

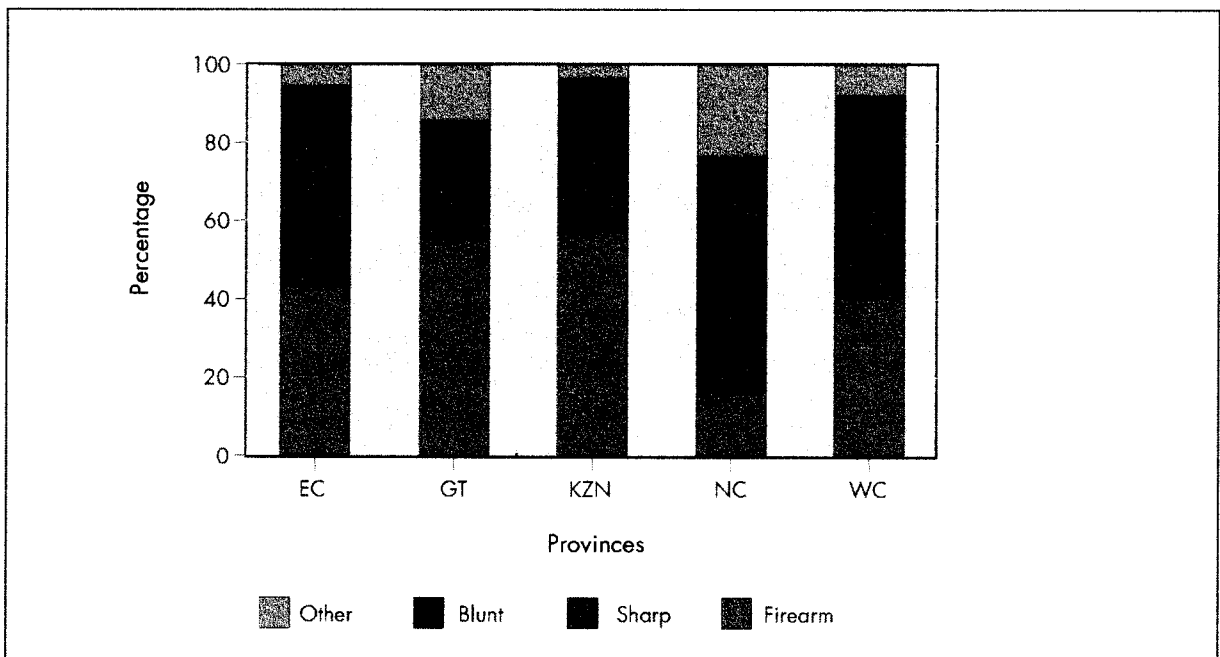
Concerning victim gender and age, Table 1 shows that for both homicide and suicide, males predominate over females in almost all age ranges. In line with universal trends homicidal violence shows a sharp increase at age 15 and remains high into the mid-40s, whereafter there is a dramatic decline. In the over 65 year age group more females are victims of homicide but this probably reflects the greater proportion of elderly women in the country.

Table 1: Homicide and suicide by gender and age (preliminary NMSS data, first quarter 1999)

Age ranges	Homicides		Suicides	
	Males	Females	Males	Females
< 15	10 (76.9%)	3 (23.1%)	1 (50.0%)	1 (50.0%)
15 - 24	166 (91.2%)	16 (8.8%)	22 (91.7%)	2 (8.3%)
25 - 34	231 (91.3%)	22 (8.7%)	23 (85.2%)	4 (14.8%)
35 - 44	141 (82.9%)	29 (17.1%)	11 (68.8%)	5 (31.2%)
45 - 54	48 (84.2%)	9 (15.8%)	9 (81.8%)	2 (18.2%)
55 - 64	20 (87.0%)	3 (13.0%)	8 (100%)	0
65+	3 (42.9%)	4 (57.1%)	5 (62.5%)	3 (37.5%)

While patterns in respect of manner of death, victim age and victim gender show negligible variation between centres included in the surveillance, the primary medical cause of death varies sharply between sites. Although not all provinces are represented in the preliminary NMSS data, Figure 3 does show that KwaZulu-Natal and Gauteng have more firearm-related homicides while in the three other provinces sharp objects, primarily knives, predominate.

