring of the paths of the strategy will be worked out after the Strategy has been adopted.

[1] 52 countries
[2] Disability adjusted life years
[3] EU 27
[4] Average for the period between 2003 and 2005 according to the WHO

Introduction

Accidents and injuries put our health at risk in every country around the world. More than 5,000,000 people die every year worldwide as a result of one type of injury or another, and even more suffer lasting injuries. As a result of the increasing significance of accidents and injuries, many countries have already prepared national policies, strategies and action plans to prevent accidents and injuries from happening.[5]

Accidents can occur as a result of the convergence of a number of different factors, and may present itself in very diverging clinical forms. One of its determining features, however, is that wherever they happen, for whatever cause, in the vast majority of cases, the person who has been involved in the accident requires some form of medical attention.

Out of the international healthcare organizations, the WHO put forth its expectations regarding the relevant activities of the Member States in the form of a Resolution [4], whereas the DG SANCO publicised its expectations in the form of a Recommendation in 2007 [5].

Following the accession to the EU, Hungary has been involved in a number of accident prevention projects announced within the framework of the Public Health Programme of the EU, coordinated by other Member States. These programmes, however, cannot guarantee that the activities started within the Programme will be continued or disseminated to a wider audience once the project is over. Continuation and dissemination require a strong foundation, i.e. commitment from the government and the competent healthcare authority, which, in turn, allows not only for the establishment of the institutional background of accident prevention but also for specifying the funds that can ensure the system continues to operate with a stable financial background.
Commitment at the highest level of the government is also important, because accident prevention is a rather complex activity, which may only be implemented successfully unless multiple ministries agree to cooperate such as the ministries of health, transport, justice, social affairs, labour, etc.

Healthcare can do many things within its own area of expertise to

- prevent accidents,
- provide professional medical attention and care to those who have been involved in accidents, and
- rehabilitate the victims of accidents.

In this document, the importance of primary prevention is emphasized, but the issues of emergency care and follow-up care will also be considered.

Respecting and efficiently supplementing the activities of other ministries, the Directorate General for Health and Consumer Affairs (DG SANCO) has determined the following priority areas — relevant to accident prevention — for healthcare institutions and consumer affairs protection organizations:

1./ Data collection ensuring international comparability in the field of accidents and injuries.

2./ Drawing up national accident and injury prevention plans, or equivalent measures, especially with respect to the following groups and areas:

1. Child safety

[5] WHO Developing Policies to prevent injuries and violence

2. Teenagers and risk-taking
3. The safety of elderly persons
4. Groups at more intensive risk (pedestrians, cyclists, motorcyclists, people getting around with baby prams)
5. Sports safety
6. Work equipment safety
7. Prevention of injury to the self and the prevention of violence, ensuring the conditions thereof, with a special focus on sexual violence
8. Occupational safety

The WHO highlights the following topics for public health [9]:

1. Accident surveillance; data collection: risk and protection factors
2. Research
3. Prevention and control
4. Evaluation
5. The embedding and the application of best practices
6. Drawing up a health policy
7. Service development
8. Lobbying, consultancy
9. Supporting the amendment of existing legislation
10. Establishment of management and supervision

Accident prevention is a multidisciplinary effort, in which many governmental and non-governmental organizations are involved currently. With the entry into effect of this document, healthcare will now be formally involved as well.

The consequences of inadvertent accidents and acts of violence translate into a considerable cost burden for healthcare. It is in the outmost interest of healthcare to achieve a drop in the number of these traumas, which in fact can be prevented with great efficiency.

Hungary is currently in the mid-range of the 27 Member States of the European Union in terms accidental deaths. Presumably, the situation is the same in terms of minor accidents requiring medical attention, although this is rather difficult to measure due to the lack of relevant data.

Considering that in addition to the healthcare sector, other ministries and institutions are also involved in accident prevention, it is prudent for the ministry of health to join already existing proven networks on the one hand, while, on the other hand, it is reasonable to focus efforts on prevention in the areas specified by the WHO and EU DG SANCO.

Furthermore, healthcare can improve accidental death rate statistics both by providing more efficient care and by increasing the number of years a person spends without health problems, which can be achieved by more effective rehabilitation.

The strategic healthcare policy document on accident prevention is based on the relevant recommendation of the WHO [10]. As a result, the document consists of three major parts: Situation Analysis; Definition of Objectives and Interventions; and the Foundations of the Action Plan. The specialized accident prevention action plans will be worked out after the strategic plan has been adopted.

Please find below the strategy building method recommended by the WHO:

I. Foundations of Strategy Development

Step 1: Situation Analysis

Step 2: Raising Interest

Step 3: The Steering Body, Inducing Political Commitment

Step 4: Involvement of Stakeholders, Establishing an Ownership Approach

II. Establishment of Strategy

Step 1: Establishment of a Framework

Step 2: Definition of Objectives, Selection of Interventions

Step 3: Ensuring that Action is Taken in line with the Policy

III. Implementation

Step 1: Focusing on the Stakeholders

Step 2: Approval by the Government

Step 3: Government Guarantee for Implementation

1. Situation Analysis

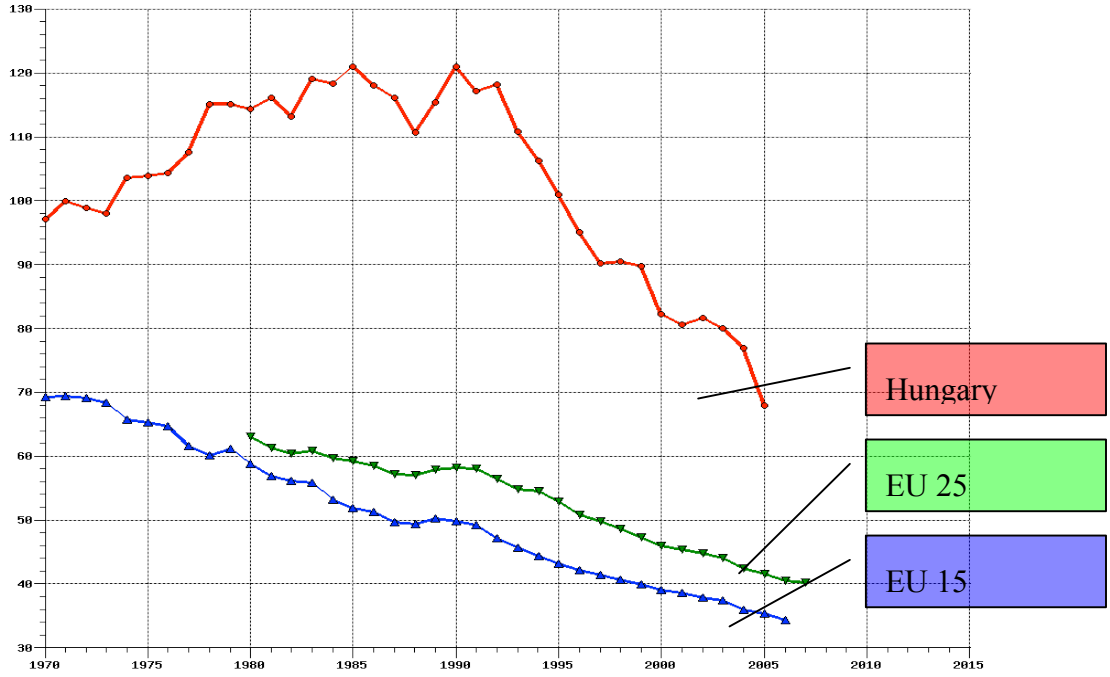
1.1. Epidemiological Analysis

1.1.1. Death Rates

International Comparison

Compared to other EU Member States, Hungary has considerably more deaths attributable to external causes.

Chart 1 Deaths attributable to external causes in the countries of the EU-15 and EU-25 and in Hungary between 1970 and 2005



Source: WHO, European Health for All Database, Copenhagen 2009.

Domestic Situation

Accidents, injuries, illnesses attributable to external causes and the ensuing deaths are a major burden on Hungarian society and healthcare.

Mortality and its Consequences

Approximately 7,500 persons lose their lives because of accidents or acts of violence. (Table 1)

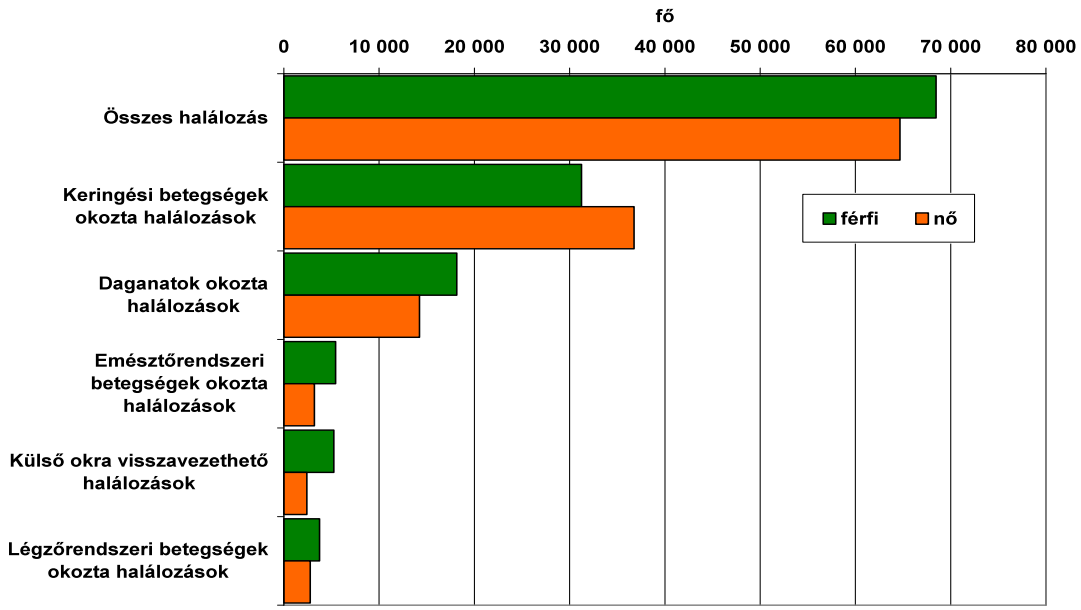
Table 1 Accidental deaths between 2005 and 2007 by age group

Mortality rates broken down by years of age and age group as per the nature of the accident, 2005-2007

