



A profile of fatal injuries in South Africa
6th Annual Report of the
NATIONAL INJURY MORTALITY SURVEILLANCE SYSTEM
2004



Section 2. Johannesburg Fatal Injury Profile

Background

This short report, which covers the period 1 January to 31 December 2004, 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.

Table I. Age standardised* injury mortality rates for Johannesburg, 2001- 2004								
Year	2001		2002		2003		2004	
Population [#]	2 893 247		2 939 810		2 981 898		3 024 589	
	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
- firearm violence	1618	41.5	1576	39.7	1326	33.9	976	24.2
Suicide	511	14.7	506	14.2	508	13.9	499	14.0
- firearm suicide	172	5.1	158	4.7	150	4.4	134	4.2
- hanging	199	5.6	205	5.5	196	5.1	216	5.6
Transport	1277	43.6	1152	39.1	1125	36.5	1153	36.3
- road traffic	1210	37.4	1109	33.5	1080	32.2	1098	33.4
<i>pedestrian</i>	516	16.8	528	16.4	510	15.5	556	17.5
<i>Driver</i>	144	4.1	169	4.6	130	3.8	166	4.8
- railway deaths	66	1.9	43	1.2	44	1.3	55	1.8
Unintentional	496	15.8	414	13.0	447	14.0	388	12.5
- burns	158	4.8	158	5.0	162	5.0	136	4.2
- drowning	68	2.3	53	1.6	57	1.9	50	1.6
ALL INJURIES^{&}	4917	140.5	4688	130.6	4501	125.9	4003	114.2

* 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

Special thanks goes to Prof. H. Scholtz and all pathologists, Ms E. Msoni, Mr S. Ndawonde and Ms L. Uys, as well as Ms I. Fenyvesi, Mr. L. Govender and Ms J. Bhana of the Forensic Chemistry Laboratory, Johannesburg for their valuable contribution towards this report.

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.

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

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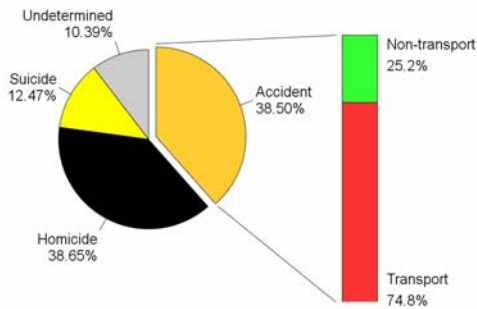
RESULTS

A total of 4765 cases were recorded in Johannesburg from January to December 2004, including 762 (16.0%) cases that were due to natural causes. The rest of the analysis is restricted to the 4003 non-natural deaths in the city.

1. Overall manner of death

The leading cause of death was violence / violence (39%).

Figure 1. Overall manner of death (N = 4003)



Manner of death by age

The average age of the deceased was 34.3 (\pm 16.2 years).

The leading manner(s) of death amongst the:

- 0-14 age group was transport (38.5%) followed by other unintentional / non-transport injuries (30.3%);
- 15-24 age group was violence (48.6%);
- 25-34 age group was violence (47.2%);
- 35-44 age group was violence (42.8%);
- 45-54 age group was violence (31.1%);
- 55-64 age group was transport (35.9%); and
- 65+ age group was transport (36.6%).

Figure 2.1. Violence by age (n = 1251)

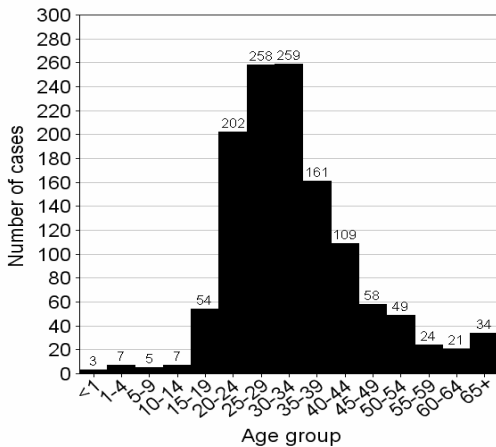


Figure 2.2. Suicide by age (n = 437)

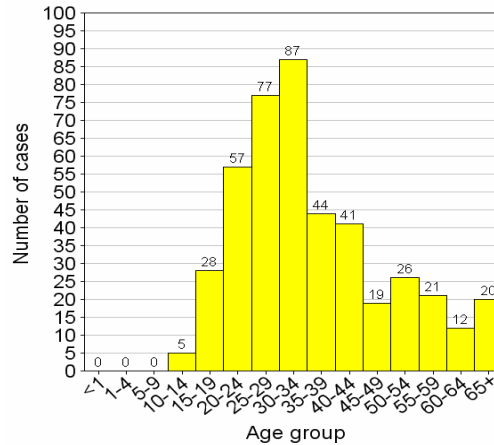


Figure 2.3. Transport deaths by age (n = 834)

