



Chapter 24

Trauma and injury



An estimated 70 000 South Africans are killed due to trauma every year with a further 3.5 million seeking health care as a result of trauma. The hazards that produce injuries are mostly essential resources to humans. The complexity of trauma interventions result in extremely high costs and at the same time the economy loses millions of Rands in lost earnings and productivity.

This chapter describes the epidemiology of injury. Almost half of all deaths due to injury are as a result of homicide (47.1%). The rate has decreased from almost 70 per 100 000 population and stabilised at about 60 per 100 000, ten times higher than the USA. Unintentional injury is dominated by traffic accidents. More than 9 000 people are killed in traffic accidents each year and 33 000 seriously injured. The statistics obscure the fact that 39% of those killed are pedestrians! This figure has decreased from over 47% in 1987.

Substance abuse is implicated in 80% of trauma patients. More is known about alcohol than other drugs but all are now being monitored in a major surveillance initiative. This surveillance initiative is monitoring fatal injuries, non-fatal injuries and establishing longitudinal information at several sentinel sites.

Prevention initiatives are aimed at intentional injuries such as domestic violence and gunshot wounds. Unintentional injury preventive interventions include the "Arrive Alive Campaign".

Trauma care and rehabilitation are struggling against limited budgets but there are some advances in the organisation and development of trauma services and training.

The chapter concludes that there is much room for improvement and that a concerted effort will be needed to bring the incidence of trauma down.



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Introduction

People, guns and knives, motor cars and trucks, open fires, unsafe electrical connections and exposed heating elements, household chemicals and medications, manual and electrically powered tools, unguarded hazards like high buildings, deep pits and open bodies of water – these are just some of the more frequently encountered objects and features of the environment that interact with human activities to kill an estimated 70 000 South Africans each year, and lead a further 3.5 million to seek health care of some kind.

Unlike the pathogens which cause infectious and communicable diseases, many things that produce injuries are indispensable to the conduct of daily life, such as the interpersonal relationships that sustain self and other, the energy sources used for heating and lighting, the vehicles and roads used for transport, the medications used to cure illnesses, and the machinery and tools by which formal and informal industry and agriculture are practised. Ironically, the strongly held and widely spread belief that they are essential to protection from violence means firearms must also be included in this list, despite epidemiological research showing them to be more of a risk than a resource to their owners and the population as a whole.^{1,2}

Because the hazards that produce injuries are at the same time essential human resources, the task of injury prevention and control is considerably more complex than the control of infectious and communicable diseases, which, in principle at least, can be eliminated by eradication of the pathogens or vaccination of the host. By contrast, and with the exception of some narrow interventions that yield wide safety gains (e.g. motor car air bags), injury prevention requires a more situation-oriented approach able to reduce risks without entirely removing the hazard; this is particularly true in regard to injuries due to interpersonal violence, occurring as it does for the most part between friends and intimates. Adding to this complexity is the extreme social and geographical variation that injuries manifest in terms of incidence rates and the distribution of risks, for this makes it difficult to generalise research findings and interventions from one situation to another. The relationship between substance abuse such as alcohol, dagga and mandrax and trauma is also a complex one requiring multifaceted prevention approaches.

While the complex causes of injuries demand complex solutions involving co-operation between many different sectors, almost all injuries of any significant severity must receive some form of medical treatment. This means that their epidemiological investigation and monitoring can to a major extent be achieved through health facilities as the common destination for all injury victims, irrespective of the cause. Motivation for hospitals and clinics to participate in such surveillance resides in the extremely high costs of providing care for trauma victims, and especially those who require intensive care, which for severe motor vehicle and gunshot injuries costs upwards of R10 000 per day.³ This limits access to such care to patients with medical aid and/or workmen's compensation, and those very few indigent victims that gain access to the dwindling number of State intensive care beds.

Injuries cost the economy hundred of millions of Rands in lost earnings and reduced productivity. Consequently, violence and injury prevention should be an inter-departmental and multi-dimensional national priority between the departments of Health, Safety and Security, Sport and Recreation, Transport and others.