2005			**0-14**	**15-24**	**25-34**	**35-44**	**45-54**	**55-64**	**65-74**	**75+**
	V01-V09: Injury suffered by pedestrians	410	10	31	21	49	84	83	53	79
	V10-V19: Injury suffered by cyclists	230	4	6	7	20	49	49	58	37
	V20-V29: Injury suffered by motorcyclists	155		36	51	20	20	14	7	7
	V30-V99: Other road traffic accidents	768	24	141	179	139	124	82	47	32
	V01-V99: Total number of road traffic accidents	1,563	38		258	228	277	228	165	155
	W00-W19: Falls	2,103	2	5	14	65	170	213	315	1,319
	W65-W74: Drowning and submersion	192	14	20	30	28	45	22	18	15
	W85-X19: Burns	264	6	12	13	32	54	44	42	61
	X20-X29 and X40-X49: Poisoning	155	1	21	30	20	33	23	13	14
	X60-X84: Self-inflicted injury	2,620	5	97	253	441	684	446	302	392
	X85-Y09: Bodily harm	190	6	7	22	33	48	24	24	26
	Other accident not detailed above	898	15	22	58	101	205	181	137	179
	Total:	**7,985**	**87**	**398**	**678**	**948**	**1,516**	**1,181**	**1,016**	**2,161**
2006			**0-14**	**15-24**	**25-34**	**35-44**	**45-54**	**55-64**	**65-74**	**75+**
	V01-V09: Injury suffered by pedestrians	403	15	22	35	34	75	88	60	74
	V10-V19: Injury suffered by cyclists	222	9	5	8	20	55	44	49	32
	V20-V29: Injury suffered by motorcyclists	149	1	25	57	28	25	7	2	4
	V30-V99: Other road traffic accidents	839	25	134	212	136	158	87	53	34
	V01-V99: Total number of road traffic accidents	1,613	50	186	312	218	313	226	164	144
	W00-W19: Falls	1,852	2	6	22	71	152	209	287	1,103
	W65-W74: Drowning and submersion	213	7	16	22	39	54	32	29	14
	W85-X19: Burns	233	8	11	15	24	53	52	19	51
	X20-X29 and X40-X49: Poisoning	184	7	23	37	22	39	29	11	16
	X60-X84: Self-inflicted injury	2,460	3	99	246	364	686	420	318	324
	X85-Y09: Bodily harm	180	12	6	22	30	47	26	18	19
	Other accident not detailed above	844	22	21	49	90	189	158	121	194
	Total:	**7,579**	**111**	**368**	**725**	**858**	**1,533**	**1,152**	**967**	**1,865**
2007			**0-14**	**15-24**	**25-34**	**35-44**	**45-54**	**55-64**	**65-74**	**75+**
	V01-V09: Injury suffered by pedestrians	402	14	I8	36	55	79	70	53	77
	V10-V19: Injury suffered by cyclists	215	5	7	14	30	42	43	44	30
	V20-V29: Injury suffered by motorcyclists	160	2	32	62	28	16	6	7	7
	V30-V99: Other road traffic accidents	749	22	142	161	138	120	77	44	45
	V01-V99: Total number of road traffic accidents	1,526	43	199	273	251	257	196	148	159
	W00-W19: Falls	1,898	2	9	20	55	136	202	278	1,196
	W65-W74: Drowning and submersion	187	21	20	17	30	38	31	17	13
	W85-X19: Burns	226	6	5	16	17	42	40	30	70
	X20-X29 and X40-X49: Poisoning	149	5	14	28	18	29	22	14	19
	X60-X84: Self-inflicted injury	2,449	2	88	222	374	612	443	322	386
	X85-Y09: Bodily harm	166	7	12	19	31	41	21	16	19
	Other accident not detailed above	816	19	19	49	79	195	163	104	185
	Total:	**7,417**	**105**	**366**	**644**	**855**	**1,350**	**1,118**	**929**	**2,047**

Deaths due to inadvertent accidents and violence now rank at the third and fourth places on the list of the causes of death, projected onto the entire population of the country (Chart 2).

Chart 2 Leading causes of death in Hungary, broken down by gender between 2005 and 2007 (persons)



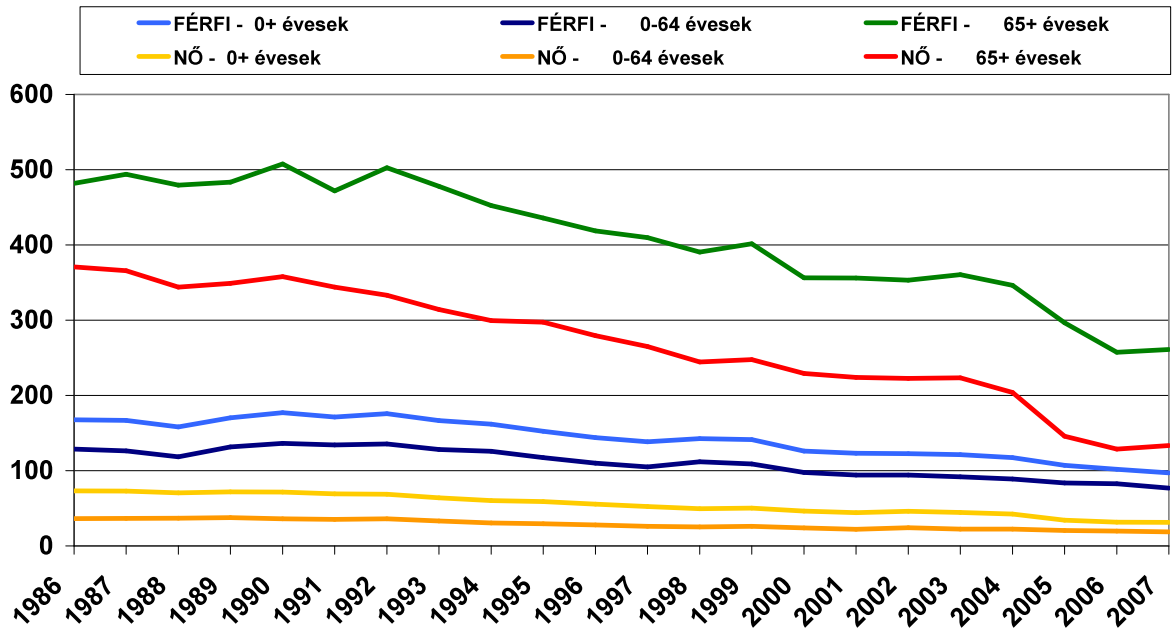
Source: HCSO

fő	Persons
Összes halálozás	Total deaths
Keringési betegségek okozta halálozások	Deaths caused by circulatory diseases
Daganatok okozta halálozások	Deaths caused by tumours
Emésztőrendszeri betegségek okozta halálozások	Deaths caused by diseases of the digestive tract
Külső okra visszavezethető halálozások	Deaths attributable to external causes
Légzőrendszeri betegségek okozta halálozások	Deaths caused by the respiratory system
férfi	men
nő	women

According to the 2007 data, 50.2% of total deaths are caused by diseases of the circulatory system, 24.7% by tumours, 6.6% by diseases of the digestive tract, 5.6% by accidents and acts of violence, while 5.1% are caused by diseases of the respiratory system. A very interesting gender-specific aspect of the deaths attributable to external causes is the fact that two-thirds of the deceased are men, and one-third are women.

As shown on Chart 3, all in all the decrease in death rates, projected onto the entire population (years 0+), is not significant. On the other hand, the fact that the death rate in the 65+ age group has markedly gone down is a welcome change, indeed. As also illustrated on Charts 3 and 4, accidental deaths – referenced with the given age group (100,000 persons) – occur most frequently among the elderly.

Chart 3 Deaths attributable to external causes for 100,000 residents (SMR)* in Hungary in the years between 1986-2007

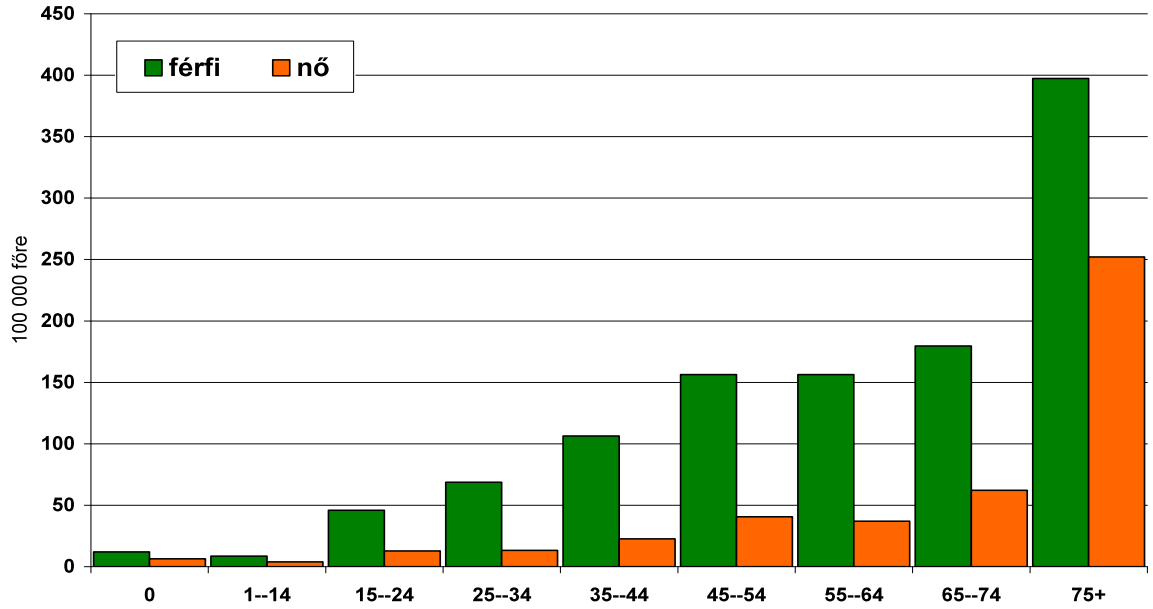


SMR: Standardised Mortality Ratio (standard: age distribution of the European population in 1976)

Source: HCSO

FÉRFI – 0+ évesek	MEN – 0+ years
FÉRFI – 0-64 évesek	MEN – 0-64 years
FÉRFI – 65+ évesek	MEN – 65+ years
NŐ – 0+ évesek	WOMEN – 0+ years
NŐ – 0-64 évesek	WOMEN – 0-64 years
NŐ – 65+ évesek	WOMEN – 65+ years

Chart 4 Deaths attributable to external causes, broken down by age group per 100,000 persons, 2005-2007



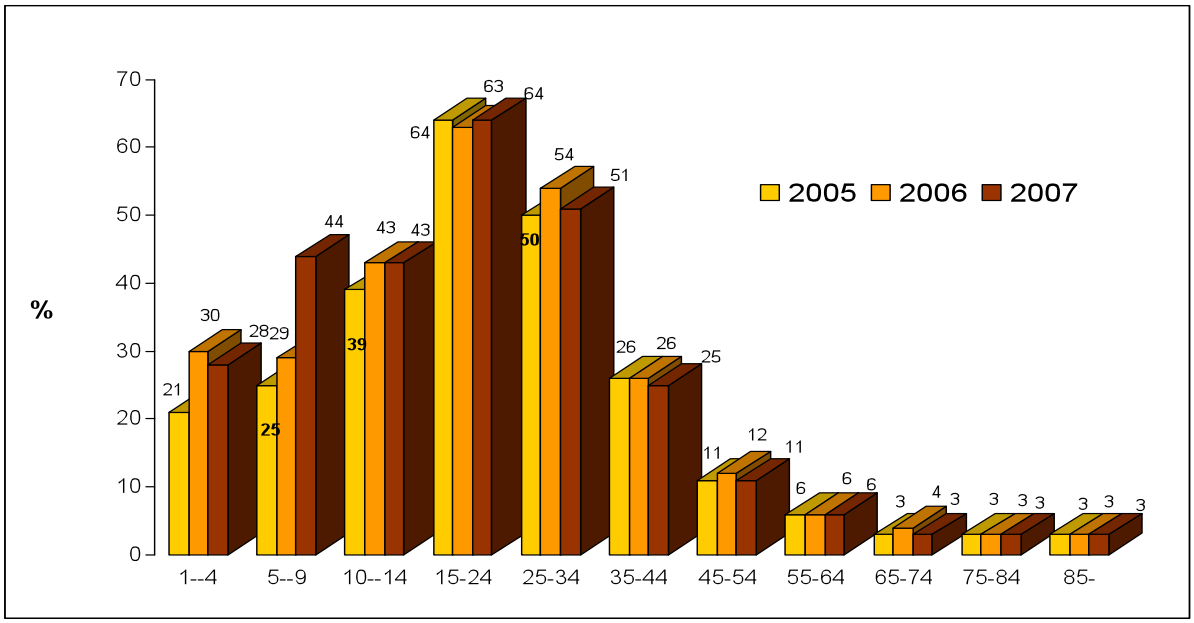
Source: HCSO

100 000 főre	Per 100,000 persons
férfi	men
nő	women

Many young people lose their lives in accidents prematurely. This fact is further underscored by the fact that in terms of potentially lost life years, death attributable to external causes is only preceded by congenital diseases. In 2007, the average number of years potentially lost was 18.8 years for men and 9.6 years for women.

When looking at the internal structure of deaths occurring in the various age groups, it becomes a glaring fact that external causes represent an increasingly significant part of deaths up to 24 years of age. These deaths account for over 60% in the 15-24 age group. External causes of death also represent a rather high ratio (50%) in the next, still rather young adult population.

