Road Traffic Accident Deaths in South Africa, 2001–2006

Evidence from death notification

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Road Traffic Accident Deaths in South Africa, 2001–2006: Evidence from death notification

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Executive summary

This report utilises data from the Statistics South Africa (Stats SA)'s Recorded causes of death database to examine trends and variations of road traffic accident deaths in South Africa. The database consists of information from the country's death notification system from the Department of Home Affairs. Focus is on deaths where road traffic accident was the underlying cause. Road traffic accident deaths are examined in relation to; category of cause of death i.e. immediate or contributing cause; province of death in relation to province of death; place of death; and month of death. Crude and age-standardised death rates are compared for the period 2001–2006 to establish trends in road traffic accident death rates. Average annual death rates are examined by age, sex, and province of death. Potential years of life lost due to premature death as a result of road traffic accidents are also estimated. The following highlights emerged from the analysis:

- When compared to water and air transport, land transport contributes the highest proportion (99,8%) to the total transport accident deaths in South Africa.
- The majority (83,4%) of people who died as a result of road transport accidents died in their province of usual residence.
- Generally, road traffic accident deaths were highest in December and lowest in January and February.
- Crude road traffic accident death rates varied slightly from 9,9 per 100 000 population in 2001 to 11,8 per 100 000 population in 2006. Standardised death rates showed only slight variation from crude death rates indicating that differences over the years are due to factors other than changes in population age composition.
- Road traffic accident death rates were highest in age group 35–49 and were lowest in age groups 0–14 and 15–24.
- The road traffic accident death rate for males was more than two and half times that for females.
- Limpopo province had the highest death rate whilst Gauteng had the lowest.

Section 1: Introduction

1.1 Background

According to the World Medical Association (2006), serious injuries and mortality in road collisions are a public health problem with consequences similar to those of major diseases such as cancer and cardiovascular disease. WHO (2004) estimated that in 2002:

- Worldwide, about 1,2 million persons were killed on the roads and an additional 20–50 million were injured.
- Road traffic injuries were the 11th leading cause of death worldwide and accounted for 2,1% of all deaths globally.
- Road traffic deaths accounted for 23% of all injury deaths worldwide.
- An overwhelming majority (90%) of the road traffic deaths occurred in low income and middle-income countries, where 81% of the world's population live and own about 20% of the world's vehicles.
- The overall global increase in road traffic accident mortality is predicted to be 67% by 2020 if appropriate action is not taken.

The road traffic death toll represents only “a tip of the iceberg” of the total waste of human and societal resources from road injury. Moira Winslow, Chairman of Drive Alive, in South Africa correctly argues that;

> “The human suffering for victims and their families of road traffic–related injuries is incalculable. There are endless repercussions: families break up; high counselling costs for the bereaved relatives; no income for a family if a breadwinner is lost; and thousands of Rands to care for injured and paralysed people.” (WHO, 2004).

In total, 3 280 931 deaths were recorded in South Africa between 2001 and 2006 of which 9,5% were due to non-natural causes (Statistics South Africa, 2008). Road traffic accident deaths comprised 9,3% of non-natural deaths. Data from the National Injury Mortality Surveillance System (NIMSS) show that in 2005 transport-related injuries accounted for 74,3% of all accidental (or unintentional) deaths (Medical Research Council and UNISA, 2007). Analysis of the injury burden in South Africa by Norman et al. (2007) showed that the age standardised road traffic injury mortality rates for South Africa were about double the global rate for both males and females.

A road traffic crash results from a combination of factors related to the components of the system comprising roads, the environment, vehicles and road users, and the way they interact. Norman et al. (2007) attributed the high burden of traffic injury mortality in South Africa to unsafe road environments, poor enforcement of existing traffic laws, road rage and aggressive driving as well as alcohol misuse. Decision-making in public policy, including road safety issues, should be dependent on evidence. Without reliable information, priorities for road traffic injury prevention, and the impact and outcomes of such interventions cannot be rationally or satisfactorily determined. In the same way, information is central to ascertaining the burden of road traffic accidents.

In South Africa, data on road traffic accident deaths is collected, stored and analysed by a variety of agencies which include the Road Transport Management Corporation (RTMC), Statistics South Africa (Stats SA) and the National Injury Mortality Surveillance System (NIMSS). The RTMC collects and analyses data on road traffic injuries and fatalities. The data is collected through the accident report forms which are completed by the police. The NIMSS is a project of the Medical Research Council/University of South Africa (UNISA) Crime, Violence and Injury Lead Programme. NIMSS produces information on non-natural deaths, which include road traffic accident deaths, from selected mortuaries. In essence, this system involves the active collation and centralisation of routinely-kept data on deaths due to non-natural causes that, in terms of legislation, are subject to medico-legal investigation. The NIMSS is being expanded annually, and will eventually process information from all mortuaries performing medico-legal post-mortems (NIMSS, 2009). Stats SA collects information from the country's death notification system from the National Department of Home Affairs. The information is stored in the Recorded causes of death database at Stats SA. The database includes all registered deaths both natural and non-natural deaths (including road traffic accident deaths). This is the information on which this report is based. Data from these different sources are, however, not necessarily comparable due to differences in collection methods, coverage and possibly definitions.

1.2 Objectives of this report

This thematic report aims to provide an in-depth analysis of statistics on registered road traffic accident deaths in South Africa during 2001–2006 based on cause of death data recorded on death notification forms. Specifically, the report examines trends and variations of road traffic accident deaths.

1.3 Definition of terms

Cause of death: all those diseases, morbid conditions or injuries which either resulted in or contributed to death and the circumstances of the accident or violence which produced any such injuries.

Recorded death: is a death registered at the Department of Home Affairs and processed at Statistics South Africa.

A *transport accident:* is any accident involving a device designed primarily for, or being used at the time primarily for, conveying persons or goods from one place to another.

A traffic accident: is any vehicle accident occurring on the public highway/street (i.e. originating on, or involving a vehicle partially on the highway/street).

A road traffic accident death: a death resulting from injuries sustained in a road traffic accident including those of a pedestrian, pedal cyclist, motorcycle rider, occupants of three-wheeled motor vehicle, occupant of pick-up truck or van, occupant of heavy transport vehicles, bus occupant and individuals injured in other land traffic accidents (animal riders, occupants of a railway train etc.).

Non-natural causes of death: non-natural causes of death comprise all deaths that were not attributable, or may not have been attributable to natural causes and in South Africa, in terms of the Inquests Act (Act No. 58 of 1959), these deaths are subject to medico-legal investigation.

Underlying cause of death: the underlying cause of death is defined by the WHO as the disease or injury that initiated the train of morbid events leading directly to death

or the circumstances of the accident or violence that produced the fatal injury (United Nations, 1991). The underlying cause of death is commonly adopted as the cause for tabulation of mortality statistics as it is the most useful single cause for public health purposes.

Immediate cause of death: the disease, injury, or complication that directly precedes death, which is the ultimate consequence of the underlying cause of death.

Section 2: Data and methods

2.1 Data source

This report is based on data on road traffic accident deaths from the Stats SA mortality and causes of death information from the country's death notification system. Stats SA receives death notification forms for processing from the national Department of Home Affairs. The denominator population data for the calculation of death rates per population group was extracted from the interactive data on mid-year population estimates from the Stats SA website – StatsOnline (Stats SA, 2009). The medium variant population estimates were utilised.

Coding of cause of death

The death notification form captures multiple causes of death. The causes of death categories in the database are based on the International Classification of Diseases, tenth revision (ICD-10). This is a classification maintained by the WHO for coding diseases, signs, symptoms and other factors causing morbidity and mortality; used worldwide for morbidity and mortality statistics, and designed to promote international comparability in the collection, processing, classification and presentation of statistics. The analysis in this report focuses on deaths for which the underlying cause of death is road traffic accident (ICD-10 codes V01-V89). The underlying cause of death is generated automatically by the software programme, Automated Classification of Medical Entities (ACME). The ACME programme, developed by the United States National Center for Health Statistics, applies World Health Organization rules on the selection of underlying causes of death. The programme uses the sequence of the conditions listed as causes of death on the death notification form to automatically generate the underlying cause of death (Statistics South Africa, 2008). Cases that are not automatically generated are derived manually by trained coders at Statistics South Africa.

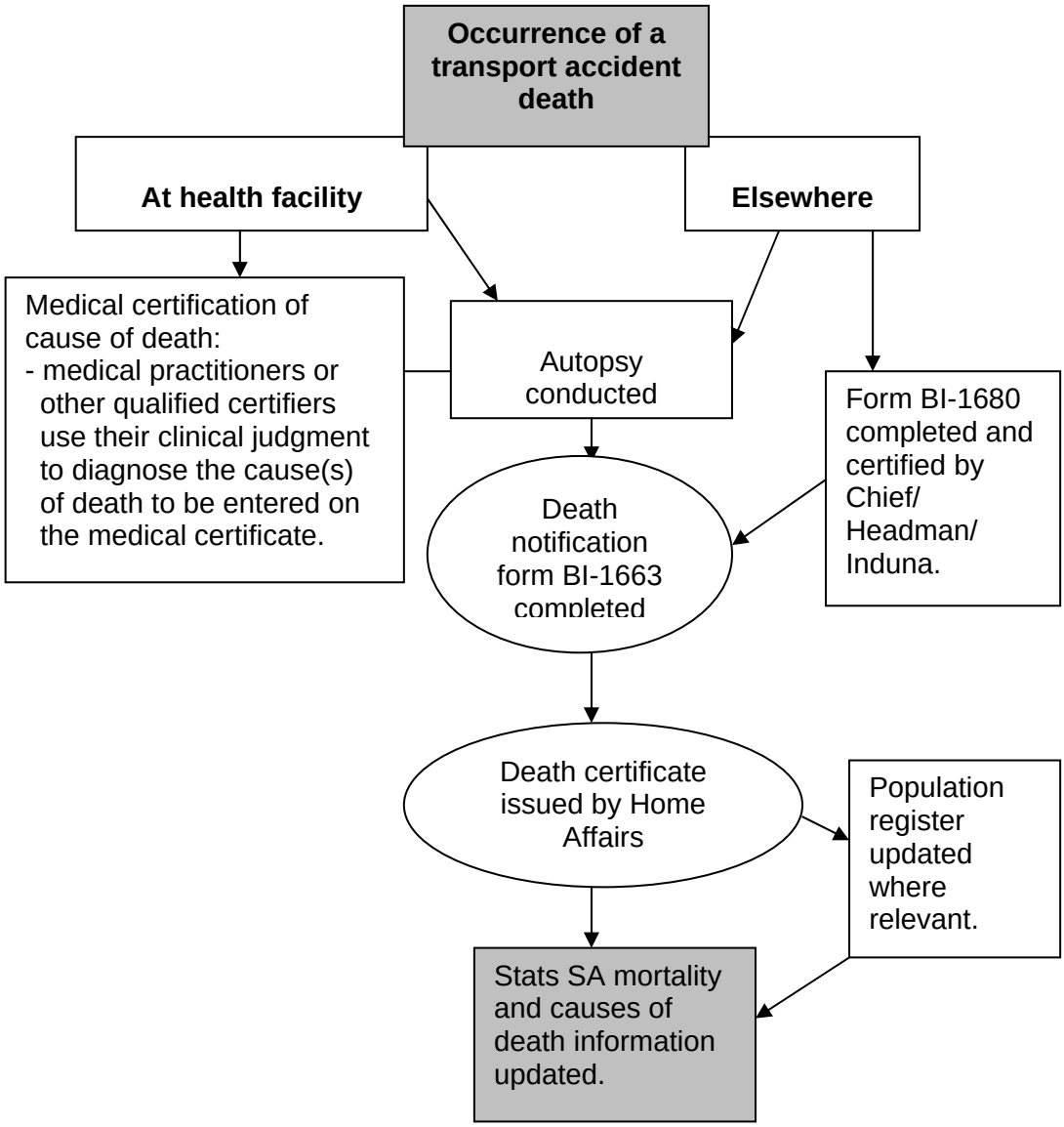
From accident death to accident statistic- the data chain

Road traffic accidents are a part of the non-natural causes of death, and in terms of the Inquests Act (Act No. 58 of 1959) of South Africa, these deaths are subject to medico-legal investigation and an autopsy must be performed to establish the cause of death. A representation of the manner in which road traffic accident death data are generated through the civil registration process is shown in Figure 2.1

2.2 The data

As defined earlier, road traffic accident deaths include deaths for which the underlying cause was road traffic accident (ICD-10 codes V01-V89). Specifically excluded are deaths due to injuries sustained in water transport accidents (V90-V94), air and space transport accidents (V95-V97) and other specified and unspecified transport accidents (V98-V99). The data includes a total of 28 890 road traffic accident deaths that occurred and were recorded in South Africa during the period 2001–2006 (including those of non-citizens and/or non-residents).

