



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



Section 2. JOHANNESBURG Metropolitan Area

Background

This short report, which covers the period 1 January to 31 December 2005, describes the fatal injury profile in the Johannesburg Metropolitan area, and includes data from four mortuaries: Johannesburg, Diepkloof, Germiston and Roodepoort.

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 analysis on request.

Year	2001		2002		2003		2004		2005	
Population [#]	3 225 812		3 271 105		3 303 520		3 336 255		3 383 099	
	Total deaths [§]	Rate/ 100,000 pop.	Total deaths	Rate/ 100,000 pop.	Total deaths	Rate/ 100,000 pop.	Total deaths	Rate/ 100,000 pop.	Total deaths	Rate/ 100,000 pop.
Violence	2274	59.9	2284	58.3	1936	49.9	1547	40.1	1441	36.4
- firearm violence	1618	41.5	1576	39.7	1326	33.9	976	24.2	827	20.1
Suicide	511	14.7	506	14.2	508	13.9	499	14.0	483	13.0
- firearm suicide	172	5.1	158	4.7	150	4.4	134	4.2	110	3.3
- hanging	199	5.6	205	5.5	196	5.1	216	5.6	235	6.0
Transport	1277	43.6	1152	39.1	1125	36.5	1153	36.3	1292	37.9
- road traffic	1210	37.4	1109	33.5	1080	32.2	1098	33.4	1234	36.2
<i>pedestrian</i>	516	16.8	528	16.4	510	15.5	556	17.5	523	15.9
<i>driver</i>	144	4.1	169	4.6	130	3.8	166	4.8	164	4.3
- railway deaths	66	1.9	43	1.2	44	1.3	55	1.8	57	1.6
Unintentional	496	15.8	414	13.0	447	14.0	388	12.5	469	14.4
- burns	158	4.8	158	5.0	162	5.0	136	4.2	159	4.9
- drowning	68	2.3	53	1.6	57	1.9	50	1.6	81	2.5
ALL INJURIES*	4917	140.5	4688	130.6	4501	125.9	4003	114.2	4243	118.9

* WHO World Standard Population Distribution

[#] City populations adjusted from 2001 Census using Actuarial Society of South Africa's provincial growth estimates (www.assa.org)

[§] Totals adjusted for missing ages.

[&] Includes apparent manner of death undetermined.

Acknowledgements

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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 end goal is to establish a permanent system that will record all such deaths that occur annually in South Africa. The NIMSS will at a local level, regional and national level, provide 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.

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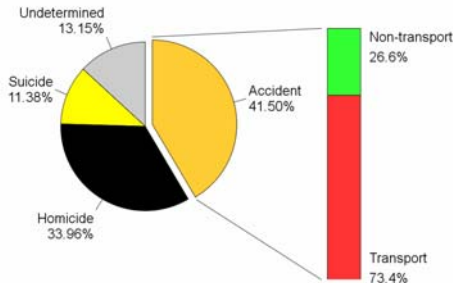
RESULTS

A total of 4928 cases were recorded in Johannesburg for January 2005 to December 2005, including 682 (13.8%) cases that were due to natural causes and another three cases that were stored at the mortuary. The rest of the analysis is restricted to the 4243 non-natural deaths that occurred in the catchment area.

1. Overall manner of death

The leading manner of death was violence/homicide (33.95%).

Figure 1. Overall manner of death (N = 4243)



Manner of death by age

The average age of the deceased was 33.6 (\pm 16.2 years). The leading manner(s) of death amongst the:

- 0-14 age group was non-transport (33.8%);
- 15-24 age group was violence (38.6%);
- 25-34 age group was violence (45%);
- 35-44 age group was violence (36%);
- 45-54 age group was transport (38%) followed by violence (31.1%);
- 55-64 age group was transport (37.2%); and
- 65+ age group was transport (34.4%).

