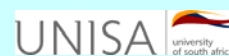




A profile of fatal injuries in South Africa
7th Annual Report of the
NATIONAL INJURY MORTALITY SURVEILLANCE
SYSTEM
2005



Section 1. National Fatal Injury Profile

Background

This short report, which covers the period 1 January to 31 December 2005, is the seventh annual report of the National Injury Mortality Surveillance System (NIMSS).

As a result of the continuing expansion of the system, we have taken steps to improve our data management and reporting mechanisms. This report has been generated by a software programme that interfaces with our database and produces a number of standard outputs. The Crime, Violence and Injury Lead Programme can provide more detailed analyses in the form of customised reports on request.

Acknowledgements

We wish to acknowledge the Department of Health and Department of Safety and Security for supporting this project. In particular, we would like to thank the forensic pathologists, data capture and police personnel at the various mortuaries who made these data available to us.

We also wish to acknowledge the MRC data capturers and Prof Mike Stewart and staff at the Forensic Chemistry laboratories.

Province	Number of mortuaries	Case total
Eastern Cape	5	4236
Gauteng	7	12285
KwaZulu Natal	3	6026
North West	2	891
Northern Cape	1	449
Western Cape	3	5709
Total		29596

* See Appendix 1 at the end of this section for a comprehensive list of participating mortuaries

This report is available online at: www.sahealthinfo.org.za/violence/nimss.htm

Purpose and Scope

The NIMSS produces and disseminates descriptive epidemiological information for deaths due to non-natural causes that, in terms of existing legislation, are subject to medico-legal investigation. The NIMSS provides information to:

- describe the incidence, causes and consequences of non-natural deaths;
- prioritise injury and violence prevention action directed at high risk groups and socio-economic risk factors;
- identify new injury trends and emerging problem areas;
- monitor seasonal and longitudinal changes in the profile of non-natural fatalities; and
- evaluate direct and indirect violence and injury.

Although the system captures data from rural mortuaries in the Northern Cape and the North-West Province, the bulk of the caseload occurs through investigations at urban mortuaries, hence the data set is currently more representative of the urban rather than the rural mortality injury profile. Results for four of South Africa's largest cities, Johannesburg, Durban, Cape Town and Tshwane/Pretoria are presented in sections 2-5.

Contact details:

Megan Prinsloo

Crime, Violence and Injury Lead Programme
Medical Research Council
Tel: 021 938 0513
Fax: 021 938 0381
megan.prinsloo@mrc.ac.za

Mrs C. Kotzenberg

Non-Communicable Diseases
Department of Health
Tel: 012 312 0246
Fax: 012 312 3132
rensba@health.gov.za

Prof Mohamed Seedat

Crime, Violence and Injury Lead Programme
UNISA Institute for Social and Health Sciences
Tel: 011 857 1142
Fax: 011 857 1770
seedama@unisa.ac.za

Reviewed by:

Prof G. Saayman & Prof S.A. Wadee

This report is available online at:

www.sahealthinfo.org.za/violence/nimss.htm

Editor:

Megan Prinsloo

Project team:

Hilton Donson
Natasha Hendricks
Annelise Krige
Lee Louw
Motlagomang Maruping
Richard Matzopoulos
Ian Neethling
Keith Ross
Anesh Sukhai
Lu-Anne Swart

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RESULTS

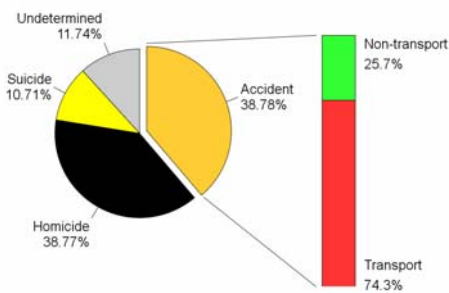
A total of 29596 cases were recorded at the 21 mortuaries that supplied data to the NIMSS in 2005, including 4800 (16.2%) cases that were due to natural causes and another 1255 (4.3%) cases that were either stored or viewed at the mortuaries.

It is estimated that there are approximately 60 000 non-natural deaths in South Africa annually that account for approximately 12% of all mortality. The analysis that follows is restricted to the 23541 non-natural deaths recorded by the NIMSS in 2005, representing approximately 39% of the non-natural deaths that occur in the country annually.

1. Overall manner of death

The leading causes of death was violence/homicide (38.77%) and accidental (or unintentional) injuries (38.78%), of which transport-related injuries accounted for the majority of deaths.