Figure 2.1: Registration process for road traffic accident deaths



2.3 Data limitations

The data used provides important information on road traffic deaths in the country, which in turn contributes to better understanding of the extent of this critical public health problem. It is however important to note that the data has some limitations related to; incompleteness of background information on the deceased; inadequate specification of cause of death; and under- and late registration of deaths. These limitations are discussed in this sub-section.

(a) Completeness of information of background characteristics per individual record

One major limitation of the data is that information on many of the background characteristics is missing. Table 2.1 shows the percentage of road traffic accident deaths with missing data on age and sex of the deceased, which are key characteristics in the analysis of death rates. The table shows that the proportion of road traffic accident deaths for which the age at death was unspecified or unknown increased steadily from a low of 0,43% in 2001 to reach a high of 1,41% in 2004, and decreased thereafter to reach 0,49% in 2006. Apparently, sex is relatively better reported than age.

Table 2.1: Percentage of road traffic accident deaths with unspecified/ unknown age and sex by year of death, 2001–2006

Year	Total deaths (N)	Age unspecified/ unknown (%)	Sex unspecified/ unknown (%)
2001	4 433	0,43	0,22
2002	3 661	0,57	0,44
2003	4 455	1,17	0,38
2004	5 234	1,41	0,19
2005	5 443	1,08	0,18
2006	5 664	0,49	0,12

Although the type of vehicle is seen as the most important factor for prevention purposes, for the majority of the road traffic accident deaths utilised in this report, the type of vehicle is unspecified (Table 2.2). The table shows that the average annual proportion of deaths associated with motor or non-motor vehicle accident but for which the type of vehicle is unspecified (ICD-10 code V89) was generally over 85% in the period 2001–2006.

Table 2.2: Number and percentage of recorded road traffic accident deaths with type of vehicle unspecified by year of death

Year	Number of deaths	%
2001	3 915	88,0
2002	3 409	93,1
2003	4 171	93,4
2004	4 764	90,9
2005	4 686	85,9
2006	4 585	80,9

(b) Cause of death unspecified

Depending on the diligence and integrity of the certifying officer, death notification forms may not contain adequate detail to allow for definite determination of cause of death (Stats SA, 2008). As such, for some deaths, the cause of death is ill-defined. From 2001 to 2006, a total of 313 079 non-natural deaths were recorded and of these, 35% were attributed to unspecified/ undetermined events. This category includes deaths from injuries due to unspecified causes (which may include road traffic accidents but which were not recorded as due to road traffic accidents). For example, a cause of death specified as 'multiple injuries' on a death notification form. The high proportion of non-natural deaths classified as due to "unspecified events/ undetermined intent" points to problems of inadequate detail on cause of death on the death notification forms.

(c) Under-registration

Under-registration of deaths is a major global problem affecting not only low-income and middle-income countries but also high-income countries. In South Africa, under-registration is one of the identified weaknesses of the cause of death data, particularly in rural areas (Stats SA, 2008). This leads to lower estimates of the numbers of deaths. In this case, however, whilst some under-reporting is possible, the extent is expected to be limited due to the fact that road traffic accident deaths are non-natural deaths, which, according to legislation, are subject to medico-legal investigation with an autopsy being mandatory.

(d) Late registrations

Table 2.3 shows the additional number of deaths from road traffic accidents obtained from death notification forms for the years 2001–2005 that were processed with the 2006 forms in the 2007–2008 processing phase. This report uses the updated information that includes all forms processed up to 2006. The table shows that late registration is not a major problem with regard to road traffic accident deaths. The majority of the late registrations of road traffic accident deaths were for deaths that occurred in the preceding year, 2005, and this was 24 deaths.

Table 2.3: Additional road traffic accident deaths processed with the 2006 forms in the 2007–2008 processing phase by year of death

Year of death	Additional forms received in the 2007/2008 processing phase
2001	0
2002	2
2003	1
2004	2
2005	24
2006	N/A

2.4 Methods

Death rates: The report examines trends and differentials in road traffic accident mortality using death rates (deaths per 100 000 per given time period). The number of deaths per 100 000 population is widely used with reasonable confidence to monitor changes over time in "personal risk" levels and to make comparisons between countries, communities, and geographic units with populations of different

size. Errors in population statistics are assumed to have little impact on the observed changes or comparisons. The death rates, which show the ratio of fatalities to population, reflect the impact of road traffic accidents on human population as a public health problem.

For calculation of age and/or sex-specific death rates, cases with missing data on age at death and sex were distributed by prorating based on the assumption that those of unknown age or sex have the same percentage distribution as those of known age or sex (Siegel et al, 2004). Broad age groups are utilised in the analysis which are; 0–14, 15–24, 25–34, 35–49, 50–64 and 65 and above. The age groups were purposely selected to reflect deaths among children (0–14), youth (15–24), young adults (25–34), the middle aged (35–49; 50–64) and the elderly (65 years and above).

Standardisation: The death rates are standardised for differences in age composition, using the 2006 mid-year population estimates for South Africa as the standard. The standardisation eliminates the effect of differences in age composition from comparisons among populations. Effectively, the standardised rates represent the number of deaths that would occur per 100 000 persons if the standard population experienced the age-specific death rates of the population of interest. The age adjusted (standardised) death rates are thus only useful for comparison purposes and have no inherent meaning for most of other purposes.

Section 3: Overview of road traffic accident deaths

3.1 Road traffic accident as an underlying cause of death

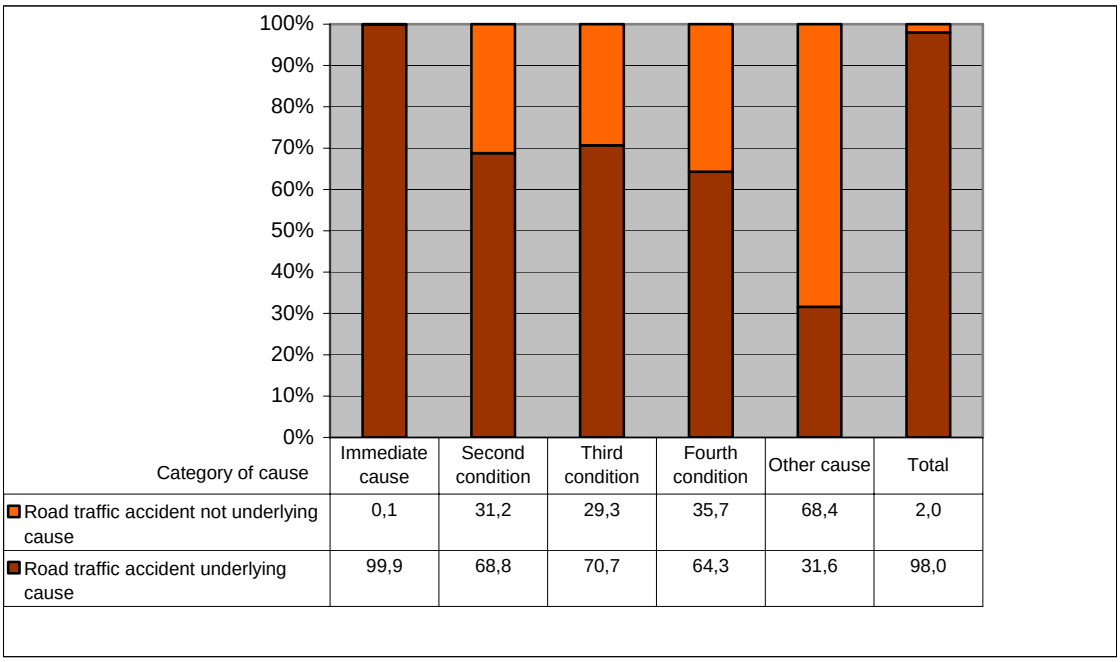
As indicated earlier, this report is based on analysis of deaths coded to road traffic accident as the underlying cause (ICD-10 codes V01-V89). However, the South African death notification form makes provision for grouping causes of death on each form into one or more categories. For example, the form provides for the capture of the immediate cause of death and in addition, there is also space to record sequentially the list of conditions leading to or contributing to the immediate cause. Thus, a cause can be indicated as immediate, contributing or underlying. Table 3.1 shows the distribution of road traffic accident deaths where road traffic accident was mentioned among the causes of death by category of cause. The table shows that road traffic accidents were most commonly mentioned as immediate causes. A total of 27 722 deaths that occurred between 2001 and 2006 had road traffic accident as the immediate cause of death. On the other hand, road traffic accidents were mentioned as a fourth contributing cause in only 84 deaths over the same period.

Table 3.1: Number of deaths where road traffic accident was mentioned among causes of death by category of cause and year of death

Category of cause	Year of death						
	2001	**2002**	**2003**	**2004**	**2005**	**2006**	**Total**
Immediate cause (cause A)	4 251	3 465	4 252	5 055	5 277	5 422	**27 722**
Second condition leading to death (cause B)	180	263	315	203	156	178	**1 295**
Third condition leading to death (cause C)	55	70	72	50	51	57	**355**
Fourth condition leading to death (cause D)	22	19	10	13	6	14	**84**
Other conditions leading to death (other cause)	12	3	18	4	0	1	**38**

As indicated earlier, the underlying cause is generated automatically, and in some cases manually, from the information on conditions listed as causes of death. In 98% of the cases where road traffic accident was mentioned as an immediate or contributing cause of death, it was also the underlying cause (Figure 3.1). The graph also shows that in 99,9% of the deaths where road traffic accident was mentioned as the immediate cause, it was also the underlying cause compared to 31,6% of the cases where it was mentioned as “other cause” contributing to death.

Figure 3.1: Percentage distribution of deaths where road traffic accident was mentioned as a cause and was also the underlying cause by category of cause, 2001–2006



Category of cause	Immediate cause	Second condition	Third condition	Fourth condition	Other cause	Total
Road traffic accident not underlying cause	0,1	31,2	29,3	35,7	68,4	2,0
Road traffic accident underlying cause	99,9	68,8	70,7	64,3	31,6	98,0

The choice to use underlying cause of death in this analysis was based on the fact that in the overwhelming majority of cases where road traffic accident was mentioned as a cause, it was also identified as the underlying cause. Furthermore, “underlying cause” as defined earlier has a more intuitive meaning when compared to the other categories of causes of death.

3.2 Road traffic accident deaths and other transport accident deaths

The contribution of air and space transport accidents and water transport accidents to total transport accident deaths was relatively small as shown in Table 3.2. Road traffic accidents contributed 99.8% of the total transport accident deaths from 2001 to 2006.

Table 3.2: Distribution of road traffic accident deaths by type of accident and year of death

Year	Land transport/ road traffic accident	Water transport	Air and space transport	Other and unspecified transport accidents	Total
2001	4 433	2	12	2	**4 449**
2002	3 661	0	1	1	**3 663**
2003	4 455	0	6	7	**4 468**
2004	5 234	2	3	3	**5 242**
2005	5 443	0	5	6	**5 454**
2006	5 664	0	4	1	**5 669**
Total	**28 890**	**4**	**31**	**20**	**28 945**

3.3 Country of death

Table 3.3 shows the distribution of recorded road traffic accident deaths by year of death and whether or not the deaths occurred in South Africa. A total of 45 recorded road traffic accident deaths, from 2001 to 2006, involved South African citizens and permanent residents who died outside the country. Deaths of South African citizens and permanent residents that occurred outside South Africa, although recorded in South Africa (for purposes of updating the population register), were excluded from the analysis in this report.

