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## Background

Road transportation provides benefits both to nations and to individuals by facilitating the movement of goods and people. It enables increased access to jobs, economic markets, education, recreation and health care, which in turn have direct and indirect positive impacts on the health of populations. However, the increase in road transportation has also placed a considerable burden on people's health – in the form of road traffic injuries, respiratory illnesses, and the health consequences that ensue from

a reduction in physical activity. There are additional negative economic, social and environmental consequences that arise from the movement of people and goods on the roads – such as air pollution, greenhouse gas emissions, consumption of finite resources, community severance, and noise.

According to WHO's Global Burden of Disease Project for 2004, road traffic crashes caused over 1.27 million deaths that year – a similar number to



Between 1991 and 2001 the number of motorized vehicles in Thailand almost doubled, from 6.3 million to 11.5 million.

those caused by many communicable diseases (1). Road traffic injuries affect all age groups, but their impact is most striking among the young. Table 1 shows that road traffic injuries are consistently one of the top three causes of death for people aged between 5 and 44 years.

While road traffic death rates in many high-income countries have stabilized or declined in recent decades, data suggest that in most regions of the world the global epidemic of traffic injuries is still increasing. It has been estimated that, unless immediate action is taken, road deaths will rise to the fifth leading cause of death by 2030, resulting in an estimated 2.4 million fatalities per year (1, 2).

In addition to fatalities, many less severe injuries are caused by road traffic crashes: between 20 and 50 million non-fatal injuries are estimated to occur annually around the world (3, 4). These non-fatal injuries are also an important cause of disability (1). A study in Turkey estimated that, of approximately 95 000 people

injured in road traffic crashes in 2005, 13% had a subsequent disability, while in India an estimated 2 million people have a disability that results from a road traffic crash (5, 6). Situations like these have important consequences on the demand for services needed to address disability.

The road traffic injury epidemic also has considerable impact on the economies of many countries, particularly low-income and middle-income countries that are frequently struggling with other development needs. The global losses due to road traffic injuries are estimated to be US\$ 518 billion<sup>1</sup> and cost governments between 1% and 3% of their gross national product – more than the total amount that these countries receive in development assistance (4, 7).

Persons from poor economic settings are disproportionately affected by road traffic injuries, even in high-income countries. For instance, a study in New South Wales, Australia, found that children of relatively

<sup>1</sup> A billion here is used to refer to one thousand million.

Road traffic injuries are one of the top three causes of death for people aged between 5 and 44 years.



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Table 1. Leading causes of death by age, world, 2004

RANK	0–4 YRS	5–14 YRS	15–29 YRS	30–44 YRS	45–69 YRS	70+ YRS	TOTAL
1	Perinatal causes	Lower respiratory infections	Road traffic injuries	HIV/AIDS	Ischaemic heart disease	Ischaemic heart disease	Ischaemic heart disease
2	Lower respiratory infections	Road traffic injuries	HIV/AIDS	Tuberculosis	Cerebrovascular disease	Cerebrovascular disease	Cerebrovascular disease
3	Diarrhoeal diseases	Malaria	Tuberculosis	Road traffic injuries	HIV/AIDS	Chronic obstructive pulmonary disease	Lower respiratory infections
4	Malaria	Drownings	Violence	Ischaemic heart disease	Tuberculosis	Lower respiratory infections	Perinatal causes
5	Measles	Meningitis	Self-inflicted injuries	Self-inflicted injuries	Chronic obstructive pulmonary disease	Trachea, bronchus, lung cancers	Chronic obstructive pulmonary disease
6	Congenital anomalies	Diarrhoeal diseases	Lower respiratory infections	Violence	Trachea, bronchus, lung cancers	Diabetes mellitus	Diarrhoeal diseases
7	HIV/AIDS	HIV/AIDS	Drownings	Lower respiratory infections	Cirrhosis of the liver	Hypertensive heart disease	HIV/AIDS
8	Whooping cough	Tuberculosis	Fires	Cerebrovascular disease	Road traffic injuries	Stomach cancer	Tuberculosis
9	Meningitis	Protein–energy malnutrition	War and conflict	Cirrhosis of the liver	Lower respiratory infections	Colon and rectum cancers	Trachea, bronchus, lung cancers
10	Tetanus	Fires	Maternal haemorrhage	Poisonings	Diabetes mellitus	Nephritis and nephrosis	Road traffic injuries
11	Protein–energy malnutrition	Measles	Ischaemic heart disease	Maternal haemorrhage	Self-inflicted injuries	Alzheimer and other dementias	Diabetes mellitus
12	Syphilis	Leukaemia	Poisonings	Fires	Stomach cancer	Tuberculosis	Malaria
13	Drownings	Congenital anomalies	Abortion	Nephritis and nephrosis	Liver cancer	Liver cancer	Hypertensive heart disease
14	Road traffic injuries	Trypanosomiasis	Leukaemia	Drownings	Breast cancer	Oesophagus cancer	Self-inflicted injuries
15	Fires	Falls	Cerebrovascular disease	Breast cancer	Hypertensive heart disease	Cirrhosis of the liver	Stomach cancer
16	Tuberculosis	Epilepsy	Diarrhoeal diseases	War and conflict	Nephritis and nephrosis	Inflammatory heart diseases	Cirrhosis of the liver
17	Endocrine disorders	Leishmaniasis	Falls	Falls	Oesophagus cancer	Breast cancer	Nephritis and nephrosis
18	Upper respiratory infections	Violence	Meningitis	Diarrhoeal diseases	Colon and rectum cancers	Prostate cancer	Colon and rectum cancers
19	Iron deficiency anaemia	War and conflict	Nephritis and nephrosis	Liver cancer	Poisonings	Falls	Liver cancer
20	Epilepsy	Poisonings	Malaria	Trachea, bronchus, lung cancers	Mouth and oropharynx cancers	Road traffic injuries	Violence

Source: WHO (2008), Global Burden of Disease: 2004 update.



