



stats sa

Department:
Statistics South Africa
REPUBLIC OF SOUTH AFRICA

STATISTICAL RELEASE

P0309.3

Mortality and causes of death in South Africa: Findings from death notification

2018

**Embargoed until:
15 June 2021
11:00**

ENQUIRIES:
User information services
012 310 2600

FORTHCOMING ISSUE:
2019

EXPECTED RELEASE DATE
To be confirmed

Preface

This statistical release presents information on mortality and causes of death in South Africa for deaths that occurred in 2018. Deaths for the years 1997–2017 are also included to show trends in mortality and causes of death, using updated information that includes late registrations. The statistical release is based on deaths collected through the South African civil registration system maintained by the Department of Home Affairs. The information on causes of death is as recorded on death notification forms completed by medical practitioners and other certifying officials.



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1. Introduction

1.1 Background

The World Health Organization (WHO) envisions a world where all people attain the highest standard of well-being through health promotion with measurable impact at country level (WHO, 2020). One of the key health priorities outlined in the National Development Plan is to increase life expectancy of South Africans to at least 70 years by the year 2030 and to attain a high standard of living and quality of life (National Planning Commission, 2011).

At present, many countries lack the health information systems needed to accurately monitor health trends and inform decision-making.

Vital statistics generated out of a civil registration system offer the most valuable, accurate and relevant information on a country's population dynamics, including at small areas. These data are vital for assessing progress made towards government programmes, for highlighting areas of progress and for exposing where resources need to be directed.

The Economic Commission for Africa's (ECA's) assessment of the status of national civil registration and vital statistics (CRVS) systems in member states reported that death registrations were particularly challenging and many countries performed poorly on completeness of death registration and medical certification of cause of death. Furthermore, only a few countries compiled and produced annual vital statistics reports from their civil registration systems (Economic Commission for Africa, 2017).

Health trends are constantly evolving as observed from the global shift from communicable to non-communicable diseases (NCDs) which continue to rise. Since 2000, the largest increase in deaths has been from ischaemic heart disease, accounting for 16% of the world's deaths (WHO, 2019). These observed trends are accompanied by continuous emergence of new diseases that challenge health systems globally. In low-income countries health is frequently compromised by diseases and conditions that are preventable or treatable. Many premature deaths are associated with environmental factors or life style choices, such as tobacco use, unhealthy diet, physical inactivity and unhealthy consumption of alcohol. (WHO, 2019).

In South Africa, mortality levels have been declining yearly as observed from the 25,3% decrease in deaths between the years 2006 and 2017. Six of the top ten leading underlying natural causes of death in 2017 were non-communicable diseases with diabetes mellitus being the leading cause of death and tuberculosis the leading cause of death for communicable diseases. Essentially, South Africa faces a double burden of health challenges.

Violence is a worldwide problem and continues to grow as a priority for public health practitioners, particularly as its causes and consequences are not better understood. Although the number of deaths due to non-natural causes continue to decline in South Africa, concern remains for the stable increase in non-natural deaths due to violence, the effects of which are disproportionately felt by males in age groups 15–29 years with nearly half of these deaths attributed to assault. Public health initiatives along with cross-cutting elements to violence prevention, including addressing the availability of firearms, excessive alcohol consumption and the reduction in social inequalities may have a critical role to play in the prevention of violence in South Africa.

The continuous production of mortality statistics is made possible through the availability of registered administrative death records from civil registration. A complete death registration system is an important tool for informing public health policy planning and evaluating health intervention in the country. The system provides this invaluable information at national level and by location, age, sex, and causes of death, which is important for monitoring health-related targets. The Department of Home Affairs (DHA) is the steward of the civil registration system inclusive of administrative records and is mandated to provide a complete and accurate national death register (Republic of South Africa, 1992). Statistics

South Africa (Stats SA), produces information on mortality and causes of death from the civil registration system as mandated by the Statistics Act (Act No. 6 of 1999). This includes the provision of reliable information on levels and causes of mortality through application of appropriate quality criteria, standards, classifications and procedures for vital statistics (Republic of South Africa, 1999).

1.2 Objectives of this statistical release

The mortality and causes of death statistical release is part of a regular series published by Stats SA, based on data collected through the civil registration system. This statistical release has two main objectives:

- To outline emerging trends spanning a 21-year period (1997–2018) and differentials in mortality by selected socio-demographic and geographic characteristics for deaths that occurred in 2018; and
- To present statistics on the causes of death for deaths that occurred in 2018, focusing on the underlying causes of death.

1.3 Scope of this statistical release

This release is based on information on mortality and causes of death from the South African civil registration system. All death notification forms from DHA for deaths that occurred in 2018 or earlier that reached Stats SA during the 2019/2020 processing phase are covered. However the main focus is on deaths that occurred in 2018. Deaths that occurred during the period 1997 to 2017 are also provided to show trends in mortality and causes of death. This release excludes stillbirths, which are also collected through the civil registration system using the same death notification form. The definitions of technical terms used in this release are provided in Appendix A (see page 62).

1.4 Organisation and presentation of this statistical release

This release is composed of five sections. The first section consists of information on the background and purpose of the release. Section two lays out the data and methods which focuses on data sources, including methods used in data processing, data editing, quality assurance and data analysis. The third section on registered deaths presents mortality levels, trends and differentials, specifically focusing on socio-demographic and geographic characteristics of the deceased. The fourth section mainly covers information on underlying causes of death for 2018 death occurrences. In addition, the section provides information on immediate, contributing and underlying causes of death differentials by natural versus non-natural causes, as well as the Global Burden of Diseases (GBDs). Causes of death for the years 1997 to 2018 are also included to show patterns in mortality over the years. Finally, the last section presents a summary of the findings and concluding remarks.

2. Data and methods

This section describes the sources of data, methods used to process, edit and analyse data as well as procedures used in assessing the quality of data.

2.1 Data source

The statistics presented in this release are based solely on administrative records from death notification forms obtained from the Department of Home Affairs. The DHA uses two types of death notification forms to capture deaths: Form BI-1663 which was introduced in 1998 and Form DHA-1663 which was introduced in 2009 as a replacement of Form BI-1663. However, BI-1663 forms will continue to be used until all remaining forms are depleted. The major difference between the two forms is that stillbirths and deaths occurring within the first seven days of life (perinatal deaths) on Form BI-1663 are recorded in the same section as all other deaths, whereas Form DHA-1663 has a separate section that records perinatal deaths. In instances where there is no medical practitioner available to complete the death notification form as is the case in some rural areas in South Africa, a traditional leader may complete and issue a Death Report form also known as Form B1-1680 which certifies the occurrence of death and a description of circumstances that resulted in the death. During registration at DHA offices, information on the Death Report is transcribed on to either the BI-1663 or the DHA-1663.

The Births and Deaths Registration Act, 1992 (Act No. 51 of 1992) amended in 2010 through the Births and Deaths Registration Amendment Act, 2010 (Act No. 18 of 2010) is the legislation governing registration of deaths in South Africa (Republic of South Africa, 1992; Republic of South Africa, 2010). Additionally, the 2014 Births and Deaths Regulations which rescinded the 1992 Regulations prescribe that notice of occurrence of death including a stillbirth must be given within 72 hours by an informant, regardless of citizenship status of the deceased. After registration of the death, the DHA issues a death certificate to the informant and updates the National Population Register (NPR). The NPR only includes deaths for South African citizens with valid national Identity documents (ID) and permanent residents whose births records were already captured onto the NPR prior to death. Persons not eligible for inclusion in the NPR are non-South African citizens who were temporarily in the country. South African citizens and permanent residents who died before notice of their births had been registered would also not be captured in the NPR. Stats SA, on the other hand, collects all death notification forms, irrespective of the deceased's citizenship status for processing, analysis and dissemination of mortality and causes of death information. On this basis, the number of deaths processed by Stats SA will always be higher than the figure of deaths recorded on the NPR for the same period.

The 2018 statistical release is based on a total of 454 014 deaths that occurred in 2018 and 16 636 late death registrations for 1997 to 2017 that were registered at the DHA and reached Stats SA in time for the 2019/2020 processing phase. About 99,98% of these deaths were registered using the new form DHA-1663, and 0,02% were registered using the old form BI-1663.

2.2 Data processing

The processing of completed death notification forms takes place at Stats SA Data Processing Centre. The process begins with sorting of the forms by year of death, pasting unique identifier labels on each of the forms, coding socio-demographic and causes of death variables, and ending with data capturing. Data from the two death notifications (Form BI-1663 and Form DHA-1663) are then merged into one dataset as data elements in these two forms are largely comparable.

2.2.1 Classification of the causes of death

The cause-of-death statistics in this publication are compiled using the International Classification of Diseases (ICD), 10th Revision 2016 Edition. The ICD is a system of categories to which morbid entities of either external or pathological causation are assigned according to established criteria. It is developed collaboratively between the World Health Organization (WHO) and various international agencies who are involved in mortality data quality improvement. It is revised from time to time in line with new adaptations, classifications and glossaries. All member states of the United Nations, including South Africa, agreed to use ICD as the standard classification system for compiling morbidity and mortality statistics. The South African National Information System also adopted it as a standard.

The primary purpose of ICD is to provide for conversion of word descriptions of diseases or conditions into an alphanumeric code, which permit easy storage, retrieval and analysis of data. It also allows for the systematic and standardised recording, analysis, interpretation, comparison and sharing of morbidity and mortality data within a population and across countries. The ICD-10 provides for coding and classification of diseases and injuries and a wide range of signs, symptoms and other abnormal findings.

According to WHO (2016), the most effective public health objective is to prevent the underlying cause of death from operating. For this purpose, the WHO recommends that countries use the international form of medical certificate of cause of death to facilitate the selection of the underlying cause of death. The ICD-10 contains about 8 000 categories of causes of death which are organised into 22 chapters consisting of communicable diseases, non-communicable diseases, ill-defined causes of death and external causes of injury and death.

Each chapter contains three-character categories which is subdivided into 10 four-character subcategories. However, for international comparisons, three-character coding is the mandatory level for reporting morbidity and mortality statistics, while four-character coding is recommended for more specific details about the disease or condition resulting in morbidity or mortality. Statistics South Africa codes the causes-of-death data at four-character level where sufficient details about the causes of death were available. However, this statistical release analyses up to three-character level.

The quality of the causes of mortality statistics depends on completeness and accuracy of certified death notification forms. Coders at Stats SA follow the principle of 'what you see is what you code' when coding causes-of-death statistics. The coders use the ICD-10 for categories of causes of death coded in the ICD-10 manual. For categories that are not coded in the ICD-10 manual, Stats SA has outlined specific guidelines and procedures. For example, according to these rules and procedures immunosuppression is coded as immunodeficiency and not as human immunodeficiency virus (HIV) disease.

Medical practitioners sometimes report the cause of death as acquired immune suppression which is not coded in the ICD-10 manual. Based on the Stats SA guidelines, this is coded as human immunodeficiency virus (HIV) disease (B20-B24). Multidrug-resistant tuberculosis (MDR-TB) and extensively drug-resistant tuberculosis (XDR-TB) were assigned the ICD-10 special codes U51 and U52, respectively, and are included in the tuberculosis (A15-A19) broad group causes of mortality.

2.2 Generation of the underlying cause of death

The underlying cause of death is defined as: "(a) the disease or injury that initiated the sequence of events leading directly to death, or (b) the circumstances of the accident or violence that produced the fatal injury" (WHO, 2016: 31). Stats SA uses two software packages, namely Automated Classification of Medical Entities (ACME 2011) and IRIS, for the automated derivation of the underlying causes of death. The ACME software was developed by the United States National Centre for Health Statistics

(NCHS). It applies the WHO ICD-10 rules on the selection of the underlying cause of death. The IRIS software is used for comparison of results with ACME. Similarly, this software is based on the international death certificate form provided by WHO and the causes of death are coded according to the ICD-10 rules. Where one software failed to derive the underlying cause, the results of the other software were used. In occasions where both software packages failed to derive the underlying cause of death, experienced coders at Stats SA derived the underlying cause of death manually.

2.3 Data editing

On completion of all data processing, the Stats SA's editing program was used to check for accuracy and to flag implausible causes of death for further investigation. Additionally, two electronic tools developed by WHO: Analysing mortality levels and causes-of-death (ANACoD) version 2.0 and CoDEdit version 1.0 were used to further check data consistency and plausibility (WHO, 2014a and WHO, 2014b, respectively). The tools were developed to enhance the value of mortality statistics in informing health policies and programmes. The main difference between the two tools is that CoDEdit assesses data consistency and plausibility for each unit record, while ANACoD checks the data at an aggregate level.

ANACoD version 2.0 and CoDEdit version 1.0 tools were used to automatically check the 2018 mortality data for accuracy and consistency. The tools were also used for highlighting cases with causes unlikely to cause death categorised by age and sex (sex-specific causes, age-specific causes and notifiable diseases). They also assist with assessment with possible misuse of ICD-10 codes as well as providing a summary of records within the dataset (WHO, 2014a; WHO, 2014b). For instance, regarding causes of death that are specific to one sex, the tools warn and flag for errors where the combination of sex and cause is incorrect. Errors flagged by the tools, were manually investigated for verification and corrections where necessary.

2.4 Assessment of the quality of data

The importance of producing quality mortality statistics derived from the civil registration system cannot be over-emphasised, since they are the only source of health information data continuously available at national and local administrative levels.

Mortality data have the potential to support decentralised population health administration, while the usability of statistics derived from such data depends wholly on their quality (WHO, 2013). An accurate, complete and timely civil registration system provides the foundation for the production of reliable and routine vital statistics. However, the data can suffer from a range of quality limitations such as late registrations, completeness of death registration, timeliness of publishing, accuracy of reporting, high proportion of ill-defined causes of death and misreporting or misclassification of causes of death. It is therefore vitally important to assess data quality and to be transparent about data limitations, to identify areas of improvement.

For the purpose of this statistical release in addition to the quality assessment undertaken through ANACoD and CoDEdit electronic tools, the framework proposed by Mahapatra et al. (2007) was used to evaluate quality of the 2018 causes of death data. This section presents a summary of the results of this assessment. A detailed discussion of the assessment is provided in Appendix C (see page 69).

In the 2015 statistical release (Stats SA, 2018), an estimated 96% completeness level of adult deaths (15 years and older) was reported for the 2011–2016 intercensal/survey period. Male adults had a completeness level of 97%, higher than the adult female completeness level of 95%. Estimates for the 2018 deaths completeness level remain the same, and a revised estimate will be provided when new population data are available.

2.5 Data analysis

A two-pronged approach analysis was followed for this release, which includes mortality analysis and causes of death analysis. The first section on mortality describes information on selected socio-demographic variables and mortality patterns, based on frequency distributions and cross-tabulations.

The section further covers demographic indicators such as sex ratios at death, age-specific death rates and median ages at death. Sex ratios at death show the ratio of male deaths per 100 female deaths and age-specific death rates show variations in mortality taking into consideration the population size of each age group. Age-specific death rates indicate the number of deaths in a particular age group per 1 000 population in that age group while the median ages at death provide a basic measure of how early or late mortality occurs in a population over time.

The second section lays out analysis of information on causes of death, mainly based on ranking the natural underlying causes of death and proportions of deaths due to specific causes. The top-ranking causes determine the leading causes of death. The ranking indicates the frequency of causes of death among those causes eligible to be ranked, and does not reflect causes of death in terms of their importance from a public health perspective. Causes of death with the same number of deaths received the same rank, and a rank was skipped for the next cause. For example, if two causes of death had the same frequency and were ranked third, they both received the same rank, and the next cause received rank five.

The process of ranking natural underlying causes of death excluded symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (R00–R99), because such information is not sufficiently detailed to be of use for public health purposes. It is therefore essential to raise awareness among certifying practitioners to seek sufficient evidence to assign causes of these deaths to the more precise categories through training programmes and other initiatives. Due to concerns about violence and deaths due to accidents in South Africa, natural and non-natural causes have been separated. Although non-natural causes of death were not ranked, for analysis they were disaggregated by characteristics such as age, sex and province of death of the deceased that relay important information on the levels and patterns of non-natural deaths.

In addition, the second section also provides information on causes of death based on the Global Burden of Disease as generated by ANACoD. Causes of deaths are categorised into three broad groups, namely Group I (communicable diseases), Group II (non-communicable diseases) and Group III (injuries). Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (R00–R99) deaths which are ill-defined natural causes of death were accorded across communicable and non-communicable diseases categories. The release also presents tables on mortality and causes of death for district municipalities in the country in the appendices section. Information on local municipalities is not provided in this release, but it can be made available in an aggregated dataset format and not as unit records datasets to users, on request.

3. Mortality

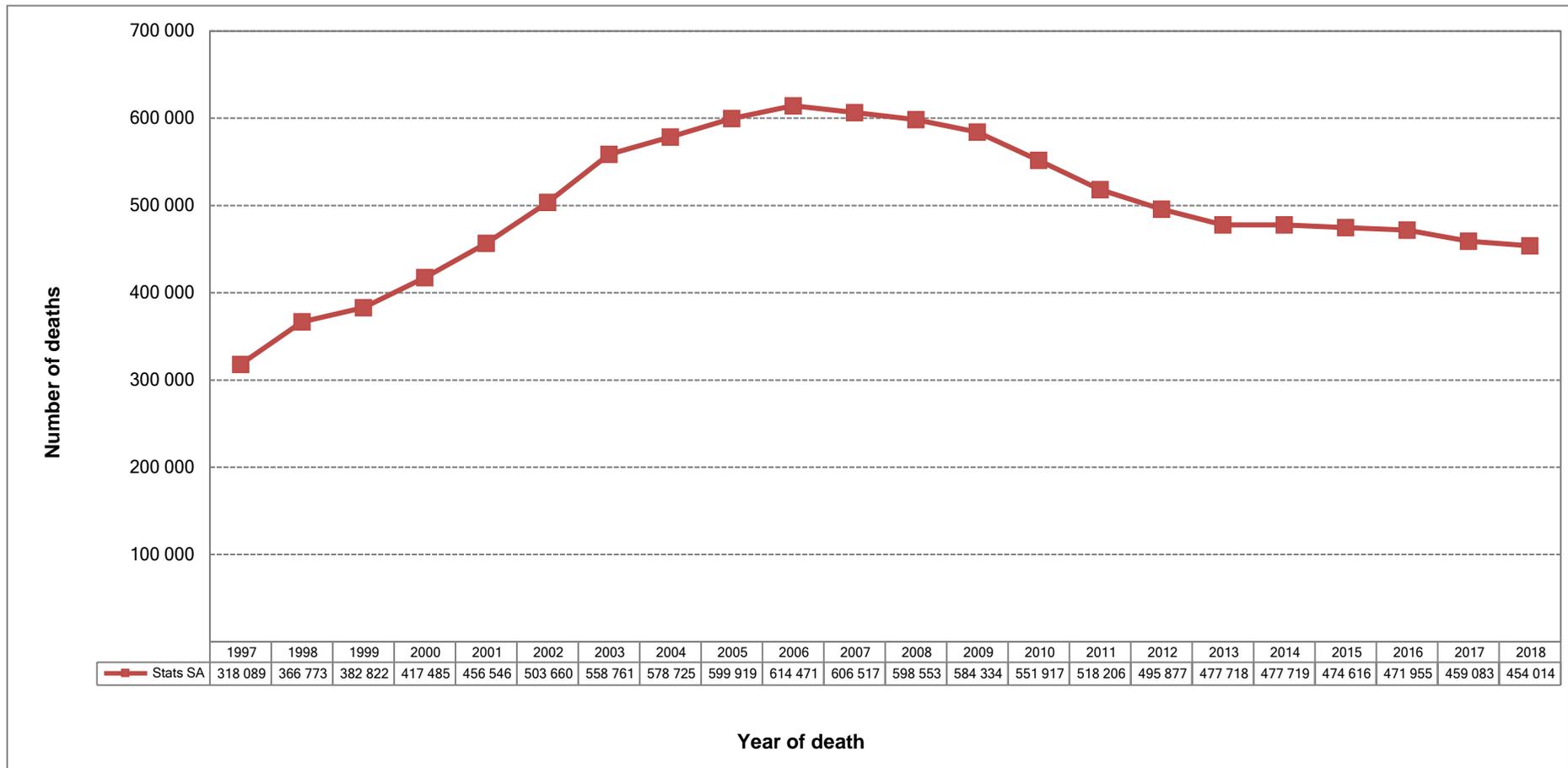
This chapter provides analysis on the distribution of 2018 registered deaths that reached Stats SA during the 2019/2020 processing phase. The section mainly focuses on absolute numbers and percentage distributions of 2018 deaths by selected background characteristics of the deceased such as age, sex, place/institution of death and geographic information (province and district municipalities). Levels and trends of registered deaths over the period 1997–2018 are also included.

3.1 Levels and trends of mortality deaths in 2018

Figure 3.1 shows that the total number of deaths that occurred and were registered at the Department of Home Affairs and processed by Stats SA in 2018 were 454 014, indicating an increase when compared with the 446 544 deaths that were processed in 2017. The increase was attributable to data processing and analysis exceeding 24 months to complete resulting in more forms captured, specifically, deaths that occurred in 2018 but registered late.

The general trend in the number of registered deaths processed by Stats SA indicates an increase from 1998 to 2006 when the number of deaths peaked at 614 412, and a decrease thereafter. The overall number of deaths per year increases as additional forms are processed at Stats SA. Additional forms may result from delayed registration or delayed transmission of forms from DHA to Stats SA. It is, therefore, expected that additional forms, 2018 forms in particular, and for the previous years will still be received for processing at Stats SA. Updated information will be provided in the next statistical release.

Figure 3.1: Number of registered deaths by year of death, 1997–2018*



*Data for 1997–2017 have been updated with late registrations / delayed death notification forms processed in 2019/2020

3.2 Age differentials

The distribution of deaths by age is presented in Table 3.1. The highest number of deaths that occurred in 2018 was amongst those aged 65–69, comprising 8,4% of all deaths. This age group was followed closely by those aged 60–64 (8,3%). Deaths that occurred among infants (age 0) accounted for 4,4% of all deaths, while the lowest percentages of deaths were observed in age groups 5–9 years and 10–14 years, each representing 0,6% and 0,7%, respectively.

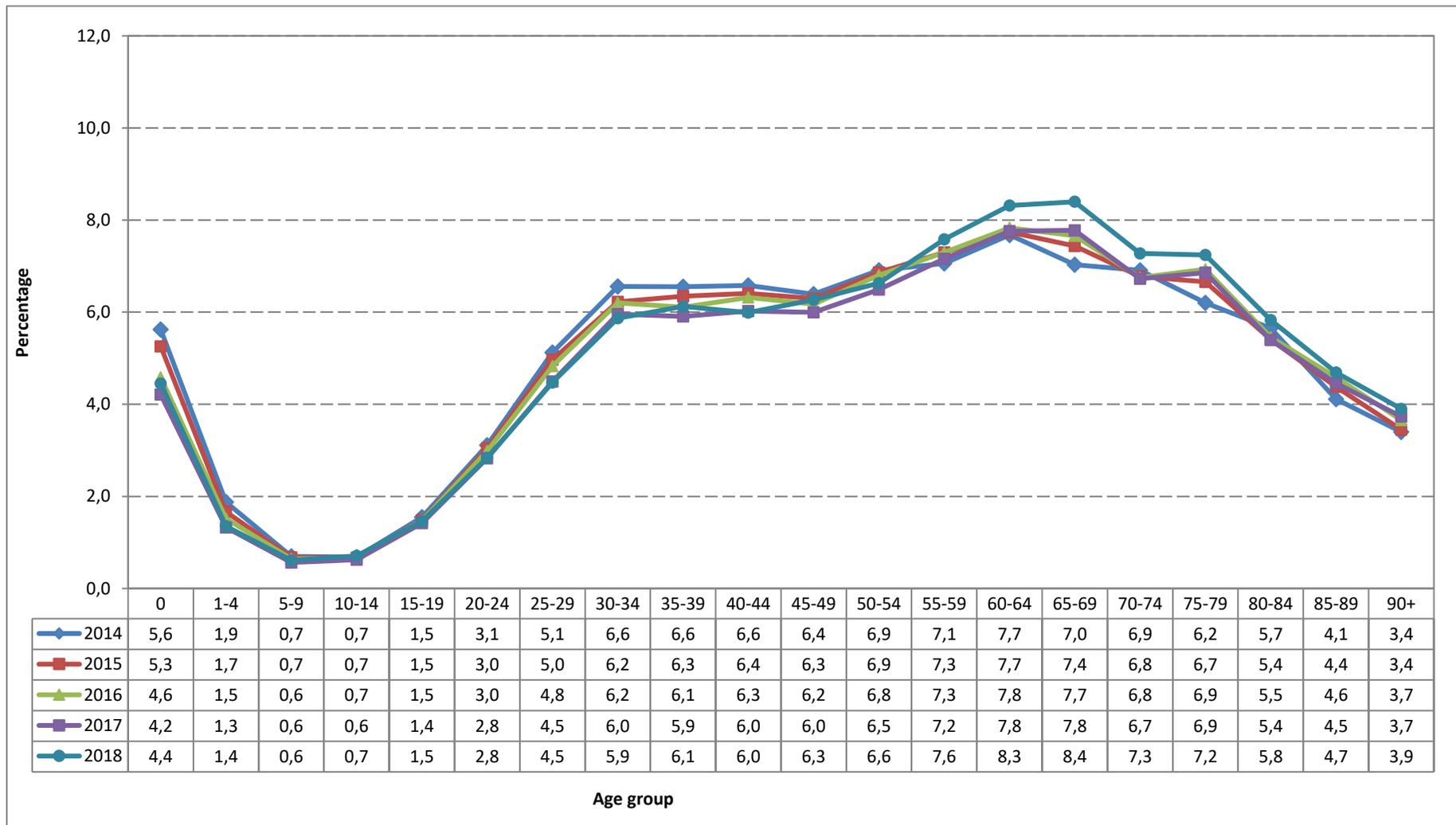
Table 3.1: Number and percentage distribution of deaths by age group, 2018

Age group	Number	Percentage
0	20 132	4,4
1–4	6 122	1,4
5–9	2 760	0,6
10–14	3 216	0,7
15–19	6 594	1,5
20–24	12 851	2,8
25–29	20 241	4,5
30–34	26 573	5,9
35–39	27 716	6,1
40–44	27 128	6,0
45–49	28 379	6,3
50–54	30 023	6,6
55–59	34 317	7,6
60–64	37 639	8,3
65–69	38 006	8,4
70–74	32 920	7,3
75–79	32 792	7,2
80–84	26 395	5,8
85–89	21 220	4,7
90+	17 647	3,9
Unspecified	1 343	0,3
Total	454 014	100,0

Figure 3.2 shows the percentage distribution of deaths by age and year of death between 2014 and 2018. A general observation is that the age pattern of mortality was somewhat consistent over the five-year period. The pattern is generally characterised by high proportions of deaths amongst infants (age zero years), lower proportions for ages 1–4 years, lowest proportions between 5–9 years and 10–14 years, rising but still low proportions between age group 15–19 years and 20–24 years. High proportions averaging 6,0% and over in all years from age group 30–34 years to 75–79 years, noteworthy decreasing proportions from age group 80 and above.

The figure further shows that between the years 2014 to 2016, the proportion of deaths peaked at age group 60–64. In 2017 both age groups 60–64 and 65–69 years recorded the highest proportion of deaths at 7,8% while in 2018 the highest proportion of deaths occurred among ages 65–69 years, accounting for 8,4%. The lowest proportions were observed in age group 5–9 years (0,7%) between 2014 and 2015 and 0,6% from 2016 onward.

Figure 3.2: Percentage distribution of deaths by age and year, 2014–2018*



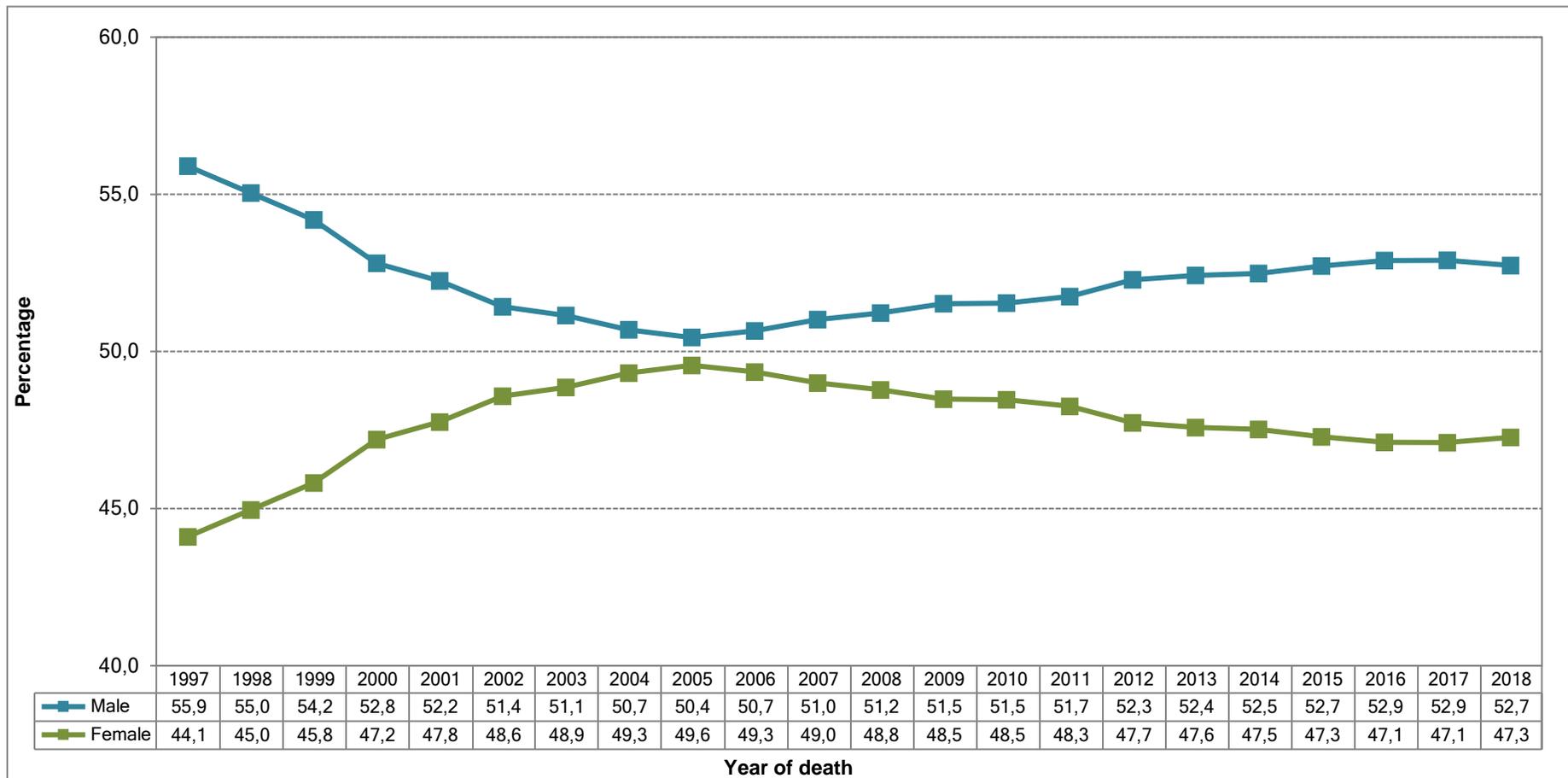
*(1) Excluding deaths with unspecified age.

(2) Data for 2014–2017 have been updated with late registrations / delayed death notification forms processed in 2019/2020

3.3 Sex differentials

Figure 3.3 presents the percentage distribution of deaths by sex and year of death from 1997–2018. The results show that prior to 2006, the proportion of male deaths persistently decreased while that of females increased, and the reverse was observed from 2006 for both sexes. However, for all the years, the proportion of male deaths were higher than female deaths. The percentage of male deaths declined consistently from a high of 55,9% in 1997 to a low of 50,4% in 2005. The opposite was true for females where their contribution to total deaths increased from a low of 44,1% in 1997 and reached a peak of 49,6% in 2005. From 2006 to 2018, the proportions of female deaths decreased yearly from 49,3% in 2006 to 47,3% in 2018. Conversely, during the same period the percentages of male deaths increased from 50,7% in 2006 to 52,7% in 2018.

Figure 3.3: Percentage distributions of deaths by sex and year of death, 1997–2018*



(1) Excluding deaths with unspecified sex.

(2) Data for 1997-2017 have been updated with late registrations / delayed death notification forms processed in 2019/2020.

The annual percentage changes in the number of deaths by sex from 1997–1999 to 2017–2018 are shown in Appendix E (see page 82). Between 1997 and 2005, female deaths increased at a higher rate than male deaths. In contrast, female deaths went on to decline at a higher rate than male deaths between the years 2006 and 2018. Appendix F (see page 83) provides Age-specific Death Rates (ASDRs) for the years 2014 to 2018 in order to show differentials in mortality by age group, taking into account the population size of each age group. The ASDRs provided should be interpreted with caution as they are based on observed number of deaths that have not been adjusted for incomplete death registration which may vary by age group.

