

SOUTH AFRICAN NATIONAL BURDEN OF DISEASE STUDY **2000**
ESTIMATES OF PROVINCIAL MORTALITY

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Illustration on cover

"Kite Flyers" is a pastel by Pieter van der Westhuizen, one of South Africa's best known and sought after artists. Born in Pretoria in 1931, his work comprises mainly landscapes, portraits, still life, figures and abstract pictures and he works in pastel, oil, watercolour, ink, pencil, charcoal and in various graphic media. Pieter van der Westhuizen's works are today found in private and state collections across the world. He has had many one-man and group exhibitions and in 1988 and 1989 exhibited with Marc Chagall inter alia, in Madrid, Spain.

Permission to use the image of Pieter van der Westhuizen's work for the cover page of this report was kindly provided by the artist's agent, Leonard Schneider of Carmel Art.

www.carmelart.co.za

A copy of this report, as well as a spreadsheet with the estimates, is available on the internet at:
www.mrc.ac.za/bod/reports.htm

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Acronyms and Abbreviations

AIDS	Acquired Immune Deficiency Syndrome
ACDIS	Africa Centre Demographic Information System
ASSA2000	Actuarial Society of South Africa Demographic and AIDS model, 2000
ASSA2002	Actuarial Society of South Africa Demographic and AIDS model, 2002
BOD	Burden of Disease
Ca	Cancer
COPD	Chronic obstructive pulmonary disease
GBD	Global Burden of Disease
GCIS	Government Communication and Information System
GDP	Gross domestic product
GGP	Gross geographic product
GIT	Gastro-intestinal tract
Group I	Communicable diseases, maternal causes, perinatal conditions and nutritional deficiencies, including HIV/AIDS unless otherwise specified
Group II	Non-communicable diseases
Group III	Injuries
HIV	Human immuno-deficiency virus
ICD-10	International Classification of Disease – 10th revision
NIMSS	National Injury Mortality Surveillance Study
SA NBD	South African National Burden of Disease Study
SADHS	South African Demographic and Health Survey
SSA	Statistics South Africa
STD	Sexually transmitted disease
TB	Tuberculosis
UNDP	United Nations Development Programme
WHO	World Health Organisation
YLLs	Years of life lost

Preface

The timing of this study is opportune for four main reasons. Firstly, South Africa, as a young democracy, is totally committed to improving the quality of life of all its peoples, especially at provincial and local district level. The geographical distribution of mortality, a convenient summary indicator for overall health and development, is indeed important to measure health inequalities amongst the provinces.

Secondly, the main components of disease burden can be identified and used to guide priorities to reduce the burden. The four main components of disease burden, communicable diseases (such as TB and childhood diarrhoea); degenerative diseases associated with changes in life-style; injury related mortality (both intentional and unintentional); and HIV/AIDS occur in different patterns across the provinces. In 2000, HIV/AIDS has the highest number of deaths in all the provinces excepting Western Cape.

Thirdly, the estimates have opened up important opportunities for epidemiological studies that can explain the differences between the provinces. One example is that of under-5 child mortality rates which are highest in Kwazulu-Natal and Eastern Cape at 116 and 106 per 1000 live births respectively. As the rate is 46 in the Western Cape, it would be very useful to explore the risk factors in the three provinces to identify the causes of these differences. Another example is provided by epilepsy related mortality which is highest in Eastern Cape. Could this be related to the distribution of free-roaming pigs in the rural areas? Or, is it a reflection of access to health care? Or is it related to inaccuracies in the data?

Lastly, estimates of mortality serve as an entrance point to the study of the international indicators. The Millennium Development Goals have been identified as targets to promote a better quality of life in all countries in the world. Reducing the burden of disease has been identified amongst these goals for countries and must be extended to provinces, and ultimately health districts.

These estimates of mortality will therefore assist the provinces in identifying priorities, as well as monitoring of important development indicators. They constitute an important baseline to guide our response.

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Executive summary

Timeous and accurate cause of death statistics are an essential component of the information needed for planning and monitoring health services and responding to the health needs of the population. Such information is required for the process of prioritisation of not only health services, programmes and research, but also for guiding the priorities in other sectors. In particular, sub-population data are needed to identify and monitor inequalities in health status. While policy is directed from a national perspective, provincial and local government need to respond to the specific needs of their communities.

Efforts to improve cause of death statistics in South Africa have been under way since 1994, and have resulted in better coverage of death registration. However, the system does not yet routinely provide cause of death statistics that can be used by provinces. This study follows the Initial Burden of Disease Study that applied the burden of disease approach developed by the WHO by using available information and presenting it in a format that is relevant for planning health and other services. It makes use of more recent data, namely the 12% sample of deaths for 1997-2001.

Due to under-registration of deaths, it was necessary to estimate the total number of deaths and number of AIDS deaths using a demographic and epidemiological model. Due to inadequacies in the medical certification of the cause of death as a result of both poor certification by medical doctors and certification by traditional headmen in some rural areas, it was necessary to make adjustments for misclassification of underlying causes. Estimates were made for the number of deaths, the death rates and the years of life lost (YLLs) for each province according to the South African Burden of Disease list. Age-standardised mortality rates were calculated to enable a comparison of the levels of mortality experienced in each province.

The Initial National Burden of Disease Study highlighted the substantial impact of HIV/AIDS as a cause of death in South Africa by the year 2000, and the major health transition that is under way. As countries become more developed the disease profile changes, from one of infectious diseases, high child mortality and malnutrition, to a predominance of degenerative, chronic diseases. However, developing countries often experience a double burden, resulting from the simultaneous occurrence of these disease spectrums. During the early 1990s the health transition in South Africa was characterised by a very high injury burden on top of the double burden, resulting in a 'triple burden' (Bradshaw *et al.*, 2002). In more recent years the impact of HIV/AIDS has created a quadruple burden of disease in South Africa. This study shows that all provinces are experiencing this quadruple burden of disease to varying degrees.

HIV/AIDS, homicide and road traffic accidents, stroke, ischaemic heart disease, hypertensive heart disease, tuberculosis, diarrhoea and lower respiratory infections generally featured in the top causes of death of all provinces. While it was possible to discern some trends in the epidemiological transition, each province had a unique profile.

HIV/AIDS was the leading cause of death in 2000 in all provinces excluding the Western Cape, mostly by a large margin. The pre-transitional causes of death were more pronounced in the poorer and more rural provinces. For example, diarrhoea had low mortality rates in Gauteng and Western Cape but high rates in Limpopo and Eastern Cape. In contrast, there was little variation in the overall level of non-communicable disease mortality. However, while the overall level of non-communicable disease mortality was similar across all provinces, the cause profile differed substantially. For example, ischaemic heart disease and lung cancer had high death rates in the more developed province of Western Cape, while hypertensive heart disease and inflammatory heart disease had high rates in Limpopo. The injury mortality rates were particularly high in some provinces, including those with large metropolitan areas as well as Mpumalanga.

Mortality levels differed among the provinces, with a variation in life expectancy from 63 years in the Western Cape to 52 years in KwaZulu-Natal. Life expectancy was consistently higher for females than males, the difference being about 5 to 6 years. The cause of death profiles also differed between the provinces.

The overall age-standardised mortality rate was highest in KwaZulu-Natal and Mpumalanga, where it was 1.5 times higher than in the Western Cape, which had the lowest mortality rate. Child mortality rates are influential on life expectancy estimates, and displayed marked variations between the provinces. Western Cape had the lowest under-5 child mortality rate of 46 per 1000 live births,

compared with KwaZulu-Natal (116 per 1000 births) and Eastern Cape (105 per 1000 live births) with the highest rates. Western Cape, Gauteng and Northern Cape were the only provinces that in the year 2000 met the 'Health for All' target of 80 per 1000 births for under-5 child mortality.

The variations between the provinces in levels and causes of mortality highlight extensive scope for epidemiological studies. Such differences may be related to levels of wealth and development, to population group differences and demographic features of the province, to geographical differences and environmental exposures or to access to health services or other basic services. The average profile of a province, furthermore, obscures the variability within a province. Studies comparing the mortality experienced by the different population groups, social classes and ethnic groups and for small areas would provide useful insight into the factors associated with the variations in health outcomes. Considering the levels of extrapolation required to derive the estimates for this study, it is important to validate the findings against other epidemiological data.

This study signifies an important milestone in generating burden of disease information at provincial level by providing mortality estimates for the provinces. These estimates are extrapolations from a variety of data sources, all with limitations. There is an urgent need to further improve the cause of death data system so that it can provide timely and reliable statistics. Based on the experience in analysing cause of death data, the following issues need to be addressed:

- The lack of details about the manner of death in the case of fatal injuries needs attention. A mechanism to build the mortuary surveillance system (NIMSS) in all provinces, and link the information to the vital registration system should be put in place.
- The quality of information on the underlying cause of death needs to be improved. In particular, there is a need to reduce the number of deaths certified with insufficient information about the underlying cause that results in a high proportion of deaths being classified as 'ill-defined'. There is a need to improve the quality of medical certification as well as to investigate how appropriate information for the deaths certified by traditional headmen can be collected.
- Systems to ensure timely access to information at local level need to be developed. While the model of duplicate capturing of death data has worked well for Cape Town, it is not clear that this is a viable model for all health districts. Government needs to grapple with the issue of ensuring that health districts have a system to produce timely cause of death statistics.
- A rapid surveillance system to produce preliminary information about the number of deaths and the changing age pattern that can be released well in advance of the official statistics should be set up.

While the data systems are being improved, provincial and local level planners are urged to make use of the findings of this study to modify the emphasis of national policies to meet the health needs of their communities. It should be noted that the spread of the HIV epidemic during the 1990s was very rapid and that the mortality profile is changing rapidly. This should be taken into account when making use of these estimates for planning, and highlights the urgency of implementing the treatment programme approved by Cabinet in September 2003 as quickly as possible as well as strengthening efforts to reduce the spread of HIV/AIDS.

This study has shown that all provinces are experiencing a quadruple burden of disease. This requires a broad range of interventions, including improved access to health care, promotion of a healthy lifestyle and ensuring that basic needs such as water and sanitation are met. Social cohesion needs to be fostered to ensure safe and caring communities.

Introduction

South African health policy is currently aiming to redress the inequities of the past and ensure adequate health services for all and to improve the health of the nation. Policy is directed from a national perspective, yet provincial Departments of Health and local government have to respond to the specific needs of their communities. An essential element for public health planning at these levels is reliable statistics on causes of death as these contribute to understanding the health outcomes experienced by the population. In spite of major improvements, the national vital statistics system, like that of many developing countries, does not yet provide good-quality mortality data in a timely fashion. The importance of cause of death statistics has been recognised by the post-apartheid government, and various initiatives to improve the poor quality of cause of death statistics have been implemented in South Africa over the last 10 years.

Efforts to understand the failures in the system identified a range of problems, and a detailed analysis of these provided a framework for improving vital registration and death statistics (Bradshaw and Schneider, 1995). A new-found co-operation between the Departments of Health and Home Affairs and Statistics South Africa (SSA) established a platform for improved vital registration and statistics. A national task team was established by the Department of Health to direct inter-departmental efforts to improve registration. A new death certificate incorporating the WHO guidelines on medical certification of causes of death was implemented in 1998 (Bradshaw *et al.*, 1998). Provincial task teams were set up to identify barriers and to find ways to resolve them. Analysis of the data from SSA and the Department of Home Affairs showed that the registration of adult deaths improved from about 50% in 1990 to over 90% in 2000 (Dorrington *et al.*, 2001). Completeness of registration for children is lower. The latest available national cause of death statistics are for the year 1996 (SSA, 2000a).

The Initial National Burden of Disease Study for 2000 (Bradshaw *et al.*, 2003) made use of several data sources, and for the first time provided a clear overview of the causes of death experienced in South Africa. Given the rapidity of the changes in mortality, the ASSA2000 model of the impact of HIV/AIDS was used to estimate the total number of deaths and the number due to HIV/AIDS (ASSA, 2002), together with the 1996 cause of death data (SSA, 2000a), the NIMSS data on fatal mortality (Burrows *et al.*, 2001) and other data sources.

The Initial Burden of Disease Study highlighted the substantial impact of HIV/AIDS as a cause of death in South Africa, and the major health transition that is under way (Bradshaw *et al.*, 2002). As countries become more developed the disease profile changes from one of infectious diseases, high child mortality and malnutrition to a predominance of degenerative, chronic diseases. However, developing countries often experience a double burden, resulting from the simultaneous occurrence of these disease spectrums. During the early 1990s the health transition in South Africa was characterised by a very high injury burden on top of such a double burden, resulting in “a triple burden” (Bradshaw *et al.*, 2002). In more recent years the impact of HIV/AIDS has created a quadruple burden of disease – with very high mortality rates being experienced when South Africa is compared with countries of similar income levels and expenditure on health services (WHO, 2000).

Estimates from the Initial Burden of Disease Study have made an important contribution to planning, but failed to reveal regional variations in health status. Living conditions in South Africa range from developed metropolitan areas and wealthy suburbs to impoverished peri-urban townships, small towns, rural farms and rural tribal areas. The variations are historical and are bound up with the racial inequalities of our apartheid past. These manifest as inequities in terms of basic amenities such as housing, water and sanitation as well as income and formal employment. Selected indicators depicting this variation at provincial level are shown in Figures A1 – A5 of Appendix A.

As South Africa enters its second decade of democracy it is essential for the provinces to have estimates of the mortality profile in order to plan effectively and benchmark their efforts to improve the health of the people. The release of a 12% sample of deaths for 1997-2001 (SSA, 2002) provided more recent cause of death data albeit from a sample. This study aims to make use of the more recent data to develop estimates of the mortality profile in each of the provinces of South Africa. This is not straightforward as a result of the high proportions of deaths classified as ‘undetermined unnatural causes’ and ‘unspecified natural causes’. Furthermore, AIDS deaths are likely to be under-represented as a result of misclassification to the immediate cause of death. In addition, such a project requires population estimates that are demographically consistent with the mortality estimate.

Methods

Total number of deaths

The usual BOD approach is to make use of vital registration data, adjusted for under-registration. Given the lack of recent complete vital statistics and the rapid changes under way, the South African National Burden of Disease Study used a modelling approach to estimate the total number of deaths. The SA NBD Study made use of the AIDS and demographic model, ASSA2000, developed by the Actuarial Society of South Africa (ASSA, 2002). This provincial study has made use of the same model to estimate the total number of deaths, applied at province level.

The ASSA2000 model is a demographic component projection model that incorporates behavioural and epidemiological dynamics of heterosexual transmission of HIV. It is used to project overall mortality, the population size and the number of deaths due to HIV/AIDS for each province. The model treats the population of each province as one group and models the demographic impact of HIV/AIDS for each age group (young: under 15, adult: 15-59, and old: 60+ years) by iteratively computing the population changes based on demographic, behavioural and epidemiological parameters for each year starting at 1985. The model assumes that the adult population (those aged 15-59 at the start of the epidemic and those turning 14 in each subsequent year) can be divided into four risk groups:

- PRO – a small, high-risk group comprising sex workers and clients;
- STD – a much larger group, assumed to be at similar risk of transmitting/contracting the virus as people who regularly contract STDs;
- RSK – an even larger group who are at risk because of their sexual behaviour, but do not have an STD;
- NOT – a similarly sized group who are assumed never to be at risk.

In the ASSA2000 model it is assumed that the median term to death is 11 years for people infected with HIV when they are less than 25 years old, and 10 years when infected at an age older than 25 years. It assumes that 25% of babies born to HIV-positive mothers are infected at birth and that these children have a mortality rate of 30% per annum. It assumes that a further 10% of babies contract the virus 3 or more months after birth through breast milk and have a median term to death of 6 years.

The basic mortality assumptions of the model are that for adults, the level of the non-HIV mortality has been set to the level estimated for 1985 by Dorrington *et al.* (1999). These estimates are derived through the synthesis of the official life tables for whites, coloureds and Indians published by the national statistical office together with the estimated life table for blacks. Detailed analysis of all the mortality data for the period 1985 onwards, based on vital registration, survey and Census data, suggests that the level of adult mortality has been stable over the period until the late 1990s when it started to increase, in step with the HIV/AIDS epidemic (Timæus *et al.*, 2000).

Child mortality estimates from the 1996 Census and the 1998 Demographic and Health Survey (SADHS) both show a reversal of the downward trend, although there are differences in the estimated levels (Nannan *et al.*, 2000). Adjustments are made to both sets of estimates due to differences and inherent biases in the different methodologies. A small upward adjustment is made to the DHS and a downward adjustment to the Census data which appear too high due to the inclusion of stillbirths incorrectly classified as live births who have died (Moultrie and Timæus, 2002).

The population in ASSA2000 is projected from a base of 36 million in 1985, consistent with a projection from the 1970 Census, considered to be one of the more reliable censuses taken in Apartheid South Africa, albeit for segregated population groups. The population projection for 1996 was 41.5 million, larger than the Statistics South Africa figure of 40.4 million, which is considered to have under-counted young children and working-age men. The fertility has been assumed to follow the age pattern observed in the DHS and to continue the declining trend. The impact of HIV on fertility is estimated from the literature.

The ASSA2000 model has been calibrated to reproduce the antenatal clinic data since these provide a continuous series concerning the HIV/AIDS epidemic in South Africa. An adjustment is made to the

antenatal prevalence since it is assumed to be higher than the community prevalence as it is based on women who have clearly had unprotected sex. In addition, the model has been calibrated to estimates of the total mortality based on the death data recorded by the Department of Home Affairs to the middle of 2001, after correcting for under-reporting and deaths without Identity Documents (Dorrington *et al.*, 2001).

The projected number of people, number of deaths and other indices of mortality are shown for each province in Table A1 of Appendix A. The SA NBD estimate of the total number of deaths was 14 179 more than the sum of the provincial estimates as it would have been exceedingly difficult to constrain the provincial models to match the national demographic parameters exactly at the same time as fitting the provincial demographic and epidemiological parameters. This difference on a total of 556 585 is considered small and has been ignored. The life expectancy and the probability of death for selected age ranges were calculated using a standard period life table approach. The number of deaths is for the 12-month period starting mid-2000 which is referred to as the year 2000 in this report, as was done in the SA NBD study.

Cause of death list

A South African National Burden of Disease (NBD) list was developed for the South African NBD study (Bradshaw *et al.*, 2003) from the list of the 1990 Global Burden of Disease Study (Murray and Lopez, 1996a and 1996b), and the ICD-10 codes are shown in Table A2 of Appendix A. The codes of the diseases included in the South African list are prefixed ZA.

Mortality is divided into three broad groups of causes of death:

- Group I are the pre-transitional causes: communicable diseases, maternal causes, perinatal conditions, and nutritional deficiencies. HIV/AIDS is part of Group I but is kept separate in the South African NBD analysis due to the size of the burden that it contributes in South Africa.
- Group II are the non-communicable causes.
- Group III are the injuries.

Each group is divided into several major categories of causes of death, such as respiratory infections, cardiovascular diseases and intentional and unintentional injuries. In some cases, where specific diseases may be of particular interest (such as the childhood cluster (ZA5)), the disease codes are further disaggregated (in this case into pertussis, polio, diphtheria, measles, tetanus and rubella (ZA5a-ZA5f)).

The level of aggregation of causes of death influences the ranking of diseases; the aggregation therefore needs to be done according to specific criteria. The Global Burden of Disease Study selected the specific diseases or disease clusters listed in the final level of disaggregation on the basis of three criteria: the number of deaths due to the specific cause, the level of health service provided for the particular cause, and the prominence of the cause in the current health policy debate. Similar criteria were used in the development of the South African NBD list.

The International Classification of Diseases (ICD-10) defines the underlying cause of death as “*the disease or injury which initiated the train of morbid events leading directly to death*” (WHO, 1992). South African cause of death statistics are coded to ICD-10, but sometimes fail to correctly classify the underlying cause due to incomplete information on the death certificate (Bah, 2003). The NBD study attempts to estimate such underlying causes.

Estimate of AIDS deaths

In the case of AIDS, the ICD-10 classifies a death as having HIV as an underlying cause when HIV is present and the person dies from a subsequent co-morbidity mediated by the HIV (codes B20 through B24). However, a relatively low proportion of HIV-related deaths are reported in the sample of deaths, together with an increased proportion of deaths due to pneumonia and tuberculosis. This suggests that there is misclassification of AIDS deaths to the immediate cause of death. Based on the distinctive age pattern in the increase in death rates, Groenewald *et al.* (forthcoming) have identified nine conditions which appear to include AIDS cases. Since the cause of death statistics under-represent the number of AIDS deaths, the ASSA2000 model is used to estimate the number in each province based on the epidemiological data.

A more recent version of the ASSA model (ASSA2002) has been developed that incorporates more empirical data. However, this model has not been finalised for the provincial projections and is not available for this study. It should be noted that the revised model projects a lower future impact of the HIV epidemic than the earlier model, as a result of the new data that include population-based prevalence and changes in behaviour, as well as changes such as the introduction of antiretroviral treatment and adjustments in the assumptions about the impact of HIV on fertility levels. However, since both models have been calibrated to the historical data on overall levels of mortality, the differences between the models when used for the year 2000 are small. Nationally ASSA2000 estimated that 29.8% of deaths were due to HIV/AIDS in the year 2000 while the revised model ASSA2002 estimated that 28.6% of the deaths for that year were due to HIV/AIDS.

Estimates of other natural causes of death

The cause of death data from the 12% sample for the years 2000 and 2001 were used to estimate the number of deaths due to natural causes, with adjustments for misclassification. The ill-defined causes within a disease category, such as cancers of unknown site or ill-defined perinatal conditions, were redistributed proportionally within each age and sex group to the specified diseases in that disease category, using the same method applied in the NBD study. In addition, the broad group of ill-defined conditions was redistributed proportionally within each age and sex group to all the specified conditions. An adjustment was also made for the nine conditions which appear to include misclassified AIDS deaths (Groenewald *et al.*, forthcoming).

The number of AIDS deaths classified to other conditions was estimated by examining the increase in the age-specific death rates between 1996 and 2000/01 (Groenewald *et al.*, forthcoming). The number of misclassified AIDS deaths was subtracted from the nine conditions that showed a clear increase in age-specific mortality rates following the distinct HIV age pattern (tuberculosis, pneumonia, diarrhoea, meningitis, other respiratory diseases, non-infective gastroenteritis, other infectious and parasitic diseases, deficiency anaemias and protein-energy malnutrition) to estimate the number of deaths due to these conditions that were not directly related to HIV.

The cause-specific death rates were calculated for 1996 and 2000/1 by age and sex using the cause of death profile from data provided by SSA applied to the ASSA2000 projections of the total number of deaths and the South African population by age and gender for the years analysed. This corrects for underestimation in the 1996 Census as well as for incomplete registration of deaths in a consistent manner across all years.

Both data sets, coded by SSA using the ICD-10 classification at three character level (WHO, 1992) were aggregated according to the South African Burden of Disease List for analysis (Bradshaw *et al.*, 2003). The use of ICD-10 at three character level made it impossible to estimate the number of deaths due to 'cot death'. In ICD-10 "Sudden infant death syndrome" is included in code R95 with other ill-defined and unspecified causes, making it impossible to identify "Sudden infant death syndrome" cases alone. The 1996 cause of death data coded by SSA to both ICD-9 and ICD-10 show that all 197 cot deaths according to ICD-9 (code 699) were coded as R95 in ICD-10. However, a further 1527 cases of "Other ill-defined and unspecified causes of mortality" (code 799 in ICD-9) were also coded as R95. All of the deaths coded to R95 were treated as ill-defined and reallocated to specified causes of death as described above.

Table 1 shows a comparison of the number of AIDS deaths estimated by adding the excess deaths observed in the nine selected conditions to the HIV deaths, compared with the number estimated using the ASSA2000 model. The increase in the tuberculosis death rates in the Western Cape did not follow the HIV/AIDS pattern, but suggested that there was a general increase in the death rates due to this disease over all ages. Careful examination of the data suggested that taking 70% of the increase as HIV-related would be a more suitable estimate. Nationally, when added to the deaths classified as HIV-related on the death certificate, the total accounts for 94% of the ASSA2000 model estimate of the number of AIDS deaths in 2000. This proportion varies by province and should be investigated further in the process of finalising the revised provincial models. At national level, the deaths that accounted for the increase in the nine indicator conditions accounted for 61% of the total deaths due to HIV/AIDS.

Province	HIV plus excess in nine indicator conditions (A)	ASSA2000 (B)	Ratio of A:B
Eastern Cape	17 267	16 316	105.8
Free State	12 118	11 897	101.9
Gauteng	30 381	34 141	89.0
KwaZulu-Natal	48 387	53 848	89.9
Limpopo	12 642	13 142	96.2
Mpumalanga	14 395	16 266	88.5
Northern Cape	1473	1361	108.3
North West	13 441	13 553	99.2
Western Cape*	3545	3507	101.1
Sum of provinces	153 650	164 032	93.7
South Africa (SA NBD)	155 800	165 792	94.0

Table 1. The estimated number of deaths due to HIV/AIDS compared with model estimate using ASSA2000

*Only 70% of the increased mortality due to tuberculosis has been included.

Estimate of injury deaths

The total number of injury deaths was estimated using the proportion of injury deaths observed in the 12% sample in each age and sex group of each province applied to the total number of deaths estimated for that age and sex group. The national profile of the cause of death for fatal injuries from the National Mortality Surveillance System (NIMMS) data was then applied to the total number of injury deaths (Burrows *et al.*, 2001). The national profile was applied due to the uncertainty of the variations observed in the NIMSS profile at provincial level, and the similarity observed previously between the NIMSS data and those seen in the demographic surveillance sites of Agincourt and the Africa Centre (ACDIS). The SSA sample of deaths could not be used for the injury profile as most of the injuries are reported without details about the manner of death. The majority of the injuries in the sample are therefore undetermined unnatural causes and it is difficult to interpret those that are specified. Complete compliance with the Inquest Act precludes pathologists from providing details about the manner of death at the time of registration of the death. However, some pathologists do provide sufficient information on the 2nd page of the death notification, a confidential form. This unresolved ambiguity in the requirements of the law needs to be reconsidered.

Age-standardised rates

The age-specific rates have been calculated using population estimates from ASSA2000. These have been used to calculate age-standardised rates by applying the WHO world population standard (Ahmad *et al.*, s.a.).

Years of life lost

Years of life lost (YLLs) have been calculated using the same method adopted in the South African NBD study, which follows the method used in the Global Burden of Disease studies (Murray and Lopez, 1996a; Murray *et al.*, 2001; WHO, 2003). The same standard life expectancy, discounting rate and age weighting have been used for the calculation of the YLLs.

Effectively, this standard life expectancy can be represented by a model life table, Coale and Demeny West Level 26, with a life expectancy at birth of 82.5 years for females (Coale and Demeny, 1966; Coale and Guage, 1989). An arbitrary biological male/female difference of life expectancy at birth of 2.5 years is used. This standard has a life expectancy at birth for males of 80 years, modelled on the West Level 25 life table for females. The discount rate of 3% per YLL is applied, and implies that individuals prefer time lived now rather than some time in the future. This rate is recommended by the International Panel on Cost Effectiveness in Health and Medicine (Gold *et al.*, 1996). A continuous age-weighting function used for this analysis assigns a greater value to a year of life lived in a young or middle-aged adult versus the very young or elderly. Age weighting does not imply preference for any age group, since it is assumed that an individual's life span encompasses all ages.

Results

Life expectancy and mortality levels

Mortality levels differed among the provinces. This was reflected by a variation in life expectancy from 63 years experienced in the Western Cape to 52 years in KwaZulu-Natal. The estimates for each province are shown in Table A1 in Appendix A and are displayed in Figure 1. Life expectancy is consistently higher for females than males, the difference being about 5 to 6 years.

Child mortality rates are influential on the overall life expectancy estimates, and displayed marked variations between the provinces (Figure 2), with the Western Cape having the lowest under-5 child mortality rate of 46 per 1000 live births compared with the highest in KwaZulu-Natal (116 per 1000 births) and Eastern Cape (105 per 1000 live births). Free State and Mpumalanga had rates of about 100 per 1000 births while North West and Limpopo's were 89 and 81 per 1000 births respectively. Gauteng and Northern Cape had among the lowest rates at 75 and 68 per 1000 births respectively. Western Cape, Gauteng and Northern Cape are the only provinces that in the year 2000 met the 'Health for All' target of 80 per 1000 births for under-5 child mortality. From Table A1 it can be seen that the infant mortality rate was the highest in the Eastern Cape province.

Mortality of young boys was consistently slightly higher than that for young girls; nationally the under-5 mortality for boys was 1.08 times that of girls. The difference is largely biological, with boys being more vulnerable to infection in the early years of life (Bogue, 1969). However, as children grow older social factors play a role and boys appear to be more vulnerable to unintentional injuries. The difference was more marked in the Western Cape and the Northern Cape, where the ratio reached 1.12 and 1.11 respectively.

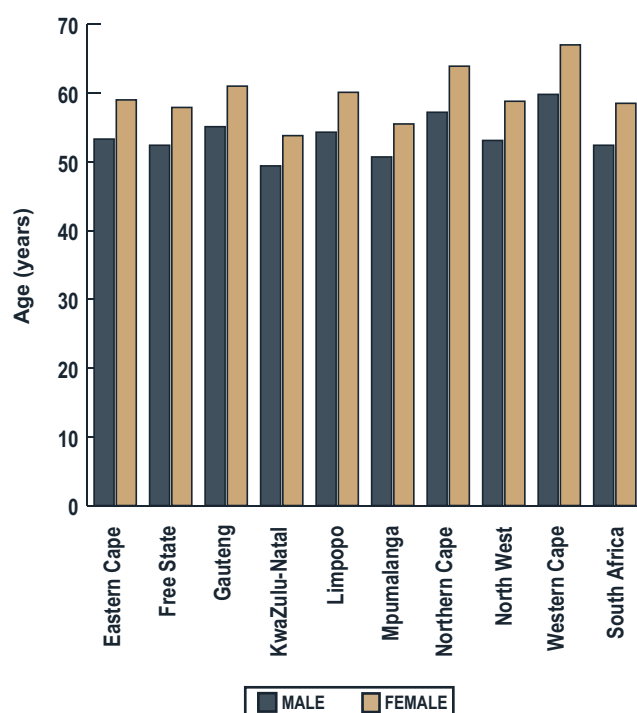
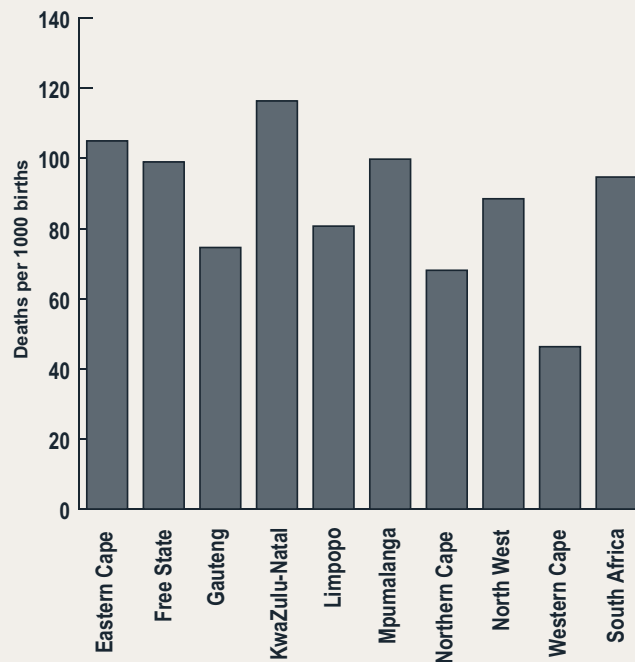


Figure 1: Estimates of life expectancy by province and sex, 2000

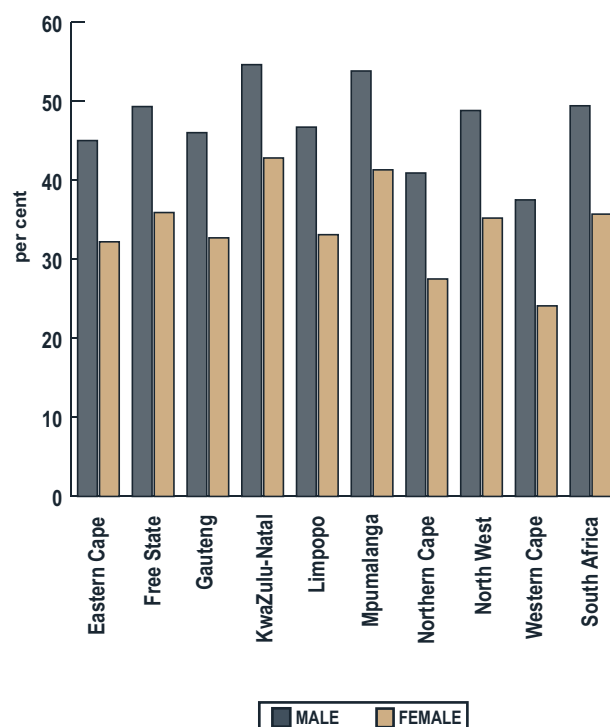
Figure 2: Estimates of under-5 mortality (${}_5q_0$) by province, 2000



Adult mortality is measured by ${}_{45}q_{15}$, the probability of a 15-year-old dying before reaching the age of 60. The estimates showed a marked difference in adult mortality (Figure 3). The national adult mortality rate was 49% for men and 35% for women, giving a ratio of male mortality to female mortality of 1.38. Provincial variations in the overall level of adult mortality were not as marked as the variations in child mortality rates, and showed that the Western Cape and the Northern Cape had the lowest rates (31% and 34% respectively), while KwaZulu-Natal and Mpumalanga had the highest rates (49% and 48% respectively). Free State and North West had rates of just over 42%, and Limpopo, Gauteng and Eastern Cape rates of just under 40%.

While there are no global targets for adult mortality rates, when compared to global estimates the rates for South Africa are lower than the rates for other Southern and East African countries and comparable to West African countries. The African countries are all higher than countries like Japan (9.8% for males and 4.4% for women), the United Kingdom (10.9% for men and 6.7% for women) and the United States (14.7% for men and 8.4% for women) (Lopez *et al.*, 2002).

Figure 3: Estimates of adult mortality (${}_{45}q_{15}$) by province, 2000



Provincial comparison of cause-specific death rates

The age-standardised mortality rates by broad cause group are shown for each province in Figure 4, based on estimates reported in Appendices B-D. The age-standardised death rates (per 1000 population) ranged from 11.7 and 13.1 in the Western Cape and the Northern Cape respectively to levels of 17.6 in KwaZulu-Natal, 17.2 in Mpumalanga and 15.8 in the Free State; the highest rate was 1.5 times higher than the lowest. The rates in North West (15.6), Eastern Cape (14.9), Limpopo (14.8) and Gauteng (14.3) were mid-range when compared with the other provinces. It can also be seen from Figure 4 that the cause of death profile by broad group differed between the provinces.

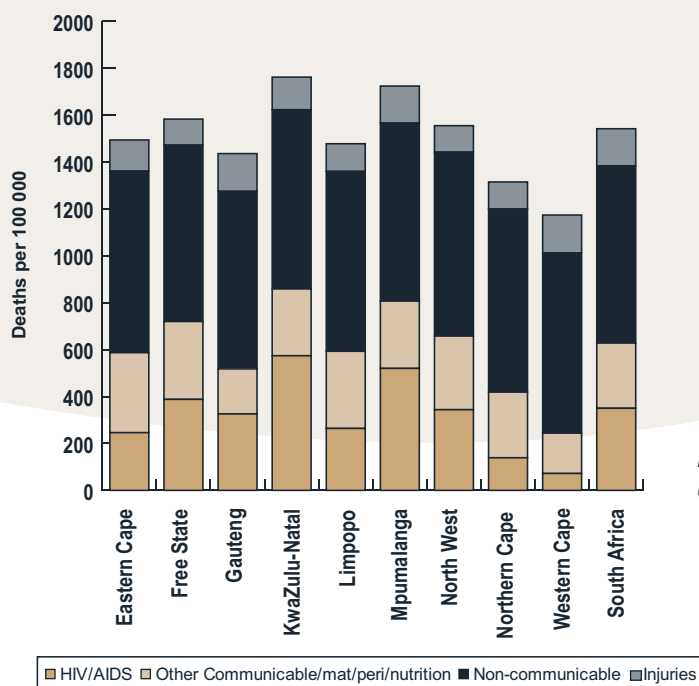


Figure 4: Provincial estimates of age-standardised death rates by broad cause group, 2000

Infectious diseases, perinatal, maternal and nutrition-related conditions

Figure 5 shows the age-standardised death rates for males and females due to HIV/AIDS. It can be seen that the age-standardised death rates for males and females were fairly similar, but the rates followed the provincial variations of the epidemic. The death rates due to HIV/AIDS showed a very large difference, with the rate per 100 000 population in KwaZulu-Natal at 574 and in Mpumalanga at 520 being about 8 times higher than the rate in the Western Cape of 72. Gauteng (326), North West (344) and Free State (388) followed the highest ranked provinces, then Limpopo (264) and Eastern Cape (246). The Northern Cape, with a rate of 139 per 100 000 population, was the second lowest rate. These estimates are for the year 2000, and it is likely that the rates in all provinces have increased over the last few years. However, the roll-out of the Prevention of Mother to Child Transmission and the comprehensive treatment programme for AIDS should slow down the increase in the mortality rates.

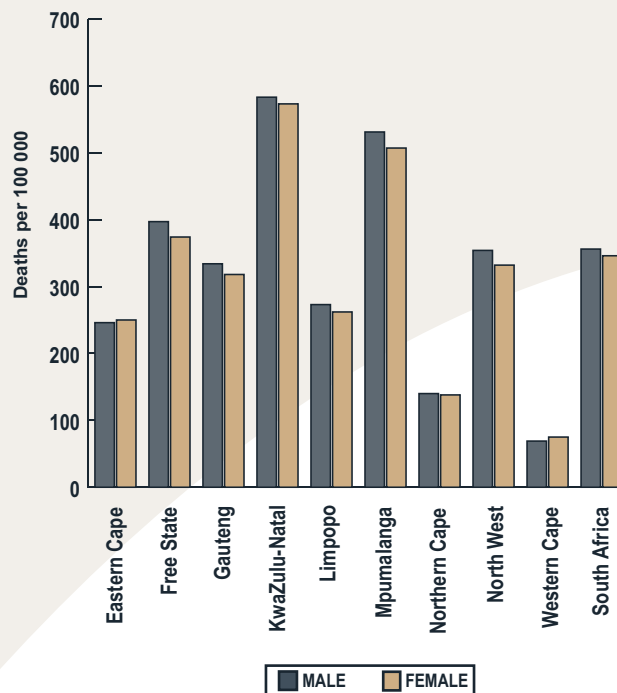


Figure 5: Provincial estimates of age-standardised death rates due to HIV/AIDS, 2000

Figure 6 shows variations between the provinces in the mortality rates due to other pre-transitional causes of death (other Group 1) including infectious and parasitic diseases, perinatal conditions and malnutrition. (The maternal death rates were too low to show on this graph but are shown in detail in Figure 8.) It can be seen that Western Cape and Gauteng had markedly lower mortality rates due to the other Group 1 causes, while the poorer provinces, Eastern Cape, Free State, Limpopo and North West, had the highest rates. However, Figure 7 shows that specific diseases followed varying provincial patterns. Tuberculosis mortality, not related to HIV, was consistently higher among males than females, and was lowest in the provinces of Gauteng, Mpumalanga, Limpopo and KwaZulu-Natal. Lower respiratory infections were highest in the provinces of North West and Free State. Diarrhoeal disease was highest in Eastern Cape, KwaZulu-Natal and Limpopo, and lowest in Gauteng and Western Cape. The ranking of provinces by diarrhoea death rates is identical to the ranking of provinces by household income as shown in Figure A1 (SSA, 2000b). The provinces with the lowest proportions of households receiving a monthly income below R800 have the lowest levels of diarrhoea mortality. Septicaemia rates ranged from 16 to 25 per 100 000. Interestingly, the septicaemia death rate for males in Eastern Cape was much higher than that for females, with a difference more pronounced than in other provinces.

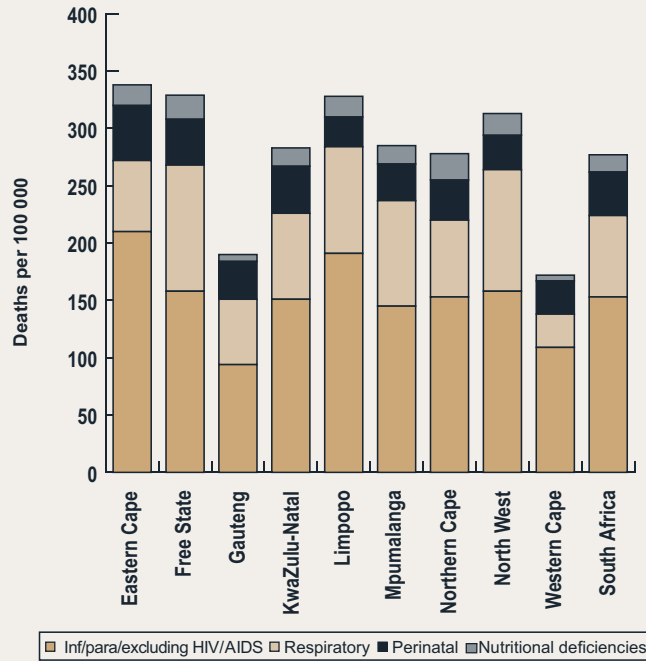


Figure 6: Provincial estimates of age-standardised death rates due to Group I causes excluding HIV/AIDS, 2000

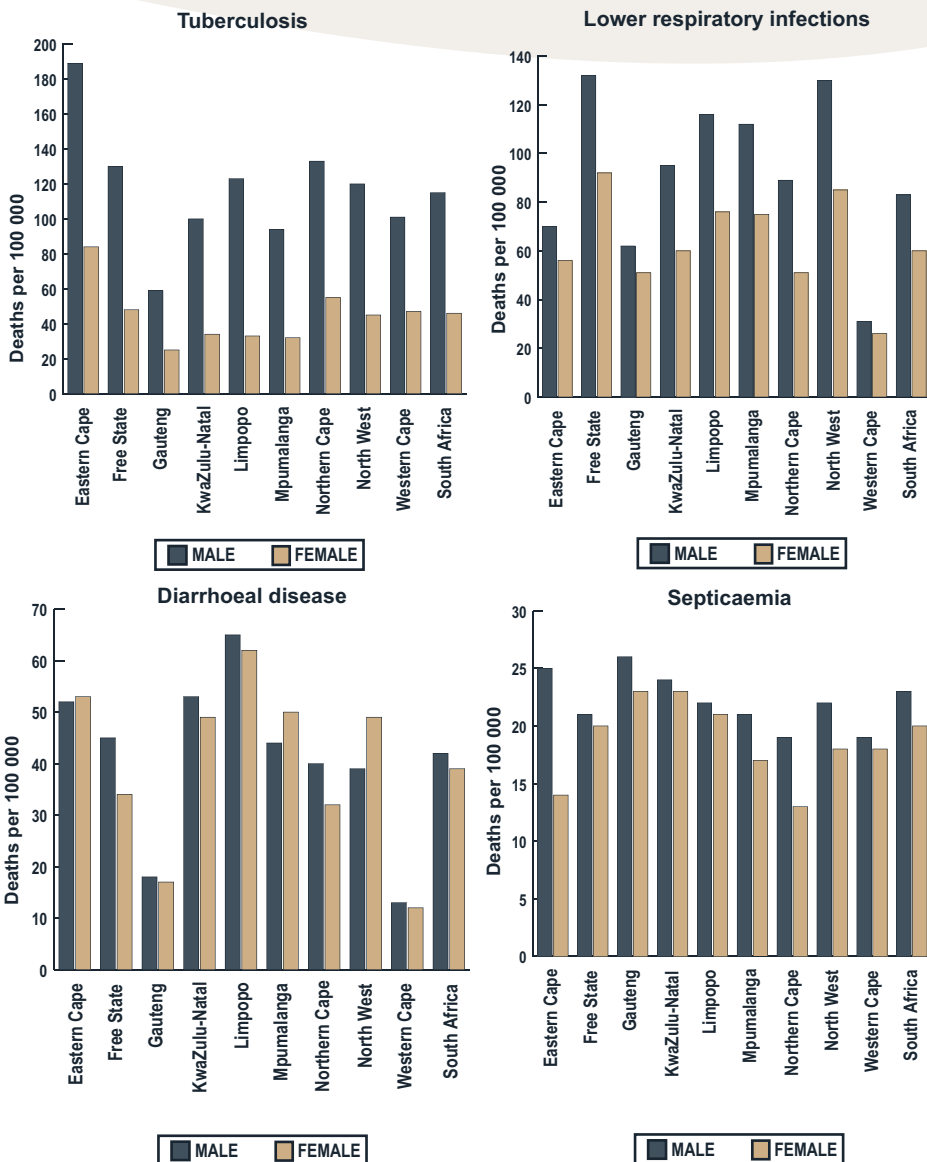


Figure 7: Provincial estimates of age-standardised death rates due to selected infectious diseases, 2000

Figure 8 shows differences between the provinces in the perinatal conditions (under 1 year), maternal conditions (for women aged 15-49 years) and protein-energy malnutrition death rates (under 5 years). Mortality from perinatal conditions was highest in Eastern Cape, Free State and KwaZulu-Natal. Malnutrition rates showed marked variations between the provinces. Eastern Cape, Free State, Northern Cape and North West showed the highest rates. Malnutrition mortality rates were higher among boys than girls, this difference being pronounced in the Northern Cape and to some extent the Eastern Cape.

The maternal conditions were compared with the NBD estimate for South Africa (Figure 8), which had been adjusted to match the national level of maternal mortality found in the SADHS 1998. Unfortunately, it has not been possible to adjust the estimates for the provinces as there are no provincial estimates of the maternal mortality ratio. The contrast of these estimates with the NBD estimate suggests that maternal deaths are consistently under-reported through death certification. In addition, it is not clear how the provincial variations between the provinces can be interpreted. If the under-reporting were consistent over all provinces, then the ranking of the provinces would indicate real differences between the provinces. However, it is likely that the provinces with better health facilities would have less under-reporting. With such high levels of under-reporting it is difficult to discern the real differences between provinces.

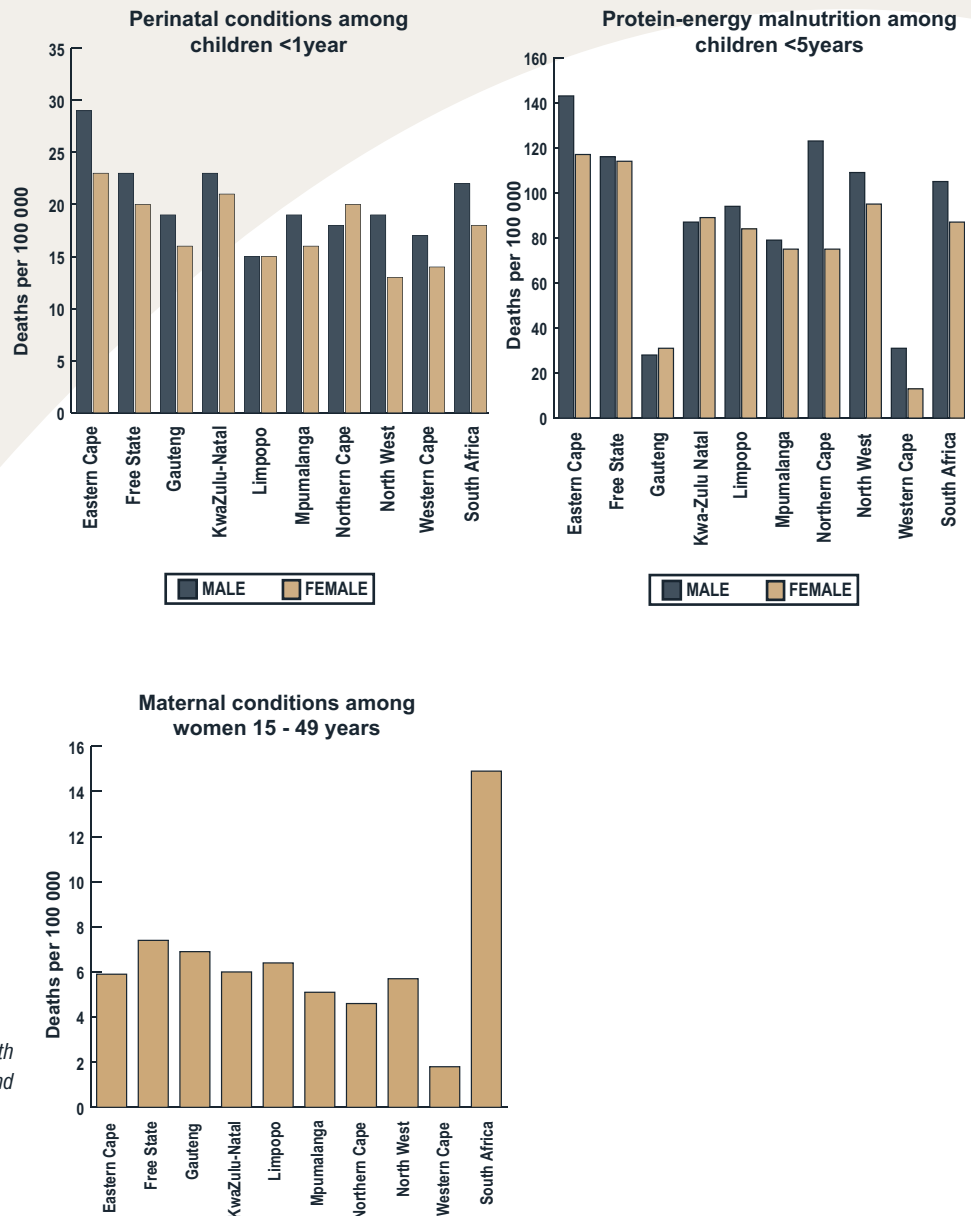


Figure 8: Provincial estimates of age-specific death rates due to perinatal or maternal conditions and protein-energy malnutrition, 2000

Non-communicable diseases

There was surprisingly little variation between the provinces in the overall age-standardised death rate due to non-communicable diseases. The poorer provinces had similar levels to those of the more developed provinces – all at about 750 per 100 000 population. However, it can be seen from Figure 9 that there were variations in the profile of non-communicable diseases between the provinces. Furthermore, there were variations in the death rates for specific conditions.

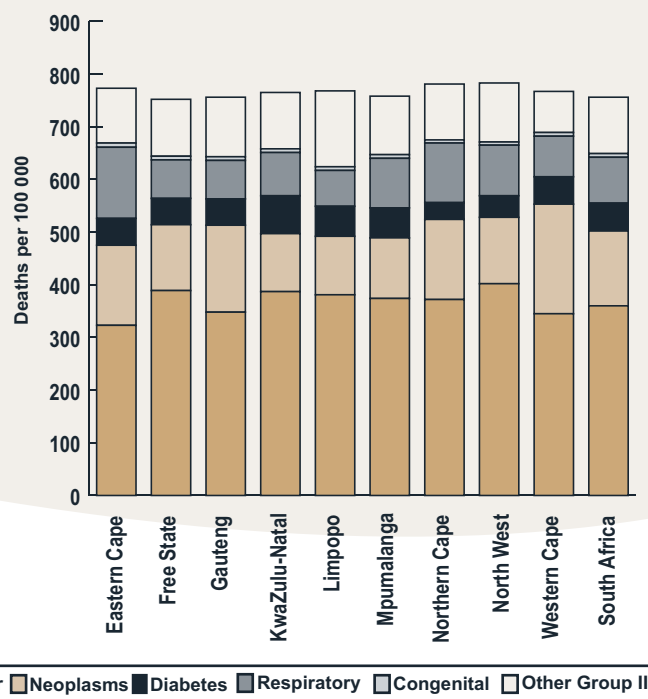


Figure 9. Provincial estimates of age-standardised death rates due to non-communicable diseases, 2000

Death rates due to cardiovascular diseases were lowest in Eastern Cape, Gauteng and Western Cape, and highest in Free State, KwaZulu-Natal and North West (Figure 10). Western Cape and Northern Cape had a pattern of high ischaemic heart disease and stroke, but low hypertensive heart disease and inflammatory heart disease. Limpopo and Mpumalanga had patterns of low ischaemic heart disease and stroke, but high rates of hypertensive heart disease and inflammatory heart disease.

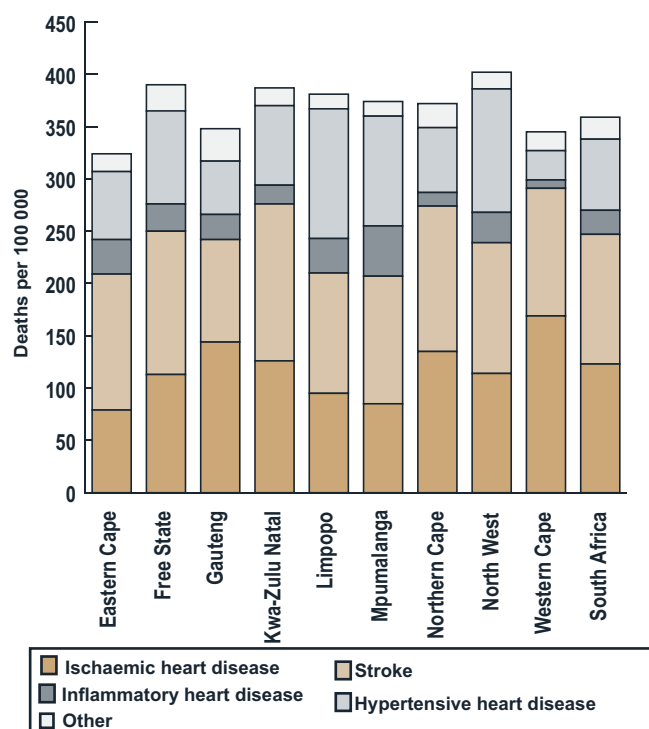


Figure 10: Provincial estimates of age-standardised mortality rates due to cardiovascular diseases, 2000

Ischaemic heart disease death rates were highest in Western Cape, Gauteng and Northern Cape, and lowest in Mpumalanga, Limpopo and Eastern Cape (Figure 11). The ischaemic heart disease rate was consistently higher for males than females. In contrast, stroke death rates for males were similar to the rates for females. The stroke death rates were particularly high in KwaZulu-Natal, and low in Gauteng. Provincial death rates due to hypertensive heart disease showed marked variations between the provinces, and higher rates for females than for males in all provinces except Mpumalanga. North West, Limpopo and Mpumalanga had the highest rates of hypertensive heart disease, while Western Cape and Gauteng had the lowest rates.

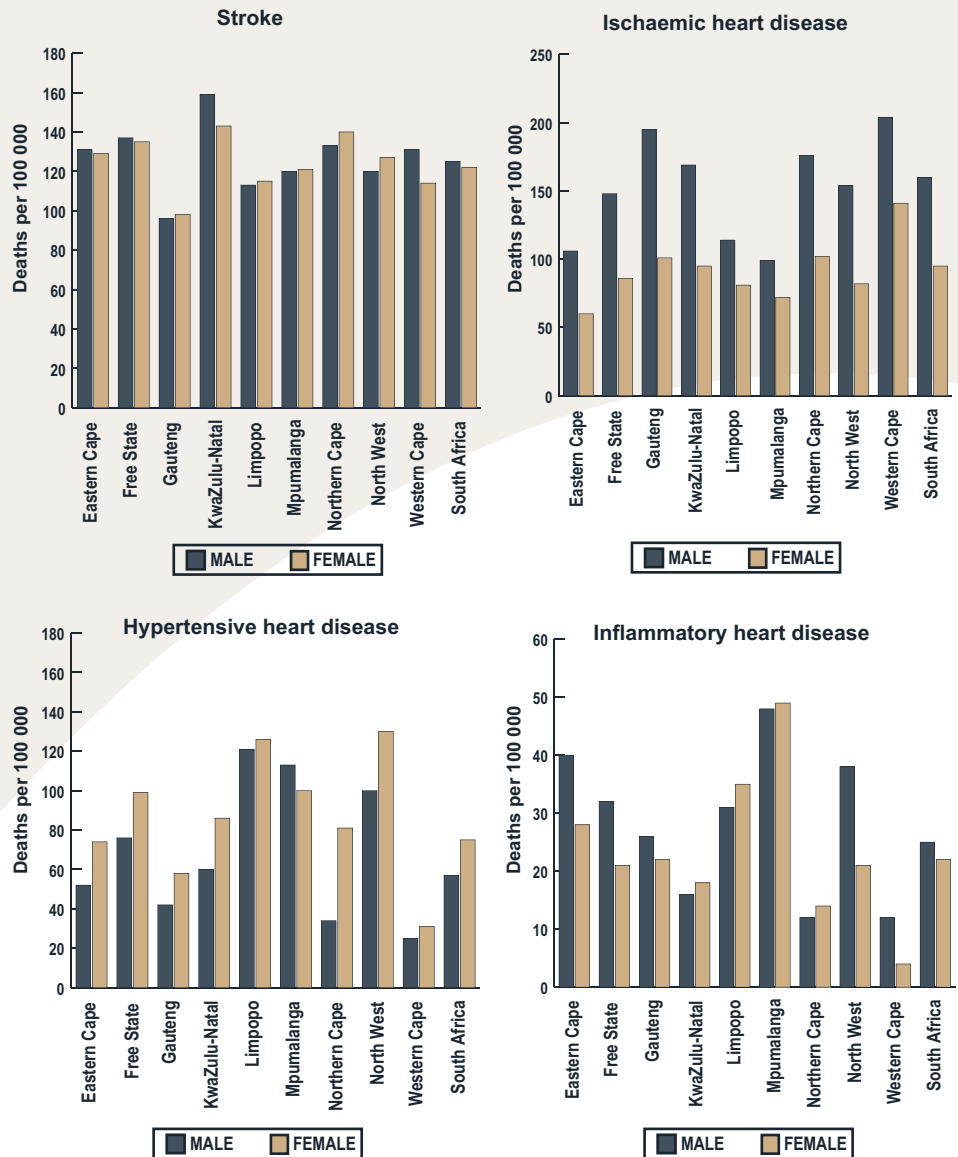


Figure 11: Provincial estimates of age-standardised death rates due to selected cardiovascular causes by sex, 2000

Death rates due to diabetes mellitus showed interesting regional variations, with the rates in KwaZulu-Natal, Limpopo, Free State and Mpumalanga being the highest and the rate in the Northern Cape being the lowest (Figure 12). Since diabetes is associated with an urban lifestyle, the more rural provinces might be expected to have lower rates. However, genetic factors play a role in the development of the disease, and the death rates are ameliorated by access to good-quality health services. It can be seen from Figure 12 that the rates for females were higher than those for males, but in Gauteng, Northern Cape and Limpopo the rates for males were higher.

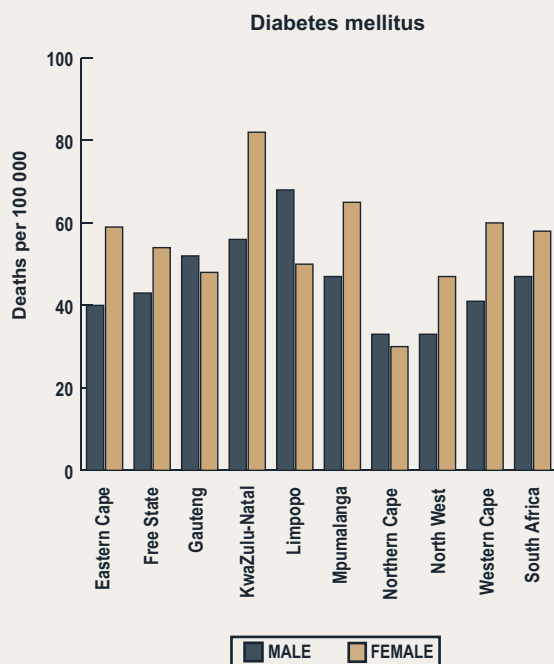


Figure 12: Provincial estimates of age-standardised death rates due to diabetes by sex, 2000

Cancer death rates varied across the provinces. From Figure 13 it can be seen that Western Cape had the highest cancer death rates followed by Gauteng, Northern Cape and Eastern Cape. The lowest rates were found in KwaZulu-Natal, Limpopo and Mpumalanga. However, the profile of the type of cancer differed enormously across the provinces.

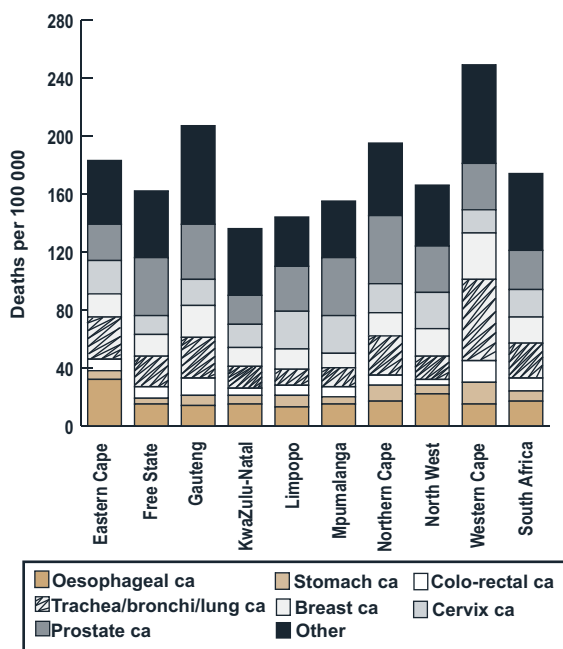


Figure 13: Provincial estimates of age-standardised death rates due to cancers, 2000

Lung cancer is the leading cancer in South Africa, with much higher rates among men than women. From Figure 14 it can be seen that the lung cancer rate among men in the Western Cape was extremely high. Prostate cancer was highest in Northern Cape, followed by Free State, Gauteng and Mpumalanga. Oesophageal cancer death rates were also higher among men than women. Eastern Cape had particularly high rates of oesophageal cancer, as did men in North West province. Nationally, cervical cancer and breast cancer death rates were at similar levels. However, there were provincial variations in the pattern. Western Cape had much higher breast cancer rates, while Mpumalanga, Limpopo and Eastern Cape had much higher cervical cancer rates.

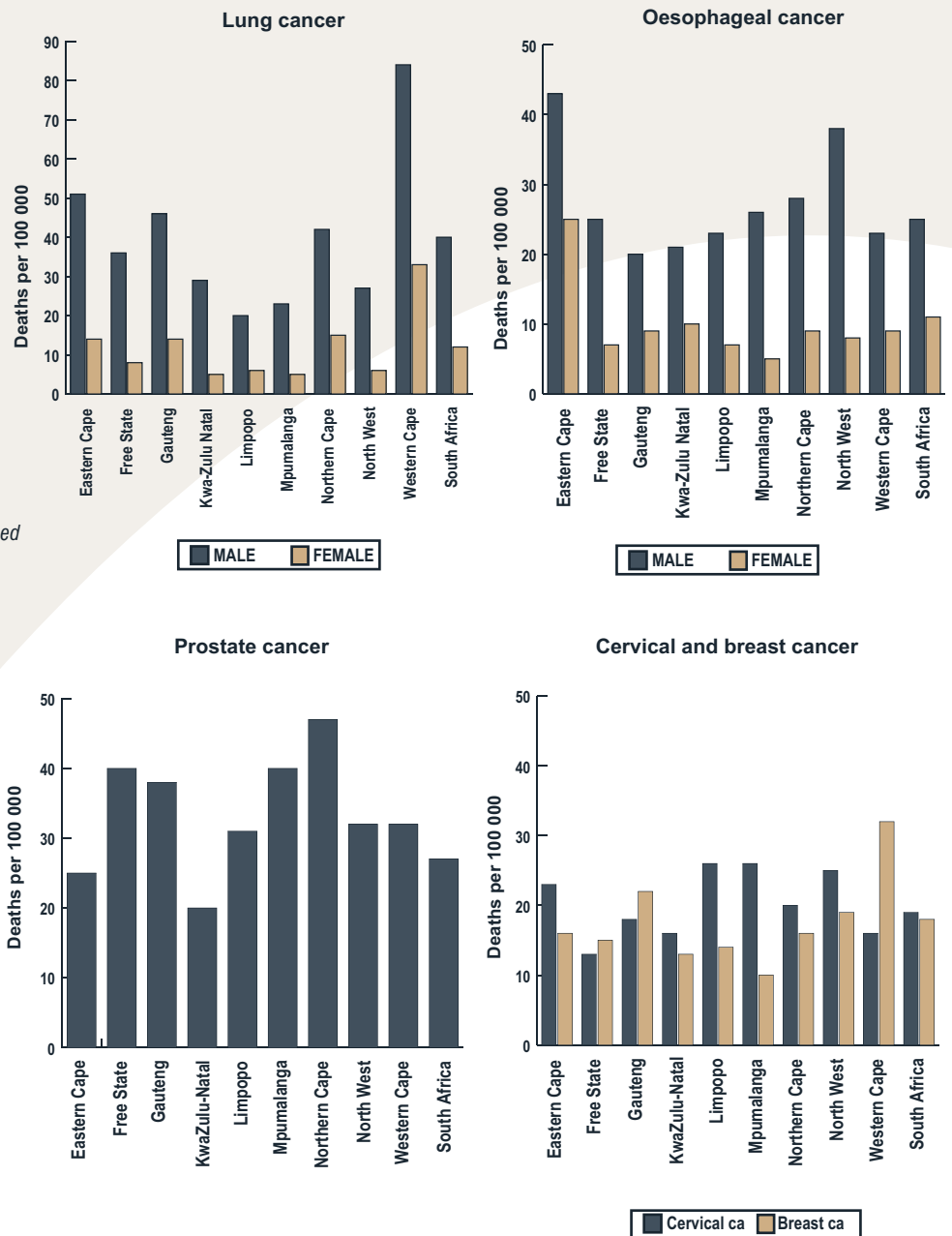


Figure 14: Provincial estimates of age-standardised death rates due to selected cancers by sex, 2000

The age-standardised death rates due to respiratory diseases, excluding acute infections such as tuberculosis and pneumonia, are shown in Figure 15. The rates in Eastern Cape and Northern Cape were particularly high, followed by North West and Mpumalanga. From Figure 16 it can be seen that the chronic obstructive disease death rates were very high in Eastern and Northern Cape, and that asthma was high in Eastern and Northern Cape, and that asthma was high in Eastern Cape, KwaZulu-Natal and Mpumalanga. Death rates for males were consistently higher than for females.