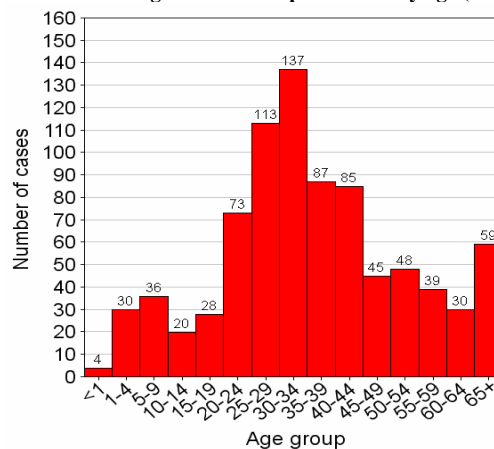


Figure 2.4. Other unintentional injury deaths (non-transport) by age (n = 330)

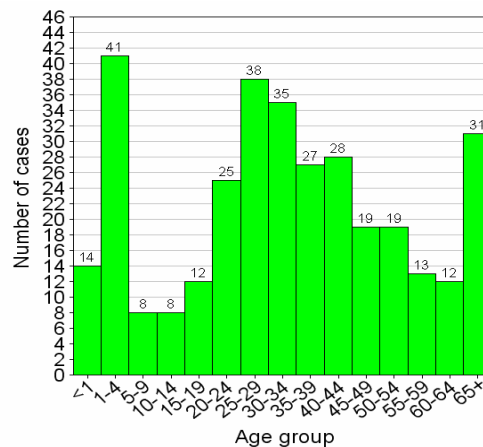
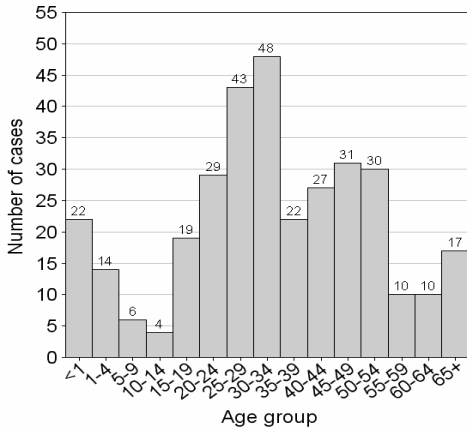


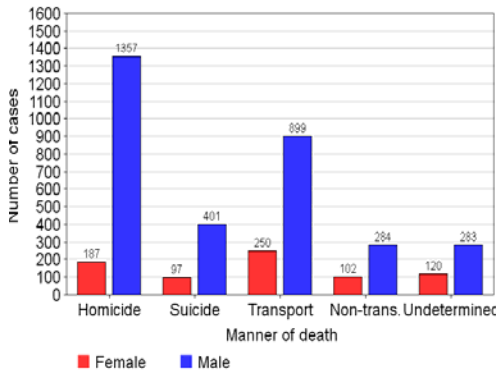
Figure 2.5. Undetermined deaths by age (n = 332)



Manner of death by sex

Of the cases recorded in Johannesburg, 3224 (81%) were male and 756 (19%) were female. The leading cause of death amongst males was violence (42.1%). The leading cause of death amongst females was transport (33.1%).

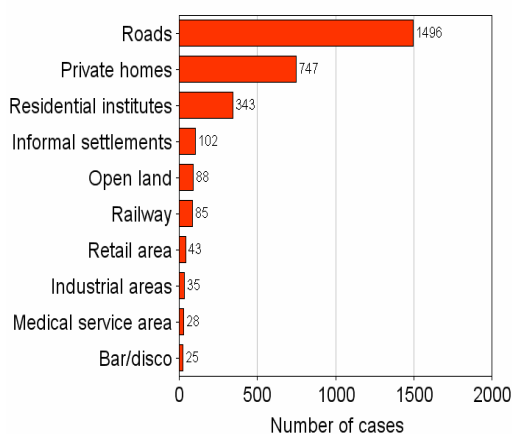
Figure 3. Manner of death by sex (n = 3980)



2. Scene of injury

The scene of injury was known in 3092 (77.2%) cases. Roads were the most common scene of death (48.4%).