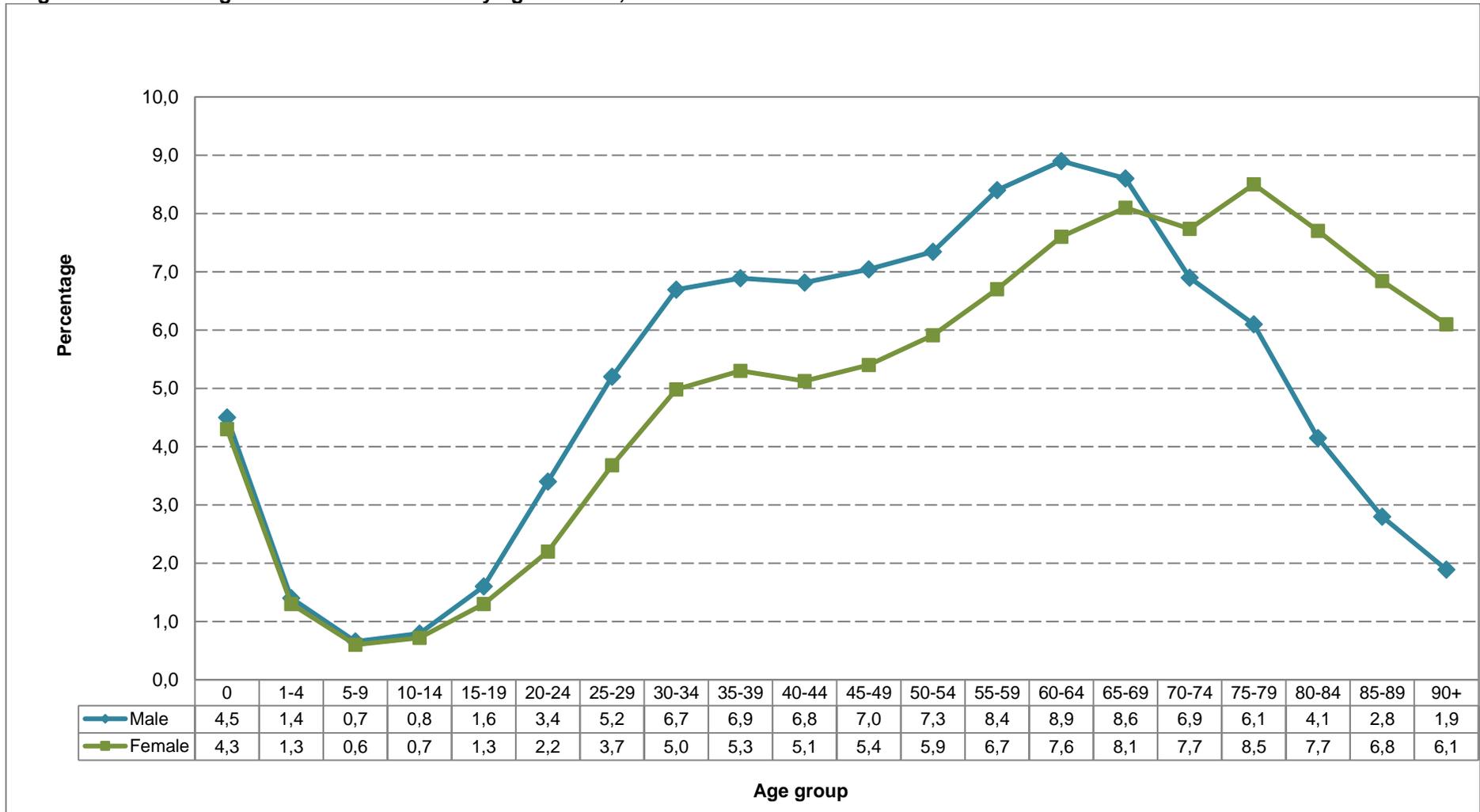
3.4 Age and sex differentials

3.4.1 Distribution of deaths by age and sex

Figure 3.4 shows the age and sex percentage distribution of deaths for 2018 (absolute numbers are presented in Appendix D7 (see page 81)). The differences between proportions of male and female deaths were minimal at younger ages (from age zero to age group 15–19 years). The distribution shows that the percentage of male infant deaths marginally exceeded the percentage of female infant deaths (4,5% for males and 4,3% for females). For both males and females, the lowest proportions of deaths occurred amongst those aged 5–9 years (0,7% for males and 0,6% for females).

Overall, the male deaths exceeded those of female deaths from age group zero up to 65–69 years. Male deaths peaked at age group 60–64 years (8,9%), followed by age groups 65–69 years (8,6%) and age group 55–59 (8,4%). The highest proportions for female deaths were observed at age group 75–79 years with 8,5%, followed by age group 65–69 years; accounting for 8,1% of total female deaths. Overall, from ages 70 years and above there were more female than male deaths. The gap in the proportion for male and female deaths was highest between age groups 75–79 up to 90 years and above.

Figure 3.4: Percentage distribution of deaths by age and sex, 2018*



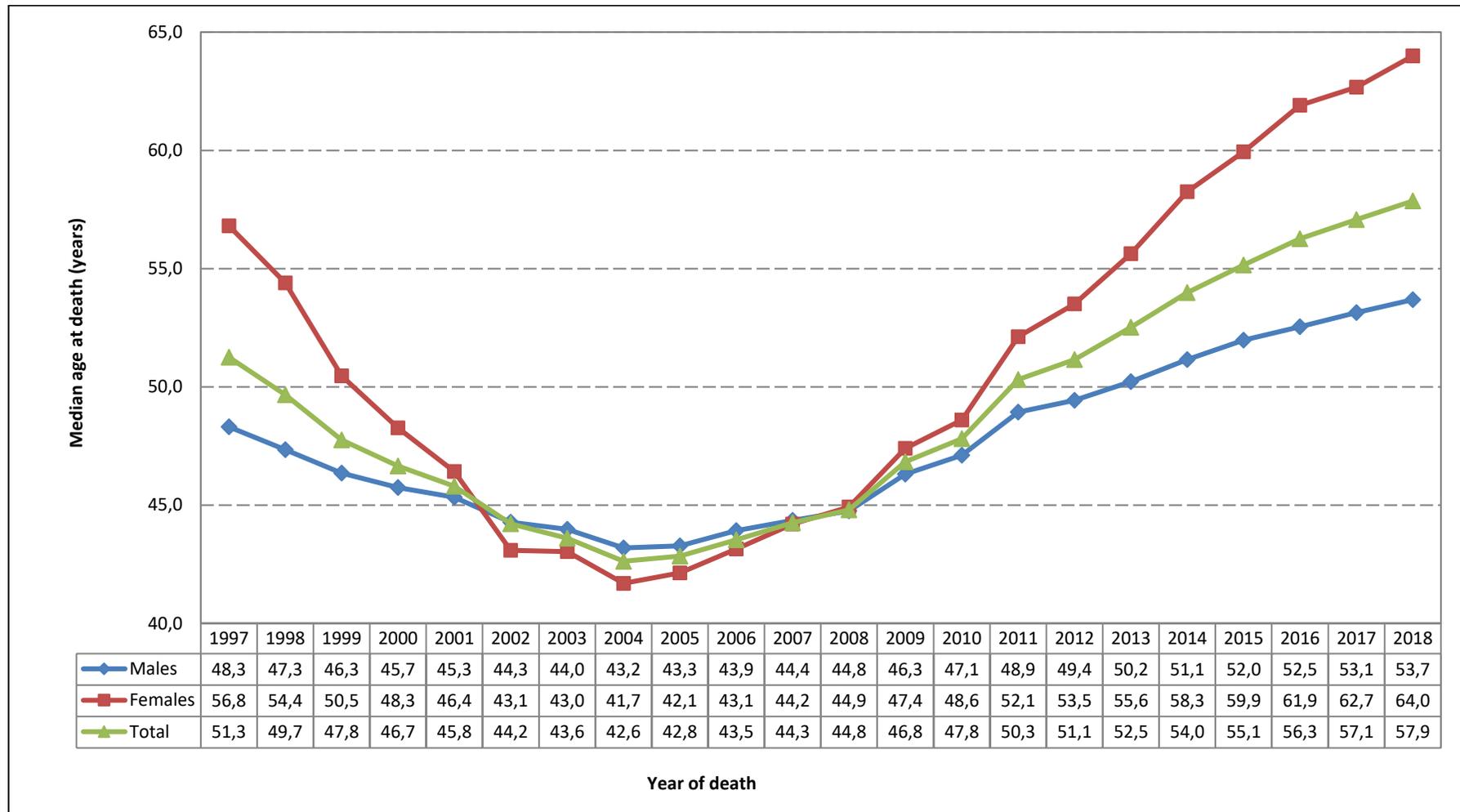
*Excluding deaths with unspecified age and sex.

3.4.2 Median ages at death by sex

The median ages at death by sex are presented in Figure 3.5. Median ages show how early or late mortality occurs in the population and specifies the age at which half of the reported deaths occur.

An analysis of median ages can reveal changes in patterns of mortality over time; lower median ages at death indicate that mortality is occurring earlier while higher median ages indicate that mortality is occurring later. Figure 3.5 shows that the median ages at death for total deaths declined notably from 51,3 years in 1997 and reached their lowest level of 42,6 years in 2004. The decreases were more rapid for females as compared to males. The median age at death for females decreased by 15,1 years from 56,8 years in 1997 to 41,7 years in 2004, while the median age at death for males decreased by 5,1 years from 48,3 years in 1997 to 43,2 years in 2004. Since 2005, the median ages at death for both males and females have been increasing, reflecting improvement in mortality.

Figure 3.5: Median ages at death by sex and year of death, 1997–2018*



*Data for 1997–2017 have been updated with late registrations / delayed death notification forms processed in 2019/2020.

3.4.3 Sex ratios by age

The sex ratio at death is an important demographic indicator, highlighting the number of male deaths relative to the number of female deaths. When there are equal numbers of male and female deaths, the sex ratio at death is equal to 100. If there are more males than female deaths, the sex ratio is above 100 and excess female deaths are indicated by a sex ratio at death that is less than 100.

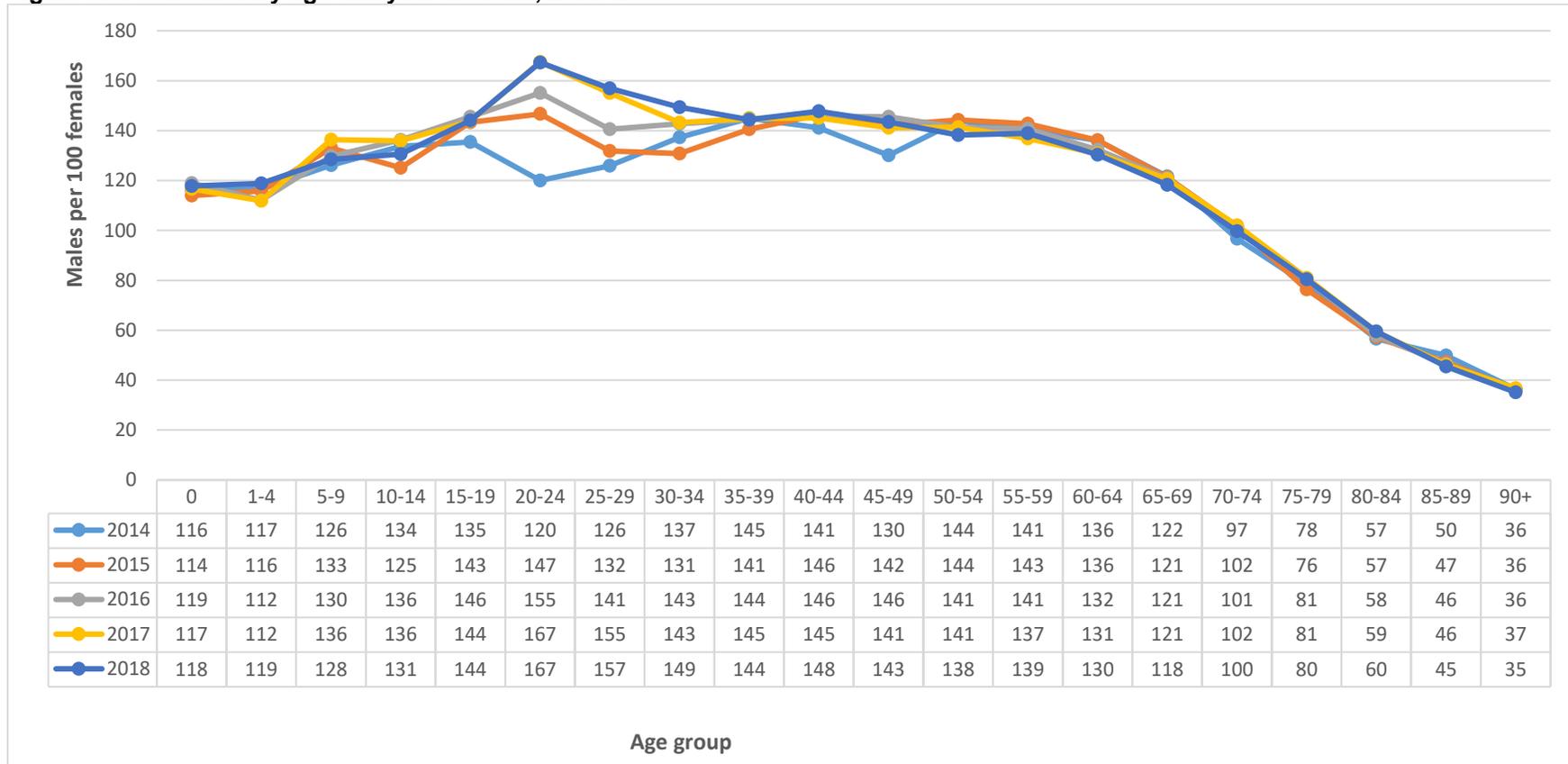
Sex ratio at death by age and year of death for the period 2014–2018 are shown in Figure 3.6. Over the five-year period, more male than female deaths were consistently observed from age 0 up to age group 65–69. Beyond these age groups sex ratios decline with increasing age.

The results also indicate that from age group 5–9 years, sex ratios increase consistently until age group 20–24 years where the highest ratios were observed over the last four years. The lowest ratio in this age group was last observed in 2014 at 120 male deaths per 100 female deaths. The highest sex ratio (167 male deaths per 100 female deaths) in the age group 20–24 were for the years 2017 and 2018 years. This pattern has continued for four consecutive years, indicating improvements in female mortality in these age groups beginning in 2015. Additionally for all four years, there has been a consistent increase in the sex ratios for age groups 20–24 and 25–29, implying that female deaths were decreasing much more than male deaths in these age groups.

In 2018, for the age group 70-74 there were equal numbers of male and female deaths for the first time since 2014. Beyond this age group, female deaths were consistently more than male deaths from age group 75–79 years to 90 years and older for the years under observation. It is further observed that those aged 90 and older had the lowest sex ratio at death for all the years. The sex ratios ranged from 36 male deaths per 100 female deaths in 2014 to 33 male deaths per 100 female deaths in 2018, although there was a slight increase in 2017.

Appendix G (see page 84) presents the overall sex ratios for 1997 to 2018. The sex ratio for 2018 deaths was 112 male deaths per 100 female deaths, indicating that there were more male than female deaths that occurred in 2018. The ratios decreased from 127 male deaths per 100 female deaths in 1997 to 102 male deaths per 100 female deaths in 2005, after which it increased consistently from 103 male death per 100 female deaths in 2006 to 112 in 2015 and remained constant at 112 over the years 2015 to 2018.

Figure 3.6: Sex ratios by age and year of death, 2014–2018*



* (1) Excluding deaths with unspecified age and sex.

(2) Data for 2014–2017 have been updated to include late registrations processed / delayed death notification forms processed in 2019/2020.

3.5 Population group differences in mortality

Mortality differentials by population group reflect the stage of health transition. Black Africans and coloureds are faced with the quadruple burden of disease while profiles for Indians or Asians and whites are dominated by non-communicable diseases. The effect of HIV/AIDS and tuberculosis has been greatest in black Africans, exacerbating mortality differentials. The discussion and distribution of underlying causes of death by population group are provided in Appendices Q and Q1 (see pages 148–149).

Table 3.2 shows the number of deaths, percentage distribution of deaths by population group and rates per thousand for each population group for 2018. The population group with the highest proportion of deaths was black Africans who accounted for 67,8% of all deaths. The Indian/Asian population group accounted for the least percentage of deaths with only 2,1% of all registered deaths. The table also indicates that 9,5% and 7,8% of all deaths were for the white and coloured population groups, respectively. Information on population group was unknown or unspecified in 12,6% of all registered deaths.

To account for the differences in population composition based on population groups, death rates are also provided. Analysis of distribution of deaths by size of the group indicates that the white population group death rates were higher than other population groups (9,6%), followed by the coloured population group (7,0%). For black African population, 6,6% of deaths per thousand population were recorded, while the least rates were observed within the Indian/Asian population group.

While there has been an improvement in the recording of population group on the death notification forms, the proportion of deaths with unknown or unspecified population group remains considerably high and therefore, these results should be interpreted with caution.

Table 3.2: Number and percentage distribution of deaths by population group, 2018

Population group	Number of deaths	Percentage by population group	Deaths per thousand Population
Black African	307 929	67,8	6,6
White	43 176	9,5	9,6
Indian/Asian	9 389	2,1	6,5
Coloured	35 353	7,8	7,0
Other	778	0.17	*
Unknown or unspecified	57 389	12,6	*
Total	454 014	100,0	

* Other and unknown/unspecified population groups were not reported by mid-year population estimates, 2018

3.6 Marital status differences in mortality

The informant reporting a death had to indicate the marital status of the deceased. Table 3.3 shows the number and percentage distribution of deaths by marital status of the deceased. Almost 42% of the deceased were reported as never been married at the time of death. A quarter (25,0%) of the deaths were married people at time of death. Furthermore, 11,5% and 2,4% of all deaths occurred amongst widowed and divorced people, respectively. The marital status of the deceased at the time of death was missing in 19,6% of all registered deaths and therefore, these results must be interpreted with caution.

Table 3.3: Number and percentage of deaths by marital status, 2018

Marital status	Number	Percentage
Never married	177 277	41,5
Married	106 816	25,0
Widowed	49 083	11,5
Divorced	10 321	2,4
Unknown/unspecified	83 735	19,6
Total	427 232	100,0

3.7 Differences in mortality by smoking status of the deceased

The number and percentage distribution of 2018 registered deaths classified by smoking status of the deceased is depicted in Table 3.4. Smoking status of the deceased is defined as the regular smoking of tobacco during the five years prior to death, and the question is applicable if the deceased was aged 16 years and older.

The table shows that the highest percentage of deaths were among people who were non-smokers (41,4%) while approximately 20,3% of the deaths occurred among people who were smoking. The table also shows that 32,9% of registered deaths in 2018 had smoking status classified as unknown or unspecified. The high proportion of deaths with missing information on smoking status shows a poor reporting of this information on the death notification forms. The condition showed marginal difference when compared to 2017 where the proportion was 32,6%, representing a 0,3% increase.

Table 3.4: Number and percentage distribution of deaths by smoking status among those aged 16 years and older, 2018

Smoking status	Number	Percentage
Yes	85 806	20,3
No	174 896	41,4
Do not know	22 803	5,4
Unknown or Unspecified	139 336	32,9
Total	422 840	100,00

3.8 Differences in mortality by place or institution of death occurrence

Table 3.5 shows the number and percentage distribution of registered deaths by place or institution of death occurrence for 2018. The results indicate that 41,0% of the deaths took place in hospitals, 2,3% were emergency room or outpatient facility deaths and 2,0% died in nursing homes. These three places of death occurrence account for 45,3 % of total deaths that occurred within a health care facility. A total of 23,8% of all deaths occurred at home in 2018, while 2,2% were amongst people who had already died by the time they reached the hospital. Only 26,3% of the death notification forms had unknown or unspecified information on place or institution of death of the deceased.

Table 3.5: Number and percentage distribution of deaths by place of death occurrence, 2018

Place of death	Number	Percentage
Hospital	186 329	41,0
Emergency room / Out patient	10 297	2,3
Dead on arrival	10 183	2,2
Nursing home	8 975	2,0
Home	108 050	23,8
Other	10 868	2,4
Unknown	119 312	26,3
Total	454 014	100.00

3.9 Geographic variations in mortality

This section presents information on the distribution of registered deaths by province and district municipality where the death occurred and by the deceased usual residences. The districts and provinces information were derived based on the 2016 municipal boundaries. The number and percentage distribution of deaths by province of the deceased are provided in Appendix I and I1 on pages 87 to 90 (absolute numbers and percentages, respectively); and Appendix J presents the sex distribution of these (see page 91).

3.9.1 Differences by province, age and sex

Table 3.6 shows the distribution of 2018 deaths by province of death occurrence and province of usual residence of the deceased at the time of death. The province of death occurrence may not always be similar to the place of usual residence.

For province of death occurrence, the highest proportion of deaths (20,0%) occurred in Gauteng province, followed by KwaZulu-Natal and Eastern Cape — each comprising 18,7% and 14,8%, respectively. The same pattern was observed for deaths that occurred and were registered in 2017. The lowest percentage of deaths occurred in Northern Cape (3,1%), and this was also observed in 2017. With regard to province of usual residence, Gauteng (14,7%) had the highest proportion of deaths, followed by Eastern Cape (13,6%) and then KwaZulu-Natal (13,0%). There was a notable increase in unspecified province of usual residence (25,3%), and this was unclear what caused the unusual increase in unspecified cases in 2018 data. This will be investigated further and efforts to improve its reporting will be made in future publications.

A cross tabulation of province of death occurrence and province of usual residence of the deceased is given in Appendix H and H1 (see page 85–86). It must be noted that analysis on geographic distribution of deaths is based only on place of death occurrence, not place of residence or place of birth of the deceased. However, information on the distribution of deaths by place of residence and place of birth of the deceased is available on request from Stats SA.

Table 3.6: Distribution of deaths by province of death occurrence and province of usual residence of the deceased, 2018

Province	Province of death occurrence		Province of usual residence of deceased	
	Number	Percentage	Number	Percentage
Western Cape	48 376	10,7	35 688	7,9
Eastern Cape	67 119	14,8	61 763	13,6
Northern Cape	13 962	3,1	12 744	2,8
Free State	28 927	6,4	26 637	5,9
KwaZulu-Natal	84 778	18,7	59 141	13,0
North West	31 486	6,9	22 667	5,0
Gauteng	90 974	20,0	66 645	14,7
Mpumalanga	30 122	6,6	23 903	5,3
Limpopo	42 270	9,3	29 870	6,6
Unspecified	16 000	3,5	114 956	25,3
Total	454 014	100,0	454 014	100,0

The number distribution of deaths by age and province of death occurrence as shown in Appendix I (see page 87) indicates that Gauteng had the highest number of deaths for age group zero (4 742). KwaZulu-Natal had the highest proportion of deaths for age groups 1–14 years (2 441) and 15–44 years (24 718). Gauteng accounted for the highest proportion of deaths in age groups 45–64 years [26 481] and 65 years and older [33 582]. It must be noted that the distribution of deaths does not take into account potential underreporting of deaths at specific ages, which may vary by district of death occurrence.

Percentage variations in 2018 deaths by age and district municipality are presented in Appendix I1 (see page 89). At province level, North West (6,2%) had the highest proportion of infant deaths. Limpopo (3,8,%) had the highest percentage of deaths amongst children 1–14 years. Deaths in Mpumalanga (29,7%) had the highest percentage in the 15–44 years age category. Northern Cape had the highest proportion of deaths occurring in the 45–64 years age group (32,8%), while Western Cape had the highest percentage of elderly deaths [ages 65 and older (41,1%)].

The sex ratios at death depicted in Appendix J (see pages 91–92) show that Western Cape (123 male deaths per 100 female deaths) had the highest sex ratio of death and both Northern Cape and Gauteng (115 male deaths per 100 female deaths) had the second highest. In the remaining provinces, the sex ratio at death ranged from a high of 114 male deaths per 100 female deaths in North West to a low of 98a male deaths per 100 female deaths in Limpopo.

3.9.2 Differences by district municipality, age and sex

The number distribution of deaths by age and district municipality of death occurrence as shown in Appendix I (see page 85) indicates that out of the 52 district municipalities, the top three district municipalities were metropolitan municipalities: City of Cape Town (29 949), City of Johannesburg (29 936) and eThekweni (27 742). The district municipalities that recorded the least number of deaths were Central Karoo (780), Xhariep (1 082) and Namakwa (1 280). Differentials by age group indicate that City of Johannesburg had the highest number of deaths for age 0 (1 726) as well as 1–14 years (751) and amongst those aged 15–44 years (8 422). Lastly, City of Cape Town had the highest number of deaths for age groups 45–64 years (8 465) and 65 years and above (12 283).

Appendix I1 also shows percentage variations by age and district municipality. John Taolo Gaetsewe district in Northern Cape had the highest proportion of deaths occurring among children below age one year (7,8%), followed by Mopani in Limpopo (7,5%). Ngaka Modiri Molema and Dr Ruth Segomotsi Mompoti districts in North West both accounted for 7,1%, of deaths below age one. The highest proportions of deaths occurring among children aged 1–14 years were noted in Alfred Nzo district (4,5%) in Eastern Cape, and Vhembe district (4,4%) in Limpopo.

For deaths occurring among those aged 15–44 years, O.R. Tambo district in Eastern Cape (32,3%), iLembe district in KwaZulu-Natal (32,1%) and Ehlanzeni district in Mpumalanga (31,4%) had the highest proportion of deaths.

At older ages, Karoo district municipality in Western (38,1%) had the highest proportions of deaths occurring in ages 45–64 years, followed by Namakwa (35,6%) and Pixley ka Seme (35,0%) districts in Northern Cape. Overberg (47,2%), Amathole (44,9%) and Eden (43,3%) had the highest proportion of deaths occurring at ages 65 years and older.

Appendix J (see pages 91–92) shows the sex distribution of the deceased by the district municipality of death occurrence. Five district municipalities had sex ratios below 100: Vhembe district in Limpopo (97 male deaths per 100 female deaths), Greater Sekhukhune district in Limpopo (96 male deaths per 100 female deaths), Mopani district in Limpopo and uMkhanyakude in KwaZulu-Natal (95 male deaths per 100 female deaths) and uMzinyathi district in KwaZulu-Natal (94 male deaths per 100 female deaths). Overall, the district level analysis of deaths by sex shows that 2018 deaths were predominantly characterised by excess male deaths in comparison to female deaths.

4. Causes of death

4.1 Introduction

This section presents information on causes of death for deaths that occurred in 2018 as recorded on death notification forms completed by medical practitioners and other role players. The section has nine sub-sections: introduction, reported causes of death, method of ascertaining the cause of death, main groups of the underlying causes of death, natural and non-natural causes of death. The remaining sub-sections cover major group of causes of death, broad groups of natural causes of death, non-natural causes of death, and comparison between immediate, contributing and underlying causes of death.

In view of concerns around the levels of violence and deaths due to accidents in South Africa, non-natural underlying causes of death are treated as a separate group. Non-natural causes of death comprise all deaths that were not attributable, or may not have been attributable to natural causes. In The Inquests Act (Act No. 58 of 1959) provides to such deaths to be subject to medico-legal investigation and an autopsy to be performed to establish the cause of death, The inquest is a legal requirement. The results of the inquest are sent to the DHA, which issues the final death certificate.

This publication uses the 10th revision of the International Classification of Diseases (ICD-10) focusing mainly on the underlying causes of death. This is defined as the disease or injury that initiated the train of events leading directly to death; or the circumstances of the accident or violence, which produced the fatal injury (WHO, 1992). Classification of underlying causes of death in this publication is based on main groups, broad groups and Global Burden of Disease. Global Burden of Disease is a critical resource for informed policymaking, as it provides a tool to quantify and compare effects of different diseases in a population. Deaths are further categorised by age, sex and province of death occurrence.

Trend analysis covering the period 1997 to 2018 were undertaken using data updated with late registrations processed during the processing of 2018 deaths, in order to establish prevailing patterns between the natural and non-natural causes of death.

The last subsection presents comparison between underlying, immediate and contributing causes of death. This analysis gives an overview of recorded instances of multiple causes of death and utilises information on all causes of death recorded on each death notification form, as death notification forms allow for reporting one or more causes of death on each form.

4.2 Reported causes of death

Information on diseases, injuries or complications that caused death is provided as part of the death notification form. Both the BI-1663 and DHA-1663 forms make provision for recording of multiple causes of death. These are Part 1 and Part 2 under "Medical Certificate of Cause of Death" on both death notification forms, or under "Causes of Death" for perinatal deaths on the new form (DHA-1663). Part 1 is for reporting the chain of events directly leading to the death while Part 2 is for other important diseases or conditions that were present at the time of death and may have contributed, but did not lead to the death.

Table 4.1 shows information on the number of causes of death provided on each death notification form for deaths that occurred in 2018. Less than one per cent (0,6%) of the forms had no cause of death recorded.

This was as a result of two scenarios:

Scenario 1: This is a situation where the page for recording causes of death information was missing when the form was received from the DHA, but there is a doctor's tick to show that it was a natural cause but with no specific cause given.

Scenario 2: This is where the page with causes of death information was missing when the form was received from the DHA, but the doctor indicated that the death was still under investigation and therefore cause of death had not yet been established.

For the 2 528 forms with no information on the cause of death, for 52,7% of the forms, doctors indicated that it was a natural cause, however, the cause of death was not completed, while for 47,3% of the forms, doctors pointed out that they were "not in a position to certify" or that the "death was under investigation" (these results are not provided). Records where there was no reported cause of death were coded to "other ill-defined and unspecified causes of mortality (R99) or other conditions originating in the perinatal period (P96)", depending on the age of the deceased. If the deceased was aged 28 days or younger, the cause of death was finally reported as other conditions originating in the perinatal period (P96), while for ages greater than 28 days it was reported as other ill-defined and unspecified causes of mortality (R99).

The majority of the death notifications forms (51,6%) had only one cause recorded, followed by 25,6% of death notification forms with two causes of death recorded and 14,8% which had three causes recorded. Just above 5% of forms had four causes reported, with only 2% recording five cause of death.

Table 4.1: Number and percentage distribution of death notification forms by the number of causes entered on the notification form, 2018

Number of the reported causes of death	Number of death notification forms	Percentage
No cause	2 528	0,6
One cause	234 239	51,6
Two causes	115 997	25,6
Three causes	67 166	14,8
Four causes	25 355	5,6
Five causes	8 729	1,9
Total	454 014	100,0

4.3 Method of ascertaining cause of death

The death notification form makes provision for a certifying official to indicate the method used to ascertain the cause of death. Options on method of ascertainment differ according to the form used by the medical practitioner to certify the death. When BI-1663 form was revised, the option on responses for the method used to ascertain cause of death was slightly changed. Post-mortem examination was included for deaths that occurred after seven days of birth, while for perinatal deaths the following option were included in the death notification form:

- i. Certified cause of death has been confirmed by autopsy;
- ii. Autopsy information may be available later; and
- iii. Autopsy not performed.

Therefore the differences in the options between the old form (BI-1663) and new form (DHA-1663) forms are:

- BI-1663 form had six options (autopsy, opinion of attending medical practitioner, opinion of attending medical practitioner on duty, opinion of professional nurse, interview of family member and other).
- DHA-1663 form, for deaths occurring after one week of birth, has the same six options but includes an additional option, called "post-mortem examination".
- In the case of perinatal deaths, the DHA-1663 form has three options; autopsy, autopsy results may be available later and autopsy not performed.

In order to avoid complexities in analysis, similar categories in DHA-1663 and BI-1663 forms were combined. Table 4.2 shows resulting categories after combining comparable information from both forms.

The most common method of ascertaining the cause of death in 2018 was post-mortem examination with 17,3%, followed by 10,5% deaths ascertained through opinion of attending medical practitioner. Almost ten per cent (7,9%) of deaths were ascertained through the opinion of a registered professional nurse and also 7,9% by means of an autopsy. There were 0,7% causes of death that were ascertained by conducting an interview with a family member of the deceased to establish the cause of death. These results should be interpreted with caution as more than a third (53,7%) constitutes unspecified cases.

Table 4.2: Number and percentage distribution of deaths by method used to ascertain the cause of death, 2018

Method of ascertainment	Frequency	Percent %
Autopsy	34 643	7,6
Post mortem examination	78 418	17,3
Opinion of attending medical practitioner	47 759	10,5
Opinion of attending medical practitioner on duty	5 955	1,3
Opinion of registered professional nurse	36 084	7,9
Interview of family member	3 258	0,7
Other	3 972	0,9
Autopsy results may be available later	221	0,0
Unspecified	243 704	53,7
Total deaths	454 014	100

4.4 Main groups of the underlying causes of death

An overview of the underlying causes of death for main groups (chapters) of classification of causes of death is provided in this subsection. The ICD-10 classifies diseases and related health problems into 22 chapters, 19 of which are used in reporting of information on underlying causes of death (see Table 4.3). This report excludes chapters 19, 21 and 22.

These are discussed briefly below:

1. Chapter 19: *Injury, poisoning and certain other consequences of external causes (S00-T98)*. These codes are used to classify causes of death in other causes but not in the underlying causes.
2. Chapter 21: *Factors influencing health status and contact with health services (Z00-Z99)*. These are only used in morbidity coding.
3. Chapter 22: Codes for special purposes. These are codes used by WHO for the provisional assignment of new diseases of uncertain aetiology. U51 and U52 were used for coding *multidrug-resistant tuberculosis* (MDR-TB) and *extensively drug-resistant tuberculosis* (XDR-TB) in this release for individual causes of death, but were both recoded to the broad group of tuberculosis (A15-A19) during analyses.

The number and percentage distribution of the 19 main groups (chapters) of classification of causes of death are presented in Table 4.3. Diseases of the circulatory system was the top ranking main group of causes of death in 2018, comprising 18,9% of all deaths. This main group has been the top ranked main group of underlying causes for the last three years after over taking certain infectious and parasitic diseases as the top ranked main group of underlying causes, which dominated prior to this period. The observation in 2018 is consistent with that of 2016 and 2017, which indicates a change in disease profile in South Africa where infectious diseases were replaced by a group of lifestyle diseases.

Ill-defined causes of death due to symptoms and signs not elsewhere classified (R00-R99) was ranked the third highest group contributing 13,5% of all deaths, while deaths due to external causes of morbidity and mortality comprised 11,9% of all deaths.

