



**A profile of fatal injuries in South Africa**  
**6<sup>th</sup> Annual Report of the**  
**NATIONAL INJURY MORTALITY SURVEILLANCE SYSTEM**  
**2004**



**Section 5. Tshwane/Pretoria Fatal Injury Profile**

**Background**

This short report, which covers the period 1 January to 31 December 2004, describes the fatal injury profile in the Tshwane/Pretoria Metropolitan area, and includes data from two mortuaries: Pretoria and MEDUNSA.

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 Tshwane/Pretoria, 2001- 2004								
Year	2001		2002		2003		2004	
Population <sup>#</sup>	2 893 247		2 939 810		2 981 898		3 024 589	
	Total deaths <sup>§</sup>	Rate/100,000 pop.	Total deaths	Rate/100,000 pop.	Total deaths	Rate/100,000 pop.	Total deaths	Rate/100,000 pop.
<b>Violence</b>	653	29.6	629	28.5	549	24.2	596	26.4
- firearm violence	398	17.8	384	16.9	320	13.8	329	14.1
<b>Suicide</b>	308	15.2	278	13.3	293	13.5	341	15.7
- firearm suicide	124	6.4	118	5.7	122	5.9	121	5.6
- hanging	84	3.8	76	3.6	89	3.8	110	4.8
<b>Transport</b>	716	40.3	677	35.8	694	34.4	779	37.8
- road traffic	684	33.6	646	32.1	657	32.1	738	35.8
<i>pedestrian</i>	238	11.9	237	11.7	231	11.9	250	12.4
<i>Driver</i>	95	4.5	106	5.3	118	5.4	135	6.6
- railway deaths	31	1.6	27	1.2	37	1.6	41	1.9
<b>Unintentional</b>	240	13.0	183	10.2	213	11.3	237	11.6
- burns	56	2.8	48	2.6	72	3.9	76	3.9
- drowning	37	1.9	30	1.6	30	1.5	31	1.5
<b>ALL INJURIES<sup>&amp;</sup></b>	2235	110.4	2035	99.9	2028	97.7	2266	107.6

\* WHO World Standard Population Distribution

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

<sup>§</sup> Totals adjusted for missing ages.

<sup>&</sup> Includes apparent manner of death undetermined.

**Acknowledgements**

Special thanks goes to Prof. G. Saayman and all pathologists, Mrs R. Echartd and Mrs I. De Villiers, as well as Dr C. Viljoen, Mr C. Kriek and Ms. C. Deysel of the Forensic Chemistry Laboratory, Pretoria 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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This report is available online at:  
[www.sahealthinfo.org.za/violence/nimss.htm](http://www.sahealthinfo.org.za/violence/nimss.htm)

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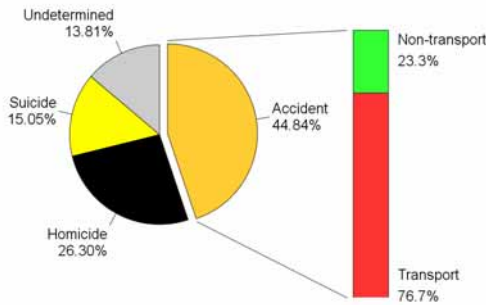
## RESULTS

A total of 2836 cases were recorded in Tshwane / Pretoria from January 2004 to December 2004, including 428 (15.1%) cases that were due to natural causes. The rest of the analysis is restricted to the 2266 non-natural deaths that occurred in the city.

### 1. Overall manner of death

The leading manner of death was transport fatalities (34%).

Figure 1. Overall manner of death (N = 2266)



### Manner of death by age

The average age of the deceased was 34.3 ( $\pm$  16.4 years). The leading manner(s) of death amongst the:

- 0-14 age group was non-transport (34%);
- 15-24 age group was violence / homicide (34.3%) followed by transport (34.3%);
- 25-34 age group was violence (35.4%) followed by transport (32.1%);
- 35-44 age group was transport (37.3%);
- 45-54 age group was transport (41.1%);
- 55-64 age group was transport (52.5%); and
- 65+ age group was transport (34.6%).