Figure 1. Overall manner of death (N = 23541)



Manner of death by age

The average age of the deceased was 33.2 (\pm 15.6 years). The leading manner(s) of death amongst the:

- 0-14 age group was transport (35%);
- 15-24 age group was violence (52.4%);
- 25-34 age group was violence (48.8%);
- 35-44 age group was violence (39.9%);
- 45-54 age group was transport (33.4%) followed by violence (32.6%);
- 55-64 age group was transport (35%); and
- 65+ age group was transport (29.7%), followed by undetermined (26.5%), followed by unintentional injury deaths (non-transport) (18.4%).

Figure 2.1. Violence/Homicide by age (n = 8223)

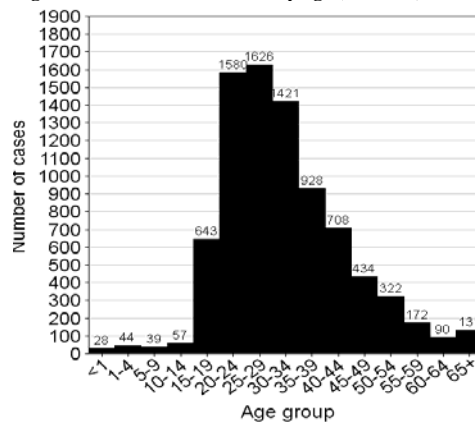


Figure 2.2. Suicide by age (n = 2239)

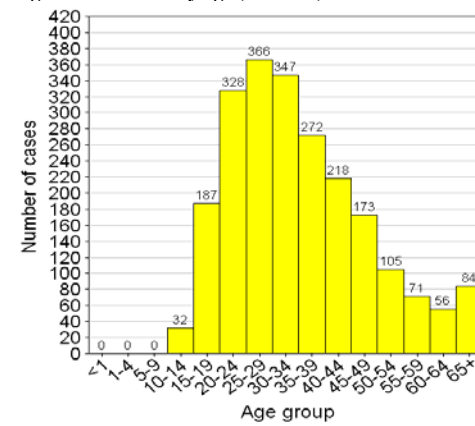


Figure 2.3. Transport deaths by age (n = 5675)

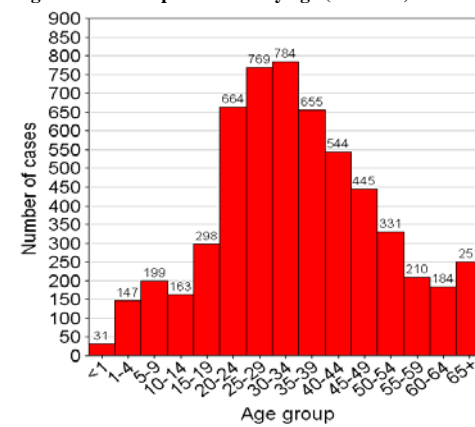


Figure 2.4. Non-transport deaths by age (n = 2074)

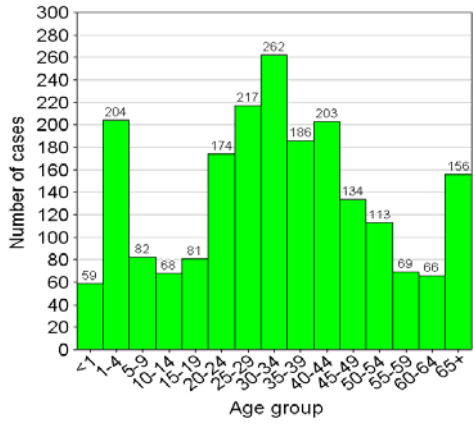
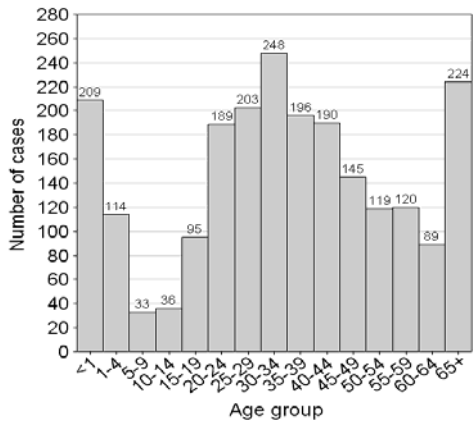