Table 4.3: Distribution of deaths by main causes of death, 2018

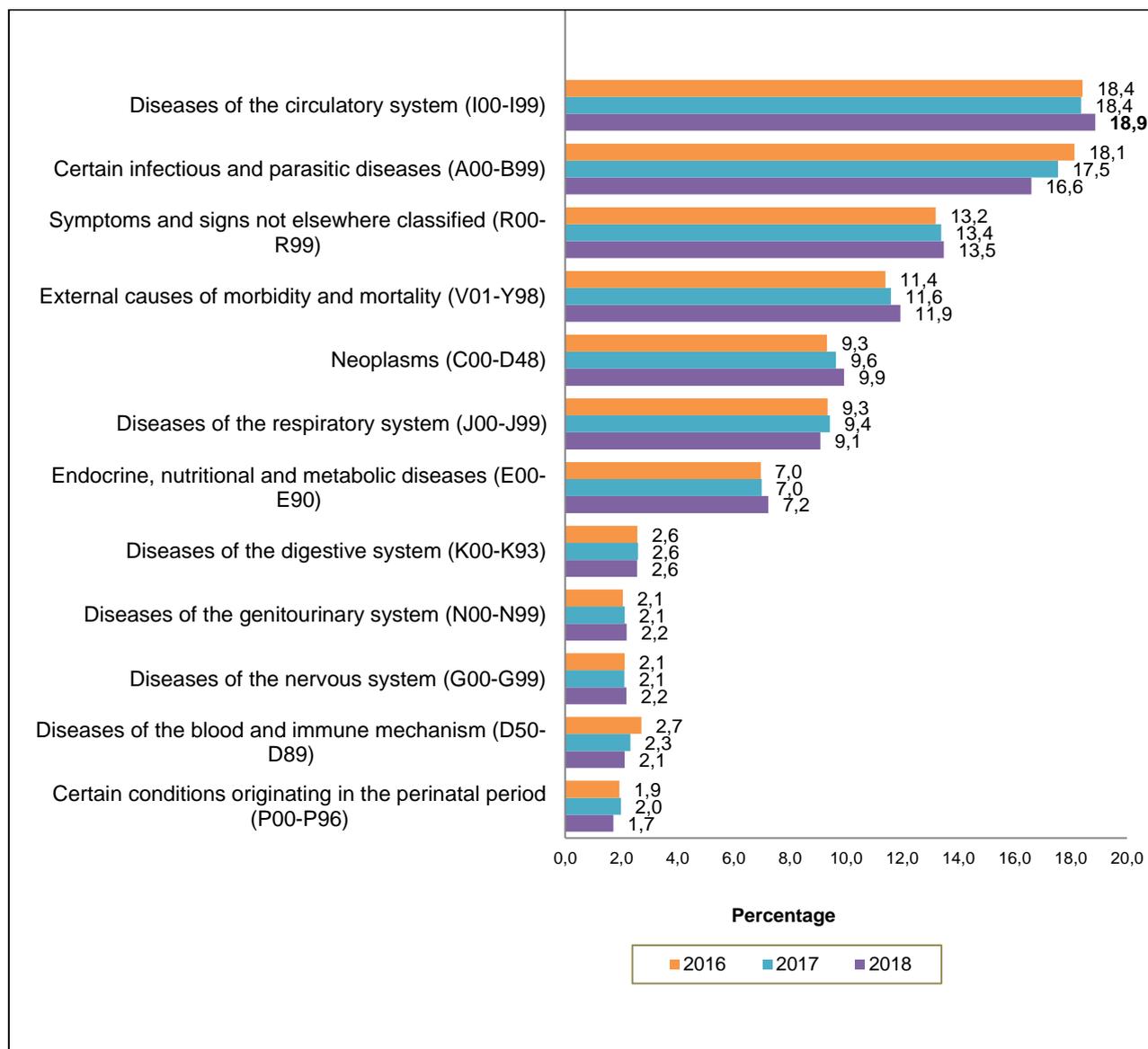
No.	Main groups of underlying causes of death (based on ICD-10)	Number	Percentage
3	Diseases of the circulatory system (I00-I99)	85 656	18,9
9	Certain infectious and parasitic diseases (A00-B99)	75 302	16,6
7	Symptoms and signs not elsewhere classified (R00-R99)	61 222	13,5
8	External causes of morbidity and mortality (V01-Y98)	54 160	11,9
1	Neoplasms (C00-D48)	45 086	9,9
14	Diseases of the respiratory system (J00-J99)	41 237	9,1
19	Endocrine, nutritional and metabolic diseases (E00-E90)	32 832	7,2
6	Diseases of the digestive system (K00-K93)	11 619	2,6
17	Diseases of the genitourinary system (N00-N99)	9 954	2,2
10	Diseases of the nervous system (G00-G99)	9 875	2,2
18	Diseases of the blood and immune mechanism (D50-D89)	9 643	2,1
12	Certain conditions originating in the perinatal period (P00-P96)	7 747	1,7
2	Mental and behavioural disorders (F00-F99)	2 764	0,6
15	Congenital malformations (Q00-Q99)	2 746	0,6
5	Diseases of the musculoskeletal system etc. (M00-M99)	2 052	0,5
16	Diseases of the skin and subcutaneous tissue (L00-L99)	1 453	0,3
13	Pregnancy, childbirth and puerperium (O00-O99)	560	0,1
11	Diseases of the ear and mastoid process (H60-H95)	59	0,0
4	Diseases of the eye and adnexa (H00-H59)	47	0,0
Total	Total	454 014	100

Including deaths due to MDR-TB and XDR-TB

A three-year trend for selected main groups of underlying causes of deaths for the years 2016 to 2018 are shown in Figure 4.1. The most noticeable changing patterns were those of certain infectious and parasitic diseases which declined from 18,1% in 2016 to a low of 16,6% in the three-year period. The other evident pattern was the increase in proportion of deaths due to diseases of the circulatory system, which increased from 18,4% in 2016 to 18,9% in 2018. This was the third year that deaths due to this main group were higher than deaths due to certain infectious and parasitic diseases.

The proportions of deaths due to endocrine, nutritional and metabolic diseases, neoplasms and diseases of the genitourinary system increased slightly each year over the three-year period, while those due to diseases of the respiratory system and diseases of the blood and immune mechanism decreased. There was also a slight increase in the proportion of deaths due to external causes of morbidity and mortality over the three-year period, from 11,4% in 2016 to almost 12% in 2018.

Figure 4.1: Percentage distribution of deaths by main groups of causes of death, 2016–2018*



4.5 Natural and non-natural causes of death

According to the ICD-10 codebook, all causes of death included in chapters 1 to 18 of ICD-10 are classified as natural causes and those in chapter 20 (V01-Y98) are non-natural causes of death. This sub-section discusses both natural causes of death and chapter 20, which are deaths due to non-natural causes. Table 4.4 and Figure 4.2 show the number and percentage of deaths due to natural and non-natural causes, respectively, from 1997 to 2018. Generally, the proportion of deaths due to natural causes was significantly higher than deaths due to non-natural causes. This trend has been observed for all the previous years.

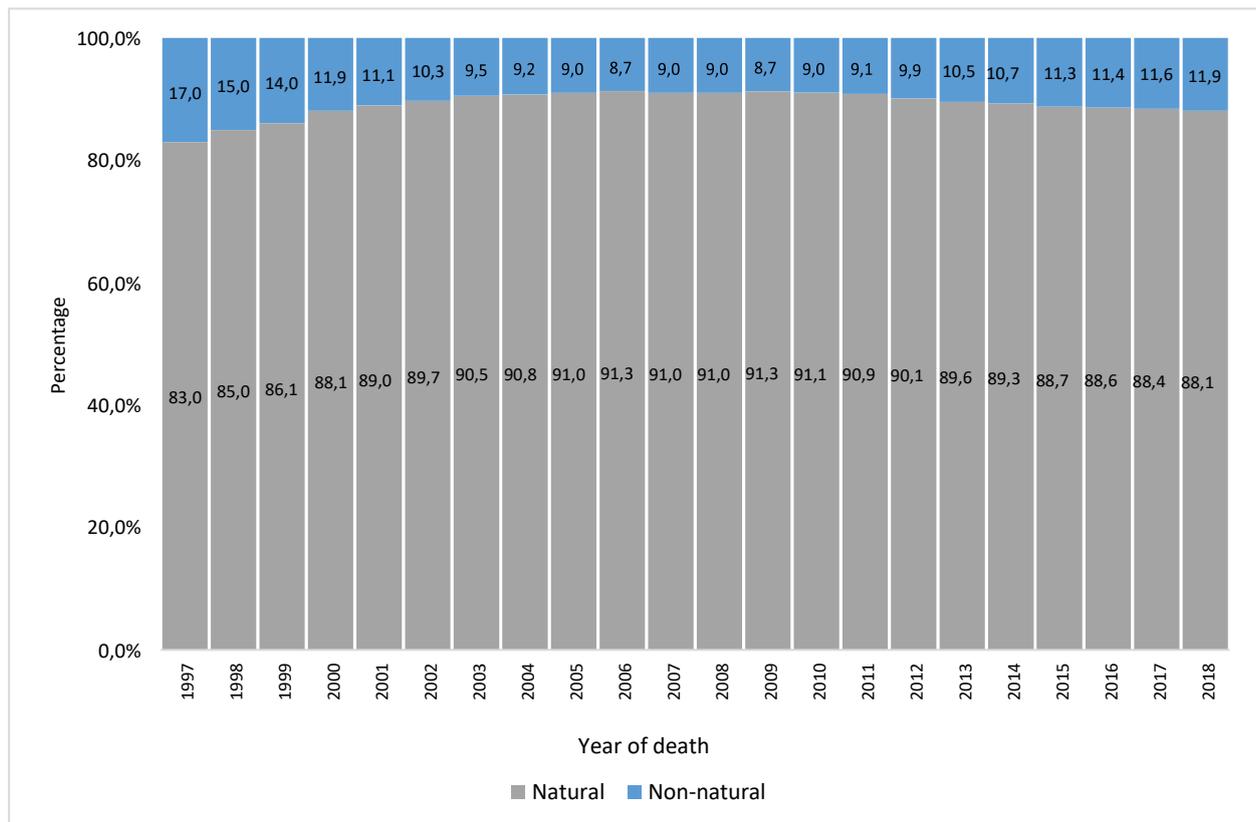
There was no discernible pattern in the number of deaths due to non-natural causes for the period 1997 to 2010, after which the proportion of non-natural deaths started to increase gradually (Figure 4.2). There has been a consistent decline in the number and proportion of deaths due to non-natural causes from 2011 to 2018, with the highest number recorded in 2018 (54 161).

Table 4.4: Number of natural and non-natural deaths by year of death occurrence, 1997–2018*

Year of death	Number of natural deaths	Number of non-natural deaths	Total
1997	263 932	54 157	318 089
1998	311 598	55 175	366 773
1999	329 415	53 407	382 822
2000	367 633	49 852	417 485
2001	406 103	50 443	456 546
2002	451 861	51 799	503 660
2003	505 786	52 975	558 761
2004	525 256	53 469	578 725
2005	545 839	54 080	599 919
2006	561 155	53 316	614 471
2007	551 856	54 661	606 517
2008	544 847	53 706	598 553
2009	533 443	50 891	584 334
2010	502 546	49 371	551 917
2011	470 889	47 317	518 206
2012	446 885	48 992	495 877
2013	427 819	49 899	477 718
2014	426 673	51 046	477 719
2015	421 185	53 431	474 616
2016	418 148	53 807	471 955
2017	405 894	53 189	459 083
2018	399 853	54 161	454 014

The percentage of deaths due to natural and non-natural causes for the period 1997 to 2018 are shown in Figure 4.2. Throughout the period, the majority of deaths were due to natural causes, comprising over 80% of all deaths. There has been a consistent increase in the proportion of deaths due to non-natural causes for the period 1997 to 2006, after which between 2007 and 2010 there was no discernible pattern. The proportion of deaths due to non-natural causes increased slightly between 2010 and 2011. From the year 2011 to 2018, non-natural causes of death remain on an increasing trajectory albeit marginal.

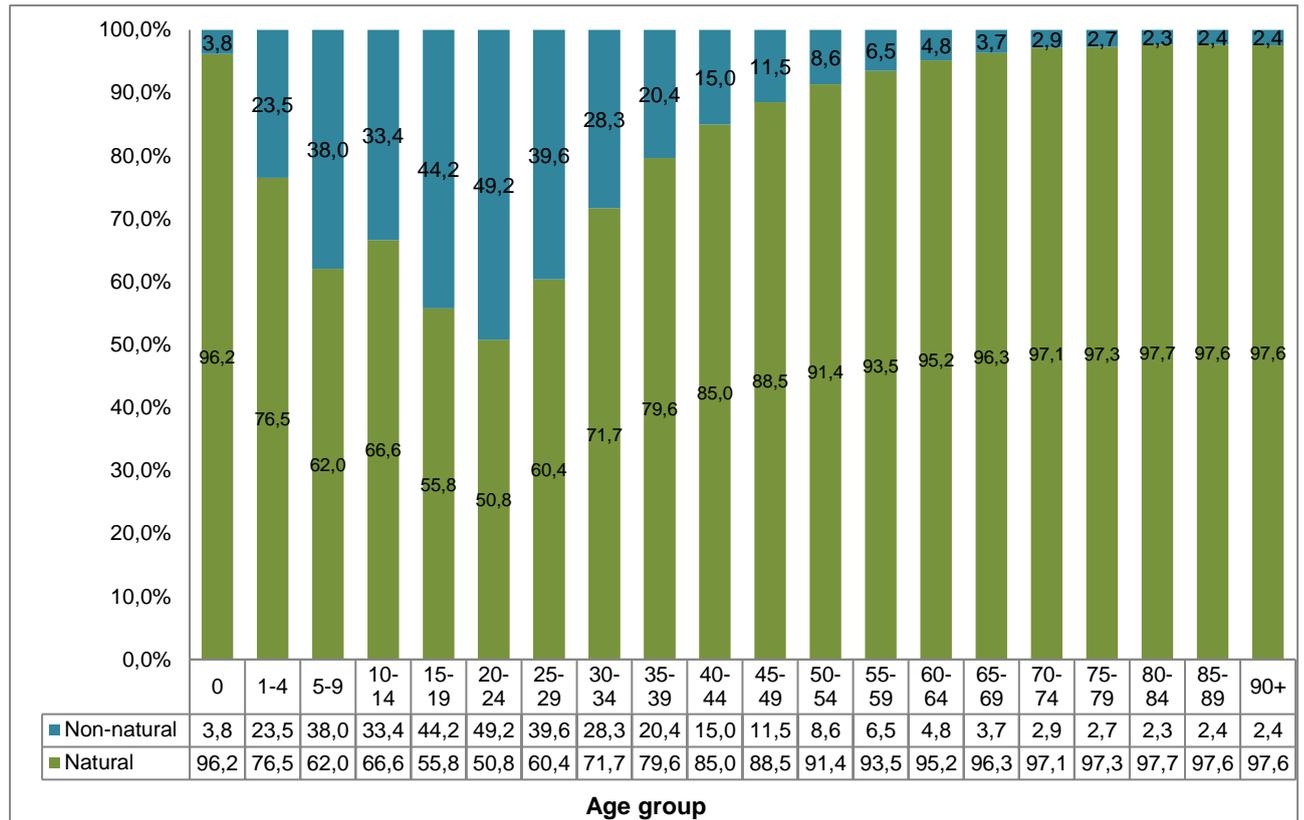
Figure 4.2: Percentage distribution of natural and non-natural causes of death by year of death, 1997–2018



4.5.1 Natural and non-natural causes of death by age

The percentage distribution of deaths due to natural and non-natural causes classified by age group for deaths that occurred in 2018 are shown in Figure 4.3. The general pattern observed is that the proportion of deaths due to non-natural causes increases almost consistently from age 0 to age group 20-24 years with a break in this trend observed for the age group 10-14, then increased thereafter. The age group 20-24 years was the most affected by non-natural causes with 49,2% of deaths due to these causes. After age group 20-24 years, the proportion of deaths due to non-natural causes declines with increasing age.

Figure 4.3: Percentage distribution of natural and non-natural causes of death by age, 2018



4.6 Major groups of causes of death as per Global Burden of Disease

The Global Burden of Diseases (GBD) is the main and most complete effort to measure epidemiological levels, and examines trends with effect from 1990s. The GBD makes comparisons across populations, enabling understanding of changing health challenges facing people across the world in the 21st century. It is the most comprehensive worldwide observational epidemiological study to date. It describes mortality and morbidity from major diseases, injuries and risk factors to health at global, national and regional levels. The 19 ICD-10 chapters used in reporting of information on underlying causes of death can be summarised into three groups of causes of death as per the GBD cause list:

Group I:

- Communicable diseases (e.g. *tuberculosis, pneumonia, diarrhoea, malaria, measles*);
- Maternal and perinatal causes (e.g. *maternal hemorrhage, birth trauma*); and
- Nutritional conditions (e.g. *protein-energy malnutrition*).

Group II: Non-communicable diseases (e.g. *cancer, diabetes, heart disease and asthma*)

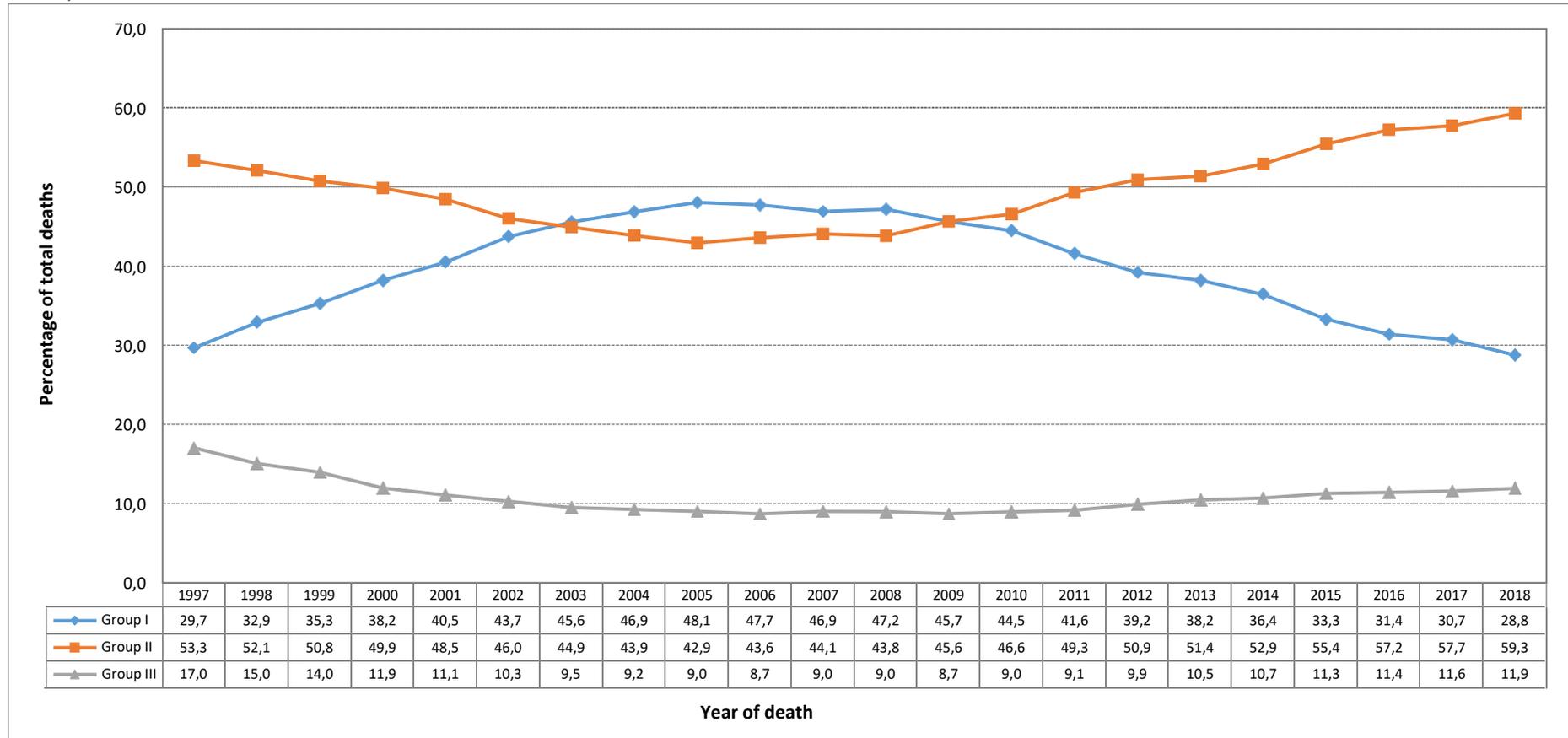
Group III: External causes of mortality (e.g. *accidents, homicide and suicide*)

Communicable diseases (Group I) are diseases caused by pathogenic microorganisms, such as bacteria, viruses, parasites or fungi and can be spread, directly or indirectly, from one person to another. These include, amongst other diseases, *diarrhoea, tuberculosis and pneumonia*. Non-communicable diseases (Group II) are medical conditions or diseases that are non-infectious or non-transmissible

among people. These last for longer periods of time and progress slowly and include, amongst others, cancer, *asthma and heart diseases*. External causes of mortality (Group III) are the non-natural causes of death.

The percentage distribution of deaths by group type and year of death are depicted in Figure 4.4. The pattern shows that prior to 2003, there were more deaths from non-communicable diseases relative to communicable diseases, although the gap narrowed over time. Starting from the year 2004 up to 2008, deaths due to communicable diseases surpassed non-communicable deaths. In 2009, there were equal proportion of communicable and non-communicable deaths. From 2010 to 2018 the gap between the communicable and non-communicable diseases widened with more deaths resulting from non-communicable diseases. A closer look at recent patterns (2010-2018) gives an indication that there is an epidemiological shift in the main causes of death and disease, away from communicable diseases towards non-communicable diseases. The same trends observed under section 4.5, were the same with regards to deaths due to injuries (Group III) group III seen from Figure 4.4.

Figure 4.4 Percentage of deaths due to communicable diseases (Group I), non-communicable diseases (Group II) and injuries (Group III) by year of death, 1997–2018*

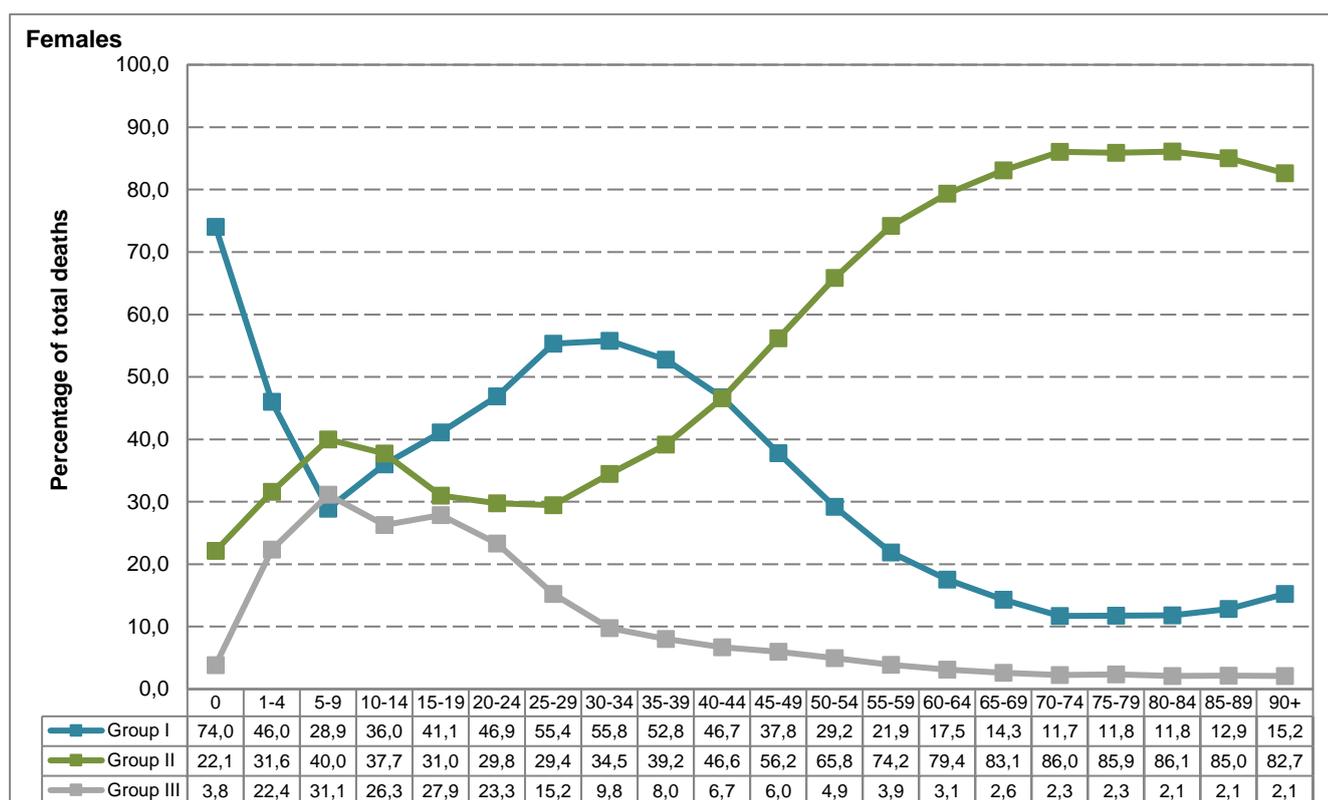
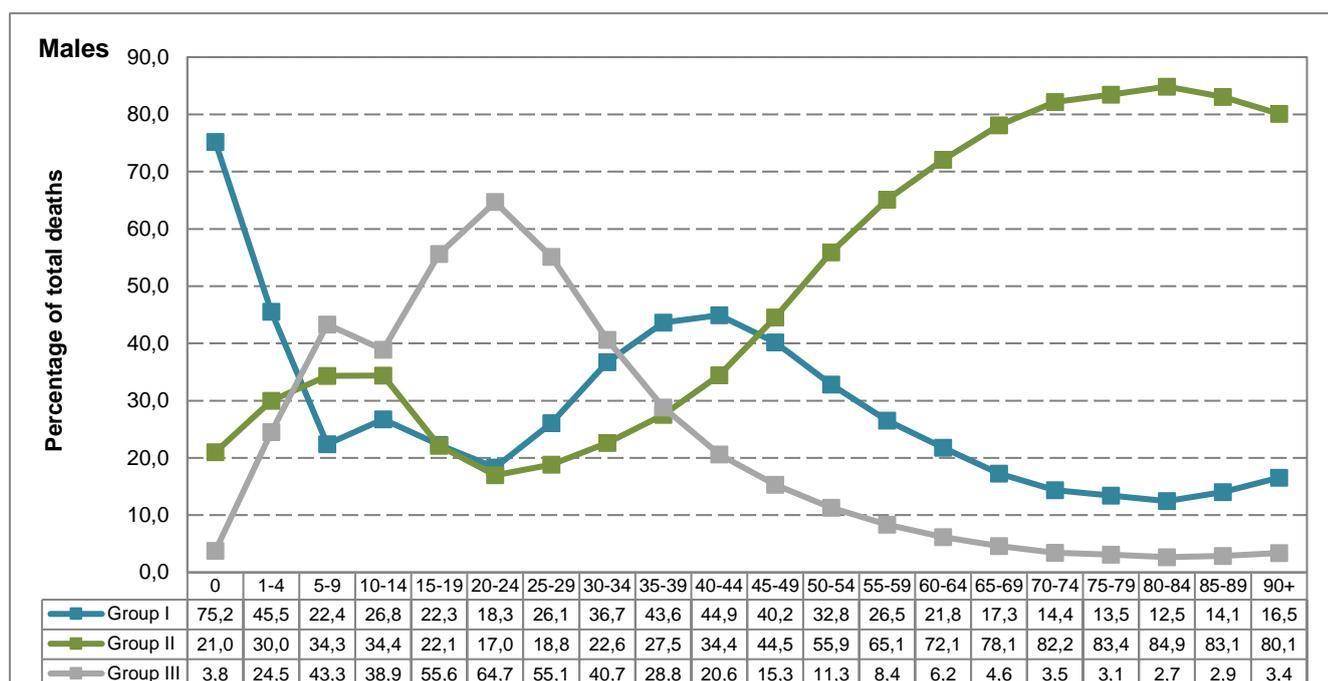


The percentage distribution of group type by sex and age group is presented in Figure 4.5. Infants (aged 0 years) had the highest proportion of deaths due to communicable diseases for both sexes (75,2% for males and 74,0% for females). The pattern with regard to this group has been observed for a number of years. The next peak in deaths due to communicable diseases was observed at age group 40-44 years for males at 44,9% and 30-34 years for females (55,8%). For both males and females, deaths due to non-communicable diseases peaked at age group 80-84 years. Communicable diseases were lowest amongst the elderly, the lowest being for females aged 70-74 years with only 11,7% of deaths due to communicable diseases. Among males, deaths due to communicable diseases in the older age groups were lowest for age groups 80-84 years (12,5%), while for younger males, the lowest was in the age group 20-24 years at 18,3%.

Generally, the trend in the proportion of deaths due to Group II causes increased from age group 25-29 years for males and 30-34 for females. In the case of infants (aged 0) for males, 20% of deaths were due to this group of causes and just above 21% for female infants. Beyond this age deaths due to non-communicable diseases increased consistently for both sex and peaks at age group 10-14 years for males (34,4%) and 5-9 years for females (40%). At ages above this group there is a decrease until age group 25-29 years amongst males, and 30-34 amongst females. Deaths due to non-communicable diseases rise dramatically at older ages for both sexes due to the increasing incidence of neoplasms, cardiovascular diseases and ischaemic heart diseases.

The proportion of deaths due to Group III causes, i.e. external causes of death including accidents and violence, was generally highest among age group 20-24 years amongst males (64,2%) and age group 5-9 years amongst females (31,1%). Deaths due to external causes were much higher for males than for females starting from age group 1-4 and through all age groups.

Figure 4.5: Percentage of deaths due to communicable diseases (Group I), non-communicable diseases (Group II) and injuries (Group III) by sex and age group, 2018*



4.7 Broad groups of natural causes of death

This subsection presents information on the leading underlying natural causes of death for broad groups. The ten leading causes of death are identified by ranking the natural underlying causes of death by the number of deaths among those eligible for ranking as described in Section 2. The top-ranking causes determine the leading underlying natural causes of death. The ranking excludes symptoms, signs and abnormal findings, not elsewhere classified as well as all non-natural deaths (external causes of morbidity and mortality).

4.7.1 Overall pattern of the leading underlying natural causes of death

The ten leading underlying causes of death in South Africa for the period 2016-2018 are shown in Table 4.5. The distribution of deaths by all broad groups of causes of death ranked by frequency (including non-natural causes and *symptoms and signs not elsewhere classified*) for 2018 is shown in appendix K (see pages 93-97). Appendix L provide the breakdown of individual causes for the broad groups that were among the ten leading causes in 2018 (see page 98-100).

Nine of the ten leading natural underlying causes of death were the same for the three years as shown in Table 4.5. Only other viral diseases, which was amongst the ten leading underlying causes of death in 2016 and 2017 moved out of the top ten in 2018 and replaced by *malignant neoplasms of digestive organs*. *Tuberculosis* remained the main leading cause of death in the three-year period, although the proportion of deaths due to TB declined in the three-year period from 6,5% in 2016 to 6,0% in 2018.

As was the cases with *tuberculosis*, *Diabetes mellitus* kept as the second leading underlying cause of death in the three-year period although the proportions death due to *diabetes mellitus* increased consistently over the three years. *Human immunodeficiency virus [HIV] disease*, *hypertensive disease* and *influenza and pneumonia* also maintained the same rank in the three year period. Despite maintaining the same rank, the proportion of deaths due to *hypertensive disease* increasing consistently from 4,3% in 2016 to 4,5% in 2018, while deaths due to *influenza and pneumonia* declined .

Cerebrovascular diseases, *Ischaemic heart diseases* each moved a position higher in 2018 compared to 2016 and *Chronic lower respiratory diseases* moved to a lower position. *Cerebrovascular diseases* moved from fourth to third, *Ischaemic heart diseases* from ninth to eighth.

Table 4.5: The ten leading underlying natural causes of death, 2016–2018

Causes of death (based on ICD-10)	2016			2017			2018		
	Rank	Number	%	Rank	Number	%	Rank	Number	%
Tuberculosis (A15-A19)**	1	30 541	6,5	1	29 441	6,4	1	27 450	6,0
Diabetes mellitus (E10-E14)	2	25 857	5,5	2	25 896	5,6	2	26 879	5,9
Cerebrovascular diseases (I60-I69)	4	23 759	5,0	4	22 806	5,0	3	22 997	5,1
Other forms of heart disease (I30-I52)	3	24 611	5,2	3	23 032	5,0	4	22 940	5,1
Human immunodeficiency virus [HIV] disease (B20-B24)	5	22 571	4,8	5	22 032	4,8	5	21 894	4,8
Hypertensive diseases (I10-I15)	6	20 331	4,3	6	20 309	4,4	6	20 576	4,5
Influenza and pneumonia (J09-J18)	7	20 203	4,3	7	19 226	4,2	7	17 569	3,9
Ischaemic heart diseases (I20-I25)	9	13 295	2,8	9	13 050	2,8	8	13 598	3,0
Chronic lower respiratory diseases (J40-J47)	10	13 097	2,8	8	13 509	2,9	9	13 579	3,0
Malignant neoplasms of digestive organs (C15-C26)	...	...	...	...	...	...	10	10 808	2,4
Other viral diseases (B25-B34)	8	16 902	3,6	10	12 869	2,8	...	...	...
Other Natural		206 981	43,9		203 724	44,4		201 564	44,4
Non-natural		53 807	11,4		53 189	11,6		54 160	11,9
All causes		471 955	100,0		459 083	100,0		454 014	100,0

**Including deaths due to MDR-TB and XDR-TB

4.7.2 Leading underlying natural causes of death by sex

The distribution of the ten leading underlying natural causes of death in 2018 by sex is shown in Table 4.6. Overall, nine of the ten leading causes were the same for both sexes, although with different rankings. *Tuberculosis* was the leading underlying cause of death for males accounting for 7,2% of male deaths while the leading underlying cause of death amongst females was *diabetes mellitus* accounting for 7,7% of female deaths. *Human immunodeficiency virus [HIV] disease* (4,6%) was the second leading cause of death for the males, followed by *Other forms of heart disease* (4,5%).

Cerebrovascular diseases (6,1%) was the second leading underlying cause of death for females.

