



# **INJURIES** and **VIOLENCE** **THE FACTS** 2014

# The magnitude and causes of injuries

Every day the lives of more than 14 000 people are cut short as a result of an injury. Among the causes of injury are acts of violence against others or oneself, road traffic crashes, burns, drowning, falls, and poisonings. The deaths caused by injuries have an immeasurable impact on the families and communities affected, whose lives are often changed irrevocably by these tragedies.

Injuries and violence have been neglected from the global health agenda for many years, despite being predictable and largely preventable. Evidence from many countries shows that dramatic successes in preventing injuries and violence can be achieved through concerted efforts that involve, but are not limited to, the health sector. The international community needs to work with governments and civil society around the world to implement these proven measures and reduce the unnecessary loss of life that occurs each day as a result of injuries and violence.

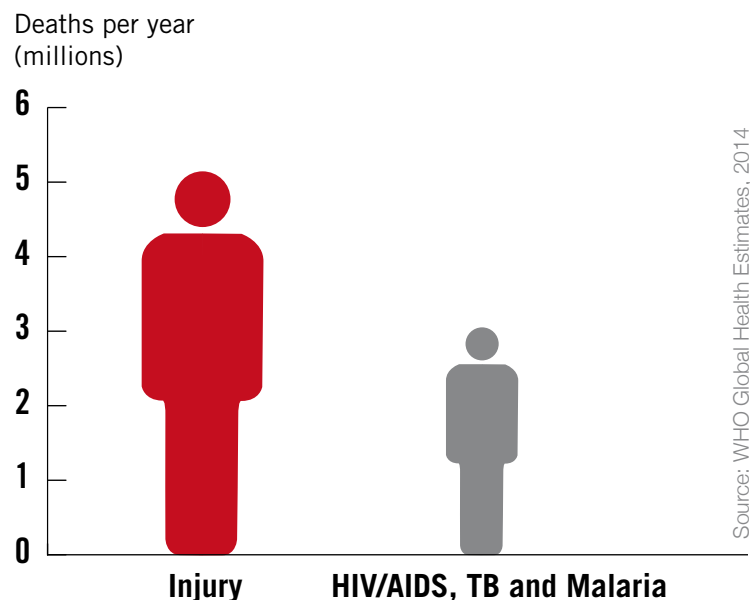
Every six  
seconds  
someone in  
the world dies  
as a result of  
an injury

## Injuries are a global public health problem

More than 5 million people die each year as a result of injuries. This accounts for 9% of the world's deaths, nearly 1.7 times the number of fatalities that result from HIV/AIDS, tuberculosis and malaria combined (see Figure 1).

**Figure 1:**  
**The scale of the problem**

Injury deaths compared to other leading causes of mortality, world, 2012.



Approximately a quarter of the 5 million deaths from injuries are the result of suicide and homicide, while road traffic injuries account for nearly another quarter. Other main causes of death from injuries are falls, drowning, burns, poisoning and war (see Figure 2).

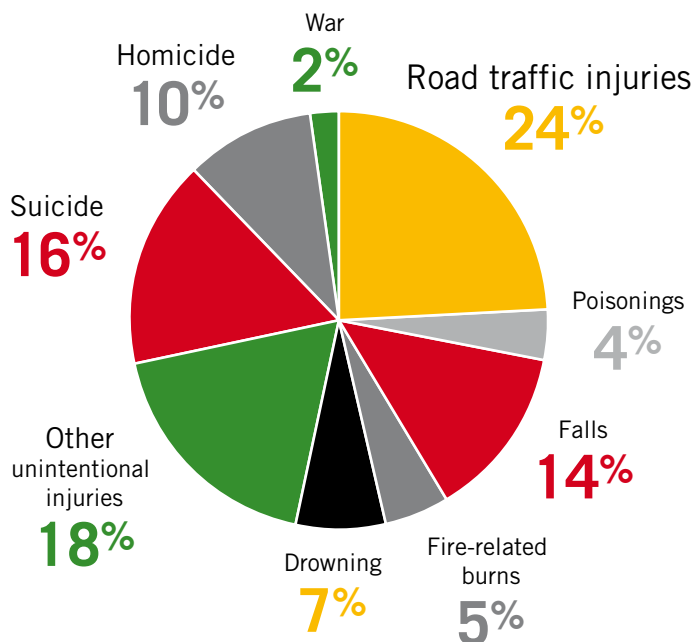


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**Figure 2:**

### How injuries and violence claim lives

Causes of injury deaths, world, 2012.



Source: WHO Global Health Estimates, 2014

Five times as many people die from homicide each year than from war-related injury

Injuries are an important public health concern, and remain a growing problem in some countries. Two of the three leading causes of injury deaths – road traffic injuries and falls – are predicted to rise in rank compared to other causes of death. As can be seen in Table 1, road traffic injuries are predicted to become the 7th leading cause of death by 2030, with falls rising to become the 17th leading cause of death and suicide remaining in the top 20.