Table 3.3: Number of road traffic accident deaths by year and country of death

Year	South Africa	Outside South Africa
2001	4 433	10
2002	3 661	4
2003	4 455	2
2004	5 234	5
2005	5 443	11
2006	5 664	13
Total	**28 890**	**45**

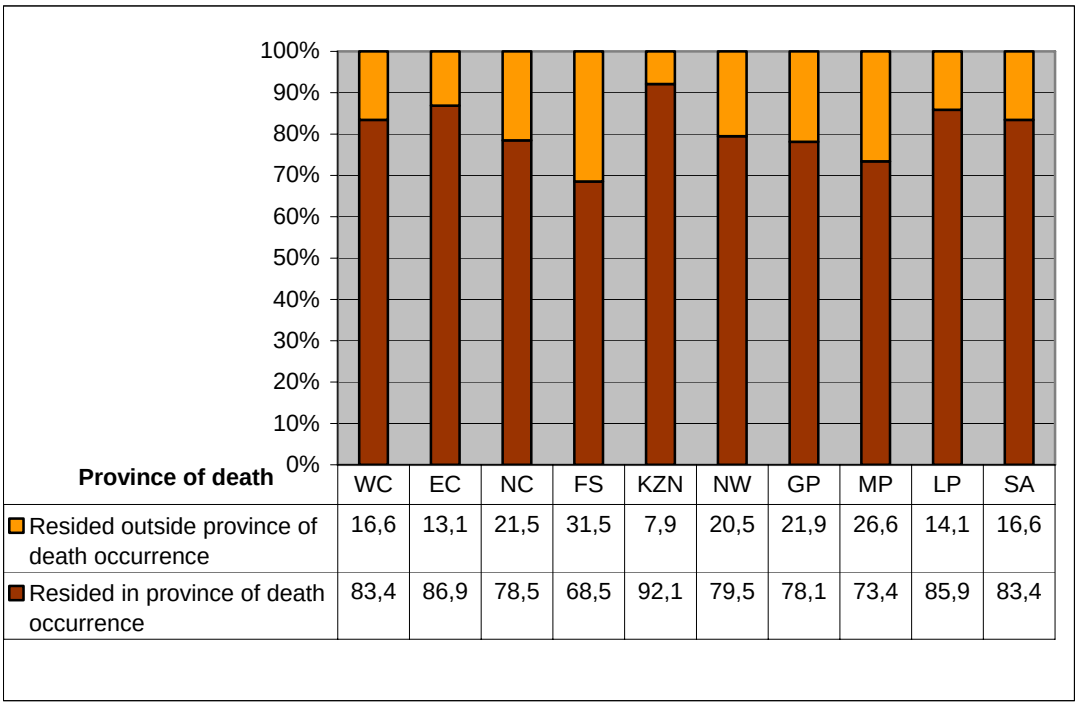
Over the period 2001 to 2006, a total of 129 of road traffic accidents involved foreigners or non-residents i.e. people who were not usually resident in South Africa. The small number of cases makes any detailed analysis of deaths of foreigners unreliable. However, disaggregation by province of death shows a higher concentration of road traffic accident deaths involving foreigners in the border provinces of Free State (1,24%), Limpopo (1,08%) and Mpumalanga (0,65%). KwaZulu-Natal had the lowest proportion of foreigners among casualties of road traffic accidents.

3.4 Province of death occurrence and province of usual residence

The death notification form (BI 1663) records information on both the province where death occurred and province of usual residence of the deceased. Whilst information on province of death is generally complete, sometimes information on province of usual residence is either unspecified or unknown. From 2001–2006, 8,7% of the recorded road traffic accident deaths had information on province of usual residence recorded as either unspecified or unknown.

Appendix 1 shows the number of road traffic accident deaths by whether or not the death occurred in the province of usual residence by year of death. Of the recorded road traffic accident deaths in South Africa from 2001 to 2006, 16,6% occurred in a province other than the province of usual residence (Figure 3.2). The graph shows that at provincial level, Free State and Mpumalanga had the highest proportions of road traffic accident deaths involving people who resided elsewhere. On the other hand, in KZN a large proportion (92,1%) of road traffic accident deaths involved people who resided in the province. This was also the case for Eastern Cape (86,9%) and Limpopo (85,9%).

Figure 3.2: Percentage distribution of road traffic accident deaths by province of death occurrence and whether or not the death occurred in province of usual residence, 2001–2006



Province of death	WC	EC	NC	FS	KZN	NW	GP	MP	LP	SA
Resided outside province of death occurrence	16,6	13,1	21,5	31,5	7,9	20,5	21,9	26,6	14,1	16,6
Resided in province of death occurrence	83,4	86,9	78,5	68,5	92,1	79,5	78,1	73,4	85,9	83,4

Note: • WC- Western Cape; EC- Eastern Cape; NC- Northern Cape; FS- Free State; KZN- KwaZulu Natal; NW- North West; GP- Gauteng; MP- Mpumalanga; LP- Limpopo; SA- South Africa
• Excludes cases with unspecified/ unknown province of usual residence.

3.5 Place of death

The death notification form (BI 1663) captures place of death as part of the demographic details. This indicates whether the death occurred in a hospital, emergency room (ER)/ outpatient, nursing home, at home or was dead on arrival. Information on place of death, with regards to road traffic accident deaths, is important as it may shed light on the importance of access to health facilities in terms of saving lives. However, such data is not always available. Figure 3.3 shows that for about a quarter (25,6%) of the road traffic accident deaths from 2001 to 2006 the place of death was either unknown or unspecified. The category “other” which includes deaths which occurred at the scene of the accident comprised 40,4% of the total deaths between 2001 and 2006. As expected, nursing homes were the least likely of places for road traffic accident deaths to occur, accounting for less than 1% of road traffic accident deaths (Figure 3.3).

Figure 3.3: Distribution of road traffic accident deaths by place of death 2001–2006

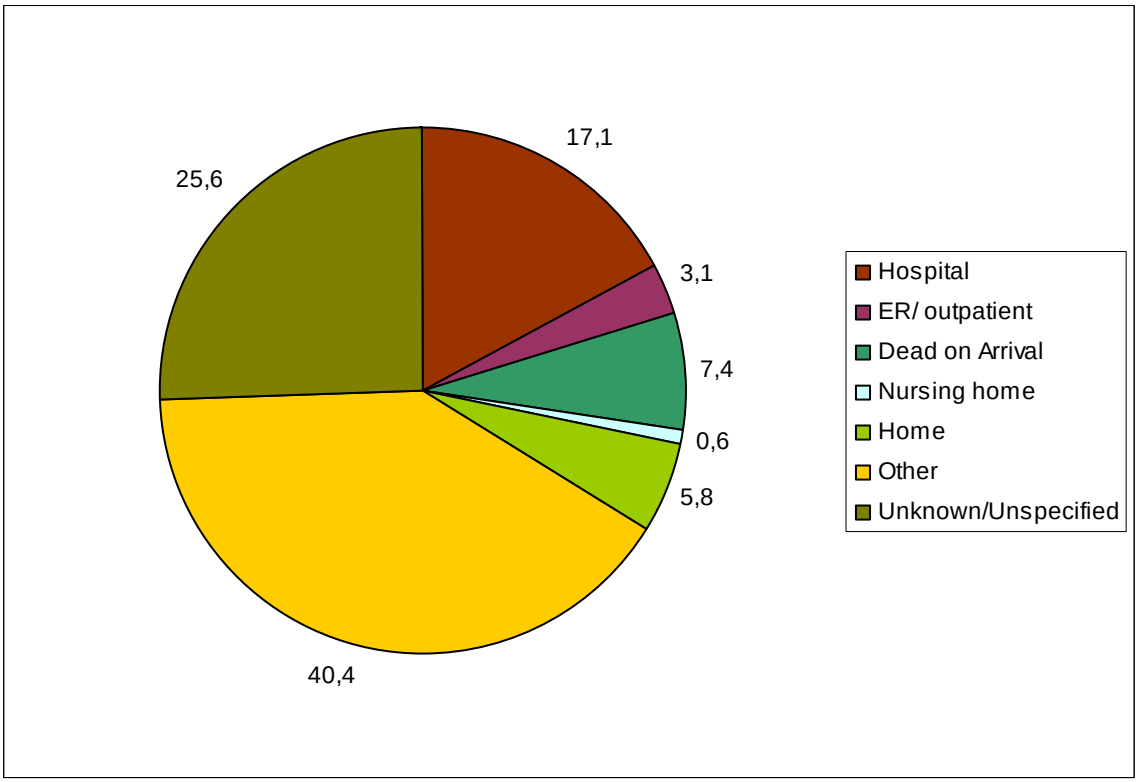


Table 3.4 shows that the proportion of road traffic accident deaths occurring in hospitals varied slightly between 16% and 17% from 2001 to 2006. Similarly, the proportion of road traffic accident deaths occurring in the emergency rooms / outpatient was roughly similar from 2001 to 2006.

Table 3.4: Percentage of road traffic accident deaths by place of death

Place of death	2001	2002	2003	2004	2005	2006	Total
Hospital	17,6	16,4	16,8	17,9	17,2	16,6	17,1
ER/ outpatient	3,2	3,5	3,4	3,1	3,4	2,5	3,1
Dead on Arrival	9,6	8,1	7,0	6,8	7,2	6,5	7,4
Nursing home	0,5	0,6	0,8	0,7	0,4	0,4	0,6
Home	5,0	5,5	6,9	5,7	6,0	5,6	5,8
Other	38,4	35,5	37,0	44,4	43,0	41,5	40,4
Unknown/ Unspecified	25,7	30,4	28,1	21,4	22,8	26,9	25,6
Total (%)	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**
Total number	**4 433**	**3 661**	**4 455**	**5 234**	**5 443**	**5 664**	**28 890**

3.6 Month in which death occurred

The number of road traffic accident deaths by month, sex and year is shown in Appendix 2. On average, December had the highest number of road traffic accident deaths while January and February had the lowest (Figure 3.4). Between March and October only slight variations in the number of road traffic accident deaths occurred, after which there is a noticeable decrease in November before rising to reach a peak in December.

Figure 3.4: Distribution of road traffic accident deaths by sex and month of death occurrence, 2001–2006

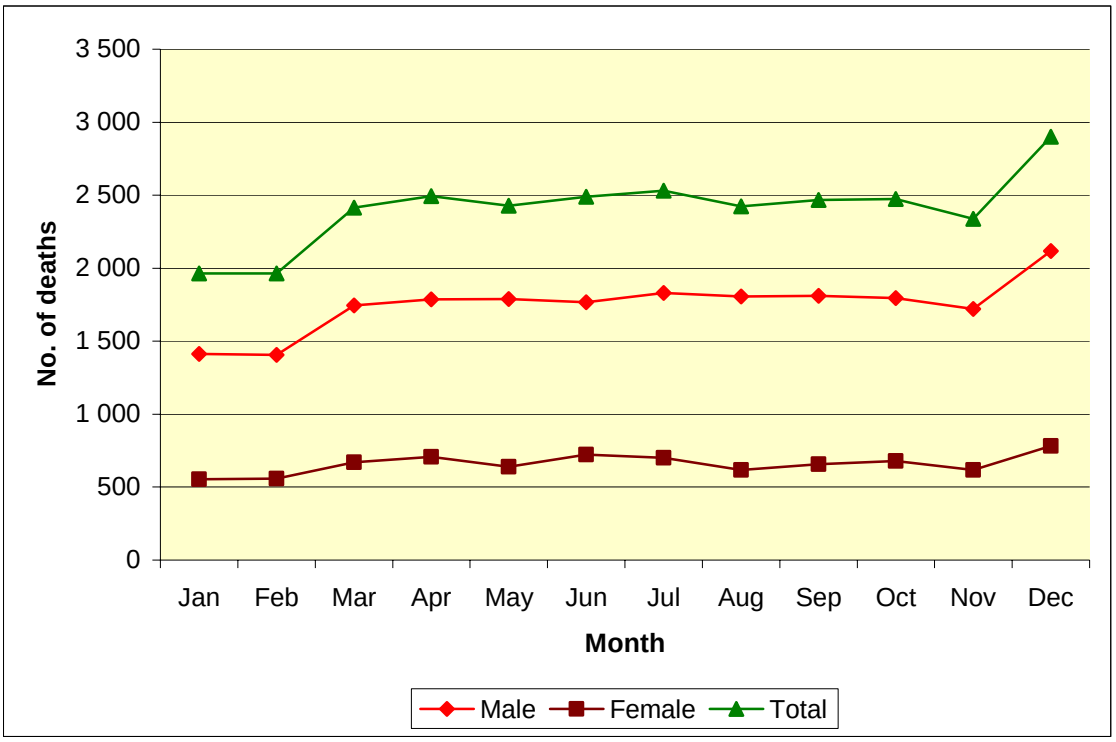
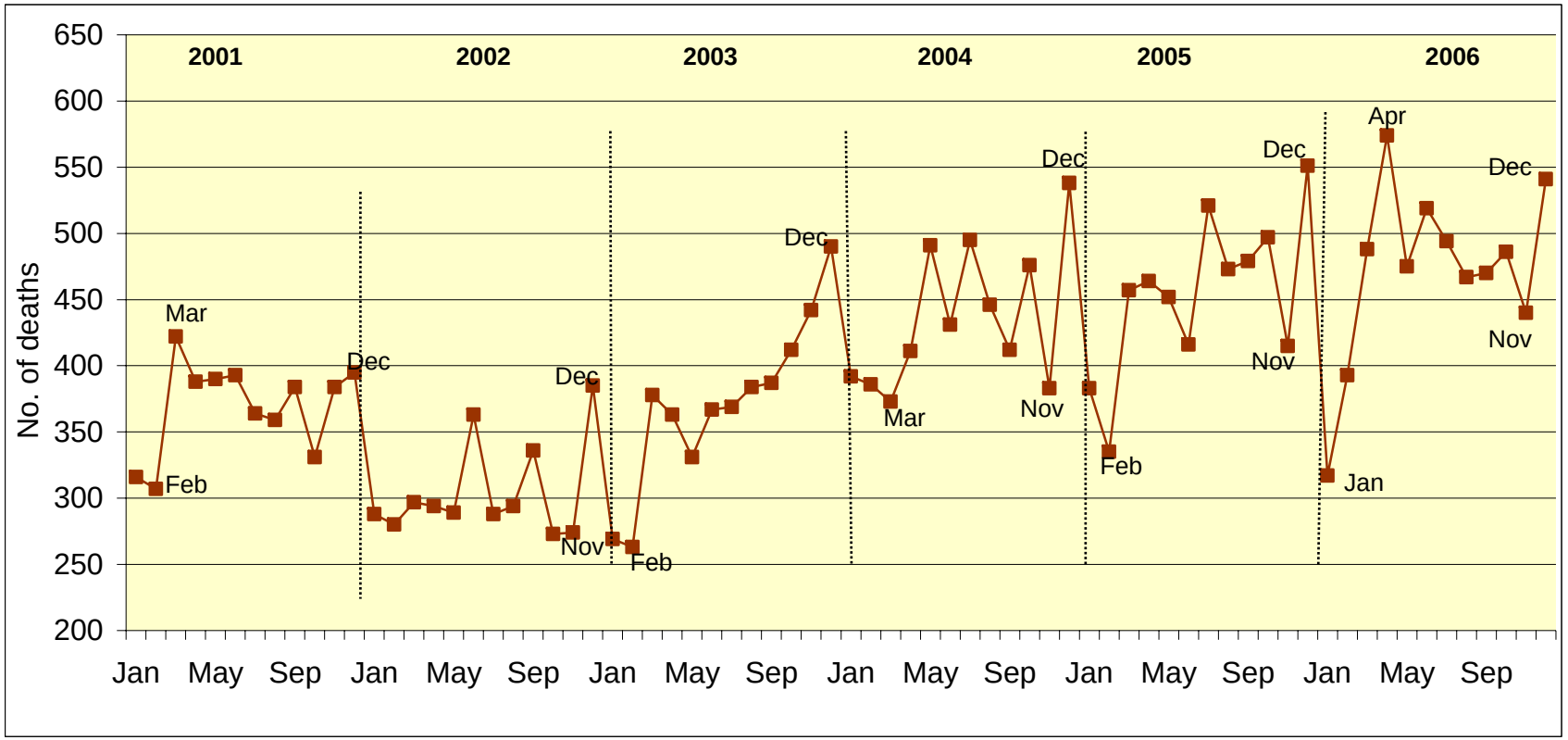