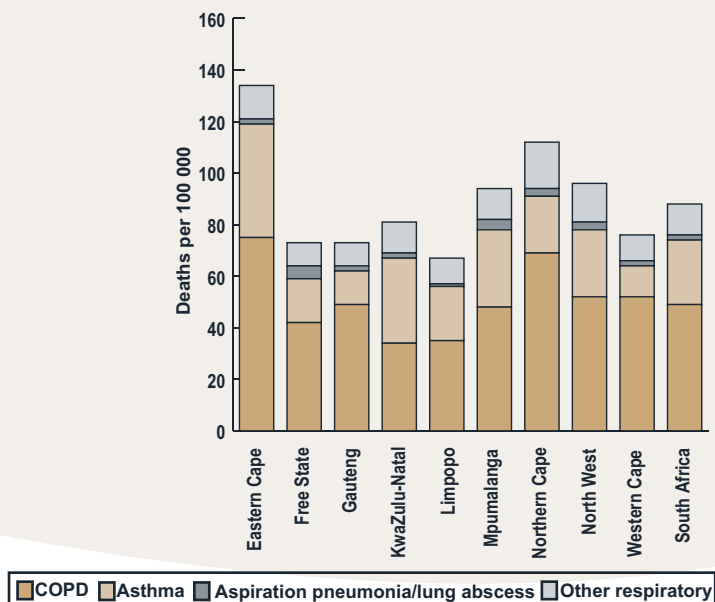


Figure 15: Provincial estimates of age-standardised mortality rates due to respiratory diseases, 2000

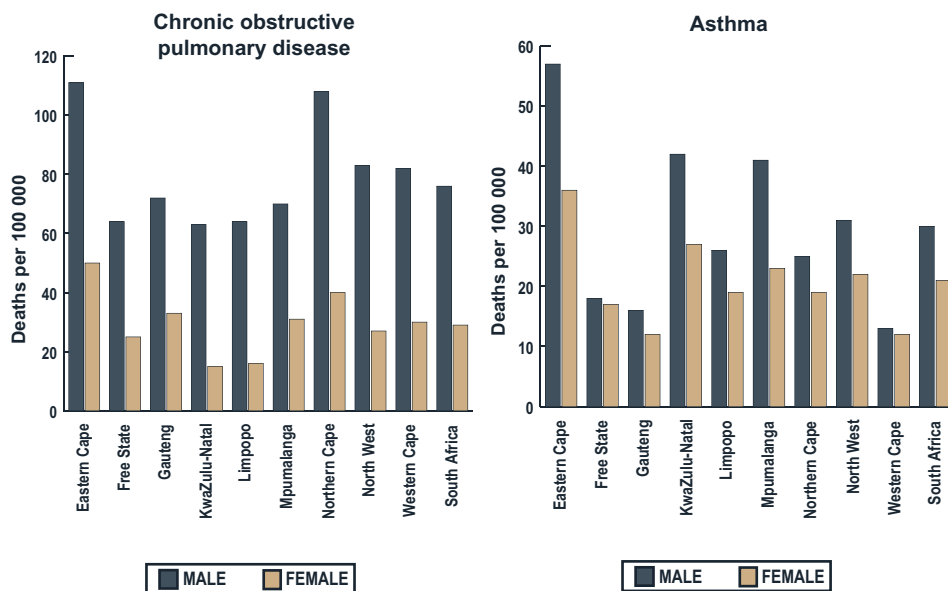


Figure 16: Provincial estimates of age-standardised death rates due to chronic obstructive pulmonary disease and asthma by sex, 2000

Figure 17 shows the provincial rates for three other non-communicable diseases that have mortality rates that are not insignificant – nephritis and nephrosis, epilepsy and cirrhosis of the liver. Mortality due to nephritis or nephrosis is often caused by hypertension or diabetes mellitus. The relatively high levels suggest that insufficient details have been provided on the medical certification of the cause of death. Death rates due to these conditions might be influenced by access to health services in terms of being diagnosed in the first place and being treated, making it difficult to assess the provincial variations. The rate was higher for males than for females in all provinces except Northern Cape. The highest rates were experienced by males in Limpopo, KwaZulu-Natal and Gauteng. The lowest rates were in females in Mpumalanga and North West. Epilepsy death rates varied enormously across the provinces. The rates were consistently higher among males than females. The rates were particularly high in Eastern Cape, and may reflect poor access to health services. Rates in North West province were also higher than the national average. Rates in Western Cape were the lowest. Death rates due to cirrhosis of the liver were higher among males than females across all provinces, with rates in Limpopo, North West, Northern Cape and KwaZulu-Natal the highest. Mpumalanga had the smallest difference between rates in males and in females.

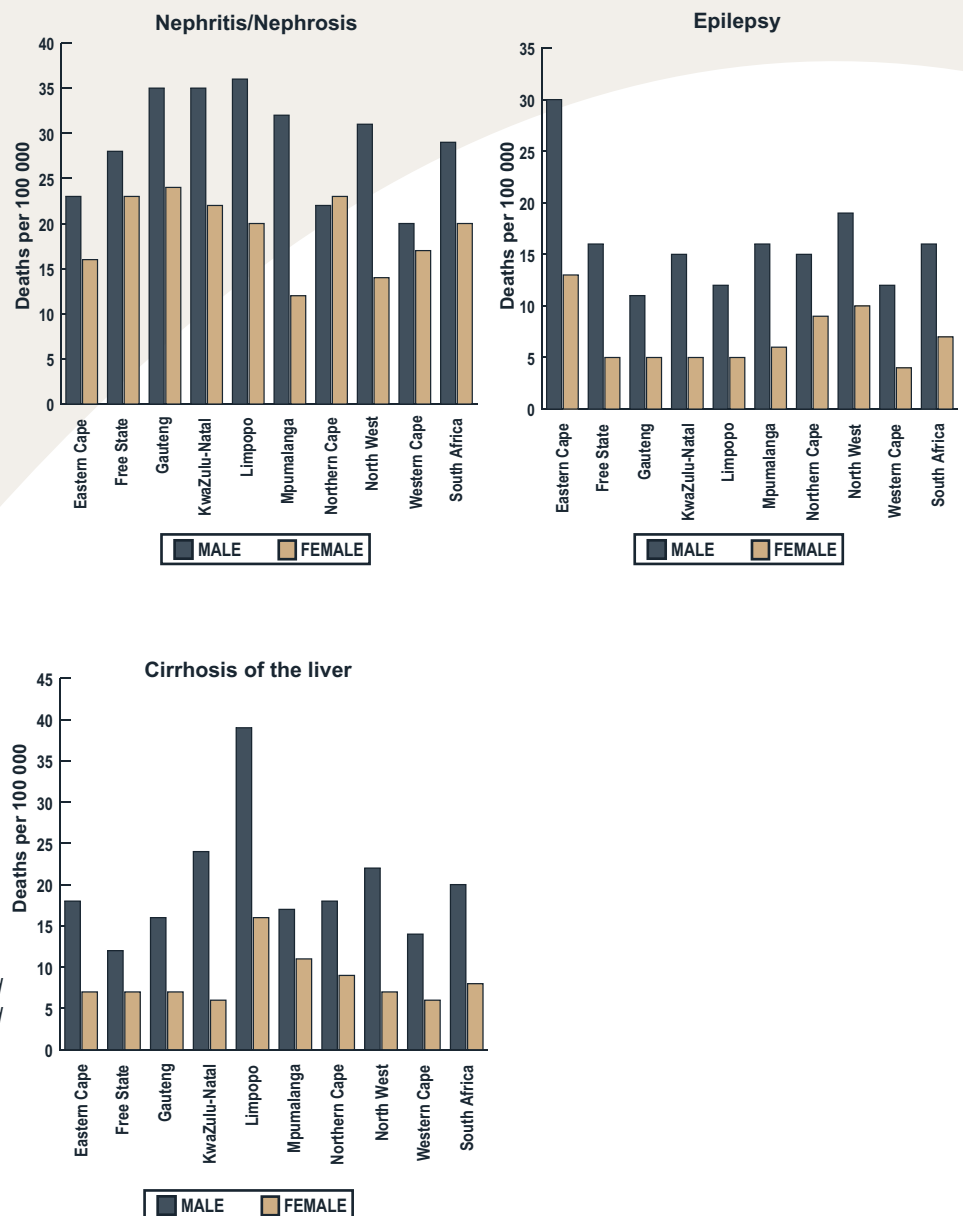


Figure 17: Provincial estimates of age-standardised death rates due to epilepsy, nephritis/nephrosis and cirrhosis of the liver by sex, 2000

Injuries

From Figure 18 it can be seen that there were large variations between males and females in the overall death rates from injuries. The rates for males were about three times higher than the rates for females across all the provinces. Western Cape and Gauteng, the most developed provinces, had the highest rates. However, Mpumalanga, KwaZulu-Natal and Eastern Cape also had high rates. Free State, Limpopo, Northern Cape and North West had the lowest rates. In the case of males, the ranking of the manner and cause of injury was first homicides followed by road traffic accidents, suicides and fires. The ranking was different for females, where the leading cause was road traffic accidents followed by homicides, fires and suicides. The national injury cause of death profile was applied to each province by age and sex but is not shown in Figure 18 due to the lack of certainty of the provincial level estimates.

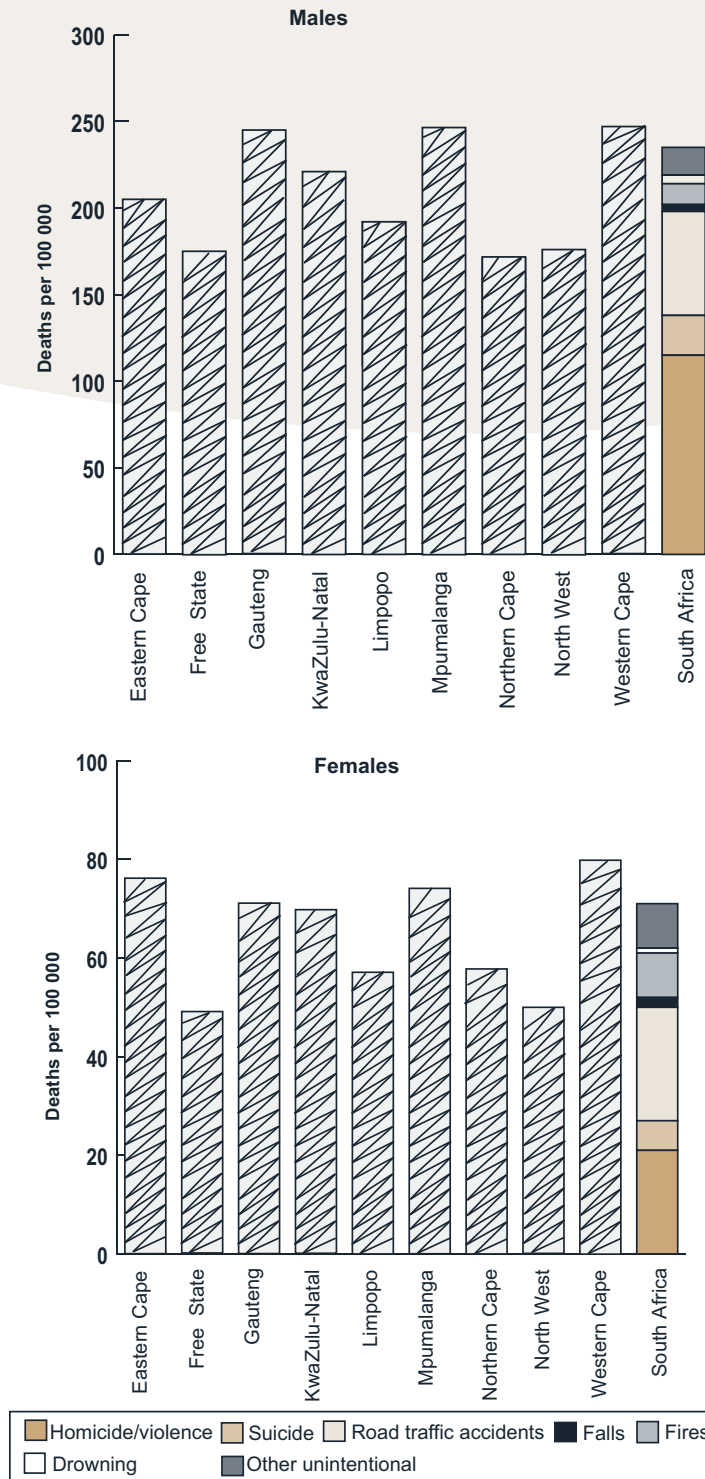


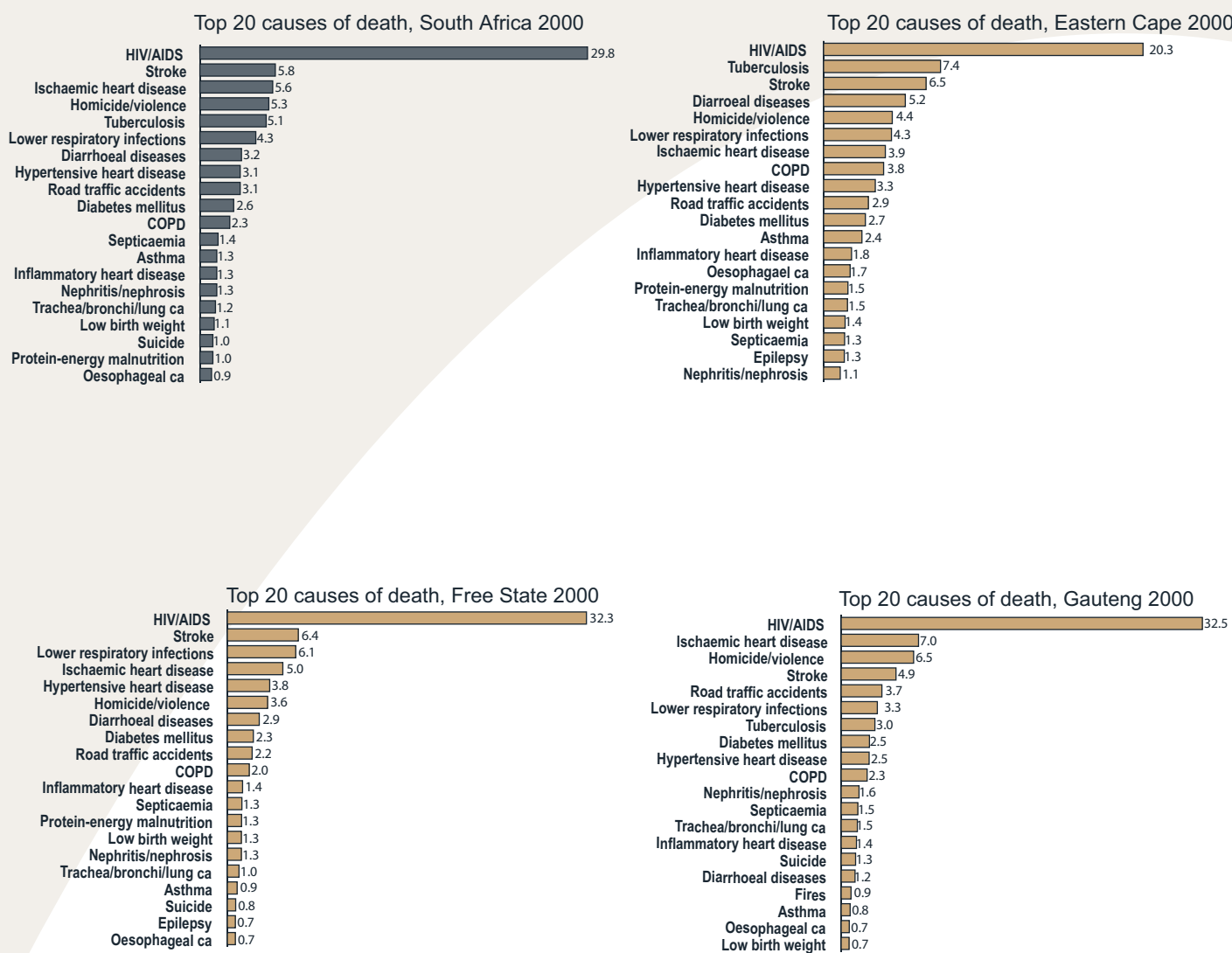
Figure 18: Provincial estimates of age-standardised death rates due to injuries for males and females, 2000

Provincial comparison of leading causes of death

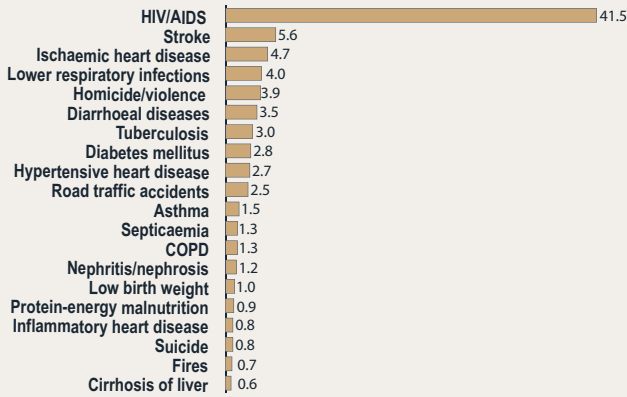
Top causes of death

The top twenty causes of death ranked according to the South African BOD list are shown for each province and nationally in Figure 19, and the top ten causes are shown in a league table (Table 2). It can be seen that HIV/AIDS was the leading cause of death in all provinces except the Western Cape, but that there are substantive differences in the ranking of the other causes. It must be noted that the level of aggregation used for the ranking of causes does influence the resulting order. Full details of the cause of death profiles are given in the next section of the report.

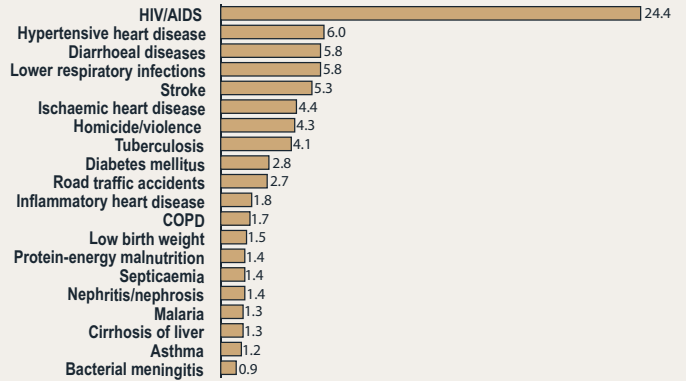
Figure 19: Top twenty causes of death (%) by province, 2000



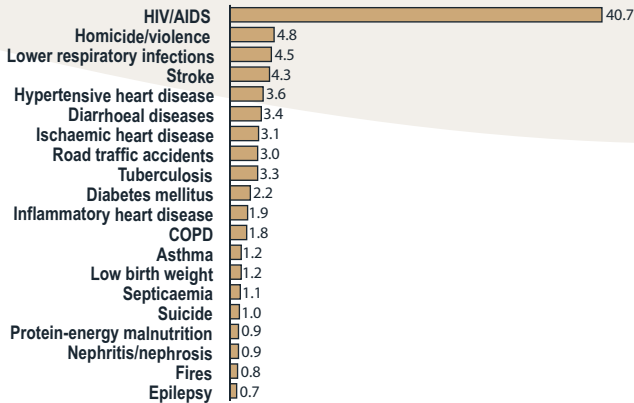
Top 20 causes of death, KwaZulu-Natal 2000



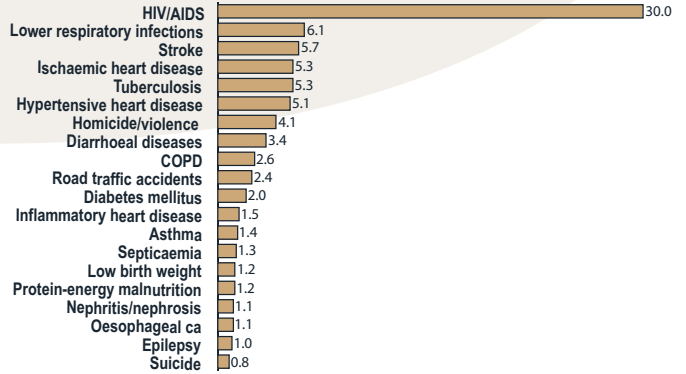
Top 20 causes of death, Limpopo 2000



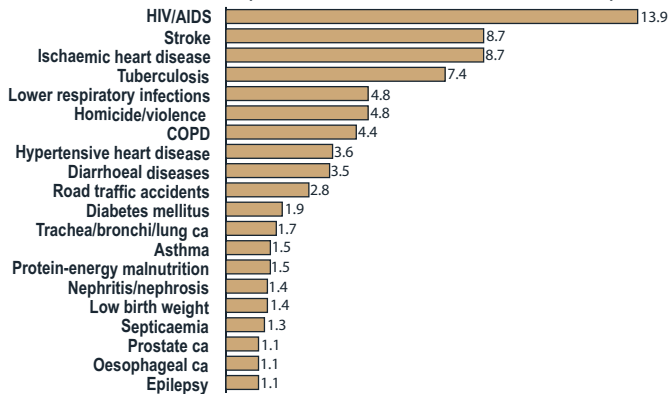
Top 20 causes of death, Mpumalanga 2000



Top 20 causes of death, North West 2000



Top 20 causes of death, Northern Cape 2000



Top 20 causes of death, Western Cape 2000

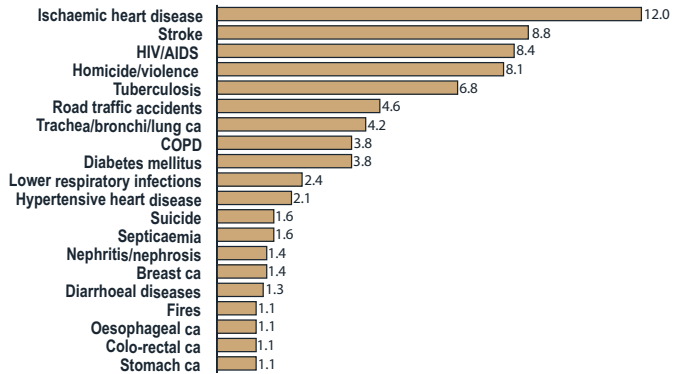


Table 2. Top ten causes of death by province, 2000

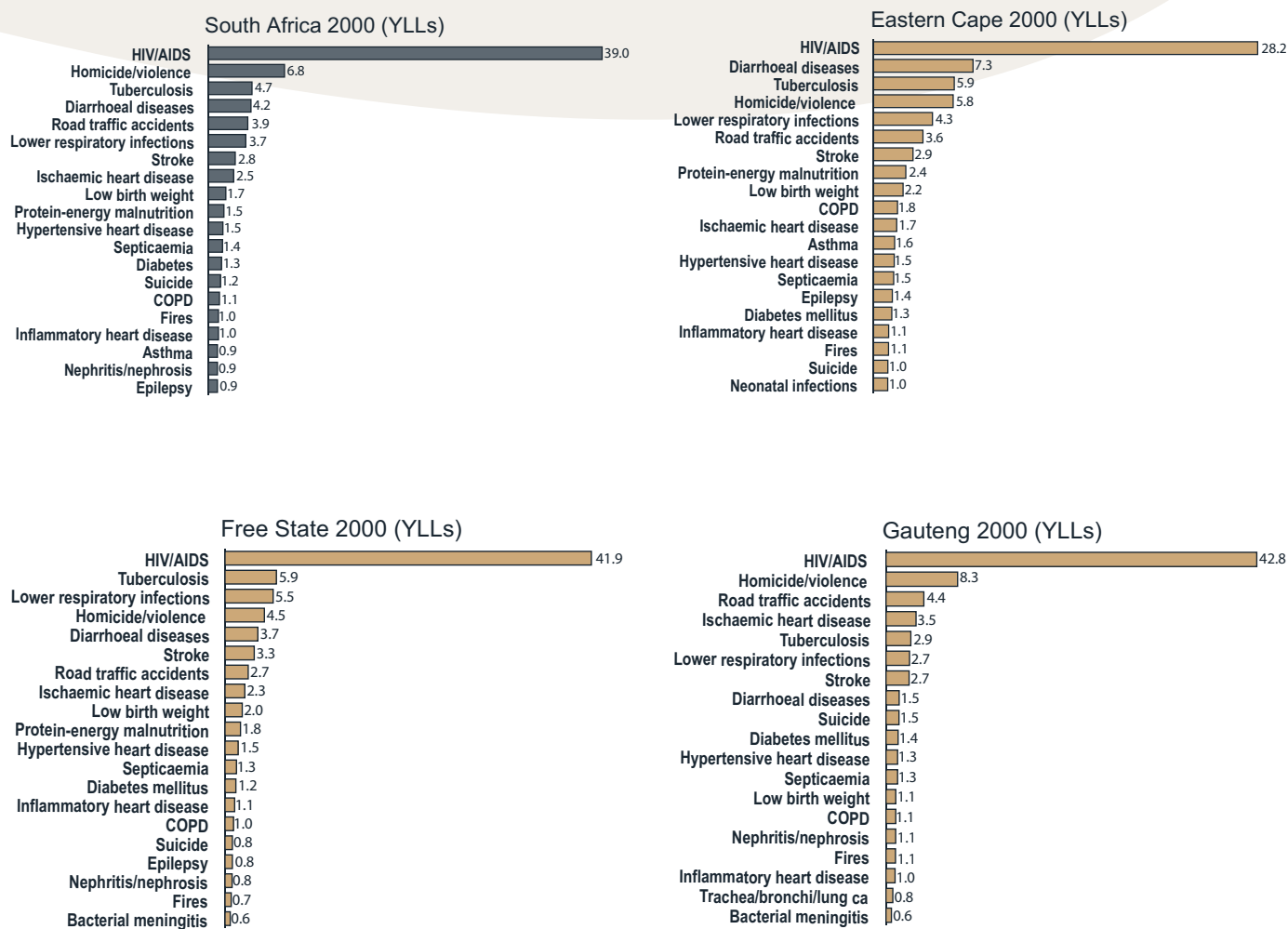
Rank	Eastern Cape	Free State	Gauteng	KwaZulu - Natal	Limpopo	Mpumalanga	Northern Cape	North West	Western Cape	South Africa
1	HIV/AIDS (20.3 %)	HIV/AIDS (32.3 %)	HIV/AIDS (32.5 %)	HIV/AIDS (41.5 %)	HIV/AIDS (24.4 %)	HIV/AIDS (40.7 %)	HIV/AIDS (27.8 %)	HIV/AIDS (30.0 %)	Ischaemic heart disease (12.0 %)	HIV/AIDS (29.8 %)
2	Tuberculosis (7.4 %)	Stroke (6.4 %)	Ischaemic heart disease (7.0 %)	Stroke (5.6 %)	Hypertensive heart disease (6.0 %)	Homicide & violence (4.8 %)	Stroke (8.7 %)	Lower Respiratory infections (6.1 %)	Stroke (8.8 %)	Stroke (5.8 %)
3	Stroke (6.5 %)	Lower respiratory infection (6.2 %)	Homicide & violence (6.5 %)	Ischaemic heart disease (4.7 %)	Diarrhoeal diseases (5.8 %)	Lower respiratory infections (4.5 %)	Ischaemic heart disease (8.7 %)	Stroke (5.7 %)	HIV/AIDS (8.4 %)	Ischaemic heart disease (5.6 %)
4	Diarrhoeal diseases (5.2 %)	Ischaemic heart disease (5.0 %)	Stroke (4.9 %)	Lower respiratory infections (4.0 %)	Lower Respiratory infections (4.5 %)	Stroke (4.3 %)	Tuberculosis (5.3 %)	Tuberculosis (5.3 %)	Homicide & violence (8.1 %)	Homicide & violence (5.3 %)
5	Homicide & violence (4.4 %)	Hypertensive heart disease (3.8 %)	Road traffic (3.7 %)	Homicide & violence (3.9 %)	Ischaemic heart disease (5.8 %)	Hypertensive heart disease (3.6 %)	Lower respiratory infection (4.8 %)	Ischaemic heart disease (5.3 %)	Tuberculosis (6.8 %)	Tuberculosis (5.1 %)
6	Lower respiratory infections (4.3 %)	Homicide and violence (3.6 %)	Lower respiratory infection (3.3 %)	Diarrhoeal diseases (3.5 %)	Stroke (5.3 %)	Diarrhoeal diseases (3.4 %)	Homicide & violence (4.8 %)	Hypertensive heart disease (5.1 %)	Road traffic (4.6 %)	Lower respiratory infections (4.3 %)
7	Ischaemic heart disease (3.9 %)	Diarrhoeal disease (2.9 %)	Tuberculosis (3.0 %)	Tuberculosis (3.0 %)	Homicide & violence (4.3 %)	Ischaemic heart disease (3.1 %)	COPD (4.4 %)	Homicide & violence (4.1 %)	Trachea/ bronchi/lung ca (4.2 %)	Diarrhoeal diseases (3.2 %)
8	COPD (3.8 %)	Diabetes mellitus (2.3 %)	Diabetes mellitus (2.5 %)	Diabetes mellitus (2.8 %)	Tuberculosis (4.0 %)	Road traffic (3.0 %)	Hypertensive heart disease (3.7 %)	Diarrhoeal diseases (3.4 %)	COPD (3.8)	Hypertensive heart disease (3.1 %)
9	Hypertensive heart disease (3.2 %)	Road traffic (2.2 %)	Hypertensive heart disease (2.5 %)	Hypertensive heart disease (2.7 %)	Diabetes mellitus (2.8 %)	Tuberculosis (3.0 %)	Diarrhoeal diseases (3.5 %)	COPD (2.6 %)	Diabetes mellitus (3.8 %)	Road traffic (3.1 %)
10	Road traffic (2.9 %)	COPD (2.2 %)	COPD (2.3 %)	Road traffic (2.5 %)	Road traffic (2.7 %)	Diabetes mellitus (2.2 %)	Road traffic (2.8 %)	Road traffic (2.4 %)	Lower respiratory infections (2.4 %)	Diabetes mellitus (2.6 %)

Top causes of premature mortality

The years of life lost (YLLs) are an important measure of premature mortality for public health planning. Figure 20 shows the top twenty causes of YLLs for each province and nationally, and Table 3 lists the top ten causes of YLLs by province. These highlight the need to focus on HIV/AIDS, homicide, tuberculosis, diarrhoea, road traffic accidents and lower respiratory infections in order to reduce premature mortality. These consistently featured among the top causes in all provinces.

HIV/AIDS was the leading cause of premature mortality in 2000 in all provinces, accounting for 14% in the lowest ranked province, Western Cape, and 51% in the highest ranked province, KwaZulu-Natal. Stroke featured in the top causes of YLLs for all provinces. It appeared in combination with ischaemic heart disease in all provinces except the most rural provinces of Eastern Cape and Limpopo. Hypertensive heart disease featured in Limpopo, Mpumalanga and North West province. Diabetes featured in the top causes for Gauteng and KwaZulu-Natal. Low birth weight featured in all provinces except the most developed - Gauteng and Western Cape. Protein-energy malnutrition featured in the top ten causes for Eastern Cape, Free State, Limpopo and Northern Cape.

Figure 20: Top twenty causes of years of life lost (%) by province, 2000



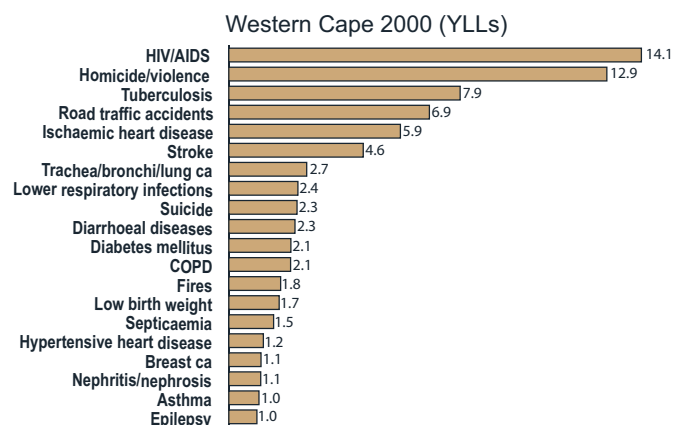
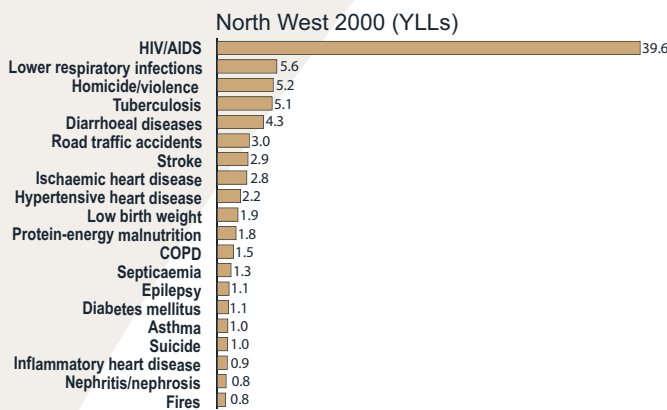
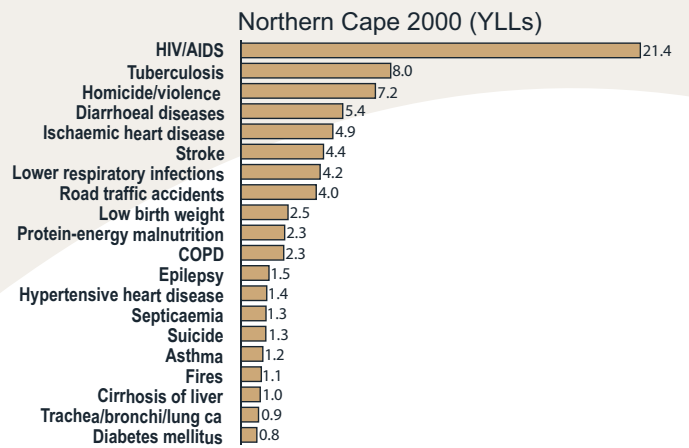
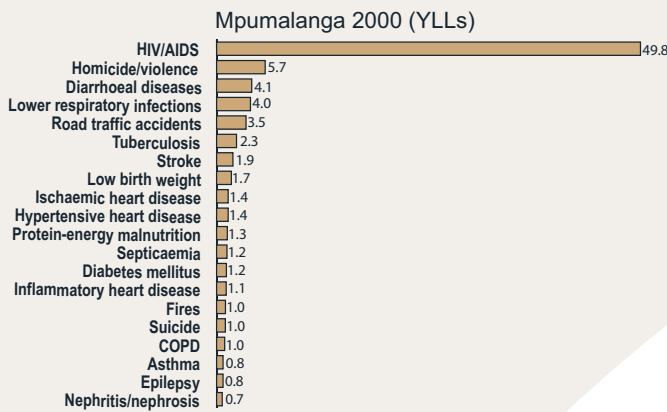
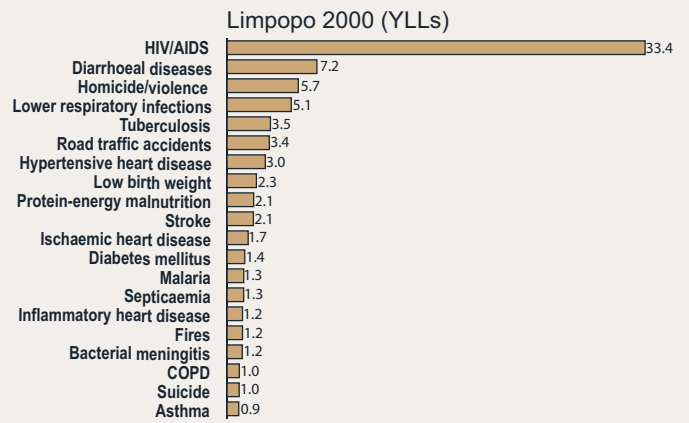
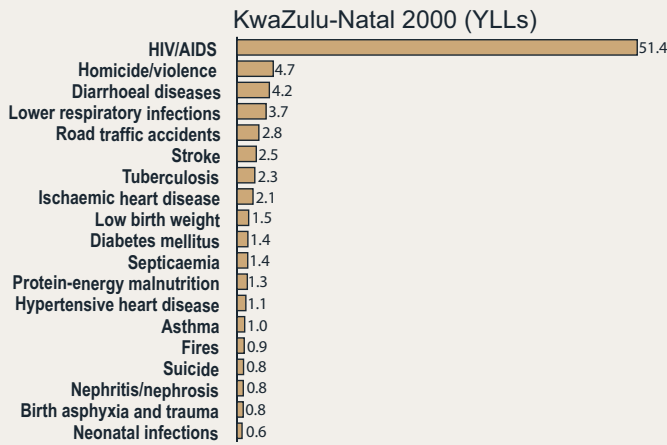


Table 3. Top ten causes of years of life lost by province, 2000

Rank	Eastern Cape	Free State	Gauteng	KwaZulu-Natal	Limpopo	Mpumalanga	Northern Cape	North West	Western Cape	South Africa
1	HIV/AIDS (28.3%)	HIV/AIDS (42.9%)	HIV/AIDS (42.8%)	HIV/AIDS (51.4%)	HIV/AIDS (33.4%)	HIV/AIDS (49.8%)	HIV/AIDS (21.4%)	HIV/AIDS (39.6%)	HIV/AIDS (14.1%)	HIV/AIDS (39.0%)
2	Diarrhoeal diseases (7.3%)	Tuberculosis (5.9%)	Homicide & violence (8.3%)	Homicide & violence (4.7%)	Diarrhoeal diseases (7.2%)	Homicide & violence (5.7%)	Tuberculosis (8.0%)	Lower respiratory infection (5.6%)	Homicide & violence (12.9%)	Homicide & violence (6.8%)
3	Tuberculosis (5.9%)	Lower respiratory infection (5.5%)	Road traffic (4.4%)	Diarrhoeal diseases (4.2%)	Homicide & violence (5.7%)	Diarrhoeal diseases (4.1%)	Homicide & violence (7.2%)	Homicide & violence (5.2%)	Tuberculosis (7.9%)	Tuberculosis (4.7%)
4	Homicide & violence (5.8%)	Homicide & violence (4.5%)	Ischaemic heart disease (3.5%)	Lower respiratory infection (3.7%)	Lower respiratory infection (5.1%)	Lower respiratory infection (4.0%)	Diarrhoeal diseases (5.4%)	Tuberculosis (5.1%)	Road traffic (6.9%)	Diarrhoeal diseases (4.2%)
5	Lower respiratory infection (4.3%)	Diarrhoeal diseases (3.7%)	Tuberculosis (2.9%)	Road traffic (2.8%)	Tuberculosis (3.5%)	Road traffic (3.5%)	Ischaemic heart disease (4.9%)	Diarrhoeal diseases (4.3%)	Ischaemic heart disease (5.9%)	Lower respiratory infection (3.9%)
6	Road traffic (3.6%)	Stroke (3.3%)	Lower respiratory infection (2.7%)	Stroke (2.5%)	Road traffic (3.4%)	Tuberculosis (2.3%)	Stroke (4.4%)	Road traffic (3.0%)	Stroke (4.6%)	Road traffic (3.7%)
7	Stroke (2.9%)	Road traffic (2.7%)	Stroke (2.7%)	Tuberculosis (2.3%)	Hypertension heart disease (3.0%)	Stroke (1.9%)	Lower respiratory infection (4.2%)	Stroke (2.9%)	Trachea/bronchi /lung (2.7%)	Stroke (2.8%)
8	Protein-energy malnutrition (2.4%)	Ischaemic heart disease (2.3%)	Diarrhoeal diseases (1.5%)	Ischaemic heart disease (2.1%)	Low birth weight (2.3%)	Low birth weight (1.7%)	Road traffic (4.0%)	Ischaemic heart disease (2.8%)	Lower respiratory infection (2.4%)	Ischaemic heart disease (2.5%)
9	Low birth weight (2.2%)	Low birth weight (2.0%)	Suicide (1.5%)	Low birth weight (1.5%)	Protein-energy malnutrition (2.1%)	Ischaemic heart disease (1.4%)	Low birth weight (2.5%)	Hypertensive heart disease (2.2%)	Suicide (2.3%)	Low birth weight (1.7%)
10	COPD (1.8%)	Protein-energy malnutrition (1.8%)	Diabetes mellitus (1.4%)	Diabetes mellitus (1.4%)	Stroke (2.1%)	Hypertensive heart disease (1.4%)	Protein-energy malnutrition (2.3%)	Low birth weight (1.9%)	Diarrhoeal diseases (2.3%)	Protein-energy malnutrition (1.5%)

EASTERN CAPE PROVINCIAL PROFILE



Eastern Cape provincial profile

Background

Eastern Cape is located in the south-east of South Africa, bordering Free State and Lesotho in the north, KwaZulu-Natal in the north-east, the Indian Ocean along its south and south-eastern borders, and Western and Northern Cape in the west. The province encloses 169 580 km², constituting 13.9% of the total land area of the country, making it in surface area the second largest province of the country (Statistics South Africa (SSA), 2003). The average population density during 2002 was 41 persons per square kilometre, and about 63% of the province's people lived in rural areas. Prior to 1994, the province was territorially divided into two areas that made up the 'national state' of Transkei, and another area that made up the 'national state' of Ciskei, while the rest of the province was under the provincial administration of the then Cape Province. These territorial divisions are no longer valid, but they are significant in terms of examining data distribution patterns (Tait, 1996).

The economies of East London, Port Elizabeth and Uitenhage are primarily based on manufacturing, the most important being motor vehicle manufacturing and related industries. The Eastern Cape's agricultural potential is evident in its fruit orchards in the fertile Langkloof Valley; sheep- and angora-farming in the Karoo interior; pineapple, chicory and dairy production in the Alexandria-Grahamstown area; and coffee and tea cultivation at Magwa. Ostrich exports earn the province about R90 million per year in foreign revenues, while the game industry is having unprecedented demand in the international market. Large numbers of the population are employed in the forestry plantations of Keiskammahoek. Inhabitants of the former Transkei are dependent on cattle, maize and sorghum farming.

The province has a coastline of about 800 km, housing two harbours. Squid forms the basis of the fishing industry, while offering access to line-catches of hake and recreational and commercial fishing for other line fish. The province's Gross Geographic Product at 2001 prices was rated at R81 027 million, and the province contributed 8.2% to the national Gross Domestic Product (GCIS, 2004). The Eastern Cape has the second highest poverty levels in South Africa (47% of households below the poverty line, which is based on imputed monthly expenditure of R800 or less) (SSA, 2000b), combined with the highest provincial unemployment rate (55%) in the country (SSA, 2003).

Population structure

According to the 2000 ASSA estimates, 6 897 865 people lived in the Eastern Cape, constituting 15.3% of South Africa's total population. The province accommodated more women (52.9%) than men (47.1%). The deficit of men is mainly among those in their 'economically active' years (15-64) (Figure EC1). Over one-third (37%) of the population were younger than 15 years, 58% were in their 'economically active' years, and 7% were aged 60 years or older. [Census 2001: total population 6 436 763 (461 102 less than ASSA); 14.4% of total population in South Africa; 53.8% female, 87.5% Black African, 7.4% Coloured, 0.3% Indian, 4.7% White.]

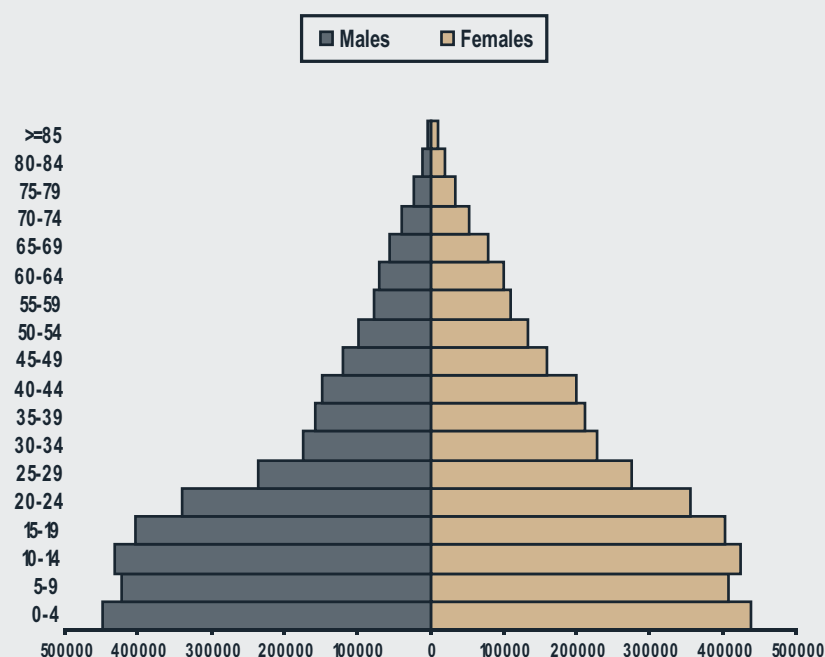


Figure EC1: Age structure of the Eastern Cape population, 2000

Living conditions

According to the 2001 Census, 23% of the population aged 20 years or older had no formal school education, and 55% of those in the age group 15-64 years were unemployed (SSA, 2003). A large proportion of the population (68%) lived below the national poverty line in 2002 (UNDP, 2004). Less than half of the households (47%) lived in formal housing, and 11% and 38% respectively in informal and traditional structures. On average 4.1 persons shared a household. Piped water was available in 62% of households, either in the home, on site, or at a communal tap. In 31% of the households there was no toilet facility. In 36% of the households refuse was removed at least once a week. Of the households, 28% had access to electricity for cooking purposes, 36% used wood and 29% paraffin. About 64% of the households had a radio, 39% a television, 32% a refrigerator, 15% a telephone, and 21% a cell phone (SSA, 2003).

Eastern Cape mortality profile

The mortality profiles are based on deaths in 41 289 (51.4%) males and 39 074 (48.6%) females, estimated for the year 2000, a total of 80 362 deaths. Group I causes including HIV/AIDS accounted for 47% of all the deaths, while Group II causes accounted for 43% (Figure EC2). The proportions of deaths due to other communicable, maternal, perinatal and nutritional deficiencies and non-communicable diseases were very similar for men and women, while HIV/AIDS accounted for 17% of male deaths and 23% of female deaths. About twice as many men as women died as a result of injury.

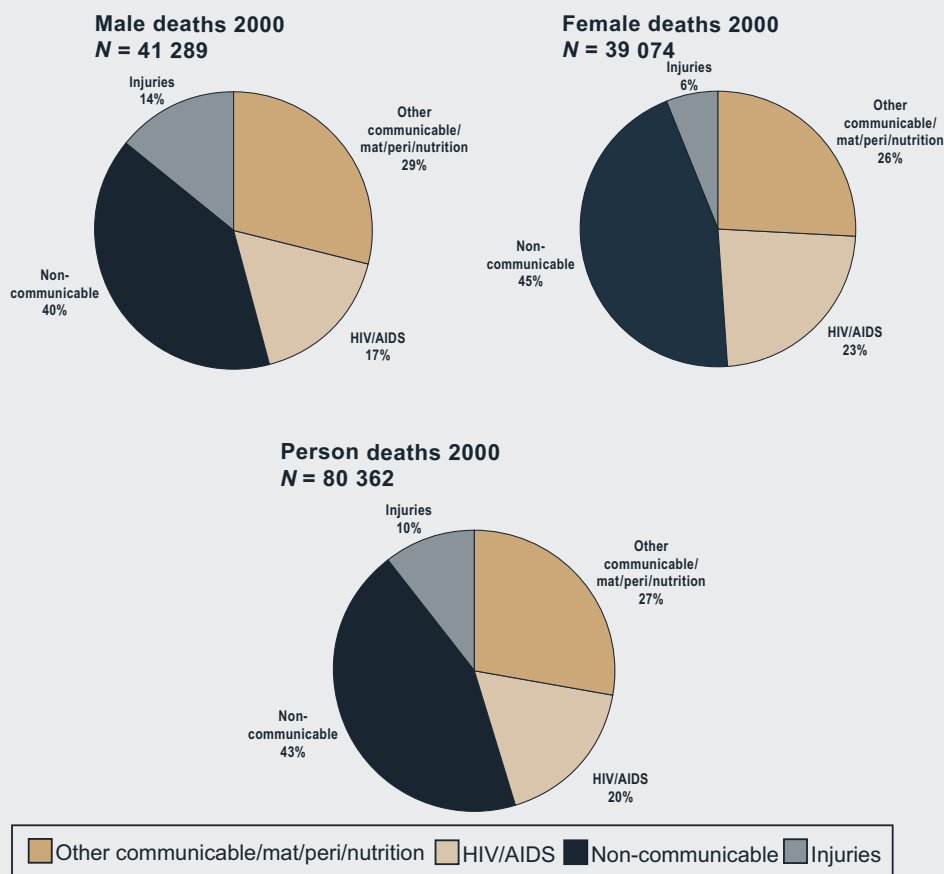


Figure EC2: Estimated deaths by Groups, Eastern Cape 2000

The age-specific cause of death profiles are presented in Figure EC3. The numbers of deaths are presented by five-year age intervals for the three broad Groups and HIV/AIDS. Due to particular disease and mortality profiles in children during the first year of life, the under-5 year age group was divided into infants less than 1 year old and children aged 1-4 years. It is important to highlight the high infant mortality in this province. About 90% of infant deaths were due to Group I diseases including HIV/AIDS. About 28% of deaths in children under 5 years of age were due to HIV/AIDS, and HIV/AIDS deaths were also high in young adult men and women. Injury-related deaths were very high in male adolescents and young adult men. In older persons most of the burden was due to non-communicable diseases.

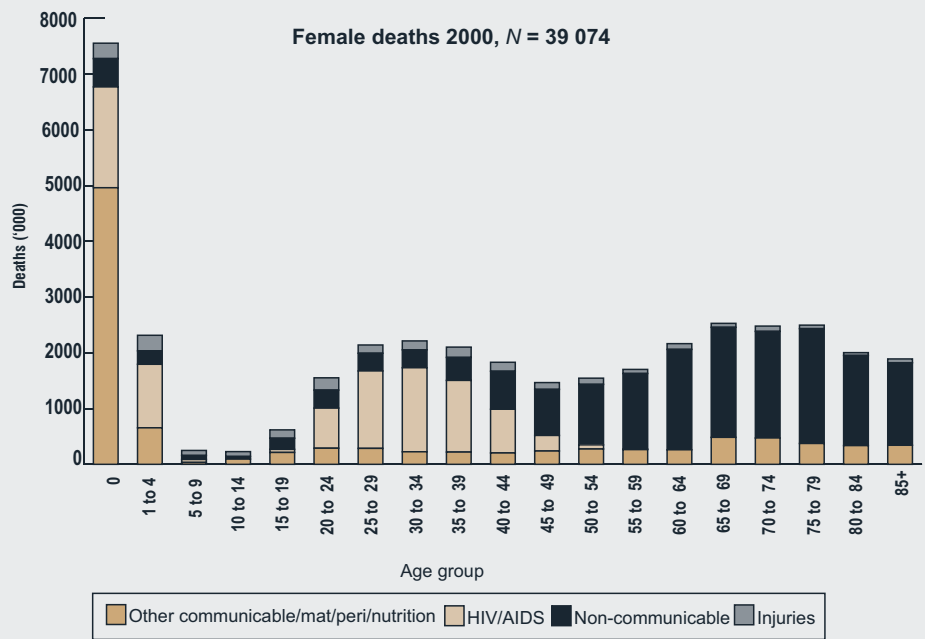
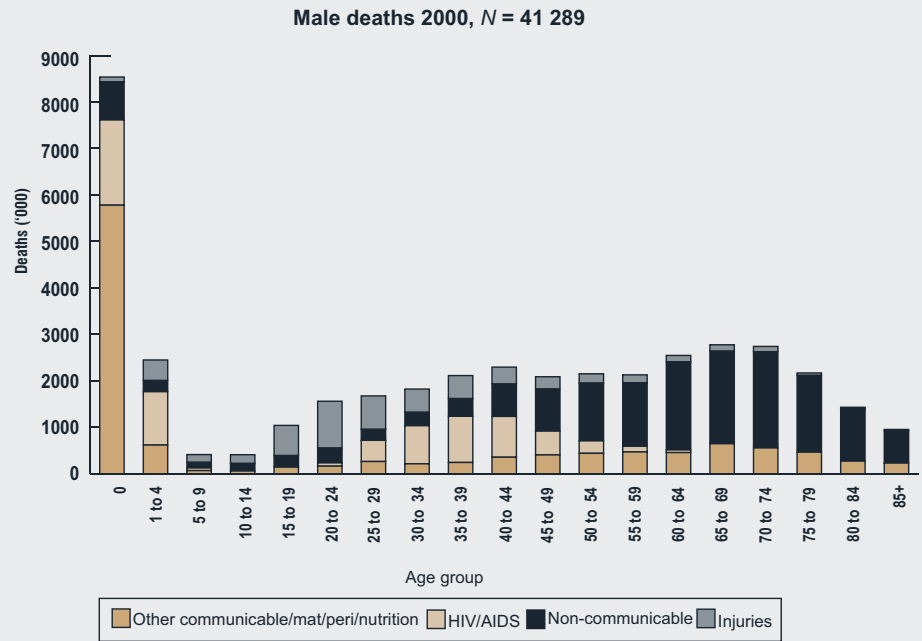
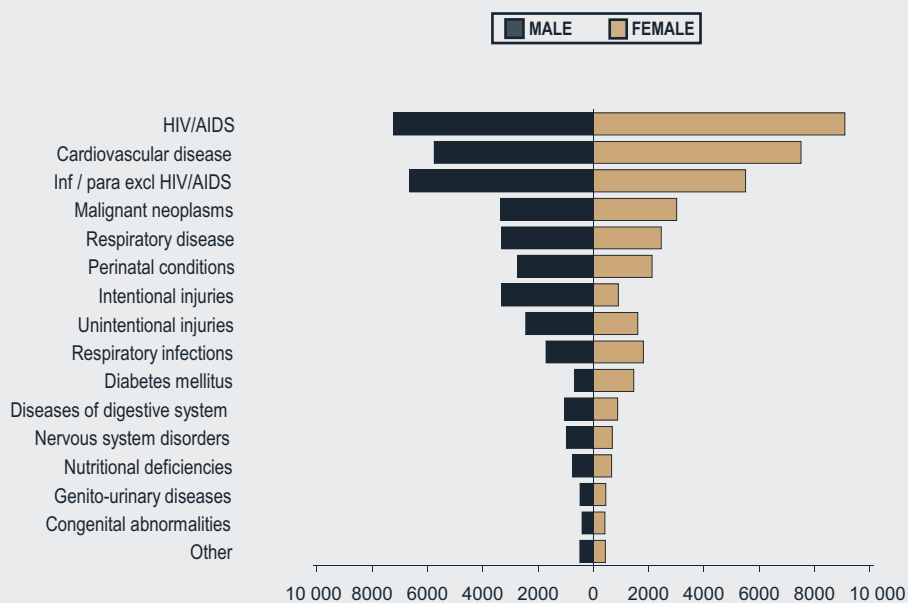


Figure EC3: Age distribution of deaths by broad Groups, Eastern Cape 2000

The Eastern Cape cause of death profile for the major disease categories is shown in Figure EC4. Causes of death are ranked in descending order by the total numbers of deaths. HIV/AIDS was the leading cause of death in both men and women (20%), followed by cardiovascular disease (17%), infectious and parasitic diseases excluding HIV/AIDS (15%), malignant neoplasms (8%), respiratory disease (7%) and perinatal conditions (6%). Differences were observed between men and women, with HIV/AIDS, cardiovascular disease, respiratory infections and diabetes accounting for more deaths in females than in males. In contrast, among the leading ten categories, other infectious and parasitic diseases, intentional and unintentional injuries, malignant neoplasms, respiratory disease, perinatal conditions and diseases of the digestive system predominated in males.



"Other" causes include endocrine and metabolic, benign neoplasms, maternal conditions, musculo-skeletal diseases, mental disorders, skin diseases, oral conditions and conditions of the sense organs.

Figure EC4: Causes of death according to categories for males and females, Eastern Cape 2000

The twenty leading single causes of death in the total Eastern Cape population are shown in Figure EC5(a) below, illustrating that HIV/AIDS was the greatest single cause of death, accounting for 20% of all deaths during 2000. Tuberculosis was the second leading cause of death, accounting for 7% of all deaths. This was followed by stroke, diarrhoeal diseases and homicide (Figure EC5(a)). Women had higher proportions of deaths due to HIV/AIDS, stroke, hypertensive heart disease, diarrhoeal disease and diabetes mellitus, while men had higher proportions of deaths due to homicide, tuberculosis, trachea/bronchi/lung cancer and road traffic accidents (Figure EC5(b)).

Persons 2000, N = 80 362

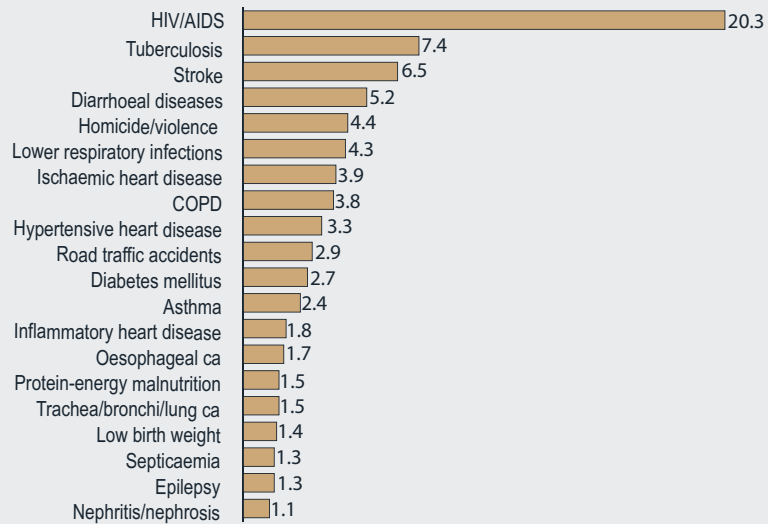


Figure EC5(a): Twenty leading single causes of death (%), Eastern Cape 2000

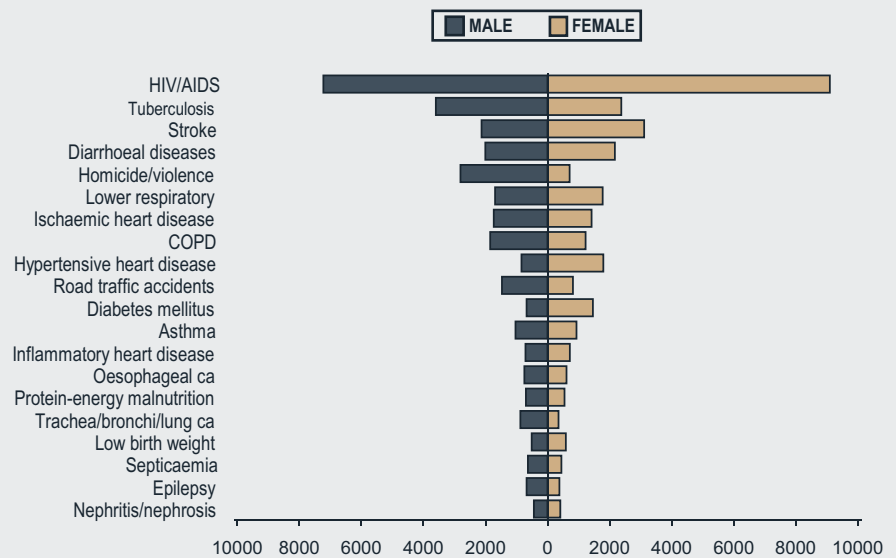


Figure EC5(b): Twenty leading single causes of death by sex, Eastern Cape 2000

Eastern Cape premature mortality

HIV/AIDS accounted for the largest proportion of female (34%) and male (23%) years of life lost (YLLs) (Table EC1). Diarrhoeal diseases were the second leading cause of premature mortality, with more YLLs in females (8%) than males (7%). Homicide/violence and road traffic accidents ranked second and fifth in men, while these causes ranked lower in women. Injuries accounted for 8% and 18% of all YLLs in females and males, respectively.

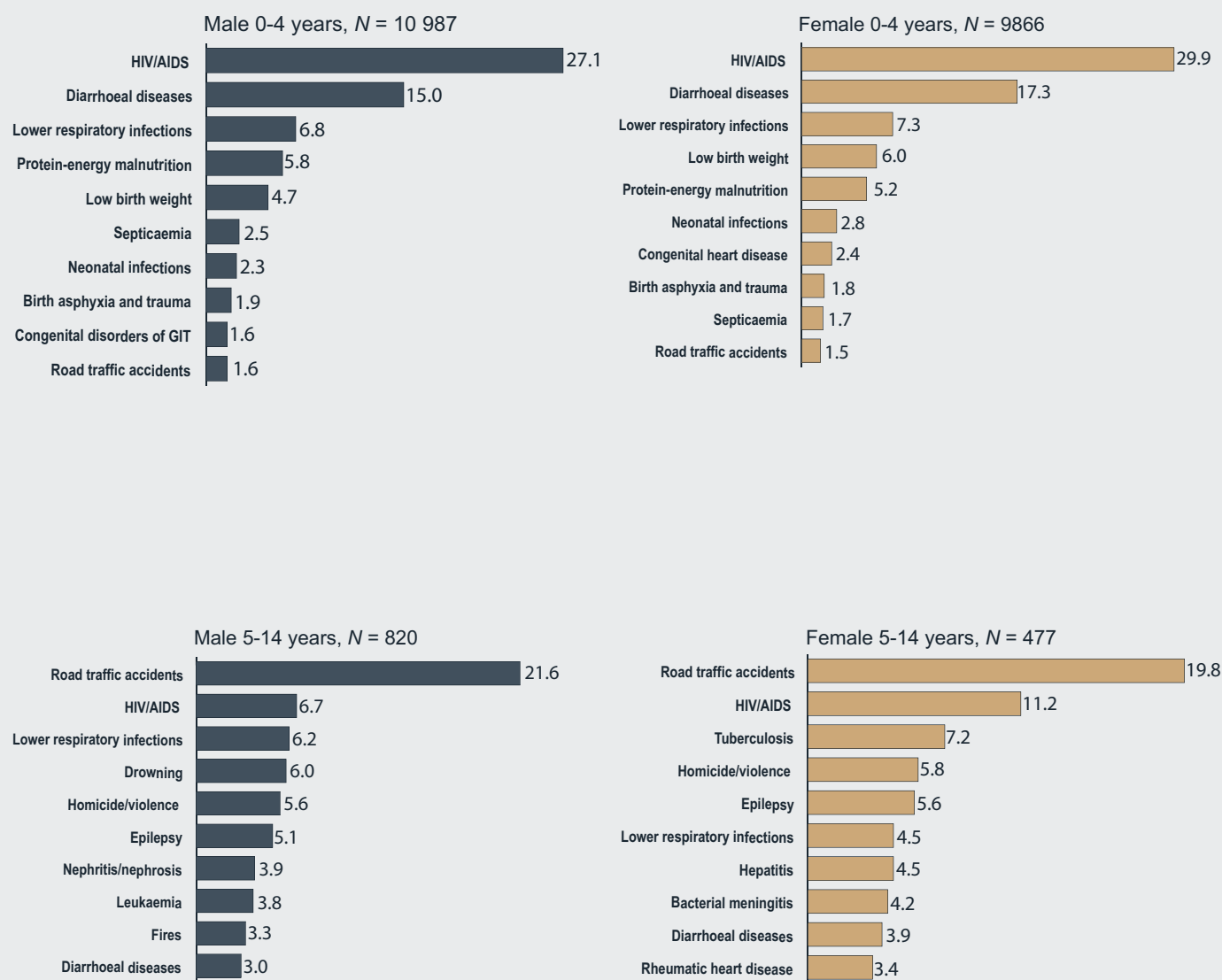
Table EC1: Leading 20 single causes of the premature mortality burden (YLLs) by sex, Eastern Cape 2000

Males				Females				Persons			
Rank	Cause of death	YLLs	%	Rank	Cause of death	YLL	%	Rank	Cause of death	YLL	%
1	HIV/AIDS	202512	23.2	1	HIV/AIDS	271739	33.6	1	HIV/AIDS	474250	28.2
2	Homicide/violence	80005	9.2	2	Diarrhoeal diseases	62633	7.8	2	Diarrhoeal diseases	122753	7.3
3	Diarrhoeal diseases	60120	6.9	3	Tuberculosis	43179	5.3	3	Tuberculosis	99665	5.9
4	Tuberculosis	56485	6.5	4	Lower respiratory infections	36348	4.5	4	Homicide/violence	98226	5.8
5	Road traffic accidents	39938	4.6	5	Stroke	28421	3.5	5	Lower respiratory infections	72792	4.3
6	Lower respiratory infections	36444	4.2	6	Road traffic accidents	20999	2.6	6	Road traffic accidents	60937	3.6
7	Protein-energy malnutrition	22175	2.5	7	Low birth weight	19542	2.4	7	Stroke	48630	2.9
8	Stroke	20209	2.3	8	Homicide/violence	18221	2.3	8	Protein-energy malnutrition	39749	2.4
9	COPD	18187	2.1	9	Protein-energy malnutrition	17575	2.2	9	Low birth weight	36532	2.2
10	Ischaemic heart disease	17151	2.0	10	Hypertensive heart disease	17148	2.1	10	COPD	29534	1.8
11	Low birth weight	16991	1.9	11	Diabetes mellitus	15387	1.9	11	Ischaemic heart disease	28492	1.7
12	Septicaemia	14877	1.7	12	Asthma	11836	1.5	12	Asthma	26061	1.6
13	Epilepsy	14368	1.6	13	COPD	11347	1.4	13	Hypertensive heart disease	25453	1.5
14	Asthma	14225	1.6	14	Ischaemic heart disease	11341	1.4	14	Septicaemia	24829	1.5
15	Suicide	12901	1.5	15	Septicaemia	9952	1.2	15	Epilepsy	23134	1.4
16	Fires	9545	1.1	16	Inflammatory heart disease	9439	1.2	16	Diabetes mellitus	22560	1.3
17	Trachea/bronchi/lung ca	9368	1.1	17	Neonatal infections	9019	1.1	17	Inflammatory heart disease	18705	1.1
18	Inflammatory heart disease	9266	1.1	18	Fires	8860	1.1	18	Fires	18405	1.1
19	Neonatal infections	8495	1.0	19	Epilepsy	8767	1.1	19	Suicide	17572	1.0
20	Hypertensive heart disease	8305	1.0	20	Cervix ca	8367	1.0	20	Neonatal infections	17515	1.0
	All causes	872 158			All causes	807 641			All causes	1 679 800	

Leading causes of death among children (<15 years)

The ten leading causes of death among children under 5 years of age and children 5-14 years are shown in Figure EC6. The high child mortality in this province was mainly the result of HIV/AIDS and other communicable diseases, perinatal conditions and nutritional deficiencies. The leading five causes in infants and children under 5 years of age followed a similar pattern. It is important to note that neural tube defects featured among the leading causes of death in infants under 1 year of age in this province. HIV/AIDS was the leading cause of death in children under 5 while road traffic accidents was the leading cause of death in children 5-14 years of age. Deaths from other injuries such as homicide, drowning and fires were also among the leading causes of death in this age group, accounting mainly for male deaths. Epilepsy accounted for 5% of male and almost 6% of female deaths in this age group.