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**Table 1:**

### **Injury deaths rise in rank**

Leading causes of death, 2012 and 2030 compared.

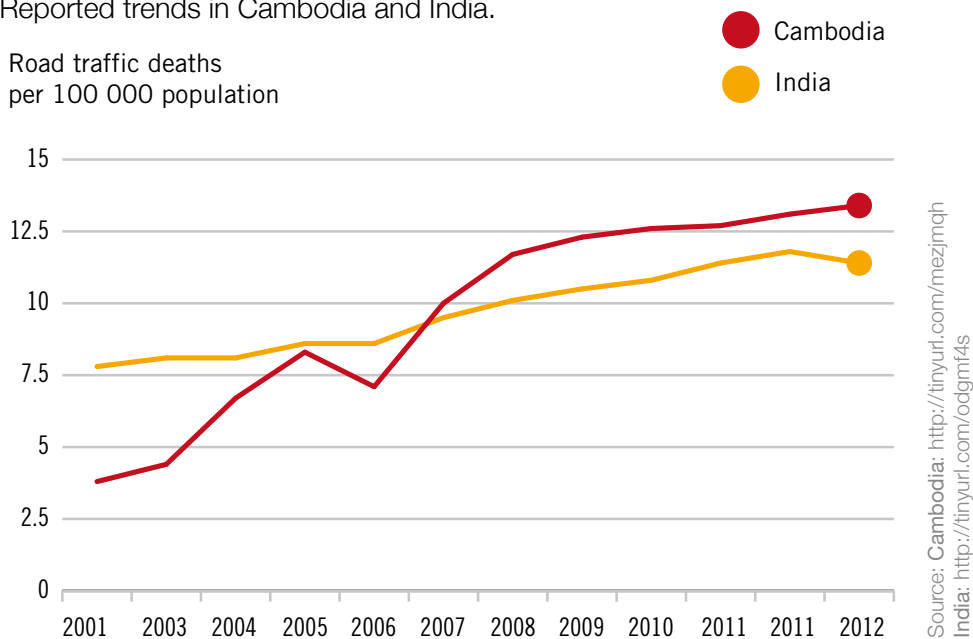
Total 2012	Total 2030
1 Ischaemic heart disease	1 Ischaemic heart disease
2 Stroke	2 Stroke
3 Chronic obstructive pulmonary disease	3 Chronic obstructive pulmonary disease
4 Lower respiratory infections	4 Lower respiratory infections
5 Trachea, bronchus, lung cancers	5 Diabetes mellitus
6 HIV/AIDS	6 Trachea, bronchus, lung cancers
7 Diarrhoeal diseases	7 <b>Road traffic injuries</b>
8 Diabetes mellitus	8 HIV/AIDS
9 <b>Road traffic injuries</b>	9 Diarrhoeal diseases
10 Hypertensive heart disease	10 Hypertensive heart disease
11 Preterm birth complications	11 Cirrhosis of the liver
12 Cirrhosis of the liver	12 Liver cancer
13 Tuberculosis	13 Kidney diseases
14 Kidney diseases	14 Stomach cancer
15 <b>Suicide</b>	15 Colon and rectum cancer
16 Birth asphyxia and birth trauma	16 <b>Suicide</b>
17 Liver cancer	17 <b>Falls</b>
18 Stomach cancer	18 Alzheimer's disease and other dementias
19 Colon and rectum cancers	19 Preterm birth complications
20 Alzheimer's disease and other dementias	20 Breast cancer
21 <b>Falls</b>	21 Endocrine, blood, immune disorders

Source: WHO Global Health Estimates, 2014. [www.who.int/healthinfo/global\\_burden\\_disease/projections/en/index.html](http://www.who.int/healthinfo/global_burden_disease/projections/en/index.html)

Injury deaths have been steadily increasing in many low- and middle-income countries. Figure 3 shows the increase in road traffic deaths in Cambodia and India over recent years – a pattern that is seen in many countries where motorization has not been accompanied sufficiently by improved road safety strategies.

**Figure 3:**  
**Rising road traffic fatalities**

Reported trends in Cambodia and India.



## The non-fatal consequences of injuries and violence

The millions of deaths that result from injuries represent only a small fraction of those injured. Tens of millions of people suffer injuries that lead to hospitalization, emergency department or general practitioner treatment, or treatment that does not involve formal medical care. The relative numbers of fatal and non-fatal injuries are often graphically depicted in the form of a pyramid, as shown in Figure 4. In addition to the severity of an injury, there are a number of factors that vary by country and that determine the “shape” of the pyramid, such as access to health care services, or the quality of the data available.

Many of those who survive acts of violence, road traffic crashes, suicide attempts or other causes of injury are left with temporary or permanent disabilities – injuries are responsible for an estimated 6% of all years lived with disability.

All causes of injury have health consequences beyond the physical injury. The many health consequences of injuries and violence are depicted in Figure 5.