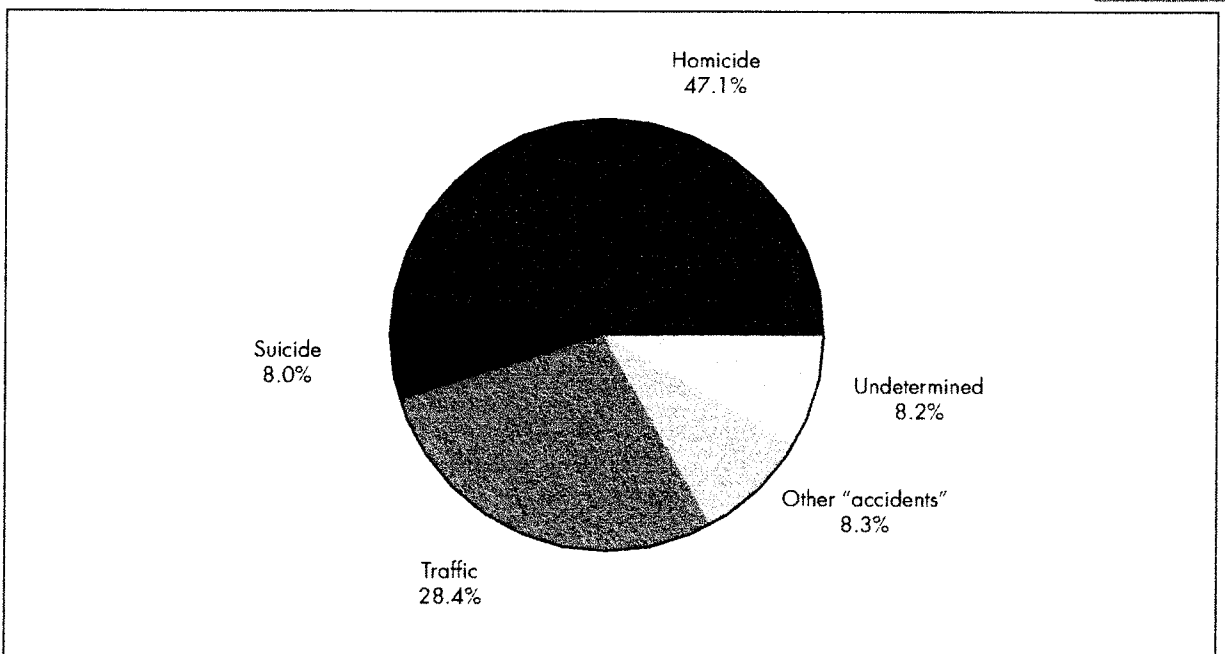


Injury epidemiology in South Africa

Lacking national level mortality data, the relative contribution of injuries to the overall burden of disease can only be guessed at. In 1994, injuries were the leading cause of death, and the 1996 Health Department status report projected a steady increase in the incidence of injuries. While the changing shape of the HIV/AIDS epidemic means that injuries may no longer be the leading cause of death, there is little reason to doubt that they remain among the top three causes of death, and a leading consumer of hospital days and health facility budgets.

While it is not yet possible to provide the complete injury picture at a national level, provisional statistics are available for deaths from the National Non-natural Mortality Surveillance System (NMSS) currently being developed (see section on Injury Surveillance). These data show that homicide and fatal road traffic collisions are the leading causes of non-natural death in South Africa (Figure 1).