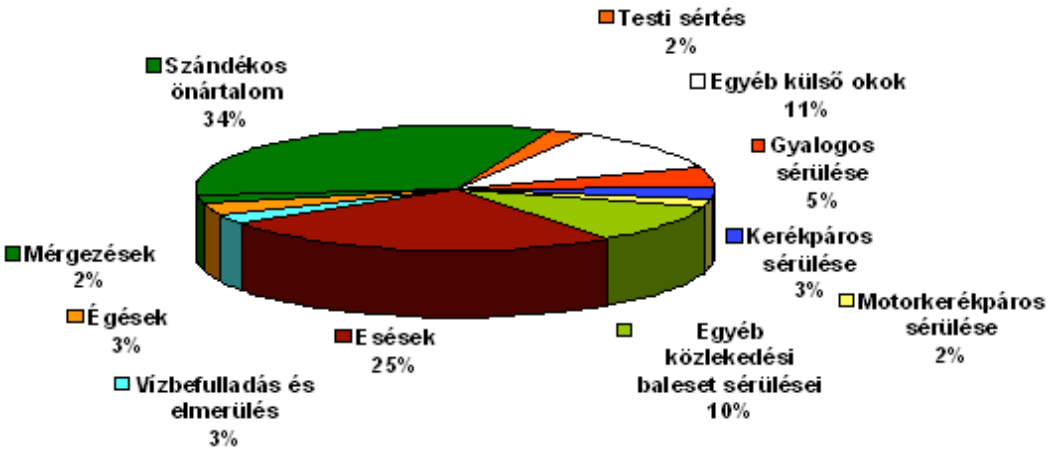
Chart 5 Proportion of accidental deaths within total deaths in the various age groups in Hungary in 2005-2007



Source: HCSO

Almost half of deaths attributable to external causes are so-called inadvertent accidents, whereas one third of such deaths are caused by deliberate self-inflicted violence. (Diagram 6) Revealed cases of bodily injury are rather rare, accounting for only 2% of deaths. The difference between the two genders, however, is significant (Diagram 7).

Chart 6 Distribution of deaths attributable to external causes in Hungary in 2007



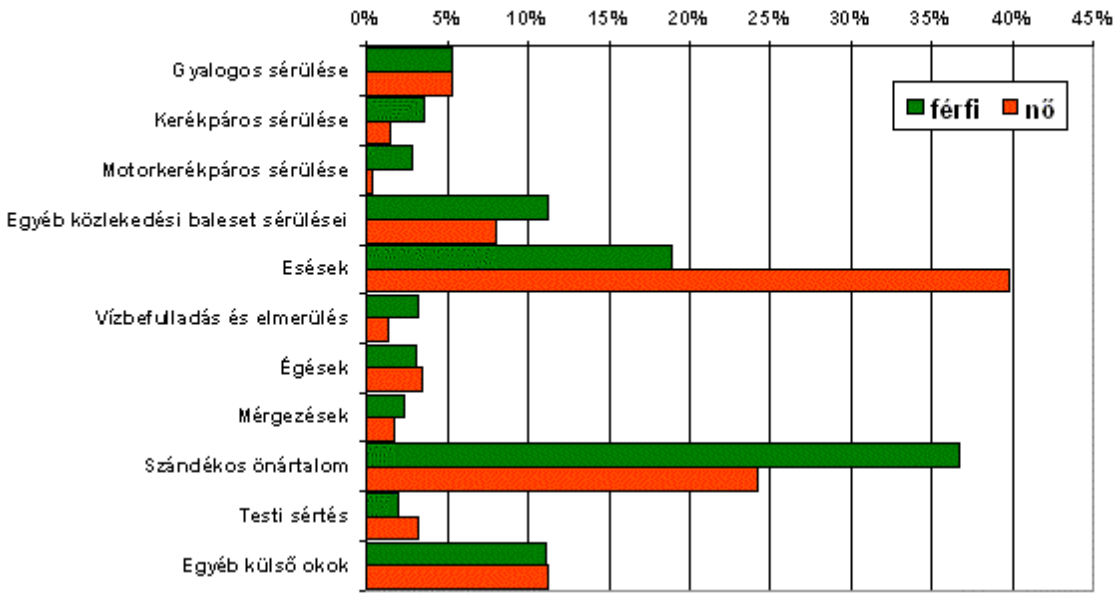
Source: HCSO

Testi sértés	Bodily harm
Egyéb külső okok	Other external causes
Gyalogos sérülése	Injury suffered by pedestrians
Kerékpáros sérülése	Injury suffered by cyclists
Motorkerékpáros sérülése	Injury suffered by motorcyclists
Egyéb közlekedési baleset sérülései	Other road traffic accident related injuries

Esések	Falls
Vízbefulladás és elmerülés	Drowning and submersion
Égések	Burns
Mérgezések	Poisoning
Szándékos önártalom	Self-inflicted injury

The distribution of so-called inadvertent accidents is very interesting. Deaths occurring due to falls represent the largest proportion (39%). This is followed by traffic accidents (32%). Burns, poisoning and drowning only account for 3-5% of accidental deaths.

Chart 7 Rate of death attributable to external causes, broken down by gender in 2007 in Hungary



Source: HCSO

Gyalogos sérülése	Injury suffered by pedestrians
Kerékpáros sérülése	Injury suffered by cyclists
Motorkerékpáros sérülése	Injury suffered by motorcyclists
Egyéb közlekedési baleset sérülései	Other road traffic accident related injuries
Esések	Falls
Vízbefulladás és elmerülés	Drowning and submersion
Égések	Burns
Mérgezések	Poisoning
Szándékos önártalom	Self-inflicted injury
Testi sértés	Bodily harm
Egyéb külső okok	Other external causes
férfi	men
nő	women

1.1.2. Morbidity

Hospital Care

The number of persons requiring hospital care as a result of injuries due to accidents or violence is around 280,000. Of this number, 200,000 cases can precisely be categorized on the basis of BNO10. Based on 2007 inpatient care data, the number of injuries in the three main age groups is shown in Table 2.

Table 2 Number of injuries requiring hospital care in Hungary in 2007

Age Group	Number of cases with a precise diagnosis	Total number of cases without a precise diagnosis
0-24 years	45,503	50,473
25-64 years	94,480	157,488
62+ years	61,216	78,559

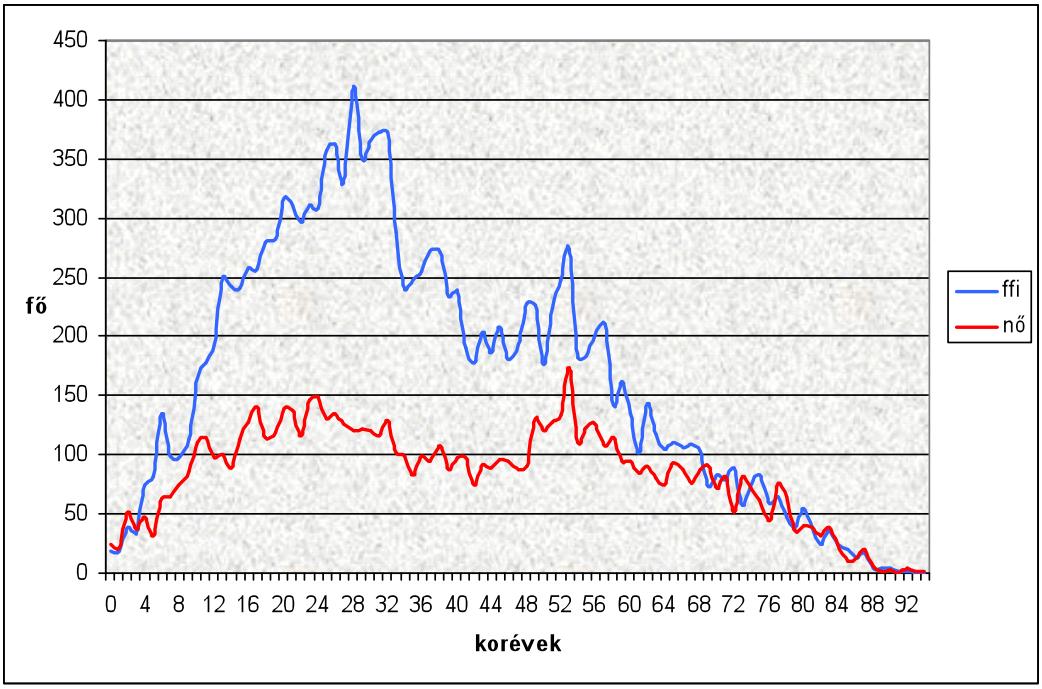
Table 6 in the Annex shows the data broken down by type of injury.

The hospital care data provide information on more severe injuries. Falls account for a large proportion of inpatient care (64%), which is followed by traffic accidents representing a relatively significant ratio of 14%. In terms of the cases requiring hospital care, the ratio of burns and poisonings barely reaches 5%.

The picture becomes rather informative if one looks at the persons injured in accidents broken down by years of age and if the four most important types of accidents such as traffic accidents, falls, burns, and poisonings are considered (Diagrams 8, 9, 10, and 11). The peaks that appear on the individual diagrams represent the vulnerability of the given age group or gender (men, women). These peaks are worth considering when determining the relevant priorities (which age group, and within that age group which gender is the most concerned in terms of hospital care).

Young and middle-aged men require hospital care due to traffic accidents in outstandingly great numbers.

Chart 8 Number of traffic accidents broken down by years of age, based on inpatient data in Hungary in 2007

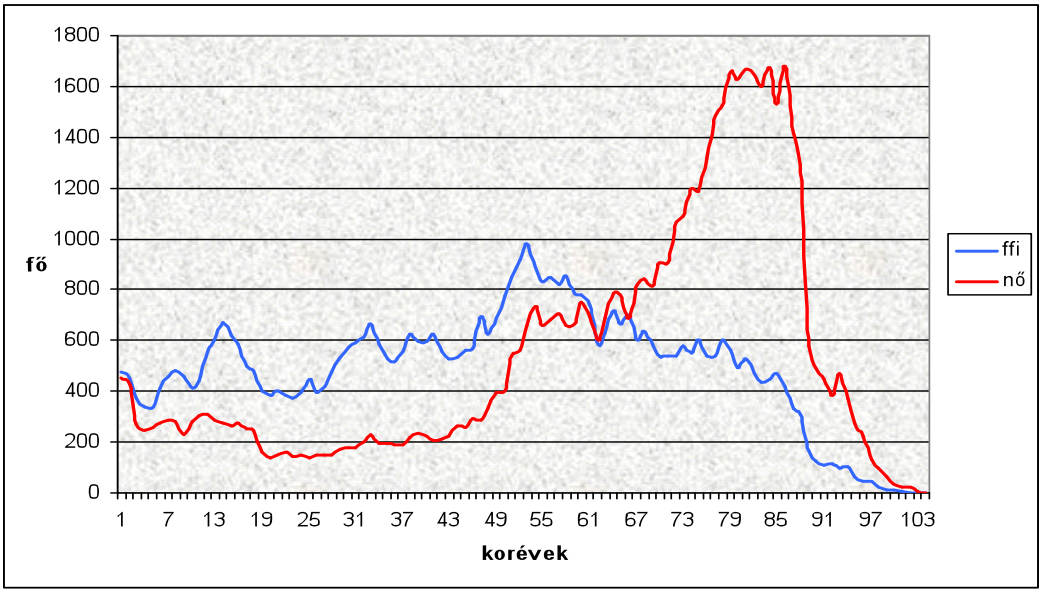


Source: Hungarian National Health Insurance Fund, Hospital Discharge Database

fő	persons
korévek	years of age
ffi	men
nő	women

Injuries occurring due to falls requiring hospital care usually affect older women, especially those above the age of 75.

