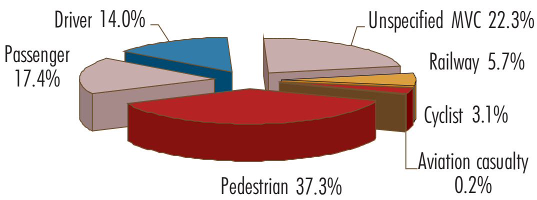
Compiled by Anesh Sukhai and Ashley van Niekerk

For 2001 pedestrians accounted for the largest percentage of transport-related deaths (37.3%), followed by cases where the transport user was unspecified. Railway, cyclist/motorbike and aviation deaths together accounted for less than 10% of deaths. Figure 18 shows the user categories for transport-related deaths.

Figure 18. Transport-related deaths by user category, 2001 (N = 6859).

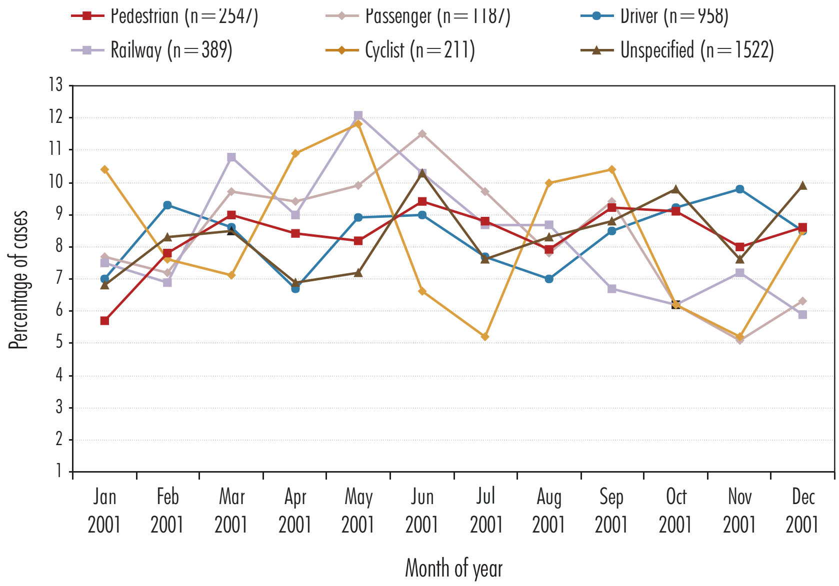


6.1 TRANSPORT-RELATED DEATHS: SEASONAL TRENDS

The percentage of pedestrian deaths was highest in March, June and October/November. Driver deaths showed a steady increase in percentage of cases from August, with the highest percentage in November. Driver deaths also peaked in February and May/June, and there was a notable decline in deaths from February to April and from June to August. Passenger deaths peaked in June and low percentages were recorded in July and November, which was when the percentage of driver deaths was relatively high. Both railway and cyclist deaths peaked in May and the highest percentage of undetermined cases was recorded in June.

Figure 19 shows the distribution of transport-related deaths for each month of the year in 2001. Aviation cases were excluded, as the numbers were too small for seasonal analysis.

Figure 19. Transport-related deaths by user category and month of death, 2001 (N = 6814).



6.2 TRANSPORT-RELATED DEATHS BY USER CATEGORY AND SEX

There were 3.3 males for every female transport-related death, with the highest male to female ratio among cyclists (16:3) and the lowest among passengers (1:7). Among motor vehicle deaths the highest male to female ratio was with drivers (8:6). Pedestrian and unspecified MVC deaths accounted for a similar percentage of both male and female deaths. Passenger deaths accounted for a higher percentage of transport-related deaths among females (27.9%) than among males (14.0%). Driver deaths accounted for a higher percentage of deaths among males (16.4%) than females (6.3%). Table VIII shows the distribution of user categories by sex for all transport-related deaths.

Table VIII. Transport-related deaths by user category and sex, 2001 (N = 6796).