Figure 2.1. Violence by age (n = 509)

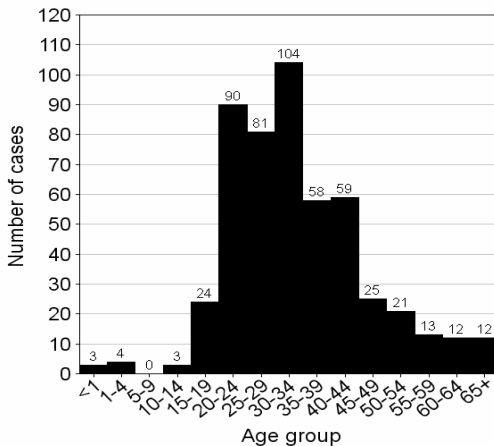


Figure 2.2. Suicide by age (n = 273)

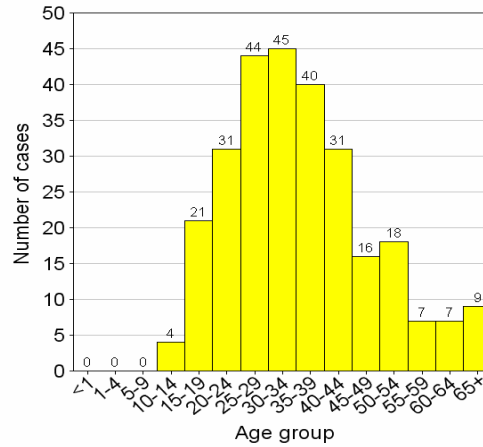


Figure 2.3. Transport deaths by age (n = 656)

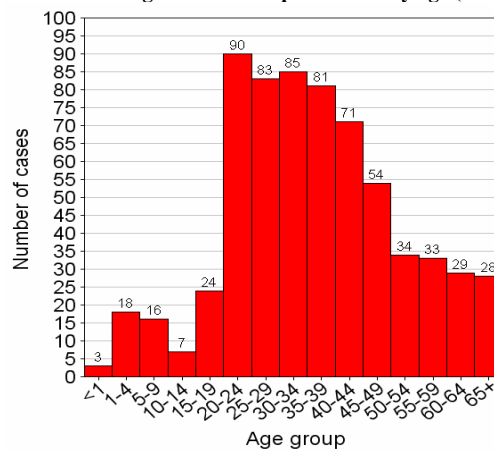


Figure 2.4 Other unintentional injury deaths (non-transport) by age (n = 197)

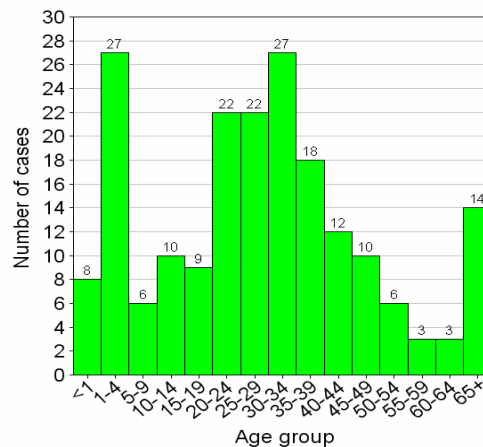
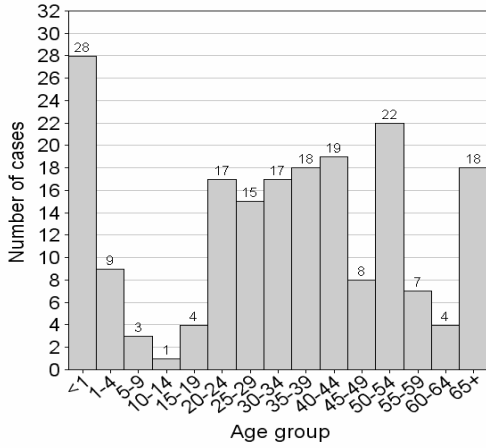


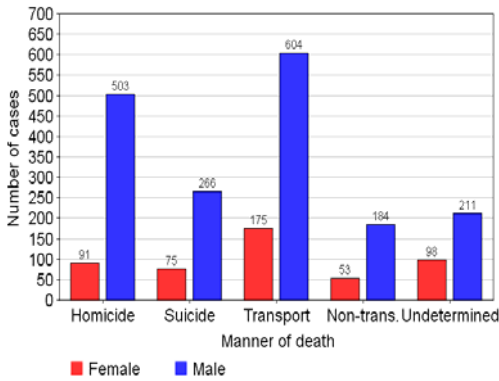
Figure 2.5. Undetermined deaths by age (n = 190)



## Manner of death by sex

Of the cases recorded in Tshwane / Pretoria, 1768 (78.2%) were male and 492 (21.8%) were female. The leading causes of death amongst males and females were transport injuries (34.2% and 35.6% respectively).

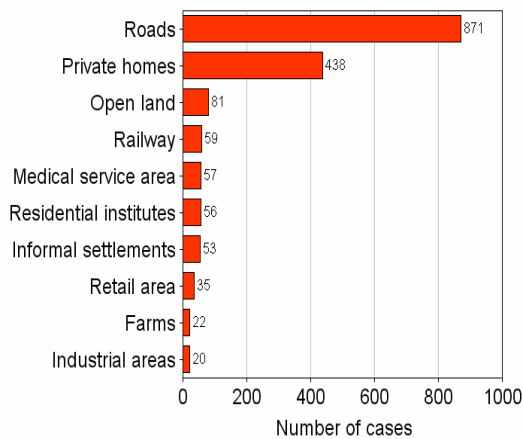
Figure 3. Manner of death by sex (n = 2260)



## 2. Scene of injury

The scene of injury was known in 1767 (78.0%) cases. Roads were the most common scene of death (49.3%).