Figure 2.1. Violence/Homicide by age (n = 1207)

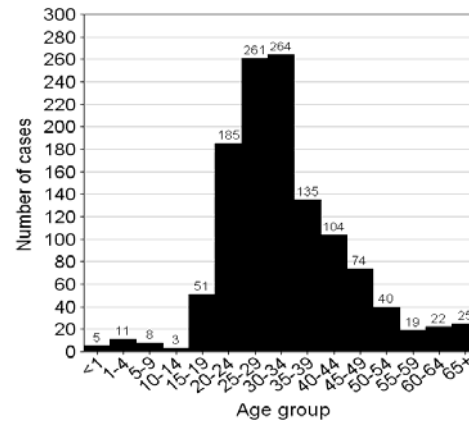


Figure 2.2. Suicide by age (n = 391)

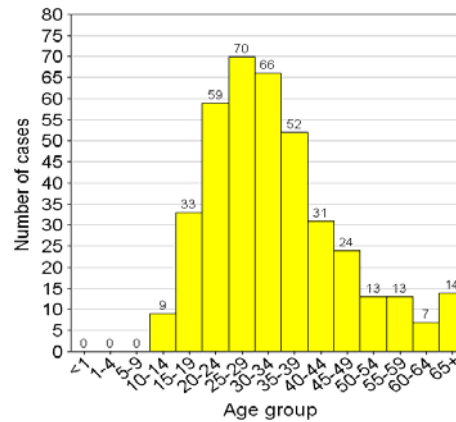


Figure 2.3. Transport deaths by age (n = 1001)

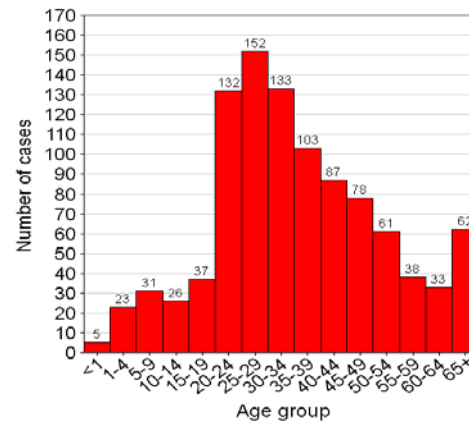


Figure 2.4. Other unintentional injury deaths (non-transport) by age (n = 408)

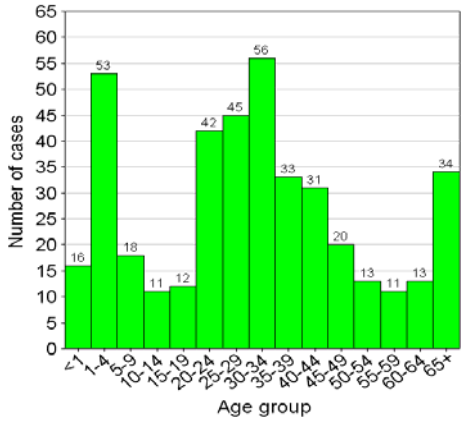
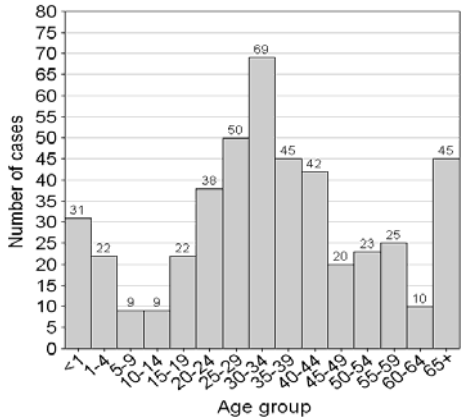


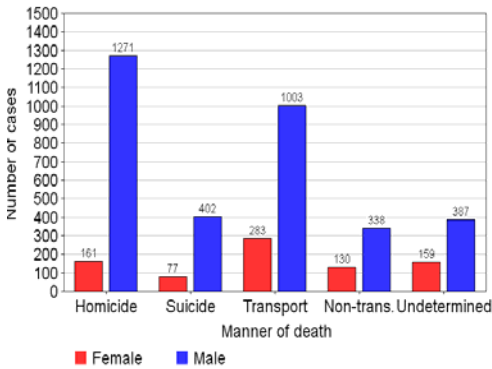
Figure 2.5. Undetermined deaths by age (n = 460)



Manner of death by sex

Of the cases recorded in Johannesburg were 3401 (80.8%) male and 810 (19.2%) were female. The leading cause of death amongst males was homicide (37.4%). The leading cause of death amongst females was transport (34.9%).