	Male	Female	M:F ratio
Pedestrian	1919 (36.8)	623 (39.6)	3.1 : 1
Passenger	731 (14.0)	439 (27.9)	1.7 : 1
Driver	858 (16.4)	100 (6.3)	8.6 : 1
Unspecified MVC	1179 (22.6)	334 (21.2)	3.5 : 1
Railway	323 (6.2)	67 (4.3)	4.8 : 1
Cyclist	196 (3.8)	12 (0.8)	16.3 : 1
Aviation casualty	15 (0.3)	0	–
TOTAL	5221	1575	3.3 : 1

6.3 TRANSPORT-RELATED DEATHS BY USER CATEGORY AND POPULATION GROUP

Pedestrian deaths accounted for the highest percentage of transport-related deaths among Coloureds and Africans, while for Whites most transport-related deaths occurred among motor vehicle drivers (see section 1.6 - Terminology). Among Asians, the percentages of driver, passenger and unspecified MVC deaths were equally distributed. Africans and Coloureds recorded higher percentages of railway deaths, and the highest percentage of cyclist deaths was among Whites. Table IX shows the distribution of user categories by population group for all transport-related deaths.

Table IX. Transport-related deaths by user category and population group, 2001 (N = 6804).

	Asian	African	Coloured	White
Pedestrian	53 (18.4)	2007 (41.4)	378 (50.5)	109 (11.9)
Passenger	74 (25.7)	824 (17.0)	124 (16.6)	153 (16.6)
Driver	74 (25.7)	466 (9.6)	70 (9.4)	346 (37.6)
Unspecified MVC	74 (25.7)	1159 (23.9)	94 (12.8)	183 (19.9)
Railway	7 (2.4)	314 (6.5)	61 (8.2)	8 (0.9)
Cyclist	6 (2.1)	79 (1.6)	19 (2.5)	105 (11.4)
Aviation casualty	0	0	0	15 (1.6)
TOTAL	288	4849	748	919

6.4 Transport-related deaths: user categories by age

Pedestrian deaths peaked in the 30-34-year age group and among children (1-14 years), with the 5-9- year age group most at risk. More than one-third (39.5%) of infant transport-related deaths and more than half (56.4%) of child transport-related deaths were the result of pedestrian injuries. Passenger deaths were almost equally as high in all age groups from 20 to 34 years. Among children, the 5-9-year age group was also most at risk for passenger deaths. The highest number of driver deaths was in the 25-29-year age group and there was a gradual decline in deaths until 44 years, after which deaths decreased more sharply. Railway deaths peaked in the 30-34-year age group. However, large numbers of cases were recorded for the entire range from 25 to 44 years. Cyclist deaths peaked equally among adolescents and young adults in the 15-19- and 20-24-year age groups. Unspecified transport deaths peaked in the 30-34-year age group and the age distribution was similar to that of pedestrian deaths. Figures 20a to 20f show the distribution of transport-related deaths by age for each user category.

Figure 20a. Transport-related pedestrian deaths by age, 2001 (N = 2037).

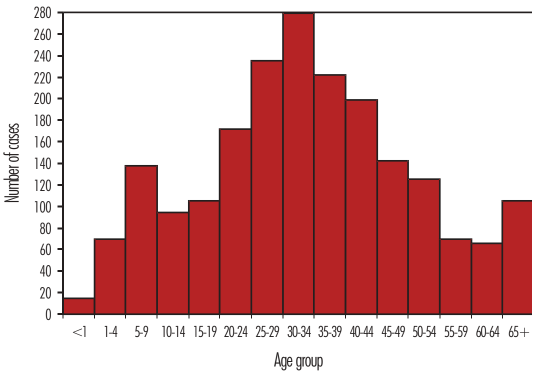


Figure 20b. Transport-related passenger deaths by age, 2001 (N = 1067).

