

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

Debbie Bradshaw, Nadine Nannan
Ria Laubscher, Pam Groenewald
Jané Joubert, Beatrice Nojilana
Rosana Norman, Desirée Pieterse
and Michelle Schneider



Burden of Disease
Research Unit



Mortality Estimates

for

LIMPOPO PROVINCE, 2000

South African National Burden of Disease Study

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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. The Initial Burden of Disease Study that applied the burden of disease approach developed by the WHO and used available information and presenting it in a format that is relevant for planning health and other services (Bradshaw et al., 2003).

This study makes use of more recent data, namely the 12% sample of deaths for 1997-2001. However, 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. It was also necessary to make adjustments for mis-classification of underlying causes 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. Full details of the methods used to estimate 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 are given in the report Estimates of Provincial Mortality by Bradshaw et al. (2004).

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.]

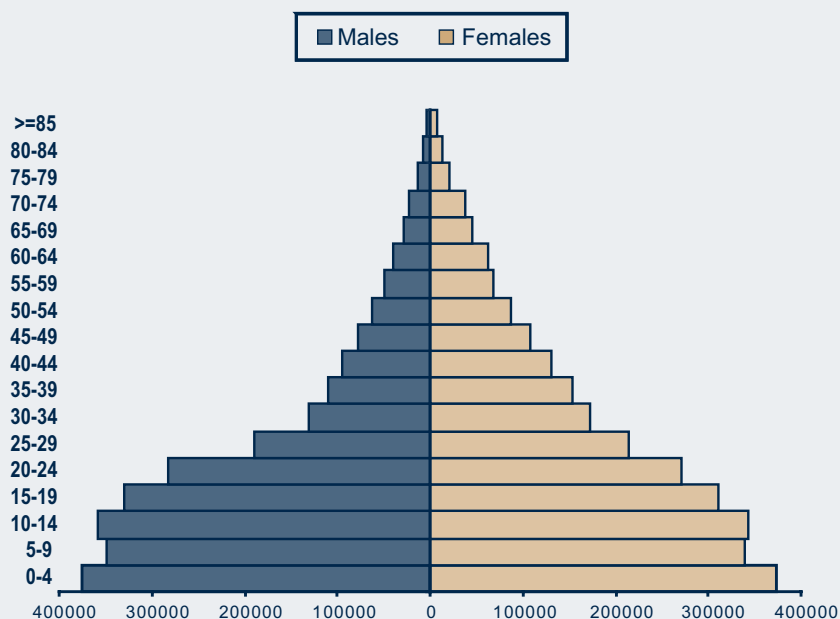


Figure LM1: Age structure of the Limpopo population, 2000

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).