Figure 3: Mechanism of homicide by province (preliminary NMSS data, first quarter 1999)



Phillips performed a cost-of-injury analysis of all homicides occurring in the Western Cape Metropole in 1997.⁶ Input data consisted of mortuary records and ancillary documentation on all homicidal deaths seen at the Salt River and Tygerberg mortuaries, mortuary budgets by which to calculate forensic-medical costs per case, survey data on average yearly earnings by occupational category, economic data on present and future market trends, and actuarial data on individuals' willingness to invest in risk-reduction measures. Data from 2 065 homicides were entered into the calculation and showed that the total economic cost of these homicides ranged from a low of R27 million to a high of R110 million. Her figures also showed that firearm deaths and deaths due to sharp objects each accounted for approximately equal cost proportions, underlying the urgency of interventions to, at the very least, reduce the number of guns in society. Approximately R58 million was spent on incarcerating homicide perpetrators in the Western Cape during 1997, and if this figure is added in to the direct and indirect costs then homicide in Cape Town in 1997 cost between R90 and R170 million.⁶ Underlining the prevention implications of these findings, Phillips⁶ concluded that:

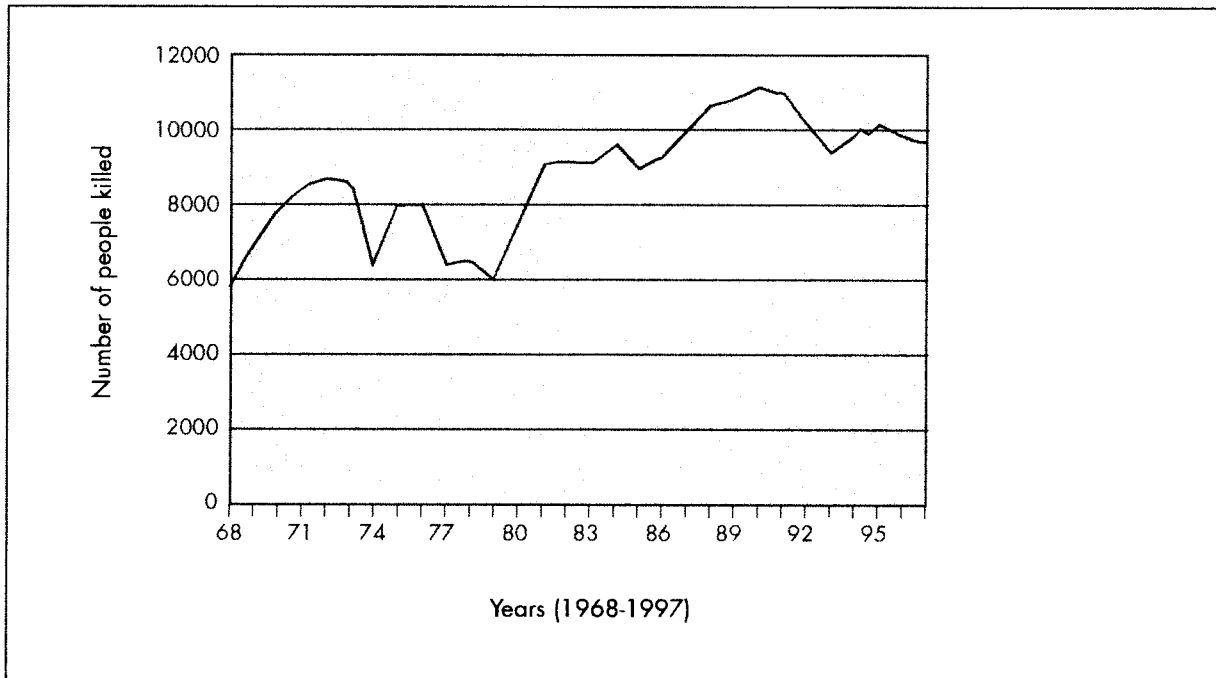
"If only one tenth of this cost was invested in prevention efforts that have been demonstrated to be effective, the long-term benefits to society would be considerable – economically, socially and individually ... At a time when limited funds are being allocated for research and development activities to prevent violence, this information may serve as a critical reminder of the costs that are likely to be incurred if such investment is not made".