Chart 9 Number of falls, broken down by years of age, based on inpatient data in Hungary in 2007

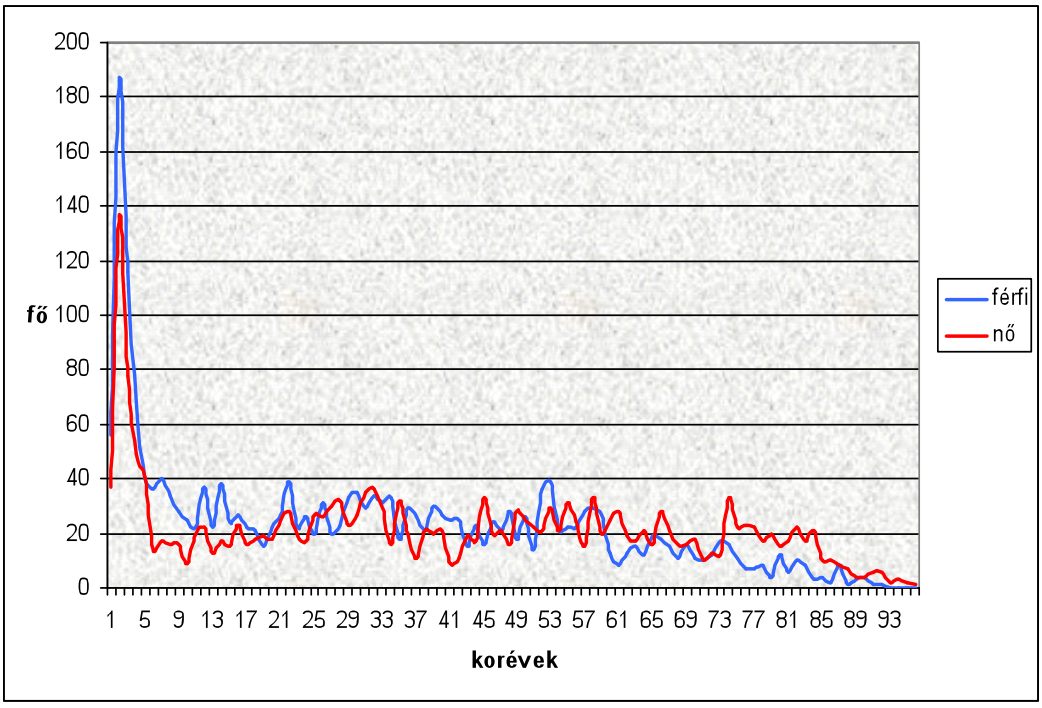


Source: Hungarian National Health Insurance Fund, Hospital Discharge Database

fő	persons
korévek	years of age
ffi	men
nő	women

It is apparent that burns represent the largest risk for the age group below 5 years of age.

Chart 10 Number of burns and cases of scalding, broken down by years of age, based on inpatient data in Hungary in 2007

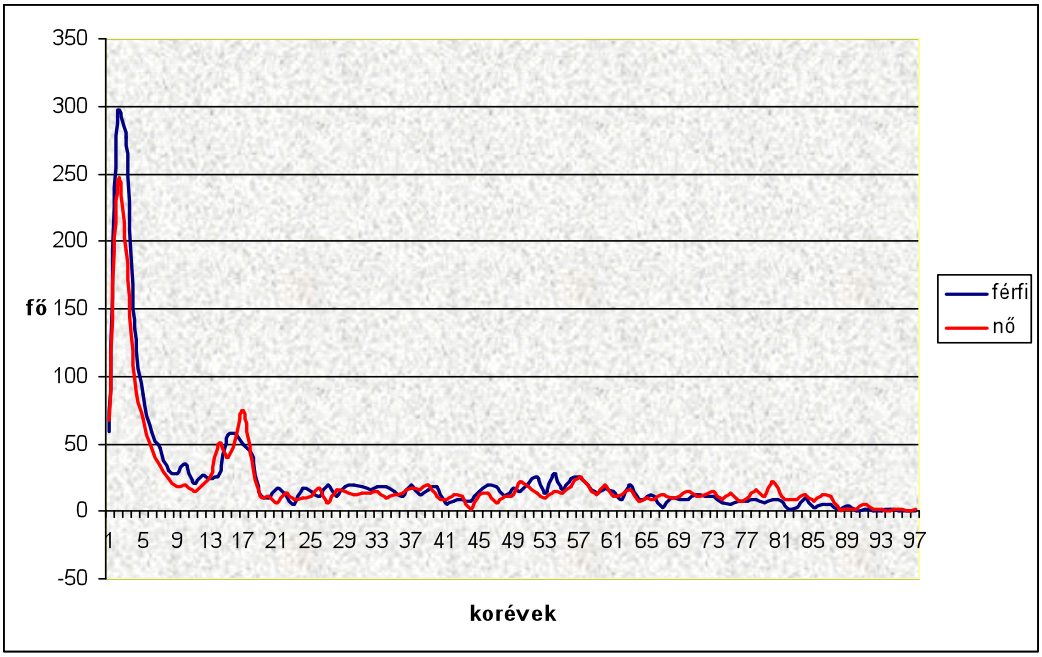


Source: Hungarian National Health Insurance Fund, Hospital Discharge Database

fő	persons
korévek	years of age
ffi	men
nő	women

During the first five years of life special attention is required to prevent accidental poisoning, while the 15-17 age group needs to be monitored in order to prevent suicide attempts.

Chart 11 Number of cases of poisoning, broken down by years of age, based on inpatient data in Hungary in 2007



Source: Hungarian National Health Insurance Fund, Hospital Discharge Database

fő	persons
korévek	years of age
ffi	men
nő	women

Key Outpatient Care Data

Taking the most frequent diagnoses into consideration, approximately 2.3-2.5 million cases of accident-related injuries are treated in the referent healthcare institutions every year. Table 3 shows the number of cases treated broken down by major accident types.

Table 3 Number of cases requesting outpatient care due to various injuries in 2007

Type of injury	Number of cases
Falls	app. 1,500,000
Puncture wounds, stabs and cut wounds	app. 230,000
Injuries caused by motor vehicles	app. 75,000
Suicide, suicide attempts	app. 10,000
Number of poisoning cases	app. 10,000

Source: Hungarian National Health Insurance Fund

One of the most severe consequences an accident can have is traumatic brain injury, which appears in approximately 450,000 cases in outpatient care. (This data should be handled with caution, however, because even the most minor brain injuries are included.) In a similar fashion, 220,000 cases of femur fracture are documented in outpatient care per year[6].

Accident prevention is one of the most lucrative investments available (Table 4) [9].

Table 4 Profit on one Euro spent on preventing certain accidents, according to the WHO

Type of accident	***Profit on one Euro spent***
Occupational accidents	***7***
Child safety seats	***32***
Helmet for cyclists	***29***
Family visits, education of parents	***19***
Poisoning prevention service	***7***
Traffic safety developments	***3***

The above data could not have been obtained without the assistance of the Hungarian National Health Insurance Fund and the pension insurance funds. These insurers can also realise manifold profit by getting to know these accident data in more detail, as it is common knowledge that accident prevention is in fact a lucrative investment.

If we compare Hungary to the countries that have prevented accidents with the most efficiency, Hungary still has a long way to go. Table 5 illustrates the data published by the WHO [9] in terms of what extent the number of deaths could be decreased, supposing that every country were able to produce the best results possible.

Table 5 The number of lives that could be saved in Europe if the number of deaths was equal to the mortality rate of the countries exhibiting the lowest mortality indicators (according to the WHO)

Type of accident	Number of deaths per year	Number and percentage of lives that could potentially be saved
Traffic accidents	100,710	54,667 (54%)
Poisoning	101,519	95,317 (94%)
Falls	72,104	36,425 (51%)
Drowning	34,026	30,713 (90%)
Fires	21,742	18,853 (87%)
Self-inflicted injuries	145,493	87,557 (60%)
Violence	61,717	54,666 (89%)
Total	746,512	508,313 (68%)

[6] Source: Department of IT, Data Management and Analysis, National Centre for Healthcare Audit and Inspection

Source: Dinesh Sethi, Francesca Racioppi, Inge Baumgarten and Patrizia Vida; Injuries and violence in Europe: Why they matter and what can be done; WHO Europe 2006.

1.1.3. Health Survey Data

Health Surveys

The Hungarian National Health Interview Surveys (OLEF) provide a comprehensive picture regarding the adult population in Hungary. According to the 2003 OLEF, approximately 10% of the over-18 population suffers accidents that require medical care [11].

Introduction

The ranking of the accidents taking the place, and the actions leading to the accident in question are displayed in Table 6.

Table 6 Injuries requiring medical attention, based on OLEF 2003

Rank	Type of accident	Number of accidents
1	Household accidents	278,000
2	Work-related accidents	167,000
3	Road traffic accidents	152,000
4	Sports accidents	93,000
5	Other accidents occurring mostly during recreational activities	48,000

Source: OLEF 2003

The HBSC surveys provide information on the health and lifestyles of children and pubescent young persons [12].

39.9% of the 5th, 7th, 9th, and 11th graders suffer some kind of an injury in the course of one year alone. The proportion of children involved in fights should not be neglected either, nor should the fact that 57.5% of students claimed they had not been involved in a fight even once. The chapter on alcohol consumption is also very interesting. Only 7-8% of 11th grade students say they are abstinent when it comes to alcohol, whereas 71% of boys and 51% of girls recount two or more instances of drunkenness in this age group.

1.1.4. Police Data on Road Traffic Accidents

Road Traffic Accidents based on Police Data

Definition of a road traffic accident: *According to the definition of HCSO, a road traffic accident is an unexpected, inadvertently caused road traffic event, which results in death, personal injury, or material damage.*

Road traffic accident related data collection is mandatory pursuant to Government Decree No. 215/2003 (XII.10.).

Data supply is performed according to the statistical data sampling sheet of HCSO (Registration number: 1009/04).

Key data featured on the questionnaire:

I. Time of the accident
II. Place of the accident
III. Data on the place of the accident
IV. Environmental conditions
V. Description of the accident
VI. Whether the person responsible for causing the accident was under the influence of alcohol or drugs
VII. Driver responsible for causing the accident
VIII. End-result of the accident
IX. Number of deceased or injured persons
X. Details of the persons involved in the accident
XI. Details of the deceased or injured persons

This data reveals the gender, age, nationality and role of the victims and the agents involved in the road traffic accident. The data sampling sheet contains information on whether those involved used safety equipment and garments.

The Police collect the following types of data on the end-result of the injuries regardless of whether the given person was involved in the accident as an agent or victim:

- if someone dies within 48 hours or 30 days after the accident,
- if someone suffers severe injuries,
- if someone suffers minor injuries.

In addition, it is also revealed whether the injured person received medical attention onsite and/or was taken to hospital.

Please find below some data cited from the publication of HCSO entitled "Road Traffic Accidents in 2008", which is considered important[7].

According to the information collected by the Police, there were a total of 19,174 accidents and 26,365 injuries in 2008. 996 of the latter resulted in death, 7,227 persons suffered severe injuries, and 18,142 persons suffered minor injuries.

The following (Table 7) is a display of the distribution of injuries and deaths according to the type of vehicle involved in the 19,174 accidents in 2008.

Table 7 Number of injuries and deaths, broken down by the type of vehicle involved in accidents in 2008

Vehicle	Accident	Injury		Death
		Driver	Passenger	
Motorcycle	833	1,477	212	53
Car	12,112	7,347	6,589	474
Bus	196	29	509	15
Tram, trolley bus	15	2	50	
Truck	1,708	769	473	114
Bicycle	1,752	2,931	48	78

[7] HCSO, 2009, edited by Dr. Ákos Probáld

Motor-assisted bicycle	843	1,382	55	23
Pedestrian	1,390		3,349	116

Source: Road Traffic Accidents 2008

2,342 (12%) of the 19,174 accidents were caused by drunk drivers in 2008.

17,521 of the accidents were caused by the driver's fault and 691 were caused by pedestrians (other causes: 166).

The age group specific distribution of the injured or deceased persons is also very revealing (Table 8).

Table 8 Number of persons involved in accidents in 2008, broken down by age group

Age group (years)	<= 5	6-14	15-17	18-20	21-24	25-27	28-30	31-35	36-40	41-45	46-50	51-60	61-64	65 =<
No. of persons	516	1,601	1,242	1,730	2,506	1,769	1,815	2,866	2,167	1,669	1,644	3,371	857	2,573

Source: Road Traffic Accidents 2008

If the above data are compared with EU-wide data, it can be deduced that in Hungary in 2007, 125 persons per one million residents died in traffic accidents (the same number is 220 in Lithuania, 30 in Malta, while the EU average is 85).

The number of accidents in Hungary per one million cars is 410 (by comparison, the same figure is 780 in Romania, 100 in the Netherlands, and the EU average is 180).