Figure EC6: Leading 10 causes of death (%) in children (<15 years) by sex, Eastern Cape 2000



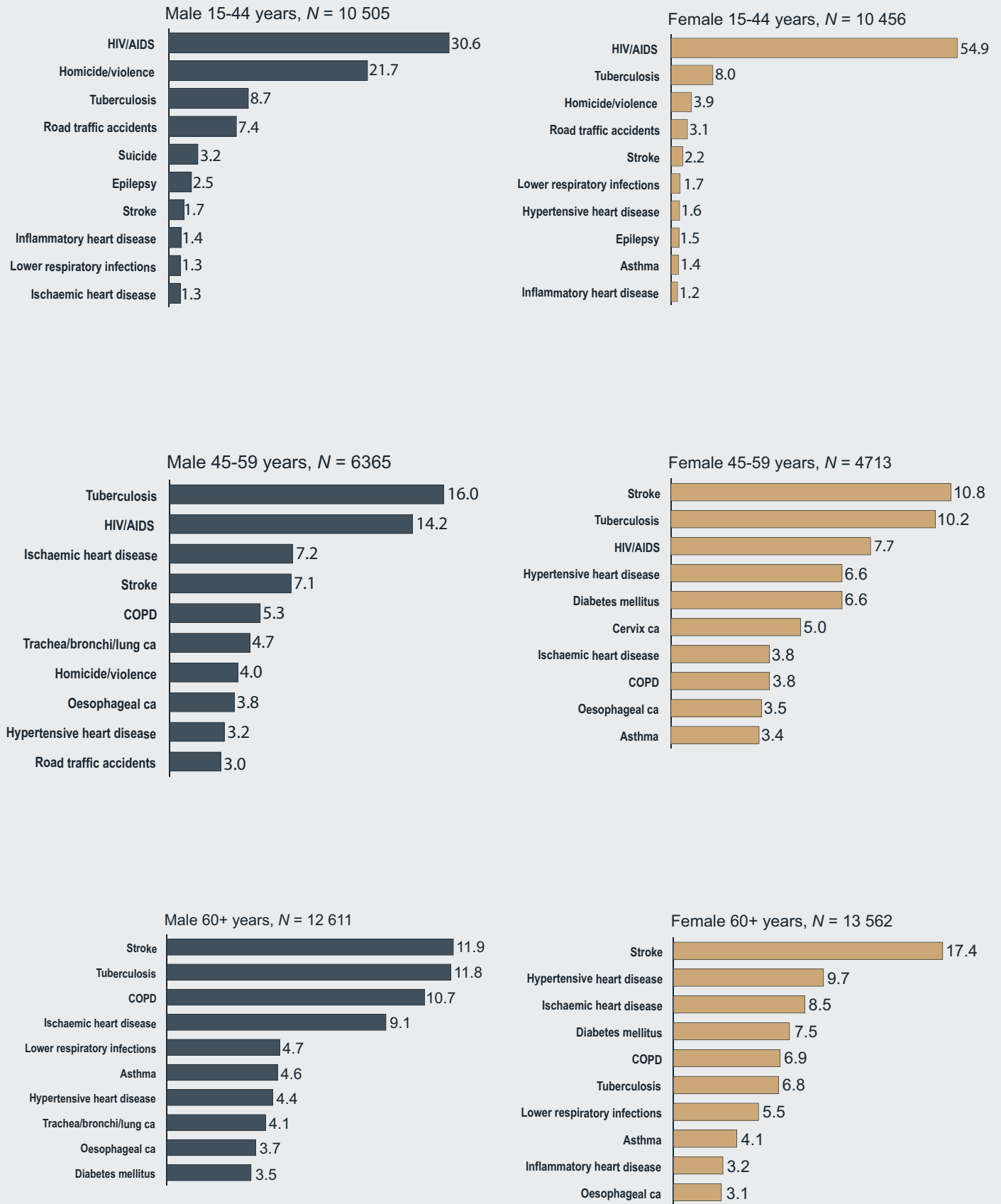
Leading causes of death among adults

The leading causes of death for adults are shown in Figure EC7. HIV/AIDS was the leading cause of death for both men and women aged 15-44 years. Tuberculosis was the second leading cause of death among women and the third leading cause of death among men aged 15-44 years. Injuries including homicide, suicide and road traffic accidents were also among the leading causes of death. Epilepsy accounted for 3% of male and 2% of female deaths in this age group. Cardiovascular diseases including hypertensive heart, ischaemic heart and inflammatory heart disease as well as stroke also featured among the leading causes in young adults.

The profile for the older adults aged 45-59 years differed from the young age group with an increasing number of deaths due to non-communicable diseases and fewer deaths due to infectious diseases or injuries, although tuberculosis is still an important cause of death in this age group. Stroke was the leading cause of death among women. Other important leading causes of death among women aged 45-59 included diabetes mellitus, asthma, hypertensive heart disease, cervical and oesophageal cancer. Injuries such as homicide and violence and road traffic injuries still featured among the leading causes of death for men in the 45-59 year age group. Trachea/bronchi/lung cancer, oesophageal cancer, chronic obstructive pulmonary disease and cardiovascular diseases were also important causes of death among men in this age group (Figure EC7).

In this province there were more deaths among female (13 562) than male (12 611) older persons. Stroke was the leading cause of death among persons aged 60 years and older (Figure EC7), accounting for 19% of female and 11.9% of male deaths in this age group. Tuberculosis ranked a close second among males, accounting for 11.8% of deaths (Figure EC7). Hypertensive heart disease and diabetes were responsible for larger numbers of deaths in older women than in older men, while chronic obstructive pulmonary disease caused more deaths in older men compared with older women. Oesophageal cancer was among the 10 leading causes of death in this age group, affecting similar proportions of men and women. Trachea/bronchi/lung cancer accounted for 4% of male and 2% of female deaths in those over the age of 60 years.

Figure EC7: Leading single causes of death (%) among adults by sex, Eastern Cape 2000



How does Eastern Cape compare with the national profile?

Comparing the Eastern Cape population age structure and cause of death profile with the national profile, it is clear that in the Eastern Cape there exists a male deficit in the economically active group. The HIV/AIDS epidemic in this province is not as far advanced as it is nationally, accounting for 20% of deaths compared with 30% of deaths nationally. However, the results still clearly indicated a quadruple burden in this province, with HIV/AIDS coming in and adding to a triple burden of poverty-related conditions, chronic diseases and injuries. The high burden from tuberculosis, diarrhoeal diseases, perinatal conditions and other conditions related to underdevelopment accounted for 27% of deaths in this province compared with 20% nationally. Injuries (10%) constituted a smaller proportion in Eastern Cape than nationally (12%), while non-communicable diseases constituted a larger proportion in the Eastern Cape (43%) than nationally (38%).

Oesophageal cancer rates were higher in the Eastern Cape than nationally, and epilepsy featured among the 20 leading causes of death in the Eastern Cape population. It is interesting to note that breast cancer did not feature among the leading causes of death among older persons in this province.

FREE STATE PROVINCIAL PROFILE



Free State provincial profile

Background

The Free State is a central province of the country, having an international border with Lesotho, and local borders with all other provinces except Limpopo and the Western Cape. The province encloses 129 480 km², constituting 10.6% of the total land area of the country, making it in surface area the third largest province of the country (SSA, 2003). The average population density during 2000 was 22 persons per square kilometre, and about 31% of the population lived in non-urban areas (SSA, 1998). Prior to 1994 the province housed two small areas that made up part of the 'national state' of Bophuthatswana, and the self-governing territory of QwaQwa. The rest of the province was under the provincial administration of the then Orange Free State. These territorial divisions are no longer valid, but in terms of examining data distribution patterns, it is important to recognise their prior existence (Tait, 1996).

Mining is the largest economic sector in the Free State, and this industry is the biggest employer in the province. The Free State Goldfields form part of the 400 km+ gold reef that stretches across Gauteng and the Free State. About 82% of the province's mineral production value is derived from gold mining. Gold mines also supply silver, while the considerable concentrations of uranium occurring in the gold-bearing conglomerates are extracted as a by-product. Additionally, bituminous coal is mined and converted to petrochemicals, diamonds are extracted from kimberlite pipes and fissures, and the largest deposit of bentonite in the country is found in the province.

Manufacturing is the second-largest sector in the province's economy, including chemical products manufactured by Sasol, further beneficiation of agricultural products, and the production of basic chemicals from coal. Agriculture also plays an important role in the Free State economy, with vast areas of cultivated land, natural veld and grazing terrains. Field crops yield about two-thirds of the gross agricultural income of the province, animal products contribute an additional 30%, and the balance comes from horticulture. Potatoes, cherries, asparagus, soya, sorghum, sunflowers and wheat are cultivated. The province's Gross Geographic Product at 2001 prices was rated at R53 900 million, and the province contributed 5.5% to the national Gross Domestic Product (GCIS, 2004).

Population structure

According to the 2000 ASSA estimates, 2 862 088 people lived in the Free State, constituting 6.3% of South Africa's total population. The province accommodated almost equal numbers of men (49.96%) and women (50.04%). Just under 30% of the population were younger than 15 years, 66% were in their 'economically active' years (15-64), and 6% were aged 60 years or older. [Census 2001: total population 2 706 775 (155 313 less than ASSA); 6.3% of total population of South Africa; 52.1% female; 88.0% Black African, 3.1% Coloured, 0.1% Indian, 8.8% White.]

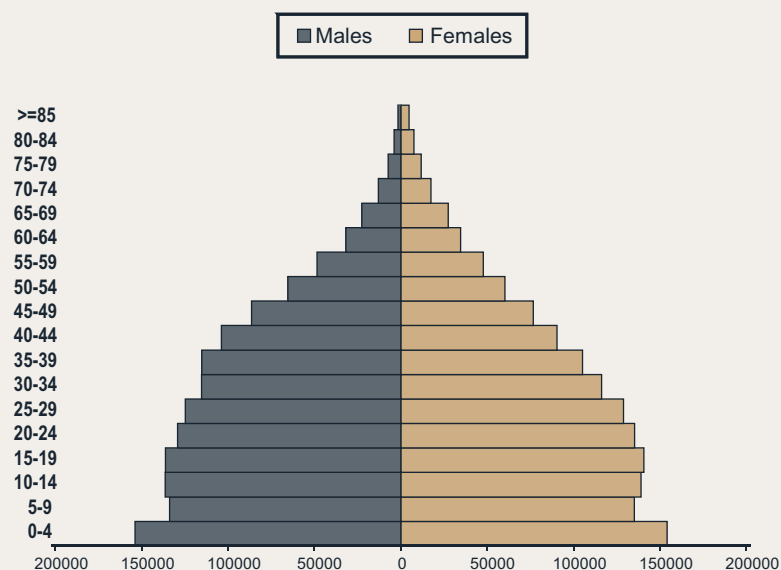


Figure FS1: Age structure of the Free State population, 2000

Living conditions

According to the 2001 Census 16% of the population aged 20 years or older had no formal school education, and 43% of those in the age group 15-64 years were unemployed (SSA, 2003). A large proportion of the population (60%) lived below the national poverty line in 2002 (UNDP, 2004). Almost 63% of households were accommodated in formal housing, and 26% and 7% respectively in informal and traditional structures. On average 3.6 persons shared a household. Piped water, whether in the home, on site or at a communal tap, was available in 96% of households. In 10% of households people had no access to a toilet facility. Almost six in ten households (59%) had a refuse removal service once a week or more. For cooking purposes, 47% of the households used electricity as the main source of energy, 8% used wood, and 34% paraffin. Almost 76% of the households had a radio, 54% a television, 49% a refrigerator, 20% a telephone and 25% a cell phone (SSA, 2003).

Free State mortality profile

In 2000 there were 36 860 deaths estimated in Free State, of which 20 613 (56%) were in males and 16 240 (44%) in females. Figure FS2 shows the causes of deaths for the broad Groups I, II, III and HIV/AIDS. More than half the deaths (55%) were due to Group I causes including HIV/AIDS, while 31% were due to Group II and 8% due to injuries. There were similar proportions of deaths from Group I and Group II causes for males and females, yet the proportion of HIV/AIDS deaths was higher in females (36%) than in males (30%). Deaths due to injuries were about three times higher in males than in females, accounting for 11% of male deaths.

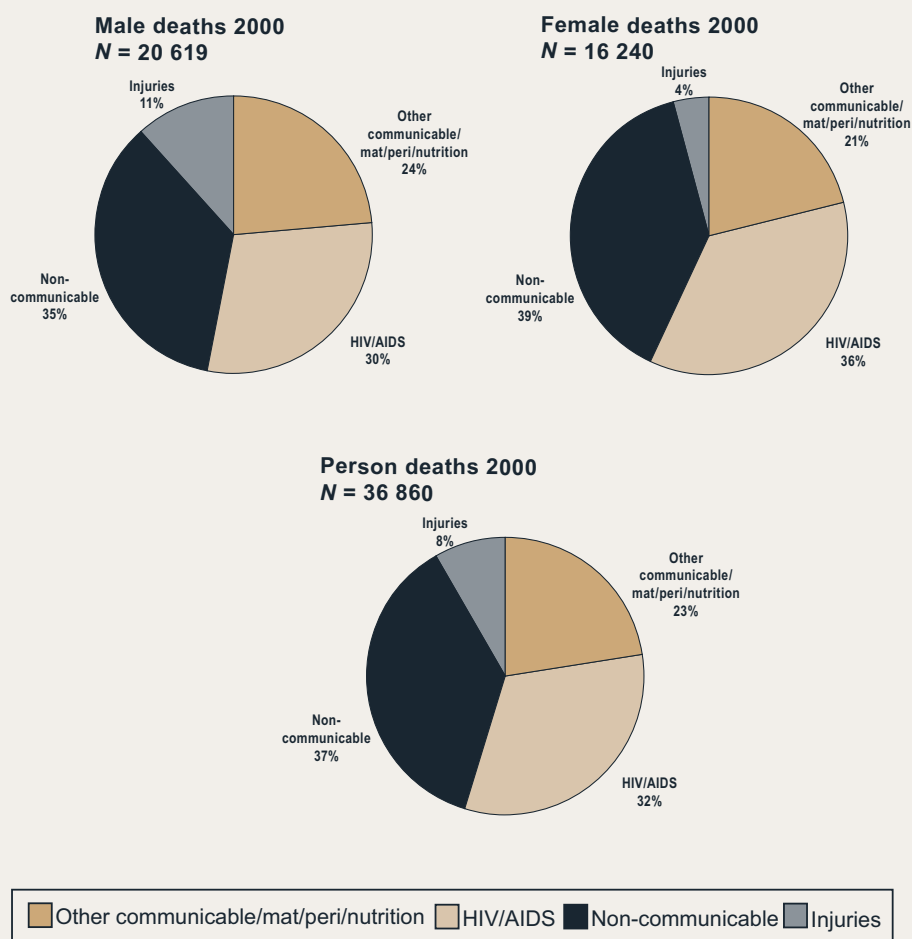


Figure FS2: Estimated deaths by Groups, Free State 2000

The age-specific mortality profiles are shown in Figure FS3. The pattern displayed here shows higher numbers of deaths in children and young and older adults. Deaths in males were higher than those in females. The patterns for infants, girls and boys were very similar, although other infectious diseases, maternal and perinatal diseases and nutritional deficiencies (Group I) accounted for more than half of the boys' deaths, followed by HIV/AIDS. In general, the main causes of death in infants were Group I and HIV/AIDS. HIV/AIDS started to show up early in females - in the age group 15-19 years - while only starting to show in the 20-24-year age group in males. Non-communicable diseases were higher in people aged 50 years and older.

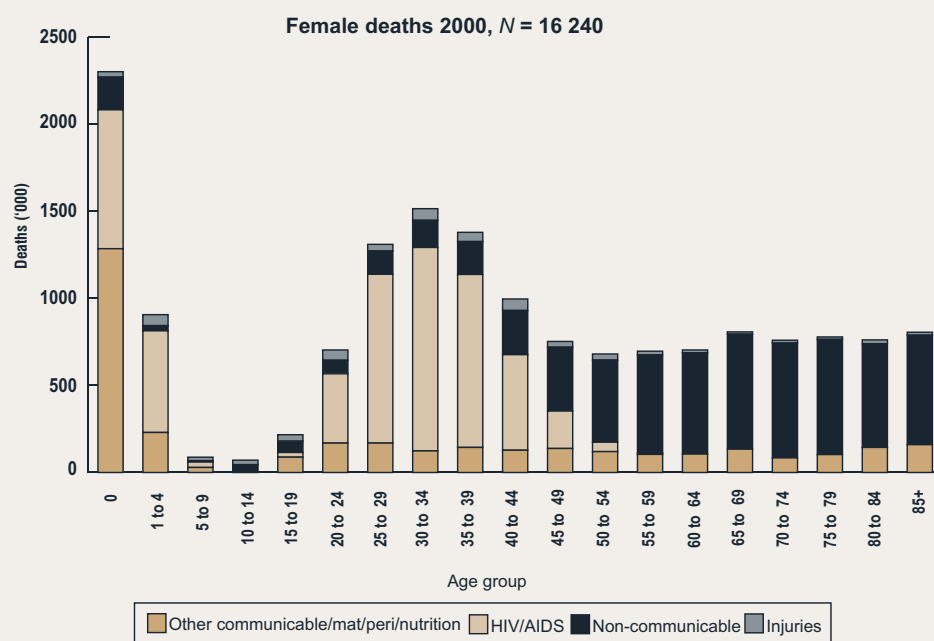
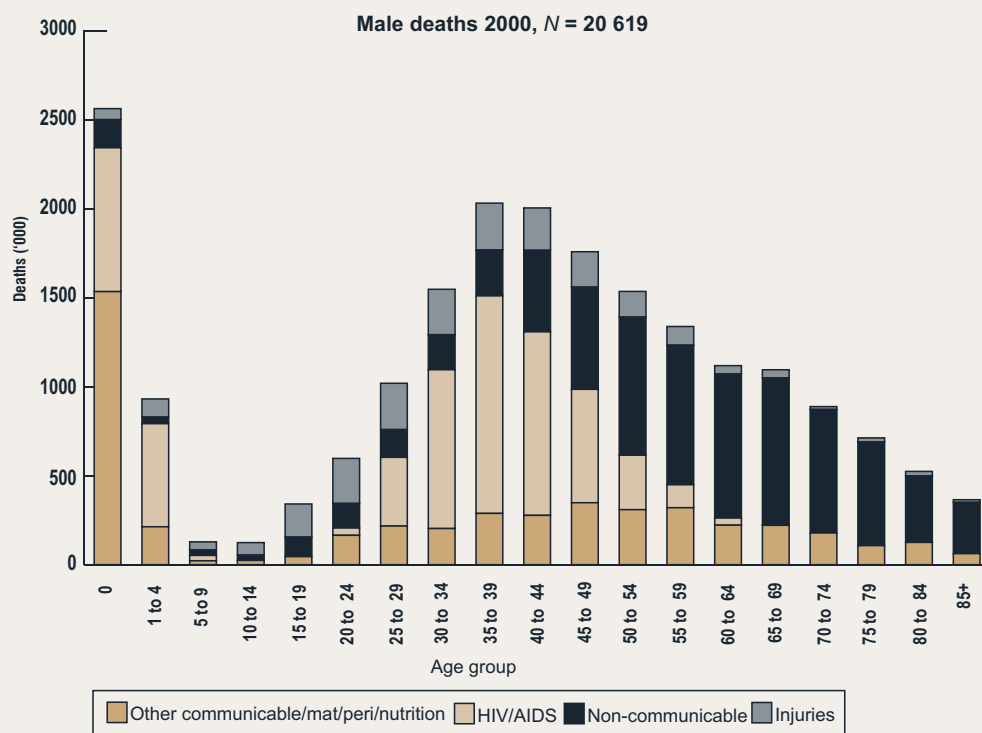


Figure FS3: Age distribution of deaths by broad Groups, Free State 2000

The causes of death for categories are shown in Figure FS4. These are ranked in descending order by the total number of deaths. The pattern shows high numbers of deaths due to HIV/AIDS (32%), followed by cardiovascular diseases (18%), infectious and parasitic diseases excluding HIV (11%), respiratory infections (6%), malignant neoplasms (6%), respiratory disease (4%), intentional injuries (4%) and unintentional injuries (4%). There were marked differences between males and females, with HIV/AIDS and cardiovascular disease accounting for a higher proportion of deaths in females than in males. Among the leading ten categories, other infectious and parasitic diseases, respiratory infections, malignant neoplasms and intentional injuries were higher in males.

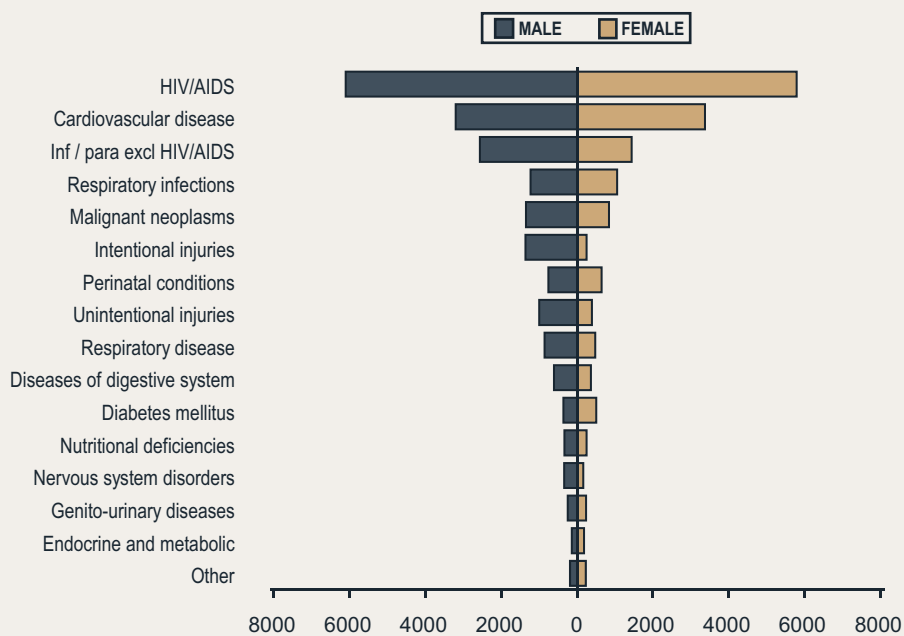


Figure FS4: Causes of death according to categories for males and females, Free State 2000

"Other" causes include congenital abnormalities, benign neoplasms, maternal conditions, mental disorders, skin diseases, musculo-skeletal diseases, oral conditions and conditions of the sense organs.

The twenty leading single causes of death in the Free State are shown in Figure FS5(a). HIV/AIDS was the largest single cause of death, accounting for 32% of all deaths. Stroke accounted for 6.4%, followed by lower respiratory infections (6.1%), ischaemic heart disease (5%) and hypertensive heart disease (3.8%), while homicide and violence accounted for 3.6%. Gender patterns are shown in Figure FS5(b). HIV/AIDS, stroke and hypertensive heart disease were more prominent among women, while deaths from ischaemic heart disease, lower respiratory infections and homicide were higher in men.

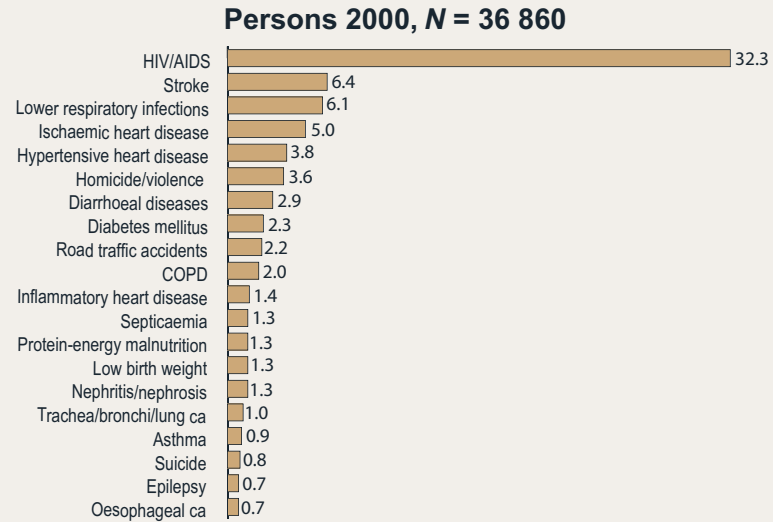


Figure FS5(a): Twenty leading single causes of death (%), Free State

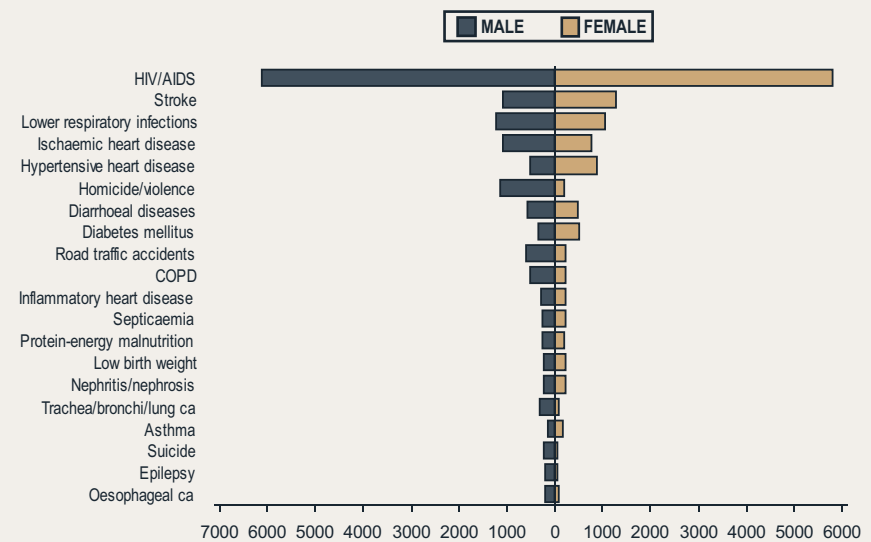


Figure FS5(b): Twenty leading single causes of death by sex, Free State 2000

Premature mortality

HIV/AIDS accounted for the largest proportion of female (48%) and male (37%) years of life lost (YLLs) (Table FS1). Tuberculosis was the second leading cause of premature mortality among persons, with more YLLs in males (7%) than females (4%). Lower respiratory infections ranked third and homicide/violence ranked fourth in all persons. Injuries accounted for 11% and 3% of all YLLs in males and females respectively.

Table FS1: Leading 20 single causes of the premature mortality burden (YLLs) by sex, Free State 2000

Males				Females				Persons			
Rank	Cause of death	YLLs	%	Rank	Cause of death	YLLs	%	Rank	Cause of death	YLLs	%
1	HIV/AIDS	158274	36.6	1	HIV/AIDS	168899	48.4	1	HIV/AIDS	327173	41.9
2	Tuberculosis	31739	7.3	2	Lower respiratory infections	19880	5.7	2	Tuberculosis	45889	5.9
3	Homicide/violence	30157	7.0	3	Tuberculosis	14150	4.0	3	Lower respiratory infections	42949	5.5
4	Lower respiratory infections	23069	5.3	4	Diarrhoeal diseases	13466	3.9	4	Homicide/violence	35143	4.5
5	Diarrhoeal diseases	15831	3.7	5	Stroke	13229	3.8	5	Diarrhoeal diseases	29296	3.8
6	Road traffic accidents	15233	3.5	6	Low birth weight	7450	2.1	6	Stroke	26120	3.3
7	Stroke	12891	3.0	7	Hypertensive heart disease	7277	2.1	7	Road traffic accidents	20743	2.7
8	Ischaemic heart disease	10993	2.5	8	Ischaemic heart disease	6647	1.9	8	Ischaemic heart disease	17639	2.3
9	Low birth weight	7941	1.8	9	Protein-energy malnutrition	6405	1.8	9	Low birth weight	15390	2.0
10	Protein-energy malnutrition	7459	1.7	10	Road traffic accidents	5510	1.6	10	Protein-energy malnutrition	13864	1.8
11	Septicaemia	5890	1.4	11	Diabetes mellitus	5070	1.5	11	Hypertensive heart disease	11747	1.5
12	COPD	5521	1.3	12	Homicide/violence	4985	1.4	12	Septicaemia	10269	1.3
13	Suicide	5181	1.2	13	Septicaemia	4380	1.3	13	Diabetes mellitus	9729	1.2
14	Inflammatory heart disease	5124	1.2	14	Inflammatory heart disease	3491	1.0	14	Inflammatory heart disease	8616	1.1
15	Epilepsy	4765	1.1	15	Nephritis/nephrosis	3116	0.9	15	COPD	7575	1.0
16	Diabetes mellitus	4660	1.1	16	Asthma	2582	0.7	16	Suicide	6548	0.8
17	Hypertensive heart disease	4470	1.0	17	Birth asphyxia and trauma	2403	0.7	17	Epilepsy	6533	0.8
18	Trachea/bronchi/lung ca	3533	0.8	18	Cervix ca	2396	0.7	18	Nephritis/nephrosis	6321	0.8
19	Fires	3509	0.8	19	COPD	2054	0.6	19	Fires	5560	0.7
20	Nephritis/nephrosis	3205	0.7	20	Fires	2051	0.6	20	Bacterial meningitis	4693	0.6
	All causes	432 439			All causes	349 169			All causes	781 607	

Leading causes of death among children (<15 years)

The leading ten causes of death in children under 5 years of age and children 5-14 years are shown in Figure FS6. The high child mortality in this province was mainly due to a combination of HIV/AIDS and other communicable diseases, perinatal conditions and nutritional deficiencies. It is important to highlight that neural tube defects featured among the leading causes of death in both infants and children under 5 years of age in the Free State. The leading five causes of death in infants and children under 5 years of age follow a similar pattern for boys and girls. HIV/AIDS accounted for 41% of deaths in children under 5. Diarrhoeal diseases also accounted for high proportions of child deaths. Cause of death profiles for boys and girls aged 5-14 differed. Road traffic accidents were the leading cause of death among boys in this age group while HIV/AIDS was the leading cause for girls. Deaths from other injuries such as drowning, homicide, fires and suicide were also among the leading causes of deaths in this age group, accounting mainly for boys' deaths. Epilepsy also featured in the top 5; it accounted for 5% of boys' and 8% of girls' deaths in this age group. It is important to highlight that non-rheumatic valvular disease featured in the ten leading causes of death among girls, accounting for 4%.

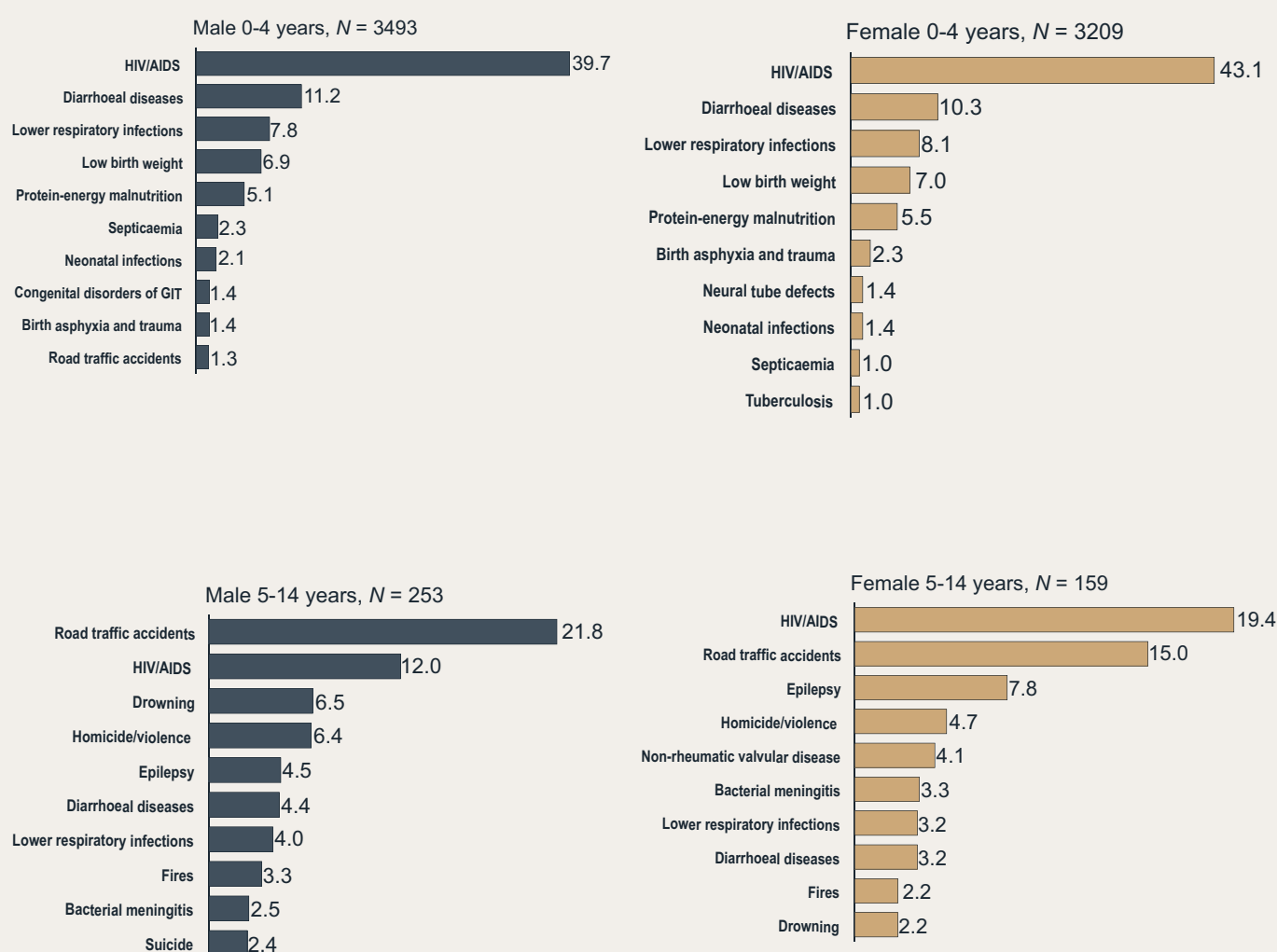


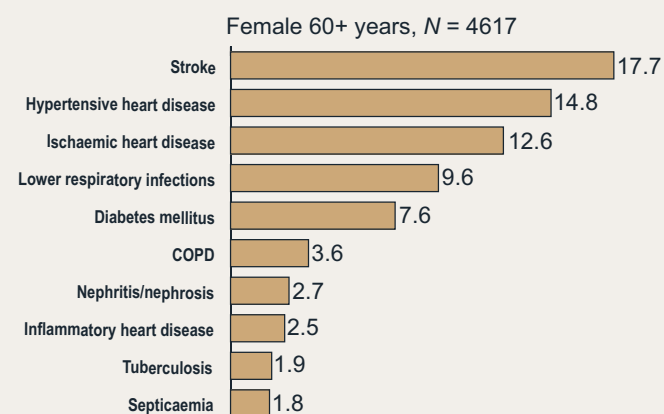
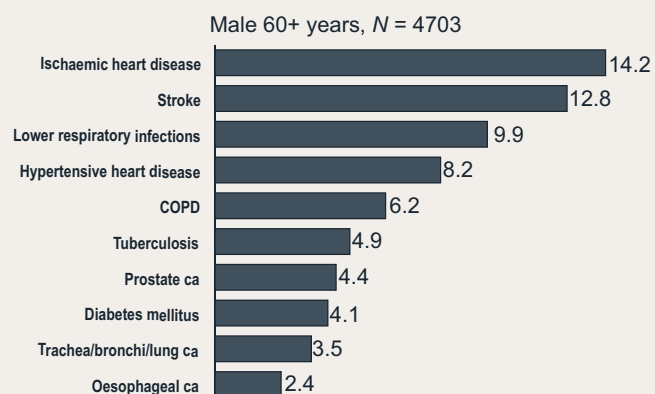
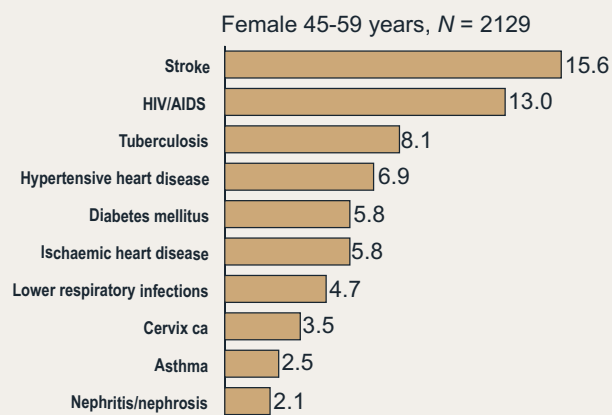
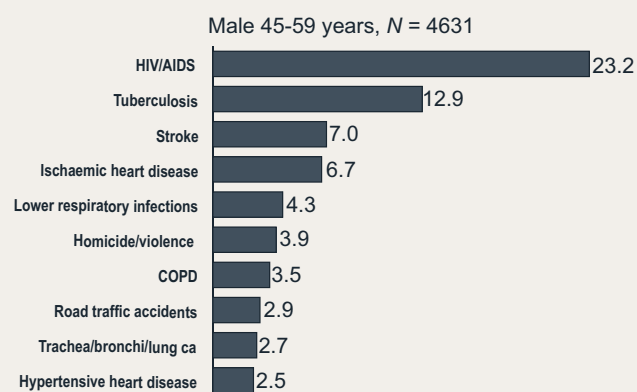
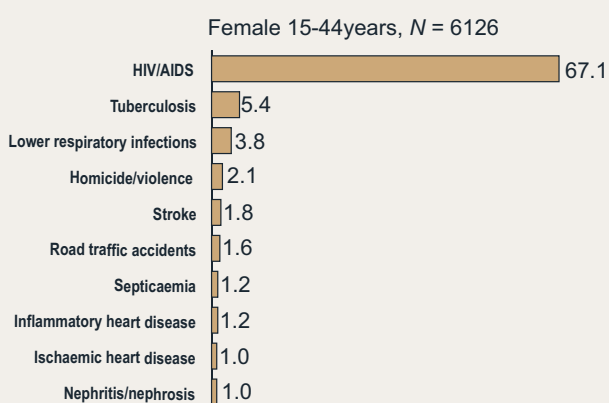
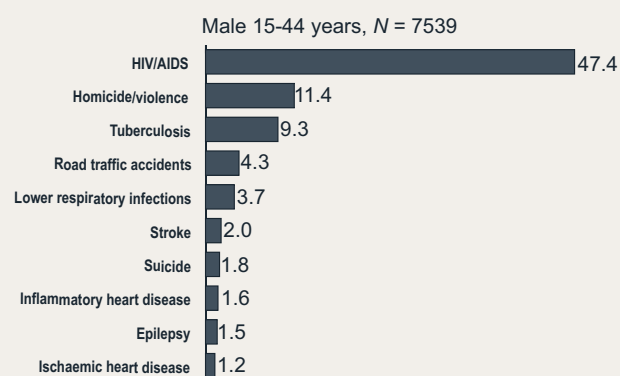
Figure FS6a): Leading single causes of death (%) among children (<15 years), Free State 2000

Leading causes of death among adults

Figure FS7 shows the leading ten causes of death in 15-44 age group. HIV/AIDS in women aged 15-44 is extraordinarily high and accounted for 67% of deaths in this age group. In contrast, HIV/AIDS accounted for 47% in men in this age group, while homicide/violence accounted for 11% of causes of death. Tuberculosis and lower respiratory infections ranked high for both men and women and road traffic accidents, cardiovascular disease, suicide and epilepsy also featured in this age group.

The profile for the older adults aged 45-59 years shows a different pattern to that of the young adult age group. In addition to the infectious diseases such as HIV/AIDS, and tuberculosis, deaths among the adults aged 45-59 years included cardiovascular disease such as stroke, ischaemic heart disease and hypertensive heart disease. In this province there were more male (4631) than female (2129) deaths in this age group. HIV/AIDS is a leading cause of death for men aged 45-59, accounting for 23% of deaths, followed by tuberculosis (12%), stroke (7%) and ischaemic heart disease (7%). In women stroke was the leading cause and accounted for 16% followed by HIV/AIDS (13%), tuberculosis (8%), hypertensive heart disease (7%), diabetes mellitus and ischaemic heart disease (each accounting for 6%). It is important to notice that cervix cancer and nephritis/nephrosis featured in the top ten of women in this age group. Stroke is the primary cause of death followed by hypertensive heart disease, ischaemic heart disease, lower respiratory infections and diabetes altogether accounting for 66% of deaths in adults 60+. Tuberculosis ranked sixth, accounting for 4.9% in males. Stroke, hypertensive heart disease and diabetes were responsible for larger numbers of deaths in older women compared to older men. Lower respiratory infections were common, affecting similar proportions of men and women. Prostate cancer, lung cancer and oesophageal cancer contributed a significant number of deaths in men in this age group.

Figure FS7: Ten leading single causes of death among adults by sex, Free State 2000



How does Free State compare with the national profile?

Comparing the Free State population's age structure and cause of death profile with the national profile, it is clear that the Free State profile was similar to the national one. The Free State had high mortality rates. HIV/AIDS is as advanced here as it is nationally; HIV/AIDS accounted for 32% of deaths in Free State compared with 30% nationally. Overall the mortality profile in the Free State was very similar to the national one, with slightly lower injury deaths (8%) compared with nationally (12%).

This province had high tuberculosis mortality among males and high rates of death from lower respiratory infections, protein-energy malnutrition, perinatal and maternal conditions. The province also had high cardiovascular mortality, arising from the full spectrum of diseases. Diabetes mortality was high among men, as was prostate cancer. Injury mortality rates were not as high as the national average.

In children the leading causes of death in the Free State and nationally were similar, except that congenital disorders of the gastro-intestinal tract and neural tube defects were present in the top ten causes in the Free State, but not nationally.

GAUTENG PROVINCIAL PROFILE



Gauteng provincial profile

Background

Gauteng is situated in the north-eastern part of the country, and is landlocked, bordered by Limpopo in the north, Mpumalanga in the east, Free State in the south, and North West in the west. The province mainly comprises the three urban areas of Pretoria, Johannesburg/Soweto and the southern Vereeniging-Vanderbijlpark industrial complex. During the 1996 Census the vast majority of the population (97%) lived in urban areas (SSA, 1998). The province encloses 17 101 km², constituting 1.4% of the country's total land area (SSA, 2003). The average population density was estimated at 513 persons per square kilometre in 2000, making it the most densely populated province by far.

Although the smallest province in surface area, it is regarded as the country's economic heartland. The province's Gross Geographic Product at 2001 prices was rated at R333 171 million, contributing 34% to the national Gross Domestic Product (GCIS, 2004). The largest contributors to the province's Gross Geographic Product are manufacturing, finance and trade. The manufacturing sector has over 9300 firms, and employs over 600 000 people. Johannesburg houses the largest Stock Exchange in Africa, and Pretoria the Reserve Bank. These two metropolises also house important health, educational and science centres. Gauteng has a well-developed infrastructure, including a comprehensive road system, an international airport, telecommunications networks, and a sophisticated financial and business support infrastructure (GCIS, 2004; Kok, 1998; Gauteng Provincial Government, 2004).

Despite being mainly an urban province, Gauteng's agricultural sector is geared to providing the cities and towns with daily fresh produce, including vegetables, fruit, meat, eggs, dairy products and flowers. Other agricultural activities include the production of maize, ground nuts, sunflowers, cotton, and sorghum (GCIS, 2004).

Population structure

According to the 2000 ASSA estimates, 8 765 262 people lived in Gauteng, constituting 19.4% of South Africa's total population. Gauteng had the lowest female proportion of the population of all the provinces, at 49.2%. Just over 26% of the population were younger than 15 years, 70% were in their 'economically active' years (15-64), and 6% were aged 60 years or older (Figure GT1).

The province has a noticeable excess of adult men in the economically active age group. [Census 2001: total population 8 837 178, 71 916 more than ASSA); 19.7% of total population in South Africa; 49.7% female; 73.8% Black African, 3.8% Coloured, 2.5% Indian, 19.9% White.]

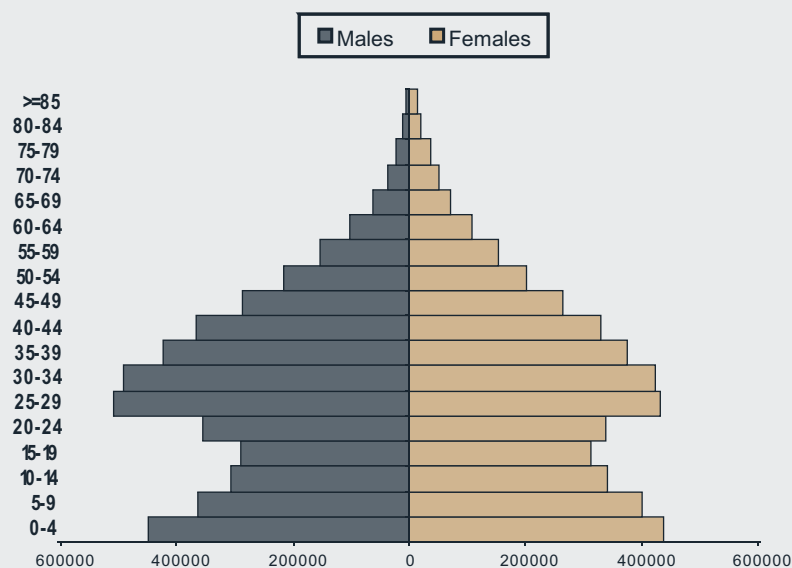


Figure GT1: Age structure of the Gauteng population, 2000

Living conditions

According to the 2001 Census, 8% of the population aged 20 years or older had no formal school education, and 36% of those in the age group 15-64 years were unemployed (SSA, 2003). One-fifth of the province's population lived below the national poverty line in 2002 (UNDP, 2004). Almost two-thirds of all households lived in formal dwellings, and 24% and 1% respectively in informal and traditional structures. On average, 3.2 persons shared a household. Piped water, either in the dwelling, on site, or from a communal tap, was available in 98% of households. About 4% of households did not have access to a toilet facility, and 84% had a refuse removal service once a week or more often. Electricity was used as the main source of energy for cooking in 73% of households, wood in 1%, and paraffin in 21%. Over 77% of the households had a radio, 66% a television, 62% a refrigerator, 32% a telephone and 45% a cell phone (SSA, 2003).

Mortality profile

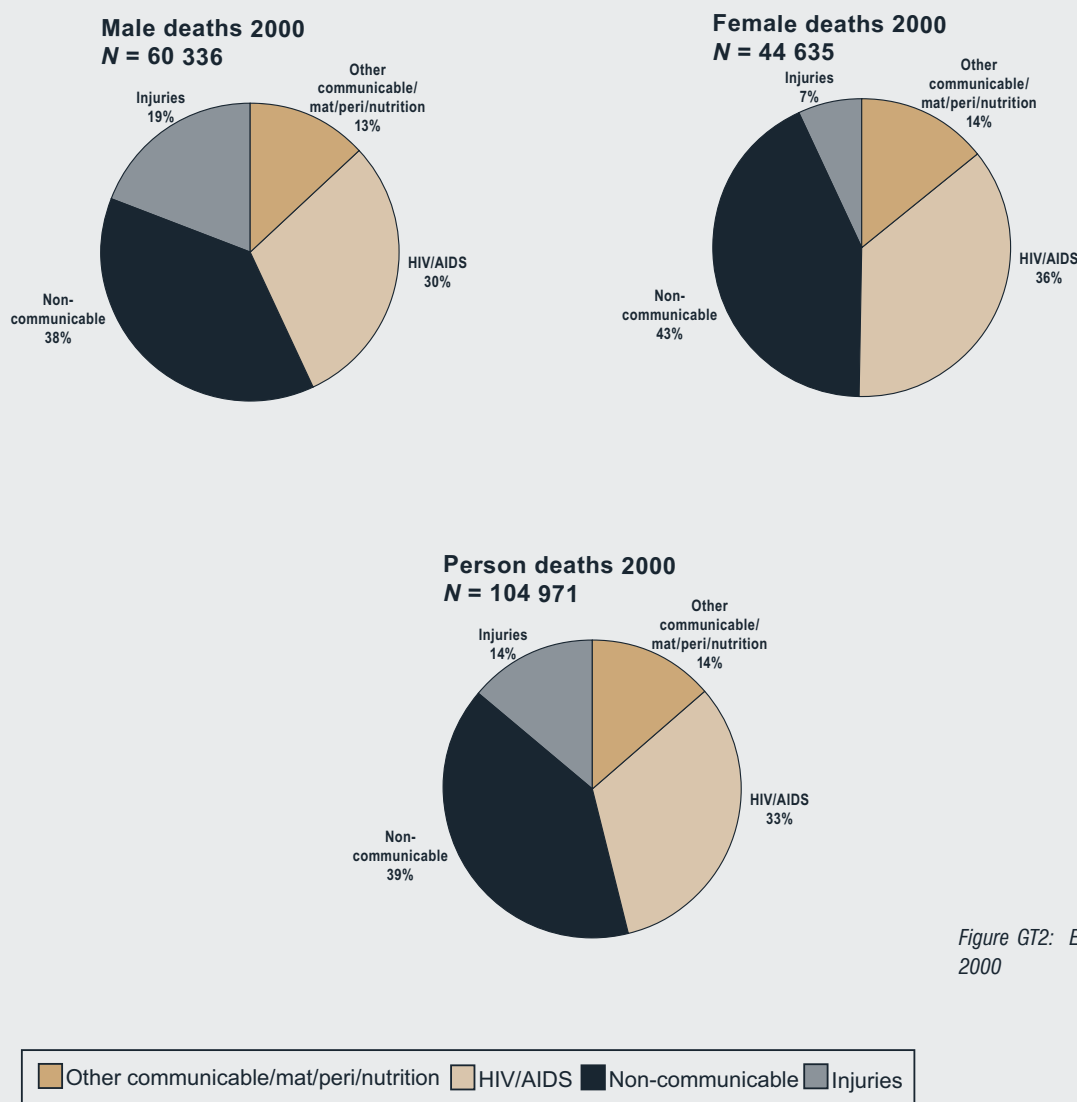


Figure GT2: Estimated deaths by Groups, Gauteng 2000

Of the total 104 971 deaths in Gauteng, 60 336 (57%) were in males and 44 635 (43%) in females. Figure GT2 shows the causes of death for broad Groups I, II, III and AIDS. The proportions due to other communicable diseases, maternal and perinatal causes and nutritional deficiencies were very similar for males and females. While females had a higher burden due to non-communicable diseases and HIV/AIDS, males had a considerably higher proportion of deaths due to injuries.

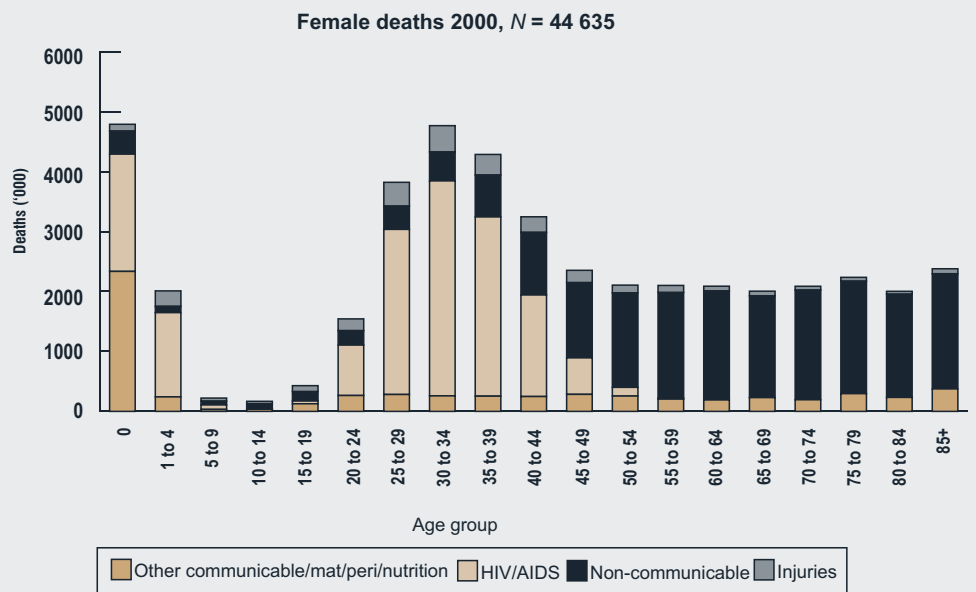
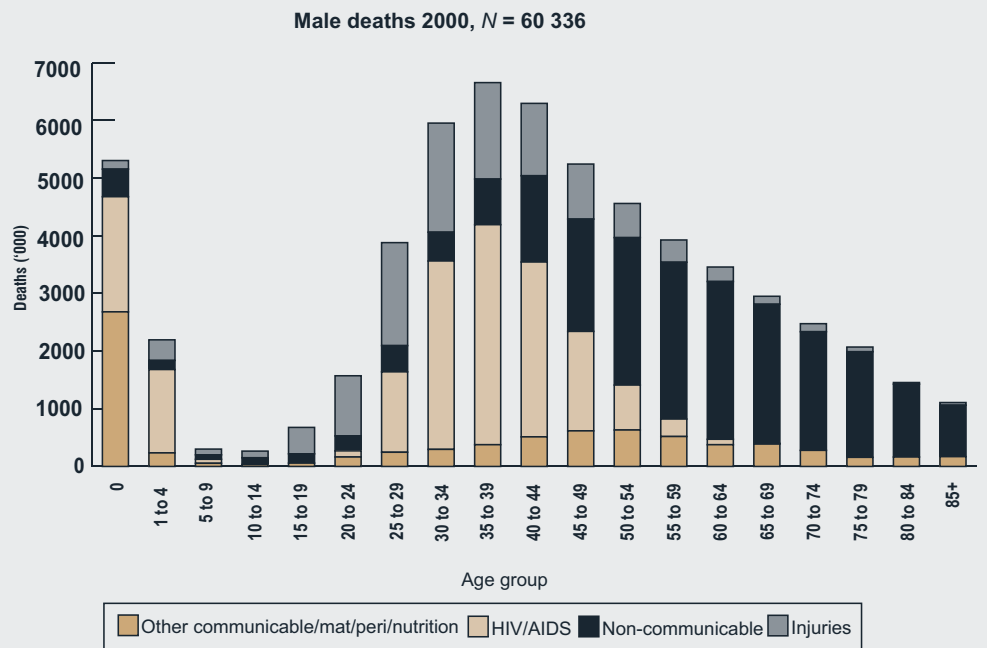
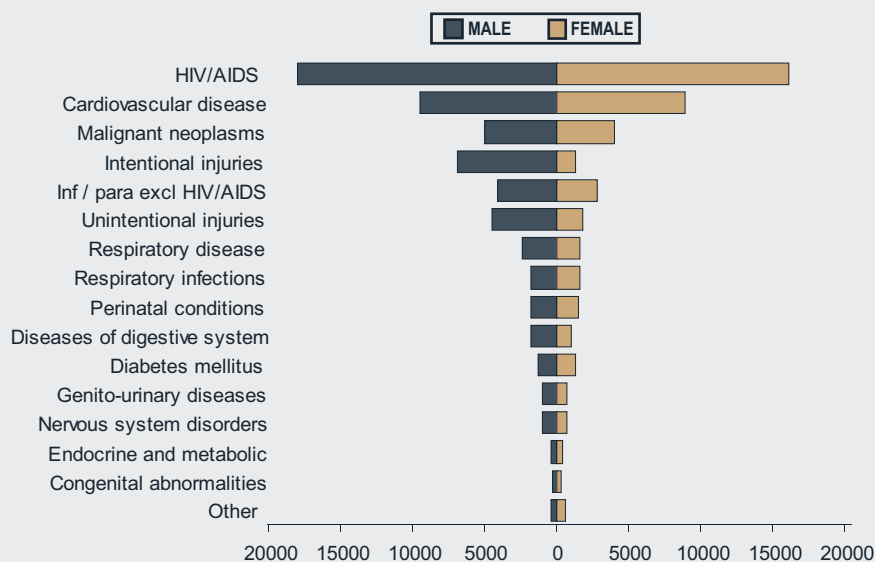


Figure GT3: Age distribution of deaths by broad Groups, Gauteng 2000

The age-specific causes of death for males and females are presented in Figure GT3. Infants and children under 5 suffered high numbers of deaths due to the unfinished agenda of infectious diseases related to underdevelopment, and a high HIV/AIDS burden. HIV/AIDS deaths were also very high in young adult men and women, although the age pattern shows a 5 year later onset in men. Deaths due to injuries were exceptionally high in adolescent and young adult men, and non-communicable causes of death were dominant in adults of 60 years and older.

The cause of death profile for Gauteng according to major disease categories is shown in Figure GT4. Causes are ranked in descending order according to total deaths. HIV/AIDS was the leading cause of death in both men and women (33%), followed by cardiovascular disease (18%), malignant neoplasms (9%), intentional injuries (8%), infectious and parasitic diseases excluding HIV/AIDS (7%), unintentional injuries (6%), and respiratory disease (4%). Differences were observed between men and women, with women displaying higher proportions of deaths from HIV/AIDS and cardiovascular disease, and men displaying considerably higher proportions of deaths from intentional and unintentional injuries.



"Other" causes include nutritional deficiencies, benign neoplasms, maternal conditions, mental disorders, musculo-skeletal diseases, skin diseases, oral and sense organ conditions.

Figure GT4: Causes of death according to categories for males and females, Gauteng 2000

The twenty leading single causes of death in the total Gauteng population are shown in Figure GT5(a). HIV/AIDS was the largest single cause of death, accounting for 33% of all deaths during 2000. Ischaemic heart disease (7.0%) was followed by homicide/violence (6.5%). Stroke was ranked fourth, with road traffic accidents, lower respiratory infection and tuberculosis being among the top ten causes of death. Pronounced gender patterns are shown in Figure GT5(b). Hypertensive heart disease and stroke were more prominent among the women, while homicide/violence and road traffic accident deaths were more pronounced among the men.

Persons 2000, N = 104 971

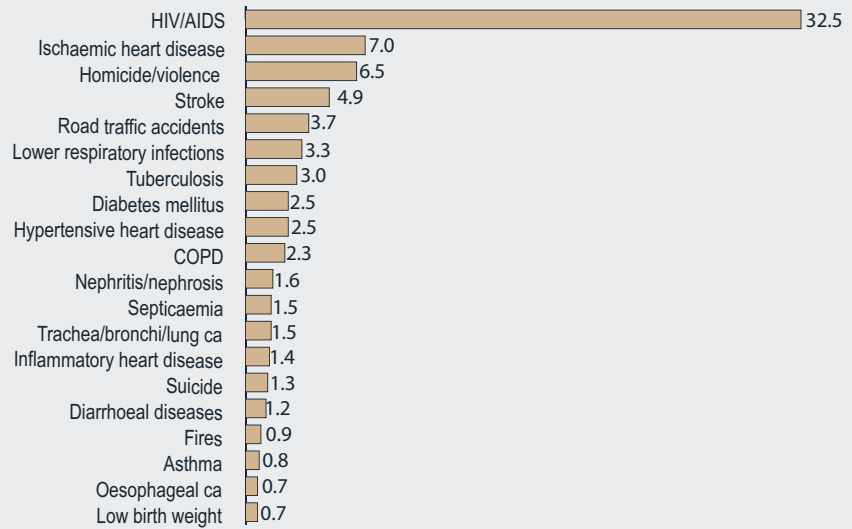


Figure GT5(a): Twenty leading single causes of death (%), Gauteng 2000

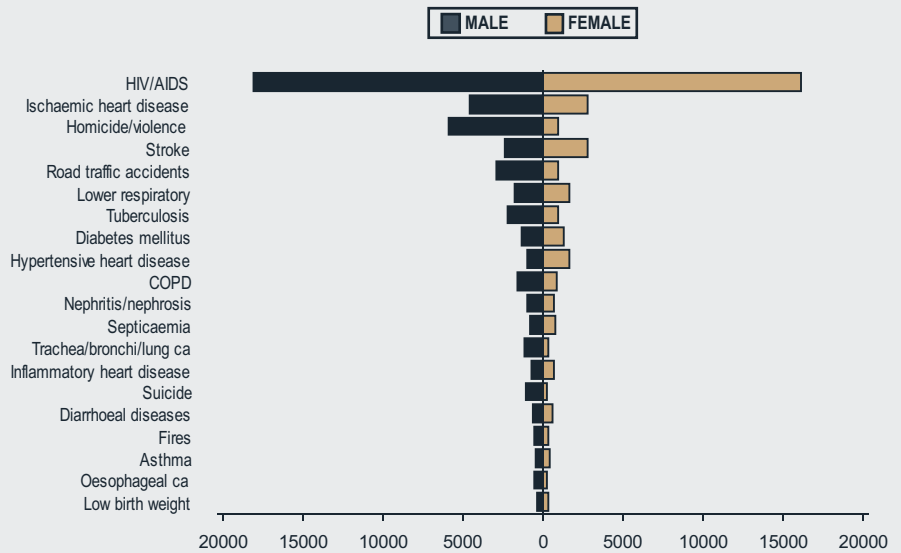


Figure GT5(b): Twenty leading single causes of death by sex, Gauteng 2000

Gauteng premature mortality

HIV/AIDS accounted for the largest proportion of female (50%) and male (38%) years of life lost (YLLs) (Table GT 1). Homicide and road traffic accidents were respectively the second (12%) and third (6%) leading causes of premature mortality among men. Stroke and lower respiratory infections were the second and third leading causes of premature mortality in women, each contributing 3%. Ischaemic heart disease accounted for 4% and 3% of YLLs in males and females respectively.