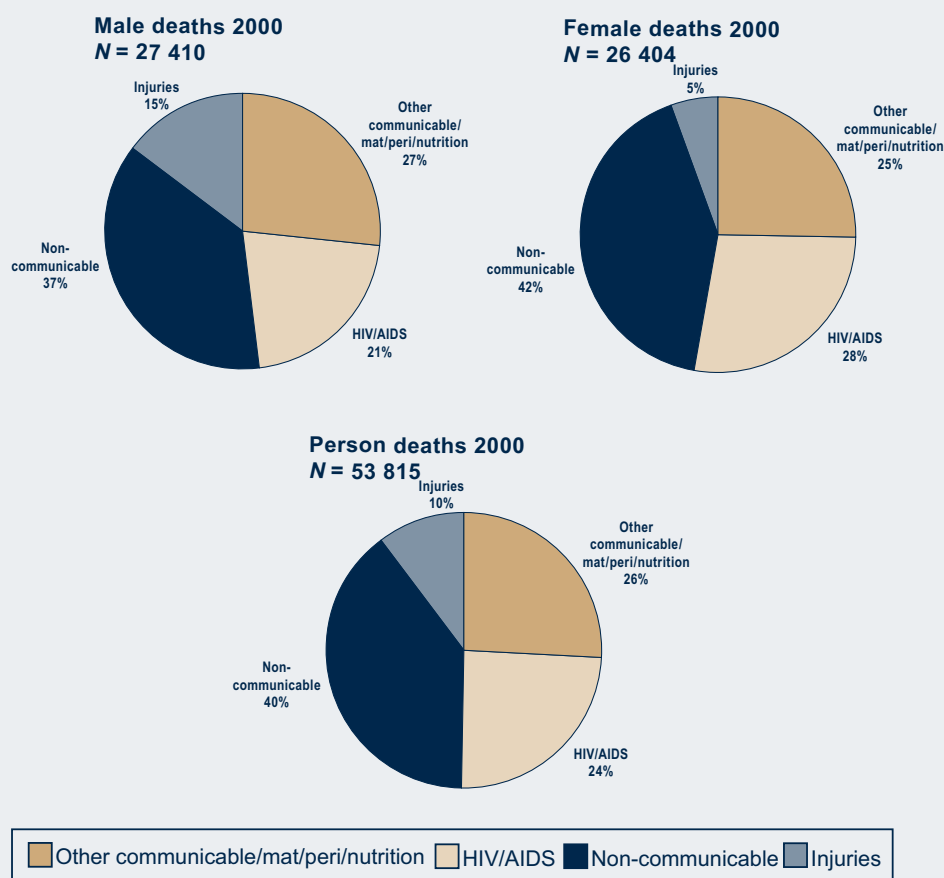


Figure LM2: Estimated deaths by Groups, Limpopo 2000

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.

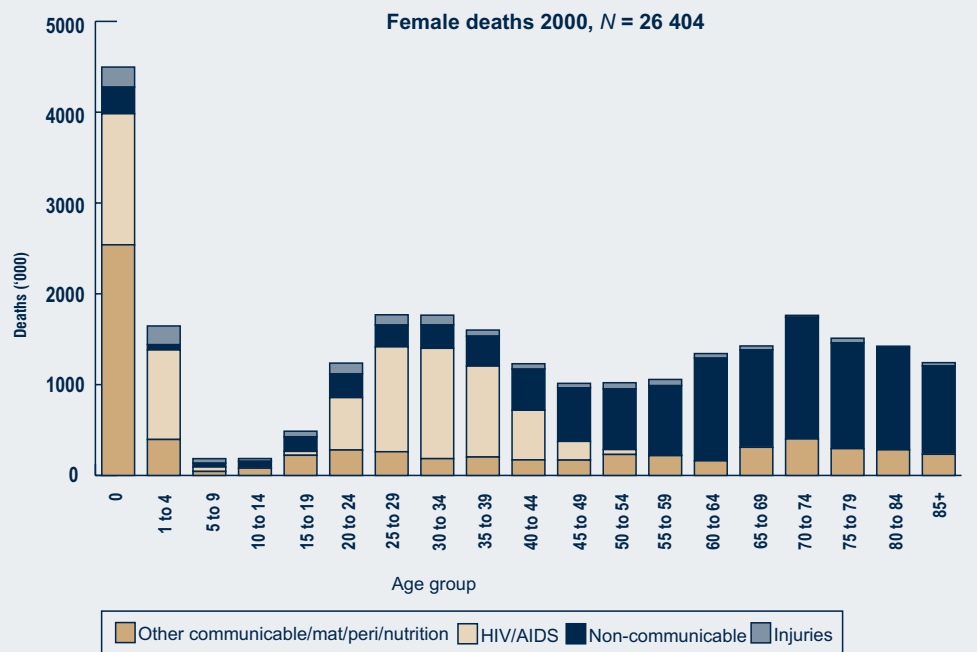
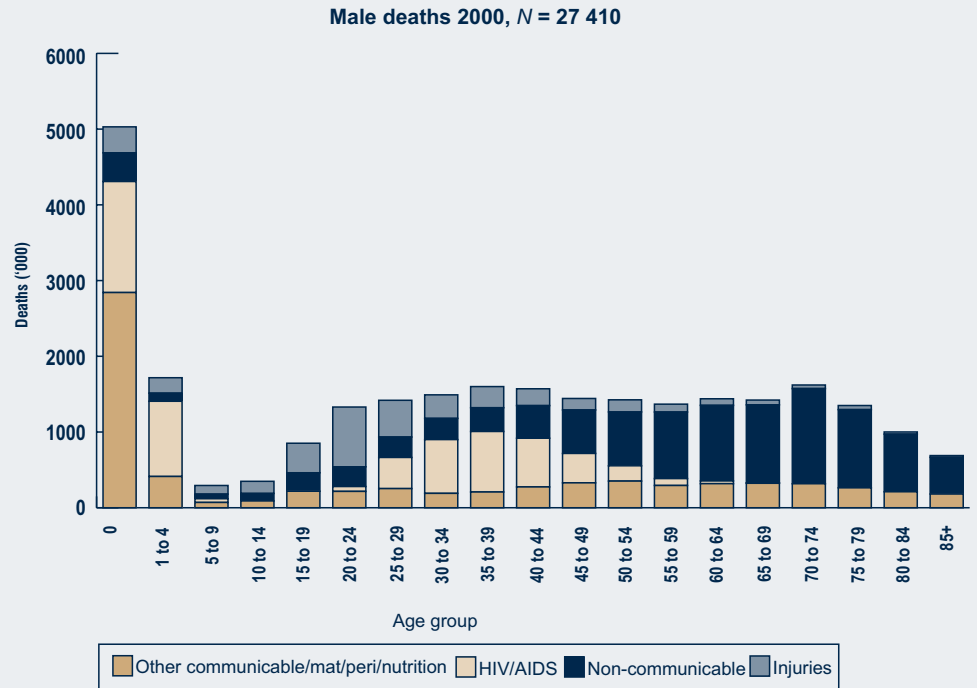