Figure 3.5 shows variations in the number of road traffic accident deaths by month and year from 2001 to 2006. The December peak is clearly evident from 2002 to 2005, while for the year 2001 the peak was in March, and in 2006, the peak was in April. The fact that January and February had the lowest numbers of deaths is also evident.

Figure 3.5: Number of road traffic accident deaths by month of death occurrence, 2001–2006



Section 4: Road traffic accident death rates

4.1 Crude versus standardised road traffic accident death rates

The distribution of road traffic accident deaths and mid-year population estimates by age group and year is shown in Appendix 3. Table 4.1 shows a close correspondence between crude death rates and age standardised death rates which indicates that the observed changes in crude death rates between 2001 and 2006 do not merely reflect the effects of the changing age structure of the population.

Table 4.1: Mid-year population estimates, number of road traffic accident deaths, and crude and age standardised road traffic accident death rates, 2001–2006

Year	Mid-year pop	No. of deaths	Deaths per 100 000 population	
			Crude	Standardised
2001	44 928 796	4 433	9,87	10,06
2002	45 587 115	3 661	8,03	8,16
2003	46 205 956	4 455	9,64	9,78
2004	46 787 089	5 234	11,19	11,30
2005	47 335 091	5 443	11,50	11,57
2006	47 837 140	5 664	11,84	11,86

4.2 Trends in road traffic accident death rates between 2001 and 2006

Figure 4.1 shows age standardised road traffic accident death rates by year of death. In 2001, the age standardised road traffic accident death rate was 10,06 deaths per 100 000 population and it decreased to 8,16 per 100 000 population in 2002 and then increased steadily to reach 11,86 per 100 000 in 2006. The dip in 2002 is most likely a genuine decrease in road traffic accident deaths. Further data interrogation (see Table 4.2) shows that for 2002:

(a) there was no deficit of total recorded deaths when compared to adjacent years; nor that of deaths due to non-natural causes; and

(b) the proportion of non-natural causes coded to events of undetermined intent only show a minor peak at 36.6% compared to 34,8% in 2001 and 35,5% in 2003.

Figure 4.1: Average age standardised road traffic accident death rates for males and females by year of death

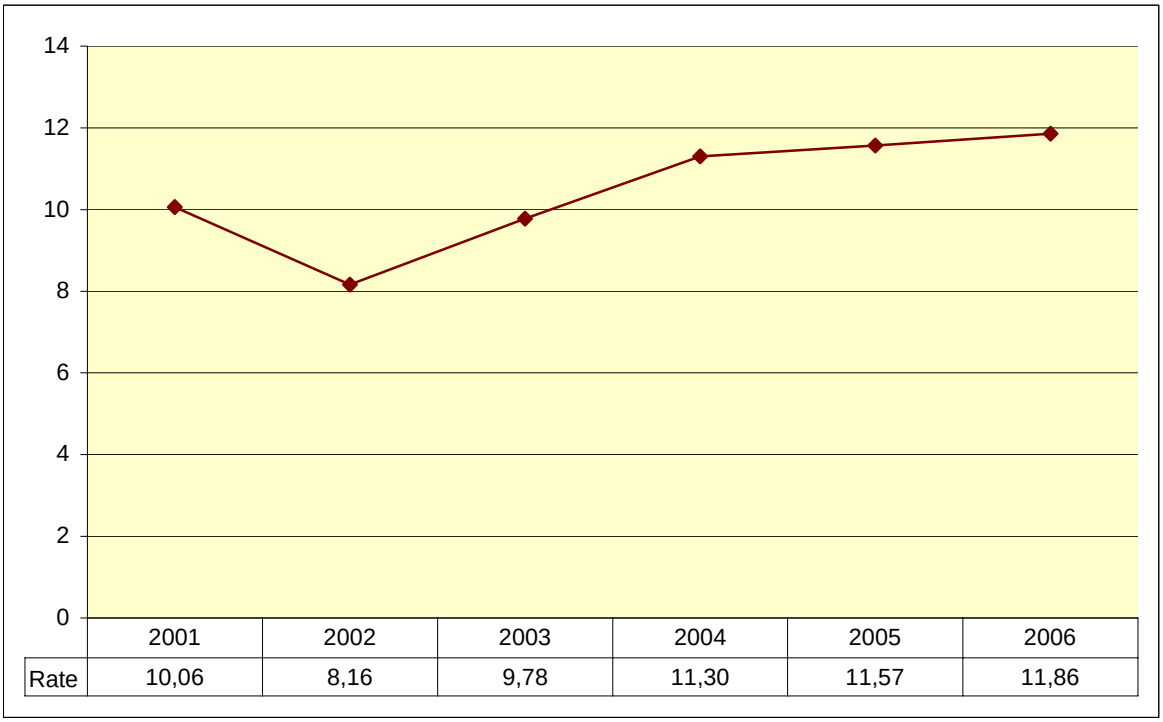


Table 4.2: Distribution of total recorded deaths, non-natural deaths and non-natural deaths coded to "unspecified events/ undetermined intent" (ICD10 code Y34) by year of death

Year	Total recorded deaths	Non-natural deaths	Non-natural deaths due to unspecified events/ undetermined intent (ICD-10- code Y34)	
	Number	Number	Number	%
2001	453 509	50 233	17 498	34,8
2002	500 082	51 317	18 791	36,6
2003	554 199	52 604	18 697	35,5
2004	572 620	52 976	18 946	35,8
2005	593 337	53 335	18 879	35,4
2006	607 184	52 614	17 234	32,8
Total	**3 280 931**	**313 079**	**110 045**	**35,2**

Note: Includes deaths of South African citizens and/or residents who died outside the country and late registrations recorded in the 2007/2008 processing period.

4.3 Age and sex differences in road traffic accident death rate

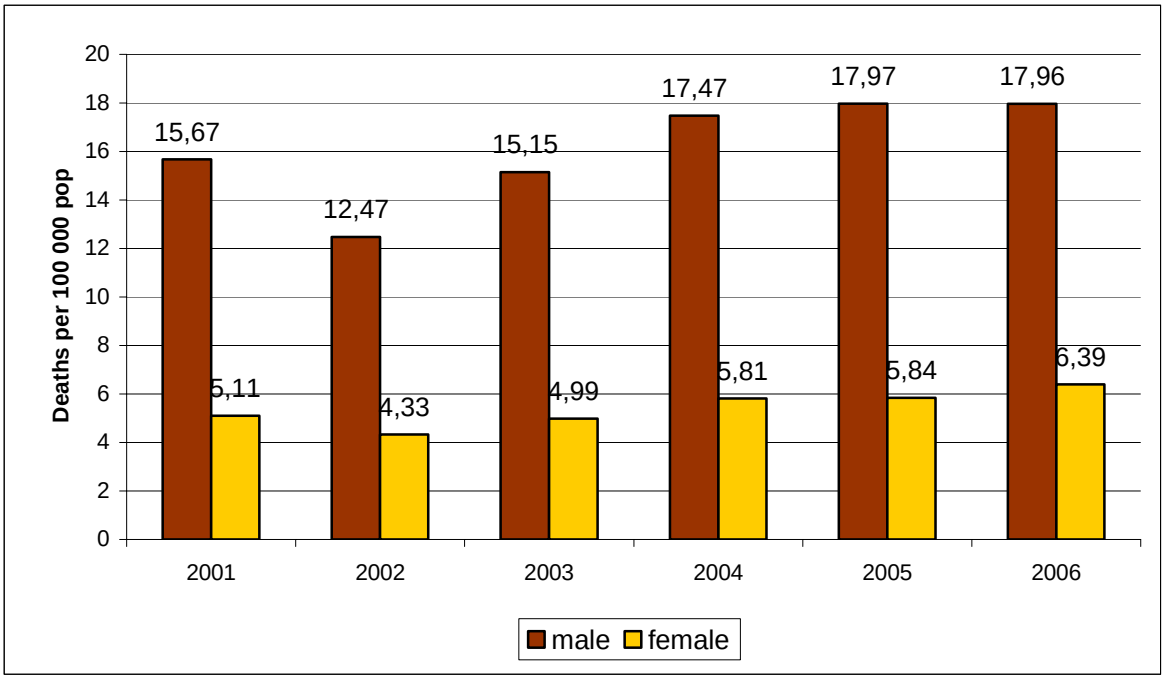
4.3.1 Sex differentials

In South Africa, from 2002 to 2006, the total number of recorded male deaths due to road traffic accidents was more than two and a half times that of females which translates to 266 male deaths for every 100 female deaths (data in Appendix 4). In terms of percentages, 73% of the recorded road traffic accident deaths between 2001 and 2006 were male. The average crude road traffic accident death rate for males was 15,7 deaths per 100 000 compared to 5,5 per 100 000 for females. Figure

4.2 shows that the relative high road traffic accident mortality rate of males compared to females was generally consistent for each of the years from 2001 to 2006. The high road traffic accident mortality for males relative to females is consistent with global patterns. According to WHO (2004), 73% of all global road traffic fatalities are male, and the gender difference in mortality rates is probably related to both exposure and risk taking behaviour.

Both the male and female standardised death rates (Figure 4.2) show the same pattern, of rising mortality from 2002 to 2006, as the rates for both sexes (Figure 4.1).