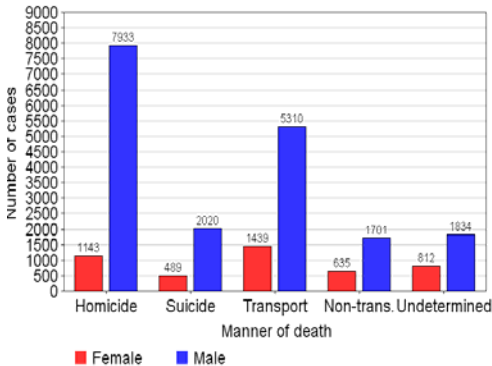
Figure 2.5. Undetermined deaths by age (n = 2210)



Manner of death by sex

Of the cases where sex was recorded, 18798 (80.6%) were male and 4518 (19.4%) were female. The leading cause of death amongst males was violence (42.2%). The leading cause of death amongst females was transport (31.9%).

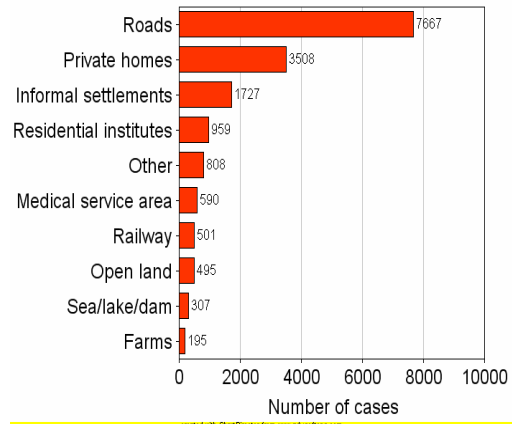
Figure 3. Manner of death by sex (n = 23316)



2. Scene of injury

The scene of injury was known in 17720 (75.3%) cases. The scene that accounted for the majority of deaths was roads (43.3%).

Figure 4. Top 10 scenes of injury (n = 16757)

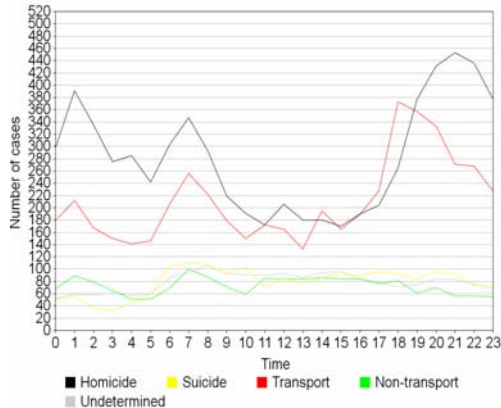


3. Time of death

The peak period(s) of death for:

- **violence** was 19h00 - 00h00 (30.3%), followed by 01h00 - 02h00 (5.7%), followed by 07h00 - 08h00 (5.1%);
- **suicide** was 06h00 - 09h00 (16.9%), followed by 10h00 - 11h00 (5.4%), followed by 17h00 - 18h00 (5%), followed by 20h00 - 21h00 (5%);
- **transport** related deaths was 18h00 - 23h00 (31.4%) followed by 07h00 - 08h00 (5%); and
- **other unintentional injury deaths (non-transport)** was 07h00 - 09h00 (10.7%) followed by 01h00 - 02h00 (5.1%).

Figure 5. Time of death (n = 17453)



4. Day of death

The peak days of death for:

- **violence** were Saturday (26.9%), followed by Sunday (21.7%), followed by Friday (12.7%);
- **suicide** were Sunday (16.2%), followed by Monday (16%), followed by Saturday (15.6%);
- **transport** related deaths were Saturday (22.2%), followed by Sunday (17.1%), followed by Friday (15.2%); and
- **other unintentional injury deaths (non-transport)** were Sunday (18.4%), followed by Saturday (16.3%), followed by Monday (15.5%).

Figure 6. Day of death (n = 23361)

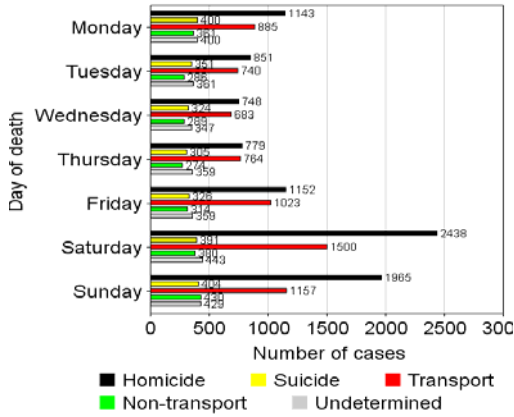


Figure 8. Day of suicide deaths by sex (n = 2489)