Figure LM3: Age distribution of deaths by broad Groups, Limpopo 2000

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.

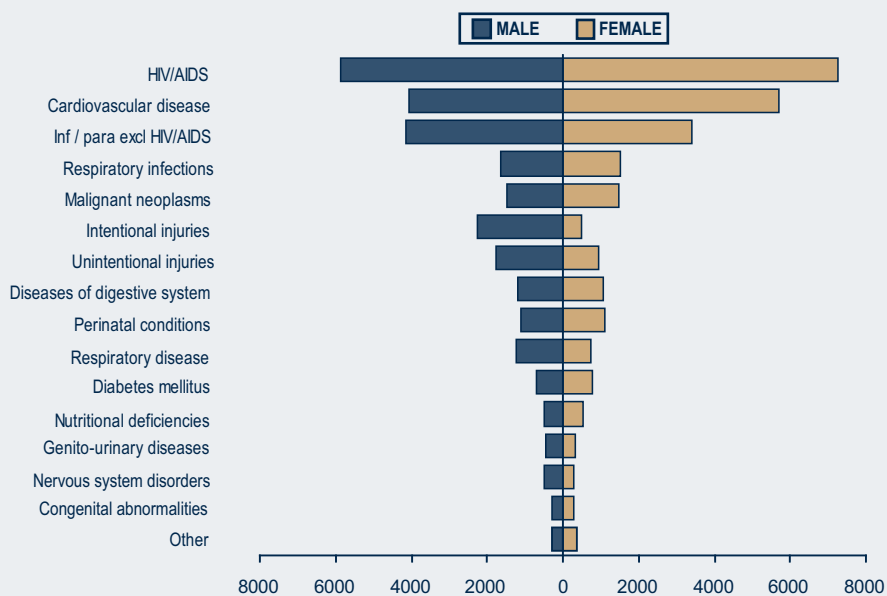


Figure LM4: Causes of death according to categories for males and females, Limpopo 2000

"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.