Table GT1: Leading 20 single causes of the premature mortality burden (YLLs) by sex, Gauteng 2000

Males				Females				Persons			
Rank	Cause of death	YLLs	%	Rank	Cause of death	YLLs	%	Rank	Cause of death	YLLs	%
1	HIV/AIDS	468319	37.6	1	HIV/AIDS	463505	49.9	1	HIV/AIDS	931824	42.8
2	Homicide/violence	154551	12.4	2	Stroke	29162	3.1	2	Homicide/violence	180114	8.3
3	Road traffic accidents	70709	5.7	3	Lower respiratory infections	27521	3.0	3	Road traffic accidents	95150	4.4
4	Ischaemic heart disease	50913	4.1	4	Homicide/violence	25563	2.7	4	Ischaemic heart disease	75482	3.5
5	Tuberculosis	40032	3.2	5	Ischaemic heart disease	24569	2.6	5	Tuberculosis	62553	2.9
6	Lower respiratory infections	31770	2.5	6	Road traffic accidents	24441	2.6	6	Lower respiratory infections	59291	2.7
7	Stroke	28864	2.3	7	Tuberculosis	22521	2.4	7	Stroke	58025	2.7
8	Suicide	25979	2.1	8	Hypertensive heart disease	17463	1.9	8	Diarrhoeal diseases	33122	1.5
9	Diarrhoeal diseases	16862	1.4	9	Diarrhoeal diseases	16260	1.7	9	Suicide	32615	1.5
10	Diabetes mellitus	16360	1.3	10	Septicaemia	14258	1.5	10	Diabetes mellitus	30565	1.4
11	COPD	15703	1.3	11	Diabetes mellitus	14205	1.5	11	Hypertensive heart disease	29162	1.3
12	Nephritis/nephrosis	15275	1.2	12	Low birth weight	11909	1.3	12	Septicaemia	29159	1.3
13	Septicaemia	14901	1.2	13	Inflammatory heart disease	11680	1.3	13	Low birth weight	24631	1.1
14	Fires	14488	1.2	14	Breast ca	9677	1.0	14	COPD	24600	1.1
15	Low birth weight	12723	1.0	15	Fires	9497	1.0	15	Nephritis/nephrosis	24381	1.1
16	Trachea/bronchi/lung ca	12563	1.0	16	Cervix ca	9150	1.0	16	Fires	23985	1.1
17	Hypertensive heart disease	11699	0.9	17	Nephritis/nephrosis	9106	1.0	17	Inflammatory heart disease	22849	1.0
18	Inflammatory heart disease	11169	0.9	18	COPD	8897	1.0	18	Trachea/bronchi/lung ca	17096	0.8
19	Epilepsy	8144	0.7	19	Suicide	6637	0.7	19	Bacterial meningitis	13650	0.6
20	Cirrhosis of liver	7675	0.6	20	Asthma	6262	0.7	20	Epilepsy	12970	0.6
	All causes	1 247 186			All causes	929 781			All causes	2 176 967	

Leading causes of death among children (<15 years)

The leading ten causes of death among children under 5 and children 5-14 years are shown in Figure GT6. The high child mortality in Gauteng is a result of the combination of HIV/AIDS and other communicable diseases as well as perinatal conditions. It is important to bear in mind, however, that the ill-defined perinatal conditions jointly accounted for 15% of infant deaths, but are excluded from these graphs. Congenital heart disease, road traffic accidents and fires were also among the leading causes of death. Infant deaths dominated those in children under 5 years of age, and the leading five causes in infants and children under 5 followed the same pattern. The cause of death profiles for boys and girls were similar, and the top five causes, HIV/AIDS, diarrhoea, low birth weight, lower respiratory infections and birth asphyxia and trauma, accounted for just over 70% of the child deaths.

The cause of death profile for boys and girls aged 5-14 years differed. Road traffic accidents were the leading cause of death among boys in this age group, while HIV/AIDS was the leading cause for girls. Injuries and other infectious diseases were among the leading causes in this age group. Inflammatory heart disease also features in this age group.

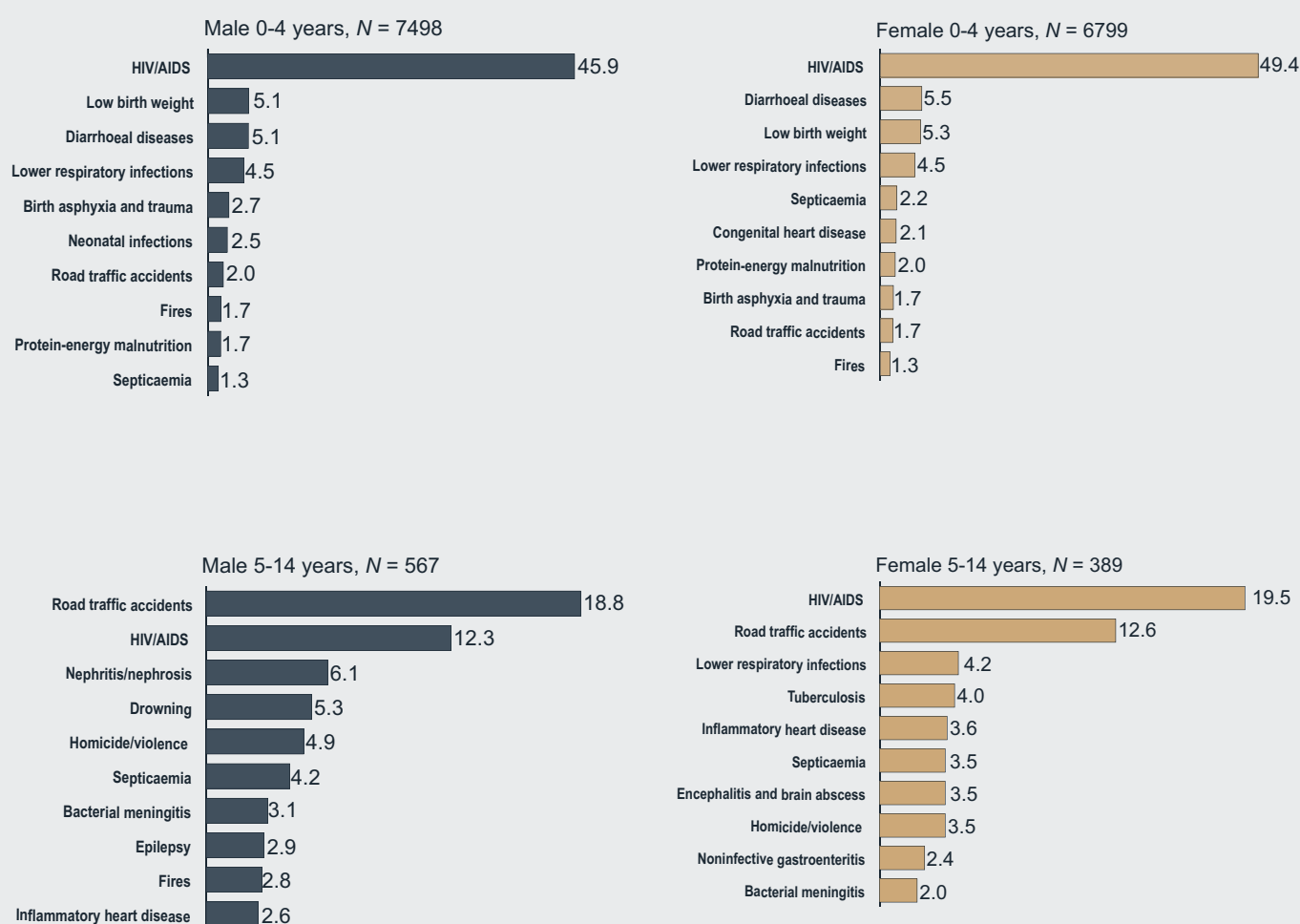


Figure GT6: Ten leading single causes of death (%) among children (<15 years) by sex, Gauteng 2000

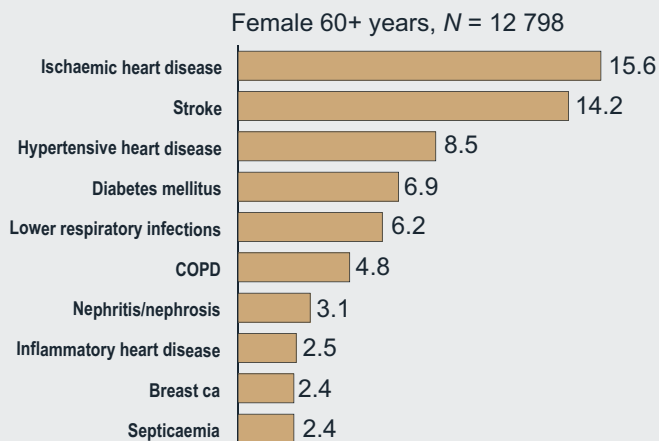
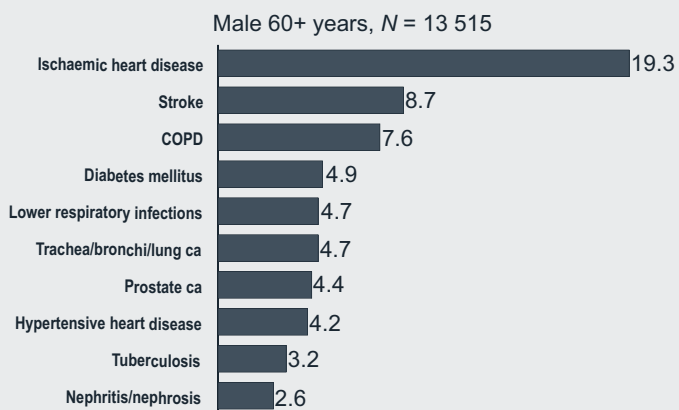
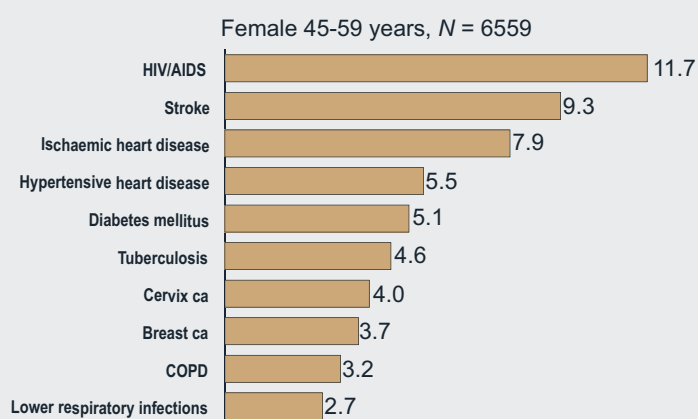
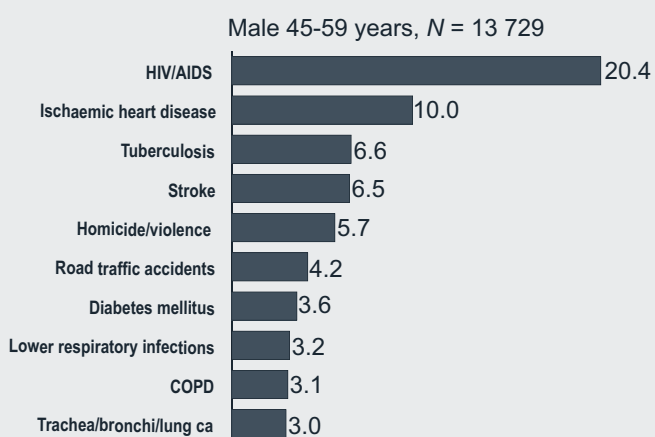
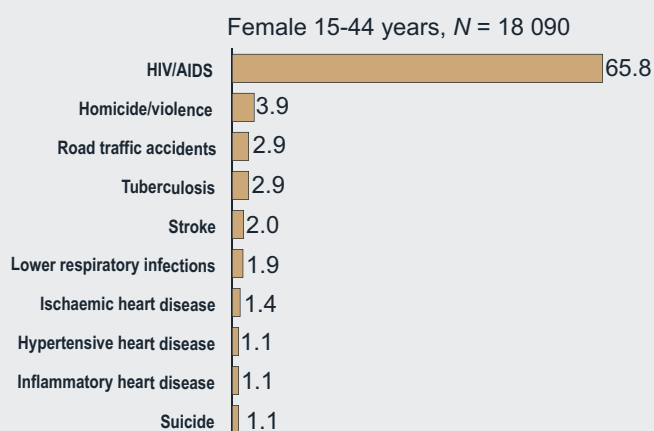
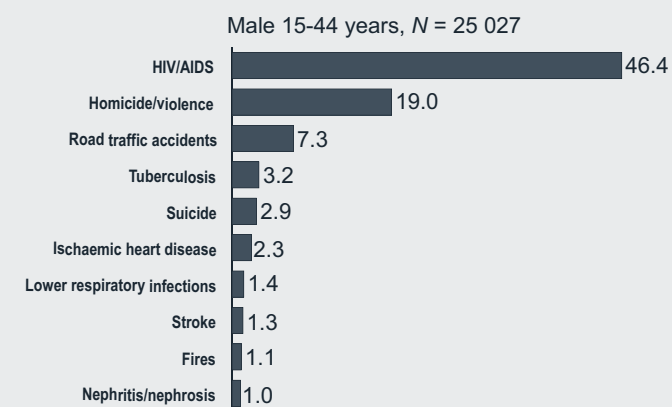
Leading causes of death among adults

The leading causes of death for adults are shown in Figure GT7. HIV/AIDS was the leading cause of death for both men and women aged 15-44 years. Homicide and road traffic accidents feature highly for men and women. Several infectious diseases such as tuberculosis and lower respiratory infections but also ischaemic heart disease in men and women, stroke in men and hypertensive heart and inflammatory heart disease featured among the leading causes in young adult women.

The profile for the older adults aged 45-59 years differed from the young age group with an increasing number of deaths due to non-communicable diseases and fewer deaths due to infectious diseases. In men, however, road traffic accidents and homicide were responsible for almost 10% of deaths. Diabetes mellitus, stroke, ischaemic heart disease and lower respiratory infections were among the leading causes of death for adults in this age group. Cervical and breast cancer also featured among the top ten for women while lung cancer showed up for men.

Most of the burden in older persons is due to non-communicable diseases, although other infectious diseases still play a role. In this province there were more female (13 515) than male (12 798) deaths among older persons. Ischaemic heart disease was the leading cause of death among persons aged 60 years and older (Figure GT7), accounting for 19% of male and 16% of female deaths. Stroke ranked second, accounting for 9% of male and 14% of female deaths. Hypertensive heart disease and diabetes were responsible for more deaths in older women than older men, while chronic obstructive pulmonary disease caused more deaths in older men. Trachea/bronchi/lung cancer was the most important cancer among men, while breast cancer was the most important cancer among women.

Figure GT7: Ten leading single causes of death (%) among adults by sex, Gauteng 2000



How does Gauteng compare with the national profile?

The population age structure of Gauteng shows that there is an excess of young economically active people, particularly men. There is also a departure from the total population in that there is a deficit of people aged between 5 and 24 years old. The progression of the HIV/AIDS epidemic in this province is very similar to the national pattern, however, accounting for 33% of deaths in this province compared with 30% of deaths nationally.

The cause of death profile in Gauteng showed the quadruple burden of disease, with communicable diseases, non-communicable diseases, injuries and HIV all having a significant impact. Gauteng had very similar proportions of deaths due to HIV/AIDS, non-communicable diseases and injury as nationally, but much fewer deaths from other infectious and parasitic diseases (14% vs 20%). This is the result of lower mortality rates due to tuberculosis, lower respiratory infections, diarrhoea and protein-energy malnutrition. Mortality due to cardiovascular conditions was slightly lower than the national average due to lower rates of death from stroke and hypertensive heart disease. However, the death rates due to ischaemic heart disease were higher than the national average. Cancer mortality was also higher, as well as mortality due to nephritis or nephrosis. The injury mortality rates were high for this province.

Almost without exception, the ten leading single causes of death appear in Gauteng as well as in the national profile, with slight variations in the ranking. Gauteng had more homicide (6.5% vs 5.8% nationally), slightly more ischaemic heart disease (7.0% vs 5.6%), less stroke (4.9% vs 5.7%), and much less tuberculosis, lower respiratory infection and diarrhoeal disease.

The infant mortality pattern in this province was quite different from the national profile. Gauteng had a much greater HIV/AIDS burden (39% vs 23.3%) and low birth weight (7.4% vs 5.9%). It had substantially fewer infant deaths from diarrhoeal diseases (6.2% vs 9.7%) and protein-energy malnutrition (1.6% vs 3.0%). There were twice as many deaths from congenital heart disease in Gauteng as in the total population.

KWAZULU-NATAL PROVINCIAL PROFILE



KwaZulu-Natal provincial profile

Background

KwaZulu-Natal is on the east coast of South Africa, bordering Mozambique and Swaziland in the north, Mpumalanga and Free State in the west, Eastern Cape in the south and Lesotho in the south west. The province encloses 92 100 km², constituting 7.6% of the total land area of the country (Statistics South Africa (SSA), 2003). The average population density during 2002 was 100 persons per square kilometre. During the 1996 Census 57% of the population lived in non-urban areas (SSA, 1998). Prior to 1994 the province territorially consisted of several patches of the self-governing area of KwaZulu. Together with the 'national state' of Transkei in the southern part of the province, these areas formed part of the so-called 'homelands', while the rest of the province was under the separate provincial administration of the then Natal. These territorial divisions are no longer valid, but given the consolidation of various administrations and levels of development, they are important when examining data distribution patterns (Tait, 1996).

Durban, housing an international airport and one of the 10 largest ports in the world, and served by an extensive national road network, is one of the fastest-growing urban areas. Steel production, coal mining and export, a rich wildlife protected in several game parks, holiday resorts along the coast, forestry, tea plantations, meat processing, and mixed agriculture all contribute to the economy. The coastal belt agriculture includes yields of sugar cane, oranges, wood, bananas, mangos and other tropical and sub-tropical fruits, while farmers in the hinterland focus on vegetable, dairy and stock farming.

KwaZulu-Natal has recently undergone rapid industrialisation, and industries are found in towns such as Dundee, Hammarsdale, Ladysmith, Mandeni, Newcastle, Richards Bay, and Richmond (GCIS, 2004). During 2001 KwaZulu-Natal made the second highest Gross Geographic Product contribution of all the provinces to the national Gross Domestic Product (GDP), providing 15.5% of the total GDP at R152 703 million (GCIS, 2004). However, at the micro level it is important to realise that high levels of unemployment and poverty prevail.

Population structure

According to the 2000 ASSA estimates, 9 211 922 people lived in KwaZulu-Natal, constituting 20.4% of South Africa's total population. The province accommodated slightly more women (52%) than men (48%). Nearly 35% of the population were younger than 15 years, and 61% were in their 'economically active' years (15-64), while 6% were aged 60 years or older. [Census 2001: total population 9 426 017 (ASSA had 214 095 less); 21% of South Africa's total population; 53.2% female; 84.9% Black African, 1.5% Coloured, 8.5% Indian, 2.4% White.]

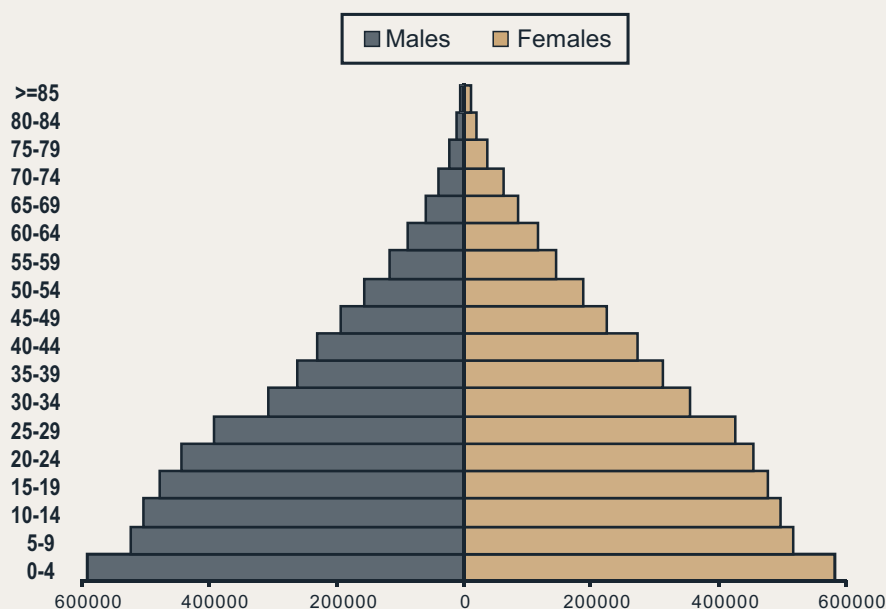


Figure KZN1: Age structure of the KwaZulu-Natal population, 2000

Living conditions

According to the 2001 Census, 21.9% of the population aged 20 years or older had no formal school education, and 48.7% of those in the age group 15-64 were unemployed (SSA, 2003). Just over half of the population (50.5%) lived below the national poverty line in 2002 (UNDP, 2004). A large proportion of the households in KwaZulu-Natal (nearly 57%) are accommodated in formal housing, and 10.8% and 27.9% respectively in informal and traditional structures. On average, 4.2 persons share a household. The majority of households (86%) have access to piped water, whether it is in the home, yard or at a public facility. In 16.2% of the households there is no toilet facility; 49.2% of the households' refuse is removed at least once a week. For cooking purposes 48.3% of the households have access to electricity, in 27% wood is used, and in 17.9% paraffin is used. Seventy three per cent of the households have a radio, 47.3% a television, 46.9% a refrigerator, 24% a telephone, and 28.5% a cell phone (SSA, 2003).

Mortality profile

KwaZulu-Natal's mortality profiles are based on 66 385 (51.1%) male and 63 473 (48.9%) female deaths estimated for the year 2000, totalling 129 858 deaths. Figure KZN2 shows the causes of death for the broad Groups. The proportions of other infectious diseases, maternal, perinatal and nutritional deficiencies and non-communicable diseases were very similar for men and women, while HIV/AIDS accounted for 46% of the female deaths and 38% of the male deaths. The greatest differences were seen in the proportions of deaths due to injuries - 13% for men and 5% for women.

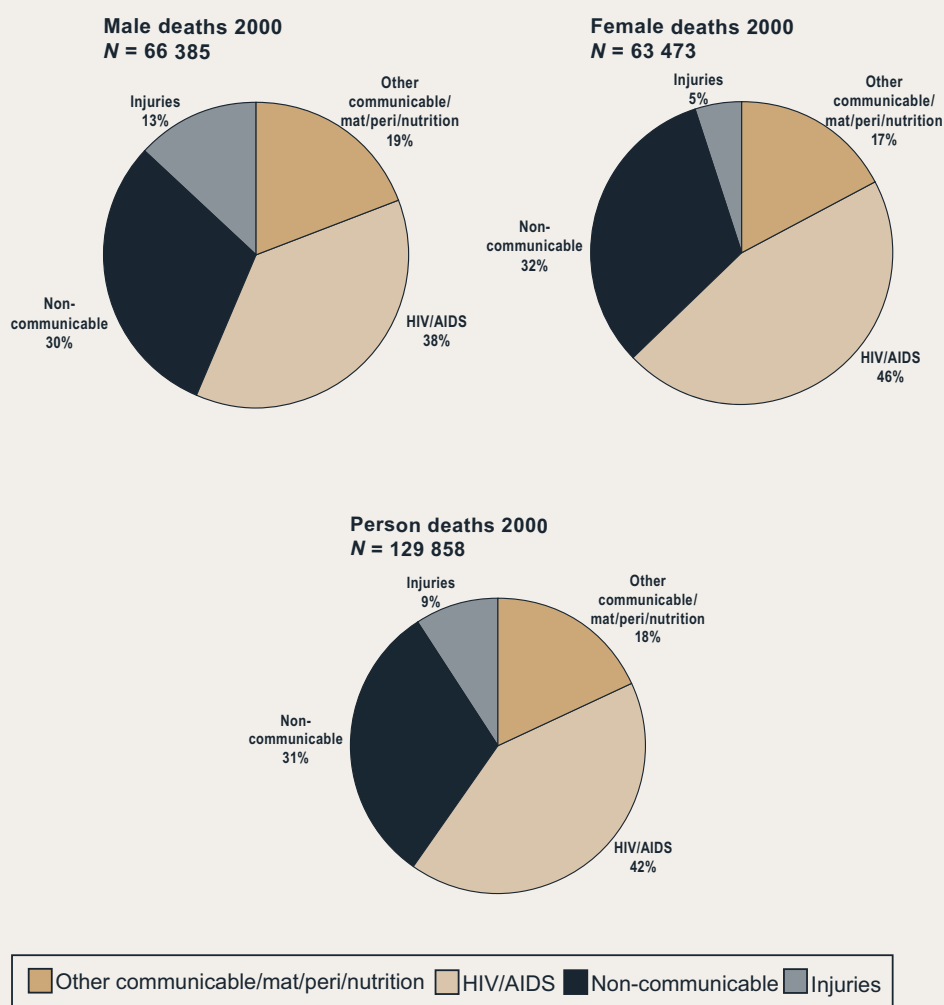


Figure KZN2: Estimated deaths by Groups, KwaZulu-Natal 2000

The age-specific cause of death profiles are presented in Figure KZN3. The numbers of deaths are presented by five-year age intervals for the three broad Groups and HIV/AIDS. Due to particular disease and mortality profiles in children during the first year of life, the under 5 year age group is divided into infants less than 1 year old and children aged 1-4 years old. HIV/AIDS deaths were exceptionally high for young adult men and women. Deaths due to other infectious diseases and HIV/AIDS were extremely high for boys and girls in the perinatal period. Deaths from injury were higher in young adult men than in women. In adults of 50 years or older non-communicable disease mortality dominated.

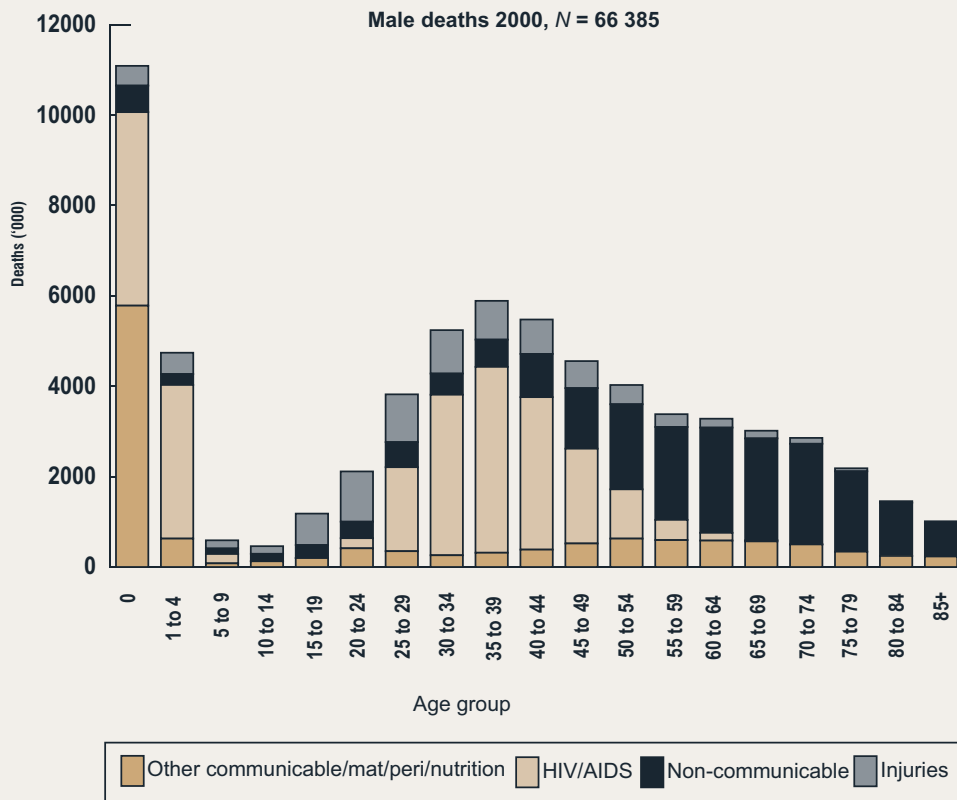


Figure KZN3: Age distribution of deaths by broad Groups, KwaZulu-Natal 2000

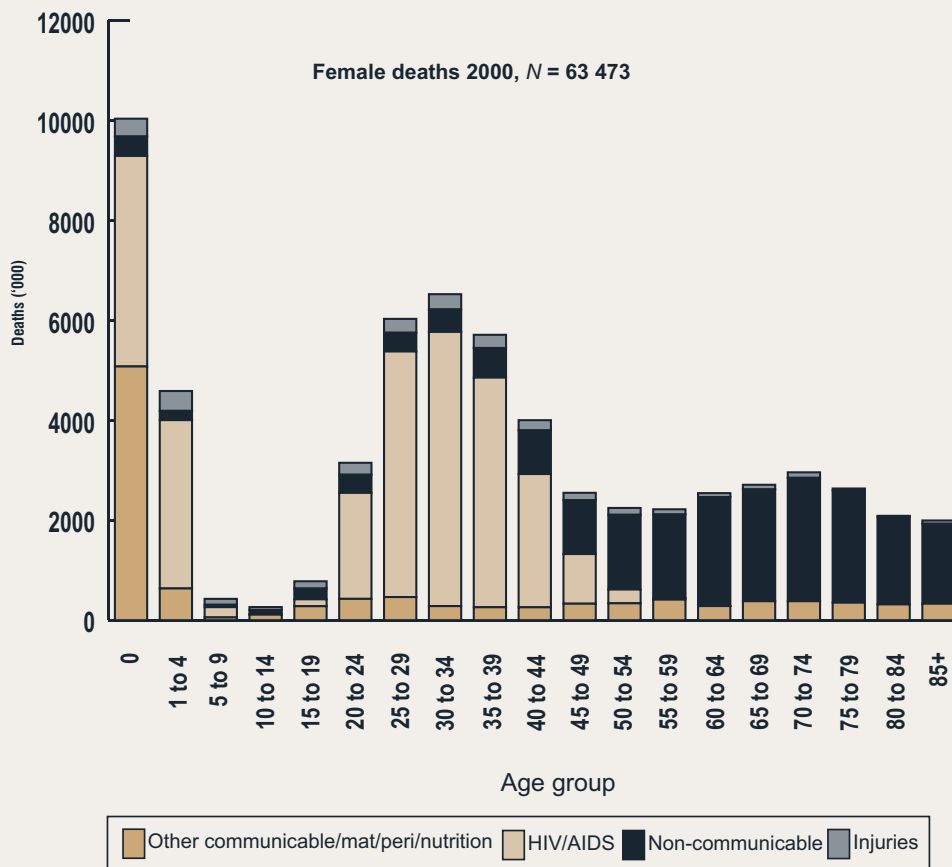


Figure KZN4 shows KwaZulu-Natal's cause of death profile for categories of causes of death, ranked in descending order according to total deaths. In both men and women HIV/AIDS was the leading cause of death (41.5%), followed by cardiovascular disease (15%), infectious and parasitic diseases excluding HIV/AIDS (9%), intentional injuries (5%) and unintentional injuries (4%), perinatal conditions (4%) and respiratory infections (4%). Differences were observed between men and women, with HIV/AIDS, cardiovascular disease and diabetes accounting for higher proportions of deaths in females than in males. In contrast, in men intentional and unintentional injuries, as well as infectious and parasitic infections excluding HIV/AIDS, predominated among the leading ten categories.

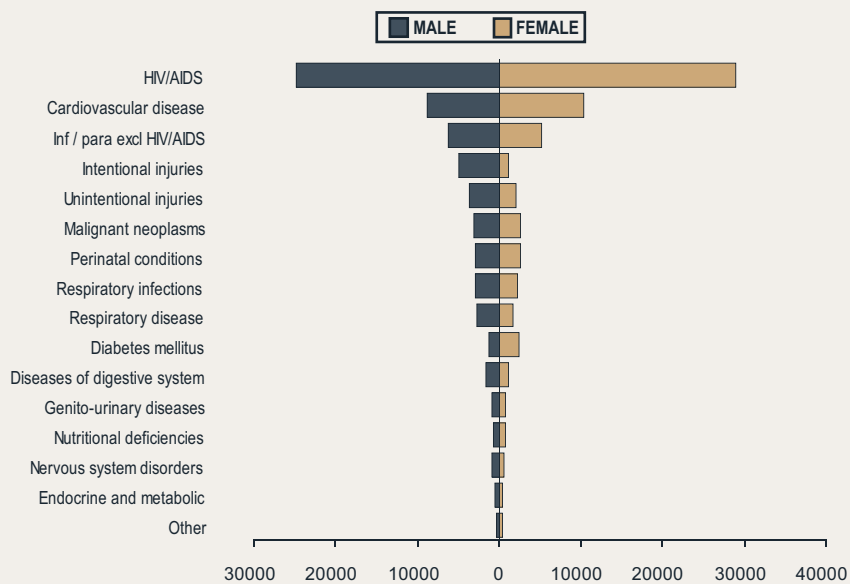


Figure KZN4: Causes of death according to categories for males and females, KwaZulu-Natal 2000

"Other" causes include congenital abnormalities, maternal conditions, benign neoplasms, musculo-skeletal diseases, skin disorders, oral conditions and conditions of the sense organs.

The twenty leading single causes of death in the total KwaZulu-Natal population are shown in Figure KZN5(a) below, illustrating that HIV/AIDS was the largest single cause of death, accounting for 41.5% of all deaths during 2000. HIV/AIDS caused about seven times more deaths than strokes, the next largest single cause (6%). Ischaemic heart disease and hypertensive heart disease, lower respiratory infection, homicide, diarrhoea and tuberculosis were next in the ranking, each accounting for between 3% and 5% of deaths. From Figure KZN5(b) it is clear that women had higher numbers of deaths due to HIV, stroke, hypertensive heart disease, and diabetes mellitus, while men had higher numbers of deaths due to the remaining leading causes of death.

Persons 2000, N = 129 858

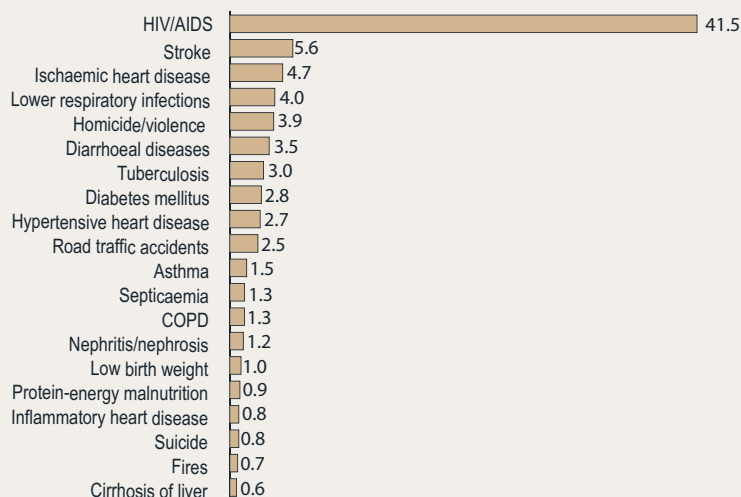


Figure KZN5(a): Twenty leading single causes of death (%), KwaZulu-Natal 2000

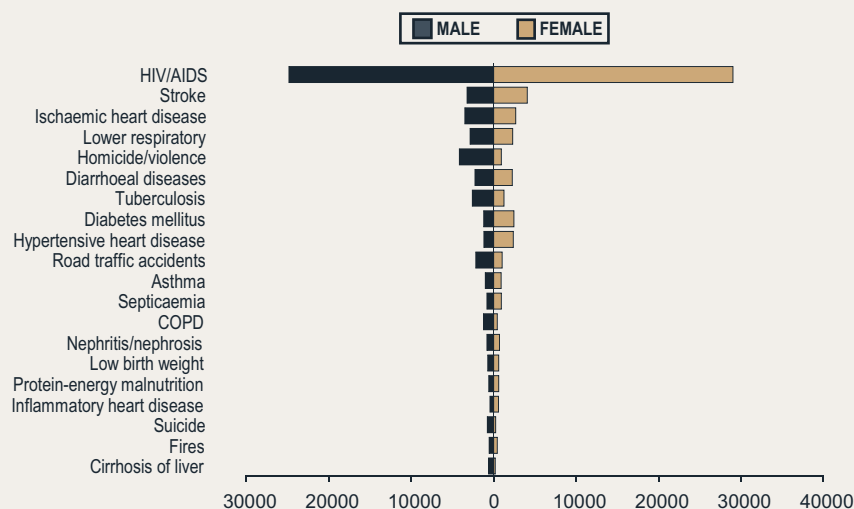


Figure KZN5(b): Twenty leading single causes of death by sex, KwaZulu-Natal 2000

Premature mortality

The years of life lost (YLLs) measure does not merely consider the number of deaths, but also takes into account the age at which the deaths occurred. YLLs are calculated using the age weighting parameter, discounting and the standard life expectancy used in the Global Burden of Disease Study. Table KZN1 shows that HIV/AIDS played a major role in premature mortality. This can be explained by the large numbers of deaths due to AIDS, especially in young adults and children under the age of 5 years. The proportions attributable to other causes are much smaller, with homicide/violence, diarrhoeal diseases, lower respiratory infections and road traffic accidents each being responsible for 2.8 - 4.7% of premature loss of life. Premature mortality manifested differently in men and women. For example, HIV/AIDS accounted for 58% of all YLLs in women and 45% in men. Homicide/violence and road traffic accidents were ranked in the top five causes in men, but ranked lower in women. Two of the classic lifestyle causes of death, stroke and diabetes, ranked in the top five causes for women.

Table KZN1: Leading 20 single causes of the premature mortality burden (YLLs) by sex, KwaZulu-Natal 2000

Males				Females				Persons			
Rank	Cause of death	YLLs	%	Rank	Cause of death	YLLs	%	Rank	Cause of death	YLLs	%
1	HIV/AIDS	673918	45.0	1	HIV/AIDS	853688	58.0	1	HIV/AIDS	1527606	51.4
2	Homicide/violence	113849	7.6	2	Diarrhoeal diseases	59773	4.1	2	Homicide/violence	138231	4.7
3	Diarrhoeal diseases	63563	4.2	3	Lower respiratory infections	49024	3.3	3	Diarrhoeal diseases	123336	4.2
4	Lower respiratory infections	61841	4.1	4	Stroke	37927	2.6	4	Lower respiratory infections	110865	3.7
5	Road traffic accidents	56282	3.8	5	Diabetes mellitus	27041	1.8	5	Road traffic accidents	83225	2.8
6	Tuberculosis	42322	2.8	6	Road traffic accidents	26943	1.8	6	Stroke	73199	2.5
7	Ischaemic heart disease	36723	2.5	7	Tuberculosis	25400	1.7	7	Tuberculosis	67723	2.3
9	Stroke	35272	2.4	9	Homicide/violence	24382	1.7	9	Ischaemic heart disease	60961	2.1
10	Low birth weight	23770	1.6	10	Ischaemic heart disease	24238	1.6	10	Low birth weight	44371	1.5
11	Protein-energy malnutrition	19603	1.3	11	Septicaemia	21038	1.4	11	Diabetes mellitus	41144	1.4
12	Septicaemia	19583	1.3	12	Hypertensive heart disease	20811	1.4	12	Septicaemia	40621	1.4
13	Suicide	18620	1.2	13	Low birth weight	20602	1.4	13	Protein-energy malnutrition	39314	1.3
14	Fires	15438	1.0	14	Protein-energy malnutrition	19711	1.3	14	Hypertensive heart disease	33467	1.1
15	Asthma	14951	1.0	15	Asthma	14136	1.0	15	Asthma	29087	1.0
17	Diabetes mellitus	14103	0.9	17	Birth asphyxia and trauma	12920	0.9	17	Fires	27305	0.9
18	Nephritis/nephrosis	12850	0.9	18	Fires	11867	0.8	18	Suicide	24502	0.8
19	Hypertensive heart disease	12657	0.8	19	Nephritis/nephrosis	10831	0.7	19	Nephritis/nephrosis	23681	0.8
20	COPD	12132	0.8	20	Neonatal infections	6984	0.5	20	Birth asphyxia and trauma	23563	0.8
	All causes	1 497 562			All causes	1 472 015			All causes	2 969 577	

Leading causes of death among children (<15 years)

The leading ten causes of death in children under 15 years of age are shown in Figure KZN6 for boys and girls separately. In the under 5 year olds, HIV/AIDS accounted for about half the deaths. The pattern for boys and girls in the top five are the same, with two infectious diseases and two perinatal conditions after HIV/AIDS. Among children 5 to 14 years, the number of deaths for boys was nearly twice as high as for girls, with the pattern for boys and girls in the top four the same. HIV/AIDS accounted for most of the deaths, followed by road traffic accidents and two infectious diseases. Injuries, including drowning and homicide, were among the leading causes for boys, while homicide and fires were among the leading causes for girls.

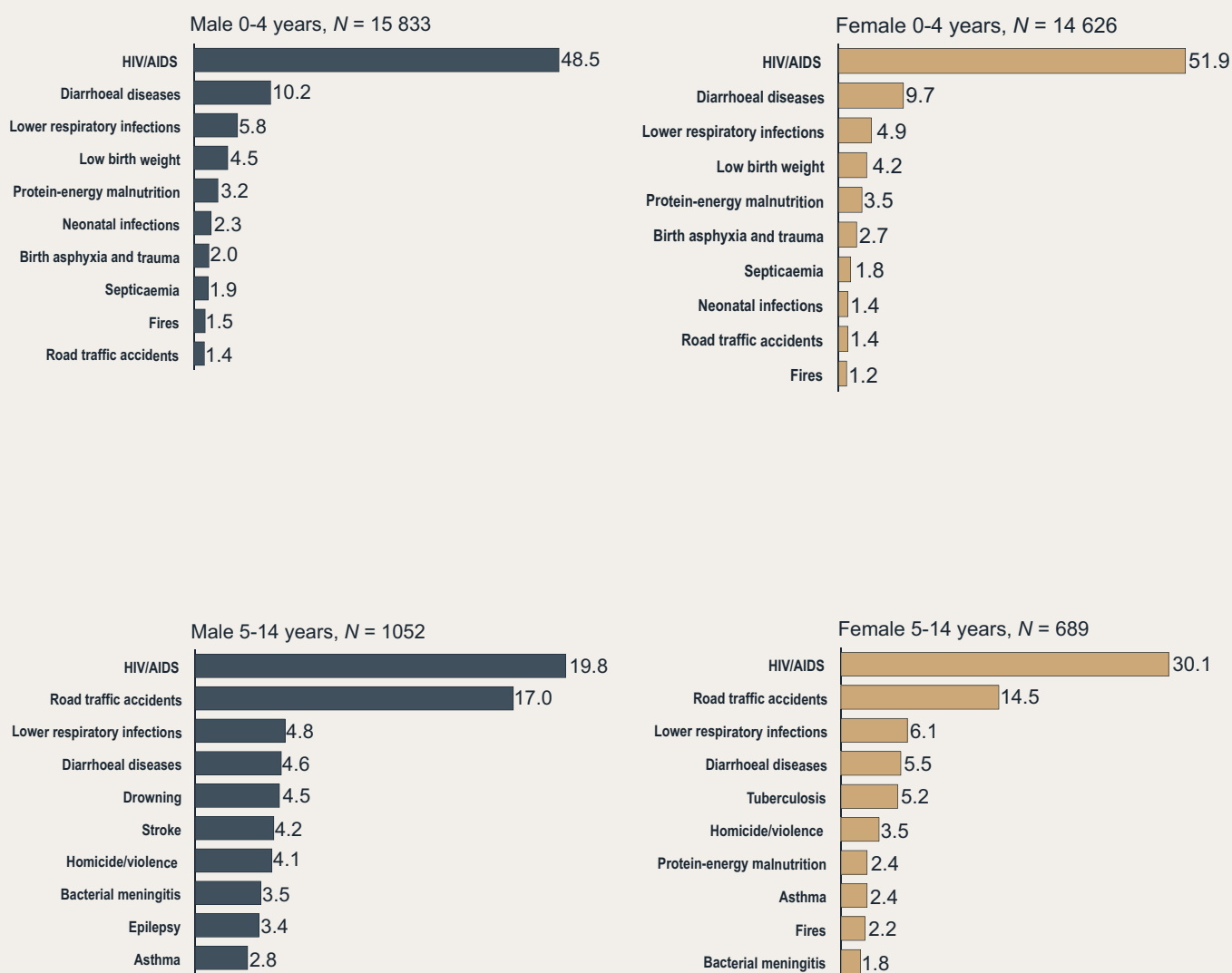


Figure KZN6: Ten leading single causes of death (%) among children (<15 years) by sex, KwaZulu-Natal 2000

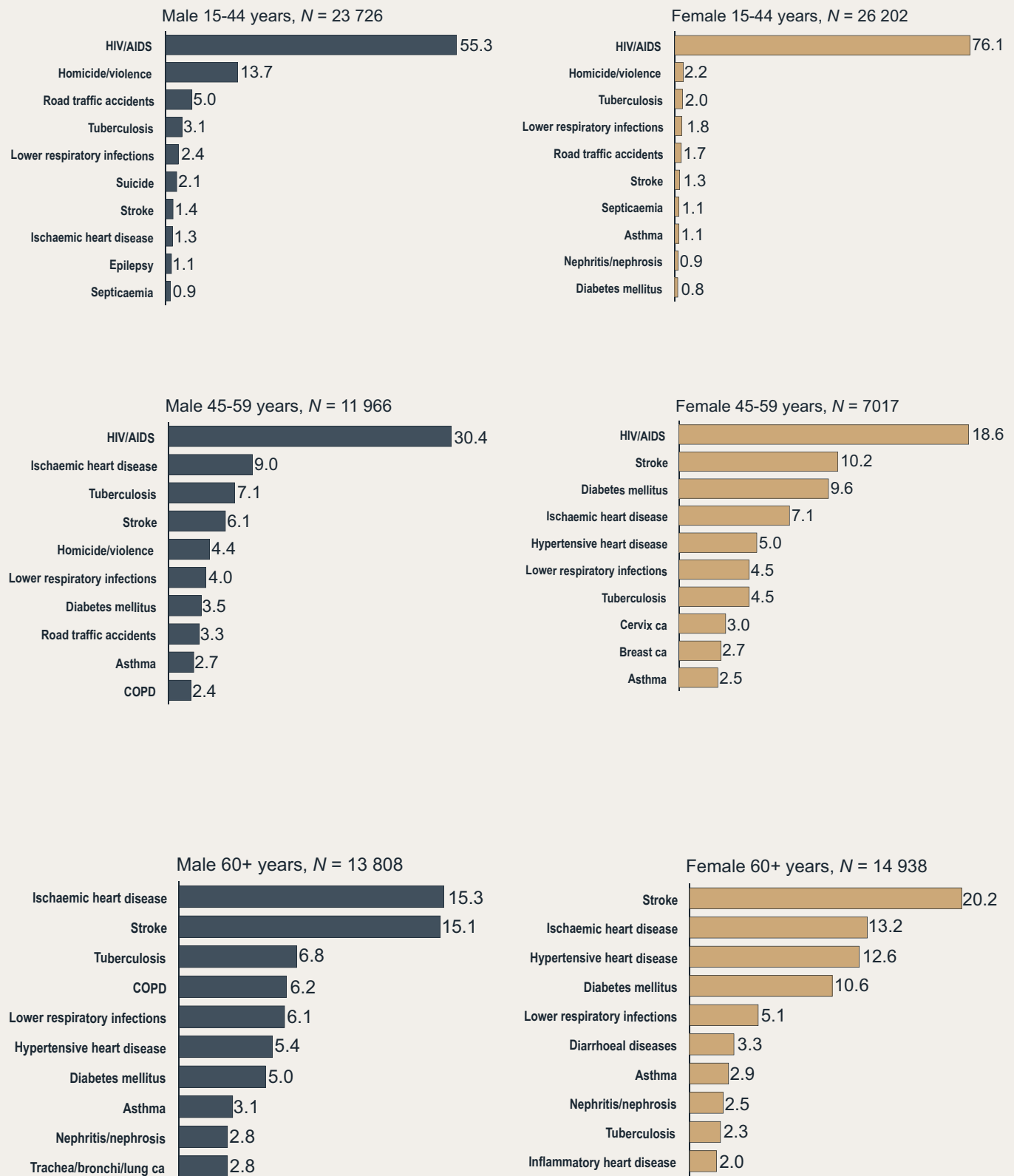
Leading causes of death among adults

The leading ten causes of death among adults are shown in Figure KZN7 by selected age groups and sex. Among young adults aged 15 to 44 years, HIV/AIDS was the leading cause for both men and women, followed by homicide. These two conditions accounted for 69% and 78.3% of the deaths in males and females respectively. The next three causes were the same for males and females, but the ranking differed.

Among the next age group, 45 to 59 years, HIV/AIDS accounted for most of the deaths. Thereafter the pattern differed slightly. Lifestyle diseases, such as stroke, diabetes, ischaemic and hypertensive heart disease, accounted for 31.9% of deaths in women. All of these lifestyle diseases, except hypertensive heart disease, appeared in males too, and accounted for 18.6% of the deaths. Injuries, such as homicide and road traffic accidents, were among the leading causes for men, but not for women. The common female cancers, cervix and breast, were among the leading causes of death for women.

In older persons (60 years and older) most of the leading causes of death were non-communicable diseases, and it is clear that cardiovascular diseases were the primary cause of death in older persons. Stroke, ischaemic heart disease and hypertensive heart disease were the leading single causes of death, accounting for 35.8% and 46% of the deaths in males and females respectively. Diabetes was the fourth largest cause, accounting for 10.6% of the deaths in women, while it was in seventh place for men, accounting for 5% of the deaths. Figure KZN7 shows that tuberculosis, chronic obstructive pulmonary disease and lung cancer caused more deaths in older men than in older women. Lower respiratory infections, asthma and nephritis accounted for deaths in both males and females at similar levels.

Figure KZN7: Ten leading single causes of death (%) among adults by sex, KwaZulu-Natal 2000



How does KwaZulu-Natal compare with the national profile?

In KwaZulu-Natal mortality was very high. This province had the highest HIV/AIDS mortality rates and the highest child mortality rates. Comparing KwaZulu-Natal's cause of death profile with the country's national profile, it is clear that there were similarities as well as differences. In the broad Groups, injuries in KwaZulu-Natal (9%) constituted a smaller proportion than nationally (12%), as did non-communicable diseases with 31% in KwaZulu-Natal and 38% nationally. In KwaZulu-Natal HIV/AIDS mortality was much higher (42%) than nationally (30%).

The leading top ten single causes of death were the same in KwaZulu-Natal as they were nationally, but they ranked differently. Tuberculosis not related to HIV was ranked lower in KwaZulu-Natal, while lower respiratory infections, diarrhoea and septicaemia were ranked higher. Stroke and ischaemic heart disease were ranked higher in KwaZulu-Natal. Unnatural causes of death like homicide/violence and road traffic accidents ranked lower in KwaZulu-Natal than nationally. Lung cancer ranked seventeenth nationally, but does not feature among the leading twenty causes in KwaZulu-Natal.

The KwaZulu-Natal Epidemiology Unit estimated the burden of disease based on the sample death data for the years 1997-2001 (KwaZulu-Natal Department of Health, 2003). A comparison of their results by broad cause combining AIDS and other Group I shows 50% against our estimate of 60%. This difference is due to the fact that their estimate is based on an earlier period. The injuries are 10% for the period 1997-2001 and 9% in this study. The focus of their study was on non-communicable diseases, for which very similar observations were made.

Empirical data have been collected in the Demographic Surveillance Site in the Umkhanyakude district of northern KwaZulu-Natal by the Africa Centre for Health and Population Studies (ACDIS) using verbal autopsy to obtain cause of death data in the area under surveillance. By the year 2000, the study reported adult mortality levels (${}_{45}q_{15}$) of 75% for males and 58% for females (Hosegood *et al.*, 2004). These levels of adult mortality are considerably higher than the ASSA2000 estimates of 55% for males and 43% for females for the province. This difference in level of mortality is considered plausible given the comparison of a rural population and an average of the province. The profile of the broad causes of death for the province was compared with that from the ACDIS which had defined causes for 97% of the deaths (Table KZN2). While the profiles were reasonably similar, with the rural area showing a higher proportion of deaths due to AIDS and lower proportion of deaths due to non-communicable diseases, it would need more careful comparison of age-specific rates to assess the distinctions.

Cause Group	KwaZulu-Natal (%)	Africa Centre Demographic Information System (%)
Other Group I	11	11
AIDS	39	48
Non-communicable	40	27
Injuries	10	11

Table KZN2. Comparison of the cause of death profile estimated for KwaZulu-Natal with the ACDIS profile for adults over 15 years

LIMPOPO PROVINCIAL PROFILE



Limpopo provincial profile

Background

Limpopo is the northernmost province of the country, having international borders with Botswana, Mozambique and Zimbabwe. The southern border of the province neighbours on Gauteng, Mpumalanga and North West. The province encloses 123 910 km², constituting 10.2% of the country's total land area (SSA, 2003). In 2000 the average population density was estimated at 43 persons per square kilometre. Prior to 1994 the province was administered as several patches of the "self-governing" areas of Lebowa and Gazankulu, the "independent state" of Venda, and part of the then Transvaal. While these territorial divisions are no longer valid, they are important when examining data distribution patterns (Tait, 1996).

During the 1996 Census the large majority of the population (89%) lived in non-urban areas (SSA, 1998). Limpopo is a typical developing area, with many rural people practising subsistence farming. Recent analysis indicated that Limpopo had its highest average real economic growth rate, 3.8% (GCIS, 2004), between 1995 and 2001. However, its Gross Geographic Product at 2001 prices was rated at R63 646 million, which translated into a 6.5% contribution (the third smallest provincial contribution) to the national Gross Domestic Product. The province's growth strategy currently focuses on addressing infrastructure backlogs, the alleviation of poverty and social development (GCIS, 2004).

Community, social and personal services; agriculture, forestry and hunting; and the wholesale and retail trade are the largest economic sectors among the employed aged 15-65 years (SSA, 2003). Citrus, tomatoes, table grapes, sunflowers, maize, cotton, peanuts, bananas, litchis, pineapples, mangoes, pawpaws, tea and coffee are grown on a commercial basis. Cattle farming, game hunting and game ranching contribute to commercial agricultural activities, while many rural people practise subsistence living. Extensive forestry plantations are found in the north, and the province has a range of minerals, including gold and platinum (GCIS, 2004). Limpopo exports primary products and imports manufactured goods and services.

Population structure

According to the 2000 ASSA estimates, 5 277 432 people lived in Limpopo, constituting 11.7% of South Africa's total population. A high proportion – 52.2% - of the province's population was female, with this female predominance being more marked in the adult age groups. In the working age groups this may be a result of male migration related to work-seeking, and in the older age groups due to the longer survival of women. The 2001 Census found that a higher proportion of the population was female (at 54.6%) than the projection. Just over 40% of the population were younger than 15 years, 56% were in their 'economically active' years (15-64), and 6% were aged 60 years or older. [Census 2001: total population 5 273 642 (790 more than ASSA), 11.8% of total population in South Africa; 54.6% female; 97.2% Black African, 0.2% Coloured, 0.2% Indian, 2.4% White.]

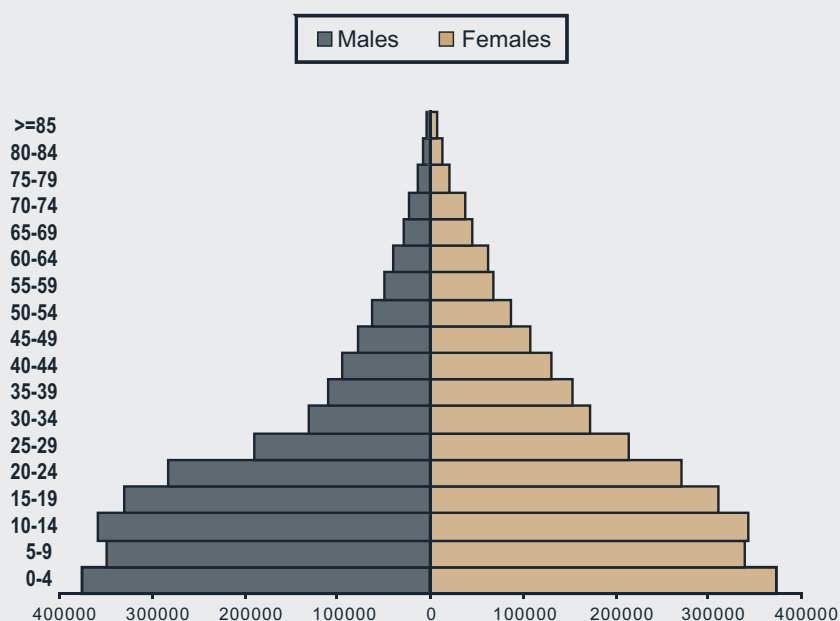


Figure LM1: Age structure of the Limpopo population, 2000

Living conditions

According to the 2001 Census, 33.4% of the population aged 20 years or more had no formal school education; 49% of those in the age group 15-64 years were unemployed, and 33% of those who were employed were in elementary occupations (SSA, 2003). Over 6 in 10 persons (61%) lived below the national poverty line in 2002 (UNDP, 2004). Just over 70% of all households lived in formal dwellings, and 7% and 20% respectively in informal and traditional structures. On average, 4.3 persons shared a household. Piped water, either in the dwelling, on site, or from a communal tap, was available in 78% of households. Almost one-quarter of households did not have access to a toilet facility, and a mere 14% had a refuse removal service once a week or more. In 25% of households electricity was used as the main source of energy for cooking, wood in 60%, and paraffin in 11%. Almost 70% of the households had a radio, 40% a television, 39% a refrigerator, 8% a telephone and 25% a cell phone (SSA, 2003).

Limpopo mortality profile

A total of 53 815 deaths were estimated for Limpopo in the year 2000. Of these, 26 404 (49.1%) were in females and slightly more, 27 410 (50.9%) in males. This is the reverse pattern to the numbers in the population. In terms of causes, half of the deaths were due to Group 1 causes including HIV/AIDS, while 40% were due to Group II causes and 10% to injuries (Figure LM2). In the case of males the proportion of injuries was higher, accounting for 15% of deaths, while the proportions of Group I and Group II deaths were lower (48% and 37% respectively) than in females. In 2000 the proportion of deaths due to HIV/AIDS was higher for females (28%) than for males (21%). The proportions of deaths due to other communicable diseases, maternal and perinatal conditions, nutritional deficiencies and non-communicable diseases were similar for males and females (27% and 25% respectively).

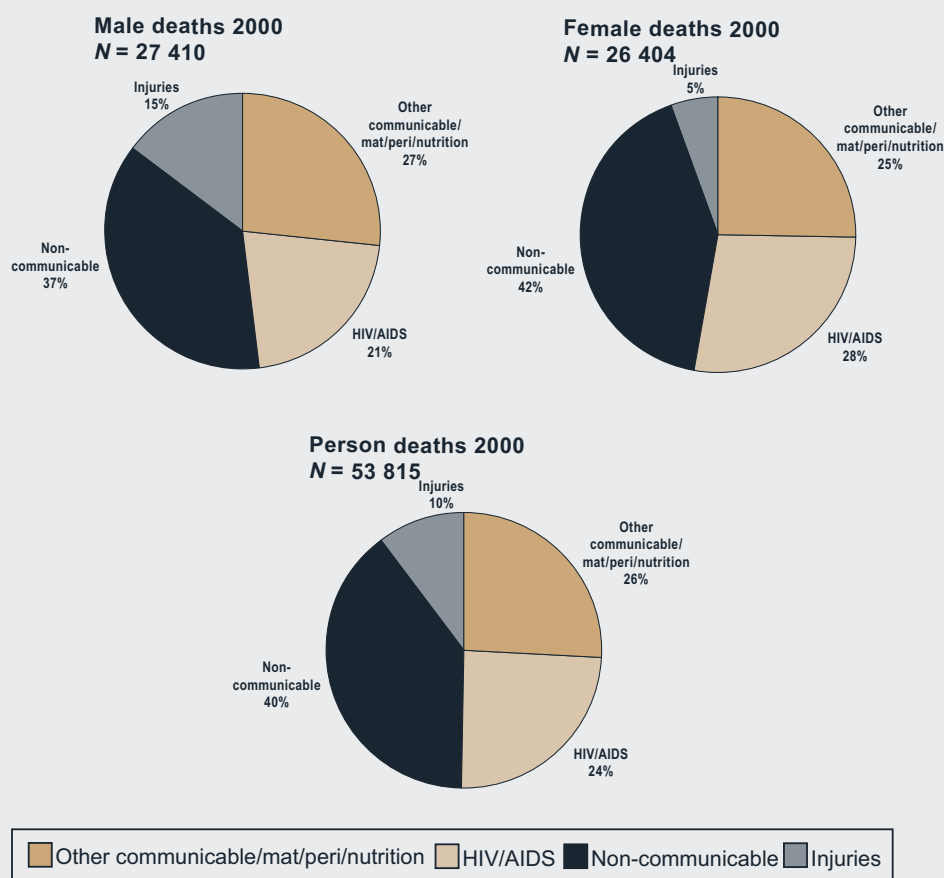


Figure LM2: Estimated deaths by Groups, Limpopo 2000

The age-specific cause of death profiles are presented in Figure LM3. The numbers of deaths are presented by five-year age intervals for the three broad Groups and HIV/AIDS. Due to particular disease and mortality profiles in children during the first year of life, the under 5 year age group is divided into infants less than 1 year old and children of 1-4 years old. Limpopo had a very high number of infant deaths, mostly due to Group I diseases and HIV/AIDS. HIV/AIDS deaths were also high in young adult men and women. Injury-related deaths were very high in male adolescents and young adult men. In older persons, most of the burden was due to non-communicable diseases.

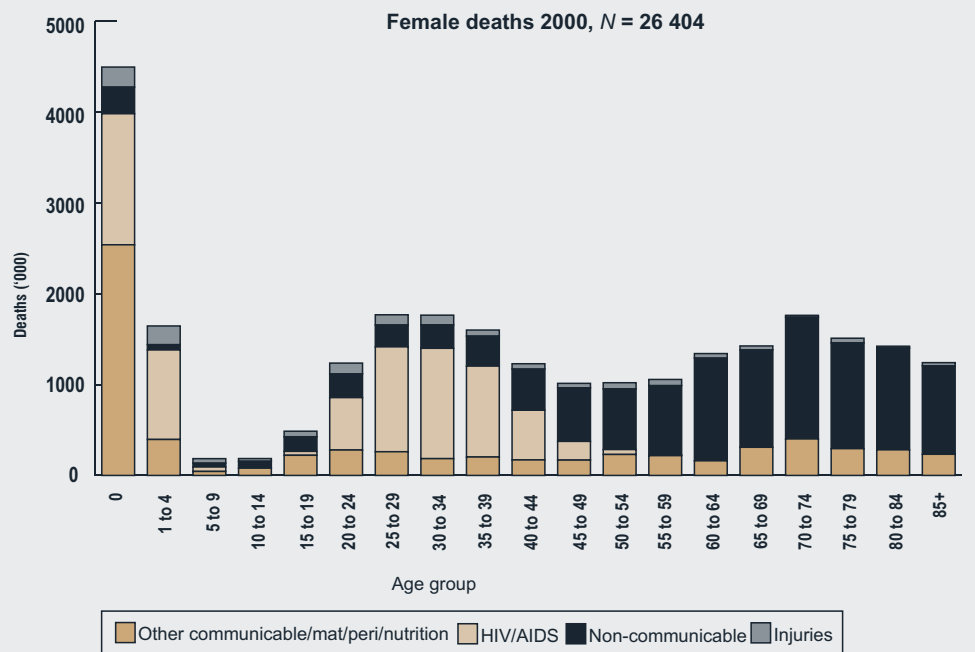
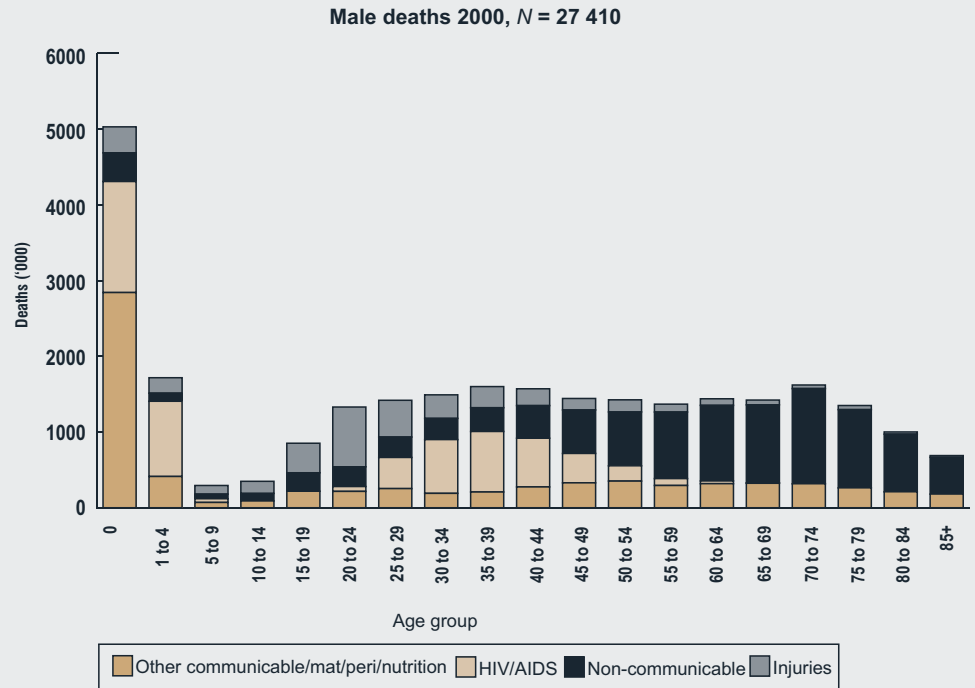


Figure LM3: Age distribution of deaths by broad Groups, Limpopo 2000

The cause of death profile for Limpopo according to major disease categories is shown in Figure LM4. This is ranked in descending order according to total number of deaths. HIV/AIDS was the leading cause of death in both men and women (24%), followed by cardiovascular disease (18%), infectious and parasitic diseases excluding HIV/AIDS (14%), malignant neoplasms and respiratory infections (6%) and intentional injuries (5%). Differences were observed between men and women, with HIV/AIDS, cardiovascular disease and diabetes accounting for a higher proportion of female than male deaths. In contrast, among the leading ten categories, other infectious and parasitic disease, intentional and unintentional injuries and respiratory disease predominated in males.