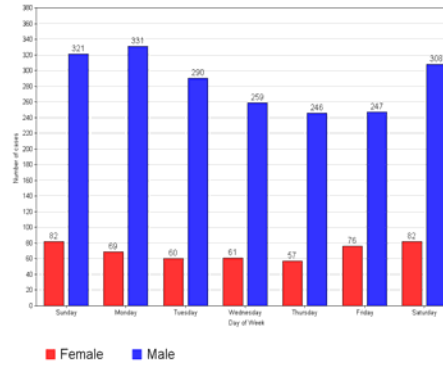


Figure 9. Day of transport deaths by sex (n = 6720)

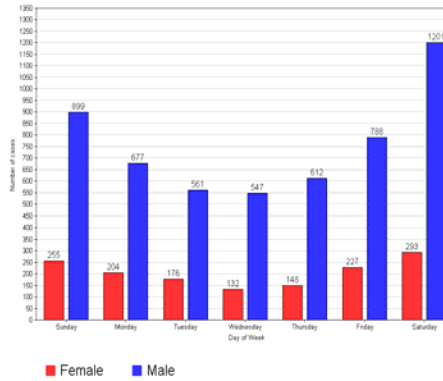
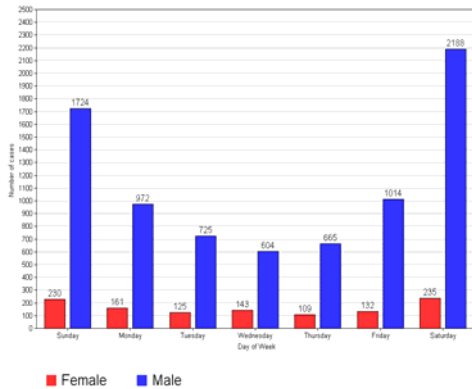


Figure 7. Day of violence deaths by sex (n = 9027)

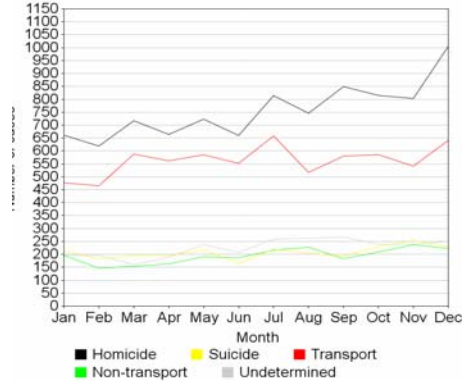


5. Seasonal variation

The peak month for:

- **violence** was December (11.1%), followed by September (9.4%), followed by October (9.0%);
- **suicide** was November (10.1%), followed by October (9.2%), followed by December (9.2%);
- **transport** related deaths was July (9.7%), followed by December (9.5%), followed by March (8.7%); and
- **other unintentional injury deaths (non-transport)** was November (10.2%), followed by August (9.8%), followed by December (9.6%).

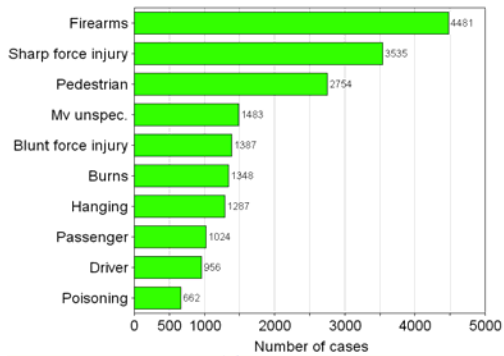
Figure 10. Seasonal variation (n = 23365)



6. External cause of death

The cause of death was unknown in 5.4% of the cases. The leading external cause of death was firearms (20.1%), followed by sharp force injury (15.9%), followed by pedestrian injuries (12.4%).

Figure 11. Top 10 external causes of death (n = 18917)



External cause of violence by age

Age was unknown in 903 of the 9126 cases. Of the remaining cases, the average age of the deceased was 31 (± 11.9 yrs). The leading external cause of death for violence in the:

- 0-14 age group was firearms (32.1%);
- 15-24 age group was sharp force injury (44.8%) followed by firearms (40.2%);
- 25-34 age group was firearms (45.2%) followed by sharp force injury (38.9%);
- 35-44 age group was firearms (42.1%) followed by sharp force injury (38.6%);
- 45-54 age group was firearms (42.5%) followed by sharp force injury (34.3%);
- 55-64 age group was firearms (45%); and
- 65+ age group was blunt force injury (29.8%), followed by firearms (26.7%), followed by sharp force injury (21.4%).