No leading causes of death between the two sexes had the same rank. The vast difference in terms of rankings between the two sexes were for *tuberculosis*, *hypertensive diseases*, *cerebrovascular diseases*, *chronic lower respiratory diseases* and *Human immunodeficiency diseases* – with the highest difference being *tuberculosis* and *diabetes mellitus diseases*. *Tuberculosis* ranked first amongst underlying cause of death for males while it ranked sixth for females responsible for 4,8% female deaths. *Diabetes mellitus diseases* ranked fourth for males (4,4%) while it ranked first for females.

In terms of the global burden on diseases, two of the top five leading underlying causes of death for males were communicable diseases whilst among females, *Human immunodeficiency virus [HIV] disease* was the only communicable disease in the top five, the rest being non-communicable diseases.

Table 4.6: The ten leading underlying causes of death for males and females, 2018

Causes of death (based on ICD-10)	Male			Female		
	Rank	Number	%	Rank	Number	%
Tuberculosis (A15-A19)	1	17 110	7,2	6	10 230	4,8
Human immunodeficiency virus [HIV] disease (B20-B24)	2	11 004	4,6	5	10 824	5,1
Other forms of heart disease (I30-I52)	3	10 677	4,5	4	12 213	5,7
Diabetes mellitus (E10-E14)	4	10 404	4,4	1	16 447	7,7
Cerebrovascular diseases (I60-I69)	5	9 944	4,2	2	13 015	6,1
Influenza and pneumonia (J09-J18)	6	9 065	3,8	7	8 442	3,9
Chronic lower respiratory diseases (J40-J47)	7	8 168	3,4	10	5 393	2,5
Hypertensive diseases (I10-I15)	8	7 696	3,2	3	12 845	6,0
Ischaemic heart diseases (I20-I25)	9	7 652	3,2	8	5 926	2,8
Malignant neoplasms of digestive organs (C15-C26)	10	6 006	2,5	...	...	...
Malignant neoplasms of female genital organs (C51-C58)		...	...	9	5 862	2,7
Other Natural		99 180	41,6		100 543	47,0
Non-natural		41 637	17,5		12 062	5,6
Total		238 543	100		213 802	100

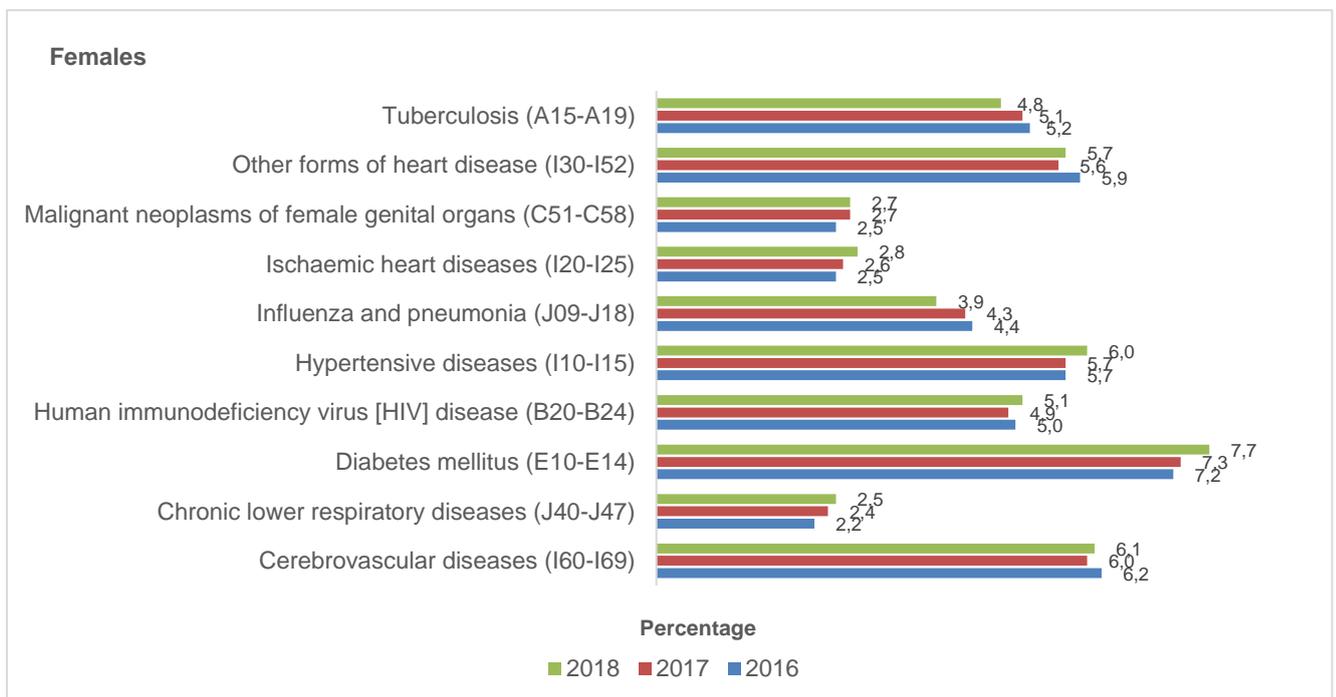
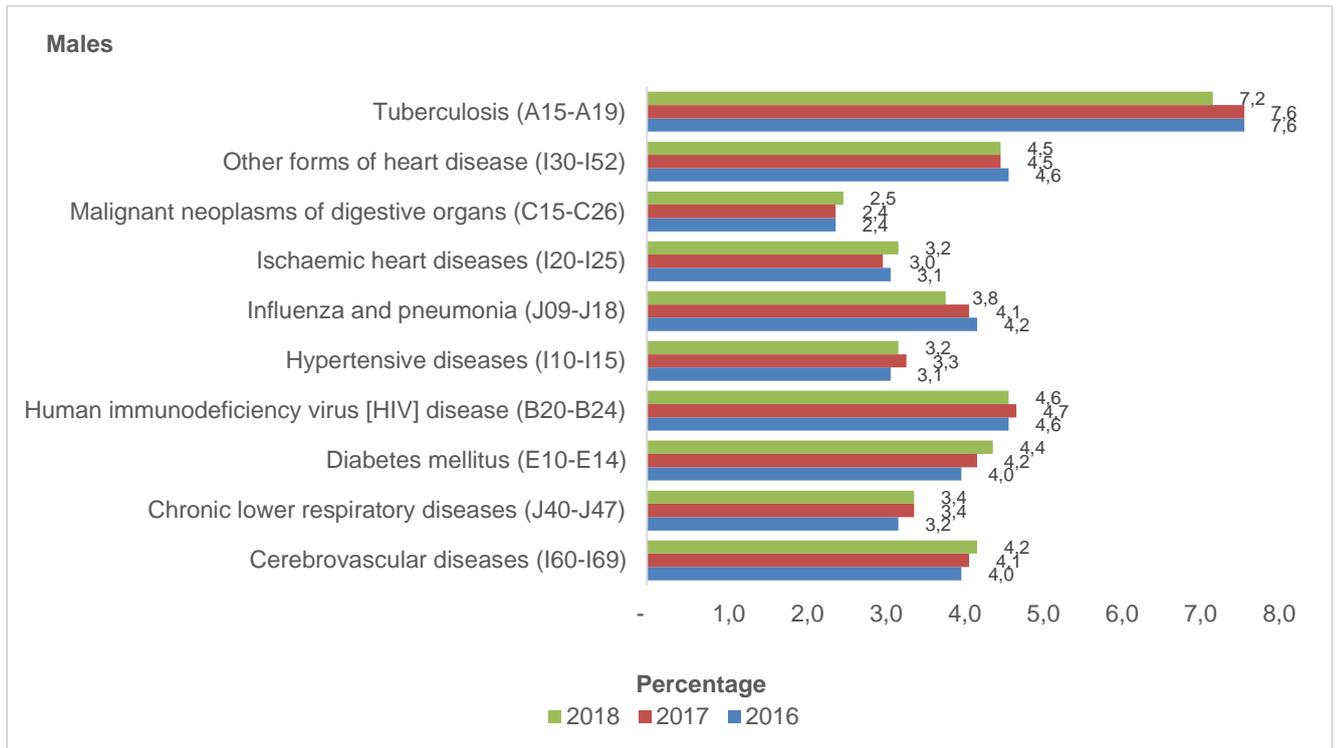
Figure 4.6 shows the ten leading natural causes of death classified by sex for a three-year period (2016-2018) for underlying causes. Over the three-year period, *tuberculosis* remained the leading cause of death for males, while for females *diabetes mellitus* was the leading cause of death over the three years under observation. For females, deaths due to *diabetes mellitus* have been on a steady increase, accounting for 7,2% and 7,3% in 2016 and 2017 respectively, increasing to 7,7% in 2018.

The overall pattern for the two sexes shows that the proportion of deaths due to *tuberculosis* and *influenza and pneumonia* decreased in the three-year period. A decline of 0,4 % for male deaths due to *tuberculosis* was observed in 2018 from 7,6% in 2016, whereas for females, deaths reduced from 5,2% to 4,8% in the same time period. Deaths from *influenza and pneumonia* reduced from 4,4% (2016) to 3,9% (2018) among females, while it reduced from 4,2% (2016) to 3,8% (2018) among males.

For females, six underlying natural causes of death increased in proportion, all of these were non-communicable diseases, for males five underlying natural causes of death due to non-communicable diseases increased. The three diseases which increased and were common among the two sexes were *chronic lower respiratory diseases*, *ischaemic heart diseases* and *diabetes mellitus*. The other two which increased over the three-year period were *cerebrovascular diseases* and *malignant neoplasm of digestive system* for males while for females it was *hypertensive diseases* and *Human immunodeficiency virus [HIV] disease*.

There was an increase in the proportion of male deaths due to *diabetes mellitus*, *chronic lower respiratory diseases* and *cerebrovascular diseases* over the three year period. *Malignant neoplasms of digestive organs* was among the top ten leading underlying causes of death for the first time in 2018 amongst males, while for females *chronic lower respiratory diseases* entered the top ten leading underlying causes of death for the first time in 2018.

Figure 4.6: Distribution of deaths for the leading causes of death by year of death and sex, 2016–2018*



4.7.3 Leading underlying natural causes of death by age

The World Health Organization recommends classification of ages into the following broad age groups; 0, 1-14, 15-44, 45-64, and 65 years and older for analysis and to facilitate international comparison (WHO, 2009). Table 4.7 shows the ten leading underlying natural causes of death for these age groups. Further decomposition of age and leading underlying natural causes of death for deceased children under-5 years and for those aged 15-24 years at the time of death are provided in Table 4.8 and Table 4.9 respectively.

Consistent with previous years, *influenza and pneumonia* was the only underlying cause of death common for all age groups, however, ranking varied greatly by age. *Influenza and pneumonia* was the leading cause of death for age group 1-14 (6,8%), the second leading underlying cause of death for age 0 (7,6%), fourth for age group 15-44 (3,3%) and seventh for both age groups 45-64 (3,6%) and 65 years and older (3,8%). *Tuberculosis* and *other forms of heart diseases* were part of the ten underlying causes of death in all age groups, save for infants, while *intestinal infectious diseases* and *malnutrition* were among the ten leading underlying causes of death only for children.

The leading underlying cause of death for infant (age 0) was *respiratory and cardiovascular disorders specific to the perinatal period*, responsible for 14,4% deaths at this age. *Influenza and pneumonia* was the second leading cause of death, accounting for 7,6% deaths, followed by *Intestinal infectious diseases*, which constituted 7,2% deaths in this age group. *Disorders related to length of gestation and fetal growth* was fourth, accounting for 5,3% of infant deaths.

The leading underlying cause of death for age group 1-14 years was *influenza and pneumonia*, responsible for 6,8% deaths, followed by *intestinal infectious diseases* with 6,0% deaths in this age group. *Tuberculosis* was ranked third and accounted for 3,3 % of deaths in this age group. *Cerebral palsy*, *Episodic and paroxysmal disorders*, *Inflammatory diseases of the central nervous system* and *Other bacterial diseases* were among the leading underlying causes of death only in this age group. These were ranked fifth, eighth, ninth and tenth respectively.

For the age group 15-44 years, the leading underlying cause of death was *tuberculosis*, constituting 10,9% deaths, followed by *human immunodeficiency virus [HIV] diseases*, accounting for 10,7% deaths. *Other viral diseases* and *Influenza and pneumonia* ranked third (4,8%) and fourth (3,3%) respectively. *Other viral diseases*, *Certain disorders involving the immune mechanism* and *Malignant neoplasms of female genital organs*(1,1%) were amongst the ten leading causes of death only for this age group.

Nine of the ten leading causes of death for those aged 45-64 and 65 years and older were the same, with differences in rank and the contribution of each cause to the overall number of deaths in each age group. While *tuberculosis* was the leading cause of death among those aged 45-64, accounting for 7,0% of deaths in this age group, it was the ninth leading cause of death among those aged 65 and older, accounting for 2,4% of deaths. Conversely, *diabetes mellitus* was the leading cause of death for those aged 65 and older (9,3%) and the second leading cause of death for those aged 45-64 (7,4%).

The two underlying causes of death not common between the two groups were *Human immunodeficiency virus [HIV] disease*, which accounted for 5,7% of the deaths in the age group 45-64 but *not part* of ten leading causes of death for the age group 65 years and older. *Renal failure* was the tenth leading cause of deaths for deceased aged 65 years and older age group, but not those on the 45-64 age group. Additionally, deaths due to non-communicable diseases were dominant with these

two age groups, only *tuberculosis* and *influenza and pneumonia* which are communicable disease, were part of the top ten causes in these groups.

Table 4.7: The ten leading underlying natural causes of death for broad age groups, 2018*

Causes of death (based on ICD-10)	0			1-14			15-44			45-64			65+		
	Rank	Number	%	Rank	Number	%	Rank	Number	%	Rank	Number	%	Rank	Number	%
Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	1	2 901	14,4	...	...	...	...	...	...	...	...	...	...	...	...
Influenza and pneumonia (J09-J18)	2	1 539	7,6	1	818	6,8	4	4 034	3,3	7	4 712	3,6	7	6 419	3,8
Intestinal infectious diseases (A00-A09)	3	1 455	7,2	2	726	6,0	...	...	...	...	...	...	...	...	...
Disorders related to length of gestation and fetal growth (P05-P08)	4	1 074	5,3	...	...	...	...	...	...	...	...	...	...	...	...
Other disorders originating in the perinatal period (P90-P96)	5	1 046	5,2	...	...	...	...	...	...	...	...	...	...	...	...
Infections specific to the perinatal period (P35-P39)	6	981	4,9	...	...	...	...	...	...	...	...	...	...	...	...
Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	7	861	4,3	...	...	...	...	...	...	...	...	...	...	...	...
Congenital malformations of the circulatory system (Q20-Q28)	8	668	3,3	...	...	...	...	...	...	...	...	...	...	...	...
Malnutrition (E40-E46)	9	448	2,2	6	342	3	...	...	...	...	...	...	...	...	...
Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	10	445	2,2	...	...	...	...	...	...	...	...	...	...	...	...
Tuberculosis (A15-A19)	...	...	...	3	403	3,3	1	13 141	10,9	1	9 690	7	9	3 994	2
Other forms of heart disease (I30-I52)	...	...	...	4	354	2,9	6	3 317	2,7	5	6 403	4,9	4	12 638	7,5
Cerebral palsy and other paralytic syndromes (G80-G83)	...	...	...	5	348	2,9	...	...	...	...	...	...	...	...	...
Human immunodeficiency virus [HIV] disease (B20-B24)	...	...	...	7	266	2,2	2	12 941	10,7	3	7 418	6	...	...	...
Episodic and paroxysmal disorders (G40-G47)	...	...	...	8	195	1,6	...	...	...	...	...	...	...	...	...
Inflammatory diseases of the central nervous system (G00-G09)	...	...	...	9	167	1,4	...	...	...	...	...	...	...	...	...
Other bacterial diseases (A30-A49)	...	...	...	10	167	1	...	...	...	...	...	...	...	...	...
Other viral diseases (B25-B34)	...	...	...	...	...	...	3	5 761	4,8	...	...	...	...	...	...
Certain disorders involving the immune mechanism (D80-D89)	...	...	...	...	...	...	5	3 595	3,0	...	...	...	...	...	...
Cerebrovascular diseases (I60-I69)	...	...	...	...	...	...	7	1 749	1,4	4	6 502	5	2	14 641	8,7
Renal failure (N17-N19)	...	...	...	...	...	...	8	1 567	1,3	...	...	...	10	3 800	2,2
Diabetes mellitus (E10-E14)	...	...	...	...	...	...	9	1 451	1,2	2	9 661	7	1	15 707	9
Malignant neoplasms of female genital organs (C51-C58)	...	...	...	...	...	...	10	1 338	1	...	...	...	...	...	...
Hypertensive diseases (I10-I15)	...	...	...	...	...	...	...	...	...	6	5 314	4,1	3	14 233	8,4
Chronic lower respiratory diseases (J40-J47)	...	...	...	...	...	...	...	...	...	8	4 609	3,5	6	7 799	4,6
Malignant neoplasms of digestive organs (C15-C26)	...	...	...	...	...	...	...	...	...	9	4 393	3,4	8	5 398	3,2
Ischaemic heart diseases (I20-I25)	...	...	...	...	...	...	...	...	...	10	4 391	3,4	5	8 095	4,8
Other Natural	...	7 977	39,6	...	4 753	39,3	...	37 705	31,1	...	57 366	44,0	...	71 484	42,3
Non-natural	...	761	3,8	...	3 559	29	...	34 504	28,5	...	9 899	7,6	...	4 773	2,8
Total	...	20 156	-	...	12 098	...	...	121 103	...	...	130 358	...	...	168 981	...

*Including deaths due to MDR-TB and XDR-TB.Category not in top ten.

4.7.4 Leading underlying natural causes of death for children aged below five years by age groups

The reduction of under-five mortality rate (U5MR) in one of the goals in the Sustainable Development Goals (SDG). Analysis of deaths among children under five was included in this statistical release on that account and to understand the leading causes of deaths in this age group for public health policy purposes. The ten leading causes of death for neonatal deaths (infants that died within the first 28 days of life), post-neonatal deaths (29 days to 11 months), all infant deaths (aged less than one year), and deaths among those aged 1-4 years are shown in Table 4.8. Infant deaths are composed of both neonatal and post-neonatal deaths.

Congenital malformations of the circulatory system was in the top 10 leading underlying cause of death for all childhood ages (Table 4.8), however the proportion of deaths due to *Congenital malformations of the circulatory system* was smaller across all age ranges, for neonates only 2,8 % succumbed to this underlying cause, for post neonatal deaths 3,7%, while for those less than 1 year it was 3,3% and 2,1% and 3% for the 1-4 years and under five years respectively. *Influenza and pneumonia*, *Intestinal infectious diseases (A00-A09)* and *Malnutrition (E40-E46)* were the leading underlying causes of death for children who died in the post neonatal period, aged less than 1 year, 1-4 years and those under 5 years.

For neonates, the top three leading underlying causes of death accounted for more than 50% of deaths, while the ten leading underlying causes of death during the neonatal period constituted 84,6% of all deaths in this age group. *Respiratory and cardiovascular disorders specific to the perinatal period*, which was the leading underlying cause of death among neonates was responsible for 30% of neonatal deaths. The second leading underlying cause for neonatal deaths was *other disorders originating in the perinatal period (P90-P96)*, accounting for 10,7% of neonatal deaths, followed by *infections specific to the perinatal period (P35-P39)*, with 10,0% of deaths due to this cause in this age group.

The leading underlying cause of death for post-neonatal deaths was *influenza and pneumonia* (13,9%) followed by *intestinal infectious diseases* in second place (12,7%). *Malnutrition* was the third leading underlying cause accounting for 4,1% of post-neonatal deaths. These three causes accounted for more than 30% of all deaths occurring in the post neonatal period. *Congenital malformations of the circulatory system* (3,7%) was the fourth leading underlying causes of death and *other acute lower respiratory infections* (3,1%) the fifth underlying cause of death.

Looking at underlying cause of death during infancy (less than one year), the leading underlying cause of death was *Respiratory and cardiovascular disorders specific to the perinatal period* which contributed 14,4% of the deaths. *Influenza and pneumonia* was ranked second, with 7,6% of infants succumbing to this cause. *Intestinal infectious diseases* was ranked third accounting for 7,2% of deaths for children aged under one year. *Disorders related to length of gestation and foetal growth* (5,3%), *other disorders originating in the perinatal period* (5,2%), and *infections specific to the perinatal period* (4,9%) were ranked fourth, fifth and sixth respectively.

The three leading underlying causes of death for those aged 1-4 years was *influenza and pneumonia* (9,1%) followed by *Intestinal infectious diseases* (8,9%) and *Malnutrition* (5,1%) in the third position. *Other forms of heart diseases* (3,1%), *Tuberculosis* (2,5%) and *Congenital malformations of the circulatory system* (2,1%) were fourth, fifth and sixth positions, respectively in this age group.

For those under 5 years, *respiratory and cardiovascular disorders specific to the perinatal period* was the leading underlying cause of death responsible for 11% of deaths. *Influenza and pneumonia* (8,0%) was the second leading underlying cause of death, *Intestinal infectious diseases* was ranked third,

responsible for 7,6% of under 5 deaths. Deaths due to *disorders related to length of gestation and foetal growth* were ranked fourth and accounted for 4,1% of all deaths. *Other disorders originating in the perinatal period* ranked fifth among leading underlying cause of death for those under-5, responsible for 4,0% deaths.

Table 4.8: The ten underlying natural causes of death for infants and children aged below five years, 2018*

Causes of death (based on ICD-10)	Neonatal (0-28 days)			Post-neonatal (29 days to 11 months)			Less than 1 year			1-4 years			Under 5 years		
	Rank	Number	%	Rank	Number	%	Rank	Number	%	Rank	Number	%	Rank	Number	%
Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	1	2874	30,1	...	...	...	1	2901	14,4	...	...	...	1	2903	11,0
Other disorders originating in the perinatal period (P90-P96)	2	1026	10,7	...	...	...	5	1046	5,2	...	...	...	5	1047	4,0
Infections specific to the perinatal period (P35-P39)	3	952	10,0	...	...	...	6	981	4,9	...	...	...	6	981	3,7
Disorders related to length of gestation and fetal growth (P05-P08)	4	951	10,0	...	...	...	4	1074	5,3	...	...	...	4	1079	4,1
Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	5	859	9,0	...	...	...	7	861	4,3	...	...	...	7	862	3,3
Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	6	439	4,6	...	...	...	10	445	2,2	...	...	...	...	...	...
Other congenital malformations (Q80-Q89)	7	292	3,1	...	...	...	...	...	...	...	...	...	...	...	...
Congenital malformations of the circulatory system (Q20-Q28)	8	272	2,8	4	396	3,7	8	668	3,3	6	127	2,1	8	795	3,0
Digestive system disorders of fetus and newborn (P75-P78)	9	264	2,8	...	...	...	...	...	...	...	...	...	...	...	...
Congenital malformations of the nervous system (Q00-Q07)	10	147	1,5	...	...	...	...	...	...	...	...	...	...	...	...
Influenza and pneumonia (J09-J18)	...	...	...	1	1475	13,9	2	1539	7,6	1	556	9,1	2	2095	8,0
Intestinal infectious diseases (A00-A09)	...	...	...	2	1351	12,7	3	1455	7,2	2	545	8,9	3	2000	7,6
Malnutrition (E40-E46)	...	...	...	3	435	4,1	9	448	2,2	3	311	5,1	9	759	2,9
Other acute lower respiratory infections (J20-J22)	...	...	...	5	332	3,1	...	...	...	8	100	1,6	10	458	1,7
Other bacterial diseases (A30-A49)	...	...	...	6	321	3,0	...	...	...	...	...	...	...	...	...
Other diseases of the respiratory system (J95-J99)	...	...	...	7	245	2,3	...	...	...	...	...	...	...	...	...
Other forms of heart disease (I30-I52)	...	...	...	8	187	1,8	...	...	...	4	187	3,1	...	...	...
Human immunodeficiency virus [HIV] disease (B20-B24)	...	...	...	9	167	1,6	...	...	...	9	91	1,5	...	...	...
Chromosomal abnormalities, not elsewhere classified (Q90-Q99)	...	...	...	10	151	1,4	...	...	...	...	...	...	...	...	...
Tuberculosis (A15-A19)	...	...	...	...	...	...	...	...	...	5	154	2,5	...	...	...
Cerebral palsy and other paralytic syndromes (G80-G83)	...	...	...	...	...	...	...	...	...	7	103	1,7	...	...	...
Other disorders of the nervous system (G90-G99)	...	...	...	...	...	...	...	...	...	10	90	1,5	...	...	...
Other Natural		1367	14,3		4892	46,1		7977	39,6		2420	39,5		11100	42,2
Non-natural		103	1,1		658	6,2		761	3,8		1438	23,5		2199	8,4
Total		9 546	100,0		10 610	99,9		20 156	100		6 122	100		26 278	99,9

4.7.5 Leading underlying natural causes of death for the population aged 15–24 years

Table 4.9 shows the ten leading causes of death for the age group 15-24 years. The World Health Organization recommends that age group 15-24 years be included in the analysis of causes of deaths for international comparison (WHO, 1992). Table 4.9 shows that just above half of all underlying natural causes of death in the age group 15-24 are due natural causes. *Tuberculosis* was the leading cause of death, accounting for 7,0% of deaths in this age group, followed by *human immunodeficiency virus [HIV] disease* (5,6%) and *other viral diseases* (2,8%) in third position. *Influenza and pneumonia, other forms of heart disease* and *certain disorders involving the immune mechanism* were the fourth, fifth and sixth leading causes of death, respectively. *Episodic and paroxysmal disorders* was ranked seventh, responsible for 1,4% deaths in this age group.

Table 4.9: The ten leading underlying causes of death for the population aged 15-24years, 2018*

Causes of death (based on ICD-10)	15-24		
	Rank	Number	Percentage
Tuberculosis (A15-A19)	1	1 354	7,0
Human immunodeficiency virus [HIV] disease (B20-B24)	2	1 088	5,6
Other viral diseases (B25-B34)	3	540	2,8
Influenza and pneumonia (J09-J18)	4	526	2,7
Other forms of heart disease (I30-I52)	5	433	2,2
Certain disorders involving the immune mechanism (D80-D89)	6	353	1,8
Episodic and paroxysmal disorders (G40-G47)	7	278	1,4
Inflammatory diseases of the central nervous system (G00-G09)	8	244	1,3
Intestinal infectious diseases (A00-A09)	9	217	1,1
Cerebral palsy and other paralytic syndromes (G80-G83)	10	178	0,9
Other Natural		4 994	25,7
Non-natural		9 240	47,5
All causes		19 445	100

*Including deaths due to MDR-TB and XDR-TB.

4.7.6 Leading underlying natural causes of death by province of death occurrence

Table 4.10 shows the ten leading underlying causes of death by province of death occurrence. Deaths that occurred outside South Africa and those where province of death occurrence was not specified in the death notification form, are not included in the table.

The underlying causes of death for all the provinces were a combination of communicable and non-communicable diseases. Western Cape had the highest number of non-communicable diseases with eight out of the ten being non-communicable diseases, followed by Northern Cape, Free State, KwaZulu-Natal and Gauteng all with seven of the ten. Six out of the ten underlying causes of death for the provinces Eastern Cape and North West were non-communicable diseases. Mpumalanga and Limpopo had five and four of the ten leading underlying causes being non-communicable diseases respectively.

Six of the ten leading underlying causes of death were common across all provinces. These were *diabetes mellitus, HIV disease, cerebrovascular diseases, tuberculosis, hypertensive diseases and other forms of heart diseases*. *Tuberculosis* was the leading cause of death in four of the nine provinces. These were Eastern Cape (8,1%); Northern Cape (6,5%); Mpumalanga (7,3%) and North West (6,8%). *Tuberculosis* was not the leading underlying cause of death in 2018 in KwaZulu-Natal for the first time since 1997. The leading underlying cause of death in KwaZulu-Natal in 2018 was *other forms of heart diseases* responsible for 8,2% deaths in the province. *Other forms of heart diseases* were also the leading cause of death in Gauteng accounting for 5,8% deaths. For the remaining three provinces, the leading causes of death were *diabetes mellitus* in Western Cape (7,6%); *hypertensive diseases* in Free State (6,0%) and *influenza and pneumonia* in Limpopo (6,8%).

For the provinces where *tuberculosis* was among the ten leading underlying cause of death, the highest proportion was recorded in Eastern Cape with 8,1% deaths; Mpumalanga with 7,3% deaths; North West with 6,8% then Northern Cape at 6,5%. For Western Cape, the second leading underlying cause of death was *Ischaemic heart diseases* (6,1%).

HIV disease was the second leading underlying cause of death in Eastern Cape (5,9%) and Northern Cape (6,5%), third in North West (5,1%) while it was fourth in Western Cape (5,7%) and Free State (5,3%) and fifth leading underlying cause of death in KwaZulu-Natal (5,4%).

Diabetes mellitus, which was the leading underlying cause of death only in the Western Cape, was ranked second in KwaZulu-Natal (7,1%); Limpopo (6,6%) and Gauteng (4,7%) while it ranked third in Eastern Cape (5,8%), Mpumalanga (5,5%) and Free State (5,4%). *Malignant neoplasms of respiratory and intrathoracic organs* was in the top ten leading underlying causes of death for only Western Cape and *renal failure* was in the top ten leading underlying causes of death only in Limpopo.

Influenza and pneumonia which was the leading cause of death in Limpopo was not in the top ten leading underlying causes of death only in the Western Cape. *Intestinal infectious diseases* was in the top ten leading underlying causes of death only in Mpumalanga (2,6%) and Limpopo (2,8%). *Ischaemic heart diseases* featured in five provinces only, namely Western Cape, Northern Cape, KwaZulu-Natal, Gauteng and Mpumalanga. *Malignant neoplasms of digestive organs* were in the top ten in four provinces namely Western Cape, Eastern Cape, KwaZulu-Natal and Gauteng.

Detailed information on the distribution of the ten leading underlying causes by provinces, sex and age is provided in appendices M to M9 (see pages 101-130).

Table 4.10: The ten leading underlying natural causes of death in each province of death occurrence, 2018*

	WC			EC			NC			FS			KZN			NW			GP			MP			LP			
	Rank	No	%	Rank	No	%	Rank	No	%	Rank	No	%	Rank	No	%	Rank	No	%	Rank	No	%	Rank	No	%	Rank	No	%	
Diabetes mellitus (E10-E14)	1	3 699	7,6	3	3 905	5,8	5	659	4,7	3	1 565	5,4	2	6 022	7,1	4	1 561	5,0	2	4 252	4,7	3	1 651	5,5	2	2 787	6,6	
Ischaemic heart diseases (I20-I25)	2	2 941	6,1	...	...	...	10	454	3,3	...	...	...	8	2 494	2,9	...	...	...	7	3 091	3,4	7	1 260	4,2	...	...	...
Cerebrovascular diseases (I60-I69)	3	2 853	5,9	4	3 315	4,9	4	668	4,8	6	1 469	5,1	4	4 866	5,7	7	1 376	4,4	4	3 735	4,1	5	1 467	4,9	3	2 607	6,2	
Human immunodeficiency virus [HIV] disease (B20-B24)	4	2 757	5,7	2	3 991	5,9	2	912	6,5	4	1 525	5,3	5	4 571	5,4	3	1 598	5,1	10	2 414	2,7	6	1 452	4,8	6	1 962	4,6	
Chronic lower respiratory diseases (J40-J47)	5	2 469	5,1	6	2 914	4,3	7	614	4,4	10	766	2,6	9	817	2,6	8	2 511	2,8
Tuberculosis (A15-A19)	6	2 393	4,9	1	5 454	8,1	1	913	6,5	2	1 573	5,4	3	5 761	6,8	1	2 143	6,8	3	3 912	4,3	1	2 191	7,3	5	2 226	5,3	
Malignant neoplasms of digestive organs (C15-C26)	7	2 174	4,5	9	1 676	2,5	10	1 771	2,1	9	2 450	2,7
Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	8	2 156	4,5
Hypertensive diseases (I10-I15)	9	1 845	3,8	5	3 166	4,7	3	812	5,8	1	1 748	6,0	6	3 254	3,8	2	1 773	5,6	6	3 352	3,7	2	1 656	5,5	4	2 319	5,5	
Other forms of heart disease (I30-I52)	10	1 585	3,3	7	2 577	3,8	6	659	4,7	7	1 300	4,5	1	6 930	8,2	5	1 536	4,9	1	5 321	5,8	8	1 091	3,6	8	1 286	3,0	
Influenza and pneumonia (J09-J18)	...	...	...	8	1 874	2,8	8	606	4,3	5	1 512	5,2	7	2 763	3,3	6	1 415	4,5	5	3 540	3,9	4	1 507	5,0	1	2 854	6,8
Other viral diseases (B25-B34)	...	...	...	10	1 392	2,1	...	...	...	9	840	2,9	9	1 855	2,2	8	975	3,1	...	...	...	9	980	3,3	7	1 447	3,4
Certain disorders involving the immune mechanism (D80-D89)	9	477	3,4	8	863	3,0	10	784	2,5
Intestinal infectious diseases (A00-A09)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10	769	2,6	9	1 204	2,8
Renal failure (N17-N19)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10	1 147	2,7
Other Natural		17 228	35,6		28 765	42,9		5 909	42,3		12 607	43,6		33 070	39,0		14 611	46,4		45 523	50,0		12 815	42,5		18 658	44,1	
Non-natural																												
		6 276	13,0		8 090	12,1		1 279	9,2		3 159	10,9		11 421	13,5		2 897	9,2		10 873	12,0		3 283	10,9		3 773	8,9	
Total		48 376	100		67 119	100		13 962	100		28 927	100		84 778	100		31 486	100		90 974	100		30 122	100		42 270	100	

4.7.7 Underlying causes of death by district/metropolitan municipality of death occurrence

4.7.7.1 Main group

The main groups of underlying natural causes of death by district/metropolitan municipalities are provided in Appendices N to O2 (see pages 131–136). The number of deaths by main groups of causes of death for each district/metropolitan municipality of death occurrence is provided in Appendices N to N2 (see pages 131–133), while Appendices O to O2 show the main groups of causes of death for each district/metropolitan municipality of death occurrence by their percentage distribution, (refer to pages 134–136).