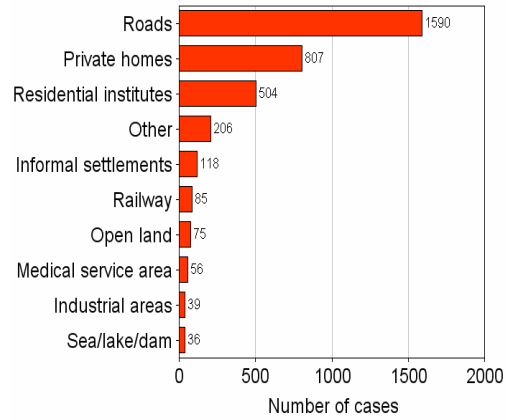
Figure 3. Manner of death by sex (n = 4211)



2. Scene of injury

The scene of injury was known in 3653 (86.1%) cases. The scene that accounted for the majority of deaths was roads (43.5%).

Figure 4. Top 10 scenes of injury (n = 3516)

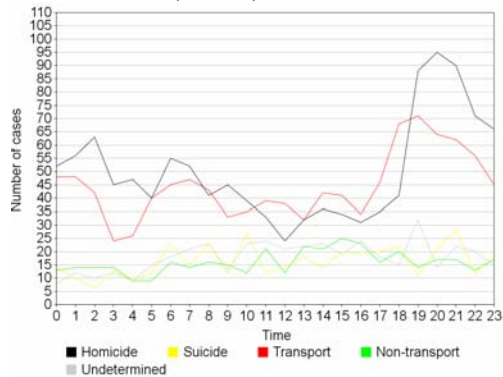


3. Time of death

The peak period(s) of death for:

- **violence** was 19h00 - 00h00 (33.9%) followed by 02h00 - 03h00 (5.2%);
- **suicide** was 20h00 - 22h00 (12.4%), followed by 17h00 - 19h00 (10.7%), followed by 10h00 - 11h00 (6.9%);
- **transport** related deaths was 18h00 - 23h00 (30%); and
- **other unintentional injury deaths (non-transport)** was 13h00 - 17h00 (23.7%), followed by 11h00 - 12h00 (5.5%), followed by 18h00 - 19h00 (5.2%).

Figure 5. Time of death (n = 3491)



4. Day of death

The peak days of death for:

- **violence** were Saturday (24%), followed by Sunday (17.4%), followed by Friday (13.6%);
- **suicide** were Thursday (16.3%), followed by Saturday (15.2%);
- **transport** related deaths were Saturday (21.3%), followed by Sunday (18.9%), followed by Friday (15.6%); and
- **other unintentional injury deaths (non-transport)** were Sunday (18.8%), followed by Saturday (14.9%), followed by Tuesday (13.6%).

Figure 6. Day of death (n = 4230)

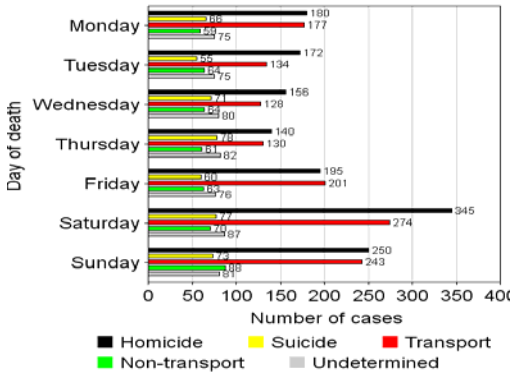


Figure 7. Day of violence-related deaths by sex (n = 1430)

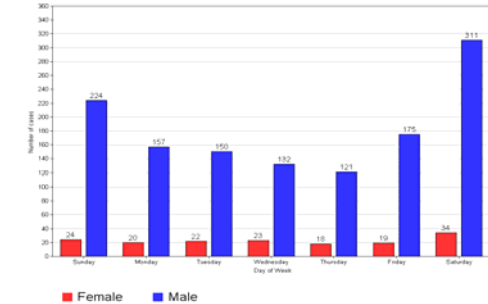


Figure 8. Day of suicide deaths by sex (n = 477)