Figure 4. Ten most common scenes of injury (n = 2992)

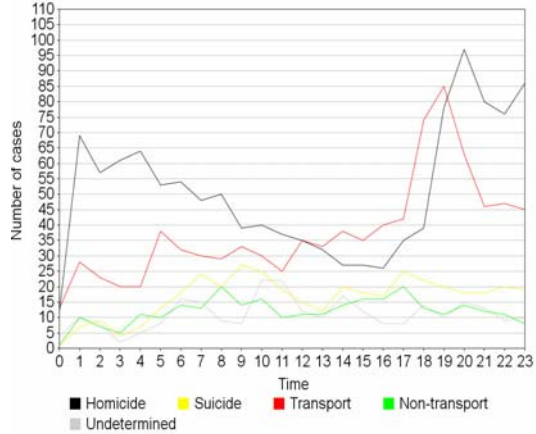


3. Time of death

The peak period(s) of death for:

- **violence** was 19h00 - 00h00 (34%), followed by 03h00 - 05h00 (10.2%), followed by 01h00 - 02h00 (5.6%);
- **suicide** was 07h00 - 11h00 (24.1%), followed by 17h00 - 20h00 (16.8%), followed by 14h00 - 15h00 (5%), followed by 22h00 - 23h00 (5%);
- **transport** related deaths was 18h00 - 00h00 (39.9%); and
- **other unintentional injury** deaths (non-transport) was 15h00 - 18h00 (18.1%), followed by 08h00 - 09h00 (6.9%), followed by 10h00 - 11h00 (5.6%).

Figure 5. Time of death (n = 3079)



4. Day of death

The peak days of death for:

- **violence** were Saturday (22%), followed by Sunday (19.2%), followed by Monday (13.3%);
- **suicide** were Tuesday (16.4%), followed by Sunday (15.4%), followed by Monday (15.2%);
- **transport** related deaths were Saturday (24.1%), followed by Sunday (17.5%), followed by Friday (14.3%); and
- **other unintentional injury** deaths were Saturday (19.8%), followed by Sunday (15.4%), followed by Friday (13.8%).

Figure 6. Day of death (n = 3950)

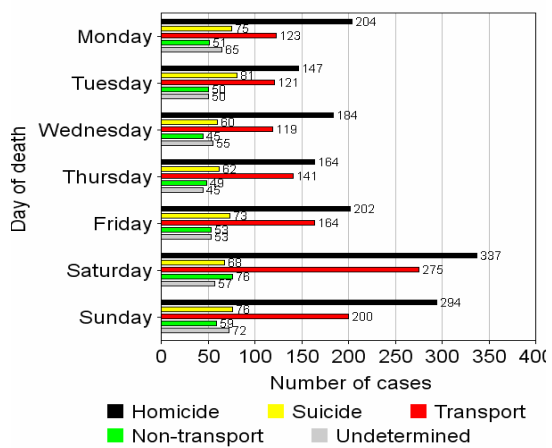
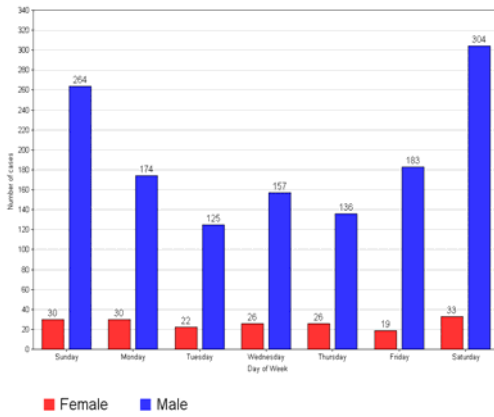


Figure 7. Day of violence-related deaths by sex (n = 1529)



5. Seasonal variation

The peak month for:

- **violence** was October (9.7%), followed by July (9.7%), followed by November (9.5%);
- **suicide** was January (9.3%), followed by March (9.3%), followed by September (9.3%);
- **transport** related deaths was May (11.4%), followed by June (9.4%), followed by October (9.2%); and
- **other unintentional injury** deaths was December (12.3%), followed by July (11.5%), followed by June (9.7%).

Figure 8. Day of suicide deaths by sex (n = 494)

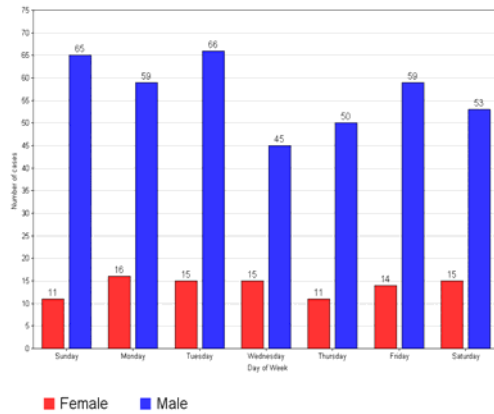


Figure 10. Seasonal variation (n = 3950)