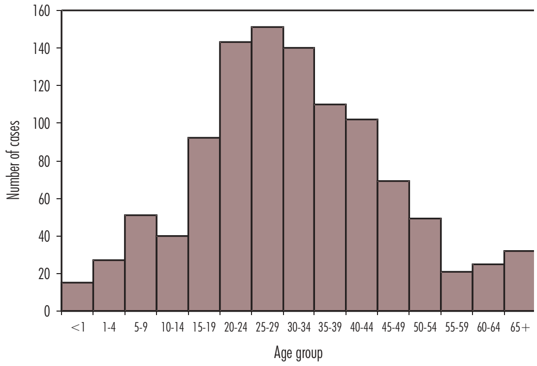


Figure 20c. Transport-related driver deaths by age, 2001 (N = 860).

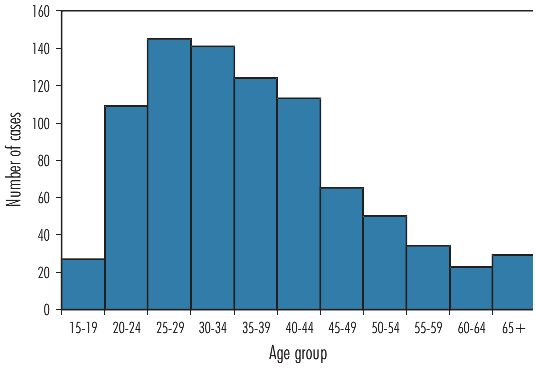


Figure 20d. Transport-related railway deaths by age, 2001 (N = 310).

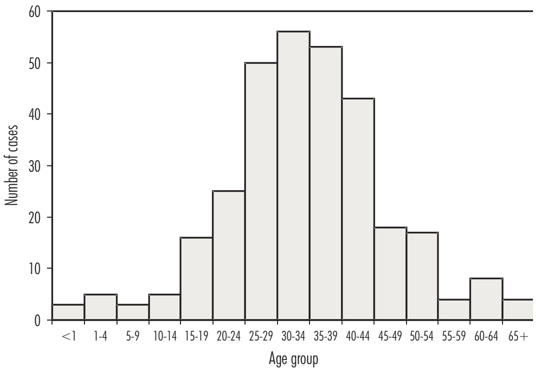


Figure 20e. Transport-related cyclist deaths by age, 2001 (N = 182).

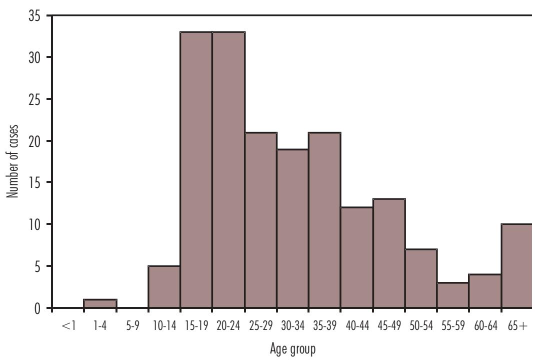
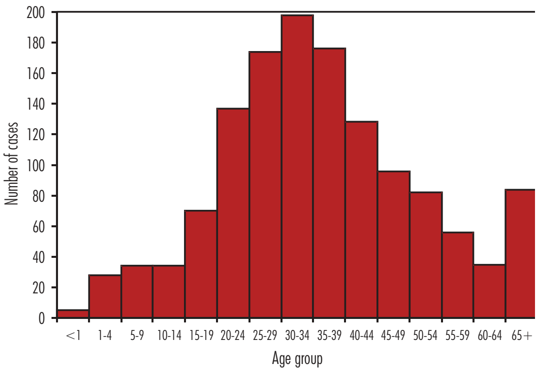


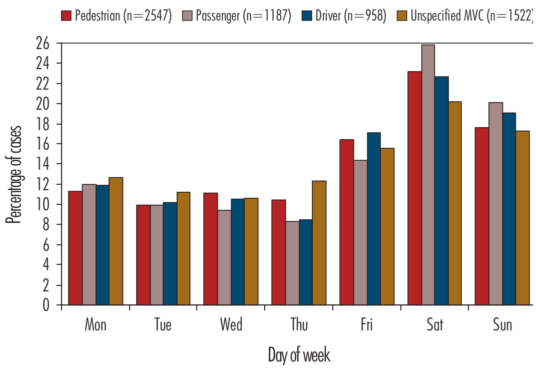
Figure 20f. Transport-related unspecified deaths by age, 2001 (N = 1337).