In order to simplify the analysis of main groups at district level, the main groups or ICD chapters were re-grouped into 11 groups. The main group “other natural causes” includes mental and behavioural disorders, *diseases of the eye and adnexa*, *diseases of the ear and mastoid process*, *diseases of the skin and subcutaneous tissue*, *diseases of musculoskeletal system*, *diseases of the genitourinary system*, *congenital malformations*, *symptoms and signs not elsewhere classified* and *pregnancy, childbirth and puerperium*.

Information at a geographic level lower than district is not provided in this release; however, this is available as a special request from Stats SA.

Appendices O to O2 show that *diseases of the circulatory system* and *other natural causes* were the most common main group of causes of death in most provinces. In provinces where *diseases of the circulatory system* were not the most common main group of underlying cause, *other natural causes* were the most commonly reported main group of underlying causes. In Western Cape, Northern Cape, Free State and KwaZulu-Natal *diseases of the circulatory system* was the most reported main group of underlying causes, however it was only in Western Cape where neoplasms, was the second most common main group of causes of death. For Northern Cape, Free State and KwaZulu-Natal, second most common main group of causes of death were *certain infectious and parasitic diseases* and *diseases of the circulatory system*. The municipality leading in deaths due to diseases of the circulatory system were Ethekwini and Umzinyathi in KwaZulu-Natal accounting 26,6% and 28% respectively.

Amongst the main group; *diseases of the circulatory system* was the most reported main group in four of the nine provinces namely Western Cape (20,5%); Northern Cape (20,0%); Free State (19,2%) and KwaZulu-Natal(21,8%). For all these four provinces, save for Western Cape, *certain infectious and parasitic diseases* were the second most reported main group of underlying causes.

Other natural causes were the most reported main group of underlying causes in Eastern Cape (21,1%); North West (20,9%); Gauteng (20,3%) and Limpopo (23,1%). The province mainly affected by this group was Limpopo followed by the Eastern Cape then North West. *Certain infectious and parasitic diseases* were the second most reported main group of underlying causes in all the four provinces, save for Gauteng where the second most reported main group of underlying causes was *diseases of the circulatory system*.

The district municipalities worst affected by *other natural causes* were predominantly Alfred Nzo (49,0%) in Eastern Cape, followed by Vhembe (39,8%) in Limpopo and OR Tambo (33,7%) Eastern Cape then followed by Ngaka Modiri Molema (29,7%) in North West. Zululand (29,3%) in KwaZulu-Natal, Joe Gqabi (27,1%) in North West. The other district with the highest proportion of deaths due to *other natural causes* was City of Johannesburg (26,2%) in Gauteng, Waterberg (23,7%) in Limpopo and lastly Mangaung Free State and West Rand in Gauteng accounting for 23,4% each .

Of the 53 districts in South Africa, *diseases of the circulatory system*, were the most reported main group of underlying causes in uMzinyathi and eThekweni both in KwaZulu-Natal accounting for 28,0% and 26,6% deaths in each district. These were followed by Sekhukhune in Limpopo with 25,8% deaths in this district due to this main group. The district least affected by *diseases of the circulatory system* was Alfred Nzo in the eastern Cape responsible for 8,2% deaths in this district.

4.7.7.2 Broad groups

Appendices P to P8 (see pages 137–147) show information on the ten leading natural causes of death by district/metropolitan municipality. The following underlying causes of death were all leading underlying causes of death in at least one district in 2018: *Tuberculosis* (17); *human immunodeficiency virus* (8); *other forms of heart diseases* (7); *diabetes mellitus* (6); *hypertensive diseases* (6) *chronic lower respiratory diseases* (3); *cerebrovascular diseases*(3) and *influenza and pneumonia* (2).

Tuberculosis was the leading underlying cause of death in 17 of the 52 districts in South Africa. It was also the part of the ten leading underlying cause of death in all the 52 districts. It was the leading underlying cause of death for seven of the eleven districts in KwaZulu-Natal and was also the leading underlying cause of death in six of the eight districts in Eastern Cape. For the two districts Alfred Nzo and Sarah Baartman where *tuberculosis* was not the leading underlying cause of death, *HIV disease* was the leading cause of death and *tuberculosis* was the second leading underlying cause of death in Alfred Nzo while it ranked third for Sarah Baartman district municipality.

South Africa has eight metropolitan municipalities (metros). *Other forms of heart diseases* was the leading underlying cause of death in half of the metropolitan municipalities while it was *diabetes mellitus* for City of Cape Town, *HIV disease* for Mangaung and *tuberculosis* for Nelson Mandela bay and Buffalo city. The four metropolitan municipalities where *other forms of heart disease* was the leading cause of death were eThekweni in KwaZulu-Natal and the other three City of Tshwane, Ekurhuleni and City of Johannesburg were all in Gauteng province.

It is important to note that just like TB, now *diabetes mellitus* as well as *hypertensive disease* are in the top leading underlying causes of death in all districts in South Africa though the ranking and proportions differ between districts. *HIV disease* was among the ten leading underlying causes of death in at least one district municipality in all provinces. It was not in the ten leading underlying causes of death in five of the fifty two districts namely Nkangala, West Rand, Ekurhuleni, Lejweleputswa and Namakwa.

4.7.8 Underlying natural causes of death by population group

Due to a large proportion of unknown or unspecified cases, the ten leading underlying natural causes of death by population group are not discussed in this section. The distribution of underlying causes of death by population group are provided in appendices Q and Q.1 (see pages 148–149).

4.8 Non-natural causes of death

The subsection presents the non-natural causes of death. Considering the high levels of violence experienced in South Africa, information on non-natural causes of death is critical for informing policy and planning in the country. Non-natural causes of death are profiled based on all external causes of morbidity and mortality (V01-Y98) derived from the causes of death specified on the death notification forms.

In cases where insufficient details are provided on the death notification form to code the non-natural cause of death accurately, Stats SA codes such deaths as other external causes of accidental injury or event of undetermined intent in line with recommendations of WHO in classifying unknown non-natural causes of death (WHO, 2009b). This contributes to the high percentage of unspecified causes of non-natural deaths. Results on non-natural causes of death should therefore be interpreted cautiously, mindful of nearly three-quarters of non-natural causes of death not adequately classified. The unexpected lower number of deaths due to transport accidents, assault, complications of medical and surgical care, intentional self-harm or sequelae of external causes of morbidity and mortality may have been partly the result of causes classified as other external causes of accidental injury or event of undetermined intent.

Table 4.11 shows the number and percentage distribution of broad groups of non-natural causes of death. A total of 11,9% of all deaths (refer to Table 4.3) that occurred in 2018 were due to external causes of morbidity and mortality. It is observed from Table 4.11 almost 70% of non-natural cause of death are allocated to *other external causes of accidental injury or event of undetermined intent*. In terms of all deaths that occurred in 2018, other external causes of accidental injury accounted for 8,1% of all causes of deaths.

Assault was the second most common non-natural cause of death and accounted for 14,0% of non-natural causes and 1,7% of all reported deaths. The third most common cause of non-natural deaths was *transport accidents* responsible for 11,4% of non-natural deaths and 1,4% of all deaths. Deaths due *event of undetermined intent* and *complications of medical and surgical care* were reported for 3,6% cases and were 0,4% of all deaths. Below 1% of non-natural deaths were due to *intentional self-harm* and 0,2% were due to *sequelae of external causes of morbidity and mortality*.

Table 4.11: Distribution of non-natural causes of death by broad groups, 2018

Causes of death (based on ICD-10, 1992)	Number	Percentage of non-natural causes	Percentage of all causes (N = 454 014)
Other external causes of accidental injury (W00-X59)	36 997	68,3	8,1
Assault (X85-Y09)	7 590	14,0	1,7
Transport accidents (V01-V99)	6 165	11,4	1,4
Event of undetermined intent (Y10-Y34)	1 956	3,6	0,4
Complications of medical and surgical care (Y40-Y84)	1 033	1,9	0,2
Intentional self-harm (X60-X84)	320	0,6	0,1
Sequelae of external causes of morbidity and mortality (Y85-Y89)	102	0,2	0,0
All non-natural causes	54 163	100	

A breakdown of the 36 997 deaths due to other external causes of accidental injury identified in Table 4.11 is provided in Table 4.12 to provide information that can be used to better understand deaths due to this cause, which comprised just over two-thirds of all non-natural deaths.

Almost half of the deaths were due to *accidental exposure to other and unspecified factors*. *Exposure to an unspecified factor* accounted for 48,9% of deaths in 2018. This includes exposure to an unspecified factor causing fracture and exposure to other unspecified factors. This was followed by deaths due to *exposure to inanimate mechanical forces* which were the second leading cause, responsible for 20,3% deaths in this group. This group includes *discharge from other and unspecified firearms* as well as contact with knife or sword.

The third most common cause was *other accidental threats to breathing* (14,8%), which includes *accidental hanging and strangulation*. The fourth most commonly reported deaths due to other external causes of accidental injury was *exposure to smoke, fire and flames* (7,2%), followed by *accidental drowning and submersion* (3,9%).

Table 4.12: Distribution of deaths due to other external causes of accidental injury, 2018

Cause of death (based on ICD-10)	Number	Percentage
Accidental exposure to other and unspecified factors (X58-X59)	18 075	48,9
Exposure to inanimate mechanical forces (W20-W49)	7 502	20,3
Other accidental threads to breathing (W75-W84)	5 465	14,8
Exposure to smoke, fire and flames (X00 - X09)	2 662	7,2
Accidental drowning and submersion(W65-W74)	1 444	3,9
Accidental poisoning by and exposure to noxious substance(X40-X49)	805	2,2
Exposure to electric current, radiation and extreme ambient air	443	1,2
Exposure to forces of nature(X30 - X39)	287	0,8
Falls (W00-W19)	197	0,5
Contact with venomous animals and plants(X20-X29)	47	0,1
Exposure to animate mechanical forces (W50-W64)	43	0,1
Contact with heat and hot substances(X10-X19)	16	0,0
Overexertion, travel and privation(X50-X59)	11	0,0
Total	36 997	100

4.8.1 Non-natural causes of death by age and sex

This subsection focuses on the distribution of non-natural causes of death by sex and broad age groups (0, 1–14, 15–29, 30–44, 45–64 and 65 and older). As per the recommendation by the WHO (1992), the 15–44 age group has been divided into two age groups (15–29 and 30–44) for analysis of non-natural deaths due to differing patterns in non-natural causes for these age groups. Table 4.13 shows the distribution of non-natural causes of death by sex and broad age groups for deaths that occurred in 2016. The absolute numbers and percentages for both sexes may not be similar to the results presented in Table 4.11, as deaths with missing sex and age are excluded.

For both sexes, the age group mostly affected by non-natural causes of death was age group 15–29 where 43,5% of all deaths in this age group were due to non-natural causes. The age group least affected by non-natural causes was those 65 years and older where only 2,8% deaths in this age group were due to non-natural causes. Death due to *Assault* was more common among those aged 15–29, accounting for 21,4% of non-natural deaths in this age group.

Differences by sex show an expected pattern — males had a higher proportion of deaths due to non-natural causes (17,3%) as compared to females (5,6%). Furthermore, for each of the age groups, males had higher proportions of deaths due to non-natural causes compared to females, except for age 0 where the proportion was 3,4% for both sexes. The difference between male and female deaths is wider at age group 15–29 where as much as 58,4% of male deaths resulted from non-natural causes compared to 20,0% of female deaths in the same age group. This is the only age group where the proportion of non-natural deaths for males is more than that of natural death.

For both males and females, non-natural deaths due to *complications of medical and surgical care* increased with increase in age except for those aged less than a year. Deaths due to this cause were higher at infancy (those aged less than a year), and higher amongst females as compared to males for all age groups. For specific causes, the main difference between males and females was the percentage of deaths due to assault as well as *complications of medical and surgical care*. On the one hand, as much as 15,9% of male non-natural deaths were due to *assault*, while 7,7% of female deaths were due to the same cause. On the other hand, 4,5% of female non-natural deaths were due to *complications of medical and surgical care* while 1,2% of male deaths were due to the same cause.

Non-natural deaths due to *transport accidents* amongst females constituted 13,6%, and amongst males it accounted for 10,9%. For each of the sexes, *intentional self-harm and sequelae* of external causes of morbidity and mortality were uncommon, each comprising less than 1% of deaths for each sex.

4.8.2 Non-natural causes of death by province of death occurrence

Table 4.14 shows the distribution of underlying non-natural causes of death by province for 2018 deaths. Eastern Cape (13,7%), KwaZulu-Natal (13,5%) and Western Cape (13,0%) had the highest proportion of deaths due to non-natural causes. The lowest percentage of deaths due to non-natural causes were observed in Limpopo (8,9%).

Deaths due to other external causes of accidental injury accounted for more than 50% of non-natural deaths in all the nine provinces with the exception of Northern Cape and where it was 40,1%. Gauteng (78,7%) had the highest proportion of deaths due to external and other causes of *accidental injury*, followed by Mpumalanga (72,3%). These are cases where the cause of death is specified as non-natural cause of death but the manner of death is not specified on the death notification form.

For all nine provinces, the second most common causes of non-natural deaths were either *transport accidents* or *assault*. *Transport accidents* were the second most common cause of non-natural deaths in Limpopo, Northern Cape, North West and Mpumalanga, with Limpopo having the highest number of deaths due to this cause responsible for 30,1% of deaths. *Assault* was the second most common non-natural cause of death in Eastern Cape (22,7%), Western Cape (20%), Free State (14,4%), KwaZulu-Natal (13,%) and Gauteng (9,1%). with the highest being in Eastern Cape.

Intentional self-harm, complications of medical and surgical care, and sequelae of external causes of morbidity and mortality were least common, each affecting less than 5% of non-natural deaths in each province.

4.8.3 Non-natural causes of death by district municipalities

The proportion of deaths due to non-natural causes of death for each district is provided in appendices O to O2 (see page 132–134). Non-natural causes of death are in the column labelled external causes of morbidity and mortality (V01-Y98).

The districts with the highest proportion of deaths due to non-natural causes were O.R Tambo district (15,5%) in the Eastern Cape followed closely by uThungulu district (15,3%) in KwaZulu-Natal then City of Cape Town (14,8%) in the Western Cape. City of Cape Town has constantly been in the top three district each year where non-natural causes of death are always higher compared to other districts. For all the districts, deaths due to non-natural causes ranged between a high of 15,5% recorded in the O.R Tambo district to a low of 7,7% recorded in Dr Ruth Segomotsi Mompati in North West

Table 4.14: Underlying non-natural causes of death by province, 2018

Causes of death (based on ICD-10)	Western Cape		Eastern Cape		Northern Cape		Free State		KwaZulu-Natal		North West		Gauteng		Mpumalanga		Limpopo	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Transport accidents (V01-V99)	366	5,8	907	11,2	378	29,6	287	9,1	1 407	12,3	524	18,1	347	3,2	503	15,3	1 136	30,1
Other external causes of accidental injury (W00-X59)	4 379	69,8	4 925	60,9	513	40,1	2 158	68,3	7 892	69,1	1 820	62,8	8 562	78,7	2 372	72,3	2 150	57,0
Intentional self-harm (X60-X84)	30	0,5	15	0,2	80	6,3	13	0,4	133	1,2	2	0,1	13	0,1	025	0,8	5	0,1
Assault (X85-Y09)	1 254	20,0	1 835	22,7	243	19,0	454	14,4	1 485	13,0	350	12,1	989	9,1	237	7,2	336	8,9
Event of undetermined intent (Y10-Y34)	79	1,3	296	3,7	42	3,3	182	5,8	292	2,6	150	5,2	597	5,5	103	3,1	92	2,4
Complications of medical and surgical care (Y40-Y84)	145	2,3	97	1,2	023	1,8	56	1,8	197	1,7	45	1,6	338	3,1	42	1,3	50	1,3
Sequelae of external causes of morbidity and mortality (Y85-Y89)	23	0,4	15	0,2	0	0,0	9	0,3	15	0,1	6	0,2	27	0,2	1	0,0	4	0,1
Subtotal	6 276	100	8 090	100	1 279	100	3 159	100	11 421	100	2 897	100	10 873	100	3 283	100	3 773	100
Non-natural	6 276	13,0	8 091	13,7	1 282	9,2	3 158	10,9	11 420	13,5	2 898	9,2	10 873	12,0	3 283	10,9	3 774	8,9
Natural causes	42 100	87,0	59 029	87,9	12 682	90,8	25 768	89,1	73 357	86,5	28 589	90,8	80 101	88,1	26 839	89,1	38 497	91,1
Total	48 376	100	67 120	100	13 964	100	28 926	100	84 777	100	31 487	100	90 974	100	30 122	100	42 271	100

*Excluding deaths that occurred outside South Africa and deaths with unspecified province of death

4.9 Comparison between immediate, contributing and underlying causes of death

The death notification form makes provision for several causes of death to be reported on each form. As provided in Table 4.1, the maximum number of causes recorded was five. These causes are recorded as either immediate, contributing or underlying. For the 2018 deaths, over half of the forms (51,6%) had just one cause of death indicated while 47,9% had two or more causes.

This subsection provides information on the total number of causes of death entered on each form when reporting the cause of death. It aggregates the total number of causes mentioned on each form, and these are then grouped by broad groups of underlying causes of death. The broad groups of underlying causes of death were then ranked, and the twenty leading causes based on all causes of death recorded on each form are shown in Table 4.15. The list includes natural and non-natural causes, as well as deaths due to *symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified* to indicate the frequency of mentioning any cause on the death notification form.

Other forms of heart diseases were the most frequently recorded cause of death in 2018, mentioned in 66 381 (8,2%) death notification forms, followed by *hypertensive diseases* mentioned in 56 926 (7,0%) forms. For 51 035 (6,3%) death notification forms, there were *Ill-defined and unknown causes of mortality* and *tuberculosis* was mentioned in 41 938 (5,2%). *Influenza and pneumonia* 41 658 (5, 1%) was the fifth most commonly recorded cause of death. *Other external causes of accidental injury* was the sixth most commonly mentioned cause 38 627 (4,8%) and the only non-natural cause appearing among the 20 most commonly mentioned causes of death. The *human immunodeficiency virus [HIV] disease* 24 127 (3,0%) ranked number twelve among the 20 most commonly mentioned causes of death.

Table 4.15: Distribution of the 20 most commonly reported causes of death, 2018

Rank	Causes of death (based on ICD-10)	Number of deaths in which the causes was reported	Percentage of all deaths
1	Other forms of heart disease (I30-I52)	66 381	8,2
2	Hypertensive diseases (I10-I15)	56 926	7,0
3	Ill-defined and unknown causes of mortality (R95-R99)	51 035	6,3
4	Tuberculosis (A15-A19)*	41 938	5,2
5	Influenza and pneumonia (J09-J18)	41 658	5,1
6	Other external causes of accidental injury (W00-X59)	38 627	4,8
7	Renal failure (N17-N19)	35 680	4,4
8	Cerebrovascular diseases (I60-I69)	34 608	4,3
9	Diabetes mellitus (E10-E14)	30 857	3,8
10	Other bacterial diseases (A30-A49)	26 465	3,3
11	Other viral diseases (B25-B34)	24 465	3,0
12	Human immunodeficiency virus [HIV] disease (B20-B24)	24 127	3,0
13	Ischaemic heart diseases (I20-I25)	20 459	2,5
14	Chronic lower respiratory diseases (J40-J47)	19 499	2,4
15	Other diseases of the respiratory system (J95-J99)	15 920	2,0
16	Metabolic disorders (E70-E90)	15 388	1,9
17	Malignant neoplasm of ill-defined, secondary and unspecified sites(C76-C80)	15 129	1,9
18	Intestinal infectious diseases (A00-A09)	13 245	1,6
19	Malignant neoplasm of digestive organs (C15-C26)	11 202	1,4
20	Other acute lower respiratory infections (J20-J22)	10 353	1,3

All the natural underlying causes of death that appeared among the ten leading causes of death also appeared among the 20 most commonly mentioned causes. The ten leading underlying natural causes

of death shown in Table 4.5 for 2018 deaths are presented in Table 4.16 to show the breakdown of the number of deaths by whether the death was selected as the underlying cause or whether it was reported as the immediate or contributing cause.

Within each category, the counts of underlying causes and immediate or contributing causes are not duplicated, so that they can be summed up to equal the total number of times a specific cause of death was recorded on a death notification form. For example, 26 880 death notification forms had *Diabetes mellitus* as the underlying cause and another 3 977 deaths had it as an immediate or contributing cause. These give a total of 30 857 death notification forms that had *diabetes mellitus* mentioned on them. According to ICD-10 coding practices, a cause of death cannot be entered more than once in one death notification form.

The percentage column in Table 4.16 shows the percentage distribution of whether a specific cause was stated as an underlying, immediate or contributing cause. Where *human immunodeficiency virus* [HIV] disease was reported on the form, it was selected as an underlying cause in 90,7% of the forms; *diabetes mellitus* was selected as the underlying cause in 87,1% of the forms. *Tuberculosis* was attributed as an underlying cause in 65,5% of the forms while *cerebrovascular diseases* was selected as an underlying cause in 66,5% of the forms in which it appeared. The causes of death which, when mentioned, were least selected as the underlying causes, were *other forms of heart diseases* (34,6%) and *hypertensive diseases* (36,2%).

Table 4.16: Number and percentage of deaths selected as underlying or reported as immediate or contributing causes of death, 2018

Causes of death (ICD-10)	Underlying rank	Number of deaths			Percentage of any mention		
		Underlying	Immediate or contributing	Total recorded	Underlying	Immediate or contributing	Total recorded
Tuberculosis (A15-A19)	1	27 459	14 479	41 938	65,5	34,5	100,0
Diabetes mellitus (E10-E14)	2	26 880	3 977	30 857	87,1	12,9	100,0
Cerebrovascular diseases (I60-I69)	3	23 000	11 608	34 608	66,5	33,5	100,0
Other forms of heart disease (I30-I52)	4	22 956	43 425	66 381	34,6	65,4	100,0
Human immunodeficiency virus [HIV] disease (B20-B24)	5	21 872	2 255	24 127	90,7	9,3	100,0
Hypertensive diseases (I10-I15)	6	20 579	36 347	56 926	36,2	63,8	100,0
Influenza and pneumonia (J09-J18)	7	17 573	24 085	41 658	42,2	57,8	100,0
Ischaemic heart diseases (I20-I25)	8	13 598	6 861	20 459	66,5	33,5	100,0
Chronic lower respiratory diseases (J40-J47)	9	13 579	5 920	19 499	69,6	30,4	100,0
Malignant neoplasms of digestive organs (C15-C26)	10	10 808	394	11 202	96,5	3,5	100,0

5. Conclusion

This statistical release provided information on deaths that occurred for 2018 and prior years in South Africa based on data from the death notification forms, DHA-1663 presented to the Department of Home Affairs (DHA) for registration purposes. Analyses included levels, trends and patterns in mortality and causes of deaths by demographic and geographic characteristics. The release further presented information on leading underlying natural causes of death, patterns and trends in natural and non-natural underlying causes of death. Deaths for the years 1997 to 2018 were also included to provide information on trends.

The total number of deaths that occurred and were registered at the Department of Home Affairs and processed by Stats SA in 2018 were 454 014. The 446 544 deaths which were published in the 2017 report have been updated with 16 636 deaths that were processed in the year 2019/2020 cycle.

The highest number of deaths that occurred in 2018 were among those aged 65–69 (8,4%) years, while the lowest number was observed among those aged 5–9 and 10–14 years, 0,6% and 0,7%, respectively. Overall, there were more male deaths than female deaths in 2018 from infancy until age 65–69, after which there were more female than male deaths.

The result shows trends observed previously, where over 80% of all deaths comprised of natural causes, was maintained, albeit with a declining trend. The other noticeable trend was the continued decline in proportion of deaths due communicable diseases and an increase in non-communicable. Almost 60% of deaths were due to non-communicable diseases in 2018, while communicable disease accounted for just below 30% of deaths. This trend has been observed since 2009.

Trends between 2016 to 2018 show that nine of the ten leading natural underlying causes of death were the same since 2016, however for 2018 other viral diseases was replaced by malignant neoplasms of digestive organs as one of the ten leading underlying causes of death. Although tuberculosis remained the main leading cause of death over the three-year period, the proportion of deaths due to this cause declined to 6,0% in 2018 from 6,5% in 2016. Generally, there was an increase in proportion of deaths due to all ranked non-communicable diseases including diabetes mellitus, hypertensive diseases, malignant neoplasms of digestive organs and chronic lower respiratory diseases. For females the top four leading underlying causes of deaths were due to non-communicable diseases, while for males the top two leading underlying causes of deaths were due to communicable diseases. The leading underlying natural cause of death amongst females was diabetes mellitus responsible for 7,7% while tuberculosis deaths was the first leading underlying natural cause of death for males accounting for 7,2% deaths. Tuberculosis was the sixth leading underlying natural cause for females, moving two places down since 2017 while diabetes mellitus maintained fourth position among males as was the case in 2017.

Consistent with previous years, influenza and pneumonia was the only underlying cause of death common among the five broad age groups. Tuberculosis and other forms of heart diseases were part of the ten underlying causes of death in all age groups, except for infants, while intestinal infectious diseases was among the ten leading underlying causes of death only for children, accounting for 7,2% of infant deaths and 6,0% of deaths to children aged 1–14 years. The leading underlying cause of death for infant (age 0) was respiratory and cardiovascular disorders specific to the perinatal period, responsible for 14,4% deaths. Influenza and pneumonia was the leading underlying cause of death for age group 1–14 years, accounting for 6,8% deaths. For children aged 1–14 Cerebral palsy and other paralytic syndromes.

Among those aged 15–44 and 45–64, years, the leading underlying cause of death was tuberculosis, constituting 10,9% and 7,0% of deaths respectively. Diabetes mellitus was the leading cause of death for those aged 65 and older.

Congenital malformations of the circulatory system was the only common underlying cause of death across all childhood age groups. The top three leading underlying causes of death for neonates accounted for more than 50% of deaths in this age group. Respiratory and cardiovascular disorders specific to the perinatal period, was the leading underlying cause of death among neonates and those aged less than 1 year. It was responsible for more than a quarter of neonatal deaths, and 14,4% of deaths for those aged less than 1 year. The leading underlying cause of death for post-neonatal deaths was Influenza and pneumonia. Influenza and pneumonia, Intestinal infectious diseases and Malnutrition were among the leading underlying causes of death for children who died in the post neonatal period, aged less than 1 year, 1-4 years and those under 5 years.

Western Cape had the highest number of deaths due non-communicable diseases with eight out of the ten being non-communicable diseases, followed by Gauteng with seven of the ten, and Northern Cape and KwaZulu-Natal each with six of ten. Tuberculosis was the leading underlying cause of death in Eastern Cape, Northern Cape North West and Mpumalanga. Other form of heart disease was leading in Gauteng and KwaZulu-Natal. In KwaZulu-Natal other forms of heart diseases displaced tuberculosis for the first time as the number one leading underlying cause of death in since 1997. As observed in previous years, Diabetes mellitus was the leading underlying natural cause of death only in the Western Cape, but was among the ten leading underlying natural causes for all the other provinces

Most non-natural underlying natural causes were allocated to other external causes of accidental injury. As expected, males had a higher proportion of deaths attributed to non-natural causes, at 17,3% compared to females at 5,6%. Males aged 15–29 remained the group most burdened by deaths due to non-natural causes compared to females, as much as 58,4% of male deaths resulted from non-natural causes compared to 20% of females in the same age group. Assault remained the most prevalent cause of non-natural death among males aged 15–29, accounting for 23,6% of deaths in this age group. Non-natural underlying natural causes due to transport accidents were slightly higher for female than males. Complications of medical and surgical care were highest amongst females than males, about 6,8% of deaths were due to complications of medical and surgical care for females aged 45–65 years, compared to just above 2,3% of deaths for males in the same age group.

The quality of mortality and causes of death data remains important, particularly with the monitoring of Goal 3 indicators of the Sustainable Development Goals, in particular targets on under-five mortality, neonatal mortality, and mortality attributed to cardiovascular disease, cancer, diabetes or chronic respiratory disease among those aged 30– to 70 years. The regulations on births and deaths registration require that a notice of death be given within 72 hours of death occurrence. In terms of registration timeliness, in 2018, the majority of the deaths (78,6%) were registered within the three days stipulated by the legislative framework. Although improvements have been made in the reporting of causes of death and completeness of death registration, further improvement is needed in the reduction of unspecified and unknown cases.

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Appendices

Appendix A: Glossary

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

Contributing causes of death are morbid conditions, if any, giving rise to the immediate cause of death.

Death is a permanent disappearance of all evidence of life at any time after a *live birth* has taken place.

Human immunodeficiency virus (HIV) is the pathogenic organism responsible for the acquired immunodeficiency syndrome (AIDS), also known as the lymphadenopathy virus (LAV).

Immediate cause of death is the disease or condition directly leading to death.

Leading underlying causes of death are the most frequent underlying causes of death in any given population. In this release, the underlying causes of death are ranked according to frequency.

Live birth in relation to a child, means the birth of a child born alive.

Multiple causes of death are all morbid conditions, diseases and injuries entered on the death certificate. These include those involved in the morbid train of events leading to the death which were classified as either the underlying cause, the intermediate cause, or any intervening cause and those conditions which contributed to death but were not related to the disease or condition causing death.

Neonatal death is the death of a live-born child during the first 28 completed days of life.

Perinatal deaths are a combination of stillbirths and infants who die in the first week after birth (early neonatal deaths)

Post-neonatal death is a live-born infant dying after 28 completed days of birth but before the first year of life is completed.

Population group: According to the Population Registration Act Repeal Act (No. 114 of 1991), the South African Population Register no longer stores information regarding the population group of individuals whose details are on the register. This Repeal Act is still in place; therefore, the population group used in this report refers to the population group as identified by the certifying physician/professional nurse on the death notification form and is only used for statistical purposes.

Stillbirth is the intra-uterine death of a foetus of at least 26 weeks of gestation that showed no sign of life after complete birth.

Underlying cause of death (previously known as primary cause) is the disease or injury that initiated the sequence of events leading directly to death; or the circumstances of the accident or violence which produced the fatal injury

Appendix B: Death Notification form

Please refer to the Mortality and causes of death in South Africa: Findings from death notification, 2016 on pages 59–64 for copies of both the BI–1663 and DHA–1663 (Stats SA, 2018).

Appendix C: Assessment of the quality of data

The gold standard in mortality statistics is to have real-time data on the number of deaths and corresponding medically certified causes of death (WHO, 2013). However, such information need to be of the highest quality in terms of completeness and timeliness of death registration and publication of death statistics. Also critical is the accuracy of information provided which must be embedded with correct information on characteristics of deceased, accurate causes of deaths and lower proportions of deaths with ill-defined or unspecified causes of deaths. Part of the process includes data quality confrontation undertaken to check for improvements in mortality statistics.

The advent of COVID 19 has impacted on a number of products within Stats SA, this has also been the case with MACOD data. This is observed from a number of data items where quality might have been compromised by reduction in staff complement during data processing due to social distancing requirement in line with COVID 19 protocols in Stats SA. A number of variables including method of ascertainment (53,7% unspecified cases and province of usual residence with 25% unspecified cases in 2018 provide evidence of unexplainable data anomalies.

In previous years, as part of data quality assessment, data confrontation was undertaken with other data sources, primarily, mortality data in the National Population Register (NPR). However, in the mortality and causes of death 2018 statistical release this process was not undertaken. This was attributable to Stats SA not having access to mortality data captured in the national population register at DHA. As a result the section dealing with comparison of the two datasets in order to assess coherency is excluded. It is envisaged that in forthcoming publications this assessment will resume.

Completeness of death registration

Completeness of death registration refers to the extent to which deaths occurring in a population in a given year are registered in the civil registration system. Two indirect demographic techniques, namely the General Growth Balance method (GGB) (Hill, 1987) and the Synthetic Extinct Generations method (SEG) (Bennett and Horiuchi, 1981 and 1984) were used for estimating the completeness of adult deaths (15 years and older). The output from the GGB was used as input in the estimation process in the SEG (as recommended by Bennett and Horiuchi, 1981) to obtain consistent estimates by age. To date, estimation of completeness has been done for four intercensal/survey periods: 1996–2001 (89%), 2001–2007 (93%), 2007–2011 (94%) and 2011–2016 (96%). For this current publication the latest estimates (2011–2016) are adopted. Overall, the completeness of adult death registration has improved over the years. In the 2011–2016 intercensal/survey period completeness level for male adult deaths was estimated at 97% whereas for females it was slightly lower (95%). Estimates for child deaths (0–14 years) will be made available when appropriate methods of estimation have been established.

Timeliness of death registration

The Regulations for the Registration of Births and Deaths in South Africa mandates that deaths should be registered within 72-hours (three days) of occurrence (Republic of South Africa, 2014). Accordingly, timeliness of death registration in this publication is calculated as the number of days it took to register a death from the date of occurrence to the date of registration. Table C.1 shows the distribution of the 2018 death occurrences by the number of days it took to register the deaths.

It is observed that 78,6% of the deaths in 2018 were registered within the period stipulated in the regulations. Among these, 16,6% were registered within a day of occurrence, increasing to 47,6% by the first day, 65,9% by the second day and 78,6% by the third day. A vast majority of deaths (92,6%) were registered within the first week in which they occurred and by the end of the first month 98,1% of the deaths were registered. While 21,3% of the deaths were registered later than the mandated time period, at least they were registered within a year of death occurrence and reached Stats SA in time for the production of the statistical release. Concerted efforts are needed for the improvement in the adherence to the legislative framework and for the reduction of deaths that do not reach Stats SA in time for the production of the statistical release.