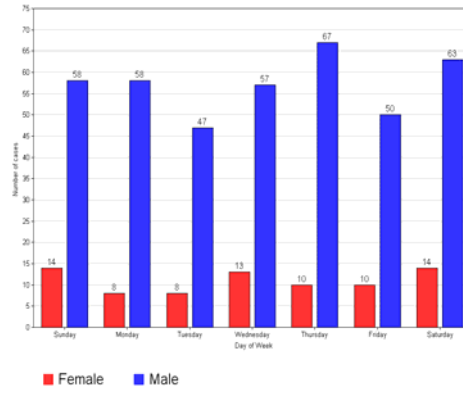
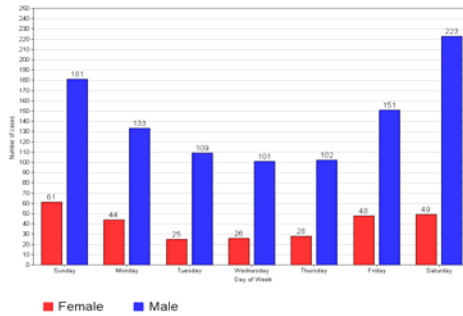


Figure 9. Day of transport deaths by sex (n = 1281)

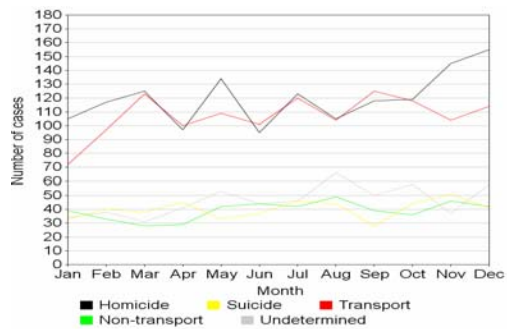


5. Seasonal variation

The peak month for:

- **violence** was December (10.8%), followed by November (10.1%), followed by May (9.3%);
- **suicide** was November (10.6%), followed by July (9.6%), followed by April (9.4%);
- **transport** related deaths was September (9.7%), followed by March (9.6%), followed by July (9.3%); and
- **other unintentional injury deaths (non-transport)** was August (10.4%), followed by November (9.8%), followed by June (9.4%).

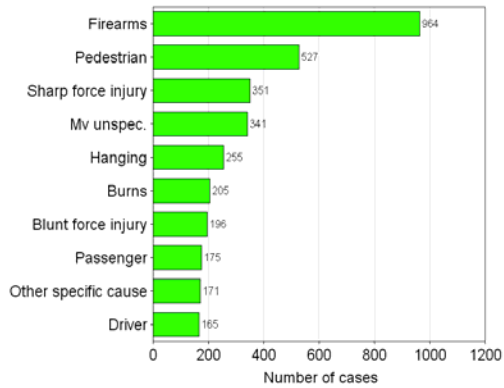
Figure 10. Seasonal variation (n = 4230)



6. External cause of death

The cause of death was unknown in 6.2% of the cases. The leading external cause of death was firearms (24.2%), followed by motor vehicle pedestrian (13.2%), followed by sharp force injury (8.8%).

Figure 11. Top 10 external causes of death (n = 3350)



External cause of violence by age

Age was unknown in 234 of the 1441 cases. Of the remaining cases, the average age of the deceased was 32 (± 12.2 yrs). The leading external cause of death for violence in the:

- 0-14 age group was firearms (33.3%);
- 15-24 age group was firearms (63.6%);
- 25-34 age group was firearms (62.3%);
- 35-44 age group was firearms (59%);
- 45-54 age group was firearms (54.4%);
- 55-64 age group was firearms (53.7%); and
- 65+ age group was blunt force (24%) and strangulation (24%).