6.5 Transport-related deaths: day and time of death

For all transport categories, deaths peaked on weekends and between 17h00 and 22h00. Figures 21 and 22 show the distribution of transport-related deaths by day of week and hour of day for the four categories of motor vehicle users only.

Figure 21. Motor vehicle deaths by user category and day of death, 2001 (N = 6214).



6.6 Transport-related deaths by user category and blood alcohol concentration (BAC)

BACs were available for 2372 or 34.6% of the 6859 transport-related deaths. Figure 23 shows the percentage of all transport deaths by blood alcohol concentration and Table X the distribution of BACs by user category. Of all transport-related cases tested, 51.9% had elevated BACs. Of these positive cases, 91.0% had levels at or above 0.05 g/100 ml.

Figure 22. Motor vehicle deaths by user category and hour of death, 2001 (N = 5131).

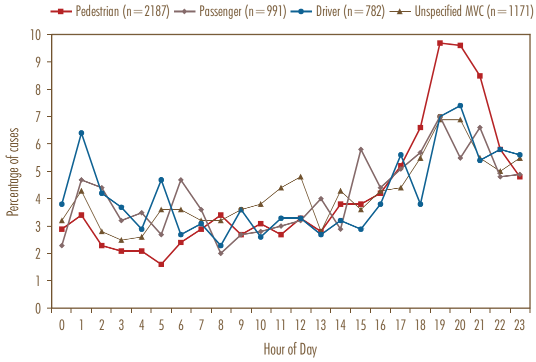
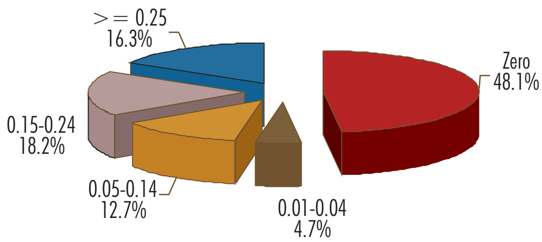


Figure 23. Transport-related deaths: blood alcohol concentration, 2001 (N = 2372).



Pedestrians followed by drivers had the greatest percentage of cases with positive BACs (Table X). Pedestrian and railway cases had equally the highest mean BAC concentration (0.20 g/100 ml each). Over 50% of all driver deaths had elevated BACs and the mean BAC for drivers of 0.17 g/100 ml was over three times the legal limit for driving. The lowest mean BAC concentration was among passengers, while the lowest percentage of alcohol-positive cases was among railway deaths.

Table X. Transport-related deaths by user category and blood alcohol concentration, 2001 (N = 2372).

	Zero	0.01-0.04	0.05-0.14	0.15-0.24	> 0.25	TOTAL	Mean positive BAC (+- Std dev.)
Pedestrian	398 (37.5)	57 (5.4)	127 (12.0)	218 (20.5)	262 (24.7)	1062	0.20 (0.1)
Passenger	174 (62.6)	13 (4.7)	39 (14.0)	38 (13.7)	14 (5.0)	278	0.15 (0.09)
Driver	172 (48.2)	19 (5.3)	65 (18.2)	67 (18.8)	34 (9.5)	357	0.17 (0.1)
Unspecified MVC	200 (54.5)	15 (4.1)	43 (11.7)	64 (17.4)	45 (12.3)	367	0.18 (0.1)
Railway	133 (64.6)	3 (1.5)	14 (6.8)	31 (15.0)	25 (12.1)	206	0.20 (0.08)
Cyclist	57 (61.3)	3 (3.2)	14 (15.1)	13 (14.0)	6 (6.5)	93	0.16 (0.09)
Aviation casualty	8 (88.9)	1 (11.1)	0	0	0	9	-
All transport deaths	386 (16.3)	431 (18.2)	302 (12.7)	111 (4.7)	1142 (48.1)	2372	0.19 (0.10)