Figure 4. Ten most common scenes of injury (n = 1692)

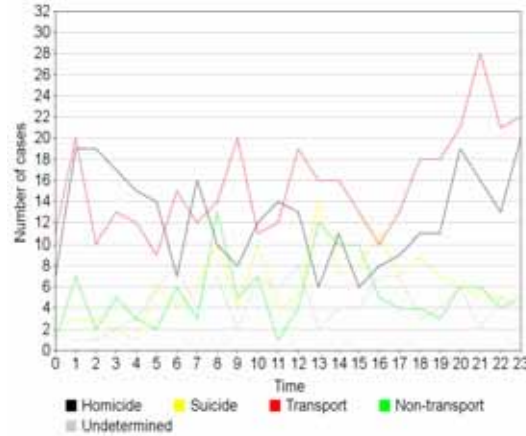


## 3. Time of death

The peak period(s) of death for:

- **violence** was 01h00 - 05h00 (23.2%), followed by 20h00 - 22h00 (11.6%), followed by 23h00 - 00h00 (6.6%);
- **suicide** was 15h00 - 17h00 (13.1%), followed by 13h00 - 14h00 (9.7%), followed by 08h00 - 09h00 (6.9%), followed by 10h00 - 11h00 (6.9%);
- **transport** related deaths was 20h00 - 00h00 (24.6%), followed by 01h00 - 02h00 (5.3%); and
- **other unintentional injuries (non-transport)** related deaths was 13h00 - 16h00 (25%), followed by 08h00 - 09h00 (10.2%).

Figure 5. Time of death (n = 1051)



## 4. Day of death

The peak days of death for:

- **violence** were Sunday (21.4%), followed by Saturday (21.4%), followed by Tuesday (14.5%);
- **suicide** were Monday (20%), followed by Sunday (16.7%), followed by Thursday (14.9%);
- **transport** related deaths were Saturday (20%), followed by Sunday (18.3%), followed by Friday (15.3%); and
- **other unintentional injury deaths (non-transport)** were Saturday (17.7%), followed by Tuesday (14.7%), followed by Sunday (14.7%).

Figure 6. Day of death (n = 2214)

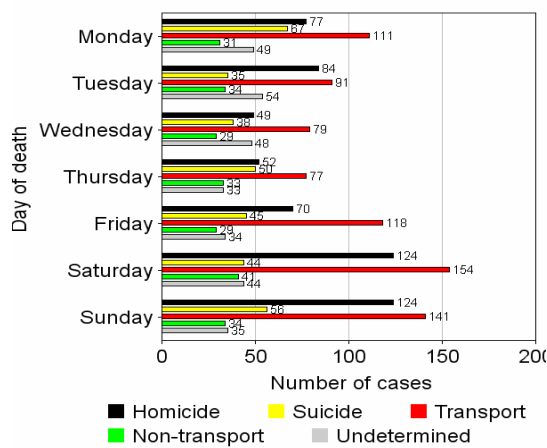


Figure 7. Day of violence-related deaths by sex (n = 579)

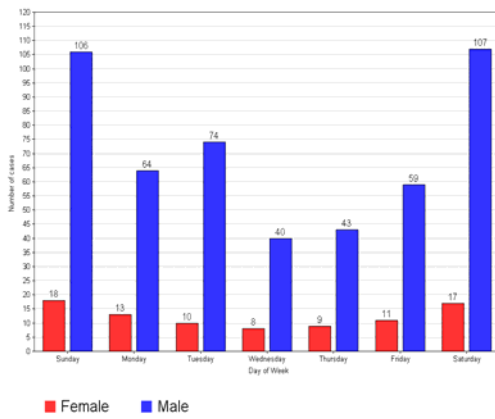


Figure 8. Day of suicide deaths by sex (n = 335)

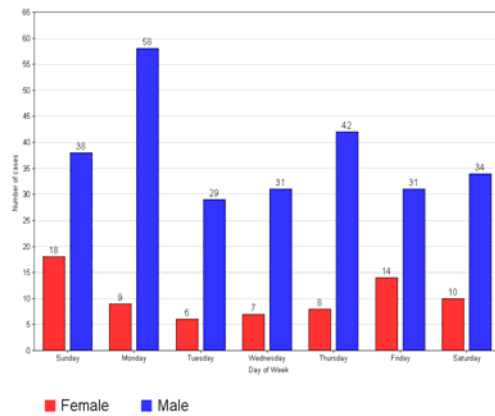
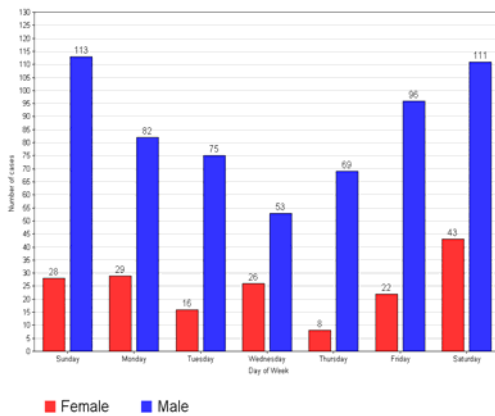