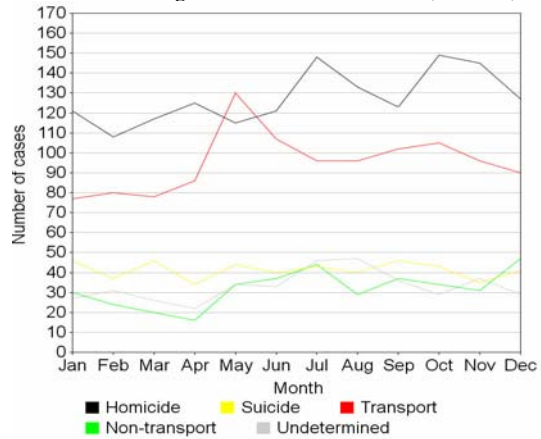
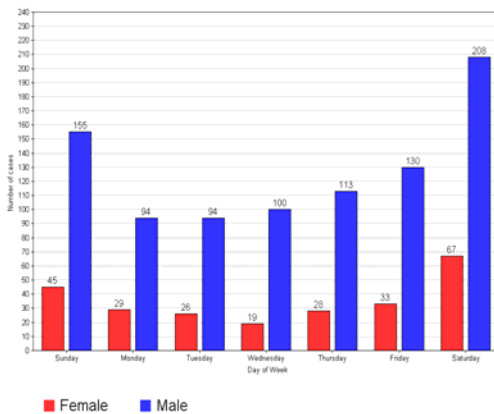


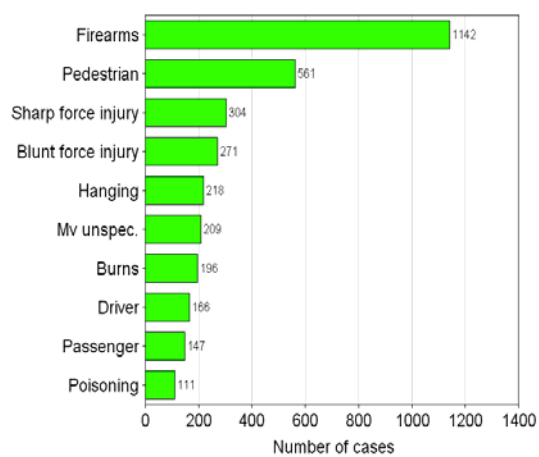
Figure 9. Day of transport-related deaths by sex (n = 1141)



6. External cause of death

The cause of death was unknown in 6.7% of the cases. The leading external cause of death was firearms (30.6%), followed by pedestrian injuries (17.5%).

Figure 11. Ten most common external causes of death (n = 3325)

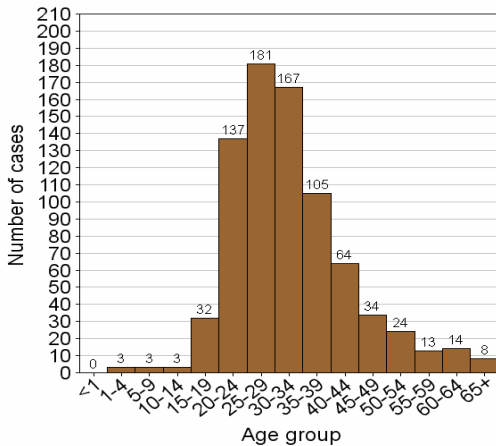


External cause of violence by age

Age was unknown in 296 of the 1547 cases. Of the remaining cases, the average age of the deceased was 33 (± 12.2 yrs). The leading external cause of death for violence in the:

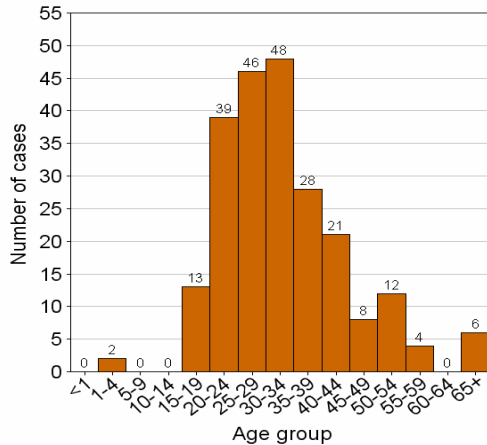
- **0-14** age group was firearms (40.9%) followed by blunt force injury (31.8%);
- **15-24** age group was firearms (66%);
- **25-34** age group was firearms (67.3%);
- **35-44** age group was firearms (62.6%);
- **45-54** age group was firearms (54.2%);
- **55-64** age group was firearms (60%); and
- **65+** age group was blunt force injury (32.4%).