1.1.5. Occupational Accident Data

Description of the current method of occupational accident related data collection

Act XCIII of 1993 on Labour Safety defines the concept of an occupational accident as follows:

Occupational accident: an accident suffered by an employee in the course of, or in connection with, organized employment, irrespective of its place and date, or the extent of the contributory responsibility of the employee (injured party).

Similarly, Chapter V of the same Act regulates the rules of reporting on occupational accidents. Reporting is performed in accordance with Annex 1 to Decree No. 28/2004 (XII.20.) FMM of the Minister of Employment and Labour.

Data on occupational accidents are collected and collated by the Hungarian Labour Inspectorate (hereinafter referred to as OMMF), and the resulting reports are published at quarterly intervals. The Quarter 4 2008 publication also contains the data for the entire year.

It is specified at the beginning of the publication that it only contains data belonging to the competence of the Hungarian Labour Inspectorate (OMMF).

Occupational accident related data contain accidents resulting in incapacity for work exceeding a period of three days, and those resulting in death.

The publication contains the following information:

The total number of occupational accidents for the current year and the four preceding years. (The publication refers to collated figures, there is no mention of the employees in the document. Data disclosure is similar in terms of lethal accidents as well). The document compares data with the same period of the preceding year, once again, providing collated numbers only. The comparison concerns the following areas:

- Total number of accidents,
- Accidents resulting in death,
- Accidents resulting in severe mutilation,
- Accidents resulting in other severe conditions,
- Occupational accidents resulting in severe overall consequences,
- Occupational accidents resulting in mutilation.

The publication also sheds light on the regional distribution of occupational accidents – once again without mentioning the employees (Table 9).

Table 9 Number of reported occupational accidents 2004-2008

Year	2004	2005	2006	2007	2008
Total number of reported occupational accidents	23,872	23,971	22,685	20,922	22,217
Total number of lethal occupational accidents	160	125	123	118	116

Source: Hungarian Labour Inspectorate (*OMMF)*

1.1.6. Cases of Poisoning

Data on cases of poisoning requiring medical attention are collected by the Health Toxicological Information Service of the National Institute of Chemical Safety (OKBI-ETTSZ). Data collection is performed pursuant to Act XXV of 2000 on Chemical Safety, and Decree No. 44/2000 (XII.27.) EüM of the Minister of Health, as well as the National Statistical Data Collection Programme (OSAP) "Report on Human Poisoning Cases", registration number: 1570 (the related key data are displayed in Table 10).

The reports filed on poisoning cases contain the following information:

- County
- The gender of the victim of poisoning
- The age of the victim of poisoning
- Substances and products causing the poisoning
- Pharmaceuticals
- Occupational and household substances
- Pesticides
- Other substances
- Narcotics
- Method of poisoning
- Suicide
- Accidental
- End-result of poisoning
- Non-lethal
- Lethal

The statistical processing system allows for the compilation of a summary report that can reveal data broken down by gender, age group, toxic substance, method and end-result of poisoning from the data

reported by the various healthcare institutions. Such a summary report, would, in turn, make the most vulnerable groups within the population more visible as well as could shed light on which ones are the toxic substances that cause the most damage.

One of the advantages of this system is that it has been operational for almost 10 years. One of its disadvantages is that the number of poisoning cases largely depends on how reliable the reporting effort is. (There is large difference in the number of poisoning cases reported by the individual counties, which is presumably not solely a coincidence. In 2008, the number of cases of poising per 10,000 residents was the highest in Borsod-Abaúj-Zemplén County (223.1), and Pest County boasted of the lowest number: 34.4. National average: 130.2.).

Table 10 Number of cases of poisoning reported to ETTSZ 2004-2008

Year	2004	2005	2006	2007	2008
Reported cases of poisoning	13,645	12,823	9,632	11,672	13,201
Lethal cases of poisoning	187	169	144	73	76

Source: OKBI, ETTSZ

1.1.7. Accidents in Institutions for Children

Accidents occurring in institutions of education

Accidents involving students and children are reported in accordance with Annex 2 of Decree No. 11/1994.(VI.8.) MKM of the Minister of Culture and Public Education.

Based on the provisions of the Decree, accidents involving students and children resulting in injuries from which recovery exceeds three days must be investigated and reported to the maintainer without delay. During the investigation the personal, material and organizational causes of the accident and any personal, material, organizational involvement must be uncovered. The notary public and the chief notary public shall send the accident records received from the maintainers to the Ministry of Education and Culture until the last day of the month following the end of the given calendar half-year. The necessary measures to avoid similar accidents in the future must be taken after each and every accident involving students or children.

5-6,000 accidents are reported every year (in 2008 there were 6,200 reported cases; source: Ministry of Education and Culture). Presumably, the actual number of accidents in these institutions is significantly higher (in a survey conducted by the Hungarian National Public Health and Medical Officer Service regarding the 2004/2005 year, the data of only 1,900 schools were processed, but the number of accidents already reached 7,000, and there are more than 5,000 educational institutions in Hungary).

Establishing a safe environment in the kindergartens and schools is the responsibility of the maintainer/operator of the institution. There is a separate chapter on fire protection, whereas the prevention of poisoning, sport accidents and other accidents in the institution is all part of the relevant accident prevention plans. The head of the institution is responsible for the development and enforcement of the accident prevention plan; however, his/her responsibility also extends to reporting accident related data.

1.1.8. Burn Injuries – Fire Protection

Fire protection is a public duty of social and business organizations within their scope of activities, and it is also an obligation that citizens must respect and abide by.

Fire protection tasks are detailed in the relevant legislation listed below:

Act XXXI of 1996 on the Protection against fire, technical rescue and the Fire Department

Government Decree No. 79/2007. (IV.24.) Korm. on the Organizations carrying out official fire protection tasks and the detailed rules of official fire protection activity

The latter piece of legislation puts the Fire Department in the forefront of fire protection, while, regarding certain other issues, the National Directorate General for Disaster Management is named as the competent authority.

Hungary's rescue fire protection is primarily the responsibility of professional municipal fire departments, whose work is aided by the voluntary and institutional fire departments, and fire fighters' associations. These institutions are maintained by the municipalities (supplemented by Government subsidies), while the relevant professional supervisory activities are handled by the National Directorate General for Disaster Management. Voluntary fire departments are public bodies jointly founded by the relevant municipality and fire fighters' association, which provide an on-call service that is continually available for purposes of fire fighting and technical rescue, and have an independent scope of operation.

The prevention of fires belongs to the competence of the Fire Department and the National Directorate General for Disaster Management. These tasks are handled by the Fire Department in an up-to-date manner.

2. Definition of Objectives

Accident prevention can only be realized through organized, goal-oriented actions, the success of which can only be gauged through the lapse of years. That is, it is prudent to set a longer timeframe for prevention programmes and the measurement thereof, which should also be in harmony with the objectives set by other relevant ministries.

2.1. Vision

To reduce the number of victims of inadvertent accidents and acts of violence, to mitigate individual human suffering, to decrease the years people spend being disabled, as well as to reduce the degree of vulnerability and poverty of the people concerned, which all have a discernible effect on the environment of the person with permanent disabilities.

2.2. Main Objective

Considering the objectives set by the associated authorities, during the next 10 years — between 2010 and 2020 — to reduce accident related mortality by 25% is a realistic objective.

2.3. Comprehensive Objectives

Having regard to the fact the fatal accidents involve, for the most part, young and middle-aged people, the following can be expected from the strategy as a comprehensive objective:

- Increase in life expectancy between the ages of 1 and 45
- Increase in healthy life years
- Decrease in the number of potential years of life lost (PYLL)
- Decrease in the costs spent on emergency medical care
- Decrease in the number of disabled life years due to accidents

2.4. Paths of Accident Prevention

1./ Accident prevention is directed according to **5 main accident groups** and according to the place of the accident:

- Road traffic accidents – having particular regard to defenceless road users
- Occupational accidents – including accidents suffered by self-employed persons as well as organized labour
- Household accidents
- Accidents occurring in children's institutions
- Sports and recreational accidents

Remark: The following prevention activities are differentiated in every group:

- prevention activities before the accident
- prevention activities during the accident, and
- prevention activities after the accident

2./ All accident prevention objectives should be set in relation to **4 age groups**:

- Children 0-14 years
- Young people 15-24 years
- Adults 25-64 years
- Elderly people 65+ years

3. Intervention – Existing Practices Used to Prevent Accidents

The fact that ten priority areas have been defined in the field of accident prevention based on a consensus of the EU Member States and the Apollo Project of the European Union is the result of several years of work [13]:

- Road traffic safety
- Falls
- Poisoning
- Burns
- Drowning
- Sports safety
- Work equipment safety
- Occupational safety
- Pharmaceuticals, alcohol and narcotics

The publication briefly defines the actions that have been proven useful to improve the safety of people in these areas, and which should also be taken into account with regard to the current domestic situation. Taking the international recommendations and domestic possibilities into account **the following recommendations are proposed**:

3.1. Prevention of Road Safety Accidents

The road traffic accident related data collection and processing procedure in Hungary is currently based on a thorough statistical analysis of the accidents identified by the Police. It is a well-known fact that the actual number of accidents is higher, since the Police are not alerted to every accident. According to the 2003 National Residential Health Interview Survey (OLEF), the adult population suffered approximately 150,000 injuries as a result of road traffic accidents that required some type of medical attention (the difference between the accidents reported by the adult population and the Police exceeds 100,000 persons).

Therefore, institutions of healthcare should continue to collect accident related data in the course of residential health interview surveys, primarily because such data allow for the estimation of the frequency of the occurrence of all road traffic accidents requiring medical attention. ➥*1*.

Hospitals register 250-280,000 accident related injuries every year. Although the 10th revision of the International Classification of Diseases contains an extensive breakdown of the description of accidents and their end-results, the relevant data, however, should be recorded even more accurately than before. This is necessary in order to ensure that the description of the situation reflects reality to the highest possible degree, and that the weight of the accidents, and the direct and indirect costs thereof be measurable. ➥*2*.

Outpatient data are characterized by inaccuracy and missing information – also mentioned in connection with inpatient data –, which render analyses rather untrustworthy. ➥*3*.

Accident related data are not featured in the routine reports compiled in the course of basic healthcare provision. Neither the National Health Insurance Fund (OEP) (B 300) nor HMAP (Family Physician Morbidity Data Collection Programme) require any relevant data to be entered. ➥*4*

Should the data supply of basic healthcare services improve in this regard, our knowledge of road accident related injuries would be much more extensive.

Currently, based on the ICD10 codes it is solely possible to distinguish between the accidents caused by the different types of vehicles.

Injuries can be assigned the accident-related data. These allow us to gauge which are the most frequent injuries that result from accidents and vice versa and what causes a given a type of trauma. These data provide a basis not only for the calculation of the associated costs but also for preventive work. ➥*5*.

Although mortality rates have dropped compared to the previous year, but as underscored by the EU data as well, they are still rather high. Considering that the end-result of an injury is largely determined by the fact whether quick and professional care can be provided or not, it would be reasonable to launch a follow-up action into the efficiency of healthcare services with the involvement of head physicians, in line with their competence. The path of follow-up would be as follows:

- responding physician
- ambulance and emergency rescue services
- emergency medical care
- hospital

The timeframe should be examined, as should also whether the necessary personnel and material conditions are available ➥*6*.

Two questions that need to be examined can be included in the activities of a head physician as part of the audit monitoring the quality (patient safety) aspect of the care provided. The audit would cover the entire "patient path" described above. Pre-hospital care is provided by the responding physician, or the ambulance and emergence rescue services, while acute care is provided in the hospital, usually in the Emergency Trauma Room thereof.

Data submitted online (per levels of care and regarding the entire patient path) are checked in accordance with the established protocols. Cases that do not conform to the protocol are evaluated by the head physician.

Analysis of long-term or permanent injuries belongs to the competence of rehabilitation. These should be examined and evaluated both professionally and cost-wise under the competence of the head physician ➥*7*.

Both types of head physician data collection are in need of improvement. In addition to the head physicians concerned, the Department of Health Monitoring and Epidemiology of Non-contagious Diseases of the National Centre for Healthcare Audit and Inspection and the employees of the IT Department could also get involved.