Figure 9. Day of transport deaths by sex (n = 771)

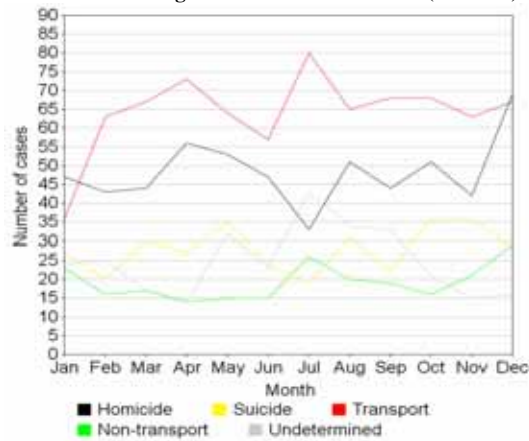


## 5. Seasonal variation

The peak month for:

- **violence** was December (11.9%), followed by April (9.7%), followed by May (9.1%);
- **suicide** was October (10.7%), followed by November (10.7%), followed by May (10.4%);
- **transport** related deaths was July (10.4%), followed by April (9.5%), followed by September (8.8%); and
- **other unintentional injury deaths (non-transport)** was December (12.6%), followed by July (11.3%), followed by January (10.0%).

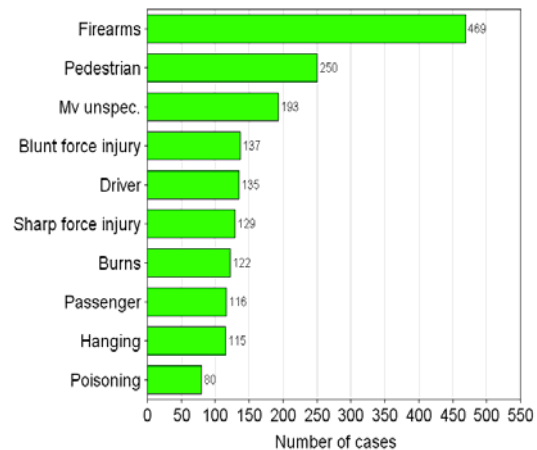
Figure 10. Seasonal variation (n = 2214)



## 6. External cause of death

The cause of death was unknown in 7.8% of the cases. The leading external cause of death was firearms (22.4%), followed by pedestrian injuries (12%), followed by unspecified motor vehicle injuries (9.2%).

Figure 11. Ten most common external causes of death (n = 1746)



### External cause of violence by age

Age was unknown in 87 of the 596 cases. Of the remaining cases, the average age of the deceased was 33 ( $\pm 12.8$  yrs).

The leading external cause of death for violence in the:

- **0-14** age group was other (40%) followed by firearms (30%);
- **15-24** age group was firearms (55.3%);
- **25-34** age group was firearms (63.8%);
- **35-44** age group was firearms (60.7%);
- **45-54** age group was firearms (50%);
- **55-64** age group was firearms (40%) followed by blunt force injury (40%); and
- **65+** age group was firearms (41.7%) followed by blunt force injury (33.3%).

Figure 12.1. Firearm by age (n = 293)

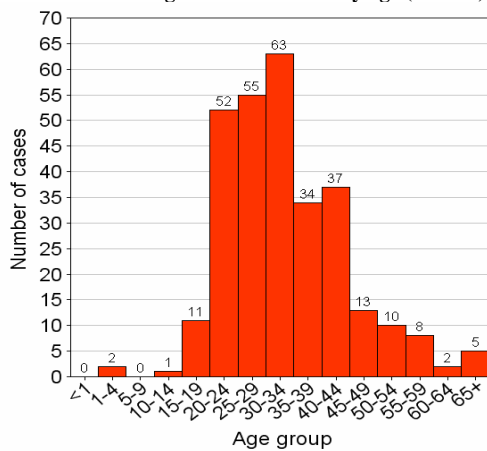


Figure 12.2. Sharp force violence by age (n = 99)