Figure 12.1. Firearm violence by age (n = 788)



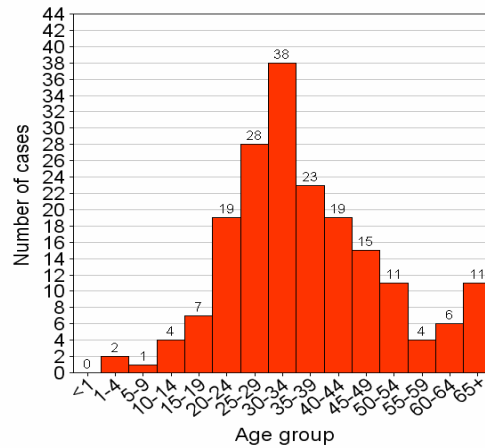
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Figure 12.2. Sharp force injury violence by age (n = 227)



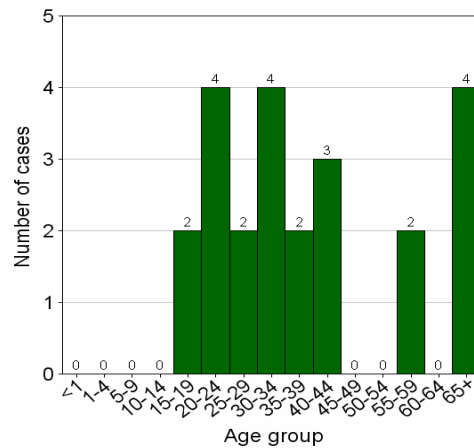
created with ChartDirector from www.advizsofteng.com

Figure 12.3. Blunt force violence by age (n = 188)



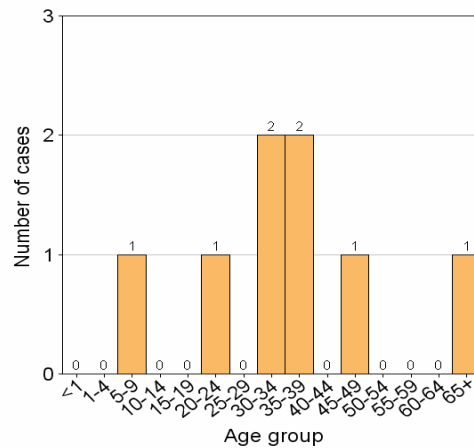
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Figure 12.4. Strangulation by age (n = 23)



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Figure 12.5. Unknown violence by age (n = 8)



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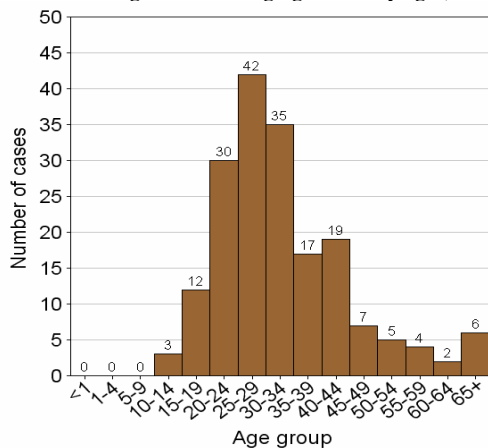
External cause of suicide by age

Age was unknown in 62 of the 499 cases. Of the remaining cases, the average age of the deceased was 35 (± 14.1 yrs).

The leading external cause of death for suicide in the:

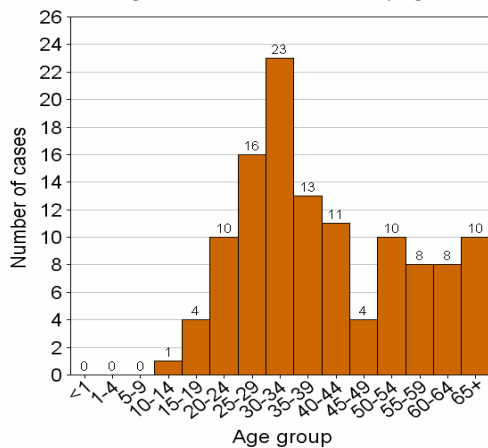
- 0-14 age group was hanging (60%);
- 15-24 age group was hanging (49.4%);
- 25-34 age group was hanging (47%);
- 35-44 age group was hanging (42.4%);
- 45-54 age group was firearms (31.1%);
- 55-64 age group was firearms (48.5%); and
- 65+ age group was firearms (50%) followed by hanging (30%).