Figure 4.2: Age standardised road traffic accident death rates by sex and year of death



4.3.2 Age pattern

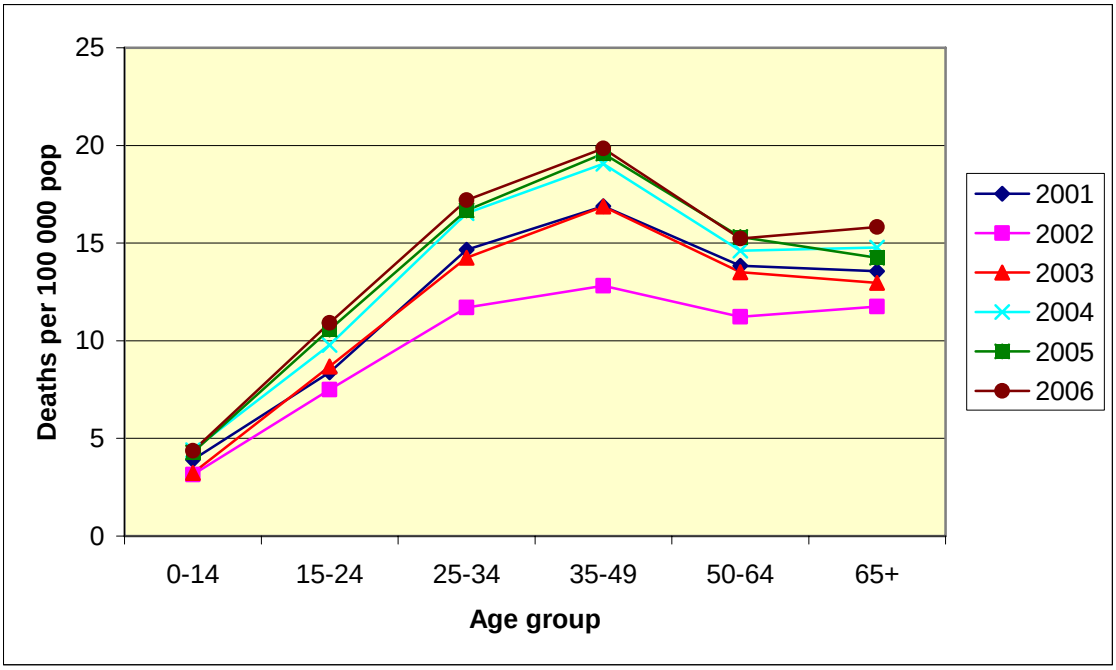
Based on the distribution of road traffic accident deaths and mid-year population by age group and year (Appendix 3), the average annual age specific death rates (ASDR) for the period 2001–2006 are shown in Table 4.3. The road traffic accident death rates were highest in age group 35–49 followed by age group 25–34 and were lowest among children aged 0–14 followed by age group 15–24. These findings contrast with those from some developed countries where road traffic accident death rates are highest among the youth. For example, an analysis of motor vehicle accident deaths in Canada from 2000–2004, revealed that the average death rate for age group 15–24 was the highest (16 deaths per 100 000 population), followed by age group 65 years and older with 9 deaths per 100 000 population (Ramage-Morin, 2008).

Table 4.3: Average annual rate of death from road traffic accidents by age, 2001–2006

Age group	Deaths per 100 000 population
0–14	3,89
15–24	9,33
25–34	15,22
35–49	17,55
50–64	14,00
65+	13,92
Total	**10,39**

Figure 4.3, which is derived from the data in Appendix 3, shows annual age specific road traffic accident death rates between 2001 and 2006. The age pattern for each year is generally similar to the average for the period. For each year, the road traffic accident death rate was highest in age group 35–49 and was lowest in age group 0–14. Young people aged 15–24 showed the second lowest road traffic accident death rates in each year. Figure 4.3 also shows that the general increase in road traffic accident death rates noted between 2002 and 2006 (Figure 4.1) was reflected in all the age groups. For each age group, the death rate was lowest in 2002 and showed a steady increase in the subsequent years up to the year 2006.

Figure 4.3: Age specific road traffic accident death rates by year of death



4.3.3 Age-sex variations

As discussed above, death rates from road traffic accidents were higher for males than females. Table 4.4 shows that this was the case across all age groups. For all the age groups, with the exception of age group 0–14 years, the male death rate was

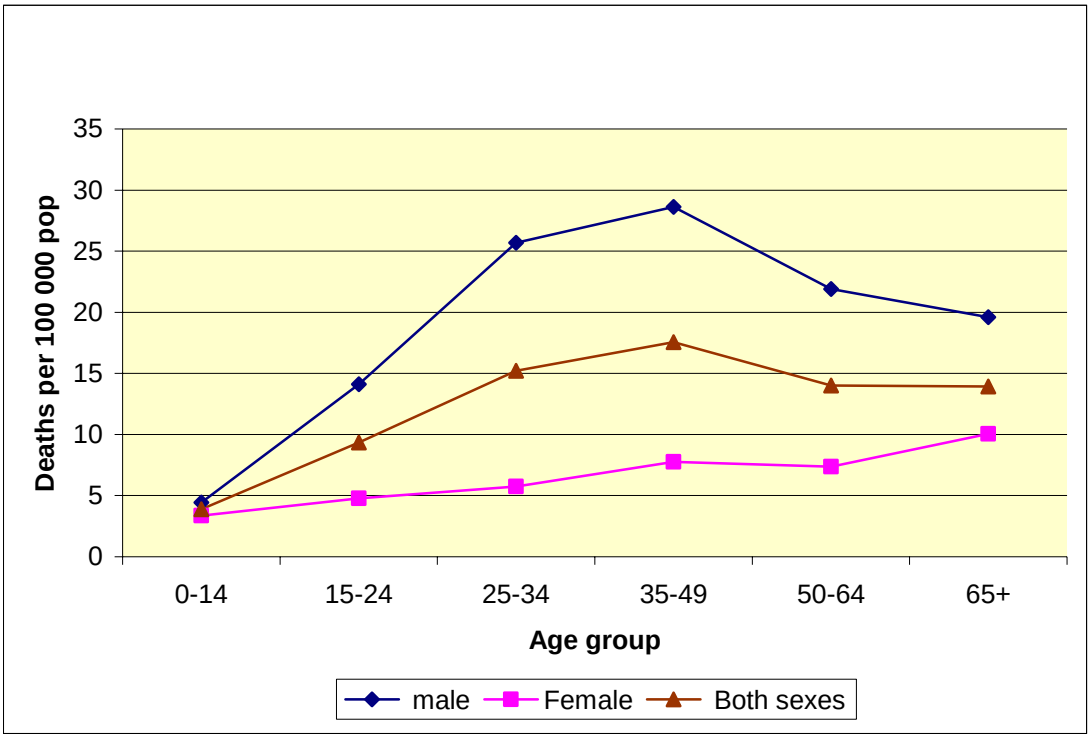
more than double that of females. The ratio of male to female road traffic accident death rates was highest in the age group 25–34, where the road traffic accident death rate for males was 4,4 times that for females, followed by age group 35–49. The difference between male and female death rates was lowest in age group 0–14 years where the male death rate exceeded that of females by only 32%.

Table 4.4: Average age specific road traffic accident death rates, 2001-2006

Age group	Male	Female	Ratio M/F
0–14	4,42	3,35	1,32
15–24	14,11	4,78	2,95
25–34	25,69	5,75	4,47
35–49	28,62	7,77	3,68
50–64	21,92	7,37	2,97
65+	19,60	10,05	1,95
Total	**15,68**	**5,47**	**2,87**

Figure 4.4 (based on data in Appendix 4) shows differences in the age pattern of road traffic accident mortality rates by sex. Whilst male death rates show a peak at age group 35–49 years (similar to death rates for both sexes), female death rates show a roughly linear increase from age group 0–14 to age group 65 years and above. Thus among females, the elderly experienced the highest death rates due to road traffic accidents.

Figure 4.4: Average age specific road traffic accident death rates, 2001–2006



4.4 Provincial variations in road traffic accident death rates

4.4.1 Levels and trends

The number of road traffic accident deaths and mid-year populations by age group, and province is shown in Appendix 5. Wide variations exist in road traffic accident death rates at provincial level (Table 4.5). The average crude road traffic accident death rate for the period 2001–2006 was highest in Limpopo province (18,1 deaths per 100 000 pop) and was lowest in Gauteng (5,9 deaths per 100 000 population). The similarity between the crude and age standardised rates shown in Table 4.5, indicates that the differences between provincial crude road traffic accident death rates are not merely a result of differences in age composition. The differences are genuine and as such, it is necessary to conduct research to identify factors responsible for the differences.

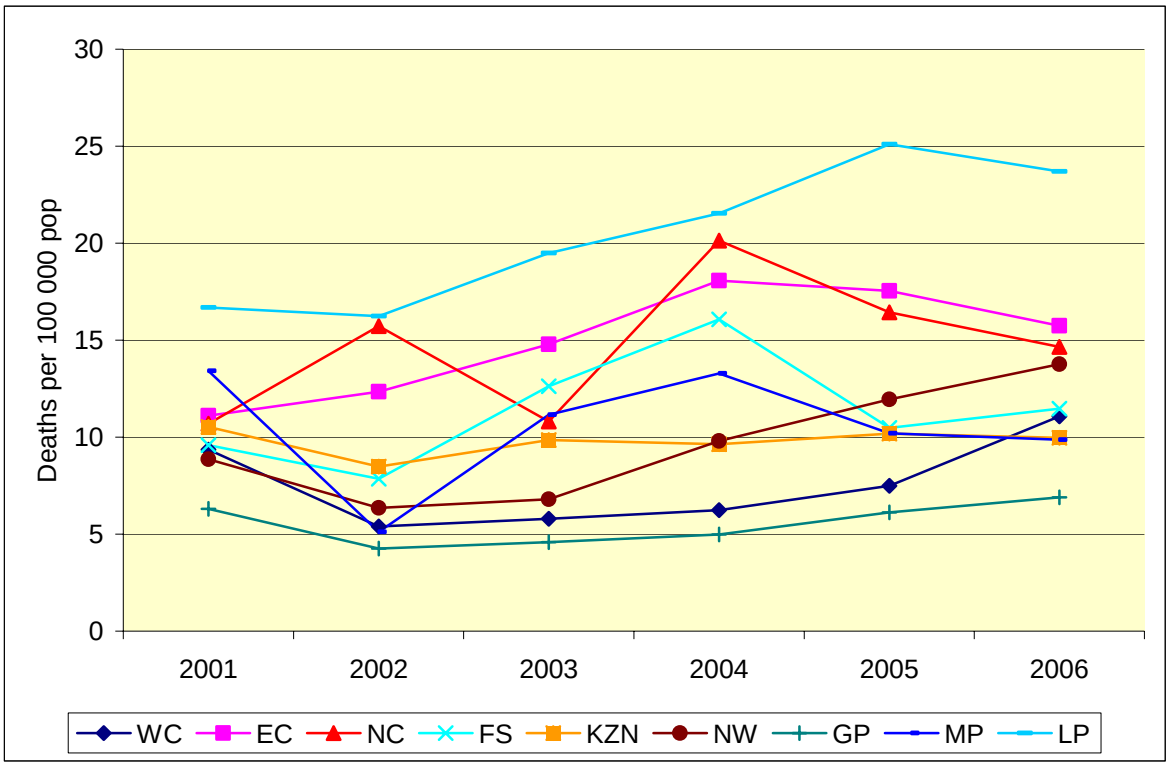
Table 4.5: Crude and age standardised average road traffic accident death rates by province, 2001–2006

Province	Deaths per 100 000 population	
	Crude	Standardised
South Africa (SA)	**10,4**	**10,5**
Western Cape (WC)	7,9*	7,6
Eastern Cape (EC)	13,9*	15,0
Northern Cape (NC)	14,4*	14,8
Free State (FS)	11,4*	11,4
KwaZulu-Natal (KZN)	9,3*	9,8
North West (NW)	9,7*	9,6
Gauteng (GP)	5,9*	5,5
Mpumalanga (MP)	9,8*	10,5
Limpopo (LP)	18,1*	20,5

** Significantly different from estimate for South Africa (p<0,05)*

Provincial trends in road traffic accident death rates are shown in Fig 4.5. The deficit of deaths in 2002 reflected at national level (Table 4.1), is apparent in all provinces except Northern Cape and Eastern Cape. However, the deficit is more visible in Mpumalanga. The trends for Northern Cape, Mpumalanga and Free State are generally erratic, which may be a result of the relatively small numbers of deaths in these provinces. North West, Western Cape and Gauteng show generally rising road traffic accident death rates from 2002 to 2006. For KwaZulu-Natal, the death rate is generally constant from 2003 to 2006. Eastern Cape and Limpopo show an initial rise in road traffic accident death rates from 2002 followed by a decrease. In Limpopo, death rates increased steadily from 2002 to 2005 and then decreased thereafter, whilst in Eastern Cape, the decrease occurred after 2004.