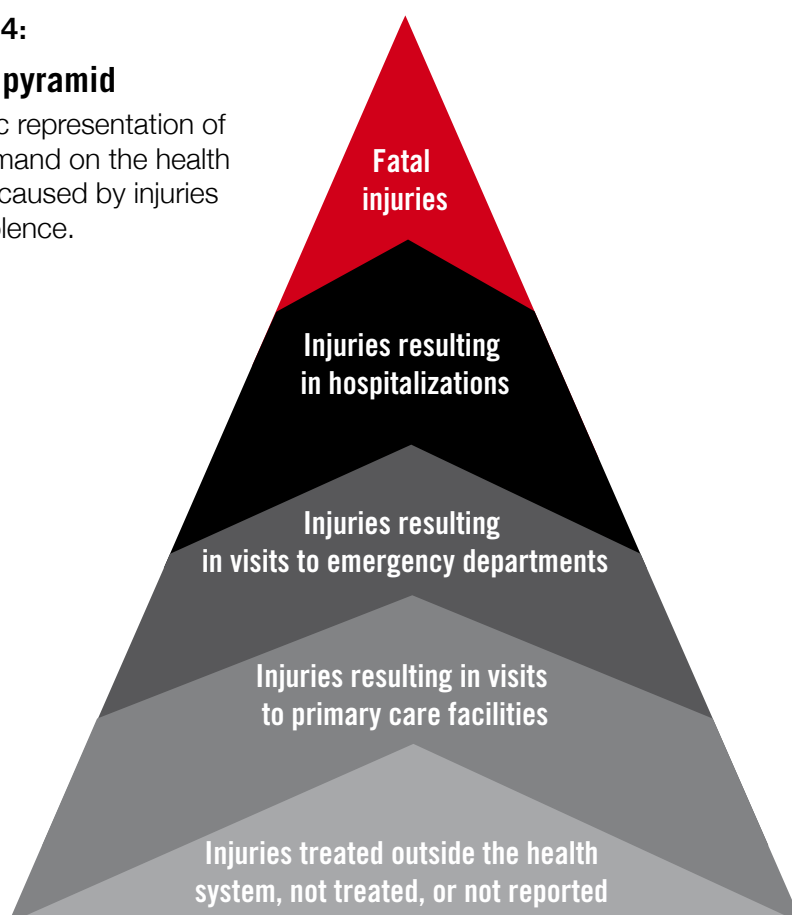
In particular, child maltreatment, intimate partner violence and sexual violence have been shown to have a broad array of adverse health effects that can persist over a lifetime. These forms of violence contribute significantly to depression, sexually transmitted diseases and unwanted pregnancies, while also increasing the likelihood of engaging in risky behaviours, such as smoking and the harmful use of alcohol and drugs. Via these behaviours, they can lead to cancers, cardiovascular diseases, diabetes, liver disease and other chronic diseases.

Women and men who experienced sexual abuse involving intercourse as children are over twice as likely to attempt suicide than their peers who were not abused

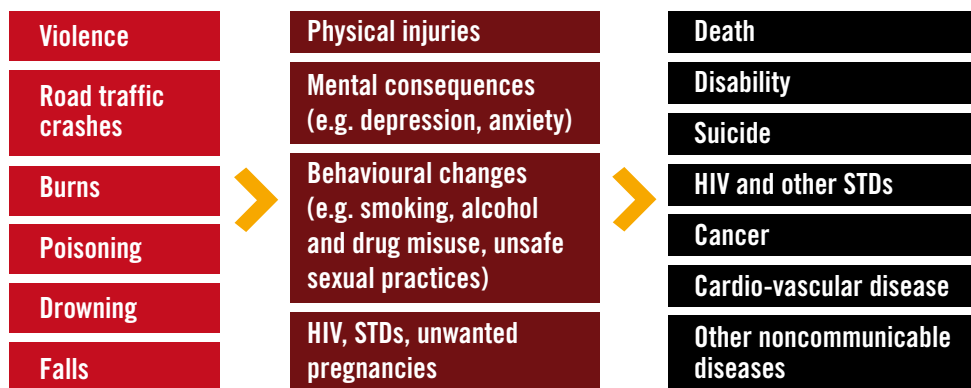
**Figure 4:**

#### **Injury pyramid**

Graphic representation of the demand on the health sector caused by injuries and violence.



**Figure 5:**  
**Consequences of injuries and violence**



## Some groups are more vulnerable to injuries and violence than others

Injuries and violence are a significant cause of death and ill health in all countries, but they are not evenly distributed around the world or within countries – some people are more vulnerable than others. The nature of injuries and violence varies considerably according to age, sex, region and income group. For example, in low- and middle-income countries in the Western Pacific, the leading injury-related causes of death are road traffic injuries, suicide and falls, while in the low- and middle-income countries of the Americas, the leading causes are homicide and road traffic injuries. The leading cause of injury death in the high-income countries of the world is suicide, with road traffic injuries and falls second and third.