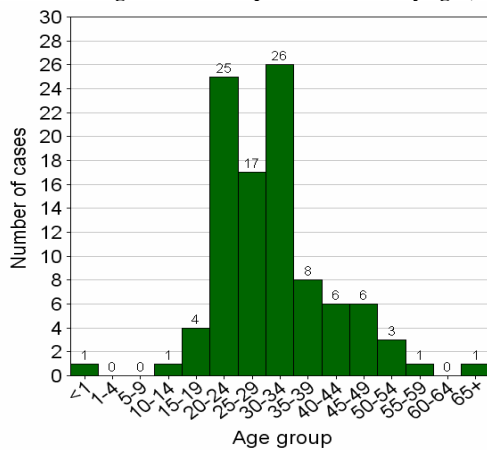


Figure 12.3. Blunt force violence by age (n = 83)

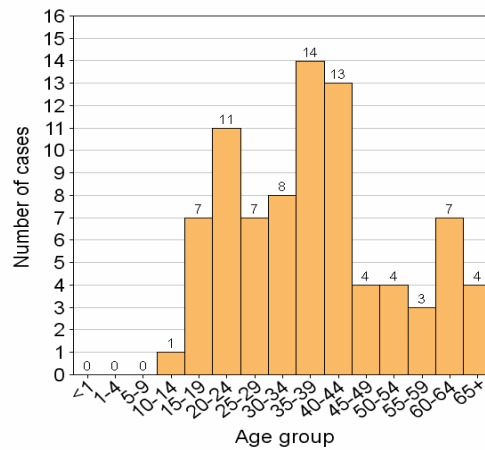


Figure 12.4. Strangulation by age (n = 12)

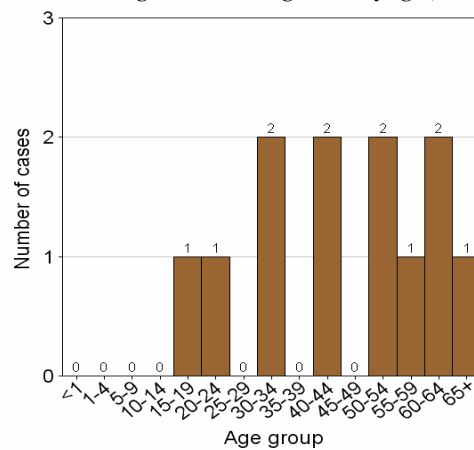
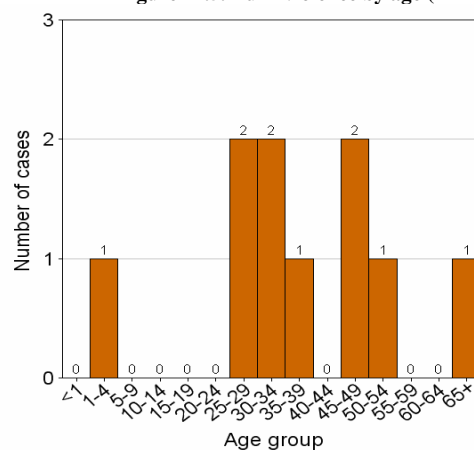


Figure 12.5. Burn violence by age (n = 10)



### External cause of suicide by age

Age was unknown in 68 of the 341 cases. Of the remaining cases, the average age of the deceased was 35 ( $\pm 13$  yrs).

The leading external cause of death for suicide in the:

- **0-14** age group was hanging (50%) followed by firearms (50%);
- **15-24** age group was hanging (44.2%) followed by firearms (36.5%);
- **25-34** age group was firearms (42.7%);
- **35-44** age group was hanging (47.9%) followed by firearms (36.6%);
- **45-54** age group was firearms (44.1%);
- **55-64** age group was firearms (35.7%); and
- **65+** age group was firearms (55.6%).

Figure 13.1. Firearm suicide by age (n = 110)

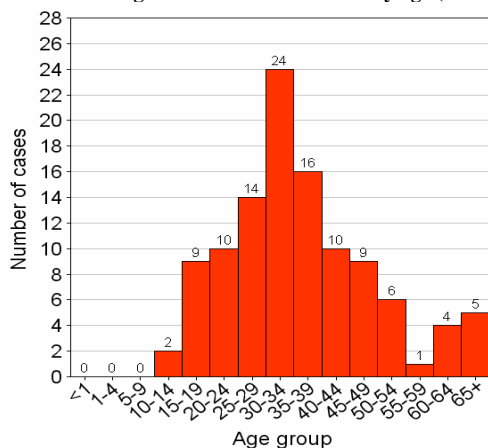


Figure 13.2. Hanging suicide by age (n = 95)