Figure 12.1. Firearm violence by age (n = 3487)

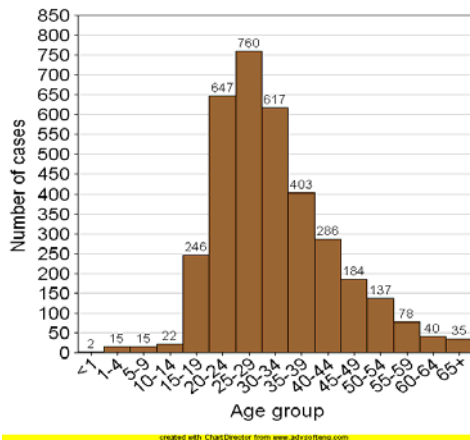


Figure 12.2. Sharp force violence by age (n = 3204)

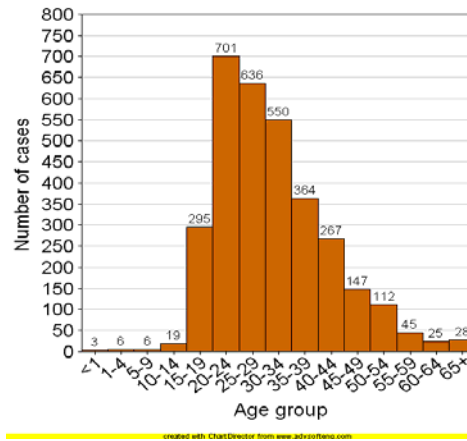


Figure 12.3. Blunt force injury homicide by victim age (n = 1048)

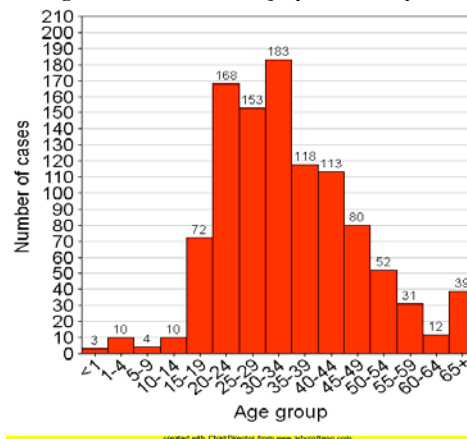
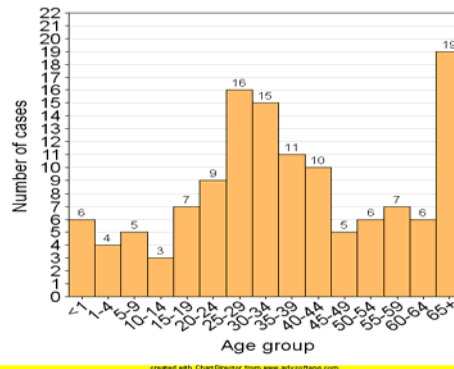


Figure 12.4. Strangulation or suffocation by age (n = 129)



External cause of suicide by age

Age was unknown in 283 of the 2522 cases. Of the remaining cases, the average age of the deceased was 34 (± 13.6 yrs). The leading external cause of death for suicide in the:

- 0-14 age group was hanging (53.1%);
- 15-24 age group was hanging (59%);
- 25-34 age group was hanging (52%);
- 35-44 age group was hanging (46.1%);
- 45-54 age group was hanging (38.5%);
- 55-64 age group was firearms (41.7%) followed by hanging (31.5%); and
- 65+ age group was firearms (39.3%).

Figure 13.1. Hanging suicide by age (n = 1088)

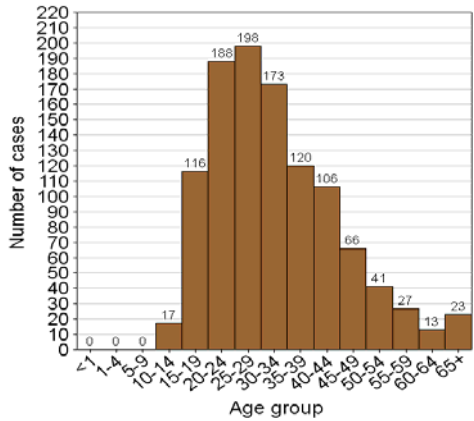


Figure 13.3. Poisoning suicide by age (n = 351)