Figure 13.1. Hanging suicide by age (n = 182)



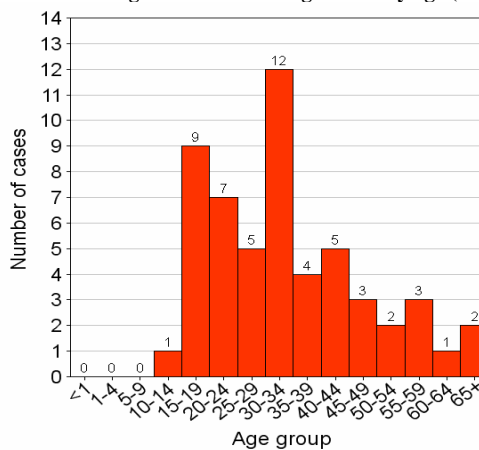
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Figure 13.2. Firearm suicide by age (n = 118)



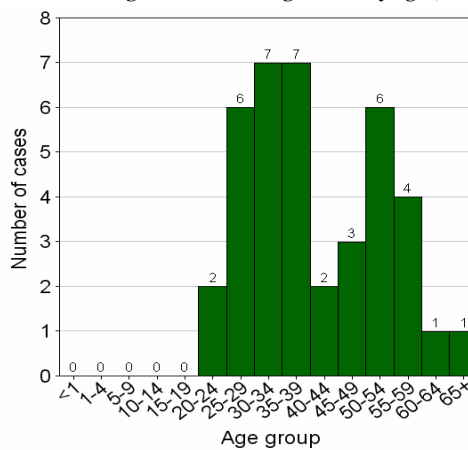
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Figure 13.3. Poisoning suicide by age (n = 54)



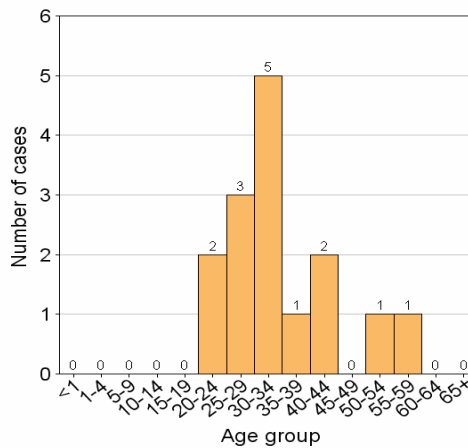
created with ChartDirector from www.advsofteng.com

Figure 13.4. Gassing suicide by age (n = 39)



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Figure 13.5. Jumping from a height by age (n = 15)



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External cause of transport by age

Age was unknown in 319 of the 1153 cases. Of the remaining cases, the average age of the deceased was 35 (\pm 17.9 yrs). The leading external cause of death for transport in the:

- 0-14 age group was pedestrian injuries (72.2%);
- 15-24 age group was pedestrian injuries (33.7%);
- 25-34 age group was pedestrian injuries (43.6%);
- 35-44 age group was pedestrian injuries (41.9%);
- 45-54 age group was pedestrian injuries (51.6%);
- 55-64 age group was pedestrian injuries (47.8%); and
- 65+ age group was pedestrian injuries (49.2%).

Figure 14.1. Pedestrian deaths by age (n = 390)

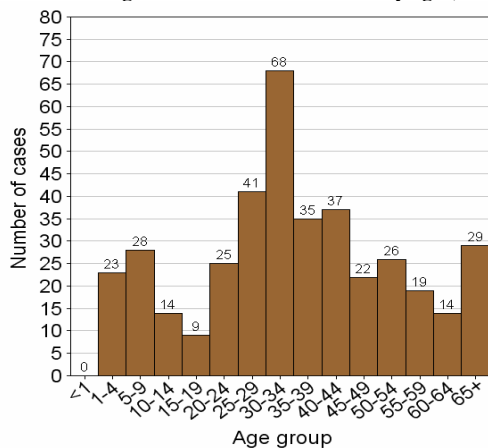


Figure 14.3. Driver deaths by age (n = 119)

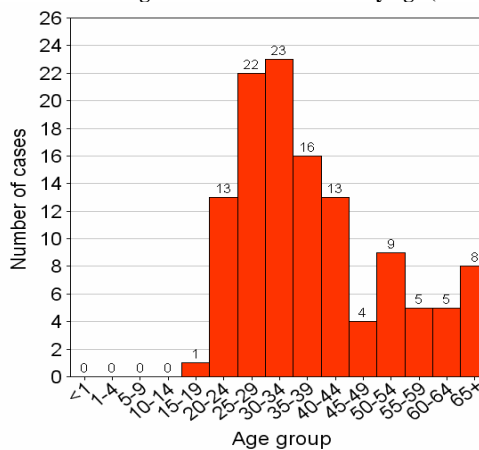


Figure 14.4. Passenger deaths by age (n = 107)