Teenage drivers are at increased risk of road traffic crashes.

**PHOTO LEFT** Those physically disabled as a result of a motor vehicle collision often face stigma and discrimination which can lead to social, educational, occupational and financial deprivation. In addition, many have mental health consequences such as post-traumatic stress disorder, phobias, anxiety and depression.

**CENTRE** While the figures on road traffic deaths point to the extent of the problem around the world, they fail to tell the full story and to reflect the devastation and suffering that each of these deaths brings to the family, friends and community of those affected.

**RIGHT** As well as the personal costs, road traffic injuries place a huge demand on health services.



Road traffic injuries show a steep socioeconomic gradient, with those from more disadvantaged backgrounds at higher risk than their more affluent counterparts.

lower socioeconomic status were at highest risk of a road traffic injury (8). Similarly, research from Bangalore, India, found that mortality from road traffic injuries was 13.1 and 48.1 per 100 000 in the poorer socioeconomic groups of urban and rural populations respectively, compared to 7.8 and 26.1 per 100 000 among their more affluent urban and rural counterparts (9). As well as being at increased risk, disadvantaged families are hardest hit by the financial pressure resulting from road traffic crashes. Poor families are less likely to have the financial resources to pay the direct and indirect costs related to a road traffic crash. Many families are driven deeper into poverty by the loss of a family breadwinner, funeral costs, the expenses of prolonged medical care and rehabilitation, or through earnings lost while caring for someone who is injured or disabled (10).

Road traffic injuries place a huge strain on health care services in terms of financial resources, bed occupancy, and

demand placed on health professionals. In Kenya, for example, road traffic injury patients represent between 45–60% of all admissions to surgical wards (11). Similarly, studies in India show that road traffic injuries account for 20–50% of emergency room registrations, 10–30% of hospital admissions, and 60–70% of people hospitalized with traumatic brain injuries (12).

## **An international response to road traffic injury prevention**

The need to reduce road traffic deaths and injuries has been acknowledged by the United Nations system and its Member States for nearly 60 years. Road safety work has been carried out by various global and regional organizations, including the World Health Organization (WHO), the World Bank, the United Nations Regional Commissions, and a number of the regional development banks.



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In 2004 the World Health Organization and the World Bank jointly launched the *World report on road traffic injury prevention* (4). This document stressed the role of many sectors in the prevention of road traffic injuries. It also described the fundamental concepts of road traffic injury prevention, the magnitude and impact of road traffic injuries, the major determinants and risk factors, and effective intervention strategies. The *World report* concluded with six recommendations that countries should follow to improve their road safety situation, namely:

1. Identify a lead agency in government to guide the national road traffic safety effort.
2. Assess the problem, policies and institutional settings relating to road traffic injury and the capacity for road traffic injury prevention in each country.
3. Prepare a national road safety strategy and plan of action.

4. Allocate financial and human resources to address the problem.
5. Implement specific actions to prevent road traffic crashes, minimize injuries and their consequences and evaluate the impact of these actions. These actions include measures: to reduce excessive and inappropriate speed; to reduce drink-driving; and to increase the use of motorcycle helmets, seat-belts and child restraints.
6. Support the development of national capacity and international cooperation.

The *World report* promoted a comprehensive approach to road safety which involves identifying the interactions between the road user, the vehicle and the road environment – i.e. the potential areas for intervention. This approach, often called the systems approach, recognizes that the human body is highly vulnerable to injury and that humans make mistakes. A safe road traffic system is therefore one that accommodates and

compensates for human vulnerability and fallibility (Figure 1). To adopt a systems approach necessitates the involvement and the close collaboration of a number of sectors – transport, police, health, industry, civil society, and special interest groups. Fundamental to implementing this approach is the collection of accurate data on the magnitude of road traffic crashes and on risk factors. The countries that have made the most progress in road safety are those that have adopted this comprehensive approach.

In April 2004, soon after the launch of the *World report*, the United Nations General Assembly adopted resolution 58/289 on “Improving global road safety”, which recognized the *World report* and endorsed its recommendations.

The following month, the World Health Assembly adopted resolution WHA 57.10 on “Road safety and health” which called on WHO Member States to prioritize road safety as a public health issue, and to take steps to implement measures that are known to be effective in reducing road traffic injuries. Subsequent United Nations General Assembly resolutions that were adopted in both 2005 and 2008 reinforced the call for Member States to increase the attention paid to road traffic injury prevention in general, and to the implementation of the recommendations of the *World report* in particular.<sup>1</sup> This document reports on the progress made in implementing some of the recommendations of the *World report*.

<sup>1</sup> For the full text of these resolutions, see <http://www.who.int/roadsafety/about/resolutions/en/index.html>.

Figure 1. The systems approach to road safety



Source: Adapted from reference 13.