

# Road traffic injuries — a neglected pandemic

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Road traffic injuries (RTIs) are the only public health problem for which society and decision-makers still accept death and disability among young people on a large scale. This human sacrifice is deemed necessary to maintain high levels of mobility and is seen as a justifiable externality of doing business: the only discussion revolves around the number of deaths and injuries that are acceptable. The sole departure from this mode of thinking is “Vision Zero”, a campaign that originated in Sweden with the aim that eventually no one would be killed or seriously injured on the roads. In October 1997, the Road Traffic Safety Bill founded on Vision Zero was passed by a large majority in the Swedish Parliament but, even in Sweden, the believers are few.

Deaths from causes that were commonplace in the early twentieth century – such as fatalities among workers in factories, mines, railroads and dockyards – are no longer accepted as inevitable today. Nowadays, many societies do not apply a death penalty no matter how serious the crime. Recently, about a hundred deaths caused by the spread of severe acute respiratory syndrome (SARS) mobilized international efforts to arrest the disease; and millions of demonstrators came out on the streets in many countries to protest against a war in their belief that nothing justifies the deaths of innocent individuals. So why is this attitude absent when it comes to road traffic?

Recent estimates suggest that RTIs result in one million fatalities worldwide every year. A vast majority of these deaths involve people who are less than 50 years old. Another 20–30 million people suffer injuries that need hospitalization or expert medical treatment.

It must not be assumed that individuals and decision-makers are not concerned about RTIs: governments in high-income countries have spent a great deal of effort in establishing road safety agencies and standards and have undertaken some research, but governments in low- and middle-income countries — despite showing concern for more than two decades — have not yet established effective agencies or spent any money on research. The attitude of all governments, however, is similar: injuries and deaths will always occur, and the best one can hope for is to reduce them. Citizens of low-income countries, however, express greater intolerance of road traffic deaths than their counterparts in the industrialized world. In many African and Asian countries, hardly a day goes by when an angry crowd does not attempt to lynch a driver or burn a vehicle involved in a crash with a pedestrian. On their own initiative, villagers have constructed thousands of “sleeping policemen” (speed humps) to slow down vehicles speeding through their neighbourhoods.

So where does the problem lie? Mainly, with the persistent focus on fault. If human error is seen as the root cause

of RTIs, it follows that the solution must be the education of road users and that those who do “wrong” may suffer injuries. This mindset has continued in the face of all scientific evidence that educating road users is not the most effective way to reduce RTIs.

A second difficulty is that work on road safety is still not recognized as a scientific occupation in our academic institutions and among decision-makers. The result is a large turnover of “experts” — for whom road safety is rarely the dominant area of activity — who repeatedly “reinvent the wheel”. It has been known for over 25 years that driver education does not significantly reduce the incidence of RTIs, but each new batch of experts goes patiently through the same processes to arrive at the same conclusion. An offshoot of this fixation is the dogged belief among road safety consultants that people in poorer countries are in special need of road traffic education. Equating developing countries with “needing education” flies in the face of research findings and simple logic: not a single study from a low- or middle-income country has demonstrated a correlation between lack of knowledge and RTI rates. Age-specific RTI fatality rates for children aged 0–14 years are very similar in low- and high-income countries, yet the first advice of international consultants working in developing countries is to start a children’s road safety education programme.

As a consequence, essential policies and countermeasures needed to control the epidemic of RTIs remain neglected. The first step in RTI control should be to implement those policies that have international validity and those that have a fair chance of success irrespective of income levels. The second step should be to set up, at national or regional levels, official road safety agencies that are independent of road building departments. These agencies would oversee data collection, standard setting, policy evaluation and research activities. The third step should be to establish and strengthen research and teaching centres in all areas associated with road safety.

## International knowledge base

Systematic reviews of scientific literature provide the following insights.

- Educational programmes by themselves are usually insufficient to change overall behaviour: they may increase knowledge, but rarely result in appropriate behaviour change among road users at the societal level.
- A few individuals may change their behaviour, but individuals also behave differently on the same day under different circumstances.

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- Driver education may be necessary for beginners to learn the elementary skills to obtain a driving licence, but compulsory training in schools leads to early licensing. There is no evidence that such schemes result in reductions in crash rates.
- Most attempts at enforcing road traffic legislation do not have any lasting effects, either on road user behaviour or on crash rates, unless the effort is sustained. Stricter penalties (in the form of higher fines or longer prison sentences) do not affect road user behaviour; imposing stricter penalties very often reduces the level of enforcement.
- Enforcement of laws against driving under the influence of alcohol, a minimum age for the consumption of alcohol, and sobriety checkpoints are measures that do reduce the incidence of RTIs.
- Placing cameras at intersections reduces red light violations and crashes by 25–40%.
- Helmet use reduces head and facial injuries to cycle and motorcycle users of all ages involved in all types of crashes, including those with motor vehicles.
- Use of seat-belts and airbags can reduce fatalities among car occupants by over 30%.
- The only effective way to get most motorists to use safety belts is by introducing appropriate legislation. When laws exist, advertising can inform the public about them and their enforcement.
- Rear brake lights mounted high on a vehicle reduce the incidence of rear-end crashes.
- Daytime use of headlights reduces the number of multi-party daytime accidents by about 10–15% for cars and motorcyclists.
- In urban areas, traffic-calming techniques, roundabouts and pedestrian and cycle facilities provide significant safety benefits.
- Reduction in average speeds is accompanied by reduction in RTIs.

All of the above findings are based on theoretical understanding of the factors associated with RTIs, supported by empirical observations and studies. They have international validity: the measures to be applied need to be prioritized according to local needs and socioeconomic conditions. This body of knowledge can give us a head start in tackling the international epidemic of RTIs. It may not be adequate, however, to solve all the problems in low- and middle-income countries and the difficulties of pedestrians and cyclists in the industrialized world.

## The way forward

Road safety research in high-income countries has involved a large number of well-trained professionals from a variety of disciplines over the last four decades. The results could be exchanged and the solutions transferred from one country to another because the conditions were roughly similar. This understanding of injuries and road traffic crashes has helped the design of safer vehicles, roads and traffic management systems. However, most of the advances have favoured car occupants over the more vulnerable road users — pedestrians, cyclists and motorcyclists. Much of the reduction in pedestrian and cyclist RTIs is probably due to overall reductions in walking and the use of bicycles. Future road safety work needs to be redirected to bring the needs of the vulnerable road users to centre stage.

The patterns of traffic and RTIs in low- and middle-income countries are very different from those in high-income countries, since there is a much larger proportion of vulnerable road users in the lower- and middle-income group. Road and vehicle designs that eliminate risk of serious RTIs to vulnerable road users are not available at present. A much larger group of committed professionals, in every country of the world, needs to be involved in this work for new ideas to emerge. Disabilities and fatalities caused by RTIs can only be eliminated with a change in philosophy. The new philosophy will have to keep Zero Vision as its core value and include the needs of low- and middle-income countries as its new challenge. ■

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