Figure 4.5: Road traffic accident mortality trends by province where death occurred, 2001–2006

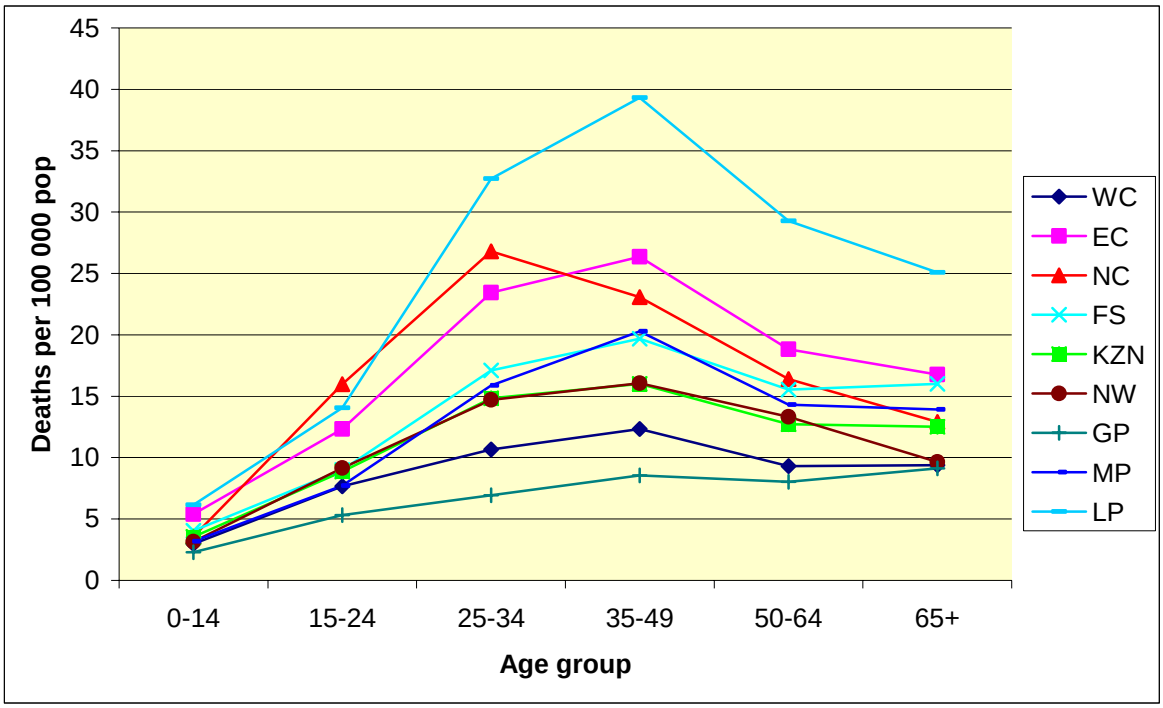


Note: WC- Western Cape; EC- Eastern Cape; NC- Northern Cape; FS- Free State; KZN- KwaZulu Natal; NW- North West; GP- Gauteng; MP- Mpumalanga; LP- Limpopo

4.4.2 Age patterns:

The provincial age specific road traffic accident death rates (Figure 4.6) generally follow the same pattern as the national average (Table 4.3). Death rates in all provinces, except Northern Cape and Gauteng, showed a peak in age group 35–49. In Northern Cape, the shape of the age pattern is similar to the majority of the provinces but the peak occurs earlier, i.e. in age group 25–34. In Gauteng, the age pattern is different as the age-specific death rates show an increasing trend from age group 0–14 to age group 65 years and above. It appears that in Gauteng, the death rates for age groups 50–64 and 65 years and above are relatively high or alternatively, the death rate for age group 35–49 is not as high as would be expected, resulting in a distortion of the age pattern for the province.

Figure 4.6: Average age specific road traffic accident death rates by province, 2001–2006

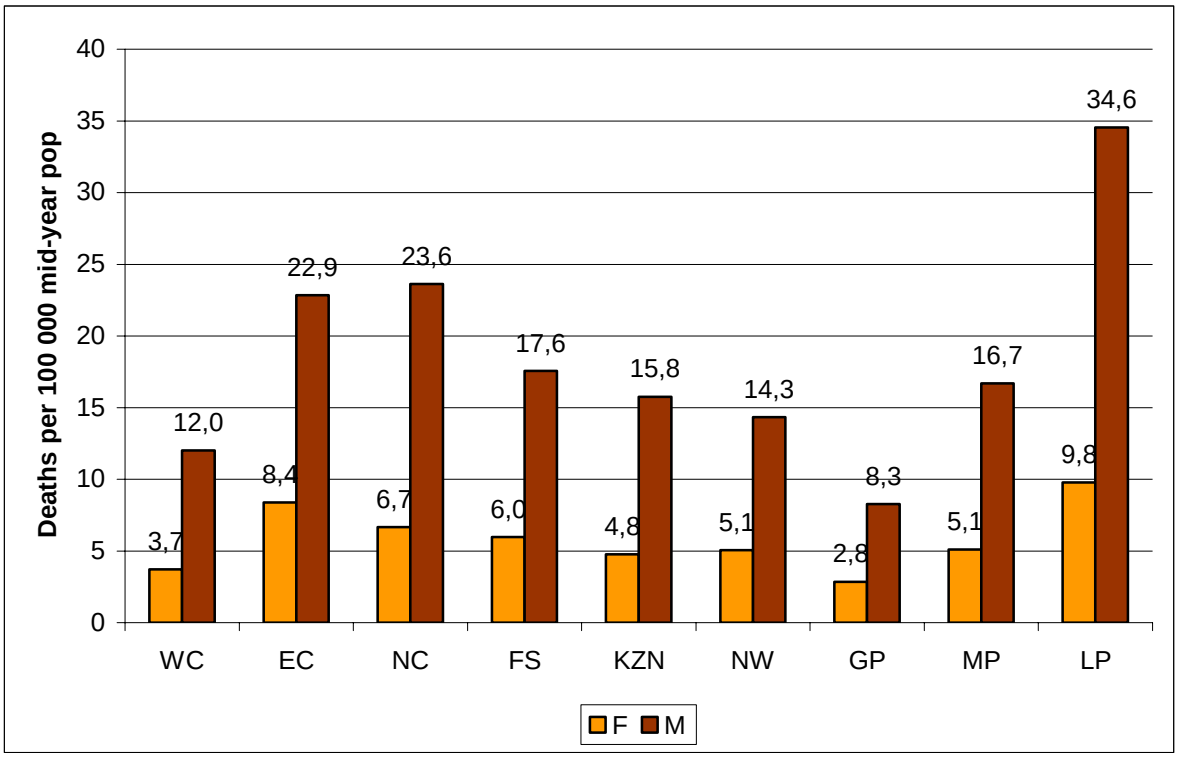


Note: WC- Western Cape; EC- Eastern Cape; NC- Northern Cape; FS- Free State; KZN- KwaZulu Natal; NW- North West; GP- Gauteng; MP- Mpumalanga; LP- Limpopo

4.4.3 Sex patterns

The distribution of road traffic accident deaths and mid-year population by province, age group and sex is shown in Appendix 6. Differences between male and female average road traffic accident death rates for the period 2001–2006 were consistent across all provinces (Figure 4.7). Male death rates were consistently higher than female deaths rates in all provinces. The differential between male and female death rates was highest in Limpopo and Northern Cape province where the male death rate was three and a half times the female death rate, and the differential was lowest in Eastern Cape province where the male death rate was 2,72 times that of females (Table 4.6).

Figure 4.7: Average standardised road traffic accident death rates by province and sex, 2001–2006



Note: WC- Western Cape; EC- Eastern Cape; NC- Northern Cape; FS- Free State; KZN- KwaZulu Natal; NW- North West; GP- Gauteng; MP- Mpumalanga; LP- Limpopo

Table 4.6: Ratio of male to female age standardised road traffic accident death rates by province, 2001–2006

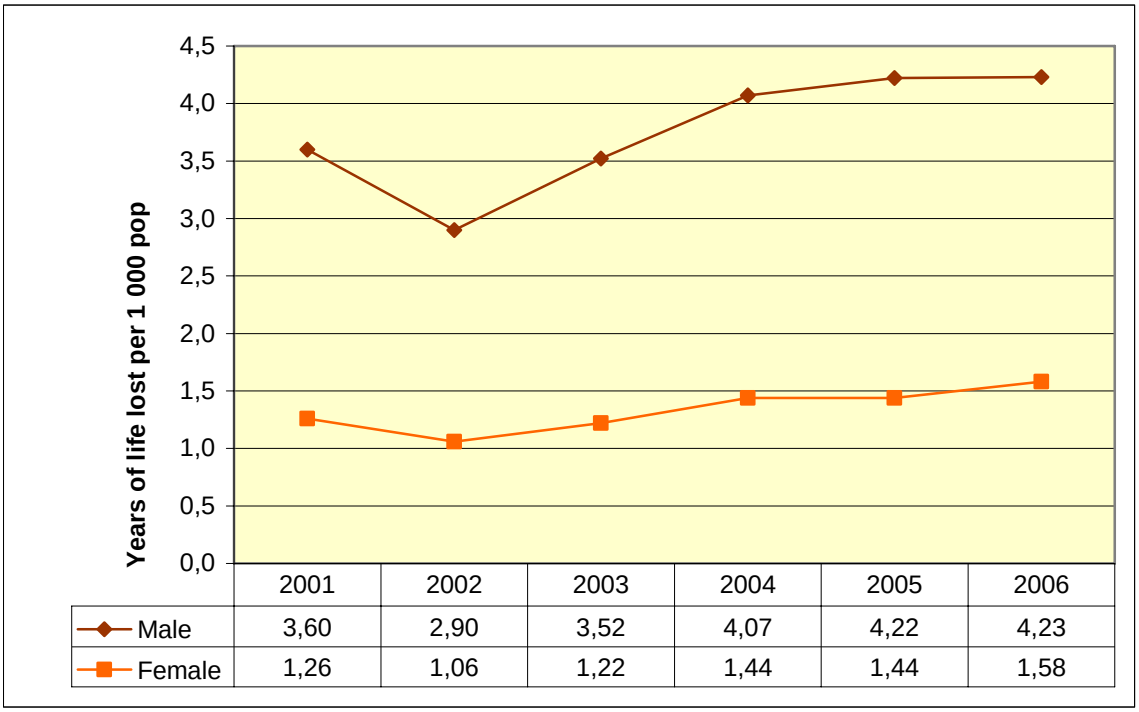
Province	**Ratio**
Western Cape	3,24
Eastern Cape	2,72
Northern Cape	3,55
Free State	2,94
KwaZulu-Natal	3,30
North West	2,83
Gauteng	2,92
Mpumalanga	3,28
Limpopo	3,54
Total	**2,87**

Section 5: Years of life lost (YLL)

This section provides information on premature death resulting from traffic accidents. That is, years of life lost (YLL), which represents the number of years of potential life lost through the death of an individual before a predetermined end-point (i.e. age). YLL were calculated from deaths due to road traffic accidents multiplied by a standard life expectancy at the age at which the death occurs following the same assumptions as the national burden of disease studies (Mathers et al., 2001).

Figure 5.1 shows the years of life lost due to road traffic accidents per 1 000 population. The years of life lost increased from 2002 to 2006 for both males and females. In 2002, among females, the rate of years of life lost was 1,06 per 1 000 population, which increased to 1,58 per 1 000 population by the year 2006. For males the rate of years of life lost increased from 2,9 per 1 000 population in 2002 to 4,23 by the year 2006 (Figure 5.1). For each year, the years of life lost due to traffic accidents for males were more than double those for females.

Figure 5.1: Years of life lost from premature death due to road traffic accidents, 2001–2006



	2001	2002	2003	2004	2005	2006
Male	3,60	2,90	3,52	4,07	4,22	4,23
Female	1,26	1,06	1,22	1,44	1,44	1,58

Section 6: Conclusion and recommendations

6.1 Conclusion

The mortality and causes of death database derived from the vital registration system contains useful information that contributes to better understanding of causes of death in South Africa. The report focused on those deaths where the underlying cause was road traffic accidents. The analysis of deaths due to road traffic accidents in this report showed that:

- Land transport accidents are the major contributor to transport accident deaths in South Africa. Air and water transport accidents contributed less than one percent.
- Road traffic accidents are most commonly reported as immediate causes of death and in 98% of the cases where road traffic accident is mentioned among the causes of death, it is also the underlying cause.
- Although some people died in a province other than their province of usual residence, the majority (83,4%) of road traffic accident deaths occurred within the province of usual residence.
- Nearly all (99,8%) of the road traffic accident deaths that occurred and were recorded in South Africa from 2001 to 2006 were of South African citizens and/ or people usually resident in the country.
- Deaths due to road traffic accidents generally increased from 2001 to 2006. The increasing trend remained unchanged after standardising for age composition. This indicates that the changes from 2001 to 2006 are not merely a reflection of changes in the age composition of the population. The increase occurred for both males and females as well as across the different age groups. Further research is needed to unravel the reasons for the increase in road traffic accident deaths in order to come up with necessary interventions to reverse the trend.
- Male mortality due to road traffic accidents was generally more than double that for females, in all age groups except in age group 0–14 years.
- Road traffic accident mortality peaked in age group 35–49 and was lowest among children aged 0–14 and youths aged 15–24 years.
- At provincial level, Limpopo, Eastern Cape and Northern Cape had the highest road traffic accident death rates.
- Despite the concerted awareness efforts e.g. the “Arrive Alive” campaign, the main holiday months of December and March/April, showed the highest road traffic accident deaths.
- The average annual potential years of life lost as a result of premature death from road traffic accidents increased from 2002 to 2006. The years of life lost by males were two and a half times the years of life lost by females.
- Several limitations exist in the mortality and causes of death data. A key limitation was the inadequate specification of cause of death. About a third of non-natural deaths were coded to “unspecified events/ undetermined intent” as the underlying cause.
- Limitations in terms of coverage of background characteristics in the death notification system also severely restricted the depth of analysis in this report.