The data received from the various professions are synthesized at the Department of Health Monitoring and Epidemiology of Non-contagious Diseases of the National Centre for Healthcare Audit and Inspection, and are displayed in the annual report of the National Centre for Healthcare Audit and Inspection.

Until the full data collection system outlined above is established, a pilot run of the Injury Database (IDB) used in many European Union countries is recommended. ➥*8*.

3.2. Prevention of Occupational Accidents

Getting a more accurate picture of occupational accidents is a shared interest of the Ministry of Social Affairs and Labour and the Ministry of Health. Therefore, our objective is to improve the quantity and quality of accident-related data. Therefore, the following recommendations are proposed to improve data supply:

- Accidents occurring during work should be included in the scope of the data supply of basic healthcare services (family physician' report).
- The selection of these accidents from outpatient care data should be ensured.
- Injuries and accidents related to work should be selected from inpatient care data.

In the interest of ensuring comparability and follow-up, a similar data structure principle should be followed with regard to all three sources of data.

In order to ensure uniform collectability, in addition to the circumstances of the accident, the nature of the injury should also be recorded in accordance with ICD 10. ➥*9*.

The cost of work-related injuries can be estimated using the weightings of the National Health Insurance Fund (OEP). Data collected and analysed in this manner allow a complete picture of the weight of the injuries resulting from certain types of accidents to be obtained as well as the indirect healthcare costs thereof. In this manner the Ministry of Health can be aided to gather a more accurate picture of the burden represented by occupational accidents within the whole of the health insurance system. ➥*10*.

The data thus generated allows for the detection of the most frequent, most severe, and most expensive accidents. Based on this, a recommendation can be formulated for the tasks to be carried out in the various fields of occupational healthcare and health protection in terms of the prevention of occupational accidents. The data can also be used by the Hungarian Labour Inspectorate (OMMF) to improve the efficiency of its onsite audits and to prevent occupational accidents.

Considering that occupational accidents can be prevented in a professional manner and with great efficiency we consider work in this area of importance and are convinced that it will yield positive results. ➥*11*.

3.3. Prevention of Cases of Poisoning

Chemical safety is also important in our everyday lives. ➥12

One of the disadvantages of the current system of data collection is that the number of poisoning cases largely depends on how disciplined the reporting effort is. It is a well-known fact that there is great deviation in the number of poisonings reported by the individual counties, which is not solely a coincidence presumably. As a result, the operation of the system should be made more accountable through more consistency, and should be controlled against the number of poisoning cases requesting basic healthcare. This would, however, require that the report of the National Health Insurance Fund (B300) be extended, similarly to the other types of accidents, and in addition this should be screened for outpatient data, and the relevant inpatient data should be examined in detail from this particular aspect. ➥*13*.

In the interest of preventing poisonings, pedagogical programmes should be drawn up or prepared with the involvement of the National Institute of Chemical Safety. The dissemination of such programmes is especially relevant in the kindergarten, lower elementary school grades, and among secondary school age groups, although the involvement of older generations could also prove useful. ➥*14*.

3.4. Prevention of Burns

It is necessary to expand the scope of data collection and to analyse the incoming data more professionally in this area as well. Burn injuries should be included in the scope of data reported by basic healthcare institutions both with reference to children's healthcare and adult's healthcare. ➥*15*

The outpatient and inpatient care data should be supplemented with the place of the accident and a detailed description of the causes of the accident. This would be necessary so that more details as to how the given burn injury exactly occurred could be reconstruct. This could also be supplemented by the extent of the burn injury. Currently, neither the costs of the transplant operations following a burn injury nor those of rehabilitation are known.

In addition to providing more accurate data, more efficient cooperation is needed in order to be able to prevent burns and scalding. For instance, health visitors, family paediatricians, and social care

providers can help immensely in terms of overcoming the various risk factors. In the course of their family visits, these professionals must call the attention of family members to the various emergencies, the importance of eliminating potential sources of accidents, and should take immediate action if they experience a situation that directly endangers the safety of certain family members. ➥*16*.

It is of vital importance to ensure that not only school children but also younger, kindergarten-age children are educated about how to prevent scalding and burns. ➥*17*.

3.5. Safety of Children's Institutions

The public health audit of institutions should include the surveillance of the safety of children's institutions as well. The equipment, appliances used in kindergartens, and institutions of education should be monitored continuously, and it should also be checked whether children use these pieces of equipment and appliances as intended. ➥*18*.

3.6. Prevention of Falls

3.6.1. In Old Age

To improving the safety of institutionalized elderly people ➥*19* ➥*20*.

Municipal support for remodelling households to improve household safety ➥*21*.

To disseminate information related to accident prevention, which requires the large-scale involvement of the local social care provider network. Workers in the social care providing network should receive training materials that can facilitate efficient prevention ➥*22*.

An activity programme should be developed as part of the methodology that is valid, useful and acceptable for physiotherapists and people involved in other types of physiotherapy (e.g.: tai chi masters) as well. ➥*23*.

The involvement of the manufacturers of medical aids and products in the prevention of falls among the elderly seems to be expedient and should yield positive results.

3.6.2. In Childhood

Considering that the fall-related accidents suffered by small children result in many injuries, this issue should be a particular focus of attention from early infancy on. Health visitors can contribute to this effort very successfully during their family visits. ➥*24*.
In terms of preventing falls on the playground, very positive results can be achieved by creating safe playgrounds and ensuring continuous supervision on these playgrounds. Solving these problems is vitally important. ➥*25*.
The same applies to school grounds and yards.
Statutory regulations concerning technical solutions – such as childproof windows and doors – should be promoted without delay. ➥*26*.

3.7. Prevention of Sports and Recreational Accidents

A much more intensive awareness raising effort is needed in this field than before, especially among teenagers, who are known for their risk-seeking behaviour. ➥*27*.
The responsibility of operators, manufacturers and distributors of related equipment is very high with regard to safety appliances and equipment (swimming pools, public areas, as well as sports and recreational centres).
The related training of physical education teachers is especially important. ➥*28*.

3.8. Research into Accident Prevention

During the past five years, the Department of Health Monitoring and Epidemiology of Non-contagious Diseases of the National Centre for Healthcare Audit and Inspection has conducted a number of surveys and analyses in order to promote accident prevention. The data thus gathered provides information with regard to the following topics:

- Number of accidents in elderly people's homes per one year
- Housing conditions of elderly people living on their own and the related accident risks
- Willingness of elderly people to participate in organized sports
- Willingness of elderly people to remodel their homes
- The attitudes of college students enrolled in healthcare programmes towards accidents – before and after training
- The usefulness of the accident prevention training of health visitors
- SF-36 tests administered to elderly people after traditional timed stand up and go physical therapy and tai chi practice
- The attitudes of secondary school and college students concerning road traffic risks
- Sports and sports accidents among secondary school students
- Consumption of pharmaceutical products and the frequency of falls in two retirement homes – one-year-long follow-up

In order to be able to measure the effectiveness of interventions, additional research and further cooperation would be required in other areas as well. For example:

- Improvement of data collection – integrated data collection through the development of existing data supplies ➥*29*
- The correlation between old age and road traffic accidents ➥*30*
- The effect of the WLS – Williams LifeSkills Programme – in the reduction of aggressive driving ➥*31*
- "Split the Risk" – the effect of the initiative on the risk-seeking behaviour of teenagers ➥*32*

The topic is open and offers many yet unexplored opportunities.

3.9. Campaigns

Planning, organization of media and other campaigns; measuring the effects of mass communication. ➥*33* ➥*34*.

4. Brief Thematic Summary of Intervention Recommendations

The main problems arising from various accidents and the current Hungarian practices aimed at resolving these problems are summarised in Chapters 1.1 (Epidemiological Analysis) and 1.2 (Interventions – Existing Practices in Accident Prevention). In the following, recommendations will be listed that are worthy of implementation primarily by the healthcare system so that a more detailed picture of the situation can be obtained, and a more efficient accident prevention strategy can be implemented.

4.1. Road traffic accidents

1./ OLEF should include a separate section on accidents.

2./ Updating of the hospital database of OEP to include accident-related data at least as per ICD10.

3./ Updating of the OEP outpatient database with accident-related data at least as per ICD10.

4./ Collection of accident-related data in basic healthcare

5./ Reports on typical injuries resulting from various accidents and the calculation of direct healthcare costs relying on these reports.

6./ Development and measurement of the indicators of accident-related emergency care service.

7./ Measurement of the long-term impact of accidents. (DALYs)

8./ Pilot level trial of IDB, long-term application in the case of favourable experiences.

4.2. Work-Related Accidents

9./ Through the application of the contents of Point 2.8, a clearer picture regarding work-related accidents can be obtained.

10./ Separation of occupational accident coverage as another insurance policy.

11./ Introduction of targeted good practices applied for the purpose of occupational safety; controlling the efficiency of these practices. Strict adherence to risk estimation as stipulated in legislation on the part of employers, and controlling of such adherence by occupational health experts.

4.3. Poisoning Cases

12./ Adherence to occupational and environmental safety requirements regarding poisonous substances.

13./ The expansion of the contents of Points 1-8 to also cover cases of poisoning.

14./ Promoting of good practices in order to prevent poisoning, particularly within vulnerable age-groups. (Children, minors, elderly, the deprived). The expansive application of mental health programmes is recommended in order to prevent adolescent suicides.

4.4. Burns, Scaldings

15./ The expansion of the contents of Points 1-8 to also cover burns and scalding cases.

16./ Emphasising burn and scald risks during family visits, particularly among the disadvantaged. Information provision by health visitors and children's doctors for expectant mothers participating in pregnancy care.

17./ Burn prevention programmes for children between the ages of 3-14, complete with teachers' educational package.

4.5. Accidents Occurring in Child-Care Institutions

18./ Safety in child-care institutions should form part of routine supervision by authorities.

4.6. Fall Prevention

19./ Decreasing accident risks in social housing institutions.

20./ Decreasing accident risks in healthcare institutions.

21./ Programmes aimed at making the homes of the elderly accident risk free.

22./ Training programmes in the field of accident prevention for those participating in care provision to the elderly.

23./ Promotion of activity programmes among the elderly. (Traditional physiotherapy, tai chi, walking, dancing.)

24./ Prevention of infant and childhood falls with the involvement of health visitors.

25./ Maintenance and monitoring of playground safety. (Inspection, see Point 18.)

26./ Review of technical specifications in order to prevent falls.

4.7. Prevention of Sport and Leisure Time Accidents

27./ Promoting and spreading good practices taking into account of adolescent risk-taking behaviour. (AdRisk)

28./ Emphasizing safety education for physical education teachers. (Particularly with reference to teaching to swim and water rescue in order to prevent drowning.)

4.8. Research

29./ Analytic-purpose review of existing and soon-to-be completed databases.

30./ Development of road traffic accident prevention programmes for the elderly. Physiological and psychic evaluations of elderly drivers. Reformulation of the frequency and content of drivers' aptitude tests.

31./ Introduction of violence decreasing and stress management courses in driving courses on an experimental basis, measurement of the efficiency of such courses.

32./ Influencing of risk-taking behaviour among adolescents through the introduction of new programmes.

4.9. Media

33./ Planning of media and other campaigns in the field of accident and violence prevention, with particular emphasis on the prevention of violence against women and children.

34./ Measuring the impact and effects of mass communication.

5. Key Aspects of the Foundations of the Action Plan

5.1. Existing Health Policies

The necessary statutory references on interventions have been made in the referent chapter.

Apart from these, there are numerous health protection programmes, strategies and concepts in other fields that are directly or indirectly connected to accident prevention.

Below are some examples of these:
"Our Treasure: the Child" Government Programme – Approved in 2006, the programme specifically mentions the prevention of child-related accidents. It was on the basis of this programme that the "**National Child and Youth Safety Action Plan**" was completed in 2009.

Road Safety Action Programme - It includes 77 specific programmes to prevent road traffic accidents. The formulation and development of the programme is dependent on the approval of the interministerial committee composed of state secretaries. The controlling of half-period performance is due in 2009.