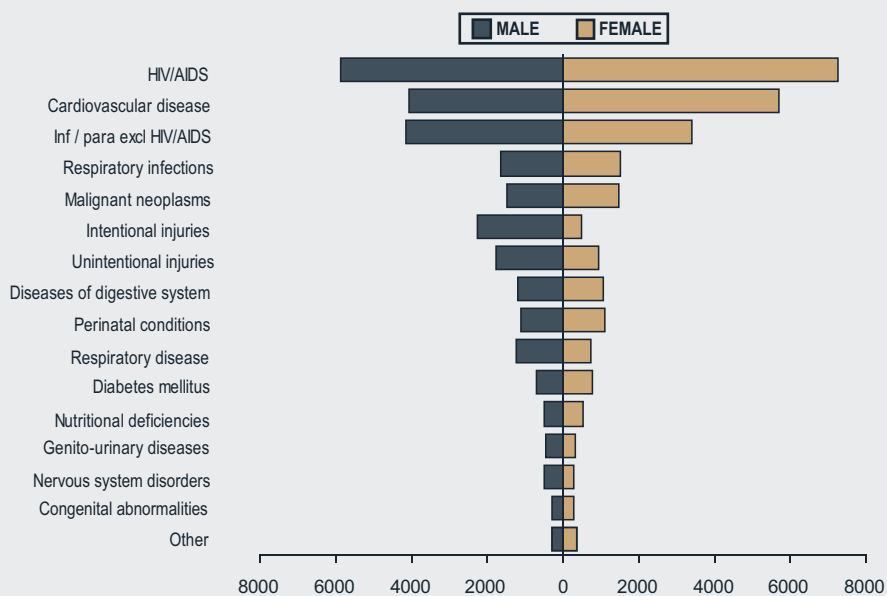


Figure LM4: Causes of death according to categories for males and females, Limpopo 2000

"Other" causes include maternal conditions, musculo-skeletal diseases, benign neoplasms, mental disorders, skin diseases, oral and sense organ conditions.

The twenty leading single causes of death in the total Limpopo population are shown in Figure LM5(a). HIV/AIDS was the largest single cause of death, accounting for 24% of all deaths during 2000. Hypertensive heart disease and diarrhoea followed, accounting for 6% and 5.8% respectively. Lower respiratory infections were the fourth leading cause of death followed by stroke. Homicide and tuberculosis were ranked sixth and seventh. Ischaemic heart disease and diabetes were among the top causes of death. Pronounced gender patterns are seen in Figure LM5(b). Hypertensive heart disease and stroke were more prominent among the women, while homicide, tuberculosis, road traffic accidents and COPD deaths were more pronounced among the men.

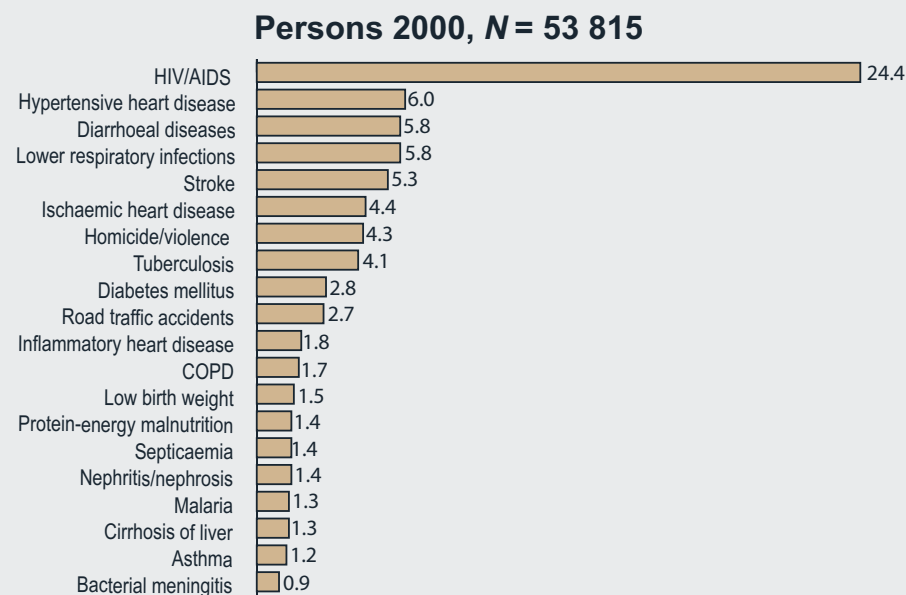


Figure LM5(a): Twenty leading single causes of death (%), Limpopo 2000

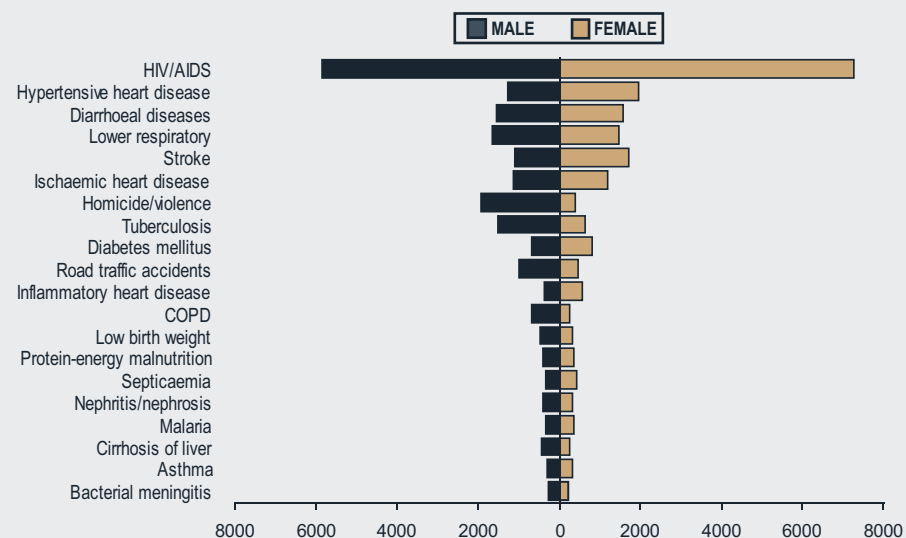


Figure LM5(b): Twenty leading single causes of death by sex, Limpopo 2000

Limpopo premature mortality

HIV/AIDS was the leading cause of premature mortality and accounted for a third of the total years of life lost (YLLs); 40% for females and 28% for males (Table LM1). Diarrhoeal diseases were the second leading cause of premature mortality among persons (7% of YLLs). Homicide/violence and road traffic accidents ranked second and fifth in men, but ranked lower in women. Injuries accounted for 7% and 19% of all YLLs lost in females and males respectively.

The top four causes of premature mortality accounted for just over half of the total loss: HIV/AIDS, homicide, diarrhoeal and lower respiratory infections.

Table LM1: Leading 20 single causes of the premature mortality burden (YLLs) by sex, Limpopo 2000

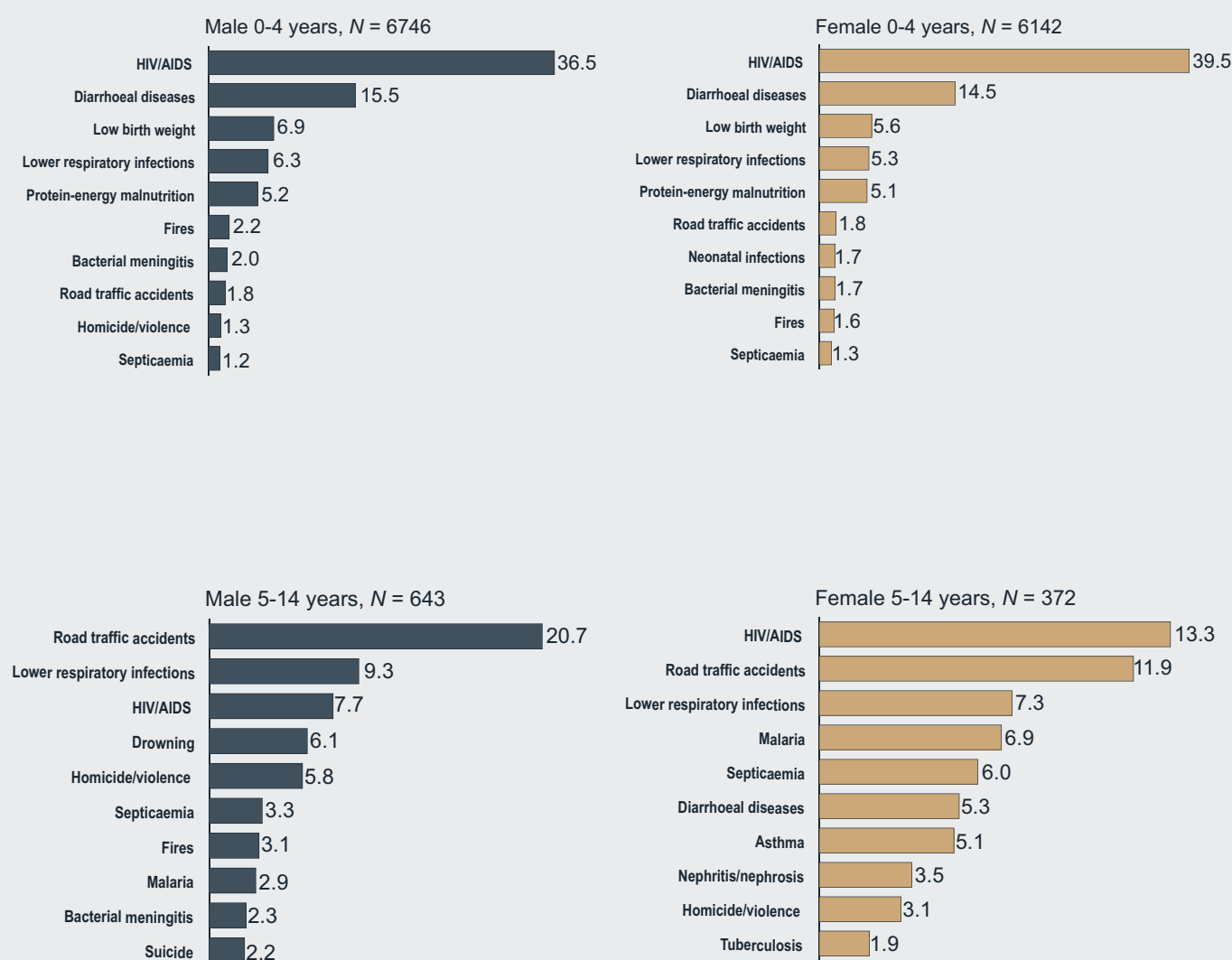
Males				Females				Persons			
Rank	Cause of death	YLLs	%	Rank	Cause of death	YLLs	%	Rank	Cause of death	YLLs	%
1	HIV/AIDS	166095	27.8	1	HIV/AIDS	218894	39.3	1	HIV/AIDS	384989	33.4
2	Homicide/violence	55208	9.2	2	Diarrhoeal diseases	39372	7.1	2	Diarrhoeal diseases	82746	7.2
3	Diarrhoeal diseases	43374	7.3	3	Lower respiratory infections	27188	4.9	3	Homicide/violence	65490	5.7
4	Lower respiratory infections	31831	5.3	4	Hypertensive heart disease	20158	3.6	4	Lower respiratory infections	59020	5.1
5	Road traffic accidents	26984	4.5	5	Stroke	14128	2.5	5	Tuberculosis	39890	3.5
6	Tuberculosis	25840	4.3	6	Tuberculosis	14050	2.5	6	Road traffic accidents	38879	3.4
7	Low birth weight	15469	2.6	7	Road traffic accidents	11895	2.1	7	Hypertensive heart disease	35132	3.0
8	Hypertensive heart disease	14975	2.5	8	Protein-energy malnutrition	11671	2.1	8	Low birth weight	26976	2.3
9	Protein-energy malnutrition	12740	2.1	9	Low birth weight	11507	2.1	9	Protein-energy malnutrition	24410	2.1
10	Ischaemic heart disease	10448	1.7	10	Homicide/violence	10283	1.8	10	Stroke	24219	2.1
11	Stroke	10090	1.7	11	Diabetes mellitus	9294	1.7	11	Ischaemic heart disease	19441	1.7
12	Suicide	8686	1.5	12	Ischaemic heart disease	8992	1.6	12	Diabetes mellitus	16260	1.4
13	Fires	8443	1.4	13	Septicaemia	8825	1.6	13	Malaria	15332	1.3
14	Bacterial meningitis	8278	1.4	14	Malaria	7899	1.4	14	Septicaemia	15175	1.3
15	COPD	8015	1.3	15	Inflammatory heart disease	7896	1.4	15	Inflammatory heart disease	14188	1.2
16	Malaria	7433	1.2	16	Cervix ca	5833	1.0	16	Fires	14175	1.2
17	Diabetes mellitus	6966	1.2	17	Fires	5733	1.0	17	Bacterial meningitis	13956	1.2
18	Septicaemia	6350	1.1	18	Asthma	5691	1.0	18	COPD	11246	1.0
19	Inflammatory heart disease	6291	1.1	19	Bacterial meningitis	5679	1.0	19	Suicide	11049	1.0
20	Nephritis/nephrosis	5975	1.0	20	Nephritis/nephrosis	4418	0.8	20	Asthma	10716	0.9
	All causes	597 238			All causes	556 524			All causes	1 153 762	

Leading causes of death among children (<15 years)

The ten leading causes of death among children under 5 years of age and children 5-14 years are shown in Figures LM6. The high under 5 mortality in this province was a result of the combination of HIV/AIDS and other communicable diseases, perinatal conditions, lower respiratory infections and nutritional deficiencies. The cause of death profiles for boys and girls were similar and the top five causes, HIV/AIDS, diarrhoea, low birth weight, lower respiratory infections and protein-energy malnutrition, accounted for just over 70% of the child deaths.

The cause of death profiles for boys and girls aged 5-14 years differed. Road traffic accidents were the leading cause of death among boys this age while HIV/AIDS was the leading cause for girls. Injuries and other infectious diseases were among the leading causes in this age group.

Figure LM6: Ten leading single causes of death (%) among children (<15 years) by sex, Limpopo 2000



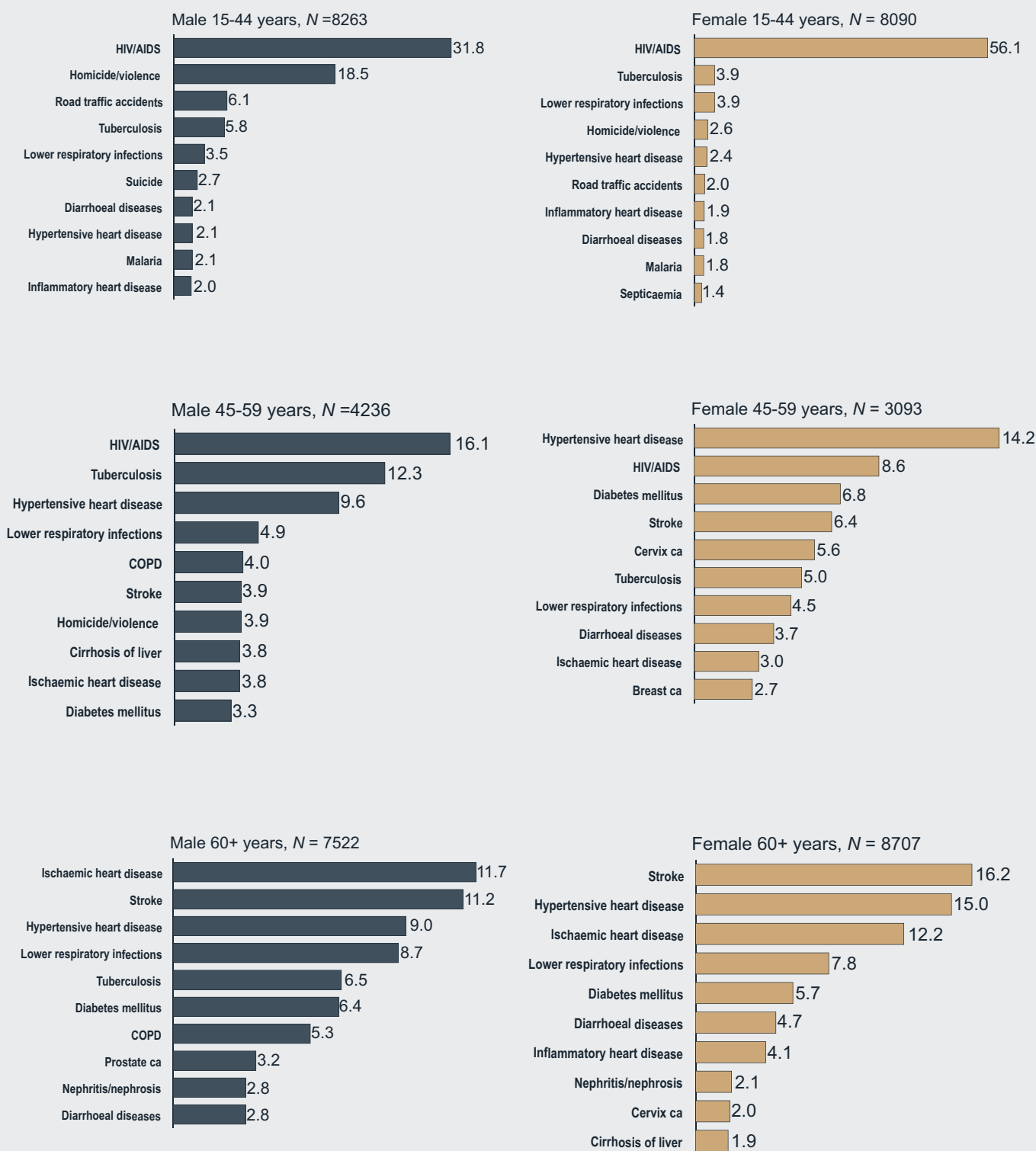
Leading causes of death among adults

The leading causes of death for adults are shown in Figure LM7. HIV/AIDS was the leading cause of death for both men and women aged 15-44 years. Several infectious diseases such as tuberculosis, lower respiratory infections, diarrhoea and malaria were among the leading causes together with several injuries including homicide, road traffic accidents and suicide. Hypertensive heart and inflammatory heart disease featured among the leading causes in young adults.

The profile for the older adults aged 45-59 years differed from the young age group with an increasing number of deaths due to non-communicable diseases and fewer deaths due to infectious diseases or injuries. Hypertensive heart disease, diabetes mellitus, stroke, ischaemic heart disease, cervical and breast cancer showed up for the women, while hypertensive heart disease, chronic obstructive pulmonary disease, stroke, ischemic heart disease and diabetes mellitus together with cirrhosis of the liver showed up for men.

Most of the burden in older persons was due to non-communicable diseases, although other infectious diseases still played a significant role. In this province, there were more female (8707) than male (7 522) deaths among older persons. Stroke was the leading cause of death among persons aged 60 years and older (Figure LM7), accounting for 16% of female and 11% of male deaths in this age group. Hypertensive heart disease and ischaemic heart disease and diabetes were among the leading causes for both men and women. Chronic obstructive pulmonary disease and prostate cancer featured in the leading causes of death for men. Lower respiratory infections, tuberculosis and diarrhoea were among the leading causes for older persons in this province.

Figure LM7: Ten leading single causes of death (%) among adults by sex, Limpopo 2000



Contrast with national profile and unexpected patterns

The population age structure of Limpopo showed that there is a deficit of men in the economically active group. The HIV/AIDS epidemic in this province is not as far advanced as it is nationally, accounting for 24% of deaths in this province compared with 30% of deaths nationally. The quadruple burden is experienced in this province, although injuries accounted for a slightly lower proportion (10%) of deaths than nationally (12%).

Mortality from conditions related to underdevelopment was high and the other pretransitional conditions excluding HIV/AIDS accounted for 26% of deaths in this province compared with 20% nationally. Diarrhoea, lower respiratory infections and protein-energy malnutrition mortality rates were high in this province. Non-communicable diseases constituted a slightly larger proportion in Limpopo (40%) than nationally (38%). Hypertensive heart disease and stroke were the leading causes of cardiovascular disease, and rates for these conditions were relatively high. Diabetes death rates and mortality from nephritis and nephrosis were also relatively high in this province. The non-communicable conditions were the leading causes among the older people aged 60 years and more. Cirrhosis of the liver had high mortality rates in this province. No cancers featured among the top causes of death, while infectious diseases predominated. Injury mortality rates were lower than the national average

MPUMALANGA PROVINCIAL PROFILE



Mpumalanga provincial profile

Background

Mpumalanga is in the north-east of South Africa, having international borders with Mozambique and Swaziland in the east, and local borders with KwaZulu-Natal and Free State in the south, Gauteng in the west, and Limpopo in the north. The province encloses 79 490 km², constituting 6.5% of the total land area of the country (SSA, 2003). In 2000 the average population density was estimated at 38 persons per square kilometre. During the 1996 Census 61% of the population lived in non-urban areas (SSA, 1998). Prior to 1994 the province territorially consisted of three patches of the self-governing area of Kangwane in the east, two patches of KwaNdebele in the north west, and one patch of the 'national state' of Bophuthatswana. These areas formed part of the so-called homelands, while the rest of the province was under the separate provincial administration of the then Transvaal. These territorial divisions are no longer valid. However, given the consolidation of the various administrations and differing levels of development, they are important when examining data distribution patterns (Tait, 1996).

The best performing sectors include mining, manufacturing and services. Mpumalanga is rich in coal reserves, explaining on the one hand very high levels of air pollution, and on the other the presence of huge power stations and the country's second petroleum-from-coal installation. Besides coal, the province also produces steel and vanadium. Extensive forestry plantations, timber processing and large paper mills further enrich the province's economy. In addition, agriculture plays an important role in the economy through sugar production, an abundance of tropical and sub-tropical fruits, maize, wheat, sunflowers, potatoes and other vegetables, nuts, cotton, wool and dairy products. The province's Gross Geographic Product at 2001 prices was R70 621 million, contributing 7.2% to the national Gross Domestic Product (GCIS, 2004).

Population structure

According to ASSA estimates for 2000, 3 054 973 people lived in Mpumalanga, constituting 6.8% of South Africa's total population. The province accommodated slightly more women than men, with men constituting 49.5% and women 50.5% of the population. Just over 35% of the population were younger than 15 years, while 62% were in their 'economically active' years (15-64), and 5% were 60 years or older. [Comparison with 2001 Census: total population 3 122 990 (ASSA had 68 017 less); 7% of total population of South Africa; 52.1% female; 92.4% Black African, 0.7% Coloured, 0.4% Indian, 6.5% White.]

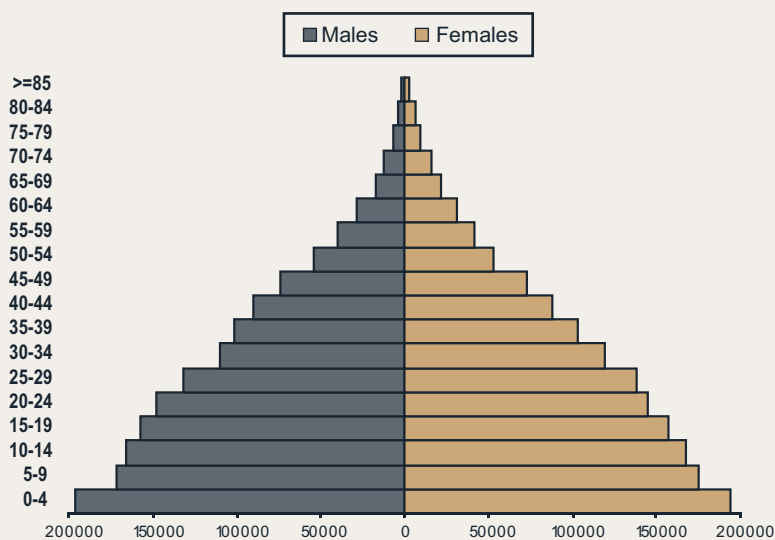


Figure MP1: Age structure of the Mpumalanga population, 2000

Living conditions

According to the 2001 Census, 27.5% of the population aged 20 years or older had no formal school education, and 41% of those in the age group 15-64 were unemployed. Almost one-third of those who were employed were in elementary occupations (SSA, 2003). Almost 55% of the province's population lived below the national poverty line in 2002 (UNDP, 2004). About 67% of all households lived in formal dwellings, and 16% and 13% in informal and traditional structures respectively. On average, 4 persons shared a household. Piped water, either in the dwelling, on site, or from a communal tap, was available in 87% of households. About 10% of households did not have access to a toilet facility, and 39% had a refuse removal service once a week or more often. In 40% of households electricity was used as the main source of energy for cooking, while wood was used in 23% and paraffin in 17%. Of the households, 74% had a radio, 50% a television, 51% a refrigerator, 15% a telephone in the dwelling, and 32% a cell phone (SSA, 2003).

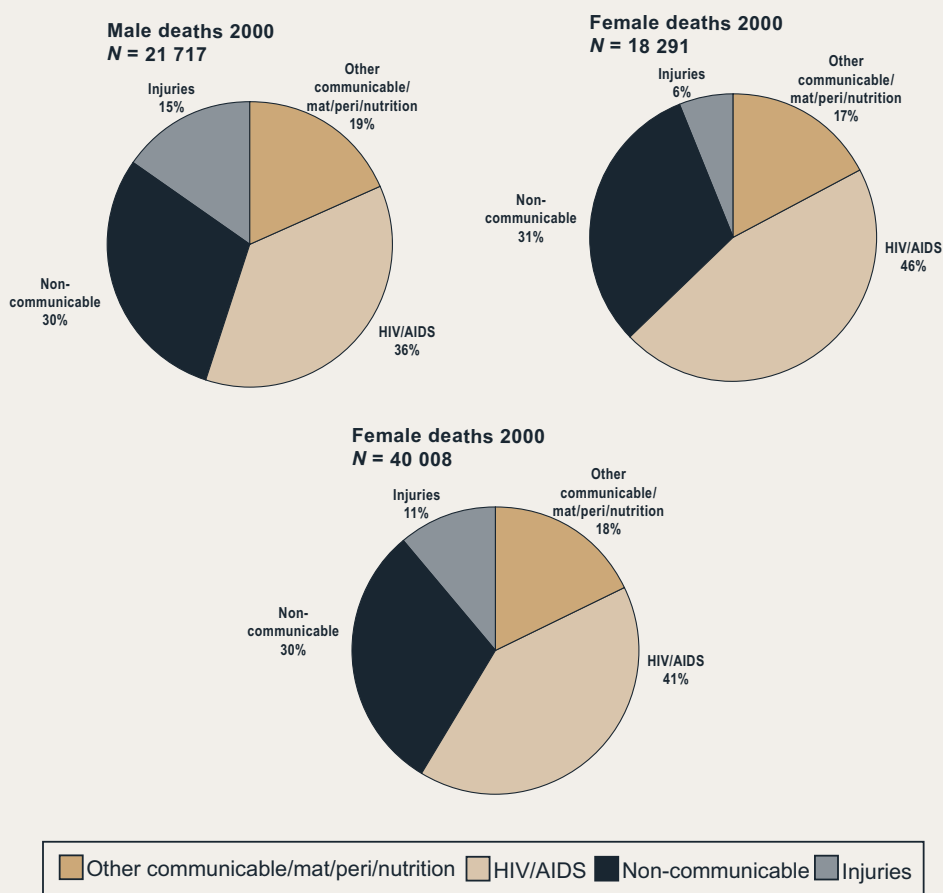


Figure MP2: Estimated deaths by Groups, Mpumalanga 2000

Mortality profile

For the year 2000 there were an estimated 40 008 deaths in Mpumalanga, in the broad Groups I, II, III and AIDS. HIV/AIDS accounted for 46% of the female deaths and 36% of the male deaths. A considerable sex difference was also visible in the proportions of deaths due to injuries, with two and a half times more injury deaths among men. The proportions of deaths in Groups I and II were very similar for men and women.

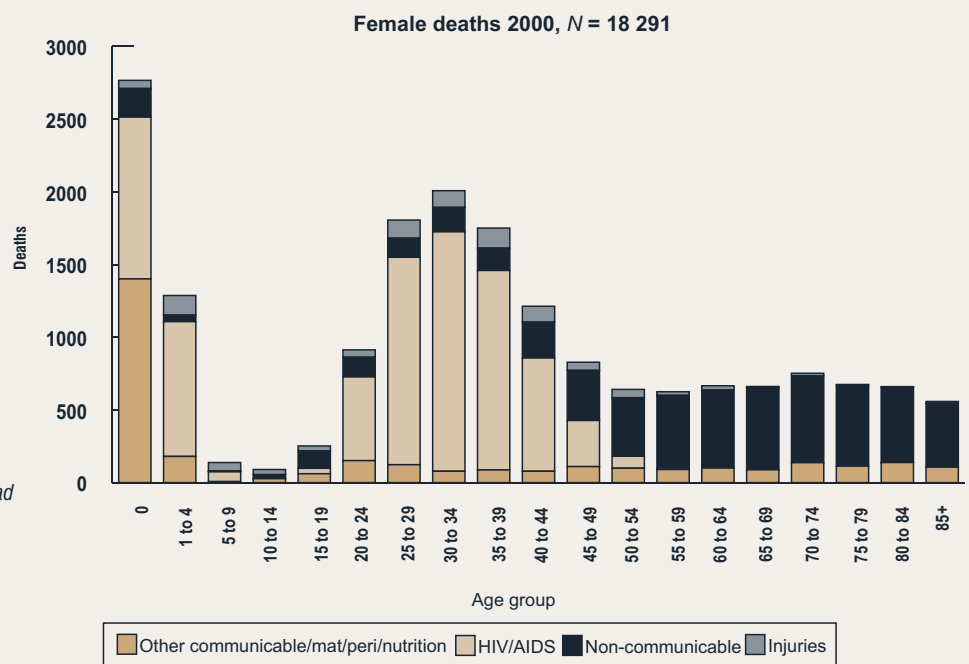
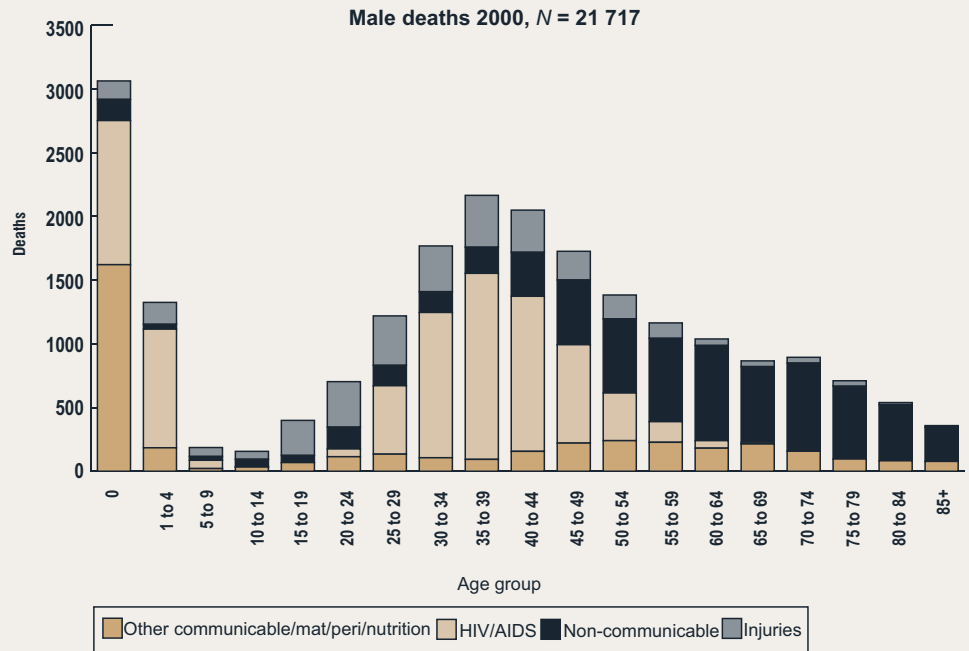
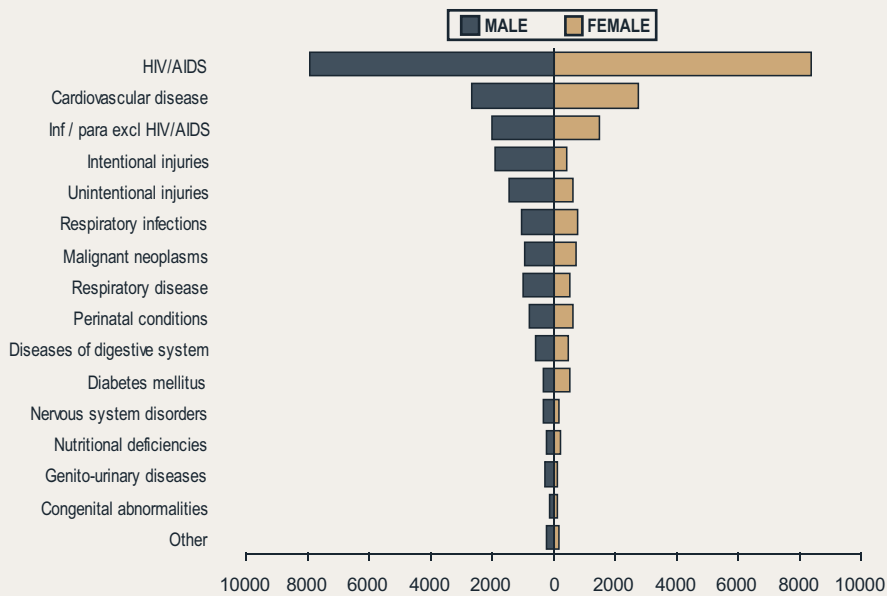


Figure MP3: Age distribution of deaths by broad Groups, Mpumalanga 2000

The age-specific cause of death profiles are presented in Figure MP3. The numbers of deaths are presented by five-year age intervals for the three broad Groups and HIV/AIDS. Due to particular disease and mortality profiles in children during the first year of life, the under 5 year age group was divided into infants less than 1 year old and children aged 1-4 years. For the infants, deaths from both HIV/AIDS and the communicable, maternal, perinatal and nutrition Group (Group I) predominated. There were more male infant deaths than female infant deaths and Group I accounted for a higher proportion of infant deaths than HIV/AIDS. For children of 1-4 years old HIV/AIDS was the main cause of death.

HIV/AIDS deaths were also exceptionally high in young adults and early middle-aged men and women (from about 20 to 54 years). Besides there being more HIV/AIDS deaths among women than men overall, there were more HIV/AIDS deaths in younger adult women than men. The number of HIV/AIDS deaths peaked for females in the 30-34-year age group, and for males in the 35-39-year age group. While injury deaths were high for young men, non-communicable deaths come to the fore as men and women age.

Each cause of death group is divided into several major categories of causes of death. Figure MP4 shows the broad cause of death categories ranked in descending order by the total number of deaths. The leading cause of death in both men and women was HIV/AIDS, followed by cardiovascular disease and infectious and parasitic disease excluding HIV/AIDS. Intentional and unintentional injuries ranked fourth and fifth respectively. Both had a larger proportion of deaths in men than in women, particularly unintentional injuries. Respiratory infections and respiratory disease ranked sixth and eighth respectively, with respiratory disease causing more deaths in males. Other disease categories ranked in the top ten (excluding HIV/AIDS) included malignant neoplasms, perinatal conditions, diseases of the digestive system and diabetes mellitus. Diabetes caused more deaths in women than in men, while the other categories accounted for more or less the same proportion of male and female deaths.



"Other" causes include endocrine and metabolic, benign neoplasms, mental disorders, maternal conditions, musculo-skeletal diseases, skin diseases, sense organ and oral conditions.

Figure MP4: Causes of death according to categories for males and females, Mpumalanga 2000

Persons 2000, N = 40 008

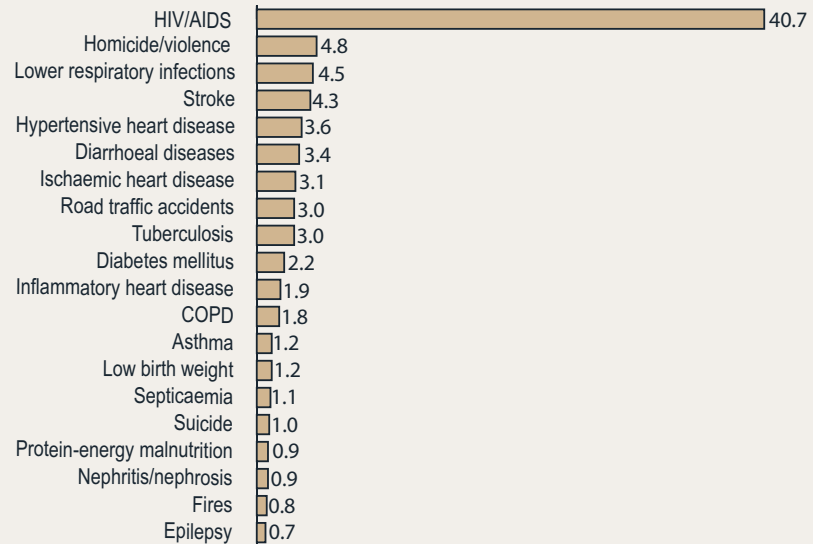


Figure MP5(a): Twenty leading single causes of death (%), Mpumalanga 2000

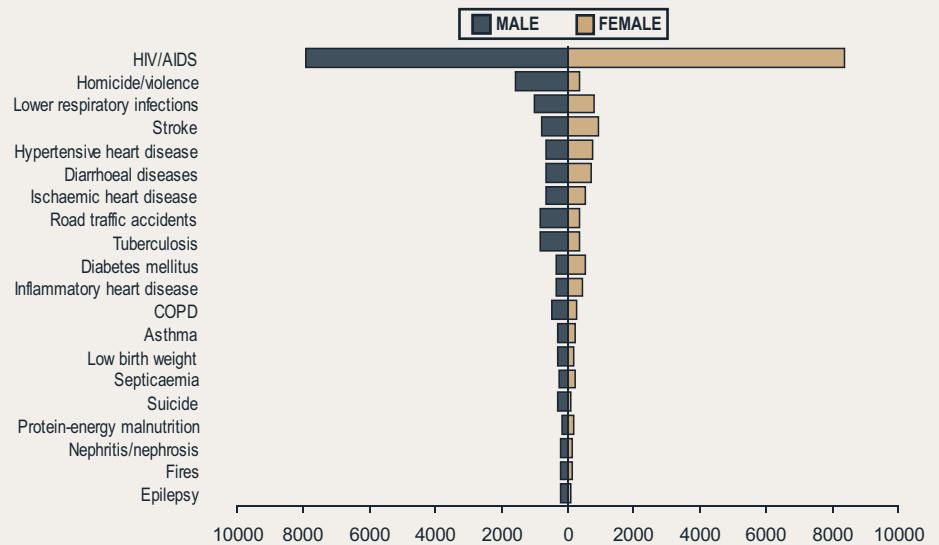


Figure MP5(b): Twenty leading single causes of death by sex, Mpumalanga 2000

The cause of death categories are further disaggregated into more specific causes of death. The twenty leading single causes of death are depicted in Figure MP5(a). HIV/AIDS accounted for 41% of all deaths in 2000, about eight times more deaths than homicide/violence, which was the next largest single cause of deaths in the province. Lower respiratory infections and stroke each accounted for less than 5% of the deaths. Hypertensive heart disease, diarrhoeal diseases, ischaemic heart disease, road traffic accidents and tuberculosis each accounted for between 3.6% and 3% of deaths.

Figure MP5(b) shows that in the top ten ranking, men had a higher number of deaths from homicide/violence, road traffic accidents and tuberculosis, as well as a slightly higher number of deaths from ischaemic heart disease than women. In addition to HIV/AIDS, women had a higher number of deaths due to stroke and diabetes mellitus than did men. For the remaining rankings, apart from inflammatory heart disease, men had higher numbers of deaths due to the various causes than women.

Premature mortality

The years of life lost (YLLs) measure does not merely consider the number of deaths, but also takes into account the age at which the death occurred. YLLs were calculated using the age weighting parameter, discounting and standard life expectancy that were used in the Global Burden of Disease Study. Table MP1 shows that HIV/AIDS plays a major role in premature mortality, accounting for the largest proportion of female (56.8%) and male (43.5%) YLLs. This can partly be explained by the large numbers of deaths due to AIDS, and partly by the large proportion of AIDS deaths that occurred in young adults and children under the age of 5 years.

Homicide/violence and road traffic accidents ranked second and third in terms of YLLs for men, while these two single causes ranked fifth and fourth respectively for women. YLLs for diarrhoeal diseases and lower respiratory infections ranked second and third respectively for women and fifth and fourth respectively for men.

Table MP1: Leading 20 single causes of the premature mortality burden (YLLs) by sex, Mpumalanga 2000

Males				Females				Persons			
Rank	Cause of death	YLLs	%	Rank	Cause of death	YLLs	%	Rank	Cause of death	YLLs	%
1	HIV/AIDS	209243	43.5	1	HIV/AIDS	244296	56.9	1	HIV/AIDS	453540	49.8
2	Homicide/violence	43131	9.0	2	Diarrhoeal diseases	18718	4.4	2	Homicide/violence	51949	5.7
3	Road traffic accidents	21591	4.5	3	Lower respiratory infections	15783	3.7	3	Diarrhoeal diseases	37630	4.1
4	Lower respiratory infections	20425	4.3	4	Road traffic accidents	9909	2.3	4	Lower respiratory infections	36208	4.0
5	Diarrhoeal diseases	18911	3.9	5	Stroke	8861	2.1	5	Road traffic accidents	31500	3.5
6	Tuberculosis	13532	2.8	6	Homicide/violence	8818	2.1	6	Tuberculosis	21305	2.3
7	Low birth weight	10042	2.1	7	Tuberculosis	7774	1.8	7	Stroke	17516	1.9
8	Stroke	8655	1.8	8	Hypertensive heart disease	6852	1.6	8	Low birth weight	15840	1.7
9	Ischaemic heart disease	7555	1.6	9	Inflammatory heart disease	6113	1.4	9	Ischaemic heart disease	12381	1.4
10	Suicide	7116	1.5	10	Low birth weight	5798	1.4	10	Hypertensive heart disease	12376	1.4
11	Septicaemia	6250	1.3	11	Protein-energy malnutrition	5677	1.3	11	Protein-energy malnutrition	11433	1.3
12	Protein-energy malnutrition	5756	1.2	12	Diabetes mellitus	5672	1.3	12	Septicaemia	11124	1.2
13	Fires	5660	1.2	13	Septicaemia	4874	1.1	13	Diabetes mellitus	10499	1.2
14	Hypertensive heart disease	5524	1.2	14	Ischaemic heart disease	4826	1.1	14	Inflammatory heart disease	10265	1.1
15	COPD	5461	1.1	15	Fires	3802	0.9	15	Fires	9461	1.0
16	Epilepsy	5203	1.1	16	Cervix ca	3706	0.9	16	Suicide	9339	1.0
17	Diabetes mellitus	4827	1.0	17	COPD	3205	0.7	17	COPD	8665	1.0
18	Inflammatory heart disease	4152	0.9	18	Asthma	2995	0.7	18	Asthma	6965	0.8
19	Asthma	3970	0.8	19	Nephritis/nephrosis	2407	0.6	19	Epilepsy	6910	0.8
20	Nephritis/nephrosis	3625	0.8	20	Suicide	2223	0.5	20	Nephritis/nephrosis	6032	0.7
All causes		480 947		All causes		429 538		All causes		910 485	

Leading causes of death among children (<15 years)

The leading ten causes of death among children under 5 years of age and children aged 5-14 years are shown in Figure MP6. Almost half the deaths in the under 5 year olds were attributed to HIV/AIDS with diarrhoeal diseases, low birth weight, lower respiratory infections and protein-energy malnutrition all among the leading causes of deaths for boys and girls.

The cause of death profiles for boys and girls aged 5-14 years differed. Road traffic accidents were the leading cause of death among boys this age while HIV/AIDS was the leading cause for girls. Injuries and other infectious diseases were among the leading causes in this age group for girls. Inflammatory heart disease was responsible for 6% of girl deaths in this age group.

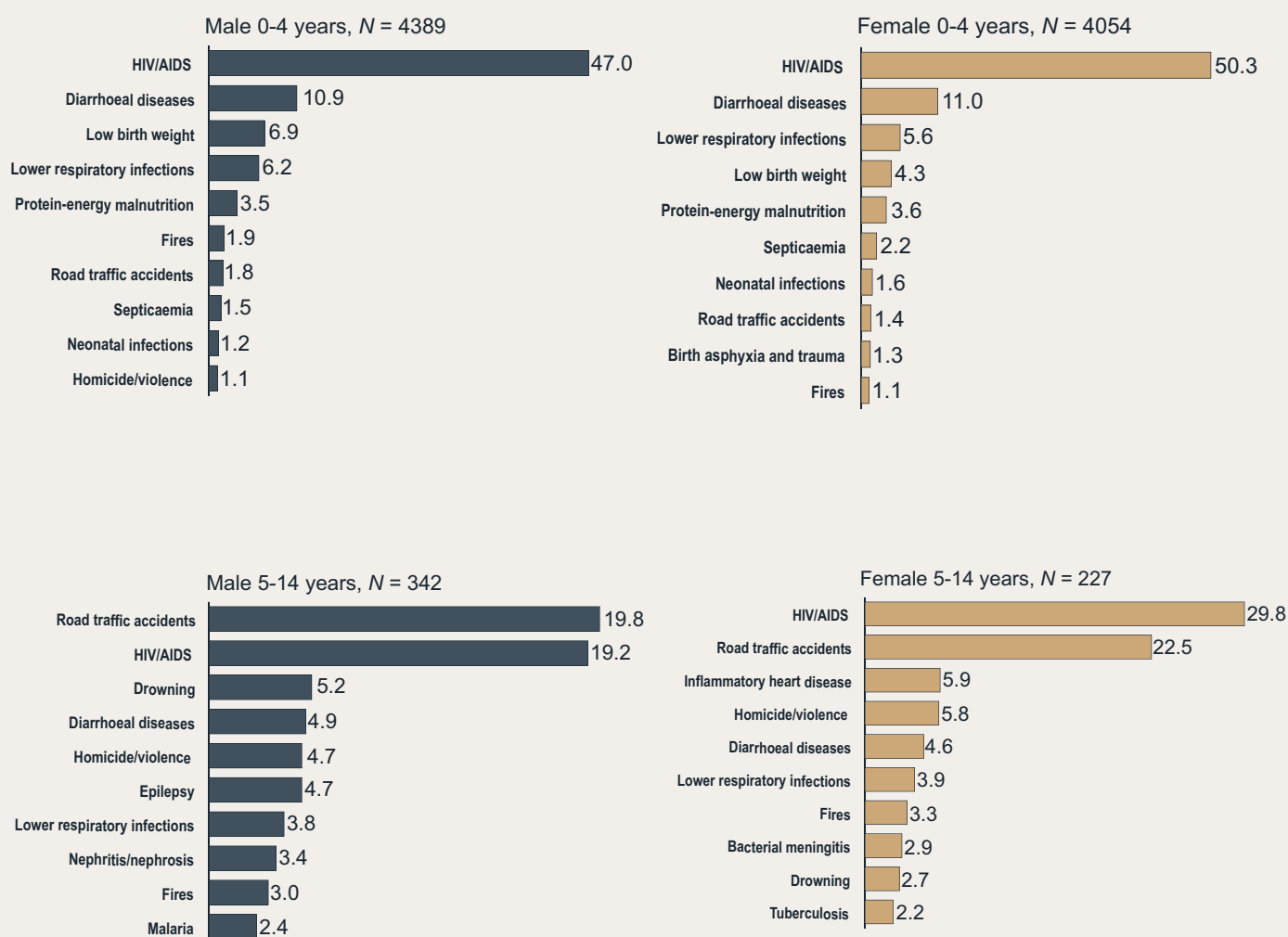


Figure MP6: Ten leading single causes of death (%) among children (<15 years) by sex, Mpumalanga 2000

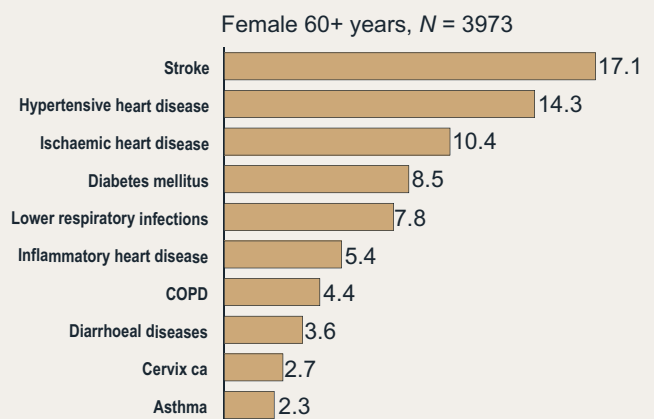
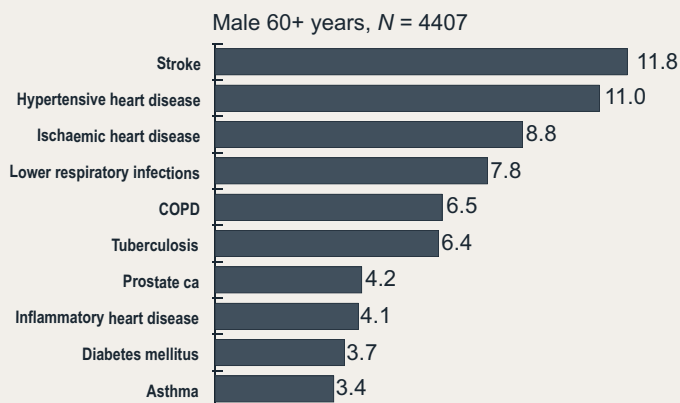
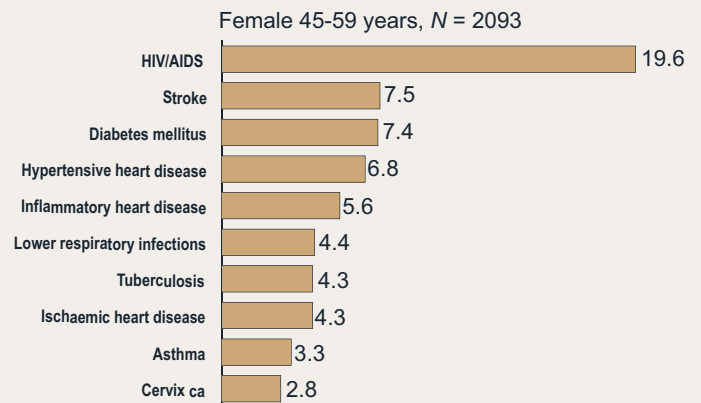
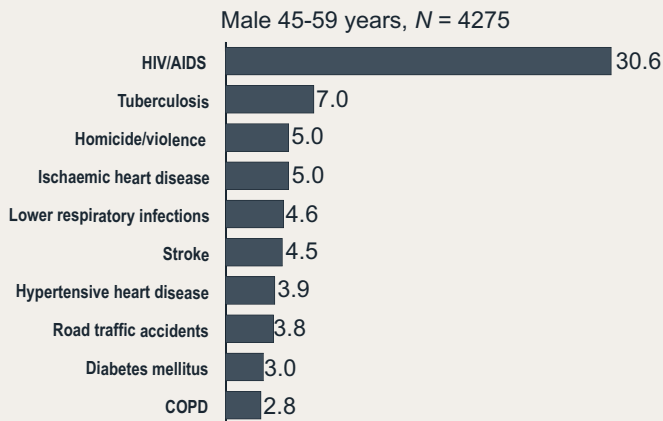
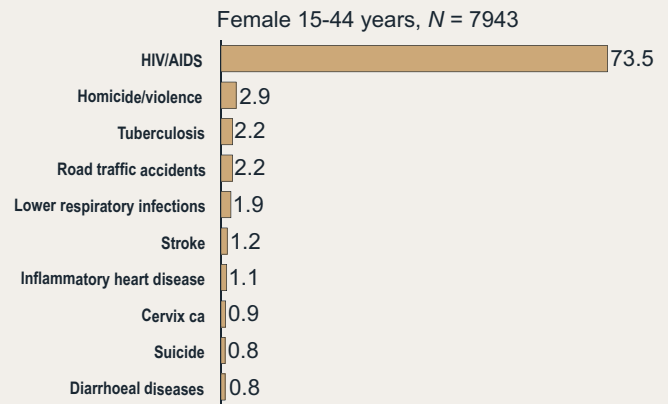
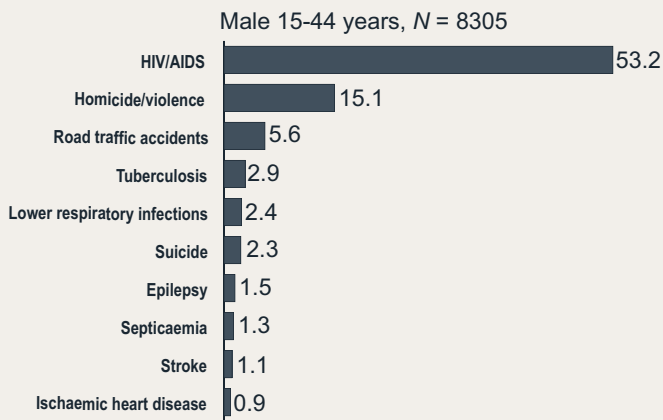
Leading causes of death among adults

The leading causes of death for adults are shown in Figure MP7. HIV/AIDS was the leading cause of death for men and women, and accounted for 53% and 30% of the deaths respectively in the 15-44 year old age group. Deaths due to road traffic accidents and homicide and violence were also high in this age group and accounted for 21% and 28% in men and women respectively. Infectious diseases such as diarrhoeal and lower respiratory infections and tuberculosis, as well as other injuries including fires, drowning and suicide featured among the leading causes in adults.

The profile for the older adults aged 45-59 years differed from the young adult age group with an increasing number of deaths due to non-communicable diseases and fewer deaths due to infectious diseases or injuries. Although HIV/AIDS was the leading cause of death in this age group, stroke, diabetes, hypertensive and ischaemic heart disease featured in both men and women. Infectious diseases such as tuberculosis and lower respiratory infections also featured in both. Injury deaths such as homicide, violence and road traffic accidents showed up in men, while cervical cancer showed up in women.

In older persons the majority of the leading ten single causes of death were non-communicable diseases, with stroke and cardiovascular disease ranked in the top three, accounting for over 30% of the deaths in the elderly (Figure MP7). Cardiovascular disease was the primary cause of death in older persons in Mpumalanga. The fourth, fifth and sixth rankings in men were deaths attributed to respiratory conditions, accounting for a further 21% of deaths. In women respiratory conditions were ranked fifth and seventh in the elderly in the province. Figure MP7 shows that stroke was responsible for more deaths in older women than older men.

Figure MP7: Ten leading single causes of death (%) among adults by sex, Mpumalanga 2000



How does Mpumalanga compare with the national profile?

Mpumalanga has a population age structure that resembles the national one. The age distribution of deaths by broad groups was also similar to the national profile.

HIV/AIDS deaths in this province were higher than nationally - 41% person deaths versus 30%. The 11% person deaths for injuries was comparable with the national figure of 12%. Similarly, deaths from Group I conditions, excluding HIV/AIDS, were 18% in Mpumalanga and 20% nationally. There were fewer deaths from non-communicable diseases in Mpumalanga than nationally.

The top ten leading single causes of death were the same for Mpumalanga as they were nationally, just the rankings differed. Noteworthy is that homicide and violence accounted for 5.8% of deaths nationally and 4.8% of the deaths in the province, and road traffic accidents accounted for about 3% of the deaths in both. Death rates due to lower respiratory infections and diarrhoea were high. For Mpumalanga the lower-ranked single causes of death were epilepsy and fire, while nationally they were lung and oesophageal cancer. Prostate and cervical cancer death rates were also higher in this province. The cardiovascular profile of this province showed high rates of death from stroke and hypertensive heart disease. Ischaemic heart disease was ranked lower and accounted for fewer deaths than it did nationally. Similarly, tuberculosis was ranked higher and accounted for a greater death burden nationally.

NORTH WEST PROVINCIAL PROFILE



North West provincial profile

Background

North West is in the central north of South Africa and is completely landlocked, bordering Botswana in the north, Limpopo and Gauteng in the east, Free State in the south, and Northern Cape in the west. The province encloses 116 320 km², constituting 9.5% of the total land area of the country (SSA, 2003). In 2000 the average population density was estimated at 32 persons per square kilometre. During the 1996 Census almost two-thirds of the population (65%) lived in non-urban areas (SSA, 1998). Prior to 1994 the province was territorially divided into six areas that made up the 'national state' of Bophuthatswana, part of the so-called independent 'homelands', and the rest of the province was under the separate provincial administrations of the then Cape Province and the then Transvaal. These territorial divisions are no longer valid, but given the consolidation of various administrations and levels of development, they are significant in terms of examining data distribution patterns (Tait, 1996).

With the largest single platinum production area in the world around Rustenburg and Brits, diamond mining at Bloemhof, Christiana, Koster and Lichtenburg, marble mining in Taung, Rustenburg and Brits, fluorspar exploitation at Zeerust, and gold and uranium mining at Klerksdorp, Orkney and Stilfontein, mining is the dominant sector of the North West economy, contributing 33% to the province's economy and 18% of the total formal employment (GCIS, 2004). Other main sectoral contributions to the province's Gross Geographic Product (GGP) are government services, trade and catering, manufacturing, finance and agriculture (DWAF & Urban-Econ, 2000). The province's GGP at 2001 prices was rated at R72 230 million, and the province contributed 7.3% to the national Gross Domestic Product (GCIS, 2004). A recent macro-economic overview of the province reported that North West is one of the poorer provinces of South Africa, and that it has a relatively small economic base compared to the other provinces (DWAF & Urban-Econ, 2000).

Population structure

According to the 2000 ASSA estimates, 3 753 128 people lived in North West, constituting 8.3% of South Africa's total population. The province accommodated slightly more women (50.3%) than men (49.7%). One-third of the population were younger than 15 years, 64% were in their 'economically active' years (15-64), and 6% were aged 60 years or older. [Comparison with 2001 Census: total population 3 669 349 (ASSA had 83 779 more); 8.2% of South Africa's total population; 50.4% female; 91.5% Black African, 1.6% Coloured, 0.3% Indian, 6.7% White.]

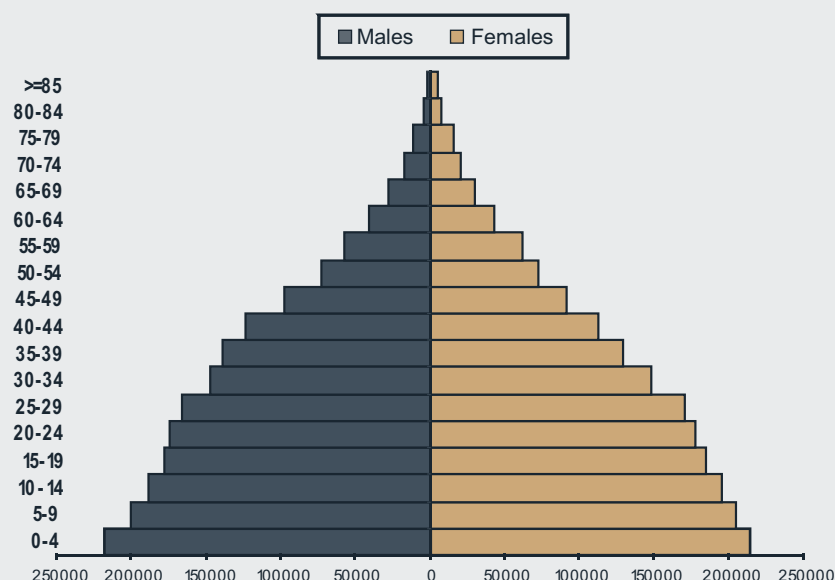


Figure NW1: Age structure of the North West population, 2000

Living conditions

According to the 2001 Census, 20% of the population aged 20 years or older had no formal school education, and 44% of those in the age group 15-64 were unemployed (SSA, 2003). Over half of the population (57%) lived below the national poverty line in 2002 (UNDP, 2004). Nearly 69% of all households in North West lived in formal dwellings, and 22% and 5% respectively in informal and traditional structures. On average 3.7 persons shared a household. The majority of households (86%) had access to piped water, either in the dwelling, on site, or from a communal tap. One in ten households did not have access to a toilet facility, while less than four in ten, 37%, had a refuse removal service once a week or more. In 45% of households electricity was used as the main source of energy for cooking, wood in 18%, and paraffin in 32%. Almost 70% of the households had a radio, 54% a television, 50% a refrigerator, 14% a telephone and 28% a cell phone (SSA, 2003).

Mortality profile

North West's mortality profiles are based on 25 246 male (55.9%) and 19 931 female (44.1%) deaths estimated for the year 2000, totalling 45 177 deaths. Figure NW2 shows causes of death for the broad Groups I, II, III and AIDS. Group I and II deaths were very similar for men and women, while the proportions of deaths due to HIV/AIDS were 27% in males and 34% in females. A considerable difference was seen in the proportions of deaths due to injuries, with three times more such deaths in men.

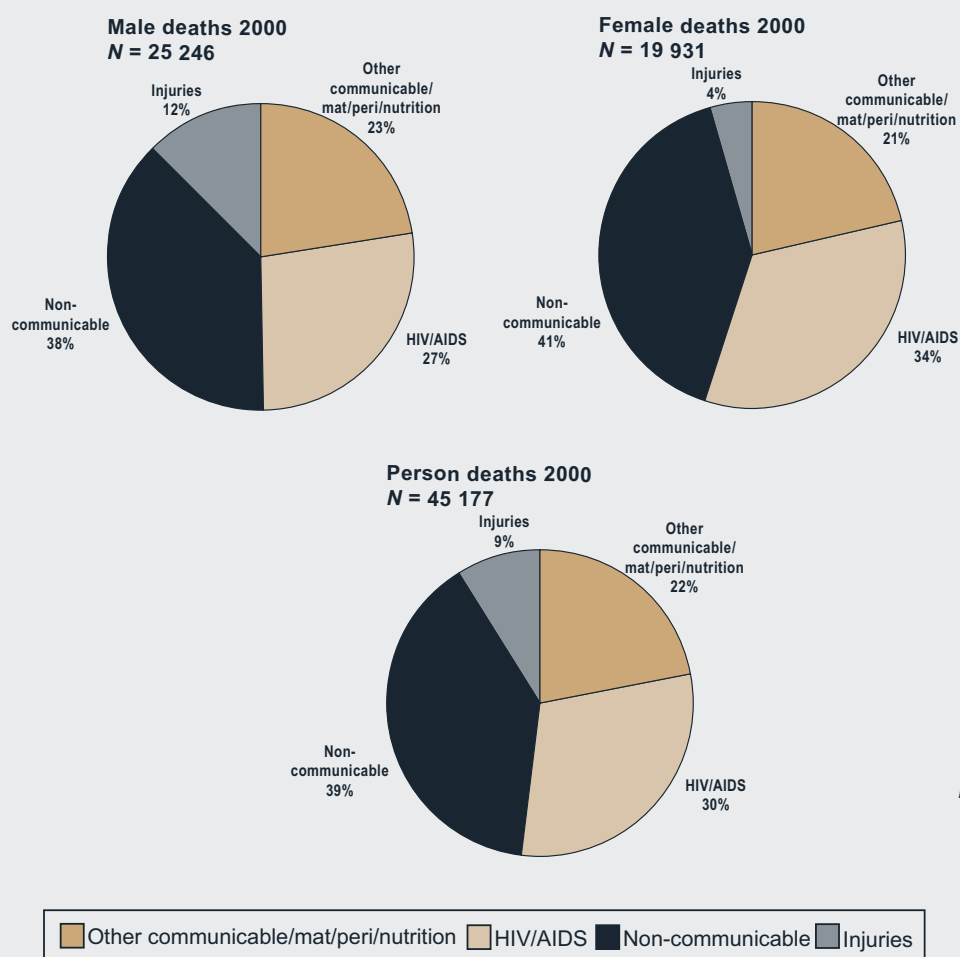


Figure NW2: Estimated deaths by Groups, North West 2000

The age-specific cause of death profiles are presented in Figure NW3. The numbers of deaths are presented by five-year age intervals for the three broad Groups and HIV/AIDS. Due to particular disease and mortality profiles in children during the first year of life, the under-5-year age group was divided into infants less than 1 year old and children of 1-4 years old. Over half of the deaths in infants were due to Group I diseases, and another third to HIV/AIDS. Over four in ten deaths in children under 5 years old were due to HIV/AIDS. HIV/AIDS deaths were also exceptionally high in young adult men and women. HIV/AIDS deaths were also exceptionally high in young adult men and women. Deaths resulting from injuries were very high in young men, while non-communicable diseases dominated in adults of 60 years or older.