Figure 12.1. Firearm violence by age (n = 716)

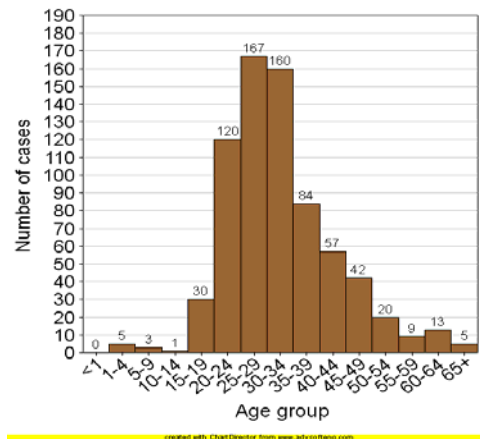


Figure 12.2. Sharp force violence by age (n = 271)

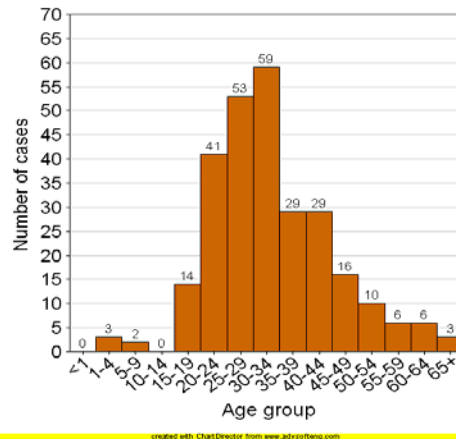


Figure 12.3. Blunt force violence by age (n = 129)

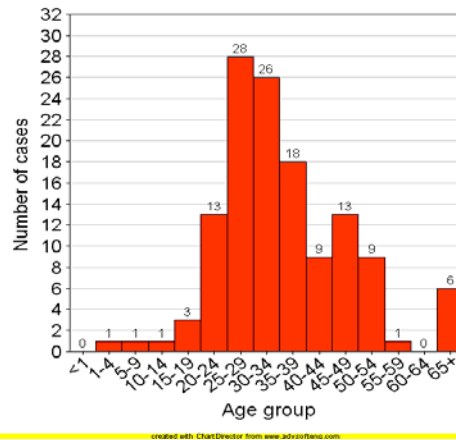
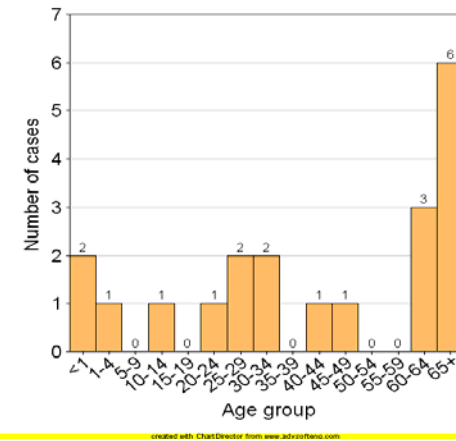


Figure 12.4. Strangulation by age (n = 20)



External cause of suicide by age

Age was unknown in 92 of the 483 cases.

Of the remaining cases, the average age of the deceased was 33 (± 13.4 yrs).

The leading external cause of death for suicide in the:

- 0-14 age group was hanging (44.4%);
- 15-24 age group was hanging (59.8%);
- 25-34 age group was hanging (44.9%);
- 35-44 age group was hanging (49.4%);
- 45-54 age group was hanging (37.8%);
- 55-64 age group was firearms (50%) followed by hanging (35%); and
- 65+ age group was firearms (64.3%).

Figure 13.1. Hanging suicide by age (n = 183)

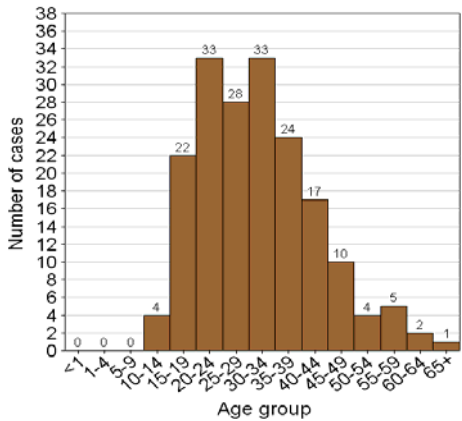


Figure 13.3. Poisoning suicide by age (n = 38)