**Road traffic injuries are the leading cause of death worldwide among those aged 15–29 years**

## Injuries are a leading cause of death among young people

Injuries affect all age groups but have a particular impact on young people and people in their prime working years. For people between the ages of 15 and 29 years, three injury-related causes are among the top five causes of death. Road traffic injuries are the leading cause of death in this age group, with suicide and homicide the second and fourth leading causes of death respectively – together accounting for more than one quarter of all deaths in this age group. Among the elderly, falls are the most common cause of injury death. Table 2 presents leading causes of death by age group in 2012.

Table 2:

**Injuries a leading killer of youth**

Leading causes of death by age group, both sexes, world, 2012.

Rank	0-4	5-14	15-29	30-49
1	Preterm birth complications 1 134 930	Diarrhoeal diseases 142 045	Road traffic injuries 325 736	HIV/AIDS 882 141
2	Lower respiratory infections 994 613	Lower respiratory infections 122 043	Suicide 242 903	Ischaemic heart disease 430 499
3	Birth asphyxia and birth trauma 743 767	HIV/AIDS 96 275	HIV/AIDS 239 228	Road traffic injuries 364 462
4	Diarrhoeal diseases 622 164	Road traffic injuries 83 604	Homicide 211 519	Stroke 293 770
5	Malaria 476 192	Drowning 74 212	Maternal conditions 150 983	Suicide 243 971
6	Congenital anomalies 450 050	Meningitis 73 745	Lower respiratory infections 103 006	Tuberculosis 231 652
7	Neonatal sepsis and infections 430 853	Protein-energy malnutrition 52 545	Diarrhoeal diseases 85 338	Cirrhosis of the liver 226 173
8	Protein-energy malnutrition 148 358	Endocrine, blood, immune disorders 42 837	Drowning 75 833	Homicide 175 089
9	Meningitis 143 835	Fire-related burns 41 575	Ischaemic heart disease 67 686	Lower respiratory infections 154 542
10	HIV/AIDS 102 796	Congenital anomalies 33 061	Meningitis 56 700	Maternal conditions 144 900
11	Measles 100 698	Malaria 32 260	Tuberculosis 55 832	Breast cancer 123 727
12	Syphilis 67 490	Epilepsy 32 095	War 54 972	Diarrhoeal diseases 111 685
13	Drowning 66 006	Falls 30 798	Stroke 53 499	Liver cancer 108 526
14	Whooping cough 62 677	Measles 25 115	Epilepsy 50 359	Diabetes mellitus 106 001
15	Fire-related burns 62 655	Homicide 21 813	Fire-related burns 49 067	Kidney diseases 100 648



	50-69	70+	All ages
	Ischaemic heart disease 2 087 015	Ischaemic heart disease 4 751 019	Ischaemic heart disease 7 352 704
	Stroke 1 807 858	Stroke 4 500 209	Stroke 6 669 383
	Chronic obstructive pulmonary disease 830 169	Chronic obstructive pulmonary disease 2 164 025	Chronic obstructive pulmonary disease 3 102 604
	Trachea, bronchus, lung cancers 671 878	Lower respiratory infections 1 271 202	Lower respiratory infections 3 051 319
	Diabetes mellitus 552 704	Trachea, bronchus, lung cancers 830 746	Trachea, bronchus, lung cancers 1 599 313
	Cirrhosis of the liver 492 154	Diabetes mellitus 804 342	HIV/AIDS 1 533 757
	Lower respiratory infections 405 912	Hypertensive heart disease 778 827	Diarrhoeal diseases 1 497 672
	Tuberculosis 341 116	Alzheimer's disease and other dementias 659 195	Diabetes mellitus 1 496 806
	Liver cancer 319 173	Kidney diseases 416 586	Road traffic injuries 1 254 434
	Hypertensive heart disease 292 343	Colon and rectum cancers 411 108	Hypertensive heart disease 1 140 303
	Stomach cancer 288 877	Stomach cancer 375 256	Preterm birth complications 1 134 954
	Road traffic injuries 280 568	Falls 355 231	Cirrhosis of the liver 1 020 807
	Kidney diseases 266 682	Diarrhoeal diseases 326 499	Tuberculosis 934 838
	Colon and rectum cancers 247 696	Liver cancer 299 075	Kidney diseases 863 810
	Breast cancer 229 381	Prostate cancer 261 207	Suicide 803 893