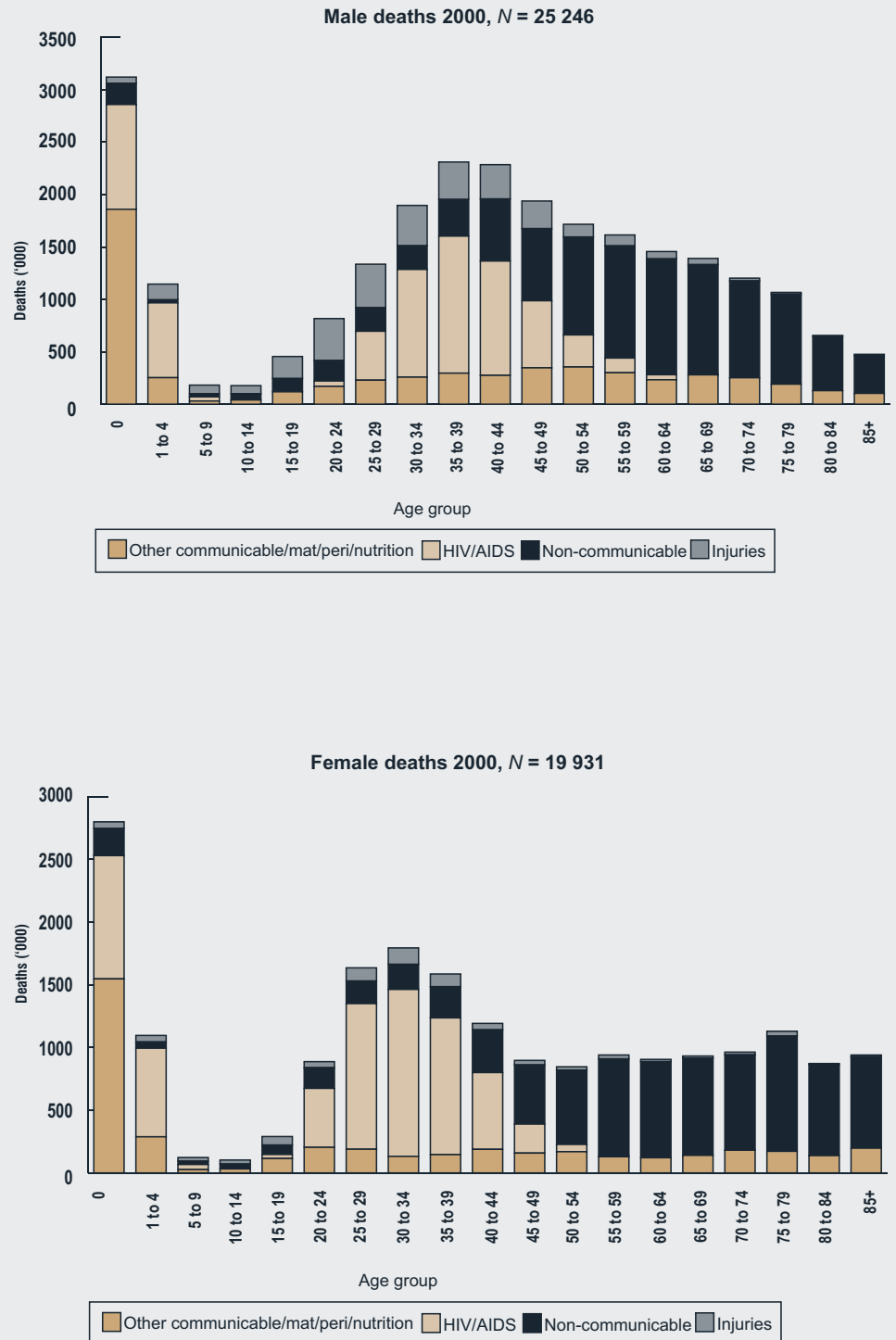


Figure NW3: Age distribution of deaths by broad Groups, North West 2000

Figure NW4 shows North West's cause of death profile for categories ranked in descending order by the total number of persons. In both men and women HIV/AIDS was the leading cause of death (30%), followed by cardiovascular disease (19%), infectious and parasitic diseases excluding HIV/AIDS (11%), respiratory infections (6%), malignant neoplasms (6%) and respiratory disease (5%). Differences were observed between men and women, with HIV/AIDS, cardiovascular disease, respiratory infections and diabetes accounting for more female than male deaths. In contrast, among the leading ten categories, other infectious and parasitic diseases, injuries, malignant neoplasms, respiratory disease, perinatal conditions and diseases of the digestive system predominated in males.

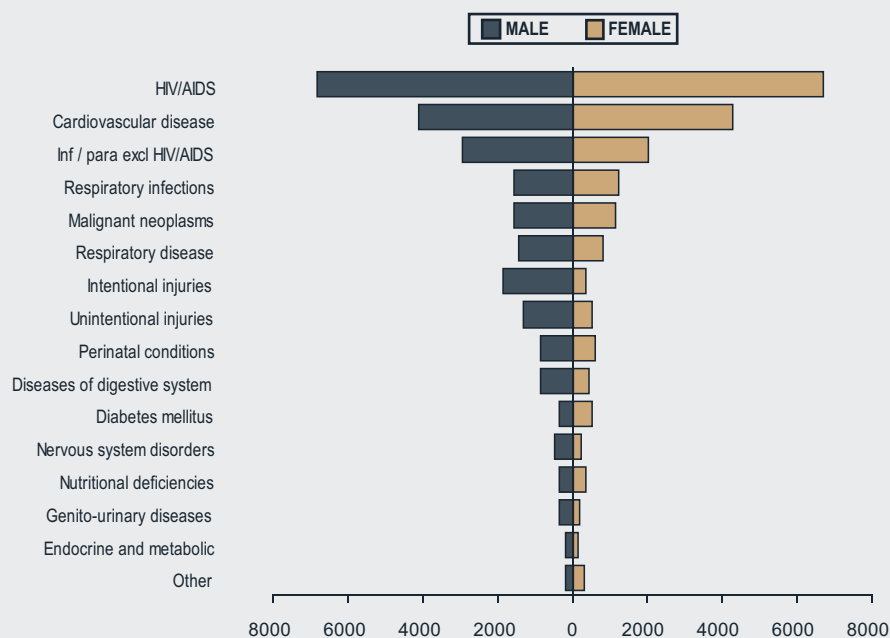


Figure NW4: Causes of death according to categories for males and females, North West 2000

"Other" causes include congenital abnormalities, benign neoplasms, maternal conditions, musculo-skeletal diseases, mental disorders, skin diseases, oral conditions and conditions of the sense organs.

The twenty leading single causes of death in the total North West population are shown in Figure NW5(a) overleaf, illustrating that HIV/AIDS was the largest single cause of death, accounting for 30% of all deaths during 2000. HIV/AIDS caused about five times more deaths than lower respiratory infections (6%), the next largest single cause. Stroke, ischaemic heart disease, tuberculosis and hypertensive heart disease were next in the ranking, each accounting for between 5% and 6% of deaths. From Figure NW5(b) it is clear that women had higher numbers of deaths due to stroke, hypertensive heart disease, diarrhoeal disease and diabetes mellitus than men, while men had higher numbers of deaths due to the remaining leading causes of death.

Persons 2000, N = 45 177

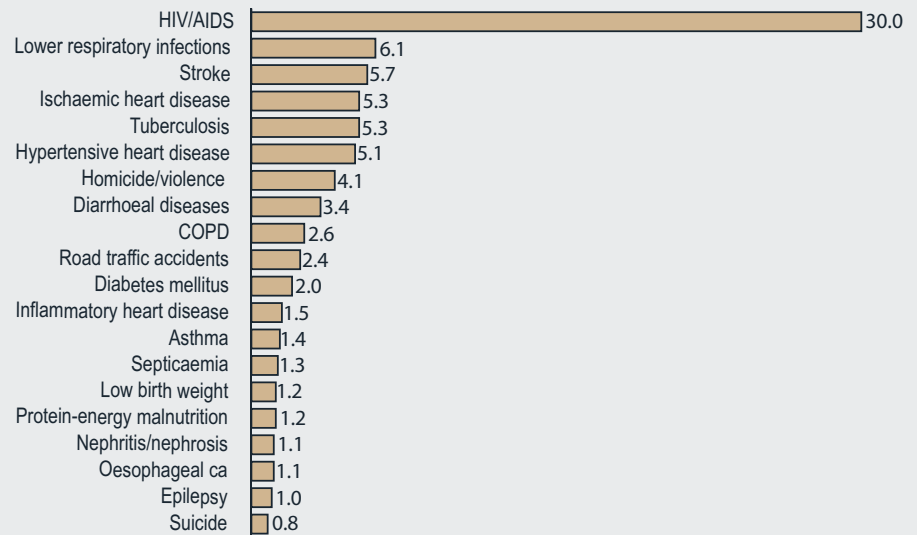


Figure NW5(a): Twenty leading single causes of death (%), North West 2000

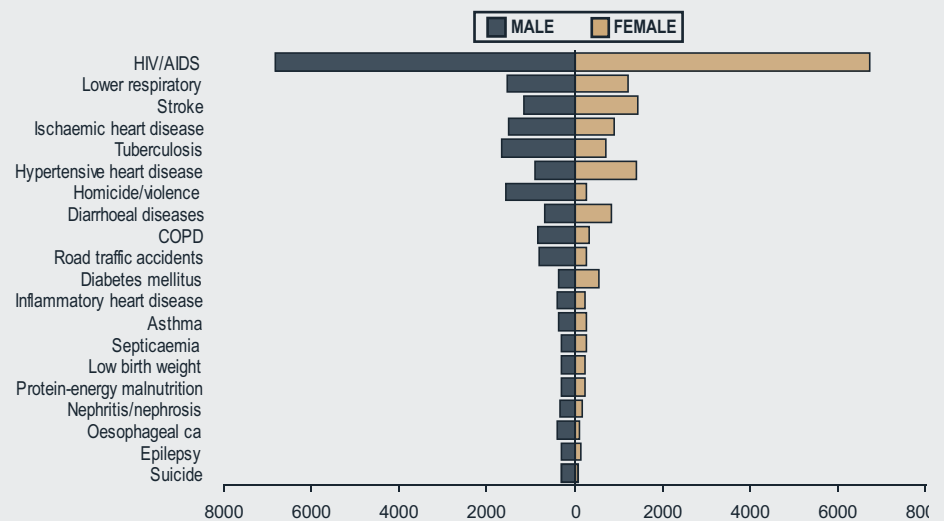


Figure NW5(b): Twenty leading single causes of death by sex, North West 2000

Premature mortality

The years of life lost (YLLs) measure does not merely consider the number of deaths, but also takes into account the age at which the deaths occurred. YLLs were calculated using the age weighting parameter, discounting and the standard life expectancy that were used in the Global Burden of Disease Study. Table NW 1 shows that HIV/AIDS played a major role in premature mortality, which can partly be explained by the large numbers of deaths due to AIDS, and partly by the large proportion of AIDS deaths that occurred in young adults and children under the age of 5 years. The proportions attributable to other causes were much smaller, lower respiratory infections, homicide/violence and tuberculosis each being responsible for 5-6% of premature loss of life in persons. Premature mortality manifested differently in men and women, with differences in the numbers and proportions of YLLs per cause of death. HIV/AIDS, for example, accounted for just under half of all YLLs in women, and about one-third in men. While homicide/violence and road traffic accidents ranked second and fifth in men, these causes ranked tenth and eleventh respectively in women, with men experiencing a four times greater premature loss of life due to these injuries ($\pm 63\ 000$ YLLs) than women ($\pm 15\ 000$ YLLs).

Table NW1: Leading 20 single causes of the premature mortality burden (YLLs) by sex, North West 2000

Males				Females				Persons			
Rank	Cause of death	YLLs	%	Rank	Cause of death	YLLs	%	Rank	Cause of death	YLLs	%
1	HIV/AIDS	180135	34.3	1	HIV/AIDS	197124	46.2	1	HIV/AIDS	377258	39.6
2	Homicide/violence	42231	8.0	2	Lower respiratory infections	24667	5.8	2	Lower respiratory infections	53083	5.6
3	Tuberculosis	32553	6.2	3	Diarrhoeal diseases	21364	5.0	3	Homicide/violence	49790	5.2
4	Lower respiratory infections	28416	5.4	4	Tuberculosis	16320	3.8	4	Tuberculosis	48873	5.1
5	Road traffic accidents	21026	4.0	5	Stroke	14371	3.4	5	Diarrhoeal diseases	41110	4.3
6	Diarrhoeal diseases	19747	3.8	6	Hypertensive heart disease	11875	2.8	6	Road traffic accidents	28443	3.0
7	Ischaemic heart disease	17073	3.3	7	Ischaemic heart disease	9231	2.2	7	Stroke	27315	2.9
8	Stroke	12943	2.5	8	Low birth weight	8103	1.9	8	Ischaemic heart disease	26304	2.8
9	Low birth weight	10309	2.0	9	Protein-energy malnutrition	7892	1.9	9	Hypertensive heart disease	20815	2.2
10	COPD	9915	1.9	10	Homicide/violence	7558	1.8	10	Low birth weight	18412	1.9
11	Hypertensive heart disease	8940	1.7	11	Road traffic accidents	7417	1.7	11	Protein-energy malnutrition	16696	1.8
12	Protein-energy malnutrition	8804	1.7	12	Septicaemia	6089	1.4	12	COPD	14374	1.5
13	Epilepsy	7061	1.3	13	Diabetes mellitus	5768	1.4	13	Septicaemia	12150	1.3
14	Suicide	7042	1.3	14	COPD	4459	1.0	14	Epilepsy	10433	1.1
15	Septicaemia	6060	1.2	15	Cervix ca	4323	1.0	15	Diabetes mellitus	10118	1.1
16	Inflammatory heart disease	5848	1.1	16	Asthma	4048	1.0	16	Asthma	9368	1.0
17	Asthma	5320	1.0	17	Epilepsy	3372	0.8	17	Suicide	9066	1.0
18	Nephritis/nephrosis	5259	1.0	18	Breast ca	3347	0.8	18	Inflammatory heart disease	8860	0.9
19	Oesophageal ca	4848	0.9	19	Inflammatory heart disease	3011	0.7	19	Nephritis/nephrosis	7857	0.8
20	Fires	4673	0.9	20	Bacterial meningitis	2752	0.6	20	Fires	7389	0.8
	All causes	525 973			All causes	426 801			All causes	952 774	

Leading single causes of death among children (<15 years)

The ten leading causes of death in children 0-4 years old, and in those 5-14 years old, are shown by sex in Figure NW6. HIV/AIDS deaths in under 5 year olds were exceptionally high, followed by two more infectious causes, a perinatal condition and a nutritional deficiency. The leading five causes in children under 1 year reflect the same pattern (not displayed here), with one in four infants dying from HIV/AIDS, followed by other Group I causes. In girls 5-14 years old, HIV/AIDS remains the largest cause of death, while in boys of this age group, road traffic accidents accounted for the largest cause of death. Particularly in boys, but also in girls 5-14 years old, injuries take up a prominent presence in the leading ten causes of death as drowning, homicide/violence and fires are added to road traffic accidents. The presence of epilepsy and tuberculosis, both manageable conditions, is observed.

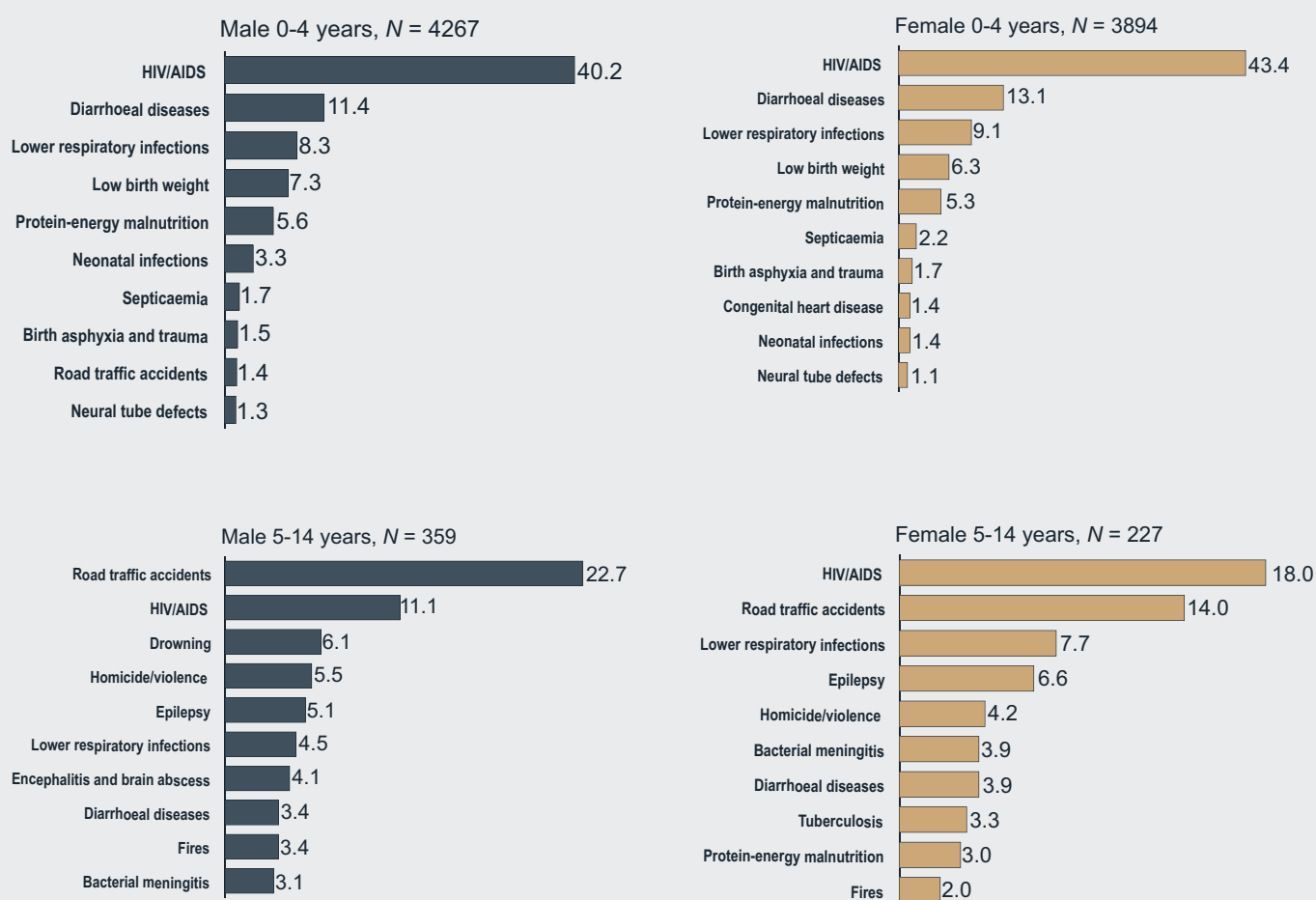


Figure NW6: Ten leading single causes of death (%) among children (<15 years) by sex, North West 2000

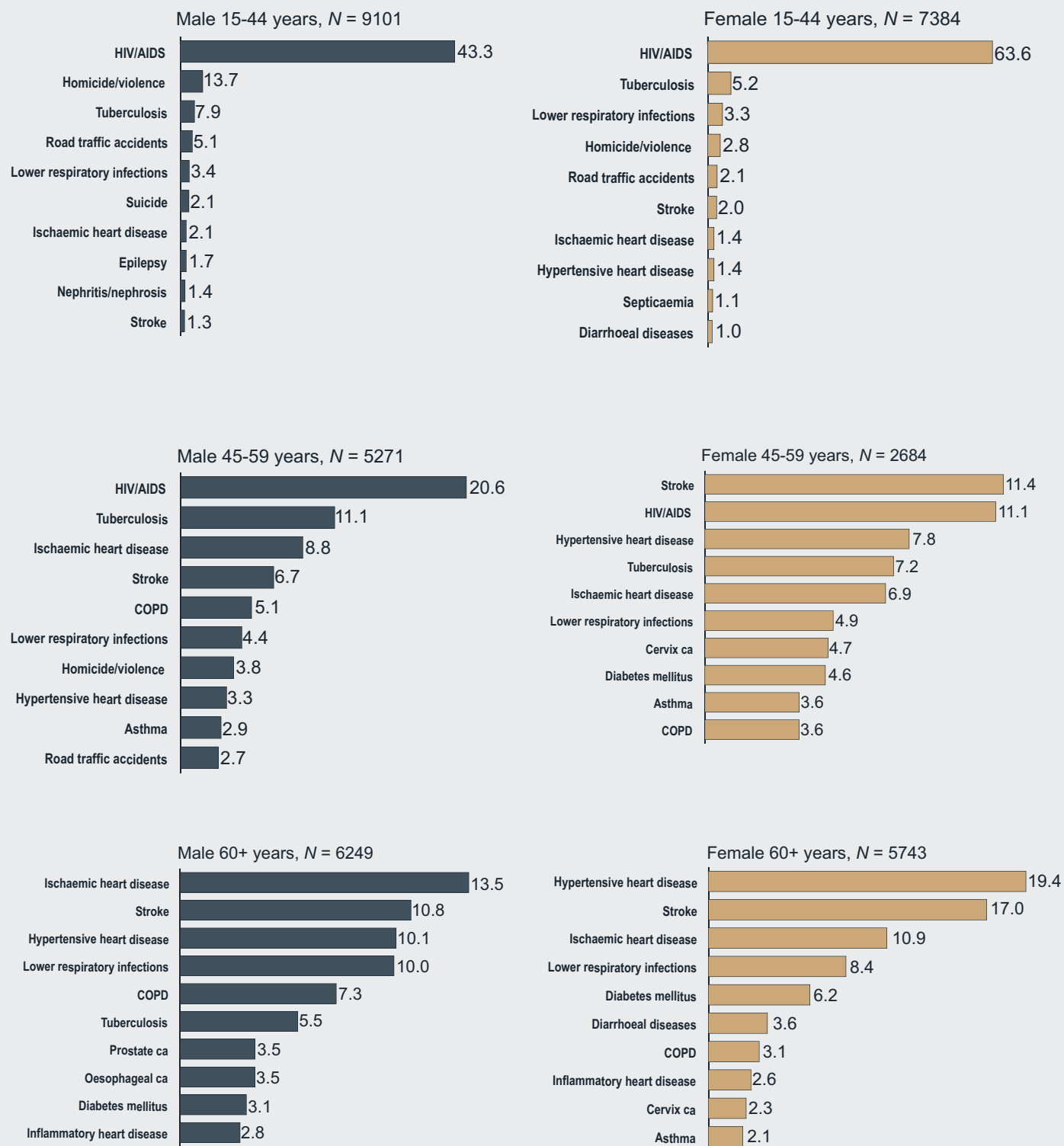
Leading causes of death among adults

Figure NW7 presents the 10 leading single causes of death in men and women in the age groups 15-44 years, 45-59 years and those 60 years or older. In young adults 15-44 years old, HIV/AIDS was by far the leading cause of death, responsible for catastrophic proportions in young women (64%). In both men and women, homicide/violence, tuberculosis, road traffic accidents and lower respiratory infections accounted for the subsequent four causes of death, though these causes differed by sex in their ranking.

In the age group 45-59 years, HIV/AIDS was responsible for the largest cause of death in men and the second largest in women. Stroke accounted for a negligibly higher proportion than HIV/AIDS in women. The proportion of HIV/AIDS deaths in men was about double the proportion in women. While HIV/AIDS held a dominating position in the leading 10 causes in this age group, diseases of lifestyle were responsible for five of the leading 10 causes in men, and for seven in women, accounting for over a quarter of male deaths, and over 40% of female deaths.

In the age group 60 years or older, most of the ten leading causes of death were from non-communicable conditions, with lower respiratory infections, tuberculosis and diarrhoeal disease the only communicable diseases among the leading causes. In both older men and older women, ischaemic heart disease, stroke and hypertensive heart disease were the leading single causes of death, with differing ranking and proportions by sex. Another cardiac condition, inflammatory heart disease, was present among the leading causes in older persons. Diabetes, being the fifth largest cause in women, and malignant neoplasms accounted for the remaining positions in the top ten causes among older persons.

Figure NW7: Ten leading single causes of death (%) among adults by sex, North West 2000



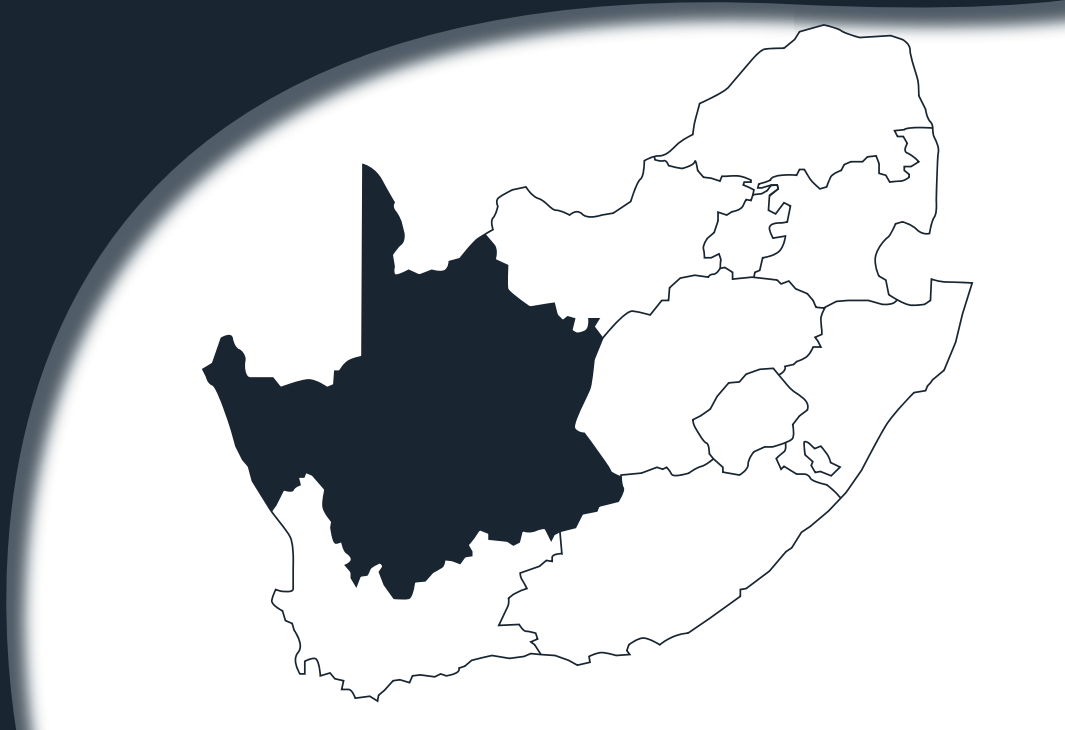
How does North West compare with the national profile?

The cause of death profile for North West is similar to the country's national profile. In the broad Groups, injuries in North West (9%) constituted a smaller proportion than nationally (12%), while non-communicable diseases constituted a larger proportion in North West (39%) than nationally (38%).

Tuberculosis and lower respiratory infections accounted for higher mortality rates in this province than nationally. In contrast, lower respiratory infections ranked second in North West, but sixth nationally. This province experienced higher cardiovascular disease mortality rates as a result of high rates for stroke and hypertensive heart disease. Cancer mortality was slightly lower than the national average overall, but prostate, cervical, and breast cancer rates were markedly higher in this province. Epilepsy, which is a manageable condition, ranked as the nineteenth largest cause of death in the North West population. Injury mortality rates were slightly lower in this province, and homicide/violence, which ranked second nationally, ranked seventh in North West.

Similar to the pattern in the total population, lower respiratory infections in children under 1 and under 5 years of age ranked higher in North West than nationally. In both these child populations neural tube defects also ranked higher in North West than nationally.

NORTHERN CAPE PROVINCIAL PROFILE



Northern Cape provincial profile

Background

Northern Cape is in the north-west of South Africa, having international borders with Botswana and Namibia, and local borders with Western Cape and Eastern Cape in the south, and Free State and North West in the east. The province encloses 361 830 km², constituting 29.7% of the total land area of South Africa (SSA, 2003). In 2000 the average population density was estimated at 3 persons per square kilometre, by far the lowest density of all the provinces. During the 1996 Census 29.9% of the population lived in non-urban areas (SSA, 1998).

Northern Cape's major airports are at Kimberley, the capital, and Upington. The Northern Cape is serviced by an excellent road network, which makes it easily accessible from South Africa's major cities, harbours and airports. Upington is the centre of the karakul sheep and dried fruit industries, and the most northerly wine-making region in South Africa. Sutherland is the coldest town in the country, and sheep-farming towns are Carnarvon, Colesberg, Kenhardt and Prieska. The province has several national parks and conservation areas. The economy of the interior Karoo depends on sheep farming, while the karakul pelt industry is one of the most important in the Gordonia district of Upington. The province has fertile agricultural land; at Upington, Kakamas and Keimoes, grapes and fruit are intensively cultivated. Table grapes are mainly produced for export.

Northern Cape is rich in minerals. The country's chief diamond pipes are found in the Kimberley district. Between Alexander Bay and Port Nolloth, alluvial diamonds are extracted from the beaches and sea. The Sishen Mine near Kathu is the biggest source of iron ore in South Africa, and the copper mine at Okiep is one of the oldest in the country. Copper is also mined at Springbok and Aggenys. The province is also rich in asbestos, manganese, fluorspar, semi-precious stones and marbles. The province's Gross Geographic Product at 2001 prices was rated at R19 585 million, contributing 2% to the national Gross Domestic Product (GCIS, 2004).

Population structure

According to the 2000 ASSA estimates 955 010 people lived in Northern Cape, constituting 2.1% of South Africa's total population. The province accommodated slightly more women (50.7%) than men (49.3%). Just over 31% of the population were younger than 15, 64% were in their 'economically active' years (15-64), and 7.3% were aged 60 years or more. [Comparison with 2001 Census: total population 822 727 (ASSA had 132 283 more); 1.8% of South Africa's population; 51.2% female; 35.7% Black African, 51.6% Coloured, 0.3% Indian, 12.4% White.]

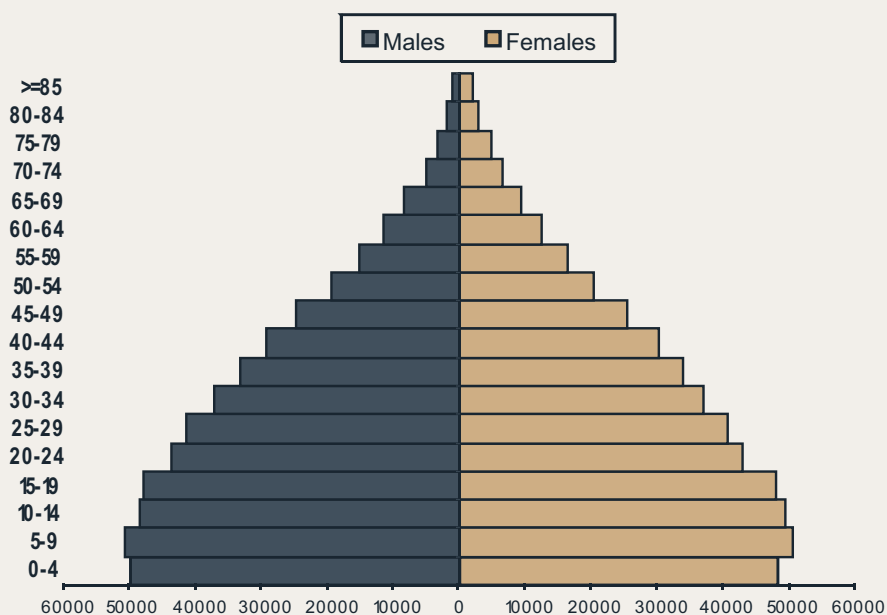


Figure NC1: Age structure of the Northern Cape population, 2000

Living conditions

According to the 2001 Census 18% of the population aged 20 years or older had no formal school education, and over 33% of those in the age group 15-64 years were unemployed (SSA, 2003). Over 54% of the province's population lived below the national poverty line in 2002 (UNDP, 2004). About 80% of all households lived in formal dwellings, and nearly 13% and 4% respectively in informal and traditional structures. On average, 3.8 persons shared a household. Piped water, either in the dwelling, on site, or from a communal tap was available in 97% of households. Over 11% of households did not have access to a toilet facility, and 69% had a refuse removal service once a week or more often. In 59% of households electricity was used as the main source of energy for cooking, wood in 15%, and paraffin in 18%. Of the households, 68% had a radio, 56% a television, 56% a refrigerator, 30% a telephone and 26% a cell phone (SSA, 2003).

Mortality profile

Northern Cape's mortality profile is based on 5495 (56%) male and 4314 (44%) female deaths estimated for the year 2000, a total of 9809 deaths. Figure NC2 shows causes of death for the broad Groups I, II, III and HIV/AIDS. Group I and II deaths were similar for men and women, while the proportions of deaths due to HIV/AIDS were 12% in males and 16% in females. There is double the number of deaths from injury in males than in females.

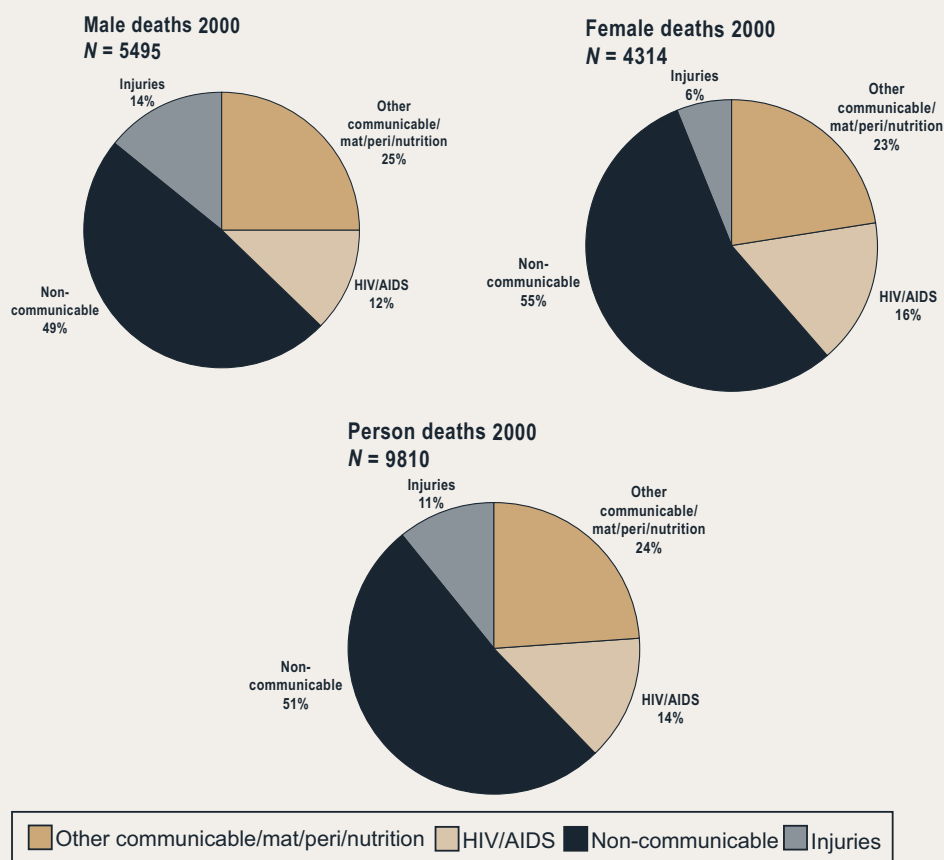


Figure NC2: Estimated deaths by Groups, Northern Cape 2000

The age-specific cause of death profiles are presented in Figure NC3. The number of deaths is presented by 5-year intervals for the three broad Groups and HIV/AIDS. Due to particular disease and mortality profiles in children during the first year of life, the under 5 year age group was divided into infants less than 1 year old and children aged 1-4 years. More than two-thirds of deaths in infants were due to Group I diseases and another quarter to HIV/AIDS. Half of the deaths in those under 5 were due to HIV/AIDS. HIV/AIDS was also the leading cause of death in young women. Injuries were the leading cause in young men, and non-communicable diseases in adults over 60 years of age.

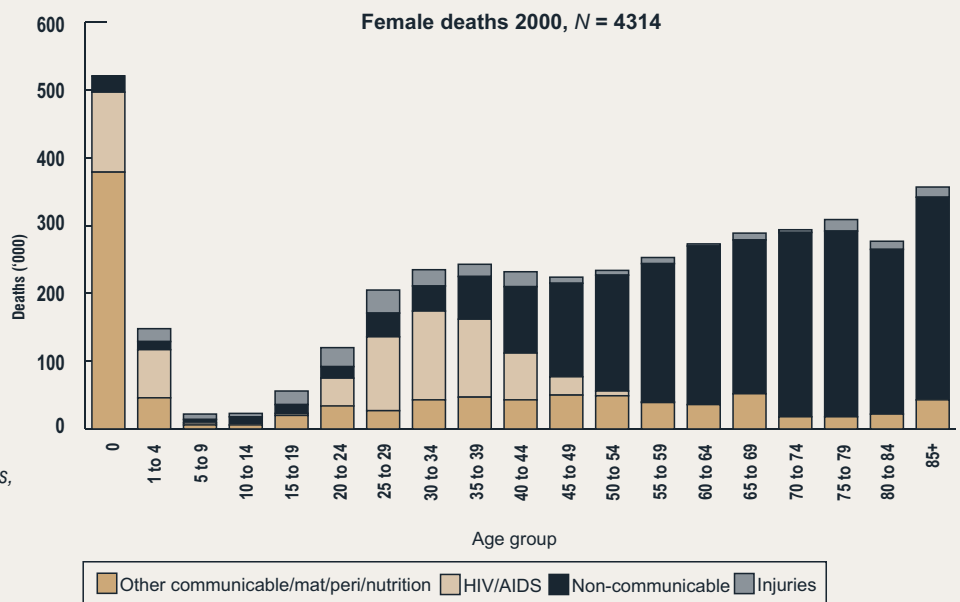
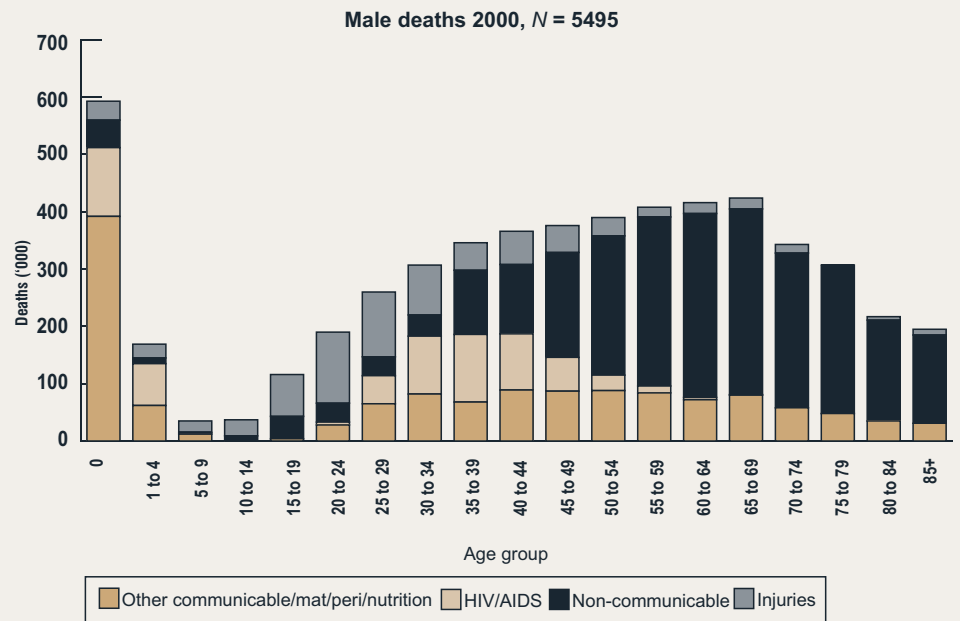


Figure NC3: Age distribution of deaths by broad groups, Northern Cape 2000

Figure NC4 shows Northern Cape's cause of death profile, with categories ranked in descending order according to total deaths. In both men and women cardiovascular disease (24%) was the leading cause of death, followed by HIV/AIDS (14%), infectious and parasitic diseases excluding HIV/AIDS (13%), malignant neoplasms (10%), and respiratory disease (7%). Considerable gender differences are observed with females experiencing 8% and 4% more cardiovascular diseases respectively than males. Males suffer 4% more death from infections and parasitic diseases excluding HIV/AIDS and 6% more intentional injuries than females.

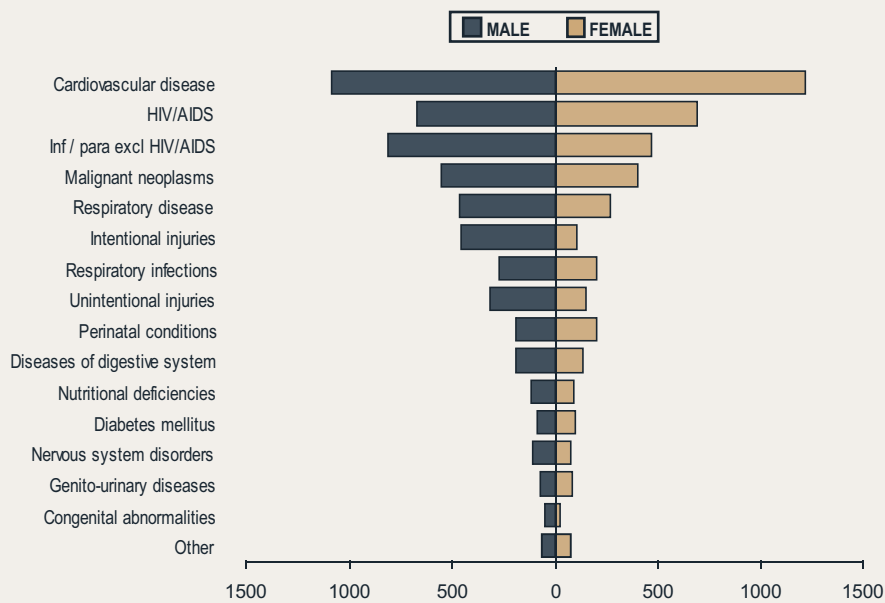


Figure NC4: Causes of death according to categories for males and females, Northern Cape 2000

"Other" causes include congenital abnormalities, benign neoplasms, maternal conditions, musculoskeletal diseases, mental disorders, skin diseases, oral and sense organ conditions.

The twenty leading single causes of death in the total Northern Cape population are shown in Figure NC5(a) below, illustrating that HIV/AIDS was the largest single cause of death, accounting for nearly 14% of all deaths during 2000. Almost twice as many deaths were caused by HIV/AIDS than stroke or ischaemic heart disease, the next largest single causes. Tuberculosis, lower respiratory infections, homicide/violence and chronic obstructive pulmonary disease were next in the ranking. From Figure NC5(b) it is clear that women had higher numbers of deaths due to HIV/AIDS, stroke and hypertensive heart disease than men.

Persons 2000, N = 9810

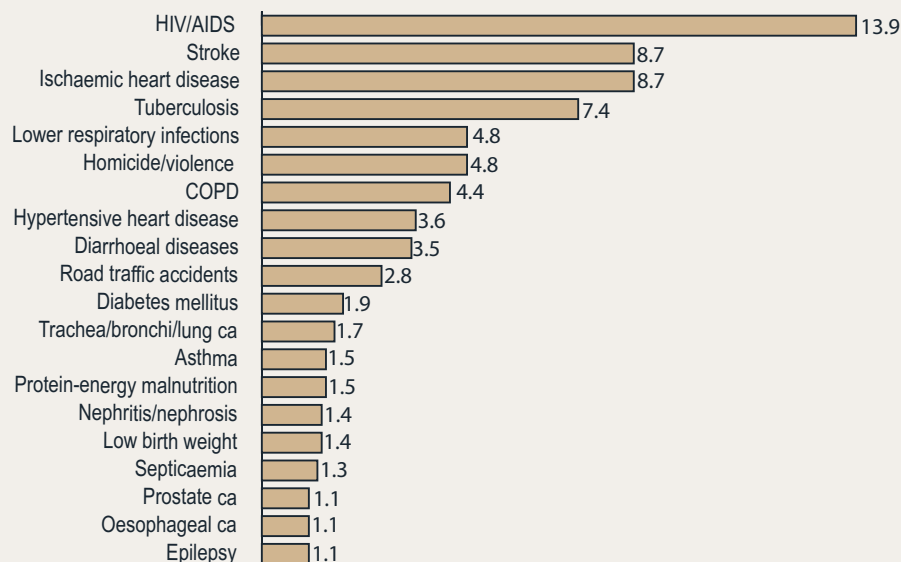


Figure NC5(a): Twenty leading single causes of death (%), Northern Cape 2000

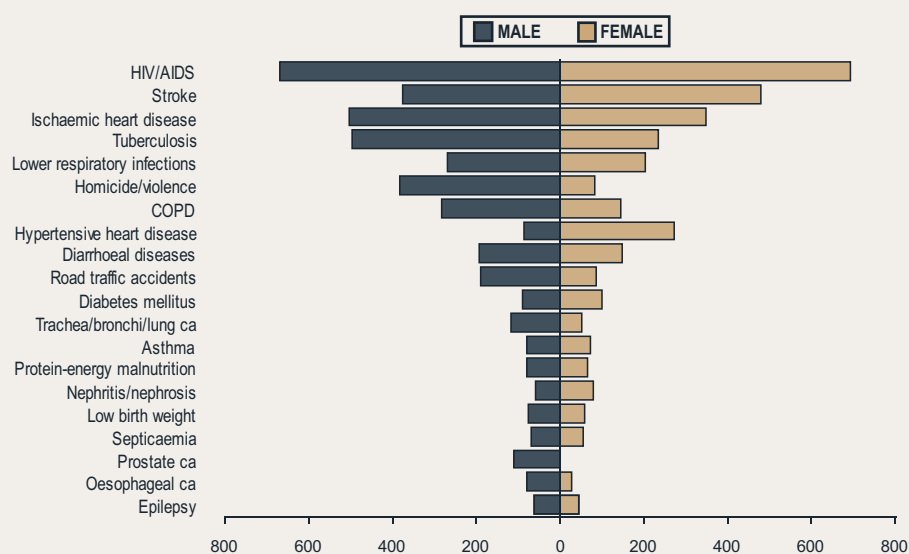


Figure NC5(b): Twenty leading single causes of death by sex, Northern Cape 2000

Premature mortality

The years of life lost (YLLs) measure does not merely consider the number of deaths, but also takes into account the ages at which the deaths occur. YLLs were calculated using the age weighting parameter, discounting and the standard life expectancy that were used in the Global Burden of Disease Study. Table NC1 shows that HIV/AIDS played a major role in premature mortality, which can partly be explained by the large numbers of deaths due to AIDS, and partly by the large proportions of AIDS deaths that occurred in young adults and children under the age of 5 years. The proportions attributable to other causes were much smaller: tuberculosis, homicide/violence and diarrhoeal diseases each being responsible for 5-8% of premature loss of life. Premature mortality manifested differently in men and women, with differences in the numbers and proportions of YLLs per cause of death. HIV/AIDS accounted for 26% of YLLs for women and 18% of YLLs for men. Homicide/violence was ranked second in men but eighth in women

Table NC1: Leading 20 single causes of the premature mortality burden (YLLs) by sex, Northern Cape 2000

Males				Females				Persons			
Rank	Cause of death	YLLs	%	Rank	Cause of death	YLLs	%	Rank	Cause of death	YLLs	%
1	HIV/AIDS	17936	17.6	1	HIV/AIDS	20224	26.4	1	HIV/AIDS	38160	21.4
2	Homicide/violence	10742	10.5	2	Tuberculosis	5173	6.8	2	Tuberculosis	14293	8.0
3	Tuberculosis	9120	8.9	3	Diarrhoeal diseases	3891	5.1	3	Homicide/violence	12843	7.2
4	Diarrhoeal diseases	5820	5.7	4	Stroke	3887	5.1	4	Diarrhoeal diseases	9711	5.4
5	Ischaemic heart disease	5760	5.6	5	Lower respiratory infections	3705	4.8	5	Ischaemic heart disease	8768	4.9
6	Road traffic accidents	5060	5.0	6	Ischaemic heart disease	3008	3.9	6	Stroke	7864	4.4
7	Stroke	3977	3.9	7	Road traffic accidents	2116	2.8	7	Lower respiratory infections	7559	4.2
8	Lower respiratory infections	3854	3.8	8	Homicide/violence	2101	2.7	8	Road traffic accidents	7176	4.0
9	Low birth weight	2518	2.5	9	Low birth weight	1958	2.6	9	Low birth weight	4476	2.5
10	Protein-energy malnutrition	2401	2.4	10	Protein-energy malnutrition	1764	2.3	10	Protein-energy malnutrition	4165	2.3
11	COPD	2355	2.3	11	COPD	1710	2.2	11	COPD	4065	2.3
12	Suicide	1764	1.7	12	Hypertensive heart disease	1689	2.2	12	Epilepsy	2651	1.5
13	Epilepsy	1429	1.4	13	Epilepsy	1222	1.6	13	Hypertensive heart disease	2444	1.4
14	Cirrhosis of liver	1310	1.3	14	Cervix ca	1179	1.5	14	Septicaemia	2383	1.3
15	Septicaemia	1291	1.3	15	Septicaemia	1092	1.4	15	Suicide	2354	1.3
16	Fires	1215	1.2	16	Asthma	1042	1.4	16	Asthma	2067	1.2
17	Trachea/bronchi/lung ca	1100	1.1	17	Breast ca	843	1.1	17	Fires	1928	1.1
18	Asthma	1024	1.0	18	Fires	713	0.9	18	Cirrhosis of liver	1817	1.0
19	Diabetes mellitus	836	0.8	19	Birth asphyxia and trauma	712	0.9	19	Trachea/bronchi/lung ca	1663	0.9
20	Oesophageal ca	769	0.8	20	Nephritis/nephrosis	679	0.9	20	Diabetes mellitus	1492	0.8
	All causes	80 281			All causes	58 709			All causes	137 879	

Leading causes of death among children (<15 years)

The leading ten causes of death in children under 15 years of age are shown in Figure NC6 for boys and girls separately. The pattern for boys and girls was similar. HIV/AIDS deaths were high in those under 5 years old, followed by one more infectious disease, two perinatal conditions and a nutritional deficiency. Among children aged 5 to 14 years, the number of deaths among boys was nearly twice as high and the profile of causes differed. Injuries, including road traffic accidents, drowning, homicide and fires were among the leading causes for boys in this age group, while epilepsy, septicaemia, HIV/AIDS and bacterial meningitis were among the leading causes for girls.

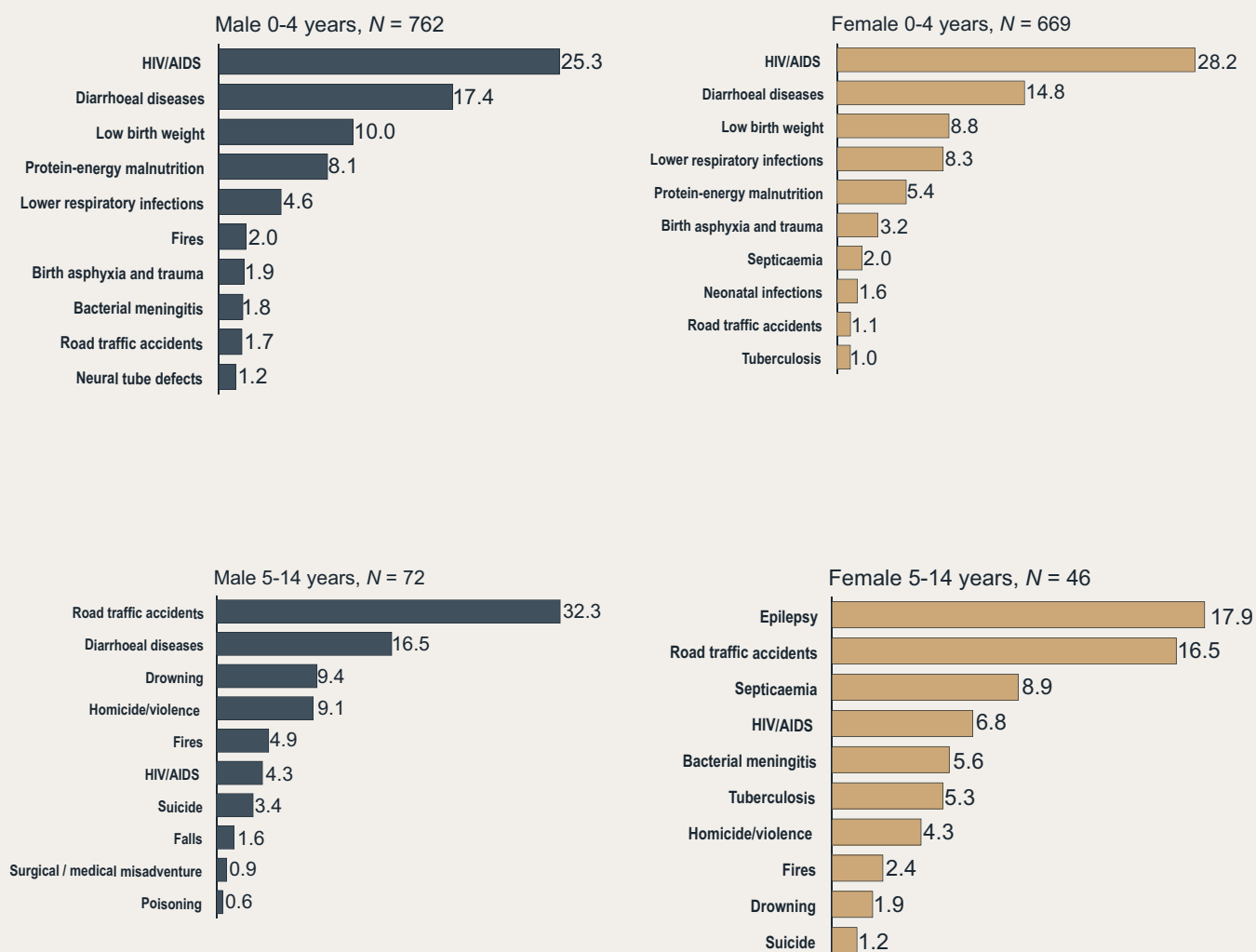


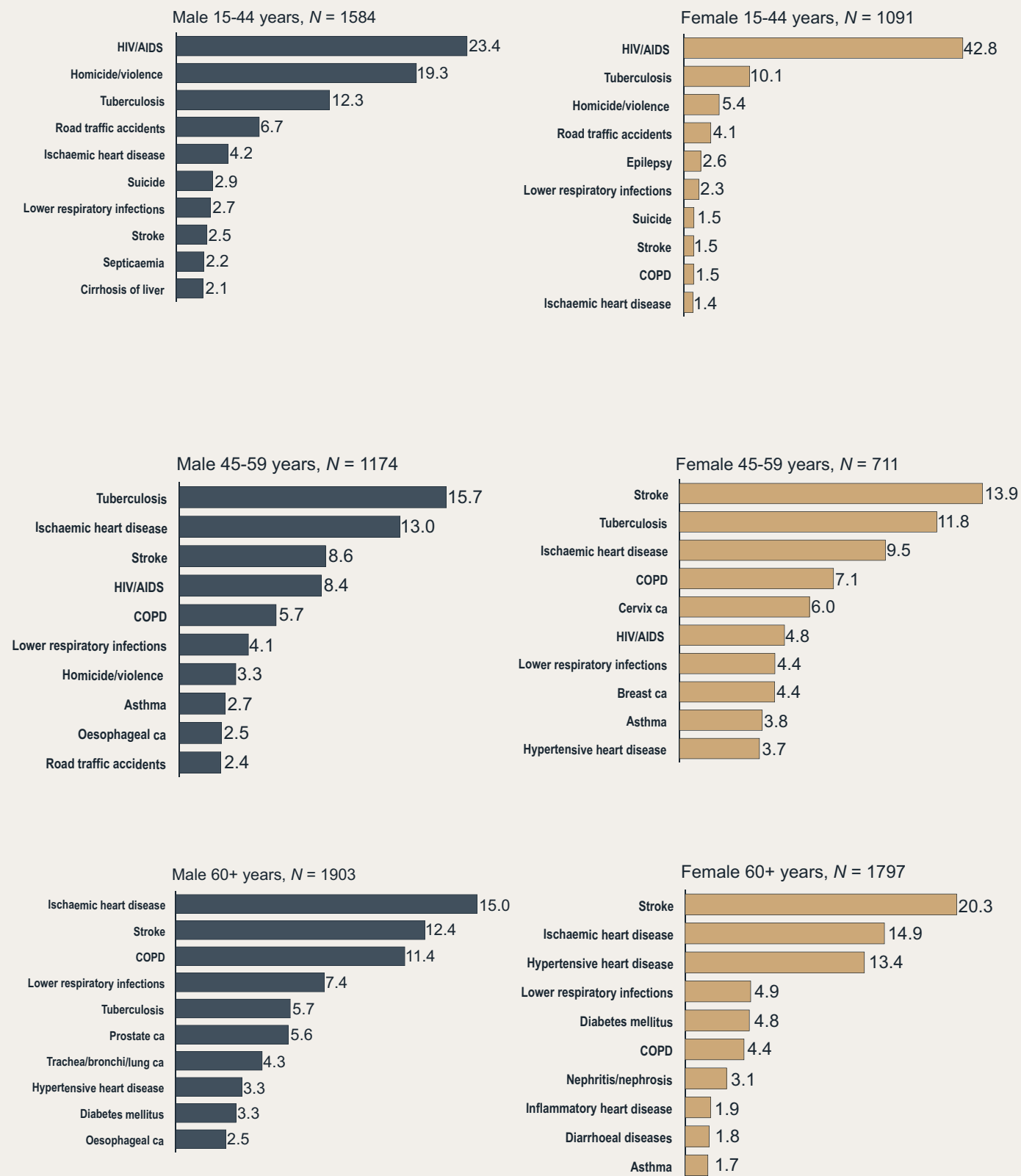
Figure NC6: Ten leading single causes of death (%) among children (<15 years) by sex, Northern Cape 2000

Leading causes of death among adults

The leading ten causes of death among adults are shown in Figure NC7 by selected age groups and sex. Among young adults aged 15-44 years, HIV/AIDS was the leading cause for both men and women, followed by tuberculosis, homicide and road traffic accidents. These 4 conditions accounted for more than 60% of the deaths in this age group. Among the next age group, 45-59 years, the pattern for men and women differed slightly. However, tuberculosis, ischaemic heart disease and stroke were the leading causes for both men and women. Chronic obstructive pulmonary disease and HIV/AIDS were the next leading causes and in the case of women, cervical cancer also featured.

In older persons (60 years and older) most of the leading causes of death were non-communicable diseases and cardiovascular disease was clearly the primary cause of death. Stroke and ischaemic heart disease were the leading single causes of death for both men and women. For men, respiratory conditions were the next largest causes of death followed by prostate and lung cancer. For women, hypertensive heart disease and diabetes mellitus featured as well as lower respiratory infections and chronic obstructive pulmonary disease. Figure NC7 shows that hypertensive heart disease and stroke were responsible for larger numbers of deaths in older women than older men, while ischaemic heart disease and chronic obstructive pulmonary disease caused more deaths in older men than older women. Malignant neoplasms were responsible for more deaths among older men than older women.

Figure NC7: Ten leading single causes of death (%) among adults by sex, Northern Cape 2000



How does Northern Cape compare with the national profile?

The Northern Cape had comparatively low mortality levels when compared to other provinces. In the broad Groups, Northern Cape had a similar profile to that of the country with regard to injuries and other communicable/mat/peri/nutrition diseases, but lower HIV/AIDS mortality.

Mortality due to tuberculosis was very high in this province, as well as from diarrhoea and protein-energy malnutrition. Cardiovascular death rates were high as a result of stroke and ischaemic heart disease as well as hypertensive heart disease among women. Cancer mortality rates were relatively high, including higher than average rates for oesophageal, prostate and cervical cancer. Death rates due to respiratory disease were high in the Northern Cape, particularly for chronic obstructive pulmonary disease among men.

In the leading single causes of death the top ten causes were the same as nationally, but ranked differently. Homicide was second nationally but sixth for the province. Road traffic accidents ranked seventh nationally but tenth for the province. Stroke ranked third nationally but second for the province.

WESTERN CAPE PROVINCIAL PROFILE



Western Cape provincial profile

Background

Western Cape is on the south-western tip of the African continent, bordering the Northern Cape in the north, the Eastern Cape in the east, the Atlantic Ocean on the west, and the Indian Ocean in the south. The province encloses 129 370 km², constituting 10.6% of the total land area of the country (SSA, 2003). In 2000 the average population density was estimated at 34 persons per square kilometre. During the 1996 Census 11% of the population lived in non-urban areas (SSA, 1998). Cape Town houses an international airport and a port and is served by an extensive network of roads and railways.

Agriculture, forestry, fishing, mining and quarrying all contribute to the economy. The sheltered valleys between the mountains provide ideal conditions for the cultivation of top-grade fruits such as apples, table grapes, olives, peaches and oranges. A great variety of vegetables are cultivated in the eastern part of the Western Cape region. An Ostrich-farming industry can be found in the Klein Karoo region around Outdshoorn. This industry results in exports such as leatherware, ostrich feathers and meat. The Swartland district around Malmesbury and the Overberg around Caledon are known as the bread basket of the country. Wool and mutton as well as pedigree merino breeding stock are produced in the inland Karoo region around Beaufort West, and the Bredasdorp district. Other animal products include broiler chickens, eggs, dairy products, beef and pork. Racehorse breeding is another important industry.

Cape Town houses the head offices of most of South Africa's petroleum companies, as well as those of the insurance giants and national retail chains. The clothing and textile industry is the single most significant industrial source of employment in the Western Cape. The province is also one of the world's greatest tourist attractions. During 2001 Western Cape made the third highest Gross Geographic Product contribution of the provinces to the national Gross Domestic Product (GDP), contributing R136 062 million or 13.8% of the total GDP (GCIS, 2004).

Population structure

According to the 2000 ASSA estimates, 4 399 414 people lived in Western Cape, constituting 9.7% of South Africa's total population. The province accommodated slightly more women (51%) than men (49%). Nearly 28.3% of the population were younger than 15 years, 66% were in their 'economically active' years (15-64), while 7.8% were aged 60 or older. [Comparison with 2001 Census: total population 4 524 335 (ASSA had 124 921 less); 10.1% of country's total population; 51% female; 26.7% Black African, 53.9% Coloured, 1.0% Indian, 18.4% White.]

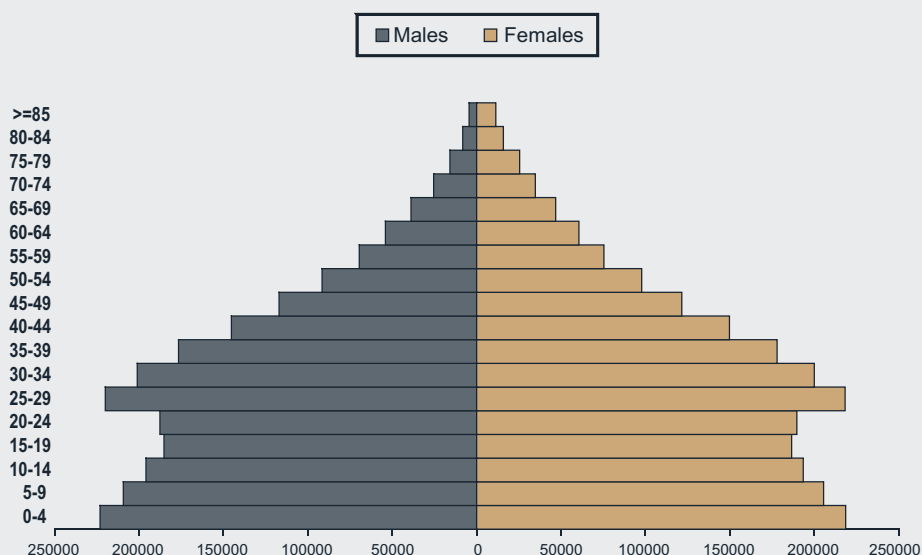


Figure WC1: Age structure of the Western Cape population, 2000

Living conditions

According to the 2001 Census, 5.7% of the population aged 20 years or older had no formal school education; 48.5% of those in the age group 15-64 years were unemployed; and 29% of those who were employed had elementary occupations (SSA, 2003). The province has a strong network of higher education institutions.

Just less than a third of the population (28.8%) lived below the national poverty line in 2002 (UNDP, 2004). The official unemployment figure for the province, 26.1%, is the lowest in the country (Labour Force Survey 2001). About 78.4% of all households lived in formal dwellings, and 16.2% and 2.2% respectively in informal and traditional structures. On average 3.6 persons shared a household. Piped water, either in the dwelling, on site, or from a communal tap, was available in 98.3% of households. About 7.7% of households did not have access to a toilet facility, and 87.8% had a refuse removal service once a week or more. In 78.8% of households electricity was used as the main source of energy for cooking, wood in 2.9% and paraffin in 10.9%. Of the households, 79.1% had a radio, 74.1% a television, 73.5% a refrigerator, 50.5% a telephone and 41.4% a cell phone (SSA, 2003).