Unintentional Injuries

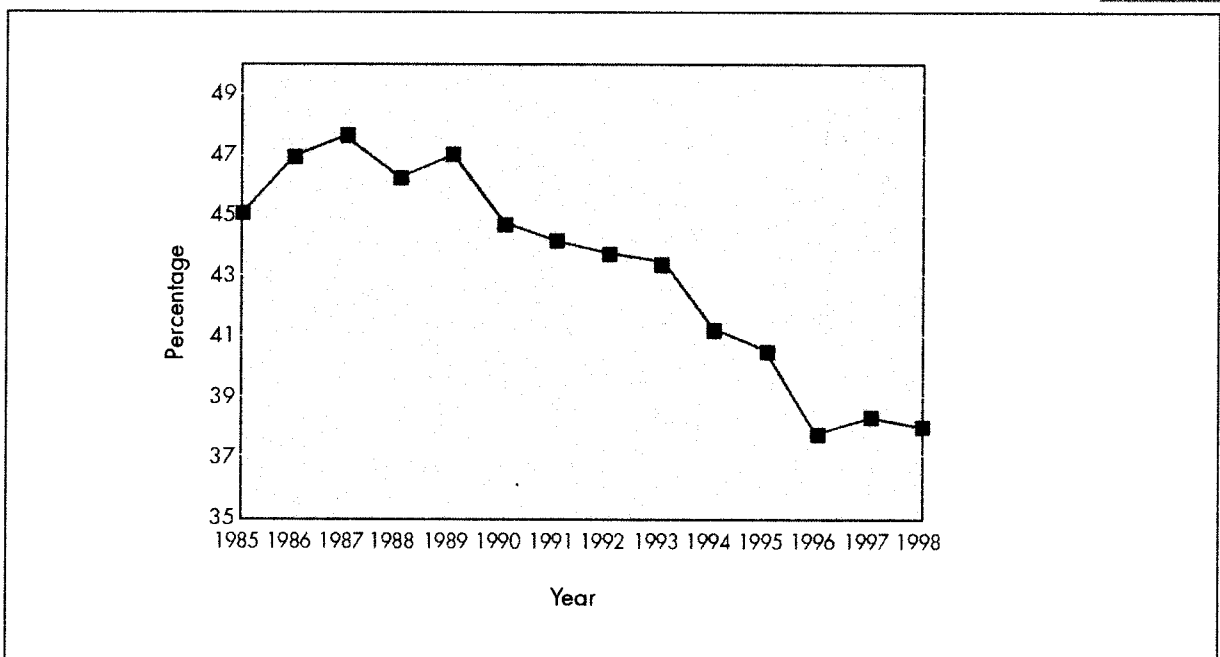
After homicide, traffic is the second leading cause of non-natural deaths in South Africa. Our road traffic death rate is 11.7 per 100 million kilometres travelled and although not the highest in the world we certainly rank in the top ten.⁷

Every year nearly half a million collisions occur in South Africa. Arising from these, more than 9 000 people are killed, more than 33 000 seriously injured and over 85 000 slightly injured. This means that on an average day, 30 people are killed, 100 people sustain serious injuries and 250 suffer minor injuries as a result of traffic collisions. Over the last few years the Directorate of Traffic Safety data does appear to be showing a downward trend in the number of fatal collisions on our roads (Figure 4).