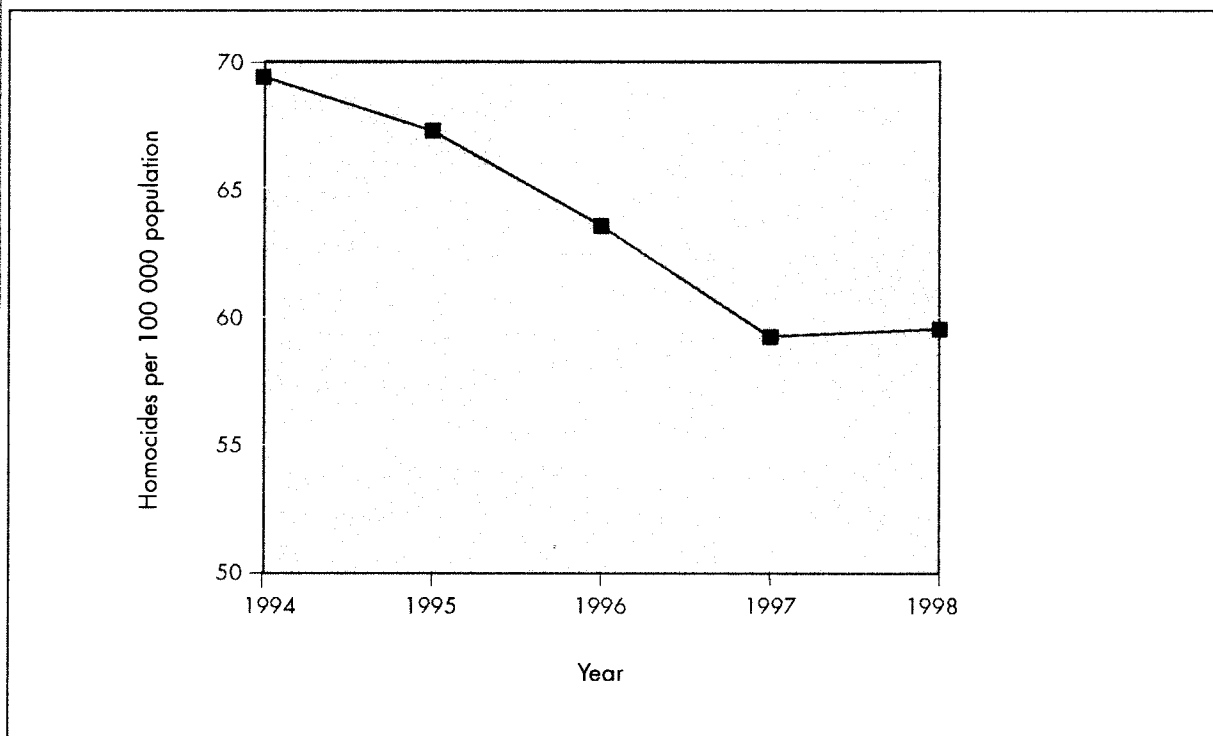
Figure 1: Causes of non-natural death in South Africa (preliminary NMSS data, first quarter 1999)



Intentional Injuries

National level data on deaths due to violence are restricted to homicidal deaths reported to and recorded in South African police statistics.⁴ For the years 1994 to 1998, Figure 2 shows that the homicide rate per 100 000 population has decreased from 69.3 in 1994 to 59.5 in 1998.

Figure 2: Annual homicide rates per 100 000 population (1994 - 1998)



Source: SAPS CRIME Information Analysis Centre Data

While these data suggest a downward trend followed by stabilisation of the homicide rate at around 60 per 1 000 000 (which is 10 times the US national rate), the likelihood that the data under report homicide by up to one fifth means they should be treated with caution. For instance, Wigton has shown that in Cape Town for some months, up to 20% of all firearm related deaths in children and adolescents that are seen in the state mortuaries were not registered in police homicide statistics.⁵

Data on deaths due to self-directed violence, the demographics of homicide and suicide victims, the causes of violent death, and other risk factors are not available at a national level. However, since the 1998 inception of the NMSS these are starting to become available for a number of the larger cities included as pilot sites for this project (see Injury Prevention Initiatives below).

Regarding manner of death (i.e. whether homicide or suicide), preliminary data from the NMSS for the first quarter of 1999 show a clear relationship between victim race and manner of death. Black and Coloured victims are most likely to be recorded as homicidal and white victims most likely to be recorded as suicidal deaths. These trends are in line with emerging historical data on the epidemiology of violence in South Africa,⁴ and if race is considered as a proxy for socio-economic status they suggest that with a general and sustained upswing in the South African economy there may be a related increase in the proportion of suicidal deaths.

a Butchart A, personal communication