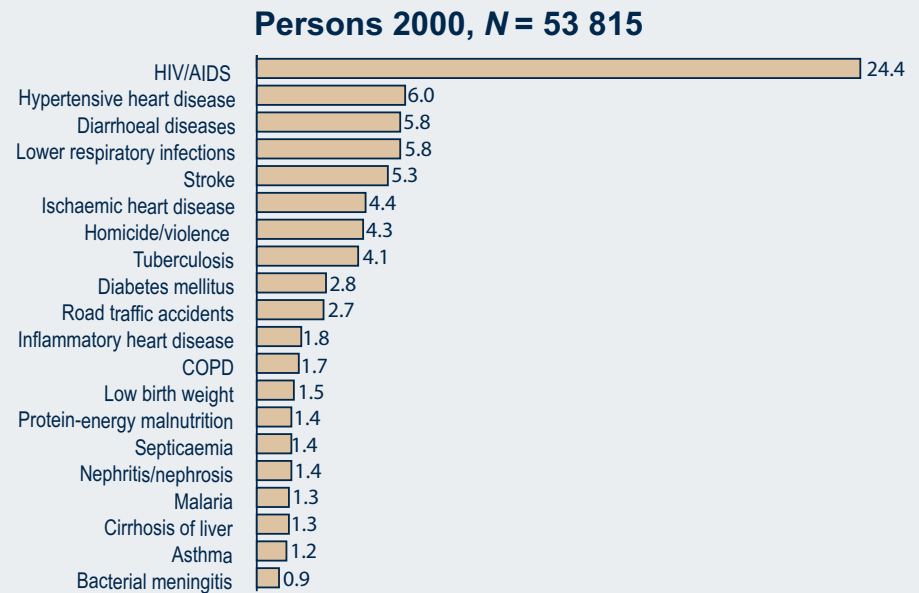


Figure LM5(a): Twenty leading single causes of death (%), Limpopo 2000

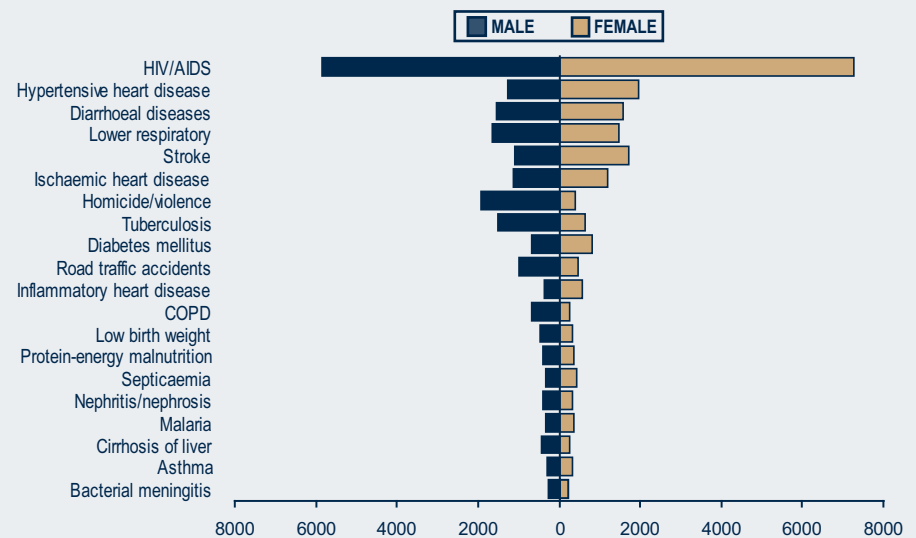


Figure LM5(b): Twenty leading single causes of death by sex, Limpopo 2000

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

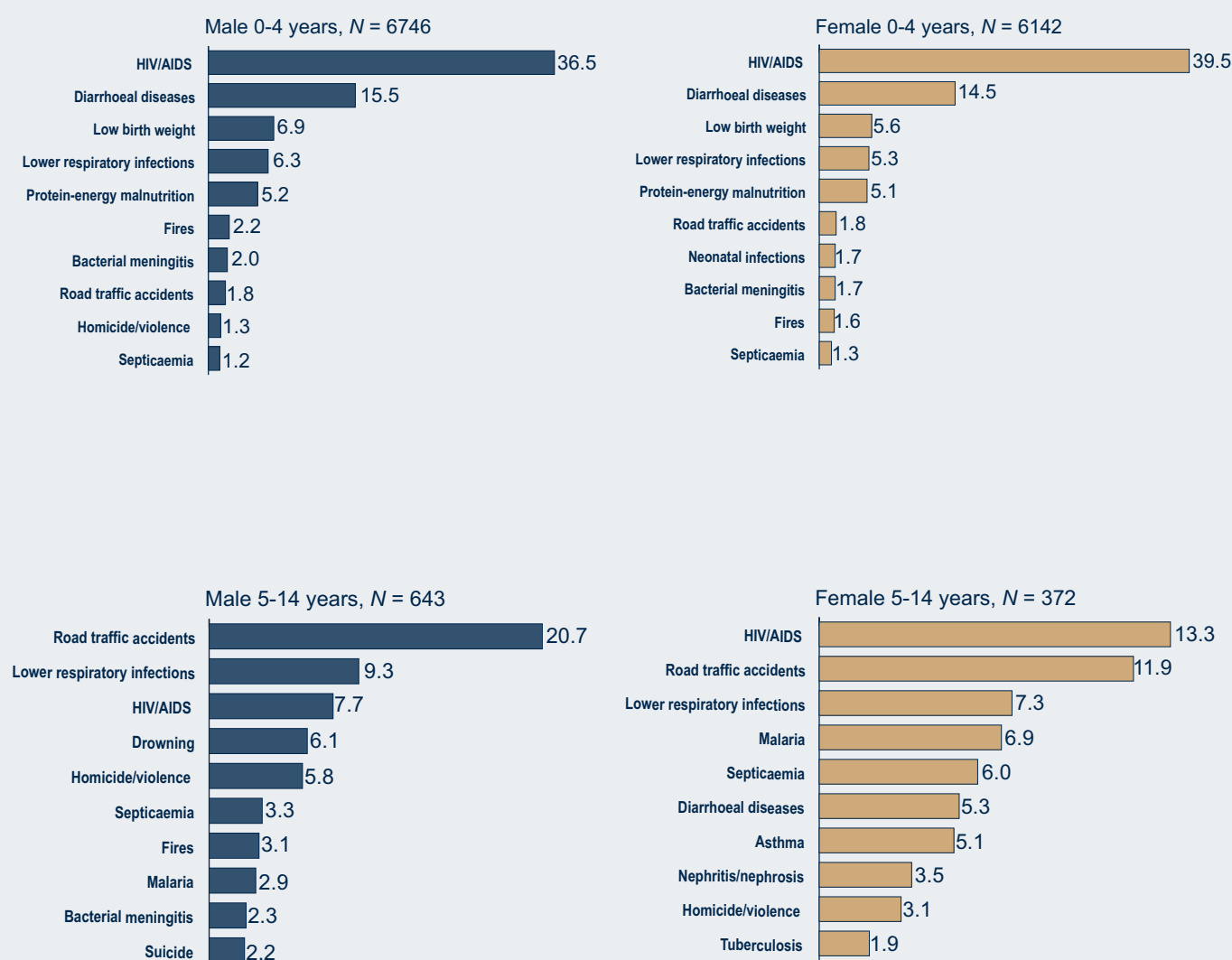
Males				Females				Persons			
Rank	Cause of death	YLLs	%	Rank	Cause of death	YLLs	%	Rank	Cause of death	YLLs	%
1	HIV/AIDS	166095	27.8	1	HIV/AIDS	218894	39.3	1	HIV/AIDS	384989	33.4
2	Homicide/violence	55208	9.2	2	Diarrhoeal diseases	39372	7.1	2	Diarrhoeal diseases	82746	7.2
3	Diarrhoeal diseases	43374	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