Source: WHO Global Health Estimates, 2014

## Poverty increases the risk of injury

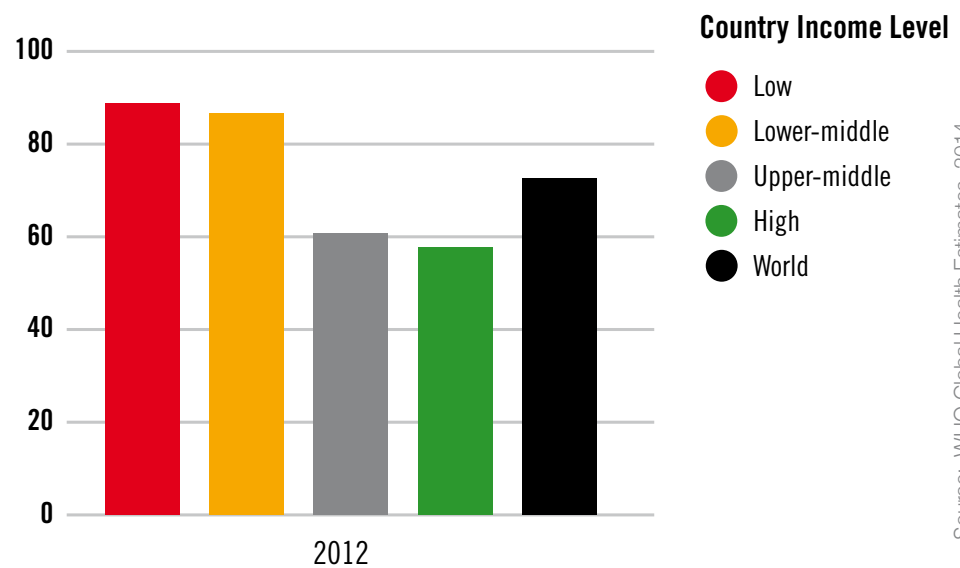
About 90% of injury-related deaths occur in low- and middle-income countries. Across the world injury death rates – a better indicator of risk as they take into consideration the size of the population – are higher in lower-income countries than in higher-income countries (see Figure 6).

**Figure 6:**

### Poorer countries are worst-affected by injuries and violence

Injury death rates by country income level, world, 2012.

Injury deaths per 100 000 population



In the Eastern Mediterranean, injury death rates are nearly three times as high in low- and middle-income countries than in high-income countries

Even within countries, injuries show strong social class gradients. This means that people from poorer economic backgrounds have higher rates of death from injury and non-fatal injuries than wealthier people. A study in Rio de Janeiro, Brazil, found that homicide rates in the poorer areas were three times higher than those in wealthier areas. This relationship is true not just in low- and middle-income countries, but holds true for more affluent countries too. For instance, a child from the lowest social class in the United Kingdom is 16 times more likely to die in a house fire than one from a wealthy family.

This uneven distribution of injuries that makes them more prevalent among the less advantaged is related to a number of factors such as living, working and travelling in less safe conditions, less focus on prevention efforts in poorer areas, and poorer access to quality emergency trauma care and rehabilitation services. As well as being at increased risk, disadvantaged families are hardest hit by the financial pressure resulting from injuries. Poor families are less likely to have the financial resources to pay the direct costs (e.g. medical bills) as well as the indirect costs (e.g. lost wages) related to injuries.



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## Injuries and violence are unevenly distributed between males and females

More males than females are killed by injuries and violence— almost twice as many each year. Worldwide, about three-quarters of deaths from road traffic injuries, four fifths of deaths from homicide, and nine tenths of deaths from war are among men (see Figure 7). However, the distribution of some forms of injury and violence varies by age and/or region. In the Eastern Mediterranean Region and South-East Asia Region, for example, the fire-related death rates of women aged 15 to 29 years are around 1.5 times and 2 times higher, respectively, as compared to men. Globally, women over the age of 70 years have higher rates of fall deaths than men – possibly related to osteoporosis and other underlying chronic conditions.

The three leading causes of death from injuries for males are road traffic injuries, suicide and homicide, while leading causes of injury-related death for females are road traffic injuries, falls and suicide.

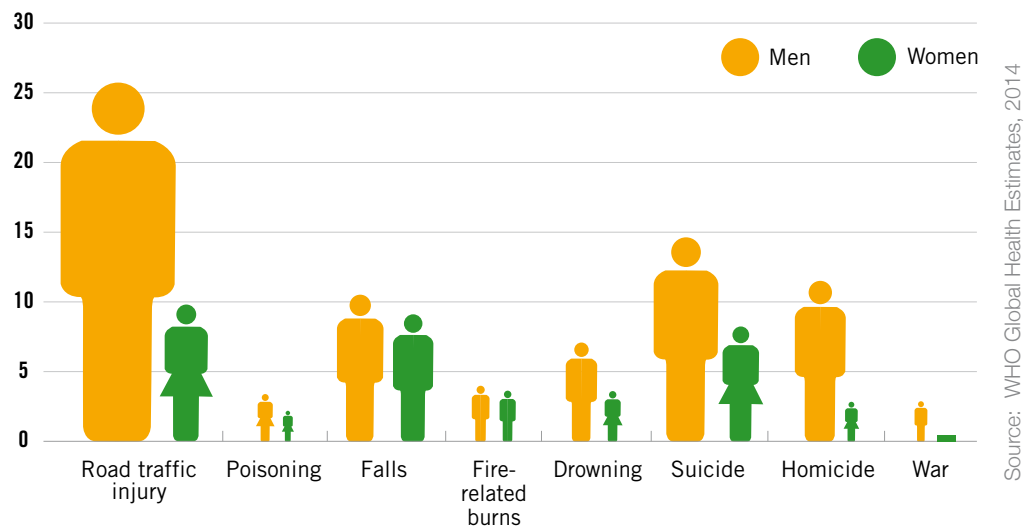
It is important to look beyond the mortality statistics and note that some types of injuries and violence predominantly affect women. More than 1 in 3 women (35%) have experienced physical and/or sexual violence inflicted by an intimate partner, or sexual violence perpetrated by someone who was not an intimate partner. Globally, an estimated average of 20% of girls and 10% of boys are sexually abused at some point in their childhood, although levels vary considerably across regions.