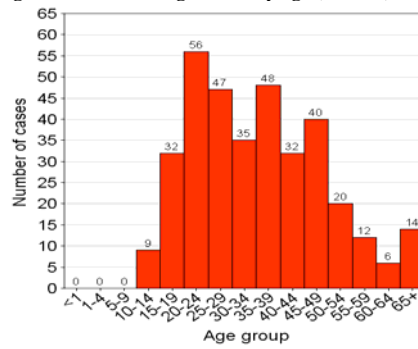


Figure 13.4. Gassing suicide by age (n = 112)

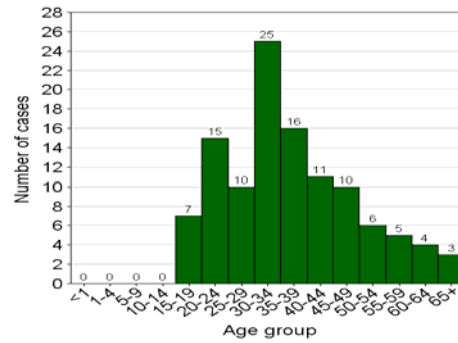


Figure 13.2. Firearm suicide by age (n = 489)

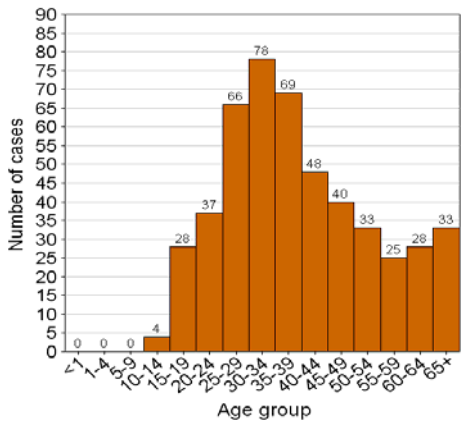
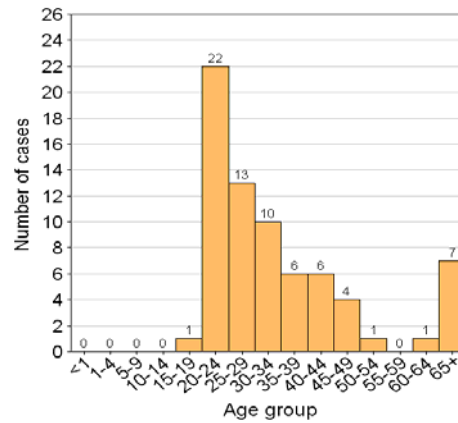


Figure 13.5. Jump from height suicide by age (n = 71)



External cause of transport deaths by age

Age was unknown in 1108 of the 6783 cases. Of the remaining cases, the average age of the deceased was 34 (± 16.1 yrs). The leading external cause of death for transport in the:

- 0-14 age group was pedestrian injuries (61.1%);
- 15-24 age group was pedestrian injuries (32.1%);
- 25-34 age group was pedestrian injuries (35.9%);
- 35-44 age group was pedestrian injuries (42%);
- 45-54 age group was pedestrian injuries (38.5%);
- 55-64 age group was pedestrian injuries (42.4%); and
- 65+ age group was pedestrian injuries (31.9%).

Figure 14.1. Pedestrian deaths by age (n = 2246)

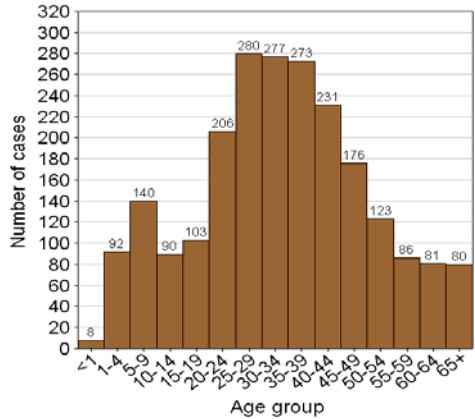


Figure 14.3. Passenger deaths by age (n = 851)

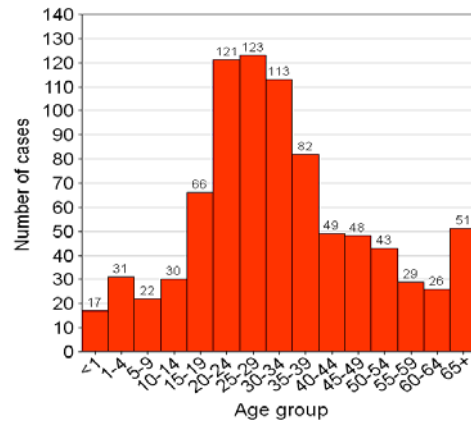


Figure 14.4. Driver deaths by age (n = 800)