Alcohol policy and strategy (plan) – alcohol consumption significantly increases the occurrence of road traffic and occupational accidents, and is one of the primary causes of interpersonal violence. Implementation of the said strategy has a crucial role in decreasing the number of accidents and occurrences of violence.

National Programme for Mental Health – with regard to self-inflicted injuries and suicides, depression is closely linked to death due to external causes. As it has been mentioned in the chapter detailing the situation analysis, 34% of all deaths due to external causes are such cases.

National Strategy for the Affairs of the Elderly – promotes the continuation of the Elderly-friendly (Idősbarát) Programme, which is a significant element of safe environments. Recommendations concerning health and activities are also linking points in the prevention of accidents, particularly falls.

National Occupational Safety Policy – concerning the 2009-2012 period.

As a summary, it can be stated that today Hungary is making significant efforts to prevent accidents.

5.2. Partners - Stakeholders Potentially Participating in Prevention

5.2.1. Ministries Participating in Accident Prevention

- Ministry of Education and Culture
- Ministry of Transport, Telecommunication and Energy
- Ministry of Justice and Law Enforcement
- Ministry of Social Affairs and Labour
- Ministry of Local Government and Regional Development
- Ministry of Health

5.2.2. Institutions Participating in Accident Prevention

- National Health Insurance Fund (OEP)
- National Institute of Child Health (OGYEI)
- National Institute of Environmental Health (OKI)
- Hungarian Institute of Occupational Health (OMFI)
- National Institute of Chemical Safety (OKBI)
- National Police Headquarters – National Accident Prevention Committee (ORFK- OBB)
- National Directorate General for Disaster Management (OKF)
- Hungarian Labour Inspectorate (OMMF)
- National Institute for Health Development (OEFI)
- Hungarian Authority for Consumer Protection (HACP)

5.2.3. Sectors of Healthcare Services Participating in Accident Prevention

- Children's healthcare
- Rehabilitation
- Traumatology
- Sports medicine
- Addictology
- Psychiatry
- Occupational health
- Emergency medicine (Hungarian National Ambulance and Emergency Service)
- Public Health

5.2.4. Non-Governmental Organisations Whose Activity is Related to Accident Prevention

- Hungarian Red Cross
- Association of Hungarian Health Visitors

- Hungarian Maltese Charity Service
- MABUHASZ Association for Public Benefit (Maitreya Buddhist Martial Art Alliance)
- Association of Hungarian Physiotherapists
- Gondolkodj egészségesen! Alapítvány (Think Healthy Foundation)
- "Fill Years with Life" Hungarian Association of Pensioners' Clubs and of Elderly People
- József Fodor School Health Society

As well as other potential stakeholders, with additions to the list.

5.2.5. Manufacturers and Distributors Specialising in Safety

- Insurance companies
- Manufacturers and distributors of medical aids and products
- Manufacturers and distributors of sports equipment
- Manufacturers and distributors of protective and safety equipment

As well as other potential stakeholders, with additions to the list.

6. The Communication of Issues Related to Accidents and Violence

It is a well-known fact that precise information regarding the actual burden of accidents is unavailable and information regarding the possibilities of prevention is still unsatisfactory. This is the reason why it is evident that communication plays a crucial role in increasing awareness regarding accident and violence related issues.

Apart from good communication, the significance of lobbying in the interest of both giving and implementing recommendations must be stressed. Such lobbying is necessary at all levels, including the levels of state leaders as well as the general population.

The *campaign* launched for accident prevention is one of the most successful methods of raising awareness of this issue.

According to the WHO [10], significant results can be achieved through accident prevention campaigns that are linked to certain highlighted events or significant days and/or bank holidays of the year.

For example, on the International Day for the Elderly, attention could be directed to the dangers of old-age accidents (elderly people with weakened functionality can be aided by providing ideas on how to change their living environment or by providing personalised counselling; however, unique ideas could also be introduced).

Mother's day, Children's Day or the World Health Day could be similarly useful for campaigning purposes, depending on the members of the target group in question.

7. The Steering Body

Stressing the "integrated" nature of accident prevention, it can be stated that the prevention process necessitates the cooperation of several ministries. At the same time, institutions related to the Ministry of Health, regional organisations of ÁNTSZ, civil organisations, private individual and profit-oriented organisations also participate in the work.

It is very important that a national level steering body is determined at the very beginning of the preparation of the political document. Various accident prevention branches could be headed by different steering bodies. For example:

- Prevention of road traffic accidents: Police, National Committee for Accident Prevention
- Prevention of occupational accidents: Hungarian Labour Inspectorate (OMMF)
- Concerning accidents occurring in institutions:
    - Child-care institutions: Ministry of Local Government and Regional Development; Ministry of Education and Culture
    - Long-term residential institutions (social homes) for the elderly: Ministry of Local Government and Regional Development; Ministry of Social Affairs and Labour
    - Healthcare institutions: Ministry of Local Government and Regional Development; Ministry of Health
- Sport and leisure time accidents: Prime Minister's Office, Ministry of Education and Culture
- Household accidents: Consumer Protection
- Fires, burn injuries: Fire Department, National Directorate General for Disaster Management

Given the fact that this is a multi-player intervention, it is the steering institution's responsibility to coordinate accident prevention activities. Good coordination is crucial, and in its absence, one cannot hope for results and efficiency. An environment must be guaranteed that continuously supports and fosters the development of the long process of the finalisation of the accident prevention programme. Equal treatment of other partners is also fundamentally important. The maintenance of cooperation is expected at all levels, as this is a basic and essential element of the project's efficiency.

8. Main Pillars of the Accident Prevention Strategy

1. **Data gathering.** Creation of a precise accident and injury database including death and morbidity data. In order to gain more extensive knowledge of morbidity data, regular data collection must be extended to institutions providing basic healthcare as well. In accordance with this, the quality of data arriving from inpatient and outpatient care must be improved. This latter means that ICD10 codes must be provided for all accidents, complemented by the factors specified by the WHO and the EU: the exact cause and site of the accident. A possible direction of development is the creation of the EU Injury Database (IDB). The database must have quality parameters that allow for 95% precision of measurement with reference to accident prevention interventions.

   With regard to the fact that cases treated in hospitals can currently only be measured with a 75-80% precision rate, it would make sense to highlight certain **indicators** of inpatient data. These are severe, life threatening and/or high-cost and numerous traumas:

   a. Severe head injuries
   b. Femoral neck fracture
   c. Fracture of long bones
   d. Burn injuries
   e. Poisoning

2. **Capacity expansion.** The number of people who are able to maintain a constant level of accident prevention through their expertise must be increased. In order to achieve this, it is crucial that the training in healthcare and social professions also includes accident prevention. Such professional include doctors, health visitors, nurse practitioners, physiotherapists, social workers and social care providers. As far as non-healthcare professions are concerned, this refers to teachers, particularly to health education and physical education teachers. The role of trainers (workplace trainers and driving instructors) is also crucial in accident prevention. Psychologists could also play a significant role in preventing violence and inadvertent accidents.
3. **Quality assurance during healthcare service provision.** In the interest of decreasing the number of fatal accidents, prompt and professional attendance to injured persons must be ensured. With regard to the fact that at the time of determining these objectives, Hungary is far behind the EU average (Diagram 1) in the field of deaths occurring due to external causes, an audit of the process of providing medical assistance to injured persons seems justified.
4. **Determination of the material costs of accidents**. For gaining a precise picture of the burden of accidents, reports should be prepared on the direct and indirect health-related impact of accidents, possibly also broken down by accident types. In light of this, a decision could be made regarding who has the financial responsibility and who is responsible for compensation. This is particularly important regarding occupational accidents so that employers could be made increasingly interested in accident prevention. More precise knowledge of the costs of medical assistance provided in connection with road traffic accidents also seems justified. (Insurance companies currently provide flat-rate payments.) Precise data on the burden of various accidents could significantly contribute to creating a priority order of accident prevention.
5. **Cooperation. Determination of competencies**. Taking into account the fact that accident prevention covers numerous areas, the operation and establishment of interministerial committees is recommended with the steering competence undertaken by the ministry with the greatest competency (material and professional resources). This would mean that the prevention of occupational accidents could be managed by the current Ministry of Labour; the Police

would be competent regarding road traffic accidents; child accident prevention could be efficiently implemented with the joint steering of the Ministry of Health (doctors, health visitors) and the Ministry of Culture and Education. With regard to old-age accidents, the Ministry of Social Affairs and Health and the Ministry of Local Governments would be the most competent. Responsibility for elderly people living in residential institutions and for the safety of their environment could also be divided between the Ministry of Social Affairs, Ministry of Health and local governments. Development of the movement coordination and the general physical condition of the elderly could be efficiently implemented primarily under the steering of physiotherapists or other trainers who are able to coordinate activity programmes for the elderly. The role of civil society must be emphasised at this point (e.g. tai chi masters). In the interest of effective accident prevention, cooperation is desirable not only between government institutions but also between state and non-state organisations.

6. **Publicity.** Campaigns. The publication and release to a wider audience of good and effective practices are an important element of accident prevention. It would be wise to apply effective and simple methods to implement, and then measure their operation in a new environment. This is particularly important in the case of good practices from abroad.

7. **Programme-like operation**. Following the approval of the basic principles of the Strategy, it is recommended that action plans are prepared in each accident field, separately for each age group or each of the two genders if necessary or through focusing on the various social layers. (See Annex.)

8. **Regular reports** to the Government on the results achieved in the field of accident prevention. Feedback and evaluation allow for continuous corrections and improvements.

9. **Institution development.** The above can be implemented with greater safety only if accident prevention has a separate background institution.

Definition of Terms

The most well-known of international definitions is that of the WHO[8]:

An injury is defined as a bodily lesion at an organic level, resulting from acute exposure to energy (mechanical, thermal, electrical, chemical or radiant) in amounts that exceed the threshold of physiological tolerance. In some cases (e.g. drowning, strangulation, freezing), the injury results from an insufficiency of a vital element (e.g. oxygen).

The external effects and causes mentioned in the above definition as well as their consequences have been defined in the ICD10 system currently used by the majority of healthcare providers. External causes of morbidity and mortality are listed under codes V01-Y98. (This category includes accidents, intentional self harm, and assault). Codes S00-T98 cover "injury, poisoning and certain other consequences of external causes"[9].

Accident: a one-time external effect on the human body which occurs suddenly or within a relatively short time, irrespective of the will of the injured person, and causes injury, poisoning or any other (physical or mental) health damage, or death. [10]

Occupational accident: an accident suffered by an employee in the course of, or in connection with, organised employment, irrespective of its place and date, or the extent of contributory responsibility of the employee (injured party).

An accident suffered by an employee in the course of transportation, material sampling, material handling, cleaning, during organised provision of meals, occupational health service provision or the provision of any other service that are provided by the employer in connection with the work performed within the field of employment shall be construed as having occurred in connection with the performance of work[11].

Road traffic accident: an unexpected, inadvertently caused road traffic event related to road traffic activity as a result of which death or personal injury, or material damage occurs[12].

[8] The Injury Chartbook, WHO, Geneva, 2002.

[9] International Statistical Classification of Diseases and Related Health Problems. Tenth Revision. Volume 1. Ministry of Welfare, Budapest, 1995.

[10] Section 89 (1) of Act XCIII of 1993 on Labour Safety.

[11] Section 89 (3) of Act XCIII of 1993 on Labour Safety.

[12] Hungarian Statistical Yearbook, Hungarian Central Statistical Office, Budapest, 2003.