Figure 4: South African traffic deaths over 30 years (1968 - 1997)

These summary statistics obscure the very high pedestrian component of our traffic problem. Approximately 45% of our road traffic deaths involve pedestrians (i.e. about 4 500 pedestrians are killed and a further 26 000 are injured annually). Since the early 1990s there have been concerted preventative efforts nationally to reduce this carnage and the Directorate of Traffic Safety annual statistics are beginning to show a downward trend (Figure 5).

Figure 5 : Pedestrians as a proportion of all South African traffic deaths (1985 - 1998)

Source: Directorate of Traffic Safety data

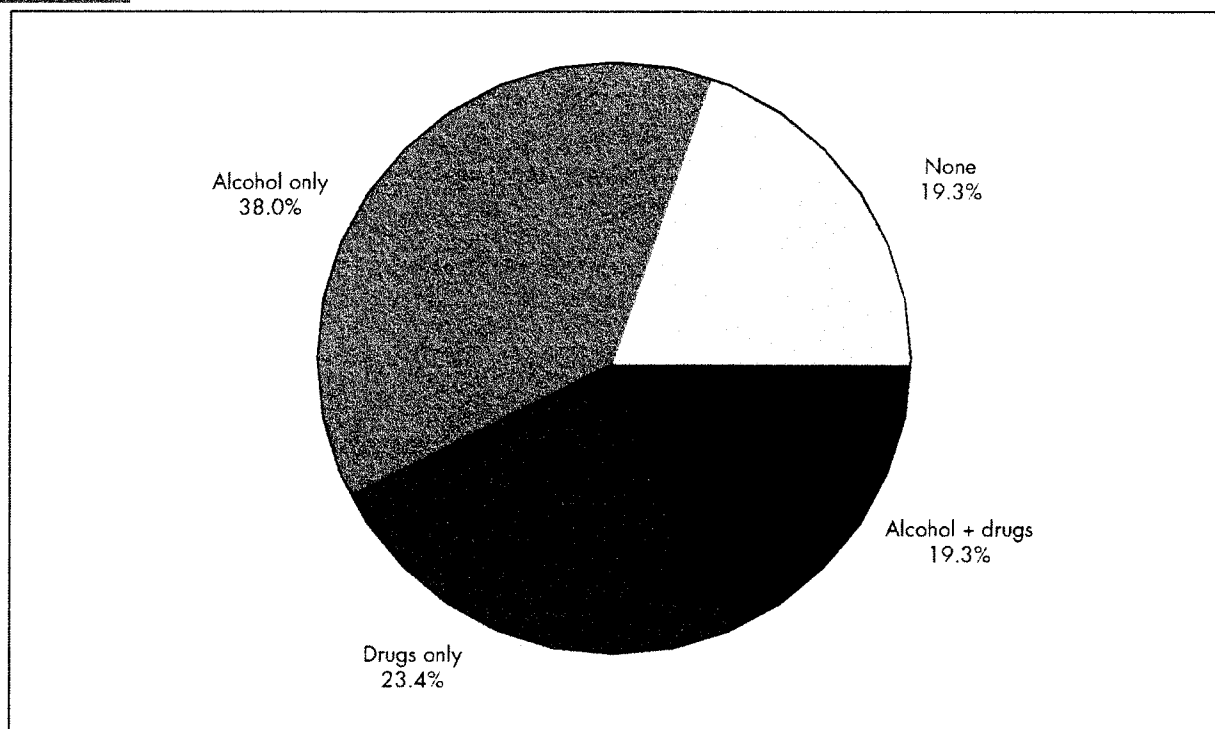
While police crime statistics and Council for Scientific and Industrial Research (CSIR) road fatality records supply at least some indication of trends in two of the major external causes of death, there are no equivalent information sources for non-fatal injuries. Existing cross-sectional epidemiological studies of the non-fatal injury pattern are now of historical value only, and restricted to Johannesburg, Cape Town and Durban. However, in 1998 state funding was awarded to a national injury surveillance consortium to develop a system of sentinel surveillance by which to monitor patterns of non-fatal injury (outlined below).