6.2 Recommendations

Based on the analysis undertaken in this report, the following recommendations are made:

- There is need to improve the certification of the causes of death in order to reduce the proportion of non-natural deaths coded to “unspecified events/ undetermined intent”. More effort is needed to ensure that officials responsible for certifying deaths and completing the death notification forms have adequate training and appreciate the importance of recording accurate and detailed information.
- Focused research on risk factors of road traffic accident death is needed to provide information for use in planning policies, intervention programmes and projects to reduce fatalities on the roads.
- In particular, research is needed to identify factors associated with the high transport accident death rates in Limpopo, Eastern Cape and Northern Cape in order to formulate strategies and programmes to reduce road traffic accident deaths.
- There is need for effective coordination of the different systems of collecting road traffic accident death information to ensure that data from the different data sources are comparable in terms of quality, standards and definitions.
- For effective monitoring of road traffic fatalities, a system that integrates information from both the Road Transport Management Corporation and the death notification system would be ideal as both systems cover the whole country and are complementary. The accident report form used by the Road Transport Management Corporation contains a variety of background information about the circumstances of the accident which is not included on the death notification form and the death notification form collects information on cause of death which is not captured by the accident report form.
- Further and more comprehensive analysis needs to be undertaken combining data from Statistics South Africa and that from the Road Traffic Management Corporation to take advantage of the complementary nature of these two data sources.

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Appendices

Appendix 1: Number of road traffic accident deaths by province of death occurrence and province of usual residence and year of death.

Year		Died in province of usual residence			Year		Died in province of usual residence			Year		Died in province of usual residence		
2001	Province of death	Yes	No	Total	2002	Province of death	Yes	No	Total	2003	Province of death	Yes	No	Total
	WC	293	47	340		WC	179	44	223		WC	163	50	213
	EC	499	107	606		EC	588	97	685		EC	667	142	809
	NC	72	31	103		NC	137	25	162		NC	72	29	101
	FS	177	78	255		FS	145	62	207		FS	252	87	339
	KZN	832	71	903		KZN	685	55	740		KZN	753	89	842
	NW	203	44	247		NW	111	45	156		NW	89	47	136
	GP	462	105	567		GP	285	104	389		GP	312	116	428
	MP	309	72	381		MP	104	47	151		MP	242	91	333
	LP	564	102	666		LP	572	69	641		LP	677	92	769
	Total	**3 411**	**657**	**4 068**		**Total**	**2 806**	**548**	**3 354**		**Total**	**3 227**	**743**	**3 970**

Year		Died in province of usual residence			Year		Died in province of usual residence			Year		Died in province of usual residence		
2004	Province of death	Yes	No	Total	2005	Province of death	Yes	No	Total	2006	Province of death	Yes	No	Total
	WC	186	67	253		WC	319	49	368		WC	438	56	494
	EC	866	154	1 020		EC	916	92	1 008		EC	849	70	919
	NC	164	40	204		NC	126	31	157		NC	115	32	147
	FS	300	144	444		FS	200	93	293		FS	198	120	318
	KZN	767	79	846		KZN	878	61	939		KZN	867	56	923
	NW	241	65	306		NW	301	69	370		NW	373	70	443
	GP	358	118	476		GP	472	136	608		GP	588	115	703
	MP	274	110	384		MP	232	73	305		MP	192	97	289
	LP	719	143	862		LP	801	135	936		LP	816	142	958
	Total	**3 875**	**920**	**4 795**		**Total**	**4 245**	**739**	**4 984**		**Total**	**4 436**	**758**	**5 194**

Appendix 2: Number of road traffic accident deaths by month, sex and year of death

	2001			2002			2003		
Month	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**
Jan	221	95	**316**	215	73	**288**	192	77	**269**
Feb	229	78	**307**	189	91	**280**	192	71	**263**
Mar	320	102	**422**	214	83	**297**	269	109	**378**
Apr	280	108	**388**	208	86	**294**	249	114	**363**
May	291	99	**390**	211	78	**289**	241	90	**331**
Jun	277	116	**393**	255	108	**363**	270	97	**367**
Jul	268	96	**364**	195	93	**288**	271	98	**369**
Aug	261	98	**359**	220	74	**294**	289	95	**384**
Sep	273	111	**384**	233	103	**336**	289	98	**387**
Oct	242	89	**331**	196	77	**273**	300	112	**412**
Nov	278	106	**384**	200	74	**274**	328	114	**442**
Dec	300	95	**395**	290	95	**385**	362	128	**490**
Total	**3 240**	**1 193**	**4 433**	**2 626**	**1 035**	**3 661**	**3 260**	**1 208**	**4 468**

	2004			2005			2006		
Month	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**	**Male**	**Female**	**Total**
Jan	272	120	**392**	289	94	**383**	223	94	**317**
Feb	290	96	**386**	251	84	**335**	256	137	**393**
Mar	276	97	**373**	315	142	**457**	350	138	**488**
Apr	303	108	**411**	340	124	**464**	407	167	**574**
May	371	120	**491**	323	129	**452**	352	123	**475**
Jun	311	120	**431**	290	126	**416**	363	156	**519**
Jul	363	132	**495**	384	137	**521**	350	144	**494**
Aug	328	118	**446**	365	108	**473**	343	124	**467**
Sep	301	111	**412**	362	117	**479**	352	118	**470**
Oct	337	139	**476**	368	129	**497**	352	134	**486**
Nov	295	88	**383**	303	112	**415**	317	123	**440**
Dec	367	171	**538**	405	146	**551**	394	147	**541**
Total	**3 822**	**1 420**	**5 242**	**4 000**	**1 454**	**5 454**	**4 059**	**1 605**	**5 664**

Appendix 3: Distribution of road traffic accident deaths and mid-year population by age group and year of death

	2001		2002		2003		2004		2005		2006	
Age group	**Deaths**	**Mid-yr pop**	**Deaths**	**Mid-yr pop**	**Deaths**	**Mid-yr pop**	**Deaths**	**Mid-yr pop**	**Deaths**	**Mid-yr pop**	**Deaths**	**Mid-yr pop**
0–14	611	15 664 129	496	15 699 976	509	15 718 133	692	15 721 040	674	15 709 547	684	15 685 415
15–24	765	9 113 929	692	9 233 009	813	9 357 331	928	9 480 568	1 015	9 601 855	1 061	9 722 849
25–34	1 063	7 249 162	872	7 450 249	1 088	7 632 270	1 287	7 789 627	1 322	7 926 791	1 384	8 043 989
35–49	1 198	7 094 984	921	7 180 085	1 224	7 252 782	1 396	7 326 330	1 452	7 414 956	1 494	7 527 791
50–64	553	3 995 528	461	4 107 378	570	4 220 588	634	4 337 478	683	4 460 003	699	4 588 783
65+	243	1 792 006	219	1 862 595	251	1 935 390	297	2 009 728	297	2 085 317	342	2 162 119
Total	**4 433**	**44 909 738**	**3 661**	**45 533 292**	**4 455**	**46 116 494**	**5 234**	**46 664 771**	**5 443**	**47 198 469**	**5 664**	**47 730 946**

Appendix 4: Number of transport accident deaths and mid-year population by sex and year of death

		2001		2002		2003		2004		2005		2006	
Male	**Age grp**	**Deaths**	**Mid-yr pop**	**Deaths**	**Mid-yr pop**	**Deaths**	**Mid-yr pop**	**Deaths**	**Mid-yr pop**	**Deaths**	**Mid-yr pop**	**Deaths**	**Mid-yr pop**
	0–14	351	7 884 767	298	7 903 498	304	7 912 979	393	7 914 466	375	7 908 365	377	7 895 592
	15–24	553	4 390 063	494	4 470 397	606	4 552 693	695	4 634 380	763	4 715 438	779	4 798 162
	25–34	833	3 429 122	715	3 528 568	865	3 620 431	1 026	3 702 087	1 071	3 775 418	1 114	3 838 893
	35–49	958	3 331 667	683	3 368 675	936	3 400 516	1 068	3 433 618	1 126	3 474 802	1 107	3 528 410
	50–64	407	1 816 298	328	1 869 842	402	1 923 904	450	1 979 201	499	2 036 363	483	2 095 613
	65+	140	723 641	113	753 117	140	783 510	185	814 615	163	846 347	200	878 733
	Total	**3 242**	**21 575 558**	**2 631**	**21 894 097**	**3 253**	**22 194 033**	**3 817**	**22 478 367**	**3 997**	**22 756 733**	**4 060**	**23 035 403**
Female	**Age grp**												
	0–14	260	7 779 362	198	7 796 478	205	7 805 154	299	7 806 574	299	7 801 182	307	7 789 823
	15–24	212	4 723 866	198	4 762 612	207	4 804 638	233	4 846 188	252	4 886 417	282	4 924 687
	25–34	230	3 820 040	157	3 921 681	223	4 011 839	261	4 087 540	251	4 151 373	270	4 205 096
	35–49	240	3 763 317	238	3 811 410	288	3 852 266	328	3 892 712	326	3 940 154	387	3 999 381
	50–64	146	2 179 230	133	2 237 536	168	2 296 684	184	2 358 277	184	2 423 640	216	2 493 170
	65+	103	1 068 365	106	1 109 478	111	1 151 880	112	1 195 113	134	1 238 970	142	1 283 386
	Total	**1 191**	**23 334 180**	**1 030**	**23 639 195**	**1 202**	**23 922 461**	**1 417**	**24 186 404**	**1 446**	**24 441 736**	**1 604**	**24 695 543**
Both Sexes	**Age grp**												
	0–14	611	15 664 129	496	15 699 976	509	15 718 133	692	15 721 040	674	15 709 547	684	15 685 415
	15–24	765	9 113 929	692	9 233 009	813	9 357 331	928	9 480 568	1 015	9 601 855	1 061	9 722 849
	25–34	1 063	7 249 162	872	7 450 249	1 088	7 632 270	1 287	7 789 627	1 322	7 926 791	1 384	8 043 989
	35–49	1 198	7 094 984	921	7 180 085	1 224	7 252 782	1 396	7 326 330	1 452	7 414 956	1 494	7 527 791
	50–64	553	3 995 528	461	4 107 378	570	4 220 588	634	4 337 478	683	4 460 003	699	4 588 783
	65+	243	1 792 006	219	1 862 595	251	1 935 390	297	2 009 728	297	2 085 317	342	2 162 119
	Total	**4 433**	**44 909 738**	**3 661**	**45 533 292**	**4 455**	**46 116 494**	**5 234**	**46 664 771**	**5 443**	**47 198 469**	**5 664**	**47 730 946**

Appendix 5: Number of deaths and mid-year population by age group, year of death and province of death occurrence