Mortality profile

The mortality profile in the Western Cape is based on 23 372 male (56.3%) and 18 175 female (43.7%) deaths estimated for the year 2000, a total of 41 547 deaths. Figure WC2 shows the causes of death for the broad Groups I, II, III and AIDS. The proportions of Group I and HIV deaths were very similar for men and women. However, the proportion of deaths from injury deaths in males was more than double that for females. Group II causes were higher in women (63%) than in men (53%).

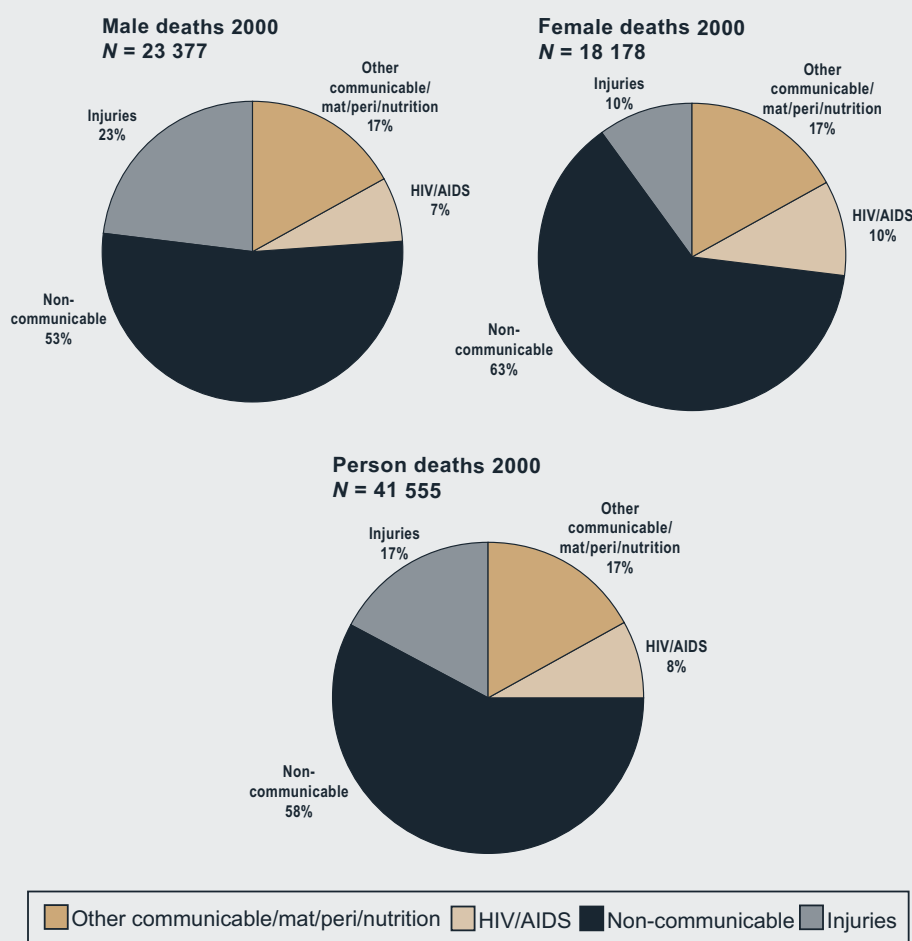


Figure WC2: Estimated deaths by Groups, Western Cape 2000

The age-specific cause of death profiles are presented in Figure WC3. The numbers of deaths are presented by five-year age intervals for the three broad Groups and HIV/AIDS. Over half of the deaths in infants were due to Group I diseases, and approximately 16% to HIV/AIDS. In children between 1 and 4 years 38% of deaths were due to HIV/AIDS. The pattern differed for adult males and females, with very high numbers of deaths resulting from injuries in young men and HIV/AIDS deaths predominating in young women. Deaths from non-communicable diseases dominated in adults of 60 years or older.

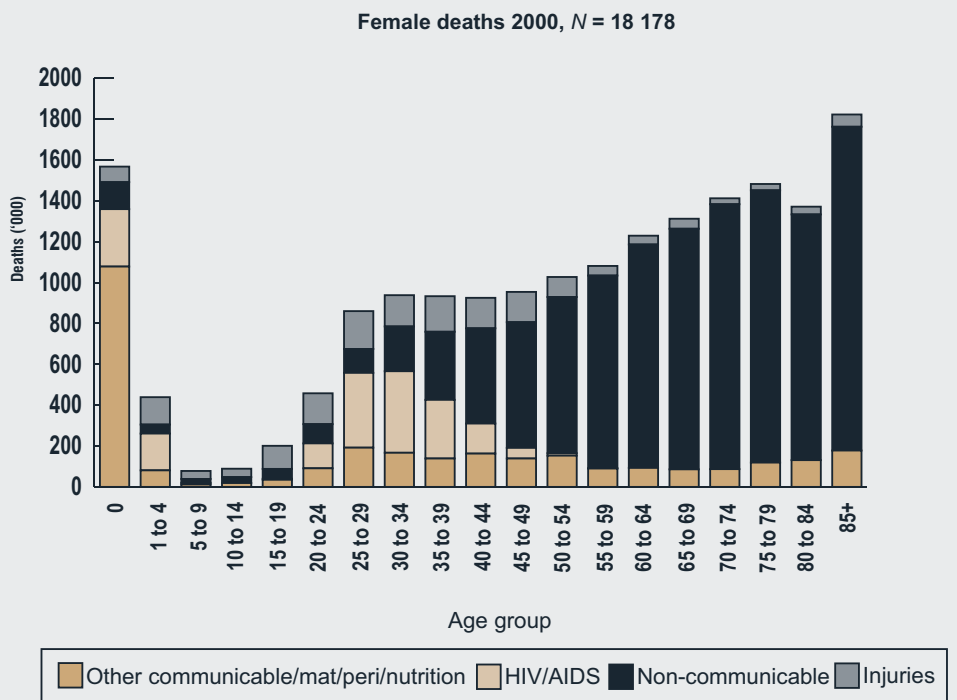
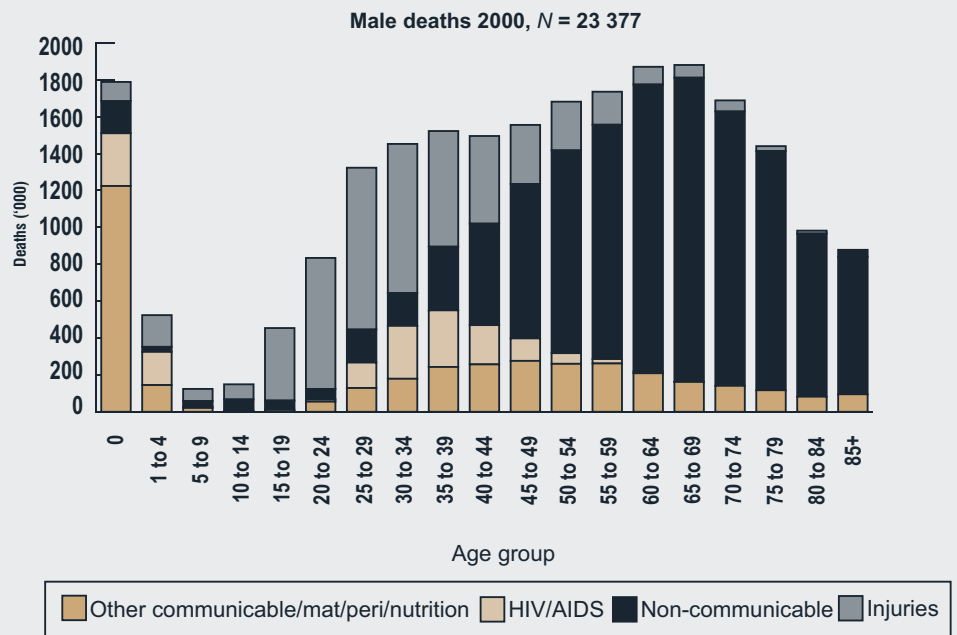


Figure WC3: Age distribution of deaths by broad Groups, Western Cape 2000

In Figure WC4 the cause of death profile is ranked for total persons. Cardiovascular disease (25%) was the leading cause of death among both men and women, followed by malignant neoplasms (16%), infectious and parasitic disease excluding HIV/AIDS (10%), intentional injuries (9.7%), HIV/AIDS (8.4%), and unintentional injuries (7.5%). Intentional and unintentional injuries and respiratory disease were higher in males than in females, while cardiovascular disease, HIV and diabetes were higher in females than in males.

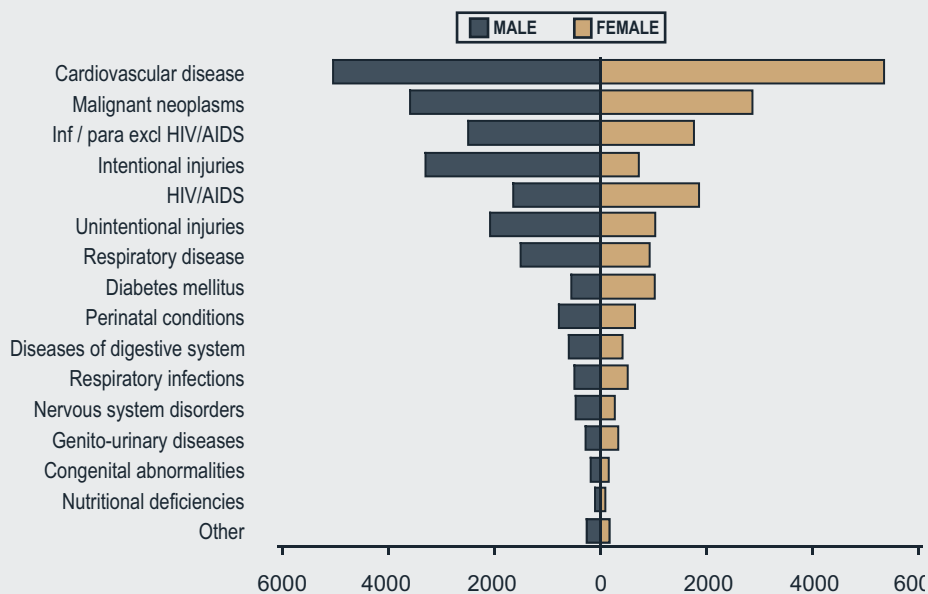


Figure WC4: Causes of death ranked according to categories for males and females, Western Cape 2000

"Other" causes include endocrine and metabolic disorders, benign neoplasms, mental disorders, maternal conditions, musculo-skeletal diseases and skin diseases.

The twenty leading single causes of death in the total Western Cape population are shown in Figure WC5(a) below, illustrating that ischaemic heart disease was the largest single cause of death, accounting for 12% of all deaths during 2000. This was followed by stroke (8.8%), HIV/AIDS (8.4%), homicide (8.1%) and tuberculosis (6.8%). Women had higher numbers of deaths due to stroke, HIV, diabetes and hypertensive heart disease than men (see Figure WC5(b)). In contrast, men had higher numbers of deaths than women from homicide, ischaemic heart disease, tuberculosis, road traffic accidents, lung cancer, chronic obstructive pulmonary disease, suicide, oesophageal cancer and colorectal cancer.

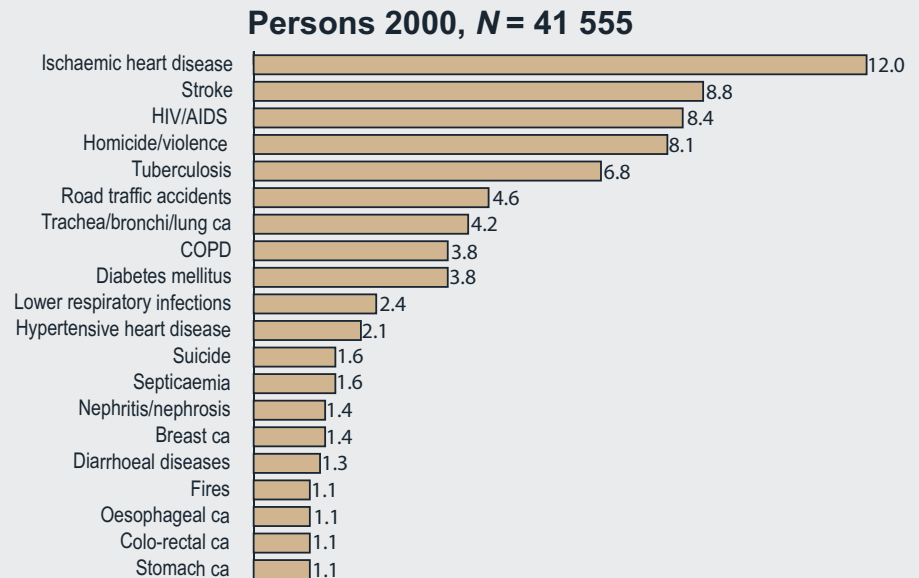


Figure WC5(a): Twenty leading single causes of death (%), Western Cape 2000

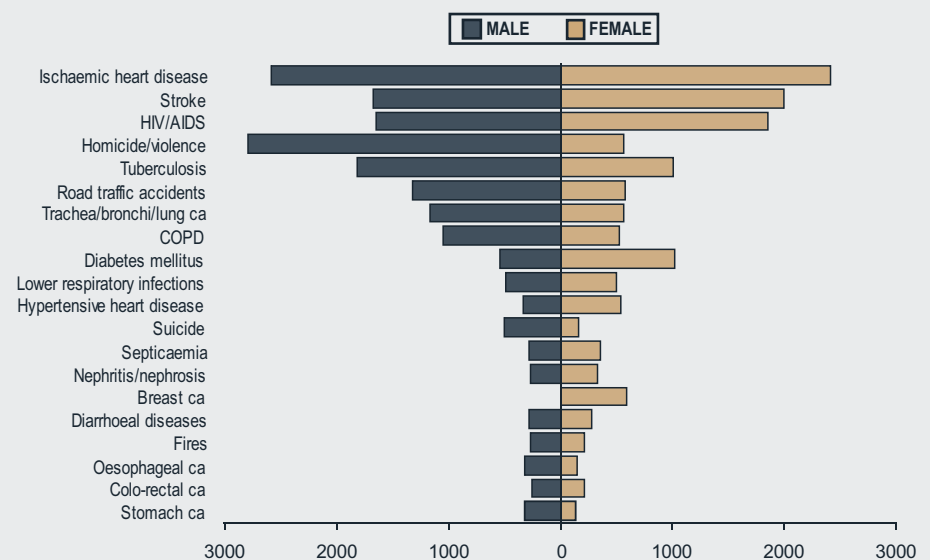


Figure WC5(b): Twenty leading single causes of death by sex, Western Cape 2000

Premature mortality

HIV/AIDS was the leading cause of premature mortality overall in the Western Cape, followed closely by homicide (see Table WC1). These were followed by tuberculosis, road traffic accidents and ischaemic heart disease. Ranking differed by gender, however, with homicide ranking top for males and HIV/AIDS top for females. In females Group II conditions ranked higher than in males, in whom Group I and Group III conditions dominated.

Table WC1: Leading 20 single causes of the premature mortality burden (YLLs) by sex, Western Cape 2000

Males				Females				Persons			
Rank	Cause of death	YLLs	%	Rank	Cause of death	YLLs	%	Rank	Cause of death	YLLs	%
1	Homicide/violence	76956	18.5	1	HIV/AIDS	54893	18.8	1	HIV/AIDS	99630	14.1
2	HIV/AIDS	44737	10.8	2	Tuberculosis	22370	7.7	2	Homicide/violence	91297	12.9
3	Road traffic accidents	33963	8.2	3	Ischaemic heart disease	17576	6.0	3	Tuberculosis	55824	7.9
4	Tuberculosis	33454	8.1	4	Stroke	16970	5.8	4	Road traffic accidents	48442	6.9
5	Ischaemic heart disease	23838	5.7	5	Road traffic accidents	14480	5.0	5	Ischaemic heart disease	41414	5.9
6	Stroke	15469	3.7	6	Homicide/violence	14341	4.9	6	Stroke	32440	4.6
7	Trachea/bronchi/lung ca	12837	3.1	7	Diabetes mellitus	9480	3.2	7	Trachea/bronchi/lung ca	18835	2.7
8	Suicide	12578	3.0	8	Diarrhoeal diseases	7844	2.7	8	Lower respiratory infections	16669	2.4
9	COPD	9648	2.3	9	Breast ca	7779	2.7	9	Suicide	16504	2.3
10	Lower respiratory infections	8901	2.1	10	Lower respiratory infections	7769	2.7	10	Diarrhoeal diseases	15970	2.3
11	Diarrhoeal diseases	8125	2.0	11	Septicaemia	6285	2.2	11	Diabetes mellitus	14986	2.1
12	Low birth weight	8011	1.9	12	Trachea/bronchi/lung ca	5999	2.1	12	COPD	14906	2.1
13	Fires	7157	1.7	13	Fires	5336	1.8	13	Fires	12493	1.8
14	Diabetes mellitus	5506	1.3	14	COPD	5258	1.8	14	Low birth weight	12155	1.7
15	Epilepsy	4827	1.2	15	Cervix ca	5003	1.7	15	Septicaemia	10837	1.5
16	Septicaemia	4552	1.1	16	Hypertensive heart disease	4674	1.6	16	Hypertensive heart disease	8308	1.2
17	Asthma	3740	0.9	17	Nephritis/nephrosis	4560	1.6	17	Breast ca	7779	1.1
18	Oesophageal ca	3712	0.9	18	Low birth weight	4144	1.4	18	Nephritis/nephrosis	7713	1.1
19	Hypertensive heart disease	3634	0.9	19	Suicide	3926	1.3	19	Asthma	7275	1.0
20	Cirrhosis of liver	3562	0.9	20	Diabetes mellitus	3535	1.2	20	Epilepsy	6804	1.0
	All causes	415 219			All causes	291 724			All causes	706 943	

Leading causes of death among children (<15 years)

The leading ten causes of death in children under 15 years of age are shown in Figures WC6 for boys and girls separately. In the under 5 year olds, HIV/AIDS accounted for one-fifth of all deaths, followed by diarrhoea, low birth weight and lower respiratory infections. The pattern was similar for boys and girls in this age group (Figure WC6). The leading five causes in children under 1 reflected a similar pattern, with HIV/AIDS ranked top, followed by other Group I causes. Figure WC6 shows that injuries were much more prominent in the 5-14 year group with road traffic accidents accounting for more than a quarter of the deaths. Homicide, drowning, fires and suicide were among the leading causes in this age group. Epilepsy, septicaemia and bacterial meningitis were also among the leading causes but the rankings of these conditions were different for boys and girls. Brain cancer was the 10th leading cause of death in this age group for boys and girls.

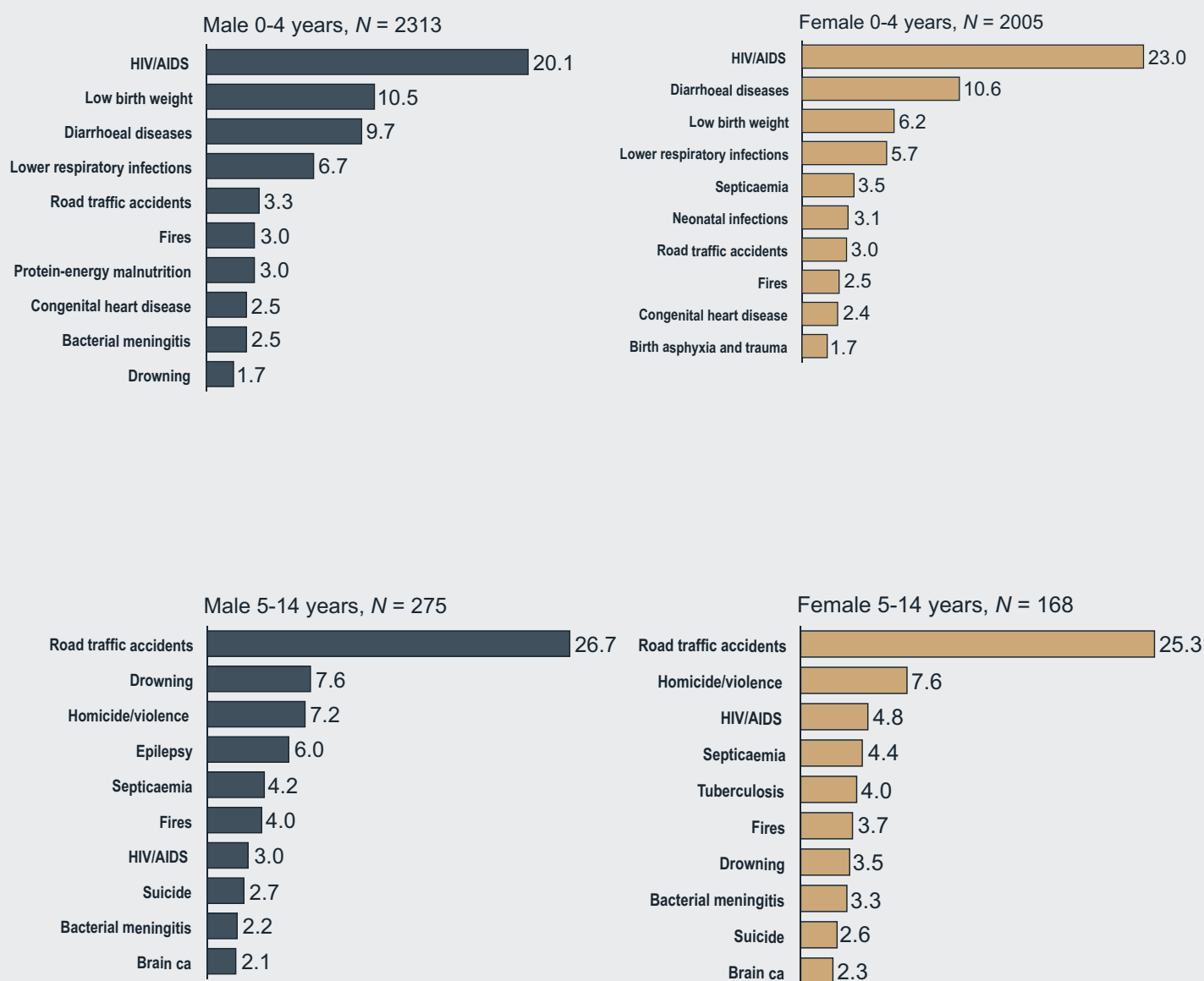


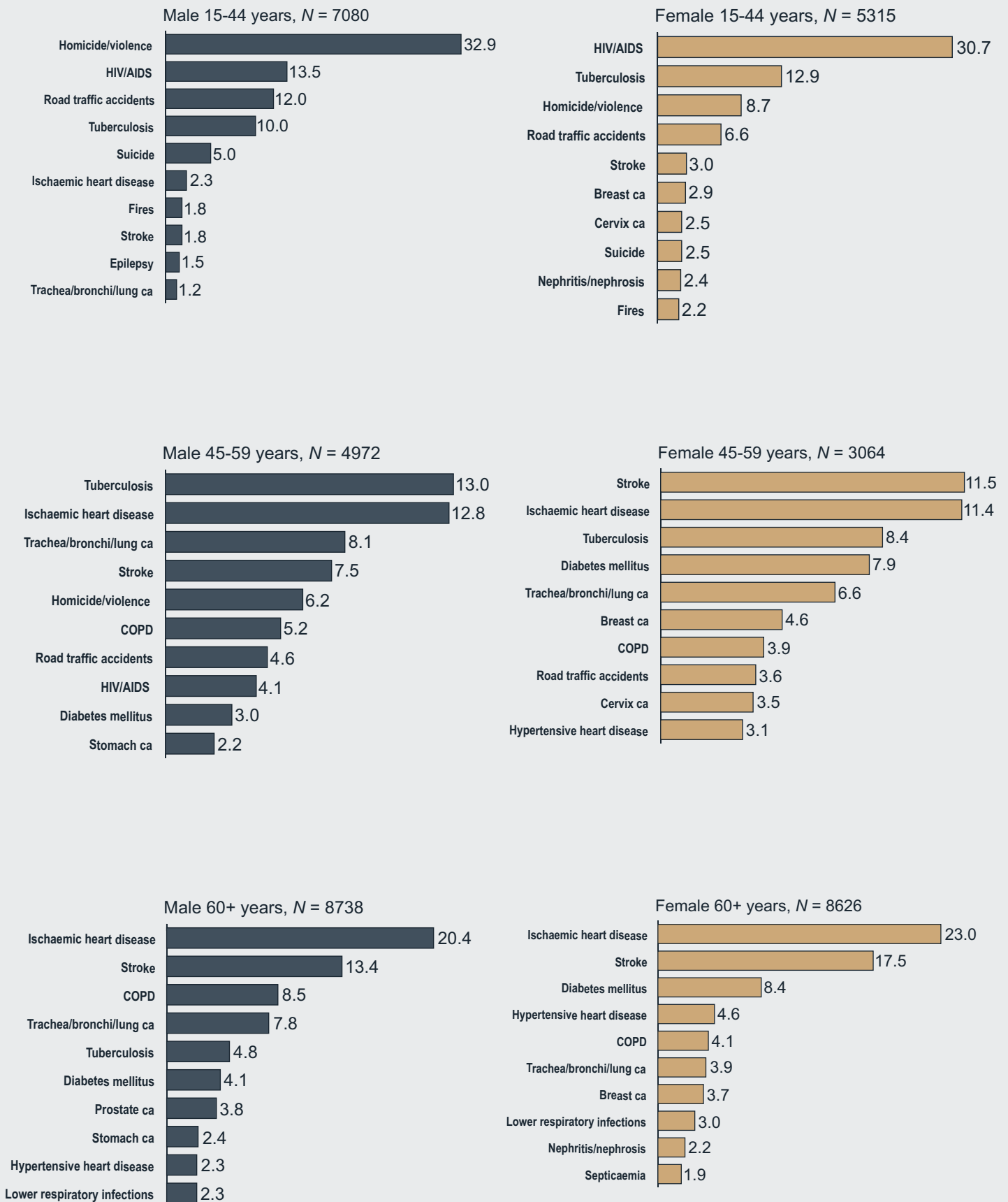
Figure WC6: Ten leading single causes of death (%) among children (<15 years), Western Cape 2000

Leading causes of death among adults

The leading causes of deaths for adults are shown in Figure WC7 in broad age groups by sex. For men and women aged 15-44 years, HIV/AIDS, tuberculosis, homicide and road traffic accidents were the leading causes. Stroke and suicide were also among the leading causes for both men and women but the rankings were different. Ischaemic heart disease and lung cancer featured among the leading causes for young adult men while breast cancer and cervical cancer and nephritis and nephrosis featured among the leading causes for young adult women. The pattern among adults aged 45-59 years differed from the young adult pattern with more non-communicable diseases among the leading causes of death. For men of this age group, the leading cause of death was tuberculosis while for women it was stroke. Ischaemic heart disease ranked second amongst both men and women. Chronic obstructive pulmonary disease and diabetes mellitus featured among the leading causes for both men and women.

In older persons the majority of the leading causes of death were non-communicable diseases, and it is clear that cardiovascular disease was the primary cause of death in older persons (Figure WC7). Ischaemic heart disease, stroke, chronic obstructive pulmonary disease, diabetes mellitus and lung cancer were the five leading single causes of death, accounting for more than 50% of deaths. Tuberculosis was ranked seventh, accounting for 3.3% of deaths in this age group. Figure WC7 shows that ischaemic heart disease, stroke and diabetes mellitus were responsible for larger numbers of death in older women than in older men, while chronic obstructive pulmonary disease, lung cancer and tuberculosis caused more deaths in older men than in older women. Malignant neoplasms were responsible for large numbers of deaths among older men and women, and it is clear that apart from sex-specific cancers, stomach, oesophagus and mouth and oropharynx cancers were influencing men and women differently.

Figure WC7: Ten leading single causes of death (%) among adults by sex, Western Cape 2000



How does Western Cape compare with the national profile?

The Western Cape had the lowest mortality of all the provinces. Although there was evidence of the quadruple burden of disease, this province had the lowest mortality from HIV/AIDS and other Group I conditions. Non-communicable diseases accounted for a much larger proportion of deaths in the Western Cape (58%) than nationally (38%). This is largely a result of the population in the Western Cape being older than the national population. Injuries were slightly higher as a proportion of the deaths in the Western Cape (17%) compared with South Africa overall (12%).

Despite the high incidence of tuberculosis in this province, mortality rates from this disease were average. Mortality due to lower respiratory infections, diarrhoea, protein-energy malnutrition and maternal conditions were markedly lower for this province.

The five top causes of death in the Western Cape were the same as in South Africa as a whole, but the ranking differed, with cardiovascular diseases (ischaemic heart disease and stroke) leading in the Western Cape and HIV leading in South Africa overall. Death rates from cardiovascular disease were similar to the national average, but featured low rates for hypertensive heart disease and inflammatory heart disease. Diabetes mortality rates were average, cancer mortality rates higher. Lung cancer and breast cancer death rates were particularly high in this province when compared to others. Many other non-communicable diseases were lower in the Western Cape: respiratory diseases, nephritis and nephrosis, epilepsy, and cirrhosis of the liver. This may reflect the relatively good access to tertiary level care in the province. Injury mortality rates, however, were high in the Western Cape.

When estimating the 'missing' AIDS deaths for Western Cape, we noted that the increase in age-specific tuberculosis death rates between 1996 and 2000 for the province extended across older age groups than for South Africa, where the increase followed the typical AIDS pattern of mortality. Given that the Western Cape has the highest incidence of tuberculosis in South Africa, we felt that we could not attribute all of the excess in tuberculosis deaths to AIDS, since some would be due to the tuberculosis epidemic per se. A decision was made to attribute only 75% of the excess tuberculosis deaths across all ages to AIDS.

When the mortality profile for the Western Cape is compared with that of the Cape Town metropole (Groenewald *et al.*, 2003), the proportions of deaths by broad cause group are very similar. The fifteen top causes of death were the same for both Western Cape and the Cape Town metropole, although the ranking differs. This may reflect slightly different patterns of mortality outside the metropole and also different coding practices between Statistics South Africa and the City of Cape Town. The Cape Town study highlighted the variations in the level of mortality and cause profile by sub-district.

Discussion

It cannot be emphasised enough that ***timeous and accurate cause of death statistics are an essential component of the information needed for planning and monitoring health services and responding to the health needs of the population.*** Such information is needed for the process of prioritisation of not only health services, programmes and research, but also for guiding the priorities in other sectors. In particular, sub-population data are needed to identify and monitor inequalities in health outcomes.

Efforts to improve cause of death statistics in South Africa have been under way since 1994, and have resulted in better coverage of death registration. However, the system does not yet routinely provide cause of death statistics that can be used by provinces. This study makes use of the burden of disease approach developed by the WHO, using available information and presenting it in a format that can be useful for planning health and other services. It builds on the initial NBD study which estimated the mortality nationally, and makes use of more recent data (the 12% sample for 1997-2001). Due to inadequacies of the data, it was necessary to estimate the total number of deaths and number of AIDS deaths using a demographic and epidemiological model. Due to inadequacies in the medical certification of the cause of death as a result of both insufficient detail provided by medical doctors and the certification by traditional headmen in some rural areas, it was necessary to make adjustments for misclassification of underlying causes.

This study estimated mortality rates, the numbers of deaths and the YLLs for each of the nine provinces. The age-standardised mortality rates are particularly important from an epidemiological perspective, and enable a comparison of the levels of mortality experienced in each province. The numbers of deaths and the profiles of the causes are useful for health service planning since they are reflective of the demands for services. The YLLs and the profiles of the causes of premature mortality are particularly important for public health planning. However, when using these estimates it must be noted that conditions that have a high morbidity and low mortality are under-represented in the burden of disease profile based on mortality alone. The number of deaths and the YLLs are presented for each province against the demographic and socio-economic determinants of health.

Compared with the initial NBD estimates that were extrapolated from the 1996 cause of death data, the more recent data have produced very similar overall results. However, subtle differences are found in the exact ranking of some conditions, although the proportion of deaths due to the conditions are very similar. Following HIV/AIDS, the initial NBD estimates ranked ischaemic heart disease, stroke and homicide as the top causes, accounting for 5.8% each. Using the more recent data, the same causes are ranked top with, stroke, ischaemic heart disease and homicide accounting for 5.3% - 5.8% each.

Overall mortality rate was highest in KwaZulu-Natal and Mpumalanga, where it was 1.5 times higher than in the Western Cape, which had the lowest mortality rate (Figure 21). Figure 21 shows the age-standardised mortality rates by broad cause groups, with the provinces ranked according to level of mortality. The differences are largely a result of the variations in the HIV/AIDS mortality and the variation in the burden due to other pre-transitional causes related to underdevelopment. The differences in mortality translated into wider variations in premature mortality (Figure 21), once the age that the deaths occurred was taken into account. The premature mortality burden of the province with the highest YLLs per 100 000 population, KwaZulu-Natal, was double that of the province with the lowest, Western Cape.

This study shows that all provinces are experiencing a quadruple burden of disease. HIV/AIDS, homicide and road traffic accidents, stroke, ischaemic heart disease, hypertensive heart disease, tuberculosis, diarrhoea and lower respiratory infections generally featured in the top causes of death of all provinces. While it was possible to discern some trends in the epidemiological transition, each province had a unique profile. HIV/AIDS was the leading cause of death in all provinces excepting the Western Cape. The lead was mostly by a large margin. The geographic variations in the prevalence of HIV are reflected in the levels of HIV/AIDS mortality. The pre-transitional causes of death were

more pronounced in the poorer and more rural provinces. For example, diarrhoea mortality rates were closely correlated with levels of income. In contrast, the overall level of non-communicable disease mortality was similar across all provinces, but the causes differed. For example, ischaemic heart disease and lung cancer had high death rates in the more developed province of Western Cape, while hypertensive heart disease and inflammatory heart disease had high rates in Limpopo. The injury mortality rates were particularly high in some provinces, including those with large metropolitan areas as well as Mpumalanga.

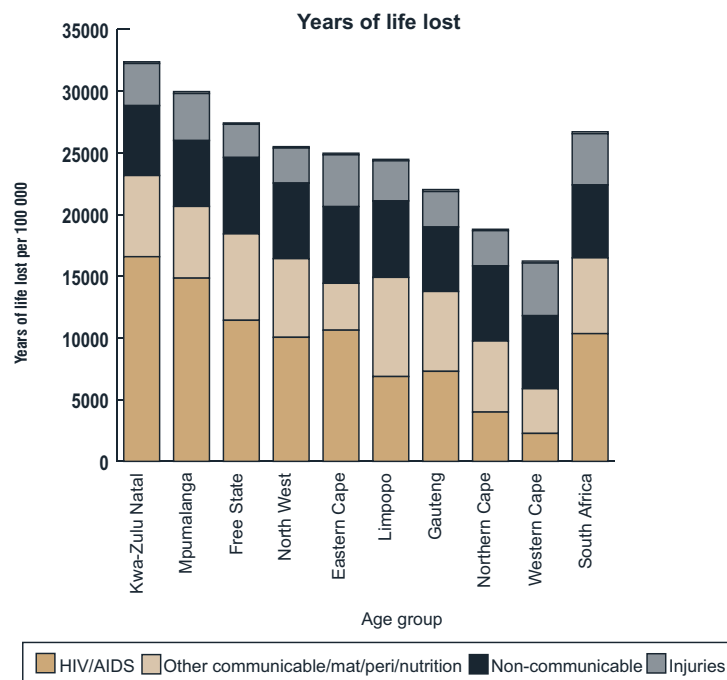
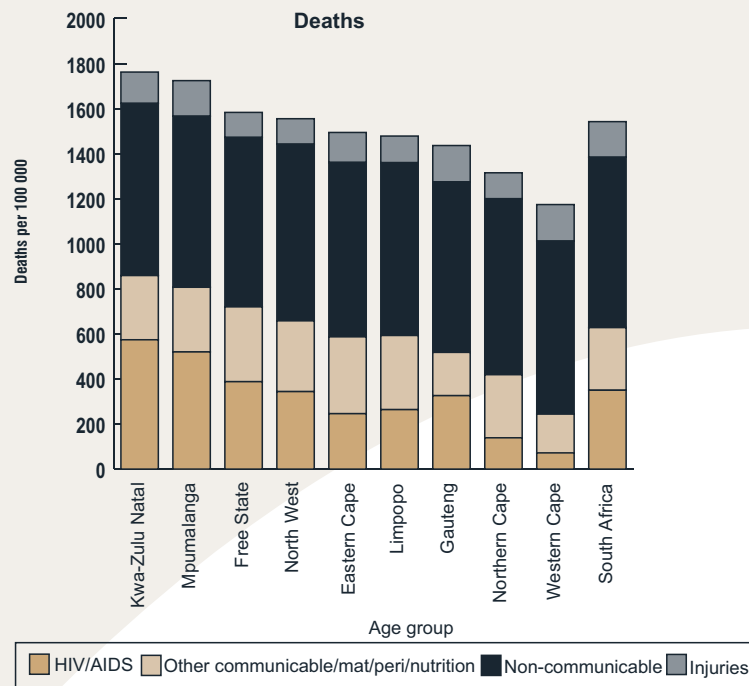


Figure 21. Provincial estimates of age-standardised death rates and years of life lost per 100 000 population by broad cause group, 2000

The variations between the provinces in levels and causes of mortality highlight extensive scope for epidemiological studies. Such differences may be related to levels of wealth and development, to population group differences and demographic features of the province, to geographical differences and environmental exposures or to access to health services or other basic services. Considering the levels of extrapolation required to derive the estimates for this study, it is important to validate the findings against other epidemiological data. The average profile of a province, furthermore, obscures the variability within a province. Studies comparing the mortality experienced by the different population groups, social classes and ethnic groups and for small areas would provide useful insight into the determinants of the variations. The findings of this study allude to a depth of variation in health outcomes that warrants much more investigation.

An attempt to assess the mortality profile for the new provinces was previously conducted using the 1990 cause of death statistics (Bradshaw, Laubscher and Schneider, 1995). It is difficult to compare the findings, however, since a different disease list was used for the earlier study and no adjustments were made for the high proportions of ill-defined causes. Also, as a result of better demographic and mortality data, this study was able to estimate death rates which could not be attempted for the 1990 study. The cause of death profiles observed for 1990 were markedly different from the profiles observed in this study since there were very few deaths due to HIV/AIDS (Bradshaw and Buthelezi, 1996). However, similar to the findings in 2000, the 1990 profiles did show variations between the provinces and suggested that they were at different stages of the epidemiological transition.

Conclusion and Recommendations

This study signifies an important milestone in generating burden of disease information at provincial level by providing mortality estimates for the provinces. The results of this study can be utilised in health planning and the setting of research priorities. The quadruple burden requires a broad range of interventions including improved access to health care, promotion of a healthy lifestyle and ensuring that basic needs such as water and sanitation are met. Social cohesion needs to be fostered to ensure safe and caring communities. Provincial and local level planners are urged to make use of the findings of this study to modify the emphasis of national policies to meet the health needs of their communities.

The HIV pandemic has spread very rapidly in South Africa resulting in an epidemic of major proportions. Although there are variations, no province has been exempt from its impact. Since the epidemic does not wait for the compilation of statistics, these estimates, for the year 2000, are likely to underestimate the current death rates due to HIV/AIDS. The ASSA2002 model projects that in 2004, the total number of deaths from all causes will be over 700 000 and that 44% of them will be due to HIV/AIDS. This should be taken into account when making use of these estimates for planning, and highlights the urgency of implementing the treatment programme approved by Cabinet in September 2003. It also highlights the need to strengthen efforts to prevent the spread of the epidemic and to ensure social systems to support individuals infected and affected by HIV/AIDS. The knock-on effect of the HIV/AIDS epidemic on tuberculosis is also in the process of unfolding, and demand for tuberculosis treatment is likely to grow. Provision must be made to bolster the tuberculosis control programmes that are currently not meeting the targeted levels of successful treatment.

The study demonstrates complex differences in health outcomes across the nine provinces. Some of the differences can be accounted for by the variations in wealth highlighting the need for policies to address poverty and reduce the inequalities in South Africa. Other differences between the provinces are likely to be related to variations in the exposure to a range of risk factors such as smoking, obesity, hypertension, high cholesterol and physical inactivity. It will be important to adapt the national strategies to promote a healthy lifestyle to suit local conditions. Some of the differences between the provinces are likely to be related to the access to health services which are not even across the country.

These estimates will be useful to planning at provincial level. They will also provide an important benchmark against which to monitor the impact of efforts to improve health.

However, there is an urgent need for further improvement to the cause of death data system to provide timely and reliable statistics on a routine basis. SSA is currently capturing the full data for 1997-2003. While these data are important and will enable more detailed geographic and population group investigation, the data will need careful interpretation to overcome the problems of inadequate information on underlying cause of death and the problems of incomplete registration.

Based on the experience in analysing cause of death data, it is clear that the following issues need to be addressed:

- The lack of details about the manner of death in the case of fatal injuries needs urgent attention. A mechanism to build the mortuary surveillance system (NIMSS) in all provinces, and link the information to the vital registration system should be put in place.
- The quality of information on the underlying cause of death needs to be improved. In particular, there is a need to reduce the number of deaths certified with insufficient information that result in a high proportion of deaths being classified as 'ill-defined'. There is a need to improve the quality of medical certification as well as to investigate how appropriate information for the deaths certified by traditional headmen can be collected.
- Systems to ensure timely access to information at local level need to be developed. While the model of duplicate capturing of death data has worked well for Cape Town, it is not clear that this is a viable model for all health districts. Government needs to grapple with the issue of ensuring that health districts have a system to produce timely cause of death statistics.
- A rapid surveillance system to produce preliminary information about the number of deaths and changing age pattern that can be released well in advance of the official statistics.

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Appendices

Appendix A: Socio-economic, demographic and mortality indicators

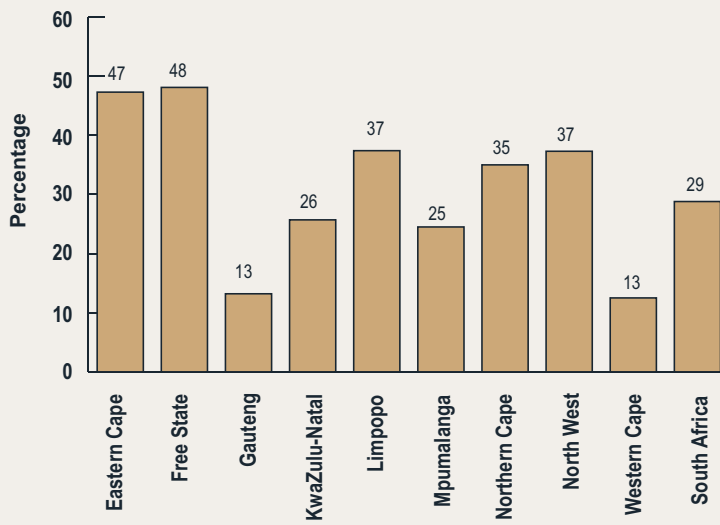


Figure A1. Percentage of households with monthly income below R800 in 1996
Source: SSA 2000b

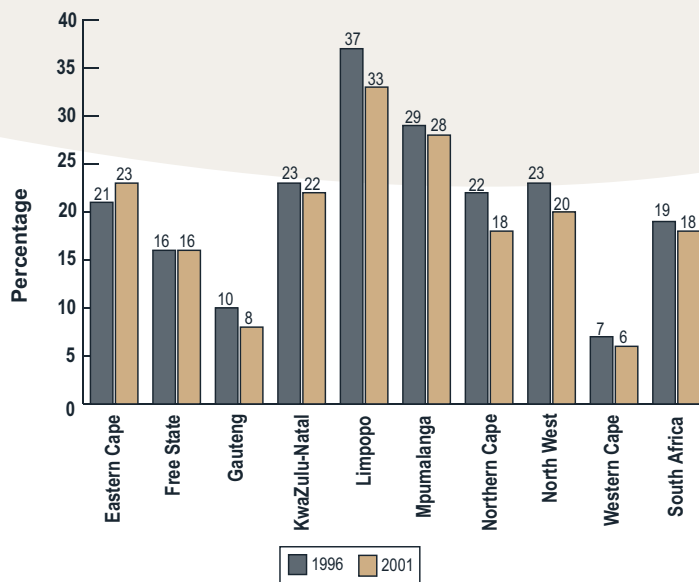


Figure A2. Percentage of population 20 years or older with no formal education, 1996 and 2001
Source: SSA 1998, SSA 2003

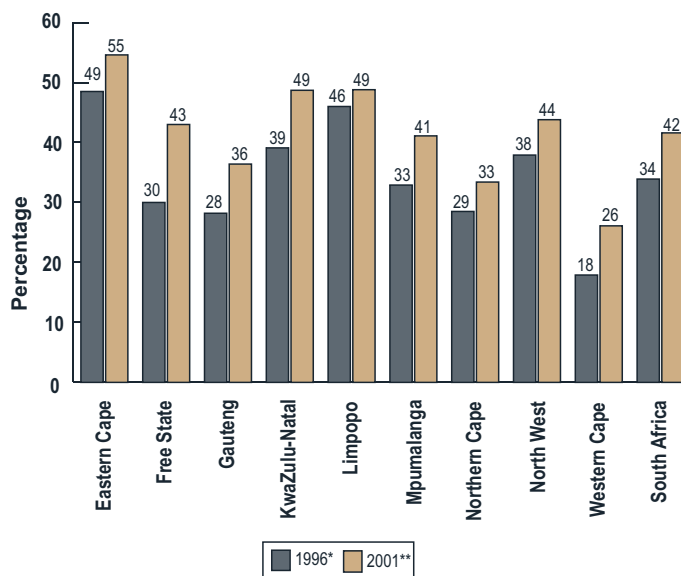


Figure A3. Percentage of economically active population unemployed in 1996 and 2001
Source: SSA 1998, SSA 2003

*Expanded definition of unemployment

** Strict definition of unemployment

Figure A4. Provincial distribution of the population compared with the provincial contribution to the GDP
 Source: ASSA2000 2003, GCIS 2003

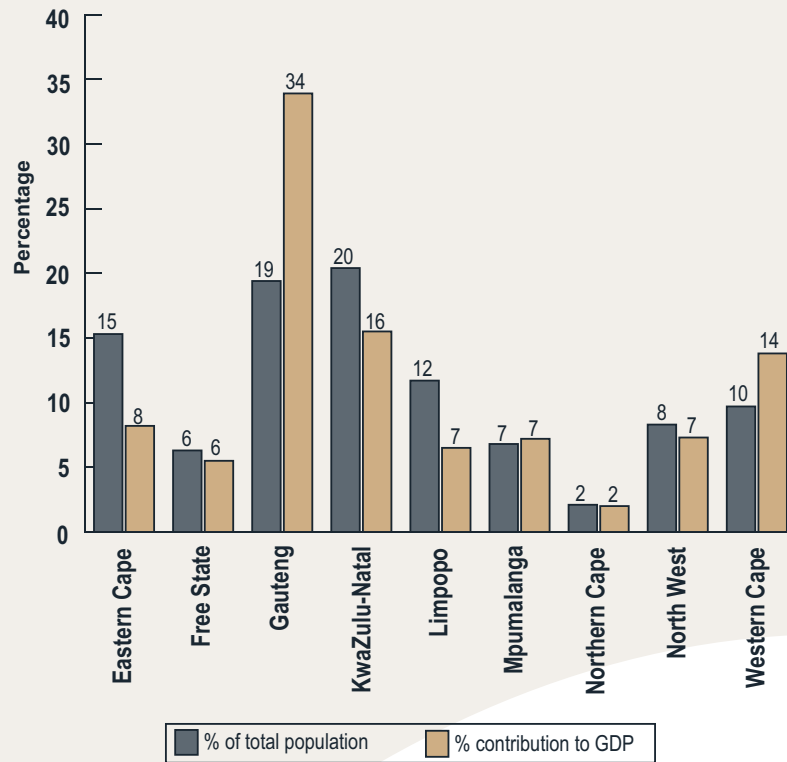


Figure A5: Antenatal sero-prevalence of HIV by province in 1996, 1999 and 2003
 Source: DoH 1997, DoH 2000, DoH 2004

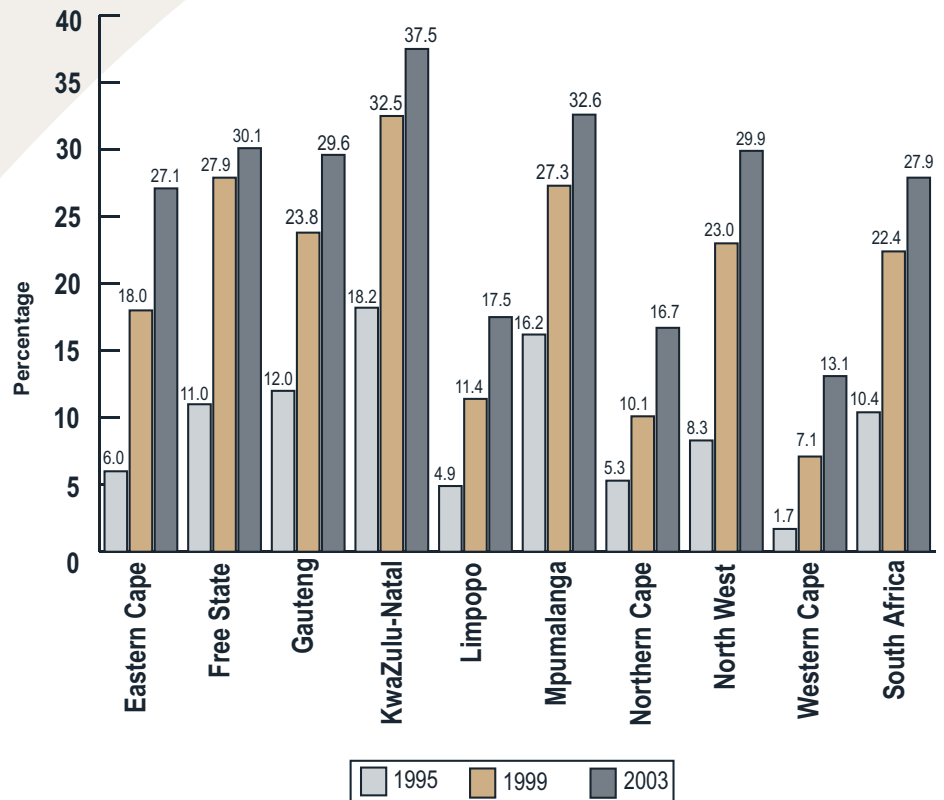


Table A1: Demographic and mortality estimates for the provinces, 2000*										
	Eastern Cape	Free State	Gauteng	KwaZulu-Natal	Limpopo	Mpumalanga	Northern Cape	North West	Western Cape	South Africa**
Population										
Total	6 897 865	2 862 088	8 765 262	9 211 922	5 277 432	3 054 973	955 010	3 753 128	4 399 414	45 081 010
Male	3 251 192	1 430 005	4 451 414	4 420 413	2 521 049	1 510 763	471 228	1 864 124	2 169 209	22 067 941
Female	3 646 672	1 432 083	4 313 848	4 791 509	2 756 383	1 544 210	483 783	1 889 004	2 230 204	23 013 069
Deaths										
Total	80 362	36 860	104 971	129 858	53 815	40 008	9810	45 177	41 555	556 585
Male	41 289	20 619	60 336	66 385	27 410	21 717	5495	25 246	23 377	303 081
Female	39 074	16 240	44 635	63 473	26 404	18 291	4314	19 931	18 178	253 504
Child mortality (per 1000 live births)										
Infant mortality rate	70.9	61.8	44.4	68.4	51.6	58.9	46.4	55.2	31.7	59.1
Infant male mortality rate	74.8	64.8	46.4	71.3	54.2	61.5	48.8	57.8	33.5	61.9
Infant female mortality rate	67.1	58.9	42.5	65.4	49.0	56.2	44.0	52.6	30.0	56.3
Under-5 mortality rate (${}_5q_0$)	105.0	99.0	74.6	116.4	80.7	99.8	68.1	88.5	46.3	94.7
Under-5 male mortality rate (${}_5q_0$)	109.4	102.3	77.1	119.7	83.6	102.7	71.6	91.5	49.0	98.3
Under-5 female mortality rate (${}_5q_0$)	100.6	95.7	72.2	113.2	77.8	96.8	64.7	85.5	43.6	91.1
Adult mortality (%)										
Adult mortality (${}_{45}q_{15}$)	38.6	42.6	39.3	48.7	39.9	47.5	34.2	42.0	30.8	42.9
Adult male mortality (${}_{45}q_{15}$)	45.0	49.3	46.0	54.6	46.7	53.8	40.9	48.8	37.5	49.4
Adult female mortality (${}_{45}q_{15}$)	32.2	35.9	32.7	42.8	33.1	41.3	27.5	35.2	24.1	35.7
Life expectancy (in years)										
Life expectancy (e_0)	56.2	55.1	58.0	51.6	57.1	53.1	60.5	55.9	63.4	55.2
Male life expectancy (e_0)	53.3	52.4	55.1	49.4	54.3	50.7	57.2	53.1	59.8	52.4
Female life expectancy (e_0)	59.0	57.9	61.0	53.8	60.1	55.5	63.9	58.8	67.0	58.5

* Estimates of the number of deaths refer to the 12-month period that started in mid-2000 and are referred to as 2000

** Estimates for South Africa are from the SA NBD study and differ slightly from the sum of the provincial estimates

Table A2: South African Burden of Disease List

Category	SABOD	#	SA BOD list	ICD-10 CODES
I			Communicable	A00-A99, B00-B99, C46, D50-D53, D64, E00-E02, E40-E46, E50-E64, G00, G03, H65-H66, J00-J22, J90, N70-N73, O00-O99, P00-P96
I	A		Infectious and parasitic	A00-A99, B00-B99, C46, G00, G03, J90, N70-N73
I	A	ZA	1 Tuberculosis	A15-A19, B90, J90
I	A	ZA	2 STDs excluding HIV	A50-A64, N70-N73
I	A	ZA	2a Syphilis	A50-A53
I	A	ZA	2b Other STDs	A54-A64, N70-N73
I	A	ZA	3 HIV/AIDS	B20-B24, C46
I	A	ZA	4 Diarrhoeal Diseases	A00-A04, A06-A09
I	A	ZA	5 Childhood (Vaccine preventable) cluster	A33-A37, A80, B03, B05-B06, B91
I	A	ZA	5a Pertussis	A37
I	A	ZA	5b Polio	A80, B91
I	A	ZA	5c Diphtheria	A36
I	A	ZA	5d Measles	B05
I	A	ZA	5e Tetanus	A33 - A35
I	A	ZA	5f Rubella	B06
I	A	ZA	6 Bacterial Meningitis and meningococcaemia	A39, G00, G03
I	A	ZA	7 Hepatitis	B15-B19
I	A	ZA	8 Malaria	B50-B54
I	A	ZA	9 Schistosomiasis and other tropical diseases	B55-B56, B65, B74
I	A	ZA	10 Leprosy	A30, B92
I	A	ZA	11 Intestinal parasites (nematodes)	B76-B81
I	A	ZA	12 Septicaemia	A40-A41
I	A	ZA	13 Other infectious and parasitic	A05, A20-A28, A31, A32, A38, A42-A49, A65-A69, A70-A74, A75-A79, A81-A89, A90-A99, B00-B02, B04, B07-B09, B25-B34, B35-B49, B57-B64, B66-B73, B75, B82-B89, B94-B99
I	B		Respiratory infections	J00-J06, J10-22, H65-H66
I	B	ZA	14 Lower respiratory infections	J10-J18, J20-J22
I	B	ZA	15 Upper respiratory infections	J00-J06
I	B	ZA	16 Otitis media	H65-H66
I	C		Maternal Conditions	O00-O99
I	C	ZA	17 Maternal haemorrhage	O20, O44-O46, O67, O72
I	C	ZA	18 Maternal sepsis	O85-O86
I	C	ZA	19 Hypertension in pregnancy	O10-O16
I	C	ZA	20 Obstructed Labour	O64-O66
I	C	ZA	21 Abortion	O00-O08
I	C	ZA	22 Other maternal	O21-O29, O30-O43, O47-O48, O60-O63, O68-O71, O73-O75, O80-O84, O87-O92, O95-O99
I	D		Perinatal Conditions	P00-P96
I	D	ZA	23 Low birth weight	P05-P07, P22
I	D	ZA	24 Birth asphyxia and trauma	P03, P10-P15, P20-P21
I	D	ZA	25 Other perinatal respiratory conditions	P23-P28
I	D	ZA	26 Neonatal infections	P35-P39
I	D	ZA	27 Other perinatal	P00-P02, P04, P08, P29, P50-P61, P70-P94, P96
			<i>Ill defined</i>	P95
I	E		Nutritional deficiencies	D50-D53, D64, E00-E02, E40-E46, E50-E64
I	E	ZA	28 Protein-energy malnutrition	E40-E46
I	E	ZA	29 Deficiency anaemias	D50-D53, D64
I	E	ZA	30 Other nutritional deficiencies including pellagra and vitamin A deficiency	E00-E02, E50-E64

Category	SABOD	#	SA BOD list
II			Non-Communicable Disease
			C00-C45, C47-C97, D00-D48, D55-D63, D65-D89, E03-E07, E10-E14, E15-E34, E65-E90, F00-F99, G04-G99, H00-H63, H68-H95, I00-I99, J30-J89, J92-J98, K00-K93, L00-L98, M00-M99, N00-N64, N75-N99, Q00-Q99, R00-R95
II	F		Malignant Neoplasms
			C00-C45, C47-C97
II	F	ZA	31 Mouth and Oropharynx
			C00-C14
II	F	ZA	32 Oesophagus
			C15
II	F	ZA	33 Stomach
			C16
II	F	ZA	34 Colo-rectal
			C18-C21
II	F	ZA	35 Liver
			C22
II	F	ZA	36 Pancreas
			C25
II	F	ZA	37 Larynx
			C32
II	F	ZA	38 Trachea/bronchi/lung
			C33-C34
II	F	ZA	39 Bone and connective tissue
			C40-C41, C47, C49
II	F	ZA	40 Melanoma
			C43
II	F	ZA	41 Other skin cancer
			C44
II	F	ZA	42 Breast
			C50
II	F	ZA	43 Cervix
			C53
II	F	ZA	44 Corpus uteri
			C54, C55
II	F	ZA	45 Ovary
			C56
II	F	ZA	46 Prostate
			C61
II	F	ZA	47 Bladder
			C67
II	F	ZA	48 Kidney
			C64-C66, C68
II	F	ZA	49 Brain
			C71
II	F	ZA	50 Lymphoma + multiple myeloma
			C81-C90, C96
II	F	ZA	51 Leukaemia
			C91-C95
II	F	ZA	52 Other malignant neoplasms
			C17, C23-C24, C26, C30-C31, C37-C39, C45, C48, C51-C52, C57-C58, C60, C62-C63, C69-C70, C72-C75, C76-C80, C97
			<i>Ill defined cancers</i>
II	G	ZA	53 Other neoplasms
			D00-D48
II	H	ZA	54 Diabetes Mellitus
			E10-E14
II	I		Endocrine and metabolic disorders
			D55-D63, D65-D89, E03-E07, E15-E34, E65-89
II	I	ZA	55 Albinism
			E70.3
II	I	ZA	56 Other endocrine and metabolic
			D55-D63, D65-D89, E03-E07, E15-E16, E20-E34, E65-E68, E71-E89
II	J		Mental disorders
			F10-F99
II	J	ZA	57 Alcohol dependence
			F10
II	J	ZA	58 Drug use
			F11-F16, F18-F19
II	J	ZA	59 Schizophrenia
			F20-F29
II	J	ZA	60 Unipolar
			F32-F33
II	J	ZA	61 Bipolar
			F30-F31
II	J	ZA	62 Anorexia nervosa
			F50
II	J	ZA	63 Neurotic disorders
			F40-F42
II	J	ZA	64 Hyperkinetic Syndrome of childhood
			F90
II	J	ZA	65 Adjustment reaction (PTSS)
			F43
II	J	ZA	66 Mental Disability
			F70-F79
II	J	ZA	67 Other mental disorders
			F17, F34-39, F44-F48, F51-F59, F60-F69, F80-F89, F91-F98, F99
II	K		Nervous system disorders
			F01-F09, G03-G99
II	K	ZA	68 Alzheimer and other dementias
			F01-F09, G30-G31
II	K	ZA	69 Parkinson's disease
			G20-G21
II	K	ZA	70 Multiple sclerosis
			G35
II	K	ZA	71 Epilepsy
			G40-G41
II	K	ZA	72 Encephalitis and brain abscess
			G04, G06, G09
II	K	ZA	73 Other nervous system disorders
			G08, G10-G12, G23-25, G36-G37, G43-G47, G50-G58, G60-G64, G70-G72, G80-G83, G90-G98
II	L		Sense Organs
			H00-H13, H15-H59, H60-H62, H68-H95
II	L	ZA	74 Glaucoma
			H40
II	L	ZA	75 Cataracts
			H25-H26
II	L	ZA	76 Other visual disorders
			H00-H21, H27-H35, H42-H59
II	L	ZA	77 Hearing loss and other ear disorders
			H60-H62, H68-H95

II	M			Cardiovascular	I00-I26, I28-184, I86-199, J81
II	M	ZA	78	Rheumatic heart disease	I01-I09
II	M	ZA	79	Ischaemic heart disease	I20-I25
II	M	ZA	80	Stroke	I60-I69
II	M	ZA	81	Inflammatory heart disease	I30, I33, I38, I40, I42
II	M	ZA	81 a	Peri-, endo, myocarditis	I30, I33, I38, I40
II	M	ZA	81 b	Cardiomyopathy	I42
II	M	ZA	82	Hypertensive heart disease	I10-I13
II	M	ZA	83	Non-rheumatic valvular disease	I34-I37
II	M	ZA	84	Pulmonary embolism	I26
II	M	ZA	85	Aortic aneurysm	I71
II	M	ZA	86	Peripheral vascular disorders	I72- I78, I80-184, I86-189
II	M	ZA	87	Other cardiovascular	I00, I28, I31, I44-I45, I95-I99
				<i>Ill-defined cardiovascular</i>	I46-I49, I50-I51, I70, J81
				<i>Heart failure etc</i>	I46-I49, I50-I51, J81
				<i>Atherosclerosis</i>	I70
II	N			Respiratory	I27, J30-J80; J82-J86, J92-J99
II	N	ZA	88	COPD	J40-J44, I27
II	N	ZA	89	Asthma	J45-46
II	N	ZA	90	Aspiration pneumonia/ lung abscess/ emphysema	J69, J85-J86
II	N	ZA	91	Other respiratory	J30-J39, J47, J60-J68, J70, J80, J82-J84, J92-J98
II	O			Digestive	K20-K38, K40-K63, K65-K93, I85
II	O	ZA	92	Peptic ulcer	K25-K28
II	O	ZA	93	Appendicitis	K35-K37
II	O	ZA	94	Noninfective gastroenteritis and colitis	K50-K52
II	O	ZA	95	Cirrhosis of liver	K70, K74, K76, I85
		ZA	96	Hepatic failure	K72
II	O	ZA	97	Gall bladder disease	K80-K83
II	O	ZA	98	Diseases of the pancreas	K85, K86
II	O	ZA	99	Other digestive	K20-K22, K29-K31, K38, K40-K46, K55-K66, K71, K73, K75, K90-K91
				<i>Ill defined</i>	K92
II	P			Genito-Urinary	N00-N50, N60-N64, N75-N98
II	P	ZA	100	Nephritis/nephrosis	N00-N19
II	P	ZA	101	Benign prostatic hypertrophy	N40
II	P	ZA	102	Other genito-urinary	N20-N23, N25-N39, N41-N50, N60-N64, N75-N98
II	Q	ZA	103	Skin disease	L00-L98
II	R			Musculo-skeletal	M00-M99
II	R	ZA	104	Rheumatoid arthritis	M05-M06
II	R	ZA	105	Osteoarthritis	M15-M19
II	R	ZA	106	Other mutculo-skeletal	M00-M02, M08, M10-M13, M20-M99
II	S			Congenital abnormalities	Q00-Q99
II	S	ZA	107	Neural tube defects	Q00-Q07
II	S	ZA	108	Cleft lip/palate	Q35-Q37
II	S	ZA	109	Congenital heart disease	Q20-Q28
II	S	ZA	110	Congenital disorders of GIT	Q38-Q45
II	S	ZA	111	Down syndrome and other chromosomal anomalies	Q90-Q99
I	D	ZA	112	Fetal alcohol syndrome	Q86.0
II	S	ZA	113	Other congenital abnormalities	Q10-Q18, Q30-Q34, Q50-Q56, Q60-Q64, Q65-Q79, Q80-Q85, Q87
				<i>Ill defined</i>	Q89
II	T			Oral conditions	K00-K14
II	T	ZA	114	Dental caries	K02
II	T	ZA	115	Periodontal disease	K05
II	T	ZA	116	Other oral health	K00-K01, K03-K04, K06-K14
II	U			Cot death	R95, R96-R98 < 12 MTHS
II	U	ZA	117	Cot death	R95, R96-R98 < 12 MTHS
				<i>Ill defined</i>	R00-R09, R10-R19, R20-R23, R25-R29, R30-R39, R40-R46, R47-R49, R50-R69, R70-R79, R80-R82, R83-R94, R96-R98 > 12 months, R99