One in three  
women have  
experienced  
physical and/  
or sexual  
violence

**Figure 7:**

### **Men are more at risk of death from injuries and violence**

Death rates per 100 000 population, by cause of injury and sex, world, 2012.



### **Injuries and violence impose heavy costs on individuals and on society**

As well as the huge emotional toll that injuries and violence exact on those affected, they also cause considerable economic losses to victims, their families, and nations as a whole. These losses arise from the cost of treatment, including rehabilitation, and incident investigation as well as reduced or lost productivity in the form of wages for those killed or disabled by their injuries, and for family members who need to take time off work to care for the injured.

There are few global estimates of the costs of injury, but the following examples illustrate the financial impact of injuries on national economies and individual families: Road traffic deaths and injuries cost approximately 2% of gross domestic product in high-income countries and as much as 5% of gross domestic product in some low- and middle-income countries. These costs include medical bills, vehicle damage, and lost productivity and total around US\$ 1.9 trillion a year globally. Estimates on the economic costs of homicide and suicide showed that these were equivalent to 1.2% of gross domestic product in Brazil, 4% of gross domestic product in Jamaica, and 0.4% of gross domestic product in Thailand.

The extent of the effects of injury-related costs on the financial and overall well-being of injury victims and their families has been documented in detail in several countries. One study conducted in Ghana found that over 40% of families of injury victims reported a decline in family income as a result of the injury, with about 20% forced to borrow money and incur debt to pay for medical treatment. A quarter of families reported a decline in their food consumption as a result of the injury.





## Injury and violence prevention is possible

Despite growing awareness of the magnitude of the problem, attention to injury and violence prevention and control among policy-makers and those funding global public health programming remains disproportionately low. Deaths from many communicable diseases are declining more rapidly than injury and violence-related deaths. This is particularly alarming given that many injuries and much violence can be prevented: there is a broad range of strategies based on sound scientific evidence that have been shown to be effective and cost-effective at reducing injuries and violence, and these strategies need to be more widely implemented.

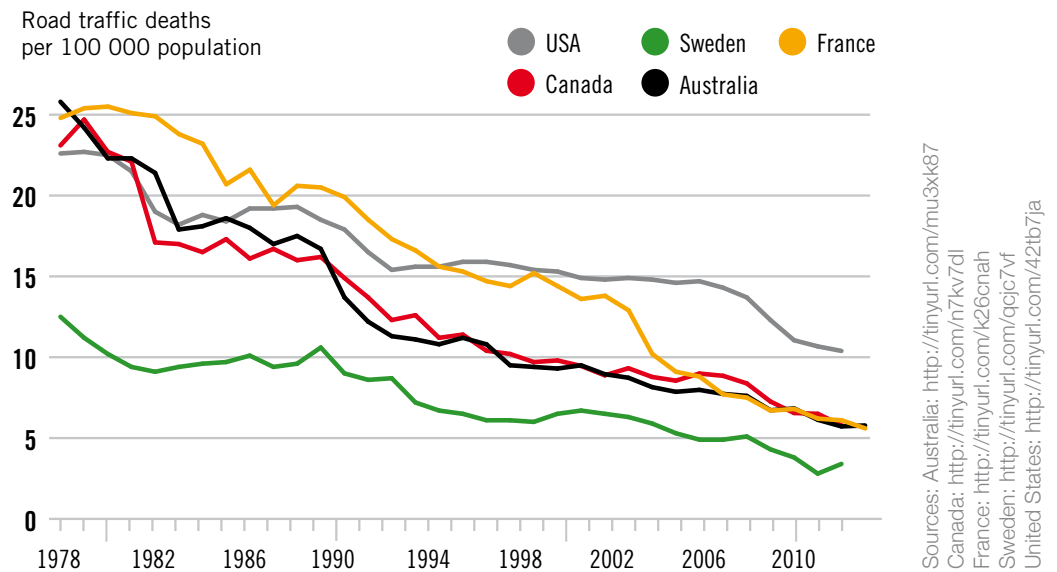
In recent decades the most significant declines in injuries have been seen mainly in high-income countries, which have reduced the burden of injury considerably by applying proven prevention and treatment strategies. For example, Sweden has successfully decreased the rate of child injuries over the past few decades by about 80% among boys and about 75% among girls.