WC	2001		2002		2003		2004		2005		2006	
Age group	**Mid-yr pop**	**Deaths**	**Mid-yr pop**	**Deaths**	**Mid-yr pop**	**Deaths**	**Mid-yr pop**	**Deaths**	**Mid-yr pop**	**Deaths**	**Mid-yr pop**	**Deaths**
0–14	1 354 918	48	1 383 765	36	1 408 493	28	1 430 330	40	1 449 929	37	1 468 056	63
15–24	868 468	81	883 995	42	901 104	55	918 372	61	934 969	70	951 026	109
25–34	819 492	98	839 329	75	857 028	66	872 367	70	887 177	98	902 852	145
35–49	831 846	144	850 613	61	868 705	82	886 931	79	905 968	129	926 512	155
50–64	464 695	51	483 119	36	501 780	41	520 941	43	540 866	41	561 661	74
65+	193 659	21	205 213	10	217 368	16	230 388	22	244 691	16	260 611	42
Total	**4 533 078**	**443**	**4 646 034**	**260**	**4 754 478**	**288**	**4 859 329**	**315**	**4 963 600**	**391**	**5 070 718**	**588**
EC	**2001**		**2002**		**2003**		**2004**		**2005**		**2006**	
Age group	**Mid-yr pop**	**Deaths**	**Mid-yr pop**	**Deaths**	**Mid-yr pop**	**Deaths**	**Mid-yr pop**	**Deaths**	**Mid-yr pop**	**Deaths**	**Mid-yr pop**	**Deaths**
0–14	2 574 422	108	2 526 463	115	2 482 417	130	2 440 538	157	2 399 650	144	2 358 886	143
15–24	1 331 536	121	1 365 376	143	1 397 661	181	1 428 209	183	1 456 722	214	1 481 944	202
25–34	795 174	151	816 826	174	835 964	184	852 720	253	868 590	239	883 122	183
35–49	878 404	165	877 181	171	874 236	241	870 591	285	867 345	270	865 499	247
50–64	592 085	72	594 597	88	597 093	108	600 590	140	606 207	129	614 383	142
65+	327 846	39	340 784	47	353 583	50	365 505	76	375 610	82	383 430	66
Total	**6 499 467**	**656**	**6 521 227**	**738**	**6 540 954**	**894**	**6 558 153**	**1 094**	**6 574 124**	**1 078**	**6 587 264**	**983**
NC	**2001**		**2002**		**2003**		**2004**		**2005**		**2006**	
Age group	**Mid-yr pop**	**Deaths**	**Mid-yr pop**	**Deaths**	**Mid-yr pop**	**Deaths**	**Mid-yr pop**	**Deaths**	**Mid-yr pop**	**Deaths**	**Mid-yr pop**	**Deaths**
0–14	376 068	8	377 474	16	378 251	8	378 422	17	378 078	16	377 406	16
15–24	203 011	25	204 930	34	206 799	22	208 543	47	210 223	35	211 974	36
25–34	163 217	31	165 410	42	166 914	28	167 782	63	168 371	60	168 715	44
35–49	177 502	33	178 395	41	178 982	38	179 440	47	179 942	45	180 656	44
50–64	109 155	11	112 171	26	115 354	16	118 604	33	121 752	16	124 707	13
65+	47 758	4	49 616	9	51 535	5	53 630	11	56 087	5	59 029	7
Total	**1 076 711**	**112**	**1 087 996**	**168**	**1 097 835**	**117**	**1 106 421**	**218**	**1 114 453**	**177**	**1 122 487**	**160**

Appendix 5: Number of deaths and mid-year population by age group, year of death and province of death occurrence (continued)

FS	2001		2002		2003		2004		2005		2006	
Age group	Mid-yr pop	Deaths	Mid-yr pop	Deaths	Mid-yr pop	Deaths	Mid-yr pop	Deaths	Mid-yr pop	Deaths	Mid-yr pop	Deaths
0–14	919 448	35	917 887	21	915 850	38	913 363	59	910 576	33	907 634	36
15–24	561 913	43	565 353	46	569 194	64	573 184	57	577 052	43	580 591	55
25–34	445 631	64	451 946	46	456 526	90	459 237	117	460 959	73	462 136	78
35–49	461 767	80	464 173	52	465 506	93	466 400	142	467 499	80	469 262	103
50–64	256 709	25	263 831	41	271 426	41	279 268	58	286 977	49	294 335	43
65+	111 122	17	113 928	12	116 674	27	119 637	22	123 235	21	127 756	15
Total	**2 756 590**	**264**	**2 777 118**	**218**	**2 795 176**	**353**	**2 811 089**	**455**	**2 826 298**	**299**	**2 841 714**	**330**
KZN	**2001**		**2002**		**2003**		**2004**		**2005**		**2006**	
Age group	Mid-yr pop	Deaths	Mid-yr pop	Deaths	Mid-yr pop	Deaths	Mid-yr pop	Deaths	Mid-yr pop	Deaths	Mid-yr pop	Deaths
0–14	3 609 882	132	3 611 299	105	3 612 325	123	3 611 845	134	3 608 072	131	3 600 029	141
15–24	2 007 025	183	2 043 671	162	2 080 111	165	2 115 589	189	2 150 361	216	2 184 667	201
25–34	1 425 865	235	1 474 558	191	1 520 249	233	1 561 897	226	1 600 159	231	1 634 847	251
35–49	1 348 116	225	1 357 879	177	1 366 155	233	1 376 001	231	1 390 595	235	1 411 696	219
50–64	809 811	122	826 038	100	840 698	111	854 887	87	869 852	122	886 186	105
65+	356 551	48	369 106	43	381 915	49	394 482	47	406 268	45	416 911	59
Total	**9 557 250**	**945**	**9 682 551**	**778**	**9 801 453**	**914**	**9 914 701**	**914**	**10 025 307**	**980**	**10 134 336**	**976**
NW	**2001**		**2002**		**2003**		**2004**		**2005**		**2006**	
Age group	Mid-yr pop	Deaths	Mid-yr pop	Deaths	Mid-yr pop	Deaths	Mid-yr pop	Deaths	Mid-yr pop	Deaths	Mid-yr pop	Deaths
0–14	1 063 038	37	1 069 798	28	1 075 040	18	1 079 220	31	1 082 868	43	1 086 317	47
15–24	615 365	48	618 156	37	621 795	38	625 867	57	630 223	85	634 950	78
25–34	531 528	72	540 052	46	546 867	66	551 561	79	554 488	98	555 596	121
35–49	558 994	78	565 965	54	571 235	72	575 599	99	579 932	106	584 893	143
50–64	290 618	37	299 686	26	309 477	26	319 915	48	330 808	53	342 031	62
65+	129 312	12	132 996	15	136 932	5	141 338	14	146 554	16	152 790	19
Total	**3 188 855**	**284**	**3 226 653**	**206**	**3 261 346**	**225**	**3 293 500**	**328**	**3 324 873**	**401**	**3 356 577**	**470**

Appendix 5: Number of deaths and mid-year population by age group, year of death and province of death occurrence (concluded)

GP	2001		2002		2003		2004		2005		2006	
Age group	**Mid-yr pop**	**Deaths**	**Mid-yr pop**	**Deaths**	**Mid-yr pop**	**Deaths**	**Mid-yr pop**	**Deaths**	**Mid-yr pop**	**Deaths**	**Mid-yr pop**	**Deaths**
0–14	2 366 891	73	2 436 994	38	2 496 226	38	2 549 597	63	2 599 955	72	2 648 598	62
15–24	1 755 235	83	1 743 629	75	1 737 360	81	1 732 929	83	1 730 290	102	1 732 759	132
25–34	1 937 150	133	1 993 809	104	2 046 279	118	2 091 112	130	2 126 544	167	2 152 725	204
35–49	1 765 186	182	1 801 436	124	1 834 982	122	1 869 984	141	1 911 005	181	1 960 620	203
50–64	862 662	92	903 835	48	945 816	70	988 706	70	1 032 460	92	1 077 033	95
65+	293 585	35	309 330	28	326 318	30	344 923	21	365 779	28	389 271	43
Total	**8 980 709**	**598**	**9 189 033**	**417**	**9 386 981**	**459**	**9 577 251**	**508**	**9 766 033**	**642**	**9 961 006**	**739**
MP	**2001**		**2002**		**2003**		**2004**		**2005**		**2006**	
Age group	**Mid-yr pop**	**Deaths**	**Mid-yr pop**	**Deaths**	**Mid-yr pop**	**Deaths**	**Mid-yr pop**	**Deaths**	**Mid-yr pop**	**Deaths**	**Mid-yr pop**	**Deaths**
0–14	1 297 986	52	1 298 939	18	1 295 897	31	1 289 160	57	1 279 162	39	1 266 667	48
15–24	701 448	61	714 378	29	727 590	63	740 430	75	752 428	60	763 367	52
25–34	507 335	107	521 109	44	533 491	92	544 371	116	554 286	81	563 206	72
35–49	476 805	120	482 578	45	486 900	114	491 032	117	496 429	100	503 932	100
50–64	249 174	52	256 758	18	264 534	39	272 571	48	280 847	41	289 323	33
65+	113 559	20	117 633	7	121 847	16	125 892	20	129 380	15	132 051	25
Total	**3 346 307**	**412**	**3 391 395**	**161**	**3 430 259**	**355**	**3 463 456**	**433**	**3 492 532**	**336**	**3 518 546**	**330**
LP	**2001**		**2002**		**2003**		**2004**		**2005**		**2006**	
Age group	**Mid-yr pop**	**Deaths**	**Mid-yr pop**	**Deaths**	**Mid-yr pop**	**Deaths**	**Mid-yr pop**	**Deaths**	**Mid-yr pop**	**Deaths**	**Mid-yr pop**	**Deaths**
0–14	2 101 473	118	2 077 358	119	2 053 629	95	2 028 564	134	2 001 258	159	1 971 821	128
15–24	1 069 927	120	1 093 520	124	1 115 713	144	1 137 445	176	1 159 589	190	1 181 574	196
25–34	623 772	172	647 210	150	668 950	211	688 581	233	706 219	275	720 790	286
35–49	596 363	171	601 867	196	606 078	229	610 354	255	616 243	306	624 724	280
50–64	360 619	91	367 345	78	374 408	118	381 998	107	390 236	140	399 125	132
65+	218 609	47	223 990	48	229 216	53	233 929	64	237 712	69	240 270	66
Total	**4 970 763**	**719**	**5 011 290**	**716**	**5 047 994**	**850**	**5 080 871**	**969**	**5 111 257**	**1 139**	**5 138 304**	**1 088**

Appendix 6: Distribution of total mid-year population and road traffic accident deaths by age group, sex and province of death occurrence, 2001–2006

		Male		Female				Male		Female	
Province	Age group	Mid-yr pop	Deaths	Mid-yr pop	Deaths	Province	Age group	Mid-yr pop	Deaths	Mid-yr pop	Deaths
Western Cape	0–14	4 189 730	152	4 305 761	100	**North West**	0–14	3 160 935	117	3 295 346	87
	15–24	2 571 816	321	2 886 118	97		15–24	1 791 905	247	1 954 451	96
	25–34	2 433 947	439	2 744 298	113		25–34	1 588 383	390	1 691 709	92
	35–49	2 453 824	503	2 816 751	147		35–49	1 792 342	428	1 644 276	124
	50–64	1 399 664	203	1 673 398	83		50–64	930 427	172	962 108	80
	65+	590 665	81	761 265	46		65+	359 878	50	480 044	31
Eastern Cape	0–14	7 606 660	453	7 175 716	344	**Gauteng**	0–14	7 537 878	200	7 560 383	146
	15–24	4 207 290	760	4 254 158	284		15–24	5 147 639	406	5 284 563	150
	25–34	2 312 822	912	2 739 574	272		25–34	6 324 818	713	6 022 801	143
	35–49	2 275 531	1 014	2 957 725	365		35–49	5 607 634	731	5 535 579	222
	50–64	1 555 744	425	2 049 211	254		50–64	2 816 108	355	2 994 404	112
	65+	861 746	172	1 285 012	188		65+	889 694	126	1 139 512	59
Northern Cape	0–14	1 139 971	45	1 125 728	36	**Mpumalanga**	0–14	3 864 031	135	3 863 780	110
	15–24	611 857	140	633 623	59		15–24	2 146 028	244	2 253 613	96
	25–34	476 616	221	523 793	47		25–34	1 479 772	402	1 744 026	110
	35–49	513 304	201	561 613	47		35–49	1 376 822	478	1 560 854	118
	50–64	328 811	92	372 932	23		50–64	753 346	171	859 861	60
	65+	141 348	30	176 307	11		65+	300 917	67	439 445	36

Appendix 6: Distribution of total mid-year population and road traffic accident deaths by age group, sex and province of death occurrence, 2001–2006 (continued)

Province	Age group	Male		Female		Province	Age group	Male		Female	
		Mid-year pop	Deaths	Mid-year pop	Deaths			Mid-year pop	Deaths	Mid-year pop	Deaths
Free State	0–14	2 732 494	128	2 752 264	94	**Limpopo**	0–14	6 298 603	416	5 935 500	337
	15–24	1 654 251	203	1 773 036	105		15–24	3 351 431	702	3 406 337	248
	25–34	1 259 720	359	1 476 715	109		25–34	1 765 726	1 065	2 289 796	262
	35–49	1 314 390	433	1 480 217	117		35–49	1 548 822	1 101	2 106 807	336
	50–64	759 832	192	892 714	65		50–64	969 688	501	1 304 043	165
	65+	288 891	71	423 461	43		65+	504 343	197	879 383	150
KwaZulu-Natal	0–14	10 889 361	452	10 764 091	314						
	15–24	6 078 914	867	6 502 510	249						
	25–34	4 252 716	1 123	4 964 859	244						
	35–49	3 655 020	989	4 595 422	331						
	50–64	2 207 604	458	2 879 868	189						
	65+	862 482	147	1 462 751	144						