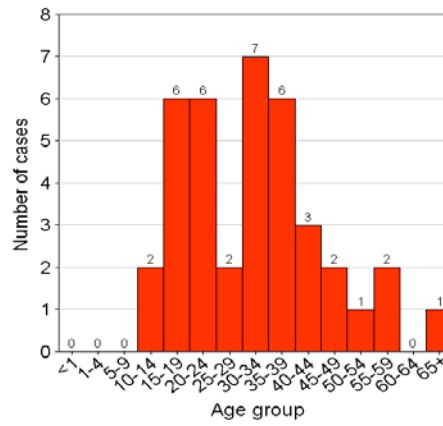


Figure 13.4. Jump from height suicide by age (n = 35)

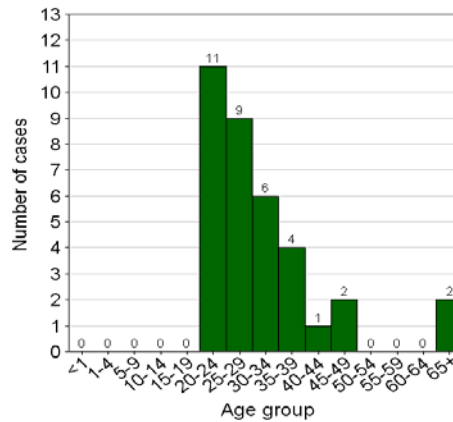


Figure 13.2. Firearm suicide by age (n = 95)

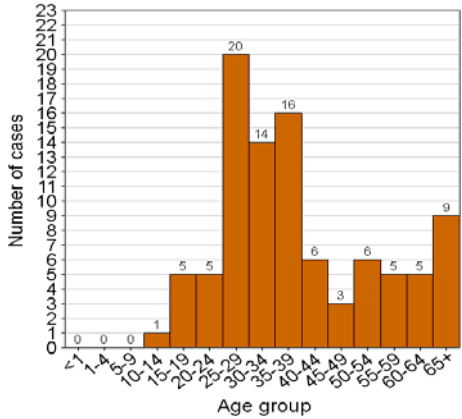
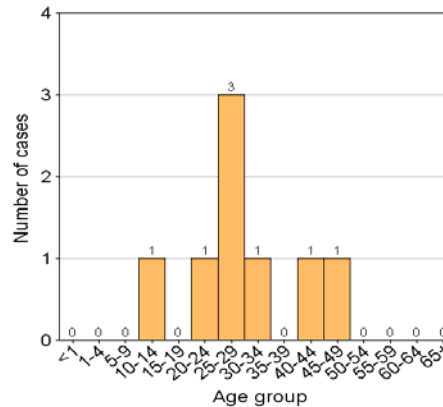


Figure 13.5. Burn suicide by age (n = 8)



External cause of transport-related deaths by age

Age was unknown in 291 of the 1292 cases. Of the remaining cases, the average age of the deceased was 35 (± 16.5 yrs). The leading external cause of death for transport in the:

- **0-14** age group was pedestrian injuries (64.7%);
- **15-24** age group was motor vehicle unspecified (29.6%), followed by pedestrian injuries (29%), followed by motor vehicle driver (17.8%);
- **25-34** age group was pedestrian injuries (35.4%);
- **35-44** age group was motor vehicle unspecified (33.2%) followed by pedestrian injuries (32.6%);
- **45-54** age group was pedestrian injuries (34.5%) followed by motor vehicle unspecified (33.1%);
- **55-64** age group was pedestrian injuries (47.9%); and
- **65+** age group was motor vehicle unspecified (38.7%) followed by pedestrian injuries (37.1%).

Figure 14.1. Pedestrian deaths by age (n = 372)

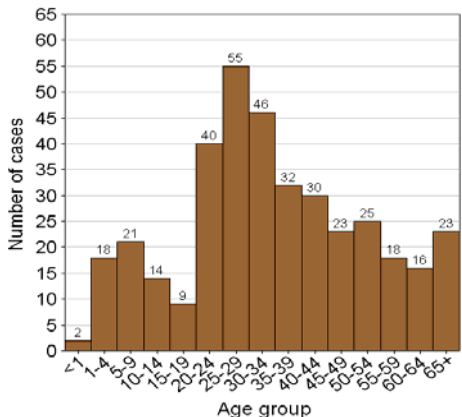


Figure 14.2. Unspecified motor vehicle deaths by age (n = 292)