Table C 1: Distribution of deaths by the number of days it took to register the death, 2018

Number of days	Number of deaths	Percentage	Cumulative percentage
Within a day of death	75 400	16,6	16,6
1 day	140 649	31,0	47,6
2 days	83 238	18,3	65,9
3 days	57 552	12,7	78,6
4 days	33 478	7,4	86,0
5 days	18 954	4,2	90,1
6 days	11 098	2,4	92,6
7 -13 days	20 501	4,5	97,1
14-20 days	2 918	0,6	97,7
21-30 days	1 773	0,4	98,1
31-364 days	7 984	1,8	99,9
1 year+	469	0,1	100,0
Total	454 014	100,0	

Timeliness of publication of statistics

Table C.2 presents information on the timeliness of published statistics, focusing on the number of deaths published in the 2017 statistical release and the additional delayed or late registrations received during the 2019/2020 processing phase for the years 1997 to 2017. According to the United Nations (UN) recommendation, for civil registration mortality statistics to be considered timely they ought to be published and disseminated before one-year from the end of the year of death occurrence (UN, 2014). This statistical release fell short of this recommendation as it is published 37 months after the end of 2018. Since civil registration deaths are continuously updated, the proportion of total registrations that are delayed or late provide an estimate of under-reporting in previous time periods.

Table C.2 shows the number of deaths published in the 2018 mortality and causes of death report for the years 1997 to 2017, and late or delayed death registrations processed during the processing of deaths registered in 2018. The table shows that 16 636 additional death notification forms for deaths that occurred between 1997 and 2017 were processed during the 2019/2020 processing phase. In general, years closer to the reference period have higher additional death notification forms, which in principle means that deaths become more complete over time. The majority [12 539 (75,4%)] of the

additional forms were for deaths that occurred in 2017, followed by 1 559 (9,4%) deaths that occurred in 2016. Appendices D (1997–1999), D1 (2000–2002), D2 (2003–2005), D3 (2006–2008), D4 (2009–2011), D5 (2012–2014) and D6 (2015–2018) [see pages 74–80] present the number distribution of the deaths by age, sex and year of death over the period 1997–2018 where years before 2017 have been updated with late or delayed registrations and processed during the 2019/2020 processing phase.

Table C2: Number of deaths published in December 2018 and late registrations processed during the 2019/2020 processing phase by year of death, 1997–2017

Year of death	Number of deaths published in December 2017	Additional forms received in the 2019/20 processing phase	Total number of deaths (December 2018)
1997	317 985	104	318 089
1998	366 711	62	366 773
1999	382 762	60	382 822
2000	417 411	74	417 485
2001	456 484	62	456 546
2002	503 592	68	503 660
2003	558 679	82	558 761
2004	578 646	79	578 725
2005	599 854	65	599 919
2006	614 412	59	614 471
2007	606 459	58	606 517
2008	598 490	63	598 553
2009	584 273	61	584 334
2010	551 820	97	551 917
2011	517 935	271	518 206
2012	495 536	341	495 877
2013	477 462	256	477 718
2014	477 484	235	477 719
2015	474 175	441	474 616
2016	470 395	1 559	471 954
2017	446 544	12 539	459 083
Total	10 050 565	16 636	10 067 201

Data confrontation

As indicated in Appendix C: Assessment of the quality of data on page 65, this section was excluded in the 2018 statistical release.

Quality of causes of death information

Causes of death are fundamental to the understanding of population health and are key to the measurement of various health indicators. However, the usefulness of the data depends entirely on the quality of reporting. Symptoms and modes of dying, such as fever, chest pain, respiratory failure, heart failure (stopped breathing) and cardiac arrest are not considered to be causes of death for vital statistics purposes. Instead, underlying causes of death which are the diseases or conditions that initiated these symptoms and modes of dying are the ones that indicate diagnoses that are robust, and therefore have sufficient details to be of value for public health purposes. This is due to the understanding that the symptoms and modes of dying occur due to a precipitating underlying cause. The ill-defined causes do not provide conclusive information on the underlying cause and as such, are of no value to evidence-based public health monitoring and interventions. For example, if heart failure is recorded as the cause of death, it is classified as an ill-defined garbage code as it does not give enough information to select the actual underlying cause. This is because heart failure as a mode of dying can result from a wide range of underlying causes such as stab injury, postpartum haemorrhage, poisoning, ischemic heart disease and other diseases, injuries or conditions (WHO, 2013).

Table C.3 provides the assessment of the quality of causes of death data based on the number and percentage distribution of ill-defined causes of death by sex of the deceased. The results show a total of 112 508 deceased with ill-defined causes, with males accounting for 53 310 (47,4%) of the ill-defined deaths as compared to 59 198 (52,6%) for females. For both sexes, *symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (R00-R99)* accounted for 54,2% of all ill-defined underlying causes of death. Males had 55,7% of deaths classified as *symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified* whilst females had 52,8%. The *symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified* are cases where, for example, the medical practitioner wrote the cause of death as *natural cause*. Ill-defined causes due to *heart failure (I50)* featured as the second highest ill-defined cause of death amongst males and were 8,3% and the second highest ill-defined cause of death amongst females was *essential (primary) hypertension (I10)* at 11,5%.

Table C 3: Number of ill-defined causes of death by sex, 2018*

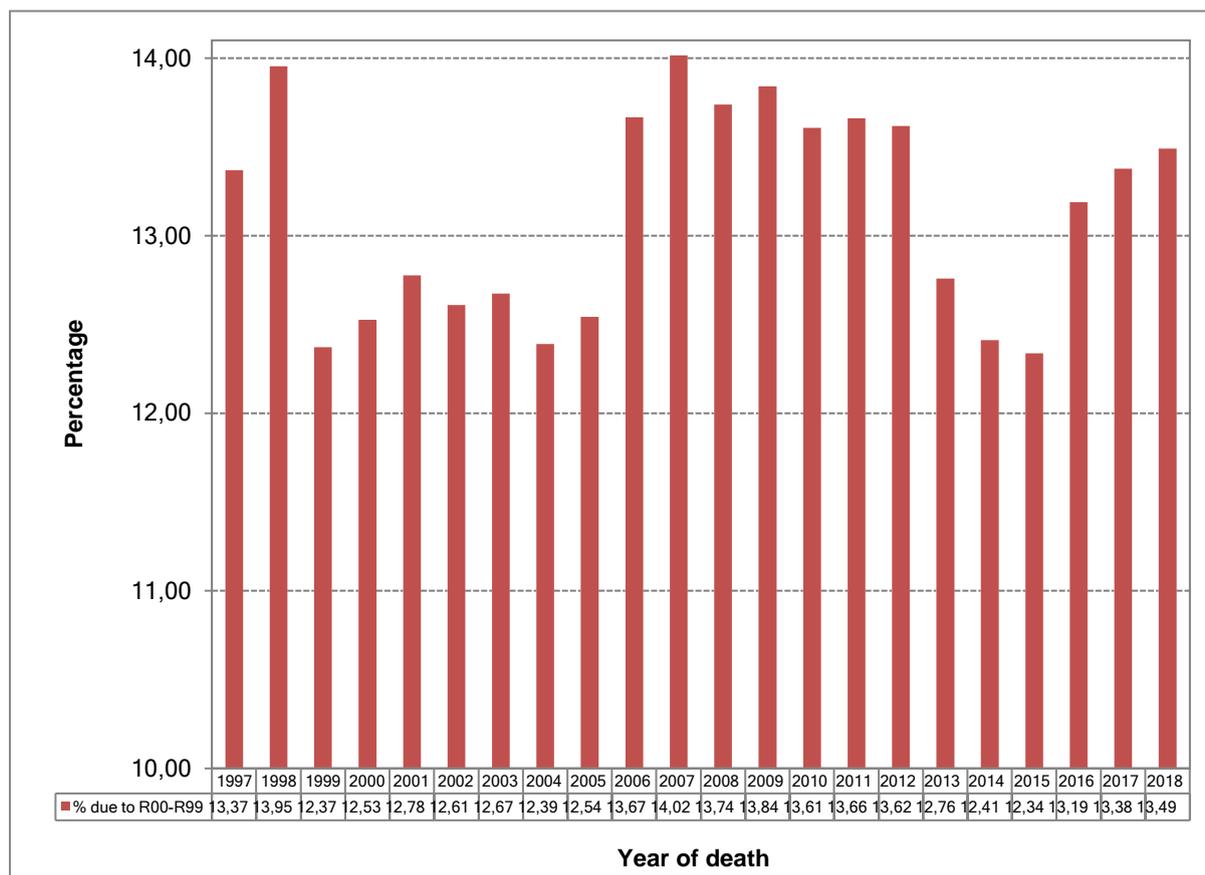
Underlying cause of death (based in ICD-10)	Number			Percentage		
	Male	Female	Bothsexes	Male	Female	Bothsexes
Streptococcal septicaemia (A40)	3	3	6	0,0	0,0	0,0
Other septicaemia (A41)	2 554	2 916	5 470	4,8	4,9	4,9
Malignant neoplasm of other and ill-defined sites (C76)	254	286	540	0,5	0,5	0,5
Malignant neoplasm without specification of site (C80)	1 767	1 853	3 620	3,3	3,1	3,2
Disseminated intravascular coagulation [defibrination syndrome] (D65)	61	73	134	0,1	0,1	0,1
Volume depletion (E86)	507	522	1 029	1,0	0,9	0,9
Essential (primary) hypertension (I10)	3 865	6 803	10 668	7,3	11,5	9,5
Cardiac arrest (I46)	3 358	3 760	7 118	6,3	6,4	6,3
Heart failure (I50)	4 444	5 517	9 961	8,3	9,3	8,9
Complications and ill-defined descriptions of heart disease (I51)	560	538	1 098	1,1	0,9	1,0
Other and unspecified disorders of circulatory system (I99)	33	55	88	0,1	0,1	0,1
Pulmonary oedema (J81)	163	182	345	0,3	0,3	0,3
Respiratory failure, not elsewhere classified (J96)	705	620	1 325	1,3	1,0	1,2
Acute renal failure (N17)	544	564	1 108	1,0	1,0	1,0
Chronic renal failure (N18)	1 292	1 286	2 578	2,4	2,2	2,3
Unspecified renal failure (N19)	2 301	2 186	4 487	4,3	3,7	4,0
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (R00-R99)	29 706	31 286	60 992	55,7	52,8	54,2
Event of undetermined intent (Y10-Y34)	1 193	748	1 941	2,2	1,3	1,7
Total of ill-defined	53 310	59 198	112 508	100,0	100,0	100,0

*Excluding deaths with unspecified sex.

Due to the high proportion of ill-defined causes of death attributed to *symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified*, it therefore becomes essential to further analyse this category to identify trends over time. Figure C.1 presents the percentage distribution of deaths attributed to *symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified* over the period from 1997–2018.

Overall, the proportions ranged between 12% and 14% over the period. The highest percentage of 14,0% was recorded in 2007 while the lowest (12,3%) was recorded in 2015. In 2008 total deaths assigned to ill-defined causes accounted for 13,7%, increasing to 13,8% in 2009 before stabilising at 13,6% between 2010 and 2012; after which the proportions declined to 12,8% in 2013 to a low of 12,3% in 2015. In 2016, the percentages of deaths attributed to *symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified* began to increase from 13,2% to a high of 13,5% in 2018. This figure continues to fall short of the 10% stipulated by WHO as the minimum threshold for ill-defined deaths and is indicative of regressing improvements in the reporting of causes of deaths. It is worth noting that while the observed deterioration may be real, there is also a growing issue of death notification forms that are sealed with glue such that when they are opened for capturing at Stats SA they have already been spoiled by the glue and the causes of death information is no longer legible.

Figure C.1: Percentage distribution of deaths assigned to symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified and year of death, 1997–2018*



Assessment framework for death registration data

For the purpose of this release, the framework by Mahapatra et al. (2007) is used to evaluate the quality of the 2018 deaths data from the South African civil registration system. This framework identified five quality assurance dimensions, namely: level of accuracy, relevance, comparability, timeliness and accessibility.

Table C.4 shows information on the proportion of missing information as indicated by the unknown or unspecified information for selected socio-demographic variables. Overall, the table gives an indication of the level of accuracy. The 'unknown' cases refer to cases where the 'unknown' option was selected on the death notification form, or where more than one option was selected, as well as in cases where information could not be classified according to specified categories. 'Unspecified' cases refer to missing information for that variable.

In 2018, less than 1% of deaths had missing information on sex of deceased (0,4%) and age of deceased (0,8%). Missing information on province of usual residence of the deceased was 3,5%. These three variables have generally been well reported over time. A notable increase for province of usual residence was observed from 1,2% in 2017 to 25,3% in 2018.

Marital status information was missing in 18,4% of cases. Incomplete information for population group was 12,6% in 2018. In 2018, occupation (77,1%), industry (77,2%), and pregnancy status (82,8%) remained the three variables with more than half of information unknown or unspecified. Four variables, namely, place or institution of death occurrence (26,2%), method used to ascertain cause of death (53,7%), smoking status (32,5%), and education (43,9%) had high missing information.

In this publication, no analyses were undertaken on all variables with over half of the information classified as missing, including the education variable with 43,9% missing information. However, these variables are also published by Stats SA on the dataset containing unit records on mortality and causes of death.

Table C.5 shows, for accuracy, the indicators for completeness of death registration and percentage of missing information for key variables. Using deaths from the civil registration, the death registration completeness level for adults aged 15 years and older was estimated at 95% for the 2011–2016 intercensal/survey. The death data from the civil registration is regarded as complete in terms of the relevance and comparability of mortality and causes of death statistics indicators.

The data is relevant as it is routinely tabulated by sex and 5-year age groups and the information is provided for the nine provinces and 52 district municipalities in the country. The data also meets the comparability quality assurance dimension as the ICD-10, which is recommended for international comparability, was used for coding causes of death. The tools used in coding causes of death for 2018 were similar to those used in previous years. Accordingly, the data are comparable within the country and at the international level.

For the accuracy dimension in the cause-of-deaths statistics category 45,6% of the deaths occurred within a health care facility in 2018. This percentage is a proxy for the percentage of deaths whose causes are more likely to be detailed enough for the underlying cause to be derived. While less than 50% of the deaths occurred in a health care facility, it is still good that all deaths in South Africa are mandated to be certified by medical practitioners. According to Mahapatra et al. (2007) no more than 10% of deaths should be assigned to symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified categories. The 2018 data shows that 13,5% of all deaths were assigned to ill-defined causes. This is a shortfall of 3,5% from the recommended threshold. Improvements are needed in the reduction of ill-defined causes of death.

The timeliness of the 2018 statistical release is not within the expected time frame of one-year lapse from end of the reference period, although this delay tends to improve coverage, as more forms which

could have been excluded from the current processing cycle are included, it however affects the relevance and utility of the information published. The time from end of the reference period to publication was 40 months while the capturing and coding of the data took 36 months. Table C 5 further shows that there is wide accessibility to the statistical release and data sets on mortality and causes of death. The data published on this statistical release can be accessed in a wide range of formats from the Stats SA website and through the Stats SA User Information Services.

Table C.4: Percentage of deaths classified as unknown/unspecified for selected variables, 2018

Variables	Applicable group	Percentage unknown or unspecified
Sex	All	0,4
Age	All	0,8
Province of death occurrence	All	3,5
Province of usual residence of deceased	All	25,3
Province of birth	All	45,7
Population group	All	12,6
Place or institution of death occurrence	All	26,2
Method used to ascertain cause of death	All	53,7
Marital Status	All	18,4
Smoking status	Aged 16 and older	32,5
Education	Aged 6 and older	43,9
Occupation	Aged 15 and older	77,1
Industry	Aged 15 and older (economically active)	77,2
Pregnancy status	Females aged 10-55	82,8

Table C.5: Assessment of the 2018 South African death statistics from civil registration system using the framework proposed by Mahapatra et al. (2007)

General vital statistics		Cause-of-death statistics	
Criteria and indicators	Measure	Criteria and indicators	Measure
Accuracy Completeness of death registration Missing data See Table 2.5	95%	Accuracy Proportion of deaths that occurred in healthcare facilities Proportion of deaths assigned to symptoms and signs of disease not elsewhere classified	45,6% 13,5%
Relevance Routine tabulations by sex and 5-year age groups Deaths in children under five years tabulated by 0 and 1-4-year age group	100% 100%	Relevance Routine tabulation by sex and 5-year age groups Number of cause-of-death tabulation areas	100% 9 provinces and 52 district municipalities
Comparability Stability of key definitions over time Uniformity of definitions across areas	100% 100%	Comparability Consistency of cause specific mortality proportions over consecutive years ICD coding for certification and coding of causes of death, revision used and code level to which tabulations are published	100% Coding causes of death using the tenth revision at 4/5-digit level
Timeliness Processing time Mean time from end of reference period to publication	36 months 40 months		
Accessibility Media - number of formats in which data are released Metadata Availability of user service	Two: website and compact discs Published on the web and with compact disc and available on request Email: info@statssa.gov.za / Tel: 012 310 8600 / Fax (012) 310 8500 / 8495		

*Based on the framework proposed by Mahapatra et al. (2007)

Appendix D: Number of deaths by age, sex and year of death, 1997–1999*

Age	1997				1998				1999			
	Male	Female	Unsp	Total	Male	Female	Unsp	Total	Male	Female	Unsp	Total
0	12996	11549	203	24748	14934	13263	314	28511	14740	13460	438	28638
1-4	4055	3651	53	7759	4864	4492	96	9452	5071	4641	98	9810
5-9	1707	1256	17	2980	1780	1438	36	3254	1900	1512	34	3446
10-14	1548	1195	20	2763	1696	1288	23	3007	1651	1306	23	2980
15-19	3779	2483	24	6286	4111	2915	63	7089	4356	3336	89	7781
20-24	8188	5475	54	13717	8802	6934	113	15849	8656	8315	107	17078
25-29	10943	7477	44	18464	13101	9902	113	23116	13912	12685	142	26739
30-34	11866	7217	52	19135	14400	9763	130	24293	16329	12316	122	28767
35-39	12014	6900	52	18966	14646	8961	98	23705	16491	10858	111	27460
40-44	11833	6431	37	18301	13978	7958	95	22031	15249	8955	92	24296
45-49	12266	6393	52	18711	14228	7702	91	22021	15017	8547	103	23667
50-54	11342	6264	31	17637	13037	7227	79	20343	13918	7781	81	21780
55-59	12693	7943	47	20683	13968	8893	108	22969	14100	8698	85	22883
60-64	11217	9305	51	20573	12452	10008	60	22520	12709	10060	85	22854
65-69	12501	11057	49	23607	13270	12465	85	25820	12853	12325	92	25270
70-74	11313	10070	49	21432	12753	11804	53	24610	12872	12262	71	25205
75-79	11224	12348	46	23618	11438	12488	87	24013	10710	11592	63	22365
80-84	6614	8787	34	15435	7888	11048	49	18985	7608	11325	73	19006
85-89	3960	6921	27	10908	4262	7808	35	12105	4453	7947	53	12453
90+	2032	4733	13	6778	2364	5567	29	7960	2211	5384	30	7625
Unsp	3116	2366	106	5588	2822	2102	196	5120	1493	1112	114	2719
Total	177207	139821	1061	318089	200794	164026	1953	366773	206299	174417	2106	382822

Appendix D1: Number of deaths by age, sex and year of death, 2000–2002*

Age	2000				2001				2002			
	Male	Female	Unsp	Total	Male	Female	Unsp	Total	Male	Female	Unsp	Total
0	15019	13539	353	28911	15494	14082	307	29883	17897	16220	341	34458
1-4	5392	4937	86	10415	5898	5315	78	11291	6328	5702	87	12117
5-9	1999	1600	29	3628	2127	1710	29	3866	2406	1965	17	4388
10-14	1724	1339	36	3099	1752	1471	22	3245	1871	1490	24	3385
15-19	4323	3498	72	7893	4483	3919	63	8465	4743	4298	60	9101
20-24	8890	9927	88	18905	8953	10990	87	20030	9588	12544	112	22244
25-29	15109	15786	107	31002	16893	19382	115	36390	18675	23420	137	42232
30-34	18532	15872	115	34519	20957	18808	112	39877	23942	23615	154	47711
35-39	18589	13663	98	32350	21147	15924	101	37172	24143	19520	129	43792
40-44	17194	11066	85	28345	19409	12933	98	32440	21647	15554	118	37319
45-49	16159	9593	80	25832	17978	10973	64	29015	19340	12705	112	32157
50-54	15324	9121	67	24512	16958	10177	74	27209	18669	11272	103	30044
55-59	13986	8884	76	22946	14622	9143	66	23831	15452	10030	72	25554
60-64	14277	11268	70	25615	15149	12084	69	27302	16222	12721	82	29025
65-69	12612	12078	53	24743	13042	12827	65	25934	13767	13300	65	27132
70-74	13137	14157	68	27362	14080	15148	60	29288	13814	15487	62	29363
75-79	10360	11547	48	21955	10872	12060	61	22993	11115	12843	72	24030
80-84	8497	12649	32	21178	9173	13933	47	23153	9558	14209	60	23827
85-89	4683	8233	27	12943	4587	8374	31	12992	4381	8320	34	12735
90+	2532	6533	31	9096	3027	7168	28	10223	3296	7670	33	10999
Unsp	1192	897	147	2236	1054	792	101	1947	1139	791	117	2047
Total	219530	196187	1768	417485	237655	217213	1678	456546	257993	243676	1991	503660

Appendix D2: Number of deaths by age, sex and year of death, 2003–2005*

Age	2003				2004				2005			
	Male	Female	Unsp	Total	Male	Female	Unsp	Total	Male	Female	Unsp	Total
0	19980	18068	435	38483	21809	19227	533	41569	24098	21980	476	46554
1-4	7158	6296	79	13533	8285	7645	72	16002	8246	7335	80	15661
5-9	2782	2209	28	5019	3193	2805	13	6011	3370	2808	21	6199
10-14	2004	1645	25	3674	2142	1781	14	3937	2153	1863	17	4033
15-19	4843	4570	70	9483	4691	4629	42	9362	4781	4556	53	9390
20-24	10362	14233	106	24701	10386	15134	78	25598	10503	14926	91	25520
25-29	20068	26332	154	46554	19846	27654	114	47614	19349	27335	111	46795
30-34	27560	28225	145	55930	28509	30729	80	59318	28851	31356	109	60316
35-39	26494	22732	115	49341	28275	25232	88	53595	29464	26330	101	55895
40-44	24808	18485	123	43416	26541	20624	70	47235	27525	21521	87	49133
45-49	22102	14510	91	36703	23145	16294	69	39508	24496	17424	81	42001
50-54	20651	12908	68	33627	21158	14121	47	35326	21556	14993	59	36608
55-59	17243	11006	49	28298	18105	12043	33	30181	19748	13329	47	33124
60-64	17431	13326	58	30815	16996	13417	31	30444	16869	13262	34	30165
65-69	14690	13898	53	28641	15233	13818	26	29077	16390	15206	38	31634
70-74	14495	16403	58	30956	13458	15437	26	28921	12921	15098	35	28054
75-79	12085	14135	56	26276	11825	14093	16	25934	12234	15937	35	28206
80-84	9461	13710	39	23210	8656	11970	21	20647	8448	11850	21	20319
85-89	5440	10206	37	15683	5043	9480	19	14542	5457	10353	17	15827
90+	3382	8160	18	11560	3292	7484	14	10790	3292	7889	15	11196
Unsp	1683	960	215	2858	1937	931	246	3114	1979	1084	226	3289
Total	284722	272017	2022	558761	292525	284548	1652	578725	301730	296435	1754	599919

Appendix D3: Number of deaths by age, sex and year of death, 2006–2008*

Age	2006				2007				2008			
	Male	Female	Unsp	Total	Male	Female	Unsp	Total	Male	Female	Unsp	Total
0	25537	22143	725	48405	24918	21755	415	47088	24179	21482	301	45962
1-4	8410	7604	118	16132	7859	7069	47	14975	8248	7232	31	15511
5-9	3033	2555	17	5605	2885	2510	4	5399	2745	2311	7	5063
10-14	2390	1921	15	4326	2253	1913	2	4168	2238	1895	2	4135
15-19	4856	4607	39	9502	4901	4227	16	9144	4872	4149	27	9048
20-24	10886	14853	98	25837	10954	13823	53	24830	10756	12971	45	23772
25-29	19047	26257	86	45390	18570	24692	72	43334	18532	23666	48	42246
30-34	28935	31113	96	60144	28475	29262	69	57806	26925	27408	57	54390
35-39	29546	26178	80	55804	29506	24985	50	54541	29250	24515	48	53813
40-44	28181	21924	79	50184	27200	21302	49	48551	26209	20327	31	46567
45-49	25204	18002	45	43251	24971	17983	43	42997	24933	17650	31	42614
50-54	22846	15647	42	38535	22985	15698	17	38700	22859	15639	21	38519
55-59	20693	14206	42	34941	21502	14673	24	36199	21701	15015	22	36738
60-64	17092	13362	27	30481	17544	13522	11	31077	17822	13962	17	31801
65-69	17781	15838	25	33644	18013	15887	9	33909	18133	15668	12	33813
70-74	13612	15617	28	29257	13864	15884	8	29756	14207	15371	2	29580
75-79	12749	17035	25	29809	12624	17112	4	29740	12630	17258	4	29892
80-84	8961	12359	21	21341	8930	12953	4	21887	9072	13901	2	22975
85-89	6156	12039	12	18207	6377	12231	2	18610	6009	11233	1	17243
90+	3568	8723	9	12300	3689	8802	12	12503	4003	9582	27	13612
Unsp	871	358	147	1376	840	350	113	1303	814	279	166	1259
Total	310354	302341	1776	614471	308860	296633	1024	606517	306137	291514	902	598553

Appendix D4: Number of deaths by age, sex and year of death, 2009–2011*

Age	2009				2010				2011			
	Male	Female	Unsp	Total	Male	Female	Unsp	Total	Male	Female	Unsp	Total
0	21113	17814	467	39394	18376	16163	384	34923	14991	13307	504	28802
1-4	6702	6126	31	12859	7068	6140	44	13252	5367	4805	47	10219
5-9	2374	2048	6	4428	2573	2129	5	4707	2381	2057	9	4447
10-14	2393	2077	4	4474	2453	2136	3	4592	2111	1818	6	3935
15-19	4681	4156	25	8862	4439	3984	18	8441	4160	3588	25	7773
20-24	10024	11880	56	21960	9463	10749	36	20248	8658	8976	83	17717
25-29	17810	21785	70	39665	16553	19573	64	36190	15077	16267	150	31494
30-34	25087	24287	81	49455	22494	21510	74	44078	19779	17928	145	37852
35-39	27757	22467	59	50283	24851	20462	52	45365	22627	17611	116	40354
40-44	25238	19253	55	44546	23413	17719	47	41179	21065	15606	100	36771
45-49	24412	17414	46	41872	22993	16429	58	39480	21109	15043	68	36220
50-54	22908	15640	40	38588	22064	15282	32	37378	21269	14479	74	35822
55-59	21858	15166	29	37053	21024	14376	34	35434	20547	14345	54	34946
60-64	19272	14439	21	33732	20145	14849	30	35024	20553	15096	61	35710
65-69	18272	15769	16	34057	17337	14644	21	32002	17103	14370	26	31499
70-74	15209	15998	17	31224	15884	16746	15	32645	16645	16956	22	33623
75-79	12770	17838	9	30617	11803	16175	8	27986	11774	16598	18	28390
80-84	9814	15175	9	24998	9953	16262	11	26226	10021	16833	15	26869
85-89	6170	11254	2	17426	5782	10525	5	16312	6024	11233	13	17270
90+	5258	11690	1	16949	4094	10750	10	14854	4405	11459	7	15871
Unsp	1285	394	213	1892	1009	265	327	1601	1376	646	600	2622
Total	300407	282670	1257	584334	283771	266868	1278	551917	267042	249021	2143	518206

Appendix D5: Number of deaths by age, sex and year of death, 2012–2014*

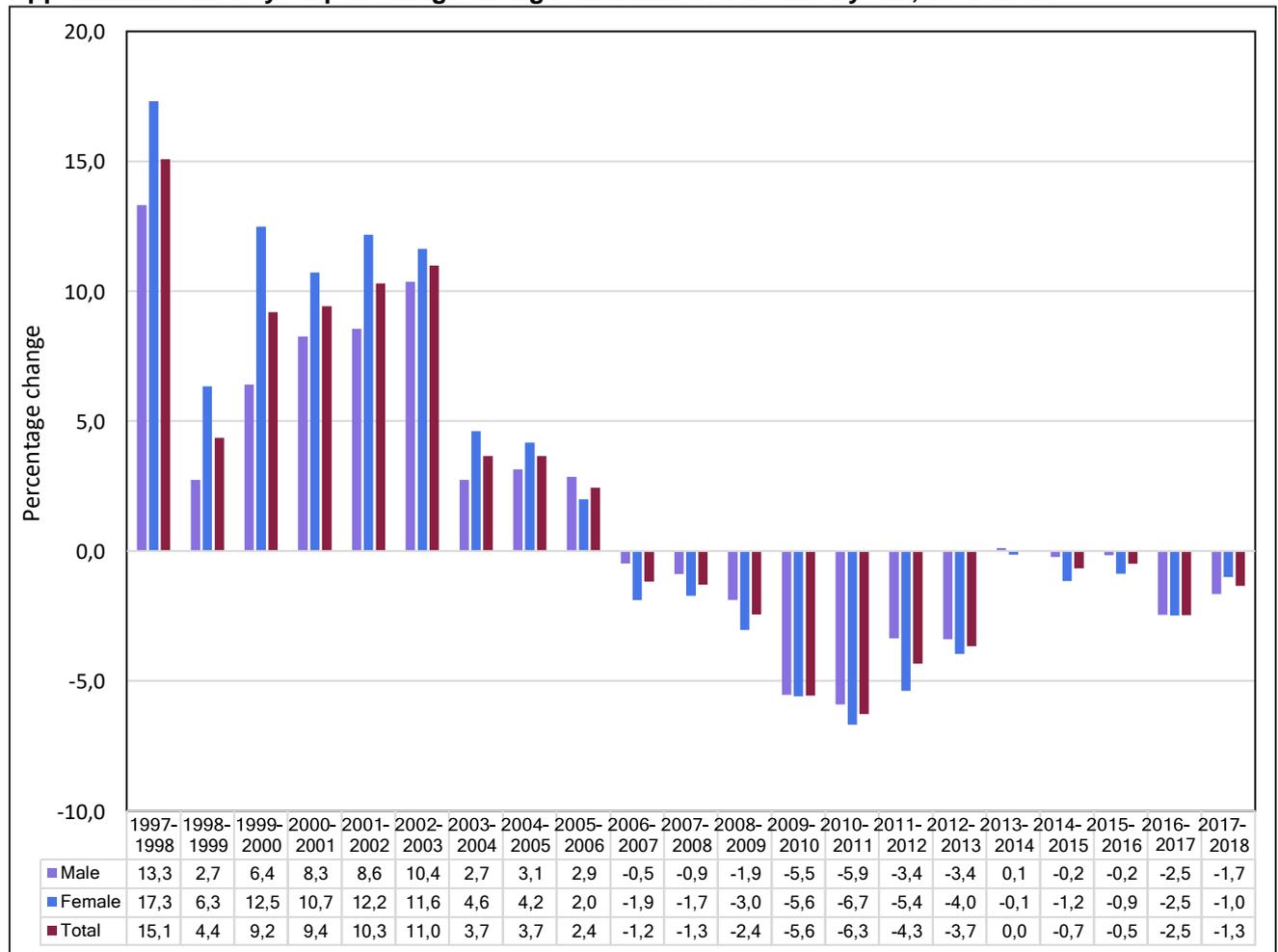
Age	2012				2013				2014			
	Male	Female	Unsp	Total	Male	Female	Unsp	Total	Male	Female	Unsp	Total
0	14373	12373	527	27273	14058	12301	516	26875	14155	12181	539	26875
1-4	5643	5010	48	10701	5011	4354	66	9431	4790	4104	64	8958
5-9	2676	2262	7	4945	1946	1599	12	3557	1875	1441	10	3326
10-14	2261	1912	4	4177	1857	1537	6	3400	1814	1437	8	3259
15-19	4131	3437	20	7588	4252	3113	31	7396	4219	3156	21	7396
20-24	8480	7881	85	16446	8461	7111	70	15642	8499	6273	80	14852
25-29	14696	14308	126	29130	13751	12361	140	26252	13223	11083	176	24482
30-34	18216	16213	156	34585	17484	14475	154	32113	17359	13784	171	31314
35-39	20816	15796	119	36731	19033	14074	134	33241	18025	13129	155	31309
40-44	19860	14154	96	34110	19132	13433	117	32682	18529	12788	113	31430
45-49	19369	13737	87	33193	18354	13019	79	31452	17830	12633	77	30540
50-54	19992	13810	73	33875	19381	13500	75	32956	19436	13504	73	33013
55-59	20097	13579	52	33728	19522	13544	53	33119	19677	13982	60	33719
60-64	20283	14509	30	34822	20456	14775	50	35281	21114	15519	42	36675
65-69	17121	13958	24	31103	16911	14173	33	31117	18426	15144	22	33592
70-74	16319	16470	15	32804	16369	16583	19	32971	16215	16769	17	33001
75-79	12087	16409	18	28514	12384	16068	24	28476	13010	16592	21	29623
80-84	10027	16807	11	26845	9752	16871	16	26639	9752	17225	18	26995
85-89	5825	11185	11	17021	6036	11922	13	17971	6534	13091	10	19635
90+	4320	11065	8	15393	4167	11035	11	15213	4336	11896	4	16236
Unsp	1498	737	658	2893	1023	427	484	1934	798	239	452	1489
Total	258090	235612	2175	495877	249340	226275	2103	477718	249616	225970	2133	477719