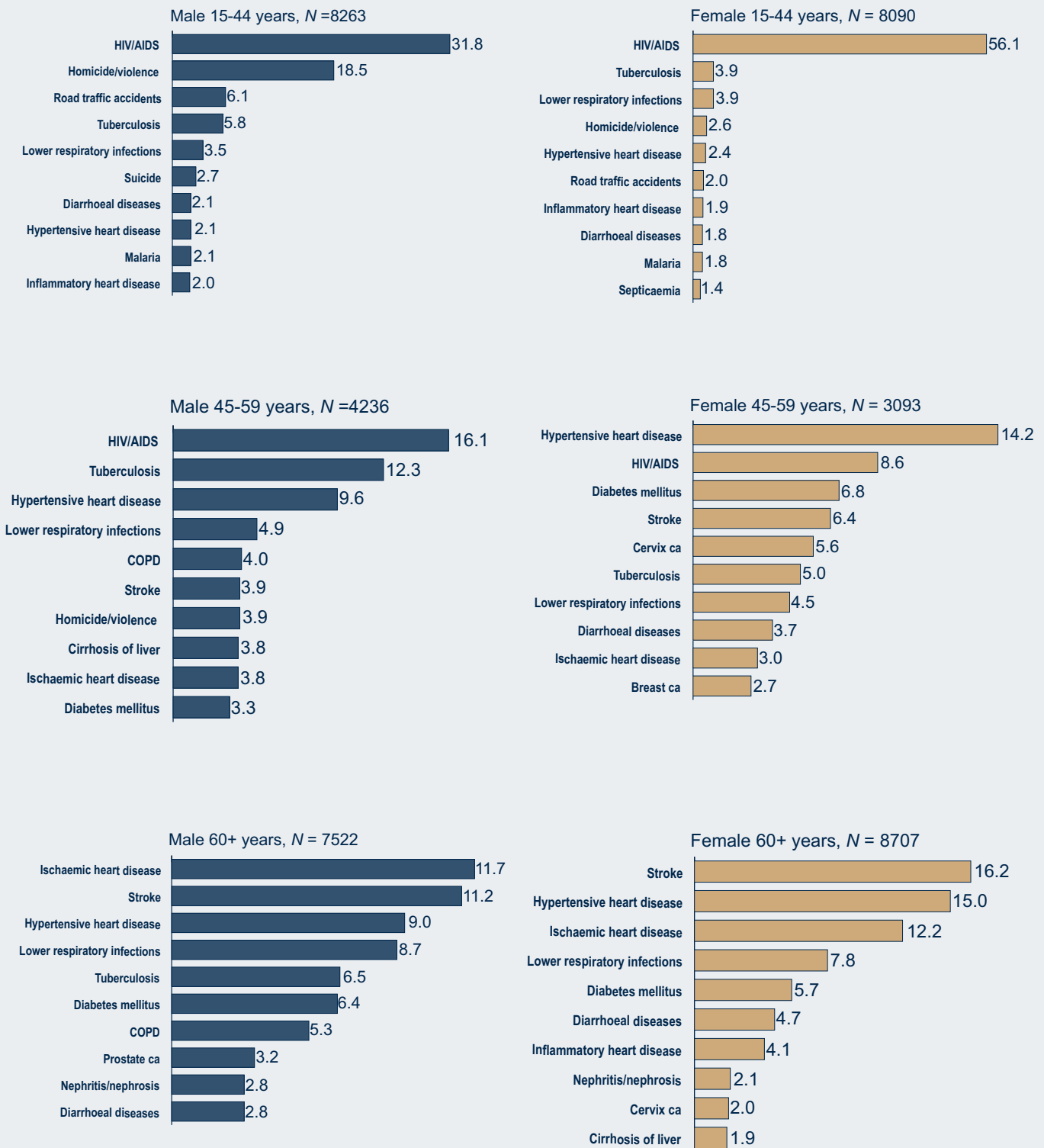
Leading causes of death among adults

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

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 and signifies an important milestone in generating burden of disease information at provincial level by providing mortality estimates for the provinces. 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

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 21% 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 (37%). 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.

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 to provide timely and reliable statistics. 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.

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