However, despite the fact that progress has been made, all countries must increase their investment in injury prevention. For example, while several countries have reduced their road traffic fatality rates in recent decades (see Figure 8), in some the downward trend in road traffic fatalities that began in the 1970s and 1980s has started to plateau, suggesting that extra steps are now needed to reduce these rates further.

**Figure 8:**

### Rich countries reduce road traffic deaths

Reported trends in road traffic deaths in selected high-income countries.

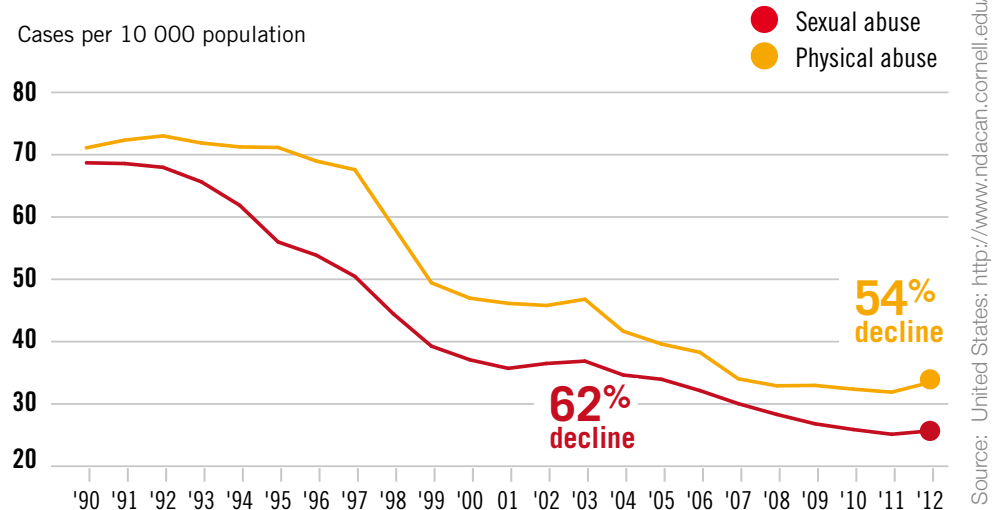


In a number of countries, rates of violence have also declined. For instance, Figure 9 shows the decline in child sexual and physical abuse in the United States from 1990 to 2012.

**Figure 9:**

### United States reduces child abuse

Trends in child sexual and physical abuse in the USA.



## Measures to prevent injuries and violence

As more governments around the world come to recognize that injuries and violence can and must be prevented, many are trying to get a better understanding of the problem in their countries as a basis for designing, implementing and monitoring effective prevention strategies (see Figure 10). A number of strategies have helped lower the rates of injuries and their consequences in many settings.



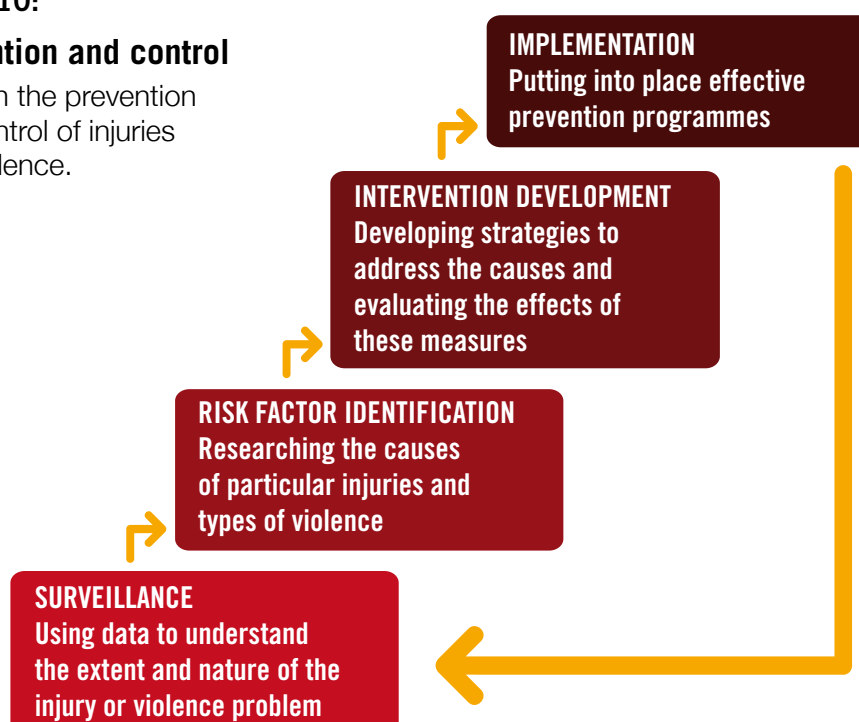
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Furthermore, analysis of the costs and benefits of a number of selected injury and violence prevention measures show that they give significant value for money, making investment in such measures of great societal benefit. For example, a study in the United States found that every dollar spent on smoke detectors saves US\$ 28 in health-related expenditure. However, much of the evidence of effectiveness for these measures comes from high-income countries: there is a need for low- and middle-income countries to adapt and implement these evidence-based strategies to specific circumstances within their environments. By doing so—and by rigorously evaluating the outcomes of these efforts—it will be possible to lower the current, unacceptably high burden of injury globally.