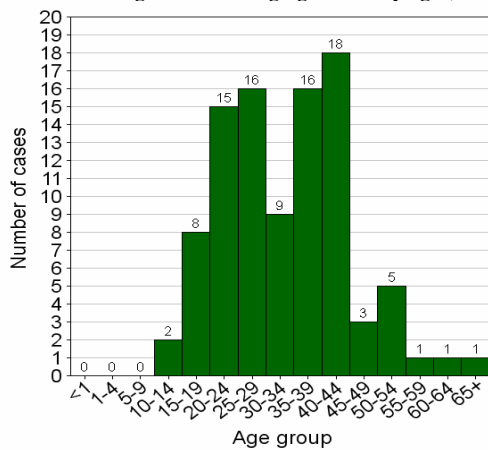


Figure 13.3. Poisoning suicide by age (n = 27)

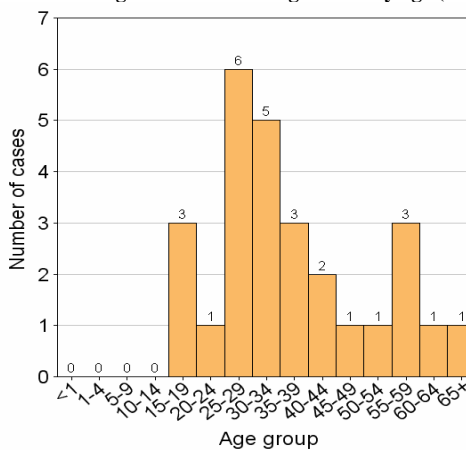


Figure 13.4. Burn suicide by age (n = 12)

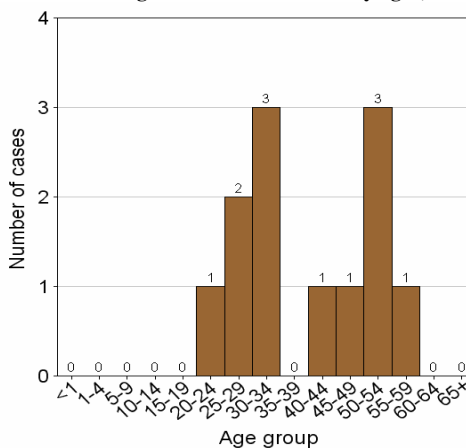
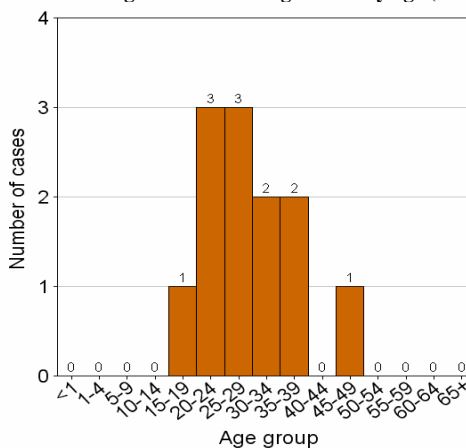


Figure 13.5. Gassing suicide by age (n = 12)



### External cause of transport by age

Age was unknown in 123 of the 779 cases. Of the remaining cases, the average age of the deceased was 35 ( $\pm 16$  yrs).

The leading external cause of death for transport in the:

- **0-14** age group was pedestrian injuries (61.4%);
- **15-24** age group was unspecified motor vehicle injuries (25.4%), followed by passenger injuries (23.7%);
- **25-34** age group was unspecified motor vehicle injuries (25.6%), followed by pedestrian injuries (25.6%), followed by passenger injuries (19.6%);
- **35-44** age group was pedestrian injuries (30.9%);
- **45-54** age group was pedestrian injuries (27.3%), followed by driver injuries (23.9%);
- **55-64** age group was unspecified motor vehicle injuries (30.6%); and
- **65+** age group was unspecified motor vehicle injuries (35.7%) followed by pedestrian injuries (35.7%).

Figure 14.1. Pedestrian deaths by age (n = 187)

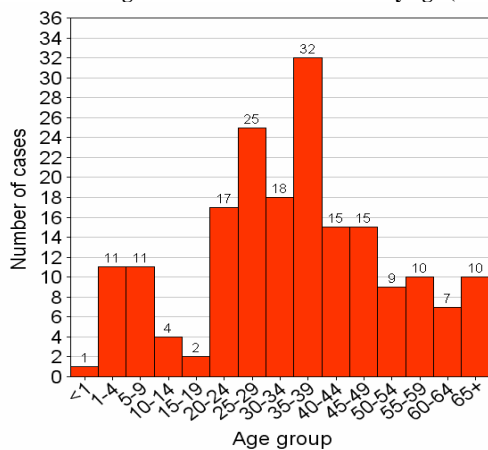


Figure 14.3. Driver deaths by age (n = 120)