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List of Abbreviations

Prime Minister's Office	MEH
Ministry of Health	EüM
Ministry of Education and Culture	OKM
Ministry of Social Affairs and Labour	SZMM
Ministry of Culture and Public Education	MKM
Ministry of Employment and Labour	FMM
Hungarian National Public Health and Medical Officer Service	ÁNTSZ
National Institute for Health Development	OEFI
National Centre for Healthcare Audit and Inspection	OSZMK
Hungarian Institute of Occupational Health	OMFI
National Institute of Chemical Safety	OKBI
National Directorate General for Disaster Management	OKF
Hungarian Labour Inspectorate	OMMF
National Institute for Health Development	OEFI
National Accident Prevention Committee	OBB
National Institute of Environmental Health	OKI
National Institute of Child Health	OGYEI
National Health Insurance Fund	OEP
National Health Interview Survey	OLEF
Egészségporta Egyesület (Healthport for Everyone Association)	EPE

DALY	Disability adjusted life years
WHO	World Health Organization
DG SANCO	Directorate General for Health and Consumer Affairs of the European Union
IDB	Injury DataBase
PÉV	Potential years of life lost
OSAP	National Statistical Data Collection Programme
PÉV	Potential years of life lost
WHO	World Health Organisation
KSH	Hungarian Central Statistical Office
ILO	International Labour Organisation
HMAP	Family Physician Morbidity Data Collection Programme
ICD	International Classification of Diseases

Annex

In the interest of achieving the primary objective determined, that is decreasing accidental deaths by 25%, and in order to achieve the comprehensive goals defined, the implementation of the following actions is recommended in the short-term (2010-2012), mid-term (2013-2016) and long-term (2017-2020) (with additions to the recommendations listed below if required or possible). It would be expedient to plan the programmes of various durations for periods of 3-4 years and evaluate them on an annual basis. One of the possible programmes available for implementation where the healthcare sector takes on a coordinating role is the Public Health Programme.

8.1. Legislation

Table 1 Recommendations for legislation

Objective	Action	Coordinator, executor	Expected result	Duration
Creation of a more precise database	Amendment of legislation regarding data from basic healthcare	EüM	A more precise, easier-to-track database	Short-term
Reducing the number of child accidents (particularly falls)	Appointment of official body responsible for the supervision of playgrounds	EüM- ÁNTSZ	Decrease in accident risks, along with the number of accidents	Short-term
Reducing the number of cases of drowning	Appointment of official body responsible for the supervision of swimming pool safety	EüM- ÁNTSZ - OMMF	Decrease in accident risks, along with the number of cases of drowning	Short-term
Reducing the number of cases of falling off windows and doors	Buildings and structures safe for children (compulsory installation of windows and doors)	ÁNTSZ	Decrease in risks, therefore the number of deaths and persons injured due to falls decreases	Mid-term
Decreasing accident risks	Determination of responsibility and the burden of accident-related care provision	EüM-OEP	Decreasing of risks – decrease in the number of accidents	Mid-term
Reducing the number of head (brain) traumas	Making wearing helmets compulsory for cyclists	ORFK	The number of severe head injuries decreases, DALYs decreases	Mid-term
Reducing the number of cases of drowning	Protection in the vicinity water-related institutions	Ministry of Local Government, ÁNTSZ	The likelihood of drowning decreases	Mid-term
Decreasing DALYs	Increasing the number and/or capacity of rehabilitation institutions	EüM	The possibility of complete recovery increases – DALYs decreases	Long-term
Decreasing occupational accident risk	Creation of new legislation on occupational accident insurance motivating employers to participate	EüM-OEP	Decreasing of risks – decrease in the number of accidents	Long-term

	in accident prevention			

8.2. Compliance with the Law

Table 2 Recommendations for compliance with the law

Objective	Action	Coordinator, executor	Expected result	Duration
Creation of a more precise database	Recording of inpatient and outpatient data according to ICD10	OEP	More precise, easier to track data	Short-term
Decreasing the number of alcohol-related accidents	Stricter sanctions concerning alcohol consumption	ORFK	The number of deaths decreases The number of severe injuries decreases DALYs decreases	Short-term
Decreasing the number of severe road traffic accidents	Stricter sanctions on speeding	ORFK	Number of deaths decreases Number of severe injuries decreases DALYs decreases	Short-term
Decreasing of accidental death	Strict sanctions on hit-and-runs and failure to provide help	ORFK	The chances of survival of persons undergoing accidents increases	Short-term
Increasing occupational safety	Combating undeclared employment	APEH, OMMF	The performance of unsafe work under illegal conditions decreases	Mid-term
Decreasing the number of poisoning cases	Promotion of stricter adherence to the Act on Chemical Safety. The use of safe and child-proof lids and covers	OKBI, ÁNTSZ	Poisoning risks and the number of poisoning cases decrease, especially among children	Short-term
Decreasing the number of occupational accidents	Strict sanctioning of failure to comply with reporting obligations. Enforcement of financial compensation	OMFI	Reporting discipline improves. Accident prevention becomes an interest for all	Short-term
Decreasing the number of poisoning cases	Availability of safety data sheets on poisonous materials	OKBI, ÁNTSZ	Efficient and professional use increases, likelihood of poisoning decreases, particularly in the workplace	Short-term
Decreasing the number of cases of leisure time accidents (drowning)	Strict sanctioning of swimming at non-suitable locations and places where such activities are prohibited	Police	Swimming at illegal locations becomes less common, therefore the chances of drowning decrease	Short-term

Objective	Action	Coordinator, executor	Expected result	Duration
Decreasing the number of occupational accidents	Stricter workplace aptitude tests	EüM-OSZMK	By filtering out diseases and weakened physical conditions, human accident risk decreases, the number of accidents decreases	Mid-term
Decreasing the number of occupational accidents	Stricter risk estimation in the workplace	OMMF	Occupational safety improves, the number of accidents decreases	Mid-term
Decreasing the number of occupational accidents	Strict sanctions regarding the provision of protective equipment	OMMF	Increased discipline regarding the use of protective equipment results in a decrease in the number of accidents	Mid-term
Decreasing the number of occupational accidents	Enforcement of total accident care related costs against the insurance company	EüM -OEP- OMMF- insurance companies	Reports on costs of injuries and charging these costs to the entity/person responsible. The number of accidents decreases as a result	Long-term
Decreasing the number of occupational accidents	Enforcing the personal responsibility of wearing and using protective equipment	Employer, OMMF	Increased discipline regarding the use of protective equipment results in a decrease in the number of accidents	Long-term

8.3. Modifications of Surrounding Areas and Environment

Table 3: Recommendations for modifications to the surrounding areas and environment

Objective	Action	Coordinator, executor	Expected result	Duration
Decreasing the number of accidents occurring in the vicinity child-care institutions	Creation of street crossings near child-care institutions, increased crossing time in order to provide sufficient time for children to cross the road	Local governments, transport and traffic organisation offices	Number of injuries decreases	Short-term
Decreasing the number of poisoning cases	Removal of poisonous plants and substances from the environment of small children	Local governments, kindergartens, schools	Poisoning risks decrease, along with the number of poisoning cases	Short-term
Decreasing the severity of the consequences of accidents	Establishment of locations where first-aid provision is available	Workplaces	Chances of providing professional and prompt treatment and care to injured persons increase	Mid-term

Objective	Action	Coordinator, executor	Expected result	Duration
Decreasing the severity of the consequences of accidents	Increased number of well-equipped intensive care ambulance units	EüM	Chances of survival of injured persons improves, mortality decreases	Mid-term
Decreasing the number of nosocomial injuries	Decreasing accident risks in healthcare institutions	Local governments, EüM	Decreasing the number of injuries occurring during healthcare provision	Mid-term
Decreasing the number of child accidents (particularly falls)	Making home, playground, kindergarten and school environments safer in terms of falls	Maintainers, managers, civil organisations	Fall risks, along with the number of falls decrease	Mid-term
Decreasing the number of old-age falls	Remodelling of homes and elderly people's homes to ensure the safety of the elderly Installing elevators in multi-storey social homes	SZMM, maintainers	Accident risks decrease, along with the number of accidents	Mid-term
Decreasing the severity of the consequences of accidents	Ambulance stations located in a way that ambulance cars can reach patients within 15 minutes in all areas of the country	EüM	Chances of survival of injured persons improves, mortality decreases	Long-term
Decreasing the severity of the consequences of old-age falls	In the case of the availability of emergency call services, enabling the people concerned to call for help	Local governments, individuals, SZMM	Chances for providing prompt and professional treatment increases, chances of survival improve	Long-term

8.4. Education

Table 4 Recommendations in the field of education

Objective	Action	Coordinator, executor	Expected result	Duration
Decreasing the number of poisoning cases	Making sure parents and teachers are aware of the toll-free telephone number of the Health Toxicological Information Service, use of the website entitled "Ellenméreg (Antitoxin)"	OKBI	More precise knowledge, exchanging of experiences decreases the number of poisoning cases	Short-term
Decreasing the number of road traffic accidents	Attention, empathy, decreasing of violence	Kindergartens, primary schools, secondary schools, civil organisations	Driving attitude and culture improve, the number of accidents decreases	Short-term

Objective	Action	Coordinator, executor	Expected result	Duration
Decreasing the number of burn injuries	Education of expectant mothers and parents about the prevention of burn (scalding) injuries. Promotion of kindergarten and school programmes	Disaster Management, Bethesda Hospital	More precise knowledge decreases the number of burn injuries	Short-term
Decreasing accident risks	The use of previous accidents for educational purposes	ORFK, OMMF, educational institutions, course organisers	Increased knowledge and sense of responsibility, decreased accident risk	Short-term
Decreasing accident risks	Stricter control of accident prevention related education	Educational institutions, OMMF	Increased knowledge and sense of responsibility, decreased accident risk	Short-term
Decreasing the number of alcohol-related accidents	Stricter sanctions concerning alcohol consumption at the workplace	OMMF	Alcohol-related accident risks decrease, the number of accidents decreases	Short-term
Decreasing the severity of the consequences of accidents	Provision of workplace first-aid (use of safety data sheets, treatment of burn injuries, etc.)	OMMF, OSZMK – occupational health doctors	Professional treatment and care, faster recovery – number of sick-leave days due to accidents decreases, lower chances of permanent damage	Short-term
Decreasing the number of poisoning cases among school children	Creation of educational programmes for the purpose of preventing poisoning	OKBI, OKM, civil organisations	The number of poisoning cases involving school children decreases	Short-term
Decrease in the number of road traffic accidents	More thorough driving education, emphasising the primary causes of accidents and their prevention	Schools	Number of accidents decreases Driving attitude improves	Mid-term
Decreasing the severity of the consequences of accidents	First-aid education from an early age Network of families providing first-aid in all villages	Kindergartens, primary schools, secondary schools, civil organisations (Hungarian Red Cross)	Chances of survival for injured persons increases, particularly in areas where there are no doctor's offices	Mid-term

Objective	Action	Coordinator, executor	Expected result	Duration
Decreasing the number of cases of prescription drug poisonings	Educational materials aimed at the prevention of prescription drug poisonings, with particular attention to children and the elderly.	OKBI, OGYI, drug manufacturers-pharmaceutical companies	Packaging of prescription drugs in safer, smaller units decreases the chances of severe poisoning. Mental health programmes to prevent suicidal self-poisoning	Mid-term
Decreasing the number of cases of childhood poisoning	Awareness raising purpose education for expectant mothers about the dangers of poisoning	OKBI, ÁNTSZ	The number of childhood poisoning cases decreases	Mid-term
Decreasing the number of poisoning cases	More widespread provision of information to the public on chemical safety	OKBI	Wider knowledge decreases the number of poisoning cases	Mid-term

8.5. Research

Objective	Action	Coordinator, executor	Expected result	Duration
Acquiring information on the actual healthcare plan concerning accidents	Measurement of the financial burden of accidents	OSZMK	More precise information on the cost of accidents	Short-term
Acquiring information on injuries typical of various accidents	Examination of the correlation between accidents and typical injuries	OSZMK	More precise information on injuries typical of various accidents	Short-term
Decreasing the number of road traffic accidents involving the elderly	Development of road traffic accident prevention programmes for the elderly	OSZMK, OBB, KTI	Decreasing of number of road traffic accidents involving the elderly	Short-term
Decreasing the number of aggressive drivers	Introduction of violence decrease and stress management purpose courses as part of driving courses on an experimental basis, measurement of the efficiency of these courses	OSZMK, OBB, MAK, Institute of Behavioural Sciences of Semmelweis University	Decrease in the number of road traffic accidents	Short-term

Objective	Action	Coordinator, executor	Expected result	Duration
Decreasing the number of road traffic accidents involving young people	Impacting on the risk-taking behaviour of adolescents through the introduction of new programmes	OSZMK, OBB, KFV	Decreasing the number of accidents involving young people	Short-term

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