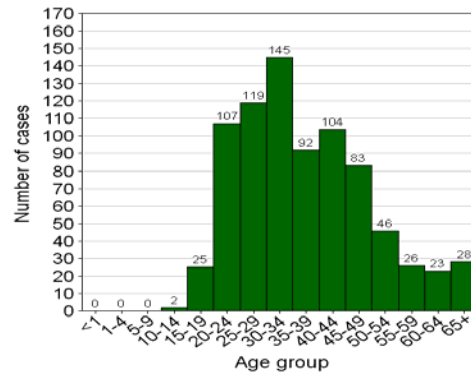


Figure 14.2. Unspecified motor vehicle deaths by age (n = 1294)

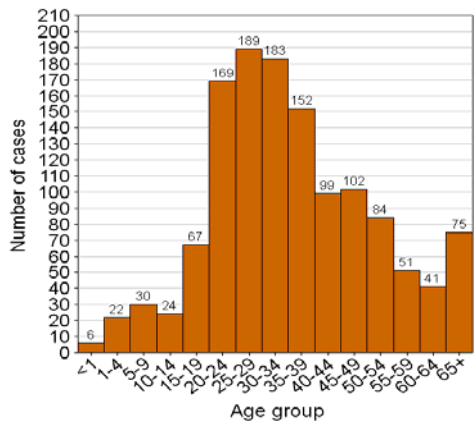
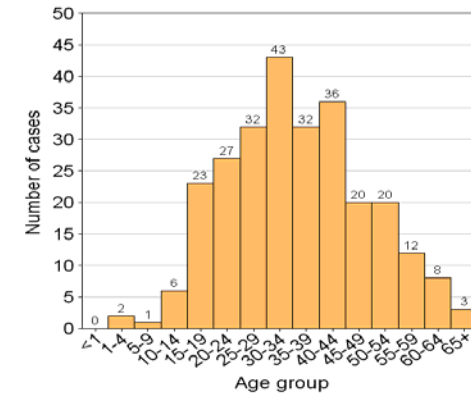


Figure 14.5. Railway deaths by age (n = 265)



External cause of unintentional injury deaths (non-transport) by age

Age was unknown in 273 of the 2347 cases. Of the remaining cases, the average age of the deceased was 32 (± 20.3 yrs). The leading cause for unintentional injury deaths in the:

- 0-14 age group was drowning (37%) followed by burns (34.1%);
- 15-24 age group was burns (39.2%);
- 25-34 age group was burns (50.7%);
- 35-44 age group was burns (46.5%);
- 45-54 age group was burns (44.9%);
- 55-64 age group was burns (34.1%); and
- 65+ age group was burns (36.5%).

Figure 15.1. Burn deaths by age (n = 879)

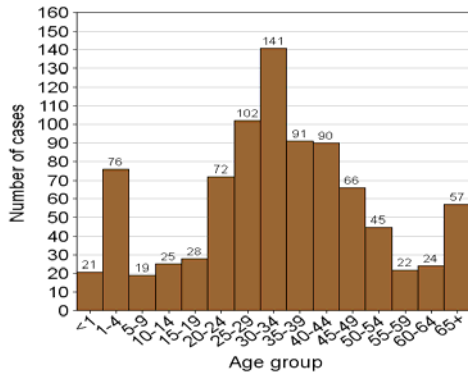


Figure 15.2. Drowning deaths by age (n = 357)

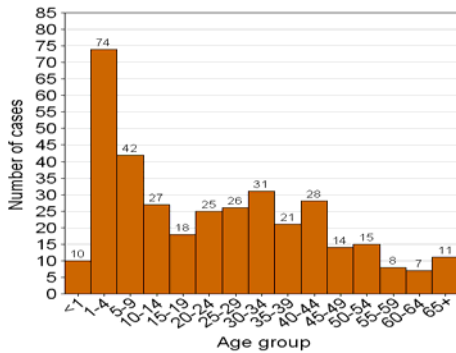


Figure 15.3. Fall from a height deaths by age (n = 196)