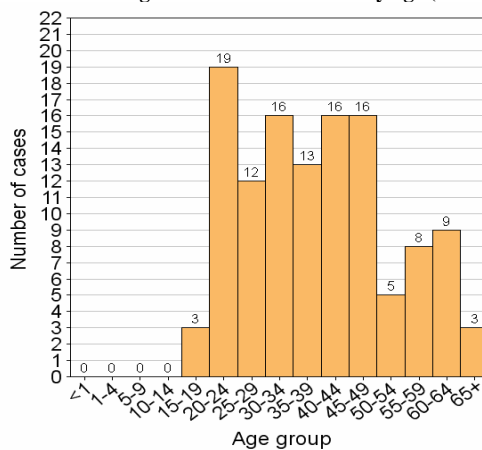


Figure 14.4. Passenger deaths by age (n = 106)

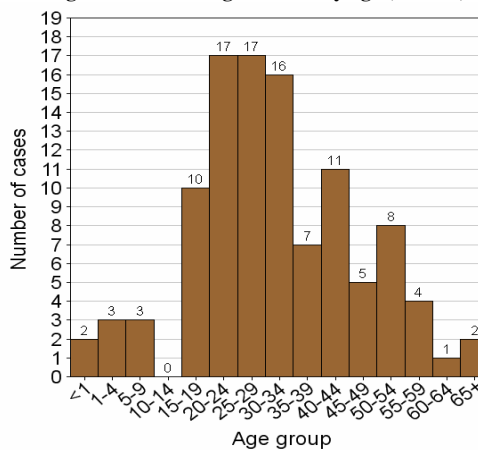


Figure 14.2. Unspecified motor vehicle deaths by age (n = 171)

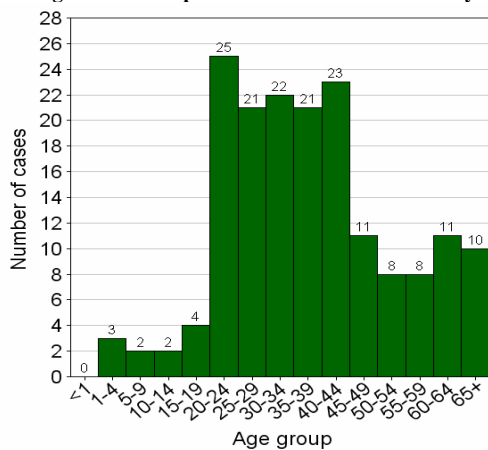
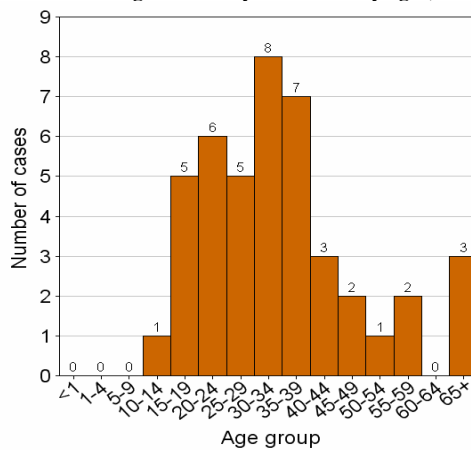


Figure 14.5. Cyclist deaths by age (n = 43)



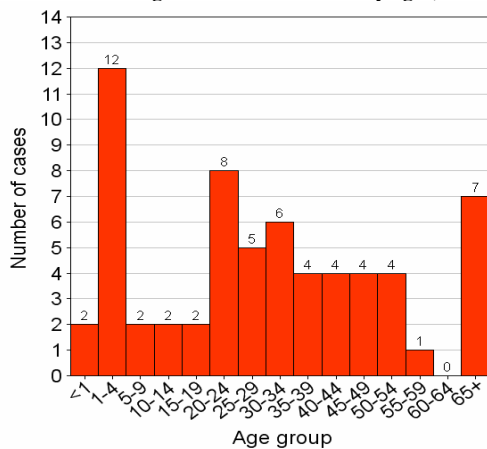
### External cause of non-transport deaths by age

Age was unknown in 40 of the 237 cases. Of the remaining cases, the average age of the deceased was 28 ( $\pm 20.7$  yrs).

The leading cause for non-transported related deaths in the:

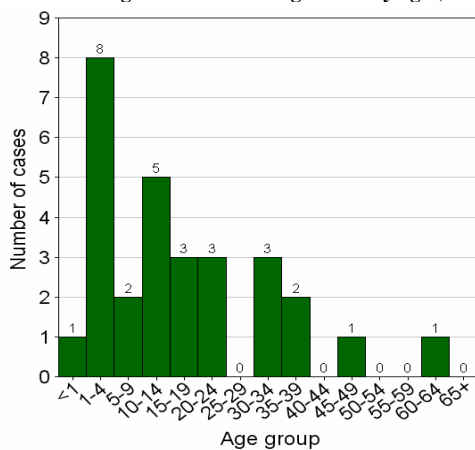
- **0-14** age group was burns (35.3%) followed by drowning (31.4%);
- **15-24** age group was other (35.5%) followed by burns (32.3%);
- **25-34** age group was other (53.1%);
- **35-44** age group was other (40%);
- **45-54** age group was burns (50%);
- **55-64** age group was other (50%); and
- **65+** age group was burns (50%).