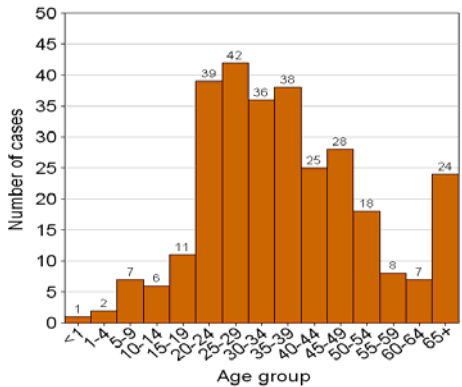


Figure 14.3. Driver deaths by age (n = 139)

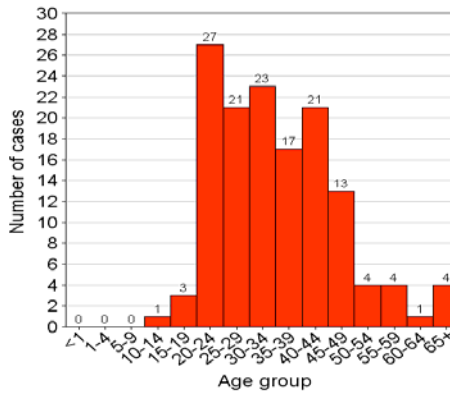


Figure 14.4. Passenger deaths by age (n = 131)

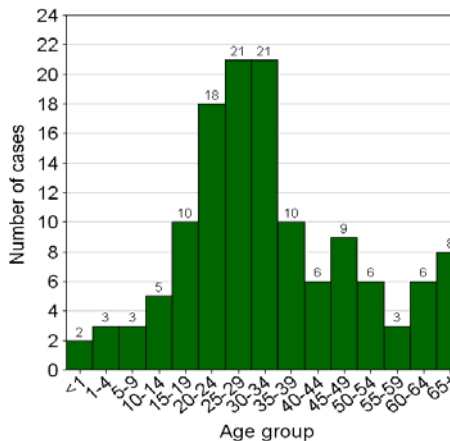
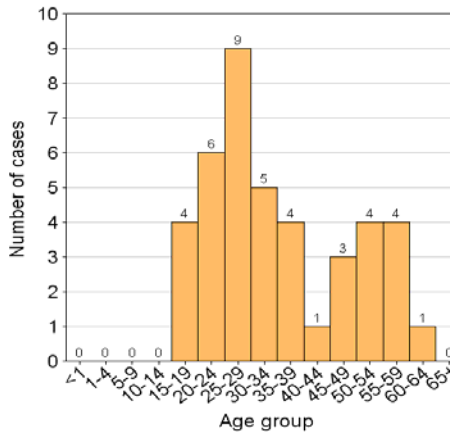


Figure 14.5. Railway deaths by age (n = 41)



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

Age was unknown in 61 of the 469 cases. Of the remaining cases, the average age of the deceased was 30 (± 21.6 yrs). The leading cause for non-transported related deaths in the:

- **0-14** age group was drowning (38.8%) followed by burns (30.6%);
- **15-24** age group was fall from height (29.6%), followed by burns (22.2%);
- **25-34** age group was burns (41.6%);
- **35-44** age group was burns (46.9%);
- **45-54** age group was burns (36.4%);
- **55-64** age group was burns (37.5%) followed by fall from height (12.5%); and
- **65+** age group was burns (41.2).

Figure 15.1. Burn deaths by age (n = 149)

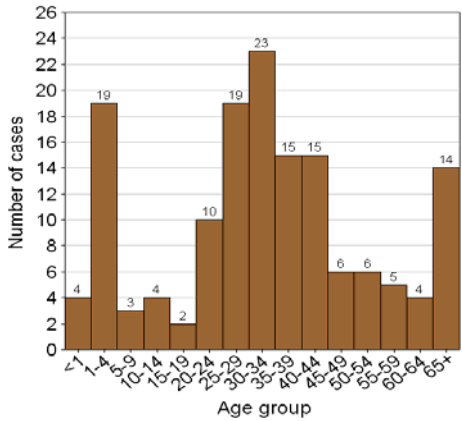


Figure 15.2. Drowning deaths by age (n = 66)