Category	SABOD	#	SA BOD list
III			Injuries
III	V		Unintentional
III	V	ZA 118	Road traffic accidents
III	V	ZA 119	Other transport accidents
III	V	ZA 120	Mining accidents
III	V	ZA 121	Poisoning
III	V	ZA 122	Surgical / medical misadventure
III	V	ZA 123	Falls
III	V	ZA 124	Fires
III	V	ZA 125	Natural and environmental factors
III	V	ZA 126	Drowning
III	V	ZA 127	Suffocation and foreign bodies
III	V	ZA 128	Other unintentional injuries specified
			<i>Ill defined</i>
			<i>Ill defined transport</i>
			<i>Ill defined other unintentional</i>
III	W		Undetermined whether intentional or unintentional
III	X		Intentional injuries
III	X	ZA 129	Suicide and self-inflicted
III	X	ZA 130	Homicide and violence
III	X	ZA 130a	with firearm
III	X	ZA 130b	without firearm
III	X	ZA 131	War / Legal Intervention
			<i>Ill defined</i>

	Male 0-4		Male 5 to 14		Male 15 to 24		Male 25 to 34		Male 35 to 44		Male 45 to 54		Male 55 to 64		Male 65 to 74		Male 75+		Total											
	Persons	Persons	Persons	Persons	Persons	Persons	Persons	Persons	Persons	Persons	Persons	Persons	Persons	Persons	Persons	Persons	Persons	Persons												
Total	2269	93	353	1069	1842	2169	3057	5580	1442	2082	58	334	1154	1216	1048	1704	3503	9822	1134	2176	76	343	1112	1547	1638	2373	4423	10710	1288	
87 Other cardiovascular	0	0	3	4	2	3	0	23	2	2	0	3	3	3	3	0	17	1	1	0	0	2	4	2	3	3	0	0	19	2
88 COPD	0	0	0	3	19	48	233	287	35	0	0	0	3	7	14	42	164	320	16	0	0	0	3	14	32	136	218	449	25	
89 Asthma	2	0	0	4	6	21	40	81	10	5	0	0	6	14	22	38	58	173	12	3	0	0	5	10	22	39	68	188	11	
90 Aspiration pneumonia/ lung abscess	8	0	4	3	3	2	14	58	34	6	0	1	1	0	6	0	0	13	1	4	0	3	2	1	9	7	26	21	4	
91 Other respiratory	7	0	4	3	8	14	20	71	126	9	7	1	3	2	17	16	30	4	7	0	4	2	6	8	19	40	63	7		
92 Peptic ulcer	0	0	3	8	19	15	36	22	56	10	0	1	2	1	8	26	8	146	6	0	0	2	5	11	12	31	14	115	8	
93 Appendicitis	0	0	4	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	
94 Noninfective gastroenteritis	12	0	11	1	12	0	0	5	9	0	4	1	2	16	0	16	0	4	11	0	0	2	6	2	14	0	0	0	5	
95 Cirrhosis of liver	0	0	6	13	12	61	36	23	9	0	0	1	11	9	21	25	49	5	0	0	0	3	12	10	41	30	40	7		
96 Hepatic failure	0	0	5	9	18	7	35	90	6	0	0	2	1	3	6	0	12	1	0	0	1	4	6	11	6	16	40	4		
97 Gall bladder disease	0	0	0	0	3	12	0	0	1	0	0	0	0	3	10	33	12	2	0	0	0	0	0	0	3	11	18	8		
98 Pancreatitis	0	0	2	0	6	7	0	0	1	0	0	1	1	0	0	13	1	0	0	0	0	1	1	1	3	3	0	9	1	
99 Other digestive	4	2	11	17	3	24	46	10	5	2	1	4	5	15	17	90	6	4	2	6	7	11	4	19	30	58	8			
100 Nephritis/nephrosis	4	2	0	8	6	33	69	141	268	16	0	8	5	14	22	36	91	282	16	2	1	4	6	10	28	53	113	277	16	
101 Benign prostatic hypertrophy	0	0	0	0	0	0	10	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	8	
102 Other genito-urinary	0	0	0	0	4	0	0	0	1	0	1	0	1	0	3	0	0	12	1	0	0	1	0	0	2	0	0	0	0	
103 Skin disease	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
104 Rheumatoid arthritis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
105 Osteoarthritis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
106 Other musculo-skeletal	0	0	0	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	1	0	1	0	1	0	0	0	0	0	
107 Neural tube defects	5	2	0	0	0	0	0	0	1	29	0	0	0	3	0	0	0	3	17	1	0	1	0	1	0	0	0	0	2	
108 Cleft lip/palate	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
109 Congenital heart disease	17	0	0	0	0	0	0	0	2	14	0	0	0	0	0	0	0	0	2	16	0	0	0	0	0	0	0	0	0	
110 Congenital disorders of GIT	33	0	0	0	0	0	0	0	4	18	0	1	0	0	0	0	0	0	2	25	0	0	0	0	0	0	0	0	3	
111 Down syndrome and other chromosomal	9	0	0	0	0	0	0	0	1	6	0	0	0	0	0	0	0	0	1	8	0	0	0	0	0	0	0	0	1	
112 Fetal alcohol syndrome	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
113 Other congenital abnormalities	0	1	0	0	0	0	0	33	1	6	1	0	0	3	0	0	0	0	1	3	1	0	0	0	1	0	0	12	1	
114 Dental caries	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
115 Periodontal Disease	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
116 Other oral health	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
117 Cot death	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
118 Road traffic accidents	29	20	29	46	61	67	61	53	126	43	18	9	11	20	19	17	25	50	15	24	15	20	29	41	45	39	37	77	29	
119 Other transport accidents	0	1	3	3	5	6	4	1	3	1	0	1	1	0	1	1	1	3	1	0	1	1	2	3	3	3	1	2	2	
120 Mining accidents	0	0	1	1	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
121 Poisoning	6	0	1	1	1	1	2	0	2	2	0	0	1	1	1	1	1	1	1	4	0	1	1	1	1	1	1	0	1	
122 Surgical / medical misadventure	3	1	0	0	1	2	8	19	54	2	3	0	1	0	2	3	8	34	2	3	0	0	1	1	2	6	13	41	2	
123 Falls	2	1	1	2	2	5	5	9	40	3	2	0	0	1	0	2	3	24	1	2	1	1	1	1	1	3	4	6	30	
124 Fires	27	3	4	7	10	11	8	10	30	9	14	1	3	5	6	5	4	7	40	6	21	2	4	6	8	8	6	9	37	
125 Natural and environmental factors	1	0	0	0	1	1	1	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	
126 Drowning	15	6	2	2	3	3	3	1	1	4	6	1	0	0	1	0	0	0	1	11	4	1	1	1	2	2	2	0	0	
127 Suffocation and foreign bodies	4	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	
128 Other unintentional injuries specified	5	2	2	2	1	3	3	4	2	2	3	0	0	1	1	0	1	0	1	4	1	4	1	1	1	2	2	3	1	
129 Homicide/violence	15	6	108	130	120	94	70	46	158	79	9	3	13	19	23	15	10	13	54	14	12	4	60	74	56	40	28	91	47	
130 Suicide	0	2	15	20	20	29	25	30	74	16	0	1	4	7	5	6	4	15	4	0	0	2	10	12	14	18	15	36	10	
131 Legal intervention and war	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

* including pellagra and Vitamin A deficiency

	Male 0-4		Male 5 to 14		Male 15 to 24		Male 25 to 34		Male 35 to 44		Male 45 to 54		Male 55 to 64		Male 65 to 74		Male 75+		Total	Persons 0-4	Persons 5 to 14	Persons 15 to 24	Persons 25 to 34	Persons 35 to 44	Persons 45 to 54	Persons 55 to 64	Persons 65 to 74	Persons 75+	Total	
	1665	85	349	884	1635	1951	2890	5439	12006	1355	1558	52	302	1002	1068	958	1608	3343												9286
85 Aortic aneurism	0	0	1	0	0	2	3	29	132	3	0	0	0	0	1	8	25	32	2	0	0	0	0	1	2	5	27	74	2	
86 Peripheral vascular disorders	0	0	0	0	0	6	13	37	54	3	0	0	0	1	4	0	19	78	3	0	0	0	1	2	3	9	27	70	3	
87 Other cardiovascular	0	1	0	0	0	4	9	4	54	2	0	0	1	1	0	1	4	15	29	2	0	0	0	2	6	10	38	2		
88 COPD	1	0	2	3	8	44	177	387	1016	35	4	0	1	5	19	83	189	410	21	3	0	2	2	6	32	130	278	623	28	
89 Asthma	5	1	0	2	7	22	45	61	157	10	3	0	0	6	4	26	27	40	89	9	4	1	0	4	6	24	36	49	113	10
90 Aspiration pneumonia/ lung abscess	4	0	1	0	3	4	2	9	8	2	0	0	0	0	1	2	0	15	1	2	0	0	0	2	3	1	4	12	1	
91 Other respiratory	4	0	1	1	3	10	20	62	125	6	5	1	3	1	2	7	15	46	65	6	5	1	2	1	3	8	18	53	86	6
92 Peptic ulcer	0	0	3	5	8	18	29	20	80	8	0	0	1	3	2	11	13	104	4	0	0	2	3	6	10	20	16	96	6	
93 Appendicitis	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	1	0	0	0	
94 Noninfective gastroenteritis	4	0	0	3	4	11	19	14	19	2	7	1	1	2	1	6	5	9	2	6	1	1	2	2	7	1	5	9	13	2
95 Cirrhosis of liver	0	0	0	2	11	34	57	64	82	12	0	0	1	1	3	9	30	38	19	5	0	0	1	2	7	22	43	50	41	8
96 Hepatic Failure	1	0	1	1	6	11	17	26	67	5	0	2	0	1	6	7	9	14	24	4	1	1	0	1	6	9	13	19	39	4
97 Gall bladder disease	0	0	0	2	2	2	4	5	25	1	0	0	0	0	0	2	2	5	31	1	0	0	0	1	2	3	5	29	1	
98 Pancreatitis	0	0	0	2	2	2	9	8	0	2	0	0	0	0	0	2	2	0	6	1	0	0	1	1	2	5	4	4	1	
99 Other digestive	10	1	1	4	9	21	25	44	131	10	1	1	3	5	7	9	13	35	112	7	6	1	2	4	8	16	19	39	118	9
100 Nephritis/nephrosis	4	5	5	7	18	44	68	120	409	22	4	1	5	7	8	23	30	52	416	17	4	3	5	7	13	34	49	82	413	19
101 Benign prostatic hypertrophy	0	0	0	0	0	1	2	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	6	0
102 Other genito-urinary	0	0	0	0	0	1	0	4	9	0	0	1	1	0	0	0	2	5	18	1	0	0	0	0	0	1	5	15	1	
103 Skin disease	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	3	0
104 Rheumatoid arthritis	0	0	0	0	0	3	0	5	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	1	0	4	0	0
105 Osteoarthritis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
106 Other musculo-skeletal	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	4	1	0	0	0	1	0	0	0	0	3	0
107 Neural tube defects	18	1	0	0	0	0	0	0	0	2	15	1	1	0	0	1	2	3	6	2	17	1	0	0	0	1	1	1	4	2
108 Cleft lip/palate	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
109 Congenital heart disease	20	2	0	0	0	0	0	0	0	2	32	1	1	0	1	0	2	0	0	4	26	2	0	4	8	16	19	39	118	9
110 Congenital disorders of GIT	20	0	0	0	0	0	0	0	0	2	3	0	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0	1
111 Down syndrome and other chromosomal	5	0	0	0	0	0	0	0	0	1	6	0	0	0	0	0	0	0	0	1	6	0	0	0	0	0	0	0	0	1
112 Fetal alcohol syndrome	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
113 Other congenital abnormalities	8	0	0	0	0	0	0	0	0	1	5	0	0	1	0	2	0	5	18	1	0	0	0	0	0	0	1	5	15	1
114 Dental caries	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
115 Periodontal Disease	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
116 Other oral health	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
117 Cot death	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
118 Road traffic accidents	33	16	41	80	97	91	81	86	103	65	26	7	15	28	27	27	28	43	65	23	29	11	28	56	64	60	54	63	78	44
119 Other transport accidents	0	1	4	6	9	8	6	2	0	5	1	0	0	2	2	1	1	2	3	1	1	0	2	4	5	4	4	2	2	3
120 Mining accidents	0	0	1	1	5	4	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
121 Poisoning	6	0	1	2	2	2	2	0	0	2	3	0	2	1	1	1	1	1	1	1	5	0	1	2	2	2	2	1	1	2
122 Surgical / medical misadventure	2	0	0	1	1	3	11	33	42	3	3	0	2	1	3	5	14	41	3	3	0	0	1	1	1	3	8	22	42	3
123 Falls	2	1	1	3	4	7	7	15	32	4	2	0	0	0	1	4	5	29	1	2	1	1	2	2	2	4	6	10	30	3
124 Fires	28	2	6	12	16	16	11	15	23	12	20	1	4	10	9	7	13	48	9	24	2	5	11	13	11	9	14	39	11	
125 Natural and environmental factors	1	0	0	0	1	1	1	2	0	1	1	0	0	0	0	0	1	0	0	0	1	0	0	0	1	1	1	1	0	0
126 Drowning	17	4	2	3	5	4	4	0	1	5	9	1	1	1	1	1	0	1	0	1	13	3	1	2	3	2	2	1	0	3
127 Suffocation and foreign bodies	3	0	0	0	0	0	0	0	0	1	3	0	0	0	0	1	1	0	0	0	3	0	0	0	0	0	0	0	0	1
128 Other unintentional injuries specified	5	1	2	3	2	4	4	6	2	3	5	0	0	1	1	1	2	0	0	1	5	1	1	2	1	2	2	4	1	2
129 Homicide/violence	15	4	153	223	195	128	92	70	148	132	12	2	17	42	33	22	17	24	69	23	14	3	85	140	119	77	54	45	96	78
130 Suicide	0	2	22	34	32	40	31	48	50	24	0	1	6	10	10	7	9	8	17	6	0	1	14	23	22	24	20	26	29	16
131 Legal intervention and war	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

* including pellagra and Vitamin A deficiency

	Male 0-4		Male 5 to 14		Male 15 to 24		Male 25 to 34		Male 35 to 44		Male 45 to 54		Male 55 to 64		Male 65 to 74		Male 75+		Male Total																	
Total	1794	91	356	910	1553	2057	3170	5959	12944	1087	1648	54	296	913	999	1041	1850	3893	10353	958	1722	73	327	912	1231	1464	2385	4686	11307	1020						
26 Neonatal infections	31	0	0	0	0	0	0	0	0	5	29	0	0	0	0	0	0	0	0	4	30	0	0	0	0	0	0	0	0	0	0	4				
27 Other perinatal	101	0	0	0	0	0	0	0	0	15	93	0	0	0	0	0	0	0	0	13	97	0	0	0	0	0	0	0	0	0	0	14				
28 Protein-energy malnutrition	94	1	1	1	1	2	4	11	22	15	84	0	1	1	3	7	4	13	32	14	89	1	1	2	5	4	12	28	14	4	14					
29 Deficiency anaemias	1	0	0	9	7	2	5	43	0	3	7	0	3	3	6	12	4	39	33	6	4	2	6	7	8	4	41	21	4	4	6					
30 Other nutritional deficiencies*	0	0	0	0	0	0	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
31 Mouth and oropharynx ca	0	0	0	0	0	0	11	31	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0				
32 Oesophageal ca	0	0	0	1	4	28	83	129	197	9	0	0	0	1	0	17	29	36	23	4	0	0	0	0	0	2	22	51	72	87	7	7				
33 Stomach ca	0	0	0	5	4	17	44	34	79	5	0	0	2	5	0	11	36	74	3	0	0	0	0	3	5	7	24	35	76	4	4					
34 Colo-rectal ca	0	0	0	2	3	6	27	59	105	195	9	0	2	1	0	10	18	0	99	4	0	0	2	2	3	17	35	40	134	6	6					
35 Liver ca	0	0	0	1	5	0	7	24	25	2	0	0	0	0	2	11	17	15	46	3	0	0	0	1	3	6	13	18	38	2	2					
36 Pancreas ca	0	0	0	0	0	4	18	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	1	7	5	0	1	1					
37 Larynx ca	0	0	0	0	0	2	13	18	128	699	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	6	7	49	257	5				
38 Trachea/bronchi/lung ca	0	0	0	0	2	28	73	131	122	8	0	0	0	0	0	16	21	14	37	3	0	0	0	2	2	21	42	59	68	6	6					
39 Bone and connective tissue ca	0	1	0	3	0	7	0	11	0	1	0	0	0	1	0	0	0	7	0	0	0	0	0	2	0	0	3	0	9	0	1	1				
40 Melanoma	0	0	0	0	0	0	7	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	5	0	0	0				
41 Other skin cancer	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
42 Breast ca	0	0	0	0	3	0	7	0	0	0	0	0	0	3	9	31	34	58	88	8	0	0	0	2	6	18	23	36	56	4	4	4				
43 Cervix ca	0	0	0	0	0	0	0	0	0	0	0	0	0	2	24	73	35	101	200	15	0	0	0	1	14	43	21	62	126	8	8	8				
44 Corpus uteri ca	0	0	0	0	0	0	0	0	0	4	11	43	0	2	0	0	11	43	0	2	0	0	0	1	0	1	6	27	0	1	1	1				
45 Ovary ca	0	0	0	0	0	0	0	0	0	0	0	0	0	3	4	5	22	0	0	1	0	0	0	0	2	2	3	13	0	1	0	0				
46 Prostate ca	0	0	0	0	2	13	18	128	699	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	6	7	49	257	5				
47 Bladder ca	0	0	0	1	0	0	0	49	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2	0	0	0	18	0	0	0	0			
48 Kidney ca	0	0	0	0	0	0	6	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	5	0	0	0	0			
49 Brain ca	0	0	0	0	0	7	6	12	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	5	0	0	0	0	0			
50 Lymphoma	4	0	2	3	0	0	12	11	25	2	0	0	1	0	2	3	5	7	23	0	2	1	2	0	1	1	2	8	9	24	2	2	2			
51 Leukaemia	0	1	2	3	0	0	0	31	2	0	0	0	0	1	2	4	0	7	28	1	0	1	1	2	1	2	0	4	29	1	1	1	1			
52 Other malignant neoplasms	2	0	0	0	5	4	0	0	56	1	0	0	0	1	2	4	5	7	25	1	1	0	1	3	4	3	5	36	1	1	0	0	0			
53 Benign neoplasms	0	0	2	1	2	0	0	0	0	1	0	0	0	0	3	4	0	0	0	1	0	0	0	1	3	2	3	0	0	0	0	0	0			
54 Diabetes mellitus	0	0	2	5	17	63	158	506	590	27	0	0	3	6	20	67	141	281	389	29	0	0	0	3	6	19	66	148	367	463	28	28	28			
55 Alcoholism	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
56 Other endocrine and metabolic	4	2	2	1	10	10	27	33	262	7	0	0	4	3	6	11	37	33	176	8	2	1	3	2	7	10	33	33	208	8	8	8	8			
57 Alcohol dependence	0	0	0	1	0	0	12	16	11	0	2	0	0	1	0	0	9	6	0	1	0	0	0	0	1	0	5	11	8	0	1	1	1	1		
58 Drug use	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
59 Schizophrenia	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
60 Unipolar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
61 Bipolar	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
62 Anorexia nervosa	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
63 Anxiety disorders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
64 Hyperkinetic syndrome	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
65 Adjustment reaction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
66 Mental disability	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
67 Other mental disorders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
68 Alzheimers and other dementias	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
69 Parkinsons disease	0	0	0	0	0	0	10	11	29	1	0	0	0	0	0	0	0	13	30	1	0	0	0	0	0	0	0	0	4	12	30	1	1	1	1	
70 Multiple sclerosis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
71 Epilepsy	5	1	7	6	19	13	38	21	29	8	0	0	3	5	12	6	15	7	12	4	3	0	5	5	15	9	24	12	18	6	6	6	6	6		
72 Encephalitis and brain abscess	10	1	5	2	0	3	0	0	22	3	16	0	3	0	3	0	0	0	0	0	0	0	0	4	1	2	1	0	0	0	0	0	0	0	0	
73 Other nervous system disorders	11	2	2	7	4	9	27	43	29	7	0	0	2	5	4	0	5	19	10	3	6	1	2	6	4	4	14	29	17	5	5	5	5	5		
74 Glaucoma	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
75 Cataracts	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
76 Other visual disorders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
77 Hearing loss and other ear disorders	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
78 Rheumatic heart disease	0	0	2	0	6	0	8	0	57	2	0	0	5	2																						

	Male 0-4		Male 5 to 14		Male 15 to 24		Male 25 to 34		Male 35 to 44		Male 45 to 54		Male 55 to 64		Male 65 to 74		Male 75+		Female Total	Female 0-4	Female 5 to 14	Female 15 to 24	Female 25 to 34	Female 35 to 44	Female 45 to 54	Female 55 to 64	Female 65 to 74	Female 75+	Persons Total	Persons 0-4	Persons 5 to 14	Persons 15 to 24	Persons 25 to 34	Persons 35 to 44	Persons 45 to 54	Persons 55 to 64	Persons 65 to 74	Persons 75+
	1794	91	356	910	1553	2057	3170	5959	12944	1087	1648	54	296	913	999	1041	1850	3893																				
82	0	1	0	13	66	192	321	516	1137	50	0	1	2	8	53	125	380	474	1532	71	0	1	1	10	59	133	356	490	1387	61								
83	0	1	0	0	3	0	0	22	0	1	0	0	8	0	0	0	0	0	29	2	0	1	4	0	1	0	0	8	19	2								
84	0	1	0	0	4	9	16	0	0	2	0	0	1	3	0	4	7	22	1	0	0	0	0	0	4	9	4	14	1									
85	0	0	0	0	2	1	12	30	31	2	0	0	0	3	5	1	7	1	0	0	0	0	0	0	1	2	5	15	1									
86	0	0	0	0	0	4	16	33	31	2	0	0	2	0	1	0	13	26	1	0	0	1	0	1	1	7	21	28	1									
87	0	0	0	0	0	0	0	11	0	0	0	0	0	3	0	3	30	1	0	0	0	0	2	0	2	0	12	19	1									
88	4	2	2	8	15	67	180	304	697	27	0	1	8	9	6	49	33	233	9	2	2	2	8	11	32	102	137	404	18									
89	0	3	7	3	8	35	75	108	217	12	7	3	2	6	12	25	39	72	166	12	4	3	5	10	29	53	86	185	12									
90	0	0	0	2	2	3	5	0	29	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	2	0	11	1									
91	0	0	5	4	8	15	16	86	212	9	8	2	1	1	3	6	20	13	46	5	8	1	3	2	5	10	18	41	107	7								
92	0	0	0	7	9	10	16	22	45	4	0	0	4	6	3	13	9	32	129	6	0	2	6	5	12	12	28	98	5									
93	0	0	0	0	0	0	0	45	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	1	0	17	0									
94	1	0	3	4	3	4	5	33	51	3	2	0	1	2	6	9	11	20	24	4	1	0	2	3	5	7	9	25	34	3								
95	0	1	0	8	15	83	126	129	302	17	0	0	4	5	11	39	104	144	9	0	1	0	6	9	41	74	114	202	13									
96	0	1	5	7	12	14	22	43	0	6	0	1	3	0	12	14	20	53	3	0	1	3	5	5	13	17	29	33	5									
97	0	0	0	0	2	0	0	0	18	0	0	0	0	0	0	11	19	0	1	0	0	1	0	1	0	6	12	6	1									
98	0	0	0	1	6	6	5	0	22	1	0	0	0	1	3	0	0	0	0	0	0	0	0	2	4	2	0	8	1									
99	0	0	5	24	34	7	69	86	380	15	0	1	5	17	19	35	32	124	153	16	0	0	5	21	25	23	47	109	240	15								
100	16	1	0	11	14	28	54	162	501	16	0	2	3	5	10	20	39	59	283	12	8	1	2	7	12	23	45	98	363	14								
101	0	0	0	0	0	0	0	11	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	11	0									
102	0	0	0	0	0	0	7	0	21	0	0	0	0	0	3	0	0	0	20	1	0	0	0	0	0	5	0	8	12	1								
103	0	0	0	0	0	0	3	0	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	6	0									
104	0	0	0	2	0	3	0	0	46	1	0	0	0	0	0	0	0	0	20	0	0	0	0	1	0	1	0	30	1									
105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
106	0	0	0	1	0	0	0	0	0	0	0	0	2	0	1	0	0	0	12	1	0	1	1	1	0	0	0	7	0									
107	19	1	0	0	0	0	0	0	3	14	0	0	0	0	0	0	0	0	2	17	1	0	0	0	0	0	0	0	0	3								
108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
109	16	2	2	1	0	0	0	4	17	0	0	0	1	0	3	0	0	3	16	1	1	1	1	1	0	2	0	0	0	3								
110	31	0	0	0	0	0	0	0	5	19	1	0	0	0	0	0	6	0	3	25	1	0	0	0	0	0	4	0	4	0								
111	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	0	0	0	0	0	0	0	0	0	1								
112	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
113	0	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0									
114	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
116	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
117	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									
118	32	19	34	52	65	68	71	67	122	39	29	6	10	16	14	23	33	29	66	16	31	13	22	32	35	42	49	44	87	27								
119	0	3	4	6	6	6	5	2	0	2	0	0	0	0	2	1	0	2	3	1	1	0	2	2	3	3	3	1	2	2								
120	0	0	0	1	4	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0									
121	9	0	1	1	2	1	2	0	2	4	0	0	1	1	2	1	2	1	2	1	6	0	1	1	1	1	2	0	1	2								
122	5	1	0	0	1	2	9	24	51	2	6	0	1	0	3	6	9	42	2	5	0	0	1	1	3	8	15	46	2									
123	3	1	1	2	3	5	6	12	37	2	5	0	0	0	0	5	3	27	2	4	1	1	1	1	2	5	6	31	2									
124	40	3	5	8	10	11	9	12	28	11	27	1	3	6	5	6	9	8	40	7	33	2	4	7	8	9	10	36	9									
125	2	0	0	0	1	1	1	1	0	1	2	0	0	0	0	1	0	0	0	0	2	0	0	0	0	0	1	1	0	0								
126	16	6	2	2	3	3	3	1	1	5	10	1	0	0	1	1	1	0	2	13	3	1	1	2	2	2	1	0	3									
127	6	0	0	0	0	0	0	0	1	6	0	0	0	0	0	1	0	0	0	6	0	0	0	1	1	1	1	0	0									
128	10	2	2	2	1	3	3	5	2	3	7	0	0	0	1	1	1	0	1	9	1	1	1	1	1	2	2	3	1	2								
129	23	5	126	153	129	91	79	55	150	76	18	2	12	25	17	19	20	18	62	14	21	4	70	83	64	49	44	32	95	44								
130	0	2	18	23	21	29	27	37	63	13	0	4	6	5	6	11	6	17	4	0	1	11	14	12	15	18	18	34	8									
131	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0									

* including pellagra and Vitamin A deficiency

	Male 0-4		Male 5 to 14		Male 15 to 24		Male 25 to 34		Male 35 to 44		Male 45 to 54		Male 55 to 64		Male 65 to 74		Male 75+		Total															
	Persons	Rate	Persons	Rate	Persons	Rate	Persons	Rate	Persons	Rate	Persons	Rate	Persons	Rate	Persons	Rate	Persons	Rate																
Total	2242	101	381	1234	2204	2437	3234	5929	12736	1437	2086	66	386	1478	1553	1170	1766	3730	9985	1184	2184	83	373	1360	1879	1809	2474	4661	11084	1310				
83 Non-rheumatic valvular disease	0	0	5	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0				
84 Pulmonary embolism	0	0	0	0	2	4	14	19	51	2	0	0	2	0	8	4	7	24	43	3	0	0	0	1	0	5	4	10	22	46	3			
85 Aortic aneurysm	0	0	0	0	0	4	0	4	0	137	2	0	0	0	0	3	0	0	0	11	0	0	0	0	0	0	4	0	1	62	1			
86 Peripheral vascular disorders	0	0	5	2	2	12	0	19	1	2	0	0	1	0	0	7	7	11	4	1	0	0	0	0	3	1	10	4	14	3	2			
87 Other cardiovascular	0	0	0	0	2	0	7	0	0	1	0	0	1	2	0	0	7	0	0	0	0	0	0	0	1	2	0	7	0	0	1			
88 COPD	6	3	3	22	58	180	310	920	32	3	0	2	9	8	17	70	196	314	17	4	0	3	6	15	38	123	247	556	24	16				
89 Asthma	7	0	7	5	10	34	80	166	608	19	6	0	3	5	5	24	80	108	168	13	6	0	5	5	7	29	80	134	344	16				
90 Aspiration pneumonia/ lung abscess	11	0	0	0	4	4	22	37	0	4	0	0	0	0	2	0	7	0	27	1	6	0	0	0	3	2	14	16	16	2	0			
91 Other respiratory	9	1	2	1	4	16	29	109	232	9	6	0	2	4	2	7	12	24	81	5	8	0	2	3	3	11	20	62	142	7	8			
92 Peptic ulcer	0	0	6	12	18	29	91	60	8	0	0	0	4	6	4	24	35	38	136	9	0	0	0	2	6	8	21	33	62	106	8			
93 Appendicitis	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	4	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0			
94 Noninfective gastroenteritis	6	2	0	18	3	4	26	37	82	11	0	4	9	1	5	7	35	38	6	8	1	2	14	2	14	2	5	16	36	55	7			
95 Cirrhosis of liver	0	0	0	2	7	36	72	55	102	9	0	0	4	20	7	28	49	76	7	0	0	0	0	3	13	22	49	52	86	8	8			
96 Hepatic Failure	0	0	0	7	6	0	0	37	82	3	0	0	4	2	4	0	15	14	16	3	0	0	2	5	5	0	8	24	43	3	0			
97 Gall bladder disease	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0		
98 Pancreatitis	0	0	6	2	11	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	1	6	0	0	0	1	0		
99 Other digestive	0	2	7	8	10	30	7	55	111	9	3	0	5	7	17	7	24	87	7	1	6	7	1	6	7	8	24	7	38	96	8	8		
100 Nephritis/nephrosis	0	3	0	17	17	27	29	127	474	16	3	0	4	9	10	10	29	21	109	8	1	2	13	14	19	29	68	254	12	0	0			
101 Benign prostatic hypertrophy	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
102 Other genito-urinary	0	0	0	3	0	0	0	37	0	1	0	0	0	0	0	0	0	11	48	1	0	0	0	1	0	0	2	0	0	22	29	1	0	
103 Skin disease	0	0	0	2	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
104 Rheumatoid arthritis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
105 Osteoarthritis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
106 Other musculo-skeletal	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	7	0	0	0	1	0	0	0	0	1	3	0	0	0	0	0	0	0	
107 Neural tube defects	12	2	0	0	0	0	0	0	0	2	12	0	0	0	0	0	0	0	0	2	12	1	0	0	0	0	0	0	0	0	0	0	0	0
108 Cleft lip/palate	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
109 Congenital heart disease	12	1	0	0	2	4	0	0	0	2	21	0	5	0	0	0	0	0	0	4	17	1	3	0	1	2	0	0	0	0	0	0	0	3
110 Congenital disorders of GIT	12	0	0	0	0	0	0	0	0	2	19	0	0	0	0	0	0	0	0	2	15	0	0	0	0	0	0	0	0	0	0	0	0	2
111 Down syndrome and other chromosomal	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
112 Fetal alcohol syndrome	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
113 Other congenital abnormalities	18	0	0	0	0	0	0	18	0	3	12	0	0	0	0	0	0	0	0	2	15	0	0	0	1	0	0	8	0	0	2	0	0	
114 Dental caries	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
115 Periodontal Disease	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
116 Other oral health	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
117 Cot death	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
118 Road traffic accidents	41	20	37	66	102	97	81	93	157	56	30	15	9	26	41	35	27	26	33	24	36	17	23	46	72	66	53	56	83	40	0	0		
119 Other transport accidents	0	1	3	5	9	8	6	2	0	4	1	1	1	1	1	1	1	1	1	1	1	1	1	2	3	6	5	4	2	1	2	1	2	
120 Mining accidents	0	0	0	1	6	4	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	3	2	0	0	0	0	0	1	
121 Poisoning	9	0	1	2	2	2	2	0	0	2	4	0	0	2	2	2	2	1	1	1	1	6	0	1	1	2	2	2	0	0	0	0	2	
122 Surgical / medical misadventure	4	1	0	1	1	4	11	35	67	3	4	0	0	2	1	4	5	8	21	2	4	0	0	1	1	4	8	20	39	3	0	0		
123 Falls	3	1	1	2	4	7	7	16	46	3	2	1	0	0	1	4	4	15	1	3	1	1	1	1	1	3	4	6	9	27	2	0		
124 Fires	42	3	5	10	17	16	10	16	36	13	23	2	3	10	14	9	7	8	25	9	33	3	4	10	15	12	9	12	29	11	0	0		
125 Natural and environmental factors	2	0	0	0	1	1	1	2	0	1	1	0	0	0	0	0	0	0	0	0	2	0	0	0	0	1	1	1	1	0	1	0	1	
126 Drowning	21	5	2	3	5	4	4	1	1	6	10	2	0	0	1	1	0	0	0	2	16	3	1	1	1	3	3	2	0	0	0	4	0	
127 Suffocation and foreign bodies	6	0	0	0	1	1	0	0	0	1	3	0	0	0	0	1	1	1	0	1	4	0	0	0	0	0	0	0	0	0	0	0	1	1
128 Other unintentional injuries specified	9	2	2	2	4	4	7	3	3	3	5	1	0	1	1	1	1	1	0	1	7	1	1	2	2	3	2	4	1	2	4	1	2	
129 Homicide/violence	24	5	135	187	203	133	93	75																										

	Male 0-4	Male 5 to 14	Male 15 to 24	Male 25 to 34	Male 35 to 44	Female 45 to 54	Female 55 to 64	Female 65 to 74	Female 75+	Female Total	Male 0-4	Male 5 to 14	Male 15 to 24	Male 25 to 34	Male 35 to 44	Female 45 to 54	Female 55 to 64	Female 65 to 74	Female 75+	Female Total	Persons 0-4	Persons 5 to 14	Persons 15 to 24	Persons 25 to 34	Persons 35 to 44	Persons 45 to 54	Persons 55 to 64	Persons 65 to 74	Persons 75+	Persons Total	
Total	1036	68	346	659	937	1552	2923	5548	11500	1078	916	42	175	430	567	904	1697	3333	8898	815	977	55	260	545	750	1220	2280	4309	9818	945	
86	0	0	0	0	4	0	14	8	126	3	0	0	0	0	0	4	6	19	44	3	0	0	0	0	3	2	10	14	73	3	
87	0	0	0	0	0	6	4	7	15	1	0	0	0	0	0	0	0	0	32	1	0	0	0	0	0	3	2	9	26	1	
88	0	0	0	1	13	59	238	531	860	48	0	0	2	1	11	27	93	155	310	23	0	0	1	1	12	42	162	320	504	36	
89	0	1	0	8	11	28	37	38	76	10	5	3	3	3	9	21	33	48	48	10	2	1	2	5	10	25	35	43	57	10	
90	0	0	1	1	0	2	17	0	30	2	0	0	0	0	0	4	6	5	24	2	0	0	1	0	0	3	11	3	26	2	
91	0	0	1	2	5	14	24	53	152	9	0	1	2	3	3	8	14	34	111	7	4	0	2	2	4	11	19	43	126	8	
92	0	0	0	0	5	7	10	53	68	4	0	0	0	0	0	2	0	22	56	2	0	0	0	0	3	4	5	36	60	3	
93	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	6	0	
94	0	0	0	1	0	1	0	0	16	1	0	0	0	3	0	4	0	0	16	1	2	0	0	2	0	2	0	0	16	1	
95	0	0	1	2	14	33	54	42	38	11	0	0	0	1	7	8	18	27	32	5	0	1	2	10	20	35	33	34	8		
96	0	0	0	1	3	9	11	0	31	3	0	0	1	3	12	9	5	8	3	1	0	0	0	1	3	10	10	3	16	3	
97	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	24	0	0	0	0	0	0	1	0	0	3	16	0
98	0	0	1	1	6	6	0	0	0	2	0	0	4	1	2	9	0	0	0	2	0	0	0	2	4	4	5	0	0	2	
99	0	1	1	5	4	13	10	25	108	6	5	0	2	1	4	4	6	16	88	5	4	1	1	3	4	8	8	20	95	6	
100	0	0	0	7	6	18	36	100	259	13	2	0	8	7	14	10	15	83	208	15	1	0	4	7	10	13	25	90	226	14	
101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
102	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	0	3	0	8	1	0	0	1	1	0	1	0	5	0	0
103	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	6	0
104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
106	0	0	0	0	0	0	0	0	0	0	0	0	2	0	4	0	0	0	0	0	1	0	1	0	0	2	0	0	0	0	0
107	12	1	0	0	0	0	0	0	0	1	16	1	1	0	0	0	0	0	0	2	14	1	1	0	0	0	0	0	0	0	2
108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
109	26	1	0	1	0	2	0	7	4	4	22	1	3	0	0	0	0	0	8	3	24	1	1	1	0	1	0	1	3	5	3
110	10	0	1	0	0	0	0	0	15	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111	0	1	1	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	0	0	1	0	0	0	1	1	0	0	0	0
112	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
113	13	0	0	0	0	2	0	0	0	2	3	1	0	0	0	0	3	0	16	1	8	0	0	0	0	0	1	2	0	10	1
114	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
116	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
117	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
118	34	18	52	86	90	84	72	62	61	61	28	11	23	23	31	43	24	35	56	26	31	14	38	54	61	63	47	47	58	43	
119	0	1	5	6	8	7	5	2	0	4	1	0	1	2	1	2	1	2	2	2	1	1	3	4	5	4	3	2	2	3	
120	0	0	1	1	5	3	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	2	0	0	0	
121	7	0	1	2	2	2	2	0	0	2	3	0	1	2	1	2	1	1	1	1	5	0	1	2	2	2	2	2	0	1	2
122	3	1	0	1	1	3	10	23	24	3	4	0	1	1	1	5	5	11	35	3	4	0	0	1	1	4	7	16	31	3	
123	2	1	2	3	3	6	6	11	22	3	3	0	0	0	1	4	4	26	4	2	3	1	1	2	2	4	5	7	25	3	
124	31	3	7	13	15	14	9	11	14	12	23	2	7	9	10	11	6	10	46	10	27	2	7	11	13	12	8	10	35	11	
125	1	0	0	0	1	1	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	0	
126	18	5	3	3	4	4	4	0	1	5	9	1	1	0	1	1	0	1	0	2	13	3	2	2	2	3	2	1	0	3	
127	4	0	0	0	0	1	0	0	0	1	4	0	0	0	0	1	1	0	0	1	4	0	0	0	0	1	0	0	0	0	
128	6	1	3	3	2	4	3	5	1	3	5	1	1	1	1	2	1	2	1	2	6	1	2	2	2	2	3	2	3	0	2
129	17	5	194	243	181	115	82	51	123	129	14	3	27	35	38	35	14	21	63	25	16	4	110	140	109	74	47	34	84	76	
130	0	2	28	37	30	36	29	35	33	23	0	1	9	8	11	11	8	7	16	7	0	1	18	23	21	23	18	19	22	15	
131	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

* including pellagra and Vitamin A deficiency

Table C1. Age standardised death rates (per 100 000 population) by cause by province, 2000

	Males										Eastern Cape	Free State	Gauteng		
	Eastern Cape	Free State	Gauteng	KwaZulu Natal	Limpopo	Mpumalanga	Northern Cape	North West	Western Cape	National					
Total	1790	1856	1703	2051	1784	2002	1584	1828	1445	1831	1283	1334	1194		
Groups															
I	Other communicable diseases, maternal, perinatal and nutritional conditions	423	410	219	348	408	343	356	382	207	337	283	261	165	
	HIV/AIDS	246	397	334	583	273	531	140	354	69	356	250	374	318	
II	Non-communicable diseases	916	874	905	899	911	882	917	916	923	889	675	650	639	
III	Injuries	205	174	245	221	192	247	171	177	245	235	75	49	73	
Categories															
A	Inf / para excl HIV/AIDS	279	209	115	194	249	179	204	195	139	196	164	110	74	
B	Respiratory infections	71	132	62	96	116	112	90	131	32	84	57	93	51	
C	Maternal conditions	0	0	0	0	0	0	0	0	0	0	3	4	4	
D	Perinatal conditions	54	43	36	43	26	36	34	35	31	41	43	37	30	
E	Nutritional deficiencies	19	26	7	16	17	16	29	20	6	16	16	17	6	
F	Malignant neoplasms	193	170	213	144	141	138	204	160	267	183	119	86	128	
G	Benign neoplasms	4	4	3	2	1	16	4	5	4	3	2	3	3	
H	Diabetes mellitus	40	43	52	56	68	47	33	33	41	47	59	54	48	
I	Endocrine and metabolic	13	14	13	16	16	9	11	13	8	12	8	16	11	
J	Mental disorders	4	2	3	0	3	2	6	0	5	3	1	0	1	
K	Nervous system disorders	40	30	32	28	29	28	30	34	29	31	23	13	20	
L	Sense organs	0	0	0	0	0	0	0	0	0	0	0	0	0	
M	Cardiovascular disease	347	419	390	423	395	396	383	425	392	389	307	362	311	
N	Respiratory disease	189	104	101	125	109	136	166	135	111	125	98	49	53	
O	Diseases of digestive system	51	52	55	57	99	66	49	69	38	56	31	34	31	
P	Genito-urinary diseases	25	29	36	40	39	34	24	35	20	32	17	24	25	
Q	Skin diseases	0	1	0	1	1	1	0	0	0	0	0	0	1	
R	Musculo-skeletal diseases	1	0	1	1	2	0	0	1	0	1	1	1	1	
S	Congenital abnormalities	8	7	7	7	7	7	8	5	8	8	9	7	7	
T	Oral conditions	0	0	0	0	0	0	0	0	0	0	0	0	0	
V	Unintentional injuries	86	76	101	95	83	107	71	74	98	97	47	30	43	
W	Intentional injuries	119	99	144	126	109	140	100	103	148	138	28	19	29	
X	HIV/AIDS	246	397	334	583	273	531	140	354	69	356	250	374	318	
Causes															
1	Tuberculosis	189	130	59	100	123	94	133	120	101	115	84	48	25	
2	STD excl HIV	1	1	0	0	1	0	1	1	0	0	1	0	1	
3	HIV/AIDS	246	397	334	583	273	531	140	354	69	356	250	374	318	
4	Diarrhoeal diseases	52	45	18	53	65	44	40	39	13	42	53	34	17	
5	Childhood immunisable diseases	0	0	0	0	0	0	0	0	0	0	0	0	0	
6	Bacterial meningitis	7	8	7	6	11	5	7	8	3	8	5	5	6	
7	Hepatitis	1	1	1	1	2	0	2	1	1	1	2	1	0	
8	Malaria	2	1	2	4	21	11	0	2	0	4	0	1	0	
9	Schistosomiasis and other tropical	0	0	0	0	0	0	0	0	0	0	0	0	0	
10	Leprosy	0	0	0	1	0	0	0	0	0	0	0	0	0	
11	Intestinal parasites	0	0	0	0	0	0	0	0	0	0	0	0	0	
12	Septicaemia	25	21	26	24	22	21	19	22	19	23	14	20	23	
13	Other infectious and parasitic	3	2	2	5	4	2	2	3	1	2	5	1	1	
14	Lower respiratory infections	70	132	62	95	116	112	89	130	31	83	56	92	51	
15	Upper respiratory infections	1	0	0	0	0	0	1	0	0	0	1	0	0	
16	Otitis media	0	0	0	0	0	0	1	0	0	0	0	1	0	
17	Maternal haemorrhage	0	0	0	0	0	0	0	0	0	0	1	0	1	
18	Maternal sepsis	0	0	0	0	0	0	0	0	0	0	1	1	0	
19	Hypertension in pregnancy	0	0	0	0	0	0	0	0	0	0	1	1	1	
20	Obstructed labour	0	0	0	0	0	0	0	0	0	0	0	0	0	
21	Abortion	0	0	0	0	0	0	0	0	0	0	0	0	1	
22	Other maternal	0	0	0	0	0	0	0	0	0	0	1	1	1	
23	Low birth weight	10	14	8	11	11	14	13	13	10	12	12	13	7	
24	Birth asphyxia and trauma	4	3	4	5	1	3	3	3	2	4	4	4	2	
25	Other perinatal respiratory conditions	10	10	4	7	3	5	8	8	3	7	4	7	4	
26	Neonatal infections	5	4	4	5	3	2	1	6	3	4	5	2	2	
27	Other perinatal	24	13	17	15	9	11	8	7	14	15	18	11	13	
28	Protein-energy malnutrition	16	21	4	10	11	9	16	15	4	13	12	12	3	
29	Deficiency anaemias	3	4	2	5	5	6	11	5	2	3	3	4	3	
30	Other nutritional deficiencies*	0	1	0	0	1	1	2	1	0	1	1	0	0	
31	Mouth and oropharynx ca	9	6	7	10	4	7	10	5	12	8	2	2	3	
32	Oesophageal ca	43	25	20	21	23	26	28	38	23	25	25	7	9	
33	Stomach ca	9	6	11	8	11	6	15	7	24	11	5	2	4	
34	Colo-rectal ca	9	9	16	6	9	9	10	4	20	10	8	7	9	
35	Liver ca	15	11	11	10	21	7	9	12	10	12	6	4	5	
36	Pancreas ca	5	6	9	6	3	2	3	7	7	6	4	5	6	
37	Larynx ca	6	2	4	3	2	4	5	4	6	4	1	1	1	
38	Trachea/bronchi/lung ca	51	36	46	29	20	23	42	27	84	40	14	8	14	
39	Bone and connective tissue ca	3	1	4	1	2	0	3	2	2	4	2	1	1	
40	Melanoma	1	3	5	3	1	2	3	0	5	3	1	0	1	
41	Other skin cancer	1	1	1	1	0	1	4	1	1	1	0	1	0	
42	Breast ca	0	1	1	0	1	0	3	0	0	0	16	15	22	
43	Cervix ca	0	0	0	0	0	0	0	0	0	0	23	13	18	
44	Corpus uteri ca	0	0	0	0	0	0	0	0	0	0	2	4	3	
45	Ovary ca	0	0	0	0	0	0	0	0	0	0	2	4	7	
46	Prostate ca	25	40	38	20	31	40	47	32	32	27	0	0	0	
47	Bladder ca	3	4	7	5	2	3	3	4	7	9	0	1	2	
48	Kidney ca	1	2	3	2	0	1	0	1	4	2	1	1	2	
49	Brain ca	1	3	4	1	2	1	1	1	4	2	0	2	3	
50	Lymphoma	4	4	12	6	3	4	8	4	13	7	3	2	8	
51	Leukaemia	4	5	5	4	2	0	4	5	4	2	2	2	6	
52	Other malignant neoplasms	4	5	9	7	3	2	10	6	9	7	4	3	5	
53	Benign neoplasms	4	4	3	2	1	16	4	5	4	3	2	3	3	
54	Diabetes mellitus	40	43	52	56	68	47	33	33	41	47	59	54	48	
55	Albinism	0	0	0	13	0	0	0	11	0	0	0	0	0	
56	Other endocrine and metabolic	13	14	13	3	16	9	11	2	8	12	8	16	11	
57	Alcohol dependence	3	2	3	0	3	2	6	0	5	3	1	0	1	
58	Drug use	0	0	0	0	0	0	0	0	0	0	0	0	0	
59	Schizophrenia	0	0	0	0	0	0	0	0	0	0	0	0	0	

Females								Persons									
KwaZulu Natal	Limpopo	Mpumalanga	Northern Cape	North West	Western Cape	National	Eastern Cape	Free State	Gauteng	KwaZulu Natal	Limpopo	Mpumalanga	Northern Cape	North West	Western Cape	National	
1549	1268	1476	1082	1308	946	1303	1494	1583	1435	1762	1478	1724	1314	1556	1174	1542	
238	276	237	216	254	141	229	341	332	192	285	329	287	280	314	172	278	
573	262	507	138	332	75	346	246	388	326	574	264	520	139	344	72	350	
668	672	658	668	672	650	655	774	752	757	764	767	759	781	784	768	756	
70	58	74	59	50	80	69	133	111	161	139	118	158	115	113	162	149	
120	150	114	106	123	83	118	210	158	94	151	191	145	153	158	109	153	
60	78	75	51	86	26	61	62	110	57	75	93	92	67	106	29	71	
3	3	3	2	3	1	3	2	2	2	2	2	1	1	2	1	1	
39	26	29	37	24	26	34	48	40	33	41	26	32	35	30	29	38	
16	18	16	20	17	5	14	18	21	6	16	18	16	23	19	5	15	
86	90	84	111	94	162	110	149	121	163	108	110	107	150	123	205	139	
1	1	1	2	3	2	2	3	3	3	2	1	8	2	4	3	2	
82	50	65	30	47	60	58	51	50	50	72	57	57	32	41	52	53	
11	13	8	8	11	3	10	10	15	12	13	14	8	9	13	5	11	
1	1	2	2	1	1	1	2	1	2	1	2	2	4	1	3	2	
15	13	15	17	15	14	17	30	21	25	21	20	21	23	24	21	23	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
359	370	353	356	378	307	335	323	389	348	387	381	374	372	402	345	360	
52	41	62	72	64	52	60	135	73	73	82	68	94	113	96	77	87	
30	63	47	36	35	22	33	39	44	43	42	77	56	43	51	29	44	
23	21	14	24	14	18	21	21	26	30	30	28	23	24	23	19	25	
1	0	0	2	1	0	0	0	0	0	1	0	0	1	0	0	0	
1	2	1	2	0	1	1	1	0	1	1	2	1	1	1	0	1	
6	7	7	5	7	7	7	8	7	7	7	7	7	6	6	7	7	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
43	37	45	35	30	48	42	64	53	73	67	57	75	54	52	72	68	
26	21	30	24	20	32	27	69	58	88	72	61	83	61	61	89	81	
573	262	507	138	332	75	346	246	388	326	574	264	520	139	344	72	350	
34	33	32	55	45	47	46	127	88	41	62	69	61	92	81	72	77	
1	1	3	1	1	0	1	1	1	0	1	1	1	1	1	0	1	
573	262	507	138	332	75	346	246	388	326	574	264	520	139	344	72	350	
49	62	50	32	49	12	39	52	39	18	50	64	48	36	44	13	41	
0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	
5	9	3	3	5	2	5	6	6	6	6	10	4	5	6	3	7	
0	1	2	0	1	1	1	1	1	1	0	1	1	1	1	1	1	
4	19	6	0	1	0	3	1	1	1	4	20	8	0	2	0	4	
0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
23	21	17	13	18	18	20	18	21	25	23	21	19	16	20	19	21	
4	3	3	1	2	1	1	4	2	2	5	4	2	2	3	1	2	
60	76	75	51	85	26	60	62	110	57	75	92	92	67	105	28	70	
0	2	0	0	1	1	1	1	0	0	0	1	0	0	1	0	0	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
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1	0	1	2	1	0	1	1	1	1	0	0	0	1	0	0	0	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
1	1	1	0	1	1	1	0	0	0	0	1	0	0	1	0	0	
9	8	8	11	10	5	9	11	13	7	10	10	11	12	11	7	11	
6	1	2	4	3	1	3	4	3	3	5	1	3	3	3	1	4	
6	6	3	6	5	3	5	7	8	4	6	5	4	7	6	3	6	
3	3	3	2	2	3	3	5	3	3	4	3	3	1	4	3	4	
14	8	12	15	5	14	13	21	12	15	15	9	12	11	6	14	14	
11	11	12	14	11	2	10	14	16	4	10	11	11	15	12	3	11	
5	7	5	5	7	2	4	3	4	3	5	7	5	7	6	2	3	
1	0	0	1	0	0	0	1	1	0	1	0	0	1	1	0	1	
4	0	2	6	4	3	3	5	4	5	6	2	5	8	4	7	5	
10	7	5	9	8	9	11	32	15	14	15	13	15	17	22	15	17	
4	6	4	8	4	8	5	6	4	7	6	8	5	11	6	15	7	
4	6	5	6	5	12	7	8	8	12	5	7	7	7	4	15	9	
5	6	6	8	5	5	5	10	7	8	7	12	7	8	8	7	8	
3	5	4	5	3	7	4	4	6	7	4	4	3	4	5	7	5	
0	0	0	0	1	2	1	3	1	2	2	1	2	2	2	4	2	
5	6	5	15	6	33	12	29	21	28	15	11	13	27	16	56	24	
1	1	1	0	1	2	1	2	1	2	1	1	1	1	1	2	2	
0	0	0	1	0	1	1	1	1	3	1	0	1	2	0	3	2	
0	0	0	1	1	1	1	1	1	1	0	0	1	2	1	1	1	
13	14	10	16	19	32	18	9	8	12	8	9	6	10	10	18	10	
16	26	26	20	25	16	19	14	7	9	9	16	14	11	13	9	11	
4	4	6	3	3	3	3	1	2	2	2	2	3	2	1	2	2	
4	2	1	3	3	5	4	1	2	4	2	1	1	2	2	3	2	
0	0	0	0	0	0	0	10	16	15	8	12	17	19	13	13	11	
3	0	1	2	1	3	2	2	2	4	4	1	2	3	3	4	4	
0	1	1	0	0	2	1	1	1	2	1	1	1	0	0	3	1	
1	0	1	2	1	3	1	0	3	3	1	1	1	1	1	3	2	
3	2	1	1	2	6	4	3	3	10	4	3	2	4	3	9	5	
3	2	1	1	1	4	3	3	3	6	4	2	1	0	3	4	3	
3	2	2	5	3	6	4	4	4	7	4	3	2	7	5	7	5	
1	1	1	2	3	2	2	3	3	3	2	1	8	2	4	3	2	
82	50	65	30	47	60	58	51	50	50	72	57	57	32	41	52	53	
0	0	0	0	0	0	0	0	0	0	5	0	0	0	5	0	0	
11	13	8	8	11	3	10	10	15	12	8	14	8	9	7	5	11	
1	1	2	2	1	1	1	2	1	1	0	2	2	4	1	3	2	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

		Males										Eastern Cape	Free State	Gauteng		
		Eastern Cape	Free State	Gauteng	KwaZulu Natal	Limpopo	Mpumalanga	Northern Cape	North West	Western Cape	National					
Total		1790	1856	1703	2051	1784	2002	1584	1828	1445	1831	1283	1334	1194		
65	Adjustment reaction	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
66	Mental disability	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
67	Other mental disorders	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
68	Alzheimers and other dementias	2	2	5	3	2	1	4	4	5	3	2	3	6		
69	Parkinsons disease	0	3	5	1	2	1	3	4	4	3	1	0	2		
70	Multiple sclerosis	0	0	0	0	0	0	0	0	0	0	0	0	1		
71	Epilepsy	30	16	11	15	12	16	15	19	12	16	13	5	5		
72	Encephalitis and brain abscess	2	3	2	2	3	1	1	2	0	2	2	2	1		
73	Other nervous system disorders	7	5	8	6	10	10	8	5	7	7	5	3	5		
74	Glaucoma	0	0	0	0	0	0	0	0	0	0	0	0	0		
75	Cataracts	0	0	0	0	0	0	0	0	0	0	0	0	0		
76	Other visual	0	0	0	0	0	0	0	0	0	0	0	0	0		
77	Hearing loss and other ear disorders	0	0	0	0	0	0	0	0	0	0	0	0	0		
78	Rheumatic heart disease	5	3	3	3	4	3	1	1	0	3	5	2	6		
79	Ischaemic heart disease	106	148	195	169	114	99	176	154	204	160	60	86	101		
80	Stroke	131	137	96	159	113	120	133	120	131	125	129	135	98		
81	Inflammatory heart disease	40	32	26	17	31	48	12	38	12	25	28	21	22		
82	Hypertensive heart disease	52	76	42	60	121	113	34	100	25	57	74	99	58		
83	Non-rheumatic valvular disease	1	4	2	3	2	1	1	1	2	2	1	4	2		
84	Pulmonary embolism	5	10	11	3	3	4	8	3	5	6	5	9	13		
85	Aortic aneurism	2	3	7	3	2	5	11	2	6	5	2	2	3		
86	Peripheral vascular disorders	2	5	5	4	4	3	3	4	6	4	1	4	5		
87	Other cardiovascular	2	3	3	2	1	1	3	2	2	2	2	2	2		
88	COPD	111	64	72	63	64	70	108	83	82	76	50	25	33		
89	Asthma	57	18	16	42	26	41	25	31	13	30	36	17	12		
90	Aspiration pneumonia/ lung abscess	4	9	2	4	2	6	6	4	3	4	1	1	1		
91	Other respiratory	17	13	11	17	17	19	27	17	13	16	11	5	8		
92	Peptic ulcer	8	12	10	6	7	14	8	14	7	9	4	9	6		
93	Appendicitis	0	1	0	0	2	1	0	1	0	0	1	0	0		
94	Noninfective gastroenteritis	3	4	3	6	6	11	3	4	1	3	4	5	3		
95	Cirrhosis of liver	18	12	16	24	39	17	18	22	14	20	7	7	7		
96	Hepatic Failure	6	9	7	7	9	6	8	8	4	7	4	2	4		
97	Gall bladder disease	1	1	2	1	1	0	0	3	1	1	1	3	1		
98	Pancreatitis	4	2	2	2	3	3	3	4	2	2	0	1	1		
99	Other digestive	12	11	14	10	32	14	8	13	9	13	9	8	10		
100	Nephritis/nephrosis	23	28	35	35	36	32	22	31	20	29	16	23	24		
101	Benign prostatic hypertrophy	1	1	1	2	1	0	0	2	0	1	0	0	0		
102	Other genito-urinary	2	0	1	3	2	2	2	2	0	1	2	1	1		
103	Skin disease	0	1	0	1	1	1	0	0	0	0	0	0	1		
104	Rheumatoid arthritis	0	0	1	0	2	0	0	0	0	0	0	0	0		
105	Osteoarthritis	0	0	0	0	0	0	0	0	0	0	0	0	0		
106	Other musculo-skeletal	1	0	0	0	0	0	0	1	0	0	0	1	1		
107	Neural tube defects	3	1	2	2	2	1	2	2	1	2	2	3	2		
108	Cleft lip/palate	0	0	0	0	0	0	0	0	0	0	0	0	0		
109	Congenital heart disease	1	2	2	2	2	2	2	1	3	2	5	1	3		
110	Congenital disorders of GIT	3	3	2	1	3	1	2	1	2	2	0	2	0		
111	Down syndrome and other chromosomal	0	1	0	1	0	0	1	0	0	0	0	1	1		
112	Fetal alcohol syndrome	0	0	0	0	0	0	0	0	0	0	0	0	0		
113	Other congenital abnormalities	0	1	1	2	0	3	2	0	1	1	1	1	1		
114	Dental caries	0	0	0	0	0	0	0	0	0	0	0	0	0		
115	Periodontal Disease	0	0	0	0	0	0	0	0	0	0	0	0	0		
116	Other oral health	0	0	0	0	0	0	0	0	0	0	0	0	0		
117	Cot death	0	0	0	0	0	0	0	0	0	0	0	0	0		
118	Road traffic accidents	53	46	63	58	49	65	43	46	61	60	25	16	24		
119	Other transport accidents	3	3	4	4	3	4	3	3	4	4	1	1	1		
120	Mining accidents	1	1	1	1	1	1	1	1	1	1	0	0	0		
121	Poisoning	2	1	2	2	2	2	1	1	2	2	1	1	1		
122	Surgical / medical misadventure	4	4	5	5	5	6	3	3	4	4	4	2	3		
123	Falls	4	4	5	4	4	5	3	3	4	4	2	1	2		
124	Fires	10	9	12	12	11	14	9	9	12	12	10	6	9		
125	Natural and environmental factors	1	0	1	1	1	1	1	0	1	1	0	0	0		
126	Drowning	5	4	5	5	4	5	4	4	5	5	2	1	1		
127	Suffocation and foreign bodies	0	0	1	1	1	1	1	0	1	1	1	0	0		
128	Other unintentional injuries specified	2	2	3	3	3	3	2	2	3	3	1	1	1		
129	Homicide/violence	99	81	119	104	90	115	83	85	124	115	22	14	23		
130	Suicide	20	18	25	22	19	25	17	17	24	23	6	4	6		
131	Legal intervention and war	0	0	0	0	0	0	0	0	0	0	0	0	0		

* including pellegra and Vitamin A deficiency

Females								Persons									
	KwaZulu Natal	Limpopo	Mpumalanga	Northern Cape	North West	Western Cape	National	Eastern Cape	Free State	Gauteng	KwaZulu Natal	Limpopo	Mpumalanga	Northern Cape	North West	Western Cape	National
	1549	1268	1476	1082	1308	946	1303	1494	1583	1435	1762	1478	1724	1314	1556	1174	1542
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2	0	0	2	1	5	3	2	3	6	3	1	0	3	2	5	3
	2	2	2	0	0	2	1	1	2	3	1	2	1	1	2	3	2
	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
	5	5	6	9	10	4	7	20	10	8	10	8	11	12	14	8	11
	1	2	1	3	2	0	1	2	2	1	2	3	1	2	2	0	2
	5	4	6	3	2	3	4	6	4	6	5	6	8	5	3	5	5
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3	3	2	3	4	3	4	5	2	5	3	3	3	2	2	2	3
	95	81	72	102	82	141	95	79	113	144	126	95	85	135	114	169	123
	143	115	121	140	127	114	122	130	137	98	150	115	122	139	125	122	124
	18	35	49	14	21	4	22	33	26	24	18	33	48	13	29	8	23
	86	126	100	81	130	31	75	65	89	51	76	124	105	62	118	28	68
	3	2	0	0	2	1	2	1	4	2	3	2	0	1	2	1	2
	4	2	5	8	8	5	7	5	10	12	4	2	5	8	6	5	6
	2	1	1	3	0	3	3	2	2	4	2	1	2	7	1	4	3
	2	2	2	2	2	3	3	1	5	5	3	3	3	2	3	4	4
	2	2	1	3	2	1	2	2	2	3	2	2	1	3	2	2	2
	15	16	31	40	27	30	29	75	42	49	34	35	48	69	52	52	49
	27	19	23	19	22	12	21	44	17	13	33	21	30	22	26	12	25
	1	0	2	1	2	2	1	2	5	2	2	1	4	3	3	2	2
	8	6	7	11	13	9	9	13	9	9	12	10	12	18	15	10	12
	5	10	14	8	10	3	6	5	11	8	5	9	14	8	12	5	8
	0	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0	0
	5	5	7	7	4	1	3	3	5	3	6	5	9	5	4	1	3
	6	16	11	9	7	6	8	12	10	11	13	25	14	13	14	10	13
	3	6	4	5	3	3	4	5	5	6	5	7	5	6	5	3	6
	1	2	1	1	2	1	1	1	2	2	1	1	0	1	2	1	1
	0	0	0	1	1	2	1	2	1	1	1	1	1	2	2	2	1
	9	24	9	7	8	6	10	11	10	12	10	27	12	8	11	7	12
	22	20	12	23	14	17	20	18	25	29	27	26	20	22	21	18	24
	0	0	0	0	0	0	0	0	0	0	1	1	0	0	1	0	0
	1	1	2	1	1	1	1	2	1	1	2	1	2	2	1	0	1
	1	0	0	2	1	0	0	0	0	0	1	0	0	1	0	0	0
	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0
	1	1	1	1	0	1	1	0	0	0	1	1	1	1	1	0	1
	2	1	1	2	2	2	2	2	2	2	2	2	1	2	2	1	2
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2	2	3	1	3	3	3	3	1	3	2	2	2	2	2	3	2
	1	2	2	1	1	0	1	2	2	1	1	3	1	1	1	1	1
	0	1	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	23	19	25	19	16	26	23	37	31	44	39	32	44	31	31	44	41
	1	1	1	1	1	1	1	2	2	3	2	2	3	2	2	3	3
	0	0	0	0	0	0	0	0	1	1	1	0	1	0	1	1	1
	1	1	1	1	1	1	1	1	1	2	2	1	2	1	1	2	2
	3	3	3	3	3	3	3	4	3	4	4	4	4	4	3	4	4
	2	2	2	2	1	2	2	3	3	3	3	3	3	3	2	3	3
	9	8	9	7	6	10	9	10	8	11	11	9	11	8	7	11	10
	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0
	2	1	2	1	1	2	1	3	3	3	3	3	3	2	2	3	3
	1	1	1	0	0	1	1	1	0	1	1	1	1	0	0	1	1
	1	1	1	1	1	1	1	2	1	2	2	2	2	2	1	2	2
	21	17	23	18	16	25	21	56	47	72	59	50	68	50	50	74	67
	6	5	7	5	5	7	6	12	11	16	13	11	15	11	11	15	14
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

NOTES

NOTES



SOUTH AFRICAN NATIONAL BURDEN OF DISEASE STUDY
ESTIMATES OF PROVINCIAL MORTALITY 2000