Appendix D6: Number of deaths by age, sex and year of death, 2015–2017*

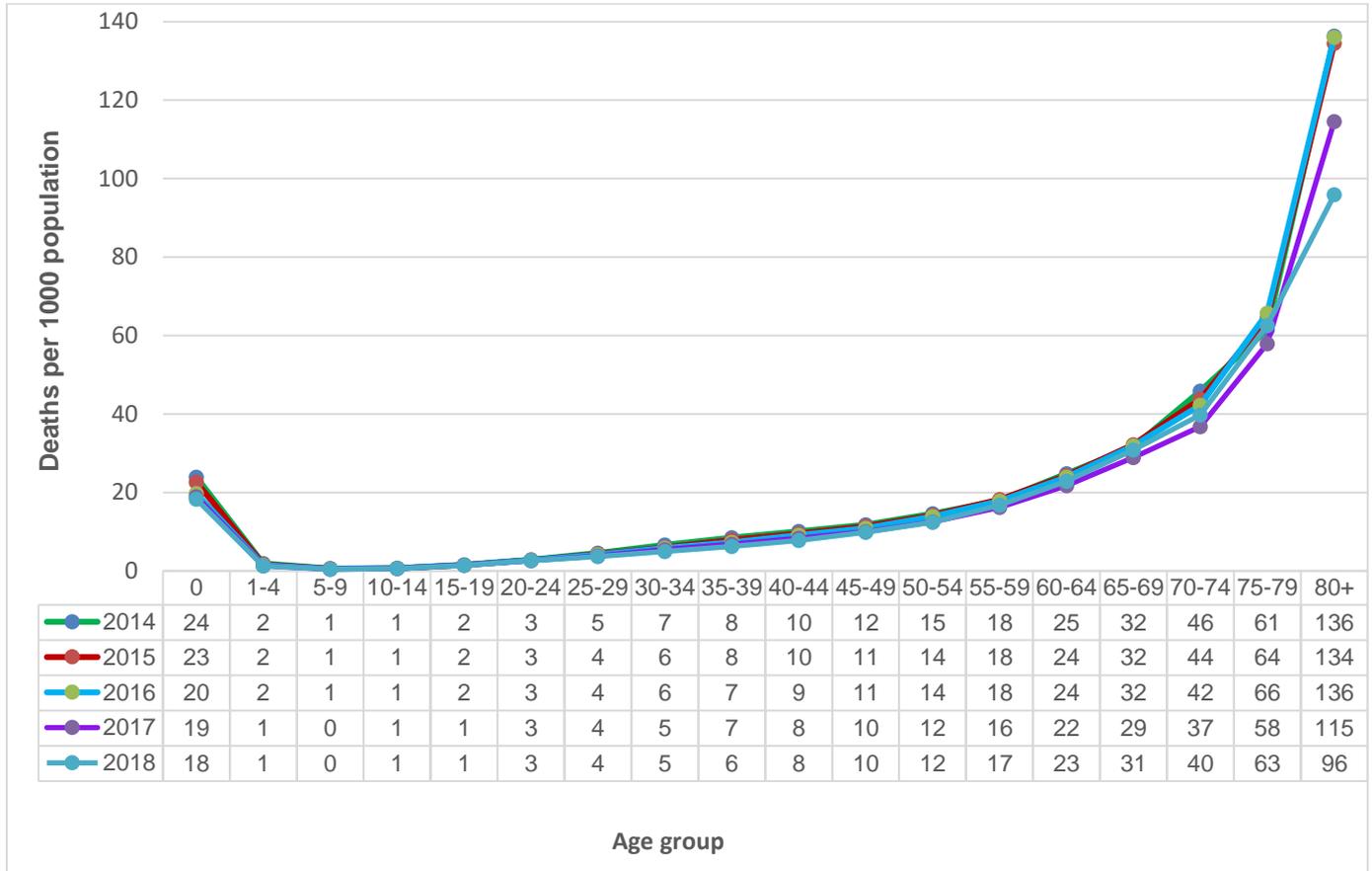
Age	2015				2016				2017				
	Male	Female	Unsp	Total	Male	Female	Unsp	Total	Male	Female	Underte minable	Unsp	Total
0	13064	11462	597	25123	11695	9831	414	21940	10929	9373	1	85	20388
1-4	4241	3662	43	7946	3809	3398	41	7248	3280	2931	.	10	6221
5-9	1828	1374	10	3212	1732	1335	6	3073	1546	1134	.	1	2681
10-14	1766	1411	9	3186	1829	1342	4	3175	1718	1264	.	2	2984
15-19	4170	2908	14	7092	4167	2863	21	7051	4002	2784	.	3	6789
20-24	8593	5859	83	14535	8627	5562	61	14250	8445	5042	.	7	13494
25-29	13413	10177	135	23725	13398	9534	124	23056	13043	8408	.	9	21460
30-34	16748	12803	182	29733	17328	12141	155	29624	16744	11688	.	21	28453
35-39	17620	12533	158	30311	17144	11877	157	29178	16686	11521	.	16	28223
40-44	18102	12369	133	30604	17830	12231	123	30184	17039	11740	.	9	28788
45-49	17608	12382	98	30088	17427	11974	90	29491	16762	11878	.	10	28650
50-54	19328	13397	72	32797	18995	13449	55	32499	18152	12838	.	5	30995
55-59	20457	14335	57	34849	20351	14450	66	34867	19745	14430	.	7	34182
60-64	21289	15641	42	36972	21275	16075	51	37401	21015	16066	.	4	37085
65-69	19459	16045	27	35531	20015	16546	32	36593	20310	16839	.	1	37150
70-74	16298	16045	20	32363	16189	16027	34	32250	16216	15896	.	3	32115
75-79	13754	18023	16	31793	14752	18324	20	33096	14661	18108	.	1	32770
80-84	9398	16409	17	25824	9553	16497	12	26062	9611	16167	.	1	25779
85-89	6697	14196	9	20902	6941	14927	19	21887	6718	14567	.	2	21287
90+	4370	12095	13	16478	4648	12796	15	17459	4796	13035	.	2	17833
Unsp	850	235	467	1552	958	251	362	1571	1130	240	.	386	1756
Total	249053	223361	2202	474616	248663	221430	1861	471955	242548	215949	1	585	459083

Appendix D7: Number of deaths by age, sex and year of death, 2018*

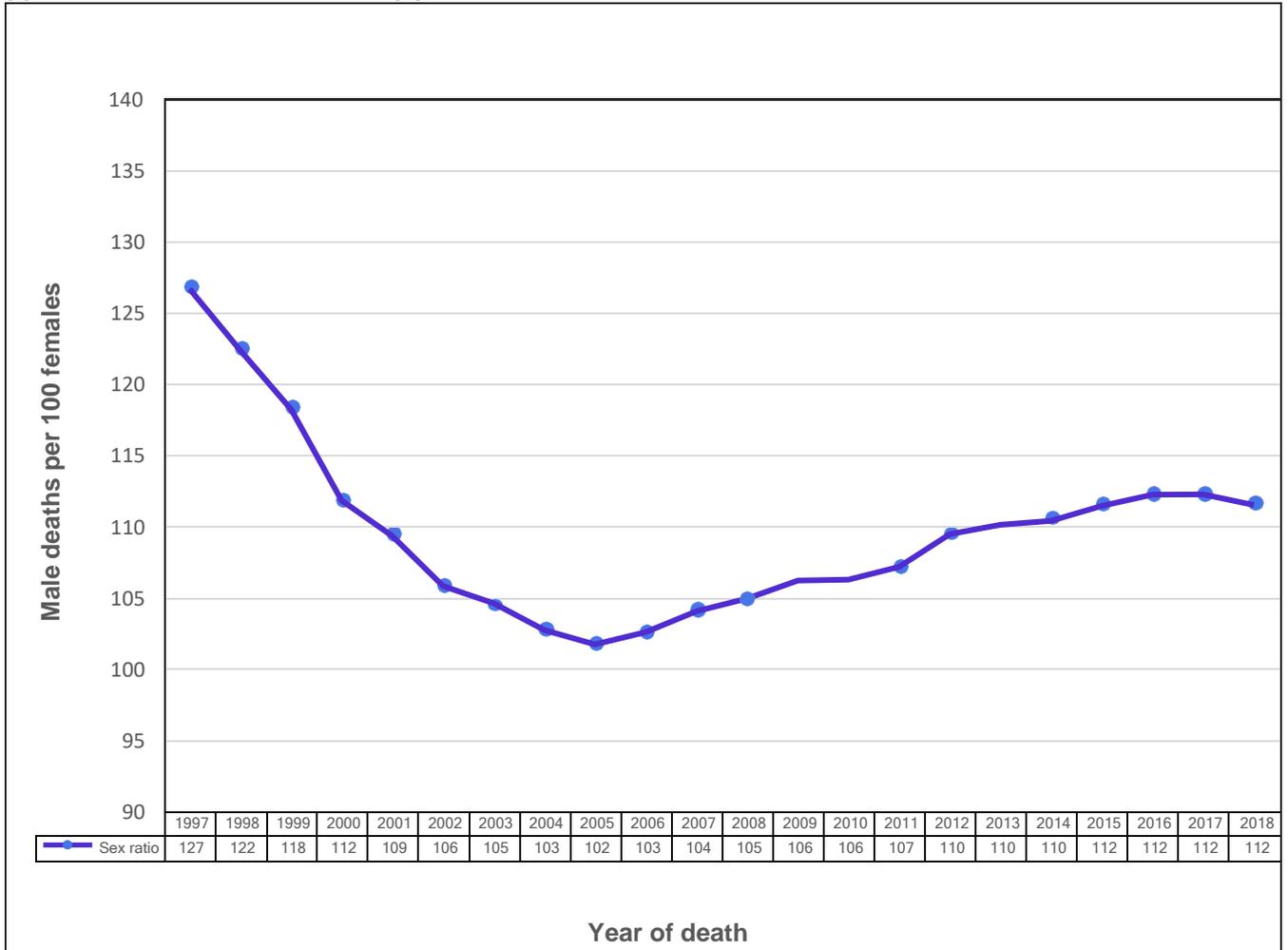
Age	2018				
	Male	Female	Undeterminable	Unsp	Total
0	10764	9144	16	232	20156
1-4	3310	2785	.	27	6122
5-9	1548	1205	.	7	2760
10-14	1818	1392	.	6	3216
15-19	3881	2694	.	19	6594
20-24	8008	4787	.	56	12851
25-29	12306	7840	.	95	20241
30-34	15836	10600	.	137	26573
35-39	16307	11294	1	114	27716
40-44	16118	10907	.	103	27128
45-49	16680	11630	.	69	28379
50-54	17380	12576	.	67	30023
55-59	19922	14343	.	52	34317
60-64	21258	16316	.	65	37639
65-69	20563	17387	.	56	38006
70-74	16416	16460	.	44	32920
75-79	14599	18151	.	42	32792
80-84	9832	16522	.	41	26395
85-89	6622	14570	.	28	21220
90+	4584	13044	.	20	17648
Unsp	791	155	.	372	1318
Total	238543	213802	17	1652	454014

Appendix E: Year-to-year percentage changes in number of deaths by sex, 1997–2018*


Appendix F: Age-specific death rates (ASDR) by year of death, 2014–2018*



*Data for 2014–2017 have been updated with late registrations/delayed death notification forms processed in 2019/2020.

Appendix G: Sex ratios at death by year of death, 1997–2018


Appendix H: Number of deaths by province of death occurrence and province usual residence of the deceased, 2018

Province of residence of deceased											
Province of death	Western Cape	Eastern Cape	Northern Cape	Free State	Kwa-Zulu Natal	North West	Gauteng	Mpumalanga	Limpopo	Unknown	Total
Western Cape	32695	644	104	39	252	17	117	99	98	14311	48376
Eastern Cape	530	57135	96	105	353	27	389	217	69	8198	67119
Northern Cape	61	54	11801	230	10	290	35	66	60	1355	13962
Free State	30	294	150	24514	47	153	476	18	176	3069	28927
Kwa-Zulu Natal	176	1125	5	119	56434	30	886	371	74	25558	84778
North West	12	95	128	235	23	19255	1453	48	172	10065	31486
Gauteng	744	604	72	636	666	2041	58525	1143	767	25776	90974
Mpumalanga	21	176	137	51	267	42	673	20603	806	7346	30122
Limpopo	35	92	15	76	23	204	431	541	26723	14130	42270
Unknown	1384	1544	236	632	1066	608	3660	797	925	5148	16000
Total	35688	61763	12744	26637	59141	22667	66645	23903	29870	114956	454014

Appendix H1: Percentage distribution of deaths by province of death occurrence and province of usual residence of deceased, 2018

Province of death	Province of residence of deceased										Total
	Western Cape	Eastern Cape	Northern Cape	Free State	Kwa-Zulu Natal	North West	Gauteng	Mpumalanga	Limpopo	Unknown	
Western Cape	67,6	1,3	0,2	0,1	0,5	0	0,2	0,2	0,2	29,6	100
Eastern Cape	0,8	85,1	0,1	0,2	0,5	0	0,6	0,3	0,1	12,2	100
Northern Cape	0,4	0,4	84,5	1,6	0,1	2,1	0,3	0,5	0,4	9,7	100
Free State	0,1	1	0,5	84,7	0,2	0,5	1,6	0,1	0,6	10,6	100
Kwa-Zulu Natal	0,2	1,3	0	0,1	66,6	0	1	0,4	0,1	30,1	100
North West	0	0,3	0,4	0,7	0,1	61,2	4,6	0,2	0,5	32	100
Gauteng	0,8	0,7	0,1	0,7	0,7	2,2	64,3	1,3	0,8	28,3	100
Mpumalanga	0,1	0,6	0,5	0,2	0,9	0,1	2,2	68,4	2,7	24,4	100
Limpopo	0,1	0,2	0	0,2	0,1	0,5	1	1,3	63,2	33,4	100
Unknown	8,7	9,7	1,5	4	6,7	3,8	22,9	5	5,8	32,2	100

Appendix I: Number of deaths by age, province and district municipality of death occurrence, 2018

Province of death Occurrence	District Municipality of death Occurrence	Age						
		0	1-14	15-44	45-64	65+	Unsp	Total
Western Cape	Cape Winelands	219	107	1 421	2 307	2 487	7	6 548
	Central Karoo	27	10	160	297	285	1	780
	City of Cape Town	1 124	437	7 584	8 465	12 283	56	29 949
	Eden	122	64	1 102	1 721	2 298	3	5 310
	Overberg	54	29	369	627	967	1	2 047
	West Coast	97	56	702	1 307	1 574	6	3 742
	Total	1 643	703	11 338	14 724	19 894	74	48 376
Eastern Cape	Alfred Nzo	240	356	2 234	1 981	3 183	5	7 999
	Amathole	146	195	1 981	2 262	3 732	1	8 317
	Buffalo City	222	156	2 122	2 723	3 337	5	8 565
	Chris Hani	249	158	2 384	2 766	3 577	8	9 142
	Joe Gqabi	106	55	792	910	1 115	4	2 982
	Nelson Mandela Bay	286	229	3 385	4 194	4 833	12	12 939
	O.R. Tambo	344	561	4 280	3 207	4 866	12	13 270
	Sarah Baartman	98	63	890	1 349	1 505	-	3 905
	Total	1 691	1 773	18 068	19 392	26 148	47	67 119
Northern Cape	Frances Baard	245	126	1 258	1 623	1 844	2	5 098
	John Taolo Gaetsewe	191	86	712	720	746	3	2 458
	Namakwa	43	21	242	456	517	1	1 280
	Pixley ka Seme	134	48	587	788	693	3	2 253
	Z F Mgcawu	135	65	806	995	871	1	2 873
	Total	748	346	3 605	4 582	4 671	10	13 962
Free State	Fezile Dabi	204	90	1 140	1 461	1 734	4	4 633
	Lejweleputswa	369	141	1 632	1 905	1 961	9	6 017
	Mangaung	445	210	2 373	2 898	3 370	5	9 301
	Thabo Mofutsanyane	453	229	2 104	2 369	2 719	20	7 894
	Xhariep	33	21	267	360	401	-	1 082
	Total	1 504	691	7 516	8 993	10 185	38	28 927

Appendix I: Number of deaths by age, province and district municipality of death occurrence, 2018* (concluded)

Province of death Occurrence	District Municipality of death Occurrence	Age						
		0	1-14	15-44	45-64	65+	Unsp	Total
Kwa-Zulu Natal	Amajuba	203	116	1278	1275	1616	4	4492
	Harry Gwala	189	158	1403	1307	1700	8	4765
	Ugu	225	206	2043	1851	2862	9	7196
	Zululand	321	235	1649	1402	2018	10	5635
	eThekwini	1044	627	8086	7567	10362	56	27742
	iLembe	147	154	1407	1137	1528	15	4388
	uMgungundlovu	348	234	2904	2941	3898	6	10331
	uMkhanyakude	134	142	1016	800	1221	6	3319
	uMzinyathi	243	166	1204	1184	1682	1	4480
	uThukela	308	200	1672	1568	2036	8	5792
	uThungulu	195	203	2056	1768	2392	24	6638
	Total	3357	2441	24718	22800	31315	147	84778
North West	Bojanala	620	284	2712	3007	3705	24	10352
	Dr Kenneth Kaunda	397	183	1982	2486	2745	25	7818
	Dr Ruth Segomotsi Mompati	357	163	1303	1523	1696	0	5042
	Ngaka Modiri Molema	586	271	2251	2445	2718	3	8274
	Total	1960	901	8248	9461	10864	52	31486
Gauteng	City of Johannesburg	1726	751	8422	8381	10314	342	29936
	City of Tshwane	1246	635	6032	7484	11035	40	26472
	Ekurhuleni	1003	474	4955	5724	6598	153	18907
	Sedibeng	506	227	2642	3368	3957	76	10776
	West Rand	261	103	1299	1524	1678	18	4883
	Total	4742	2190	23350	26481	33582	629	90974
Mpumalanga	Ehlanzeni	452	443	4003	3473	4311	53	12735
	Gert Sibande	533	270	2344	2228	2412	26	7813
	Nkangala	428	274	2603	2861	3391	17	9574
	Total	1413	987	8950	8562	10114	96	30122
Limpopo	Capricorn	732	457	3050	3193	5036	6	12474
	Mopani	668	363	2047	2321	3490	14	8903
	Sekhukhune	343	287	1902	2123	3429	6	8090
	Vhembe	380	321	1652	1854	3068	5	7280
	Waterberg	285	178	1473	1449	2138	0	5523
	Total	2408	1606	10124	10940	17161	31	42270

Appendix I1: Percentage distribution of deaths by age, province and district municipality of death occurrence, 2018

Province of death Occurrence	District Municipality of death Occurrence	Age						
		0	1-14	15-44	45-64	65+	Unsp	Total
Western Cape	Cape Winelands	3,3	1,6	21,7	35,2	38,0	0,1	100,0
	Central Karoo	3,5	1,3	20,5	38,1	36,5	0,1	100,0
	City of Cape Town	3,8	1,5	25,3	28,3	41,0	0,2	100,0
	Eden	2,3	1,2	20,8	32,4	43,3	0,1	100,0
	Overberg	2,6	1,4	18,0	30,6	47,2	0,0	100,0
	West Coast	2,6	1,5	18,8	34,9	42,1	0,2	100,0
	Total	3,4	1,5	23,4	30,4	41,1	0,2	100,0
Eastern Cape	Alfred Nzo	3,0	4,5	27,9	24,8	39,8	0,1	100,0
	Amathole	1,8	2,3	23,8	27,2	44,9	0,0	100,0
	Buffalo City	2,6	1,8	24,8	31,8	39,0	0,1	100,0
	Chris Hani	2,7	1,7	26,1	30,3	39,1	0,1	100,0
	Joe Gqabi	3,6	1,8	26,6	30,5	37,4	0,1	100,0
	Nelson Mandela Bay	2,2	1,8	26,2	32,4	37,4	0,1	100,0
	O.R.Tambo	2,6	4,2	32,3	24,2	36,7	0,1	100,0
	Sarah Baartman	2,5	1,6	22,8	34,5	38,5	0,0	100,0
Total	2,5	2,6	26,9	28,9	39,0	0,1	100,0	
Northern Cape	Frances Baard	4,8	2,5	24,7	31,8	36,2	0,0	100,0
	John Taolo Gaetsewe	7,8	3,5	29,0	29,3	30,3	0,1	100,0
	Namakwa	3,4	1,6	18,9	35,6	40,4	0,1	100,0
	Pixley ka Seme	5,9	2,1	26,1	35,0	30,8	0,1	100,0
	Z F Mgcawu	4,7	2,3	28,1	34,6	30,3	0,0	100,0
	Total	5,4	2,5	25,8	32,8	33,5	0,1	100,0
Free State	Fezile Dabi	4,4	1,9	24,6	31,5	37,4	0,1	100,0
	Lejweleputswa	6,1	2,3	27,1	31,7	32,6	0,1	100,0
	Mangaung	4,8	2,3	25,5	31,2	36,2	0,1	100,0
	Thabo Mofutsanyane	5,7	2,9	26,7	30,0	34,4	0,3	100,0
	Xhariep	3,0	1,9	24,7	33,3	37,1	0,0	100,0
	Total	5,2	2,4	26,0	31,1	35,2	0,1	100,0
Kwa-Zulu Natal	Amajuba	4,5	2,6	28,5	28,4	36,0	0,1	100,0
	Harry Gwala	4,0	3,3	29,4	27,4	35,7	0,2	100,0
	Ugu	3,1	2,9	28,4	25,7	39,8	0,1	100,0
	Zululand	5,7	4,2	29,3	24,9	35,8	0,2	100,0
	eThekwini	3,8	2,3	29,1	27,3	37,4	0,2	100,0
	iLembe	3,4	3,5	32,1	25,9	34,8	0,3	100,0
	uMgungundlovu	3,4	2,3	28,1	28,5	37,7	0,1	100,0
	uMkhanyakude	4,0	4,3	30,6	24,1	36,8	0,2	100,0
	uMzinyathi	5,4	3,7	26,9	26,4	37,5	0,0	100,0
	uThukela	5,3	3,5	28,9	27,1	35,2	0,1	100,0
	uThungulu	2,9	3,1	31,0	26,6	36,0	0,4	100,0
Total	4,0	2,9	29,2	26,9	36,9	0,2	100,0	

Appendix I1: Percentage distribution of deaths by age, province and district municipality of death occurrence, 2018* (concluded)

Province of death Occurrence	District Municipality of death Occurrence	Age						Unsp	Total
		0	1-14	15-44	45-64	65+			
North West	Bojanala	6,0	2,7	26,2	29,0	35,8	0,2	100	
	Dr Kenneth Kaunda	5,1	2,3	25,4	31,8	35,1	0,3	100	
	Dr Ruth Segomotsi Mompati	7,1	3,2	25,8	30,2	33,6	0,0	100	
	Ngaka Modiri Molema	7,1	3,3	27,2	29,6	32,8	0,0	100	
	Total	6,2	2,9	26,2	30,0	34,5	0,2	100	
Gauteng	City of Johannesburg	5,8	2,5	28,1	28,0	34,5	1,1	100	
	City of Tshwane	4,7	2,4	22,8	28,3	41,7	0,2	100	
	Ekurhuleni	5,3	2,5	26,2	30,3	34,9	0,8	100	
	Sedibeng	4,7	2,1	24,5	31,3	36,7	0,7	100	
	West Rand	5,3	2,1	26,6	31,2	34,4	0,4	100	
	Total	5,2	2,4	25,7	29,1	36,9	0,7	100	
Mpumalanga	Ehlanzeni	3,5	3,5	31,4	27,3	33,9	0,4	100	
	Gert Sibande	6,8	3,5	30,0	28,5	30,9	0,3	100	
	Nkangala	4,5	2,9	27,2	29,9	35,4	0,2	100	
	Total	4,7	3,3	29,7	28,4	33,6	0,3	100	
Limpopo	Capricorn	5,9	3,7	24,5	25,6	40,4	0,0	100	
	Mopani	7,5	4,1	23,0	26,1	39,2	0,2	100	
	Sekhukhune	4,2	3,5	23,5	26,2	42,4	0,1	100	
	Vhembe	5,2	4,4	22,7	25,5	42,1	0,1	100	
	Waterberg	5,2	3,2	26,7	26,2	38,7	0,0	100	
	Total	5,7	3,8	24,0	25,9	40,6	0,1	100	

Appendix J: Number of deaths by sex, province and district municipality of death occurrence, 2018*

Province of death occurrence	District municipality of death occurrence	Sex of deceased				Sex ratio at death
		Male	Female	Unspecified	Total	
Western Cape	Cape Winelands	3 540	2 987	21	6 548	119
	Central Karoo	434	372	2	808	117
	City of Cape Town	16 590	13 282	75	29 947	125
	Eden	2 829	2 472	9	5 310	114
	Overberg	1 301	950	3	2 254	137
	West Coast	2 012	1 720	9	3 741	117
	Total	26 706	21 783	119	48 608	123
Eastern Cape	Amathole	4 396	3 909	12	8 317	112
	Buffalo City	4 541	4 017	7	8 565	113
	Chris Hani	4 887	4 243	12	9 142	115
	Joe Gqabi	1 551	1 422	9	2 982	109
	Nelson Mandela Bay	6 916	5 990	33	12 939	115
	O.R.Tambo	6 831	6 405	34	13 270	107
	Sarah Baartman	2 019	1 880	6	3 905	107
	Alfred Nzo	4 186	3 797	16	7 999	110
	Total	35 327	31 663	129	67 119	112
Northern Cape	Frances Baard	2 678	2 407	13	5 098	111
	John Taolo Gaetsewe	1 281	1 174	3	2 458	109
	Namakwa	665	492	1	1 158	135
	Pixley ka Seme	1 226	1 021	6	2 253	120
	Z F Mgcawu	1 541	1 330	2	2 873	116
	Total	7 391	6 424	25	13 840	115
Free State	Fezile Dabi	2 457	2 163	13	4 633	114
	Lejweleputswa	3 184	2 805	28	6 017	114
	Mangaung	4 878	4 386	36	9 300	111
	Thabo Mofutsanyane	4 080	3 791	22	7 893	108
	Xhariep	557	520	5	1 082	107
	Total	15 156	13 665	104	28 925	111
Kwa-Zulu Natal	Amajuba	2 309	2 163	20	4 492	107
	Harry Gwala	2 519	2 230	16	4 765	113
	Ugu	3 684	3 496	16	7 196	105
	Zululand	2 850	2 769	16	5 635	103
	eThekwini	14 762	12 919	1	27 682	114
	iLembe	2 206	2 159	23	4 388	102
	uMgungundlovu	5 298	5 008	25	10 331	106
	uMkhanyakude	1 614	1 695	10	3 319	95
	uMzinyathi	2 167	2 297	16	4 480	94
	uThukela	2 907	2 880	5	5 792	101
	uThungulu	3 403	3 221	13	6 637	106
	Total	43 719	40 837	161	84 717	107

Appendix J: Number of deaths by sex, province and district municipality of death occurrence, 2018* (concluded)

Province of death occurrence	District municipality of death occurrence	Sex of deceased				Sex ratio at death
		Male	Female	Unspecified	Total	
North West	Bojanala	5 515	4 789	48	10 352	115
	Dr Kenneth Kaunda	4 218	3 585	15	7 818	118
	Dr Ruth Segomotsi Mompoti	2 678	2 343	21	5 042	114
	Ngaka Modiri Molema	4 314	3 936	24	8 274	110
	Total	16 725	14 653	108	31 486	114
Gauteng	City of Johannesburg	15 871	13 787	2	29 660	115
	City of Tshwane	13 968	12 407	2	26 377	113
	Ekurhuleni	9 945	8 791	171	18 907	113
	Sedibeng	5 744	4 987	44	10 775	115
	West Rand	2 721	2 139	23	4 883	127
	Total	48 249	42 111	242	90 602	115
Mpumalanga	Ehlanzeni	6 521	6 156	58	12 735	106
	Gert Sibande	4 452	3 860	1	8 313	115
	Nkangala	4 975	4 554	45	9 574	109
	Total	15 948	14 570	104	30 622	109
Limpopo	Capricorn	6 241	6 214	2	12 457	100
	Mopani	4 328	4 552	23	8 903	95
	Sekhukhune	3 946	4 131	1	8 078	96
	Vhembe	3 582	3 674	1	7 257	97
	Waterberg	2 805	2 707	11	5 523	104
	Total	20 902	21 278	38	42 218	98

*Excluding deaths with unspecified province of death occurrence.

Appendix K: All underlying causes of death, 2018

Causes of death (based on the 10th revision, International Classification of Diseases, 1992)	Number	Percentage
Ill-defined and unknown causes of mortality (R95-R99)	53 633	11.8
Other external causes of accidental injury (W00-X59)	36 991	8.1
Tuberculosis (A15-A19)	27 450	6.0
Diabetes mellitus (E10-E14)	26 879	5.9
Cerebrovascular diseases (I60-I69)	22 997	5.1
Other forms of heart disease (I30-I52)	22 940	5.1
Human immunodeficiency virus [HIV] disease (B20-B24)	21 894	4.8
Hypertensive diseases (I10-I15)	20 576	4.5
Influenza and pneumonia (J09-J18)	17 569	3.9
Ischaemic heart diseases (I20-I25)	13 598	3.0
Chronic lower respiratory diseases (J40-J47)	13 579	3.0
Malignant neoplasms of digestive organs (C15-C26)	10 808	2.4
Other viral diseases (B25-B34)	10 324	2.3
Renal failure (N17-N19)	8 185	1.8
Assault (X85-Y09)	7 590	1.7
Certain disorders involving the immune mechanism (D80-D89)	6 571	1.4
Intestinal infectious diseases (A00-A09)	6 559	1.4
Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	6 558	1.4
Transport accidents (V01-V99)	6 165	1.4
Malignant neoplasms of female genital organs (C51-C58)	5 869	1.3
Other bacterial diseases (A30-A49)	5 639	1.2
General symptoms and signs (R50-R69)	4 757	1.0
Malignant neoplasms of ill-defined, secondary and unspecified sites (C76-C80)	4 192	0.9
Other acute lower respiratory infections (J20-J22)	4 056	0.9
Malignant neoplasms of breast (C50)	3 884	0.9
Diseases of liver (K70-K77)	3 791	0.8
Episodic and paroxysmal disorders (G40-G47)	3 724	0.8
Malignant neoplasms of male genital organs (C60-C63)	3 684	0.8
Malignant neoplasms, stated or presumed to be primary, of lymphoid, haematopoietic and related tissue (C81-C96)	3 437	0.8
Metabolic disorders (E70-E90)	3 083	0.7
Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	2 907	0.6
Other diseases of the respiratory system (J95-J99)	2 865	0.6
Pulmonary heart disease and diseases of pulmonary circulation (I26-I28)	2 769	0.6
Aplastic and other anaemias (D60-D64)	2 343	0.5
Inflammatory diseases of the central nervous system (G00-G09)	2 235	0.5
Symptoms and signs involving the circulatory and respiratory systems (R00-R09)	2 170	0.5
Diseases of oesophagus, stomach and duodenum (K20-K31)	2 105	0.5
Event of undetermined intent (Y10-Y34)	1 956	0.4
Other diseases of intestines (K55-K64)	1 700	0.4
Organic, including symptomatic, mental disorders (F00-F09)	1 688	0.4
Other respiratory diseases principally affecting the interstitium (J80-J84)	1 597	0.4

Appendix K: All underlying causes of death, 2018 (continued)

Causes of death (based on the 10th revision, International Classification of Diseases, 1992)	Number	Percentage
Diseases of arteries, arterioles and capillaries (I70-I79)	1 472	0.3
Neoplasms of uncertain or unknown behaviour (D37-D48)	1 264	0.3
Other diseases of the digestive system (K90-K93)	1 235	0.3
Malignant neoplasms of urinary tract (C64-C68)	1 159	0.3
Sequelae of infectious and parasitic diseases (B90-B94)	1 151	0.3
Malignant neoplasms of lip, oral cavity and pharynx (C00-C14)	1 128	0.2
Disorders of gallbladder, biliary tract and pancreas (K80-K87)	1 106	0.2
Disorders related to length of gestation and fetal growth (P05-P08)	1 081	0.2
Other disorders originating in the perinatal period (P90-P96)	1 052	0.2
Complications of medical and surgical care (Y40-Y84)	1 033	0.2
Malnutrition (E40-E46)	1 010	0.2
Malignant neoplasms of mesothelial and soft tissue (C45-C49)	1 008	0.2
Cerebral palsy and other paralytic syndromes (G80-G83)	1 001	0.2
Other disorders of the nervous system (G90-G99)	995	0.2
Infections specific to the perinatal period (P35-P39)	983	0.2
Congenital malformations of the circulatory system (Q20-Q28)	963	0.2
Noninfective enteritis and colitis (K50-K52)	953	0.2
Other disorders of the skin and subcutaneous tissue (L80-L99)	924	0.2
Arthropathies (M00-M25)	914	0.2
Malignant neoplasms of skin (C43-C44)	899	0.2
Protozoal diseases (B50-B64)	893	0.2
Other disorders of glucose regulation and pancreatic internal secretion (E15-E16)	885	0.2
Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	870	0.2
Other degenerative diseases of the nervous system (G30-G32)	869	0.2
Diseases of veins, lymphatic vessels and lymph nodes, not elsewhere classified (I80-I89)	728	0.2
Mental and behavioural disorders due to psychoactive substance use (F10-F19)	717	0.2
Lung diseases due to external agents (J60-J70)	713	0.2
Mycoses (B35-B49)	631	0.1
Malignant neoplasms of eye, brain and other parts of central nervous system (C69-C72)	627	0.1
Symptoms and signs involving the digestive system and abdomen (R10-R19)	548	0.1
Systemic connective tissue disorders (M30-M36)	532	0.1
Extrapyramidal and movement disorders (G20-G26)	509	0.1
Coagulation defects, purpura and other haemorrhagic conditions (D65-D69)	495	0.1
Other diseases of urinary system (N30-N39)	468	0.1
Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	449	0.1
Other congenital malformations (Q80-Q89)	438	0.1
Disorders of thyroid gland (E00-E07)	416	0.1
Soft tissue disorders (M60-M79)	413	0.1
Obesity and other hyperalimentation (E65-E68)	412	0.1
Chromosomal abnormalities, not elsewhere classified (Q90-Q99)	402	0.1
Infections of the skin and subcutaneous tissue (L00-L08)	399	0.1
Viral hepatitis (B15-B19)	397	0.1

Appendix K: All underlying causes of death, 2018 (continued)