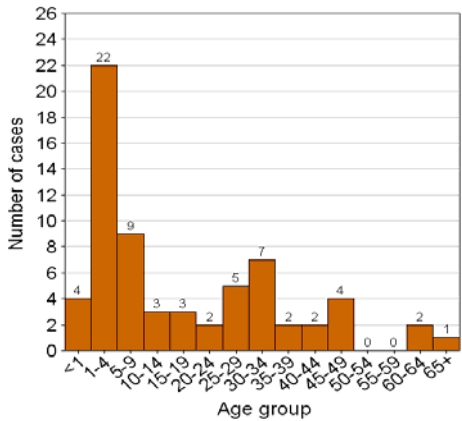


Figure 15.3. Fall from a height deaths by age (n =60)

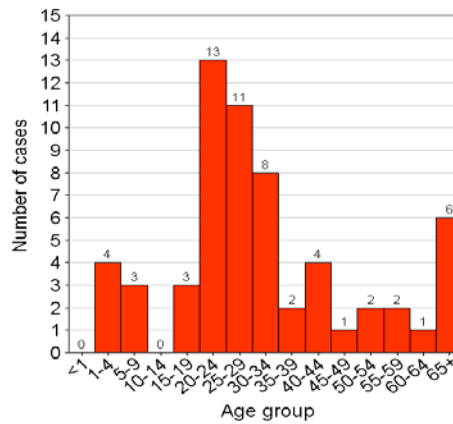
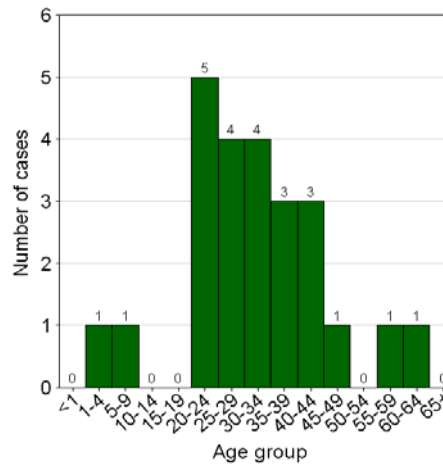


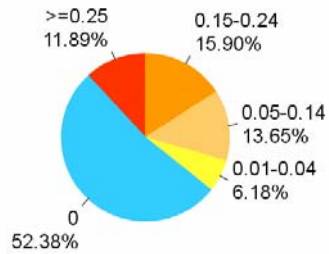
Figure 15.4. Electrocutation deaths by age (n = 24)



7. Blood alcohol levels

Blood alcohol concentration (BAC) levels were obtained in 1472 of the 4243 cases. The average BAC for those who tested positive was 0.17 ± 0.11 g/100ml.

Figure 16. Blood Alcohol Levels (n = 1472)



Blood alcohol level by apparent manner of death

Of the 4243 who were fatally injured, blood alcohol concentration were available in 1472 (34.7%).

Table II: Blood alcohol levels per apparent manner

Apparent manner	BAC's done n(%)	BAC positive n(%)	Mean BAC	Std. Dev.
Violence (1441)	583 (40.46)	295 (50.6)	0.15	0.09
Suicide (483)	202 (41.82)	78 (38.61)	0.17	0.12
Transport (1292)	488 (37.77)	240 (49.18)	0.17	0.11
Other unintentional (469)	102 (21.75)	40 (39.22)	0.19	0.09
Undetermined (558)	97 (17.38)	48 (49.48)	0.19	0.13
Total	1472	701	0.17	0.11

Blood alcohol level by transport user

Of the 1292 who were fatally injured in transport collisions, blood alcohol concentration were available in 488 (37.8%) 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 (164)	89 (54.27)	55 (61.8)	0.17	0.12
Passenger (173)	80 (46.24)	39 (48.75)	0.15	0.08
Pedestrian (523)	206 (39.39)	103 (50)	0.2	0.12
Railway case (57)	16 (28.07)	4 (25)	0.17	0.09
Cyclist (35)	18 (51.43)	4 (22.22)	0.25	0.2
Unspecified (339)	79 (23.3)	35 (44.3)	0.13	0.09
Total	488	240	0.21	0.14