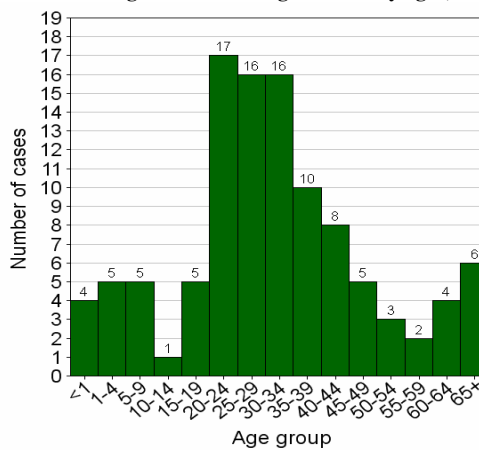


Figure 14.2. Unspecified motor vehicle deaths by age (n = 171)

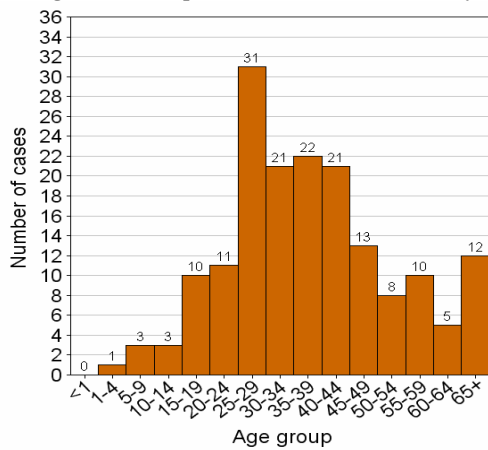
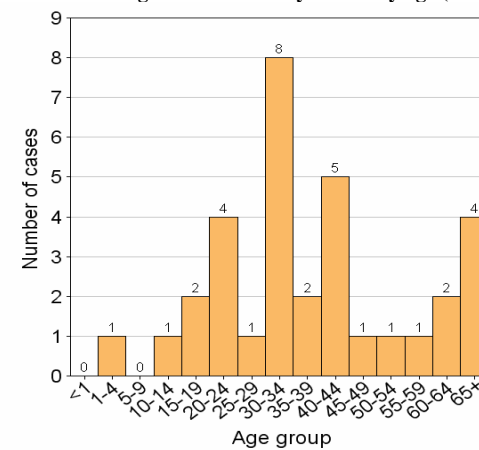


Figure 14.5. Railway deaths by age (n = 33)

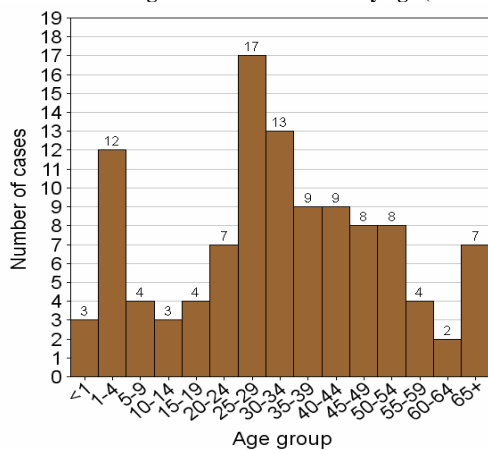


External cause of other unintentional injury deaths (non-transport) by age

Age was unknown in 58 of the 388 cases. Of the remaining cases, the average age of the deceased was 33 (± 22.7 yrs). The leading cause for other unintentional injury deaths in the:

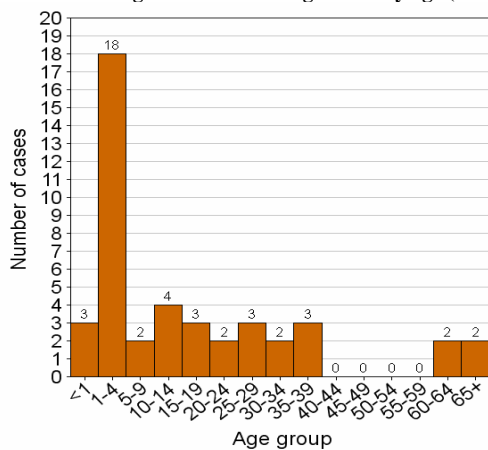
- **0-14** age group was drowning (38%) followed by burns (31%);
- **15-24** age group was other (40.5%);
- **25-34** age group was burns (41.1%) followed by other (32.9%);
- **35-44** age group was burns (32.7%) followed by other (32.7%);
- **45-54** age group was burns (42.1%) followed by other (42.1%);
- **55-64** age group was other (56%); and
- **65+** age group was other (41.9%).