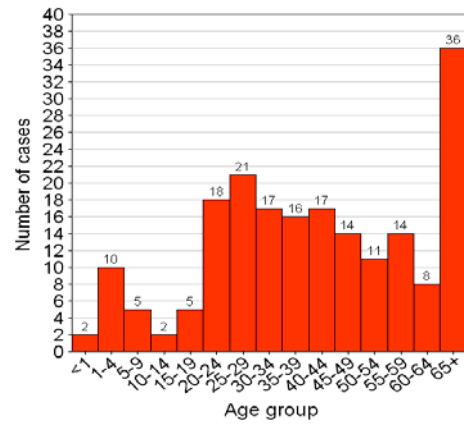
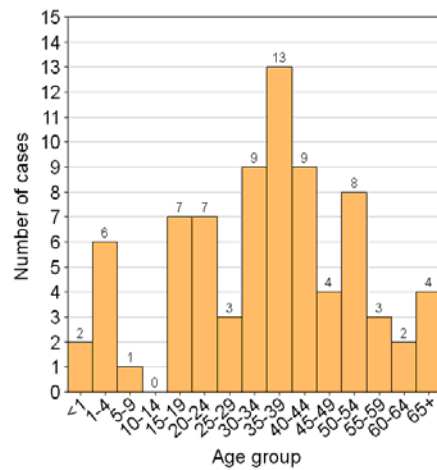


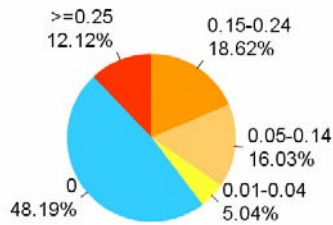
Figure 15.4. Blunt force injury deaths by age (n = 78)



7. Blood alcohol levels

Blood alcohol concentration (BAC) levels were obtained in 8988 of the 23541 cases. The average BAC for those who tested positive was 0.17 ± 0.10 g/100ml.

Figure 16. Blood Alcohol Levels (n = 8988)



Blood alcohol level by apparent manner

Of the 23541 who were fatally injured, blood alcohol concentration were available in 8988 (38.2%).

Table II: Blood alcohol levels per apparent manner

Apparent manner	BAC's done n(%)	BAC positive n(%)	Mean BAC	Std. Dev.
Violence (9126)	4131 (45.27)	2383 (57.69)	0.16	0.09
Suicide (2522)	1034 (41)	385 (37.23)	0.14	0.1
Transport (6783)	2635 (38.85)	1365 (51.8)	0.18	0.11
Other unintentional (2347)	653 (27.82)	301 (46.09)	0.19	0.11
Undetermined (2763)	535 (19.36)	223 (41.68)	0.18	0.12
Total	8988	4657	0.17	0.11

Blood alcohol level by transport user

Of the 6783 who were fatally injured in transport collisions, blood alcohol concentration were available in 2635 (38.8%) of the cases.

Table III: Blood alcohol levels per transport user

Transport user	BAC's done n(%)	BAC positive n(%)	Mean BAC	Std. Dev.
Driver (951)	482 (50.68)	258 (53.53)	0.16	0.09
Passenger (1020)	365 (35.78)	145 (39.73)	0.15	0.1
Pedestrian (2747)	1195 (43.5)	702 (58.74)	0.2	0.11
Railway case (337)	139 (41.25)	47 (33.81)	0.2	0.11
Cyclist (236)	109 (46.19)	49 (44.95)	0.16	0.1
Unspecified (1480)	343 (23.18)	164 (47.81)	0.16	0.09
Total	2633	1365	0.21	0.12

Appendix 1: Participating mortuaries			
Province	City	Mortuary	Total
Eastern Cape	East London	Woodbrook	1335
Eastern Cape	East London	King Williams Town	333
Eastern Cape	Port Elizabeth	Gelvandale	769
Eastern Cape	Port Elizabeth	Mount Road	824
Eastern Cape	Port Elizabeth	New Brighton	975
Gauteng	Bronkhorstspuit	Bronkhorstspuit	259
Gauteng	Johannesburg	Diepkloof	1721
Gauteng	Johannesburg	Germiston	3260
Gauteng	Johannesburg	Johannesburg	2817
Gauteng	Johannesburg	Roodepoort	1310
Gauteng	Pretoria	Medunsa	672
Gauteng	Pretoria	Pretoria	2246
KwaZulu Natal	Durban	Gale Street	2762
KwaZulu Natal	Durban	Phoenix	2151
KwaZulu Natal	Durban	Pinetown	1113
North West	Klerksdorp	Klerksdorp	481
North West	Potchefstroom	Potchefstroom	410
Northern Cape	Kimberley	Kimberley	449
Western Cape	Cape Town	Salt River	2511
Western Cape	Cape Town	Tygerberg	2701
Western Cape	Stellenbosch	Stellenbosch	497
Total			29596