Substance Abuse

Alcohol increases the risk of injury and numerous reports document this relationship, both internationally and locally. But much less is known about other drugs, particularly in South Africa where the use and availability of illicit drugs appears to have increased since 1994.

Part of the National Injury and Violence Surveillance initiative (outlined below) is to monitor substance abuse among trauma patients in sentinel sites in South Africa. Preliminary results from these studies seem to indicate that although alcohol remains the substance most commonly abused by injured patients, about 40% abuse illicit drugs such as cannabis, methaqualone (mandrax) or crack/cocaine either in combination with alcohol or on their own (Figure 6). The mandrax and cannabis mixture (white pipe) appears to be a problem confined almost exclusively to patients injured as a result of interpersonal violence.⁸ This nexus has previously been shown in a study on homicide victims and therefore needs to be studied in more depth.

Figure 6: Substances abused by injured patients



Injury surveillance

Recognition of the magnitude of the injury problem and the imperative for establishing an information system to monitor it, has resulted in research for injury and violence being prioritised (Department of Health, 1996). As part of their National Crime Prevention Strategy, the Department of Arts, Culture, Science and Technology (DACST) provided funding for the development of a surveillance system to monitor injury and violence patterns in South Africa. This project is currently being undertaken by a Consortium comprising the Medical Research Council, the University of South Africa and the Council for Scientific and Industrial Research. The Department of Health's Directorates of Epidemiology, Mental Health and Substance Abuse, and Health Information Systems and Research are also involved while the Centre for Disease Control and Prevention in Atlanta, Georgia, offers technical assistance under the Gore-Mbeki bi-national agreement.

The system has three parts: fatal injury surveillance, non-fatal injury surveillance, and the sentinel surveillance of substance abuse (both alcohol and illicit drugs) in trauma. These components are at different stages of development and are discussed below.

Fatal injury surveillance

In terms of the Inquests Act No 58 of 1959 (as amended) and the Births and Deaths Registration Act No 51 of 1992, all deaths due to non-natural and undetermined causes are subject to medico-legal investigation. Information generated by these medico-legal procedures serves as input data for the NMSS. The system collates 21 information items from different points in the medico-legal system into a single database using an internationally comparable coding system. Items include case and personnel identifiers, demographic details of the victim, the time, geographical location and scene of injury, the primary medical cause of death, the apparent manner of death (i.e. homicide, suicide, or accident), the presence of alcohol and other drugs, the victim-perpetrator relationship and the context of attack in the case of violence. Inclusion of data into a Geographic Information System (GIS) is also being undertaken.

Excepting three items where information is available only after court investigation, data collection, computer entry and rudimentary analysis are done by mortuary staff. While possibly compromising data quality in the initial phases, this temporary limitation is outweighed by the gains of having the surveillance information immediately available for administrative purposes at the point of entry, and by the sustainability attached to the use of mortuary staff rather than outside researchers as primary data gatherers. Specialist researchers are however required to retrieve information about the context of homicides and suicides from the courts and criminal record centres, as this becomes available only 12 or more months after the mortuary and court investigations are complete.

Pilot implementation and evaluation of the surveillance system began in June 1998 in fifteen mortuaries across South Africa and continues until December 2000, after which it is hoped that the system will be implemented on an on-going basis in all mortuaries across South Africa and the management of this system taken over by the Department of Health, since all the mortuaries currently belonging to the Department of Safety and Security are in the process of being transferred to Health.

The NMSS pilot implementation has provided valuable insights into the personnel, resource and organisational realities that underlie the injury surveillance crisis in South Africa. For example, at two Gauteng mortuaries processing 3 200 and 1 400 cases annually, there were no computers at all, and medico-legal reports were produced using a manual typewriter. At another mortuary performing 1 600 post-mortems a year there was only one low-capacity computer so filled with word processing data that there was insufficient disk space to install the NMSS data capture programme. The Department of Health has