Figure 15.1. Burn deaths by age (n = 110)



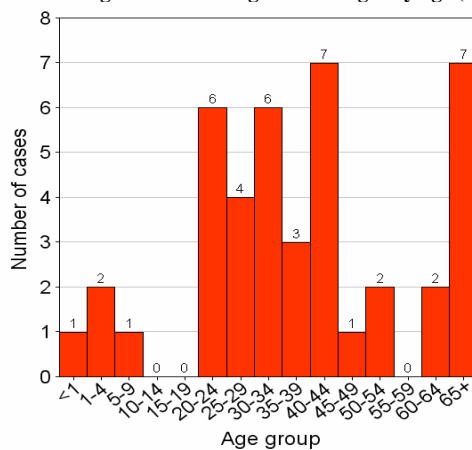
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Figure 15.2. Drowning deaths by age (n = 44)



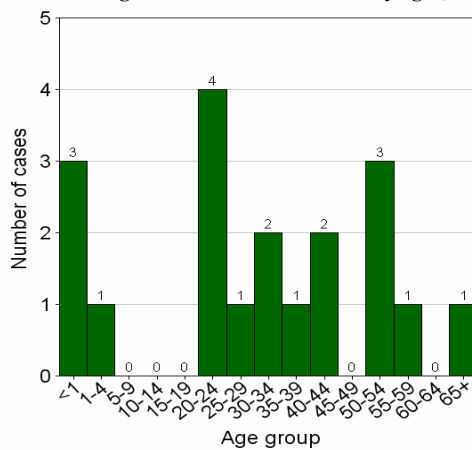
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Figure 15.3. Falling from a height by age (n = 42)



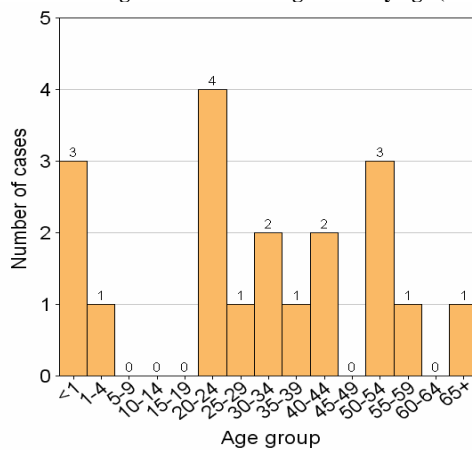
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Figure 15.4. Unknown deaths by age (n = 19)



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Figure 15.5. Poisoning deaths by age (n = 19)

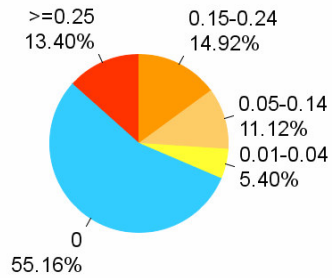


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7. Blood alcohol levels

Blood alcohol concentration (BAC) levels were obtained in 2761 of the 4003 cases. The average BAC for those who tested positive was 0.18 ± 0.11 g/100ml

Figure 16. Blood Alcohol Levels (n = 2761)



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Blood alcohol level by apparent manner

Of the 4003 who were fatally injured, blood alcohol concentration were available in 2761 (69.0%).

Table II: Blood alcohol levels per apparent manner

Apparent manner	BAC's done n(%)	BAC positive n(%)	Mean BAC	Std. Dev.
Violence (1547)	1229 (79.44)	581 (47.27)	0.17	0.1
Suicide (499)	439 (87.98)	173 (39.41)	0.15	0.1
Transport (1153)	732 (63.49)	353 (48.22)	0.21	0.12
Other unintentional (388)	156 (40.21)	67 (42.95)	0.19	0.12
Undetermined (416)	205 (49.28)	64 (31.22)	0.16	0.12
Total	2761	1238	0.18	0.11

Blood alcohol level by transport user

Of the 1153 who were fatally injured in transport collisions, blood alcohol concentration were available in 732 (63.5%) 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 (166)	139 (83.73)	78 (56.12)	0.18	0.09
Passenger (147)	98 (66.67)	29 (29.59)	0.15	0.09
Pedestrian (556)	343 (61.69)	179 (52.19)	0.24	0.13
Railway case (55)	43 (78.18)	15 (34.88)	0.23	0.13
Cyclist (20)	14 (70)	7 (50)	0.16	0.08
Unspecified (209)	95 (45.45)	45 (47.37)	0.19	0.1
Total	732	353	0.23	0.12