Figure 15.1. Burn deaths by age (n = 63)



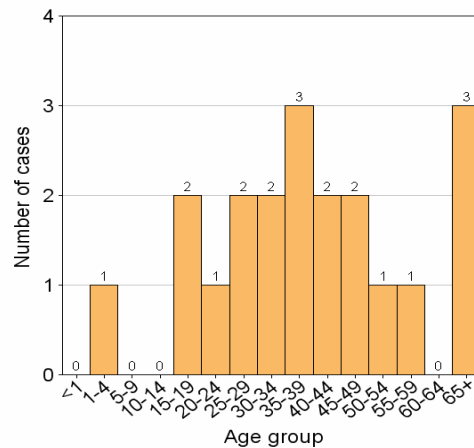
created with ChartDirector from www.advsofteng.com

Figure 15.2. Drowning deaths by age (n = 29)



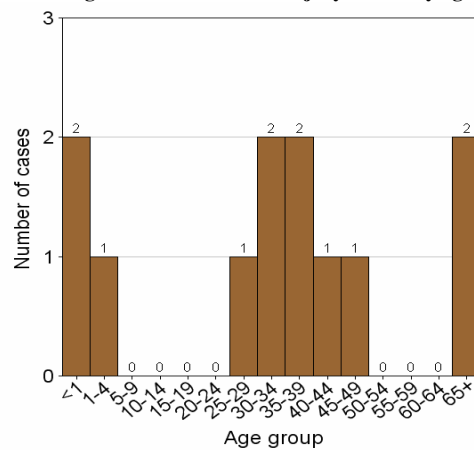
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Figure 15.3. Falling from a height by age (n = 20)



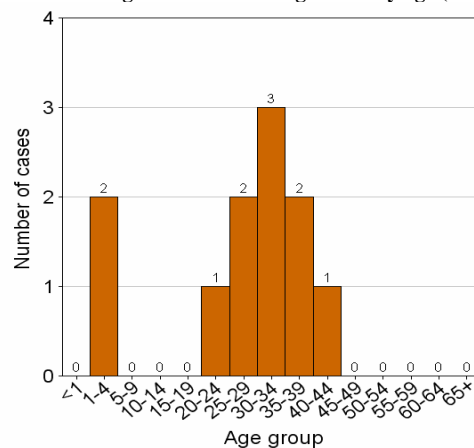
created with ChartDirector from www.advsofteng.com

Figure 15.4. Blunt force injury deaths by age (n = 12)



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Figure 15.5. Poisoning deaths by age (n = 11)

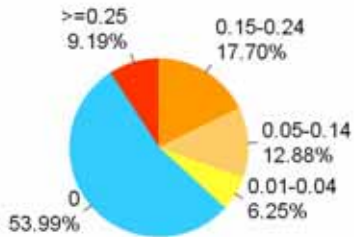


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## 7. Blood alcohol levels

Blood alcohol concentration (BAC) levels were obtained in 1328 of the 2266 cases. The average BAC for those who tested positive was  $0.16 \pm 0.10$  g/100ml

Figure 16. Blood Alcohol Levels (n = 1328)



## Blood alcohol level by apparent manner

Of the 2266 who were fatally injured, blood alcohol concentration were available in 1328 (58.6%) of the cases.

Table II: Blood alcohol levels per apparent manner

Apparent manner	BAC's done n(%)	BAC positive n(%)	Mean BAC	Std. Dev.
Violence (596)	432 (72.48)	219 (50.69)	0.14	0.09
Suicide (341)	232 (68.04)	86 (37.07)	0.14	0.1
Transport (779)	505 (64.83)	248 (49.11)	0.19	0.1
Other unintentional (237)	68 (28.69)	20 (29.41)	0.16	0.12
Undetermined (313)	91 (29.07)	38 (41.76)	0.16	0.12
Total	1328	611	0.16	0.11

## Blood alcohol level by transport user

Of the 779 who were fatally injured in transport collisions, blood alcohol concentration were available in 505 (64.8%) 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 (135)	106 (78.52)	50 (47.17)	0.17	0.09
Passenger (116)	77 (66.38)	33 (42.86)	0.15	0.08
Pedestrian (250)	171 (68.4)	105 (61.4)	0.21	0.1
Railway case (41)	33 (80.49)	10 (30.3)	0.2	0.15
Cyclist (44)	35 (79.55)	15 (42.86)	0.16	0.09
Unspecified (193)	83 (43.01)	35 (42.17)	0.17	0.11
Total	505	248	0.21	0.12