6.7 Transport-related deaths: implications for prevention

The NIMSS has confirmed that transport injuries constitute a serious public health problem in South Africa. The prominence of transport deaths and injuries is reflected in other low and middle-income societies. In general, it is thought that the high incidence of traffic crashes is due to several factors, including the large percentage of children and youth in these populations, the inadequate separation of people and vehicles, poor or absent road illumination, and the use of roads for vending, playing and walking as well as driving vehicles. This problem is compounded by the arrival of recent immigrants from rural areas, who are often unfamiliar with traffic behaviour. The mixture of vehicles with varying speeds is also cited as a potential risk factor to elevated traffic mortality rates. Risk factors related to vehicles include the overloading of vehicles and the use of inferior material for tyres, wheel bearings, brake pads and steering systems.[7]

In response to the public health threat posed by traffic crashes, a number of interventions have been proposed to reduce traffic injuries and deaths. They include committed law development and enforcement, clear separation and demarcation of areas for vehicle and pedestrian use, and community-wide traffic calming measures. Interventions reported to have been effective in changing behaviour include child restraint legislation, child restraint loan schemes, pedestrian education aimed at the child or parent, sustained use of surveillance systems, and the commitment of interagency co-operation. In this section we outline a selection of transport mortality prevention implications that may be developed based on the NIMSS data. The selection is not exclusive.

Pedestrian vulnerability and location

The NIMSS reported that most traffic-related deaths involved pedestrians (37.3%) and motor vehicle users including passengers (17.4%) and drivers (14.0%). The data indicate that the safety of these groups should be considered a national priority. The identification of where these groups are most at risk is a further research concern. The high percentage of pedestrian deaths suggests that there may not be sufficient separation of pedestrian walking areas and traffic lanes. Prevention strategies could include the enforcement of existing boundaries, the development of others where needed, and the promotion and enforcement of safe pedestrian and driver skills and conduct.

Day, time and seasonal trends, and alcohol

The NIMSS data indicate that pedestrian deaths peaked between 17h00 and 22h00 and also during the winter month of June. This information indicates that the decreased visibility over these periods may be a significant factor in fatal transport crashes. A number of organisations are appropriately producing material to improve the visibility of, for example, schoolchildren, traffic signage, and pedestrian crossings. The prominence of crash deaths over the weekends may reflect a combination of alcohol consumption and increased presence of people on roads and adjacent areas. Weekend leisure activities are especially associated with alcohol consumption. More than half of all transport-related deaths had elevated BACs. Pedestrians, especially, and driver deaths recorded the greatest percentage of cases with positive BACs. Prevention interventions may be focused on the continued enforcement and publicising of restrictions on alcohol consumption by drivers, particularly during high-risk periods.

Population group

The majority of pedestrians killed were either African or Coloured, possibly a reflection of the location of a high percentage of these people in low-income environments, with relatively lower levels of road and adjacent infrastructure, less traffic control and management systems, and less access to emergency services. People in low-income settings may be more likely to use unsafe road and pavement spaces in their daily activities, including travelling to work or to participate in leisure activities. Injury prevention interventions may include general socio-economic and environmental development, improved separation of traffic and pedestrian areas, and traffic calming interventions, specifically in high-risk areas.

Age

The NIMSS identified the vulnerability of infant passengers and child pedestrians in traffic crashes. Prevention efforts for child safety may include school education programmes, traffic control and calming measures for areas with a high concentration of children (e.g. around schools, playgrounds and housing areas) and the enforcement of current child safety legislation. The provision of adequate and separate play areas for children is a priority, especially in under-resourced areas. The NIMSS data indicate that driver deaths were relatively high in all age groups from 20 to 44 years. Driver based interventions may include regular education and skills monitoring and promotion, enforcement of safe driver behaviour and acceptable vehicle standards.

[7] Berger LH & Mohan D. 1996. Injury Control: A global view. Delhi: Oxford University Press.