**Figure 10:**

### **Prevention and control**

Steps in the prevention and control of injuries and violence.



## **Evidence-based measures to reduce key causes of injury-related deaths include the following:**

### **Road traffic crashes**

- Setting and enforcing laws on speeding
- Setting and enforcing laws on drinking and driving
- Setting and enforcing laws on motorcycle helmets
- Setting and enforcing laws on seat-belts
- Setting and enforcing laws on child restraints
- Developing safer roadway infrastructure, including engineering measures to reduce speeds in urban areas and separate different types of road users
- Implementing vehicle and safety equipment standards
- Setting and enforcing laws on daytime running lights for motorcycles
- Introducing a graduated driver licensing system for novice drivers

### **Burns**

- Setting and enforcing laws on smoke detectors
- Setting and enforcing laws on hot tap water temperatures
- Developing and implementing a standard for child-resistant lighters
- Treating burns patients in a dedicated burns centre

### **Drowning**

- Installing barriers controlling access to water
- Providing capable child care for pre-school children in safe places away from water
- Teaching school-age children basic swimming, water safety and safe rescue skills
- Training bystanders in safe rescue and resuscitation
- Wearing of personal flotation devices

### **Falls**

- Setting and enforcing laws requiring window guards for tall buildings
- Redesigning furniture and other products
- Establishing standards for playground equipment

### **Poisoning**

- Setting and enforcing laws for child resistant packaging of medicines and poisons
- Removing toxic products
- Packaging drugs in non-lethal quantities
- Establishing poison-control centres





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## Interpersonal violence

- Developing safe, stable and nurturing relationships between children and their parents or caregivers
- Developing life skills in children and adolescents
- Reducing the availability and harmful use of alcohol
- Reducing access to guns and knives
- Promoting gender equality to prevent violence against women
- Changing cultural and social norms that support violence
- Reducing violence through victim identification, care and support programmes

## Suicide

- Reducing access to common means, such as firearms, pesticides and certain medications
- Implementing policies and interventions to reduce the harmful use of alcohol
- Ensuring early detection and effective treatment of mental disorders, particularly depression and alcohol use disorders
- Ensuring management of people who have attempted suicide or are at risk, including assessment and appropriate follow-up
- Training primary health care workers and other 'gatekeepers' who are likely to interact with people at risk of suicide
- Adoption of responsible reporting of suicide by the media

## Improving trauma care and services

Although the ultimate goal must be to prevent injuries and violence from happening in the first place, much can be done to minimize the disability and ill-health arising from the events that do occur. Providing quality support and care services to victims of violence and injuries can prevent fatalities, reduce the amount of short-term and long-term disability, and help those affected to cope with the impact of the violence or injury on their lives. Improving the organization, planning and access to trauma care systems, including pre-hospital and hospital-based care, can help reduce the effects of injuries.

In Mexico, increased numbers of ambulance stations to allow for a more rapid response from pre-hospital care teams combined with improved training for pre-hospital providers led to a decrease in mortality among trauma patients. In Thailand, a programme to better monitor and evaluate the quality of care reduced the number of deaths among trauma patients admitted to a major trauma center.

Providing rehabilitation for people with disabilities, and removing barriers to care and to social and economic participation, are key strategies to ensure that people who experience disability as the result of an injury may continue a full and enjoyable life.

## Summary

Injuries and violence are among the most prominent public health problems in the world. As well as being a leading cause of mortality – particularly among children and young adults – many of the millions of non-fatal injuries result in life-long disabilities and health consequences. Tens of millions more people suffer long-term psychological health effects as a result of an injury or an act of violence.

In some countries, increasing awareness over the past decades that injuries and violence are preventable public health problems has led to the development of preventive strategies and, consequently, a decrease in deaths and disability due to injuries. However, in many countries the issue of injuries and violence is not yet recognized or being addressed. This is particularly unfortunate, since much evidence is available on what needs to be done. Action must be taken now to reverse this trend, and the international community, national governments and civil society all have an important role to play in creating societies that are safe from the risk of injuries and violence.



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## Editorial note

The global data in this brochure derive primarily from the WHO Global Health Estimates, 2014. National data used in several of the figures in this brochure derive from specific national data sources, as indicated next to the relevant figures. References for other data are available upon request by email to: [vip@who.int](mailto:vip@who.int).

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