Causes of death (based on the 10th revision, International Classification of Diseases, 1992)	Number	Percentage
Other diseases of pleura (J90-J94)	363	0.1
Chronic rheumatic heart diseases (I05-I09)	352	0.1
Congenital malformations of the nervous system (Q00-Q07)	323	0.1
Diseases of male genital organs (N40-N51)	318	0.1
Intentional self-harm (X60-X84)	317	0.1
Digestive system disorders of fetus and newborn (P75-P78)	299	0.1
Other disorders of kidney and ureter (N25-N29)	290	0.1
Hernia (K40-K46)	259	0.1
Renal tubulo-interstitial diseases (N10-N16)	259	0.1
Diseases of peritoneum (K65-K67)	249	0.1
Other congenital malformations of the digestive system (Q38-Q45)	249	0.1
Malignant neoplasms of thyroid and other endocrine glands (C73-C75)	239	0.1
Suppurative and necrotic conditions of lower respiratory tract (J85-J86)	234	0.1
Systemic atrophies primarily affecting the central nervous system (G10-G14)	227	0.0
Schizophrenia, schizotypal and delusional disorders (F20-F29)	221	0.0
Other and unspecified disorders of the circulatory system (I95-I99)	215	0.0
Benign neoplasms (D10-D36)	205	0.0
Glomerular diseases (N00-N08)	199	0.0
Congenital malformations and deformations of the musculoskeletal system (Q65-Q79)	168	0.0
Acute upper respiratory infections (J00-J06)	159	0.0
Diseases of appendix (K35-K38)	157	0.0
Oedema, proteinuria and hypertensive disorders in pregnancy, childbirth and the puerperium (O10-O16)	151	0.0
Noninflammatory disorders of female genital tract (N80-N98)	138	0.0
Malignant neoplasms of bone and articular cartilage (C40-C41)	121	0.0
Diseases of myoneural junction and muscle (G70-G73)	112	0.0
Congenital malformations of the urinary system (Q60-Q64)	107	0.0
Complications of labour and delivery (O60-O75)	106	0.0
Polyneuropathies and other disorders of the peripheral nervous system (G60-G64)	105	0.0
Other diseases of upper respiratory tract (J30-J39)	102	0.0
Sequelae of external causes of morbidity and mortality (Y85-Y89)	102	0.0
Nutritional anaemias (D50-D53)	101	0.0
Osteopathies and chondropathies (M80-M94)	97	0.0
Dorsopathies (M40-M54)	96	0.0
Pregnancy with abortive outcome (O00-O08)	96	0.0
Demyelinating diseases of the central nervous system (G35-G37)	89	0.0
Viral infections of the central nervous system (A80-A89)	87	0.0
Other obstetric conditions, not elsewhere classified (O94-O99)	86	0.0
Viral infections characterized by skin and mucous membrane lesions (B00-B09)	78	0.0
Other nutritional deficiencies (E50-E64)	77	0.0
Conditions involving the integument and temperature regulation of fetus and newborn (P80-P83)	76	0.0
Congenital malformations of the respiratory system (Q30-Q34)	76	0.0
Other diseases of blood and blood-forming organs (D70-D77)	74	0.0
Urticaria and erythema (L50-L54)	71	0.0
Disorders of other endocrine glands (E20-E35)	70	0.0
Diseases of oral cavity, salivary glands and jaws (K00-K14)	64	0.0

Appendix K: All underlying causes of death, 2018 (continued)

Causes of death (based on the 10th revision, International Classification of Diseases, 1992)	Number	Percentage
Complications predominantly related to the puerperium (O85-O92)	64	0.0
Other infectious diseases (B99)	63	0.0
Haemolytic anaemias (D55-D59)	59	0.0
Infections with a predominantly sexual mode of transmission (A50-A64)	57	0.0
Inflammatory diseases of female pelvic organs (N70-N77)	53	0.0
Helminthiases (B65-B83)	52	0.0
Diseases of middle ear and mastoid (H65-H75)	52	0.0
Mental retardation (F70-F79)	44	0.0
Unspecified mental disorder (F99)	34	0.0
Maternal care related to the fetus and amniotic cavity and possible delivery problems (O30-O48)	34	0.0
Symptoms and signs involving cognition, perception, emotional state and behaviour (R40-R46)	33	0.0
Abnormal findings on examination of blood, without diagnosis (R70-R79)	29	0.0
Disorders of breast (N60-N64)	27	0.0
Dermatitis and eczema (L20-L30)	25	0.0
Abnormal findings on diagnostic imaging and in function studies, without diagnosis (R90-R94)	24	0.0
Visual disturbances and blindness (H53-H54)	23	0.0
Other maternal disorders predominantly related to pregnancy (O20-O29)	23	0.0
Behavioural syndromes associated with physiological disturbances and physical factors (F50-F59)	22	0.0
Bullous disorders (L10-L14)	21	0.0
Transitory endocrine and metabolic disorders specific to fetus and newborn (P70-P74)	19	0.0
Urolithiasis (N20-N23)	17	0.0
Mood [affective] disorders (F30-F39)	15	0.0
Cleft lip and cleft palate (Q35-Q37)	15	0.0
Neurotic, stress-related and somatoform disorders (F40-F48)	14	0.0
Birth trauma (P10-P15)	11	0.0
Nerve, nerve root and plexus disorders (G50-G59)	9	0.0
Acute rheumatic fever (I00-I02)	9	0.0
Symptoms and signs involving the skin and subcutaneous tissue (R20-R23)	9	0.0
Symptoms and signs involving the nervous and musculoskeletal systems (R25-R29)	8	0.0
Arthropod-borne viral fevers and viral haemorrhagic fevers (A92-A99)	7	0.0
Disorders of psychological development (F80-F89)	7	0.0
Papulosquamous disorders (L40-L45)	7	0.0
Pediculosis, acariasis and other infestations (B85-B89)	6	0.0
Symptoms and signs involving speech and voice (R47-R49)	6	0.0
Certain zoonotic bacterial diseases (A20-A28)	5	0.0
Other spirochaetal diseases (A65-A69)	5	0.0
Disorders of eyelid, lacrimal system and orbit (H00-H06)	5	0.0
Other disorders of ear (H90-H95)	5	0.0
Disorders of skin appendages (L60-L75)	5	0.0
Symptoms and signs involving the urinary system (R30-R39)	5	0.0

Appendix K: All underlying causes of death, 2018 (concluded)

Causes of death (based on the 10th revision, International Classification of Diseases, 1992)	Number	Percentage
Rickettsioses (A75-A79)	4	0.0
In situ neoplasms (D00-D09)	4	0.0
Disorders of lens (H25-H28)	4	0.0
Glaucoma (H40-H42)	4	0.0
Disorders of vitreous body and globe (H43-H45)	3	0.0
Congenital malformations of eye, ear, face and neck (Q10-Q18)	3	0.0
W75-W84	3	0.0
Disorders of conjunctiva (H10-H13)	2	0.0
Disorders of choroid and retina (H30-H36)	2	0.0
Other disorders of eye and adnexa (H55-H59)	2	0.0
Diseases of inner ear (H80-H83)	2	0.0
Congenital malformations of genital organs (Q50-Q56)	2	0.0
X40-X49	2	0.0
Disorders of adult personality and behaviour (F60-F69)	1	0.0
Behavioural and emotional disorders with onset usually occurring in childhood and adolescence (F90-F98)	1	0.0
Disorders of optic nerve and visual pathways (H46-H48)	1	0.0
Disorders of ocular muscles, binocular movement, accommodation and refraction (H49-H52)	1	0.0
Radiation-related disorders of the skin and subcutaneous tissue (L55-L59)	1	0.0
X00-X09	1	0.0

Appendix L: Detailed description of the broad-based groups of natural causes of death which were among the ten leading causes, 2018

Causes of death (based on ICD-10 Version: 2010)		Number	Percentage
	Tuberculosis (A15-A19)		
A15	Respiratory tuberculosis, bacteriologically and histologically confirmed	4	0,0
A16	Respiratory tuberculosis, not confirmed bacteriologically or histologically (A16)	20 773	75,7
A17	Tuberculosis of nervous system (A17)	1 550	5,6
A18	Tuberculosis of other organs (A18)	967	3,5
A19	Miliary tuberculosis	3 099	11,3
	Drug resistant tuberculosis		
U51	Multi-drug resistant tuberculosis (U51)	935	3,4
U52	Extensively drug-resistant tuberculosis (U52)	122	0,4
	Total	27 450	100,0

	Human immunodeficiency virus [HIV] disease (B20-B24)		
B20	Human immunodeficiency virus [HIV] disease resulting in infectious and parasitic diseases (B20)	14 001	64,0
B21	Human immunodeficiency virus [HIV] disease resulting in malignant neoplasms (B21)	694	3,2
B22	Human immunodeficiency virus [HIV] disease resulting in other specified diseases (B22)	1 314	6,0
B23	Human immunodeficiency virus [HIV] disease resulting in other conditions (B23)	2 863	13,1
B24	Unspecified human immunodeficiency virus [HIV] disease (B24)	2 996	13,7
	Total	21 868	100,0

	Other viral diseases (B25-B34)		
B25	Cytomegaloviral disease (B25)	19	0,8
B26	Mumps (B26)	-	0,0
B27	Infectious mononucleosis (B27)	-	0,0
B33	Other viral diseases, not elsewhere classified (B33)	2 450	96,8
B34	Viral infection of unspecified site (B34)	61	2,4
	Total	2 530	100,0

	Diabetes mellitus (E10-E14)		
E10	Insulin-dependent diabetes mellitus (E10)	238	0,9
E11	Non-insulin-dependent diabetes mellitus (E11)	2 424	9,0
E12	Malnutrition-related diabetes mellitus (E12)	3	0,0
E13	Other specified diabetes mellitus (E13)	1	0,0
E14	Unspecified diabetes mellitus (E14)	24 213	90,1
	Total	26 879	100,0

Appendix L: Detailed description of the broad-based groups of natural causes of death which were among the ten leading causes, 2018 (continued)

Causes of death (based on ICD-10 Version: 2010)		Number	Percentage
	Hypertensive diseases (I10-I15)		
I10	Essential (primary) hypertension (I10)	10 682	51,9
I11	Hypertensive heart disease (I11)	7 269	35,3
I12	Hypertensive renal disease (I12)	2 085	10,1
I13	Hypertensive heart and renal disease (I13)	538	2,6
I15	Secondary hypertension	2	0,0
	Total	20 574	100,0

	Ischaemic heart diseases (I20-I25)		
I20	Angina pectoris (I20)	87	0,6
I21	Acute myocardial infarction (I21)	10 399	76,5
I22	Subsequent ST elevation (STEMI) and non-ST elevation (NSTEMI) myocardial infarction	1	0,0
I24	Other acute ischaemic heart diseases (I24)	236	1,7
I25	Chronic ischaemic heart disease (I25)	2 875	21,1
	Total	13 598	100,0

	Other forms of heart disease (I30-I52)		
I30	Acute pericarditis (I30)	2	0,0
I31	Other diseases of pericardium (I31)	101	0,4
I33	Acute and subacute endocarditis (I33)	94	0,4
I34	Non-rheumatic mitral valve disorders (I34)	84	0,4
I35	Non-rheumatic aortic valve disorders (I35)	304	1,3
I36	Non-rheumatic tricuspid valve disorders (I36)	5	0,0
I38	Endocarditis, valve unspecified (I38)	227	1,0
I39	Endocarditis, and heart disorders in diseases classified elsewhere (I38)	1	0,0
I40	Acute myocarditis (I40)	21	0,1
I42	Cardiomyopathy (I42)	2 931	12,8
I44	Atrioventricular and left bundle-branch block (I44)	37	0,2
I45	Other conduction disorders (I45)	34	0,1
I46	Cardiac arrest (I46)	7 133	31,1
I47	Paroxysmal tachycardia (I47)	27	0,1
I48	Atrial fibrillation and flutter (I48)	591	2,6
I49	Other cardiac arrhythmias (I49)	279	1,2
I50	Heart failure (I50)	9 976	43,5
I51	Complications and ill-defined descriptions of heart disease (I51)	1 093	4,8
	Total	22 940	100,0

	Cerebrovascular diseases (I60-I69)		
I60	Subarachnoid haemorrhage (I60)	449	2,0
I61	Intracerebral haemorrhage (I61)	1 753	7,6
I62	Other non-traumatic intracranial haemorrhage (I62)	1 017	4,4
I63	Cerebral infarction (I63)	549	2,4
I64	Stroke, not specified as haemorrhage or infection (I64)	18 069	78,6
I67	Other cerebrovascular diseases (I67)	733	3,2
I69	Sequelae of cerebrovascular disease (I69)	427	1,9
	Total	22 997	100,0

Appendix L: Detailed description of the broad-based groups of natural causes of death which were among the ten leading causes, 2018 (concluded)

Causes of death (based on ICD-10 Version: 2010)		Number	Percentage
	Influenza and pneumonia (J09-J18)		
J09	Influenza due to certain identified influenza virus (J09)	15	0,1
J10	Influenza due to other identified influenza virus (J10)	2	0,0
J11	Influenza, virus not identified (J11)	355	2,0
J12	Viral pneumonia, not elsewhere classified (J12)	21	0,1
J13	Pneumonia due to Streptococcus pneumoniae (J13)	6	0,0
J15	Bacterial pneumonia, not elsewhere classified (J15)	119	0,7
J17	Pneumonia in diseases classified elsewhere	1	0,0
J18	Pneumonia, organism unspecified (J18)	17 050	97,0
	Total	17 569	100,0

	Chronic lower respiratory diseases (J40-J47)		
J40	Bronchitis, not specified as acute or chronic (J40)	244	1,8
J41	simple and mucopurulent chronic bronchitis(J41)	1	0,0
J42	Unspecified chronic bronchitis (J42)	199	1,5
J43	Emphysema (J43)	721	5,3
J44	Other chronic obstructive pulmonary disease (J44)	8421	62,0
J45	Asthma (J45)	3029	22,3
J46	Status asthmaticus (J46)	734	5,4
J47	Bronchiectasis (J47)	230	1,7
	Total	13579	100

Appendix M: The ten leading underlying natural causes of death by age and sex: South Africa, 2018

SA, all ages	No	%		SA, Males, all ages	No	%		SA, Females, all ages	No	%
Tuberculosis (A15-A19)	27450	6,0	1	Tuberculosis (A15-A19)	17110	7,2	1	Diabetes mellitus (E10-E14)	16447	7,7
Diabetes mellitus (E10-E14)	26879	5,9	2	Human immunodeficiency virus [HIV] disease (B20-B24)	11004	4,6	2	Cerebrovascular diseases (I60-I69)	13015	6,1
Cerebrovascular diseases (I60-I69)	22997	5,1	3	Other forms of heart disease (I30-I52)	10677	4,5	3	Hypertensive diseases (I10-I15)	12845	6,0
Other forms of heart disease (I30-I52)	22940	5,1	4	Diabetes mellitus (E10-E14)	10404	4,4	4	Other forms of heart disease (I30-I52)	12213	5,7
Human immunodeficiency virus [HIV] disease (B20-B24)	21894	4,8	5	Cerebrovascular diseases (I60-I69)	9944	4,2	5	Human immunodeficiency virus [HIV] disease (B20-B24)	10824	5,1
Hypertensive diseases (I10-I15)	20576	4,5	6	Influenza and pneumonia (J09-J18)	9065	3,8	6	Tuberculosis (A15-A19)	10230	4,8
Influenza and pneumonia (J09-J18)	17569	3,9	7	Chronic lower respiratory diseases (J40-J47)	8168	3,4	7	Influenza and pneumonia (J09-J18)	8442	3,9
Ischaemic heart diseases (I20-I25)	13598	3,0	8	Hypertensive diseases (I10-I15)	7696	3,2	8	Ischaemic heart diseases (I20-I25)	5926	2,8
Chronic lower respiratory diseases (J40-J47)	13579	3,0	9	Ischaemic heart diseases (I20-I25)	7652	3,2	9	Malignant neoplasms of female genital organs (C51-C58)	5862	2,7
Malignant neoplasms of digestive organs (C15-C26)	10808	2,4	10	Malignant neoplasms of digestive organs (C15-C26)	6006	2,5	10	Chronic lower respiratory diseases (J40-J47)	5393	2,5
Other Natural	201564	44,4		Other Natural	99180	41,6		Other Natural	100543	47,0
Non-natural	54160	11,9		Non-natural	41637	17,5		Non-natural	12062	5,6
All causes	454014	100,0		All causes	238543	100,0		All causes	213802	100,0
SA, 0	No	%		SA, Males, 0	No	%		SA, Females, 0	No	%
Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	2901	14,4	1				1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	1250	13,7
Influenza and pneumonia (J09-J18)	1539	7,6	2				2	Influenza and pneumonia (J09-J18)	743	8,1
Intestinal infectious diseases (A00-A09)	1455	7,2	3				3	Intestinal infectious diseases (A00-A09)	686	7,5
Disorders related to length of gestation and fetal growth (P05-P08)	1074	5,3	4				4	Disorders related to length of gestation and fetal growth (P05-P08)	495	5,4
Other disorders originating in the perinatal period (P90-P96)	1046	5,2	5				5	Other disorders originating in the perinatal period (P90-P96)	436	4,8
Infections specific to the perinatal period (P35-P39)	981	4,9	6				6	Infections specific to the perinatal period (P35-P39)	427	4,7
Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	861	4,3	7				7	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	383	4,2
Congenital malformations of the circulatory system (Q20-Q28)	668	3,3	8				8	Congenital malformations of the circulatory system (Q20-Q28)	317	3,5
Malnutrition (E40-E46)	448	2,2	9				9	Malnutrition (E40-E46)	196	2,1
Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	445	2,2	10				10	Other congenital malformations (Q80-Q89)	182	2,0
Other Natural	7977	39,6						Other Natural	3678	40,2
Non-natural	761	3,8						Non-natural	351	3,8
All causes	20156	100,0		All causes	0	100,0		All causes	9144	100,0

Appendix M: The ten leading underlying natural causes of death by age and sex: South Africa, 2018 (Continued)

	SA, 1-14	No	%		SA, Male,1-14	No	%		SA ,Female, 1-14	No	%
1	Influenza and pneumonia (J09-J18)	818	6,8	1	Influenza and pneumonia (J09-J18)	420	6,3	1	Influenza and pneumonia (J09-J18)	394	7,3
2	Intestinal infectious diseases (A00-A09)	726	6,0	2	Intestinal infectious diseases (A00-A09)	383	5,7	2	Intestinal infectious diseases (A00-A09)	339	6,3
3	Tuberculosis (A15-A19)	403	3,3	3	Cerebral palsy and other paralytic syndromes (G80-G83)	220	3,3	3	Tuberculosis (A15-A19)	193	3,6
4	Other forms of heart disease (I30-I52)	354	2,9	4	Tuberculosis (A15-A19)	209	3,1	4	Other forms of heart disease (I30-I52)	188	3,5
5	Cerebral palsy and other paralytic syndromes (G80-G83)	348	2,9	5	Malnutrition (E40-E46)	189	2,8	5	Malnutrition (E40-E46)	149	2,8
6	Malnutrition (E40-E46)	342	2,8	6	Other forms of heart disease (I30-I52)	164	2,5	6	Human immunodeficiency virus [HIV] disease (B20-B24)	133	2,5
7	Human immunodeficiency virus [HIV] disease (B20-B24)	266	2,2	7	Human immunodeficiency virus [HIV] disease (B20-B24)	133	2,0	7	Cerebral palsy and other paralytic syndromes (G80-G83)	128	2,4
8	Episodic and paroxysmal disorders (G40-G47)	195	1,6	8	Episodic and paroxysmal disorders (G40-G47)	102	1,5	8	Episodic and paroxysmal disorders (G40-G47)	92	1,7
9	Inflammatory diseases of the central nervous system (G00-G09)	167	1,4	9	Malignant neoplasms, stated or presumed to be primary, of lymphoid, haematopoietic and related tissue (C81-C96)	93	1,4	9	Other viral diseases (B25-B34)	86	1,6
10	Other bacterial diseases (A30-A49)	167	1,4	10	Congenital malformations of the circulatory system (Q20-Q28)	89	1,3	10	Other bacterial diseases (A30-A49)	85	1,6
	Other Natural	4753	39,3		Other Natural	2486	37,2		Other Natural	2231	41,5
	Non-natural	3559	29,4		Non-natural	2188	32,8		Non-natural	1364	25,3
	All causes	12098	100,0		All causes	6676	100,0		All causes	5382	100,0
	SA, 15-44	No	%		SA, Male, 15-44	No	%		SA, Female,15-44	No	%
1	Tuberculosis (A15-A19)	13141	10,9	1	Tuberculosis (A15-A19)	7617	10,5	1	Human immunodeficiency virus [HIV] disease (B20-B24)	6755	14,0
2	Human immunodeficiency virus [HIV] disease (B20-B24)	12941	10,7	2	Human immunodeficiency virus [HIV] disease (B20-B24)	6144	8,5	2	Tuberculosis (A15-A19)	5474	11,4
3	Other viral diseases (B25-B34)	5761	4,8	3	Other viral diseases (B25-B34)	2584	3,6	3	Other viral diseases (B25-B34)	3152	6,6
4	Influenza and pneumonia (J09-J18)	4034	3,3	4	Influenza and pneumonia (J09-J18)	2047	2,8	4	Influenza and pneumonia (J09-J18)	1971	4,1
5	Certain disorders involving the immune mechanism (D80-D89)	3595	3,0	5	Other forms of heart disease (I30-I52)	1795	2,5	5	Certain disorders involving the immune mechanism (D80-D89)	1860	3,9
6	Other forms of heart disease (I30-I52)	3317	2,7	6	Certain disorders involving the immune mechanism (D80-D89)	1724	2,4	6	Other forms of heart disease (I30-I52)	1508	3,1
7	Cerebrovascular diseases (I60-I69)	1749	1,4	7	Cerebrovascular diseases (I60-I69)	944	1,3	7	Malignant neoplasms of female genital organs (C51-C58)	1336	2,8
8	Renal failure (N17-N19)	1567	1,3	8	Episodic and paroxysmal disorders (G40-G47)	829	1,1	8	Cerebrovascular diseases (I60-I69)	798	1,7
9	Diabetes mellitus (E10-E14)	1451	1,2	9	Renal failure (N17-N19)	825	1,1	9	Diabetes mellitus (E10-E14)	784	1,6
10	Malignant neoplasms of female genital organs (C51-C58)	1338	1,1	10	Inflammatory diseases of the central nervous system (G00-G09)	695	1,0	10	Renal failure (N17-N19)	732	1,5
	Other Natural	37705	31,1		Non-natural	28584	39,5		Other Natural	18014	37,4
	Non-natural	34504	28,5		Other Natural	18668	25,8		Non-natural	5738	11,9
	All causes	121103	100,0		All causes	72456	100,0		All causes	48122	100,0

Appendix M: The ten leading underlying natural causes of death by age and sex: South Africa, 2018 (concluded)

	SA, 45-64	No	%		SA, Male,45-64	No	%		SA, Female,45-64	No	%
1	Tuberculosis (A15-A19)	9690	7,4	1	Tuberculosis (A15-A19)	6726	8,9	1	Diabetes mellitus (E10-E14)	5568	10,1
2	Diabetes mellitus (E10-E14)	9661	7,4	2	Human immunodeficiency virus [HIV] disease (B20-B24)	4098	5,4	2	Human immunodeficiency virus [HIV] disease (B20-B24)	3304	6,0
3	Human immunodeficiency virus [HIV] disease (B20-B24)	7418	5,7	3	Diabetes mellitus (E10-E14)	4084	5,4	3	Tuberculosis (A15-A19)	2935	5,3
4	Cerebrovascular diseases (I60-I69)	6502	5,0	4	Other forms of heart disease (I30-I52)	3615	4,8	4	Cerebrovascular diseases (I60-I69)	2923	5,3
5	Other forms of heart disease (I30-I52)	6403	4,9	5	Cerebrovascular diseases (I60-I69)	3570	4,7	5	Hypertensive diseases (I10-I15)	2796	5,1
6	Hypertensive diseases (I10-I15)	5314	4,1	6	Chronic lower respiratory diseases (J40-J47)	3125	4,2	6	Other forms of heart disease (I30-I52)	2782	5,1
7	Influenza and pneumonia (J09-J18)	4712	3,6	7	Ischaemic heart diseases (I20-I25)	2945	3,9	7	Malignant neoplasms of female genital organs (C51-C58)	2598	4,7
8	Chronic lower respiratory diseases (J40-J47)	4609	3,5	8	Influenza and pneumonia (J09-J18)	2894	3,8	8	Influenza and pneumonia (J09-J18)	1806	3,3
9	Malignant neoplasms of digestive organs (C15-C26)	4393	3,4	9	Malignant neoplasms of digestive organs (C15-C26)	2672	3,6	9	Malignant neoplasms of digestive organs (C15-C26)	1711	3,1
10	Ischaemic heart diseases (I20-I25)	4391	3,4	10	Hypertensive diseases (I10-I15)	2509	3,3	10	Other viral diseases (B25-B34)	1696	3,1
	Other Natural	57366	44		Other Natural	31512	41,9		Other Natural	24359	44,4
	Non-natural	9899	7,6		Non-natural	7490	10		Non-natural	2387	4,4
	All causes	130358	100,0		All causes	75240	100,0		All causes	54865	100,0
	SA, 65+	No	%		SA, Male, 65+	No	%		SA, Female, 65+	No	%
1	Diabetes mellitus (E10-E14)	15707	9,3	1	Diabetes mellitus (E10-E14)	5638	7,8	1	Diabetes mellitus (E10-E14)	10052	10,5
2	Cerebrovascular diseases (I60-I69)	14641	8,7	2	Cerebrovascular diseases (I60-I69)	5370	7,4	2	Hypertensive diseases (I10-I15)	9513	9,9
3	Hypertensive diseases (I10-I15)	14233	8,4	3	Other forms of heart disease (I30-I52)	4987	6,9	3	Cerebrovascular diseases (I60-I69)	9253	9,6
4	Other forms of heart disease (I30-I52)	12638	7,5	4	Hypertensive diseases (I10-I15)	4698	6,5	4	Other forms of heart disease (I30-I52)	7630	7,9
5	Ischaemic heart diseases (I20-I25)	8095	4,8	5	Chronic lower respiratory diseases (J40-J47)	4400	6,1	5	Ischaemic heart diseases (I20-I25)	4097	4,3
6	Chronic lower respiratory diseases (J40-J47)	7799	4,6	6	Ischaemic heart diseases (I20-I25)	3993	5,5	6	Influenza and pneumonia (J09-J18)	3520	3,7
7	Influenza and pneumonia (J09-J18)	6419	3,8	7	Malignant neoplasms of male genital organs (C60-C63)	2925	4	7	Chronic lower respiratory diseases (J40-J47)	3393	3,5
8	Malignant neoplasms of digestive organs (C15-C26)	5398	3,2	8	Influenza and pneumonia (J09-J18)	2890	4	8	Malignant neoplasms of digestive organs (C15-C26)	2637	2,7
9	Tuberculosis (A15-A19)	3994	2,4	9	Malignant neoplasms of digestive organs (C15-C26)	2755	3,8	9	Renal failure (N17-N19)	2011	2,1
10	Renal failure (N17-N19)	3800	2,2	10	Tuberculosis (A15-A19)	2434	3,4	10	Malignant neoplasms of female genital organs (C51-C58)	1924	2
	Other Natural	71484	42,3		Other Natural	29947	41,2		Other Natural	39924	41,5
	Non-natural	4773	2,8		Non-natural	2579	3,6		Non-natural	2180	2,3
	All causes	168981	100,0		All causes	72616	100,0		All causes	96134	100,0

Appendix M1: The ten leading underlying natural causes of death by age and sex: Western Cape, 2018

Western Cape, all ages		No	%	Western Cape,Males, all ages		No	%	Western Cape,Females, all ages		No	%
1	Diabetes mellitus (E10-E14)	3699	7,6	1	Ischaemic heart diseases (I20-I25)	1646	6,2	1	Diabetes mellitus (E10-E14)	2149	9,9
2	Ischaemic heart diseases (I20-I25)	2941	6,1	2	Diabetes mellitus (E10-E14)	1544	5,8	2	Cerebrovascular diseases (I60-I69)	1573	7,2
3	Cerebrovascular diseases (I60-I69)	2853	5,9	3	Tuberculosis (A15-A19)	1505	5,7	3	Human immunodeficiency virus [HIV] disease (B20-B24)	1359	6,2
4	Human immunodeficiency virus [HIV] disease (B20-B24)	2757	5,7	4	Chronic lower respiratory diseases (J40-J47)	1445	5,5	4	Ischaemic heart diseases (I20-I25)	1293	5,9
5	Chronic lower respiratory diseases (J40-J47)	2469	5,1	5	Human immunodeficiency virus [HIV] disease (B20-B24)	1384	5,2	5	Hypertensive diseases (I10-I15)	1143	5,3
6	Tuberculosis (A15-A19)	2393	4,9	6	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	1375	5,2	6	Chronic lower respiratory diseases (J40-J47)	1021	4,7
7	Malignant neoplasms of digestive organs (C15-C26)	2174	4,5	7	Cerebrovascular diseases (I60-I69)	1275	4,8	7	Malignant neoplasms of digestive organs (C15-C26)	1003	4,6
8	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	2156	4,5	8	Malignant neoplasms of digestive organs (C15-C26)	1168	4,4	8	Tuberculosis (A15-A19)	878	4,0
9	Hypertensive diseases (I10-I15)	1845	3,8	9	Other forms of heart disease (I30-I52)	751	2,8	9	Other forms of heart disease (I30-I52)	830	3,8
10	Other forms of heart disease (I30-I52)	1585	3,3	10	Hypertensive diseases (I10-I15)	701	2,6	10	Malignant neoplasms of breast (C50)	796	3,7
	Other Natural	17228	35,6		Other Natural	8544	32,2		Other Natural	8620	39,6
	Non-natural	6276	13,0		Non-natural	5164	19,5		Non-natural	1087	5,0
	All causes	48376	100,0		All causes	26502	100,0		All causes	21752	100,0
Western Cape, 0		No	%	Western Cape, Males,0		No	%	Western Cape,Females, 0		No	%
1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	210	12,8	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	118	14,0	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	90	11,6
2	Disorders related to length of gestation and fetal growth (P05-P08)	155	9,4	2	Disorders related to length of gestation and fetal growth (P05-P08)	81	9,6	2	Disorders related to length of gestation and fetal growth (P05-P08)	71	9,1
3	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	112	6,8	3	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	65	7,7	3	Influenza and pneumonia (J09-J18)	53	6,8
4	Other disorders originating in the perinatal period (P90-P96)	87	5,3	4	Other disorders originating in the perinatal period (P90-P96)	47	5,6	4	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	46	5,9
5	Influenza and pneumonia (J09-J18)	85	5,2	5	Congenital malformations of the circulatory system (Q20-Q28)	44	5,2	5	Congenital malformations of the circulatory system (Q20-Q28)	39	5,0
6	Congenital malformations of the circulatory system (Q20-Q28)	84	5,1	6	Influenza and pneumonia (J09-J18)	32	3,8	6	Intestinal infectious diseases (A00-A09)	39	5,0
7	Intestinal infectious diseases (A00-A09)	69	4,2	7	Infections specific to the perinatal period (P35-P39)	30	3,6	7	Other disorders originating in the perinatal period (P90-P96)	39	5,0
8	Other acute lower respiratory infections (J20-J22)	66	4,0	8	Intestinal infectious diseases (A00-A09)	29	3,4	8	Other acute lower respiratory infections (J20-J22)	38	4,9
9	Infections specific to the perinatal period (P35-P39)	59	3,6	9	Other acute lower respiratory infections (J20-J22)	28	3,3	9	Infections specific to the perinatal period (P35-P39)	29	3,7
10	Digestive system disorders of fetus and newborn (P75-P78)	50	3,0	10	Digestive system disorders of fetus and newborn (P75-P78)	22	2,6	10	Digestive system disorders of fetus and newborn (P75-P78)	27	3,5
	Other Natural	629	38,3		Other Natural	328	38,9		Other Natural	292	37,5
	Non-natural	37	2,3		Non-natural	20	2,4		Non-natural	16	2,1
	All causes	1643	100,0		All causes	844	100,0		All causes	779	100,0

Appendix M1: The ten leading underlying natural causes of death by age and sex: Western Cape, 2018 (continued)

Western Cape, 1-14				Western Cape, Male, 1-14				Western Cape, Female, 1-14			
	No	%		No	%		No	%		No	%
1	Cerebral palsy and other paralytic syndromes (G80-G83)	51	7,3	1	Cerebral palsy and other paralytic syndromes (G80-G83)	33	7,8	1	Cerebral palsy and other paralytic syndromes (G80-G83)	18	6,5
2	Influenza and pneumonia (J09-J18)	24	3,4	2	Influenza and pneumonia (J09-J18)	14	3,3	2	Malignant neoplasms, stated or presumed to be primary, of lymphoid, haematopoietic and related tissue (C81-C96)	11	4,0
3	Tuberculosis (A15-A19)	21	3,0	3	Tuberculosis (A15-A19)	12	2,8	3	Other forms of heart disease (I30-I52)	11	4,0
4	Malignant neoplasms, stated or presumed to be primary, of lymphoid, haematopoietic and related tissue (C81-C96)	21	3,0	4	Congenital malformations of the circulatory system (Q20-Q28)	12	2,8	4	Influenza and pneumonia (J09-J18)	10	3,6
5	Congenital malformations of the circulatory system (Q20-Q28)	18	2,6	5	Intestinal infectious diseases (A00-A09)	11	2,6	5	Tuberculosis (A15-A19)	9	3,2
6	Intestinal infectious diseases (A00-A09)	17	2,4	6	Malignant neoplasms, stated or presumed to be primary, of lymphoid, haematopoietic and related tissue (C81-C96)	10	2,4	6	Episodic and paroxysmal disorders (G40-G47)	6	2,2
7	Other forms of heart disease (I30-I52)	16	2,3	7	Malignant neoplasms of eye, brain and other parts of central nervous system (C69-C72)	6	1,4	7	Inflammatory diseases of the central nervous system (G00-G09)	6	2,2
8	Inflammatory diseases of the central nervous system (G00-G09)	10	1,4	8	Other disorders of the nervous system (G90-G99)	5	1,2	8	Congenital malformations of the circulatory system (Q20-Q28)	6	2,2
9	Malignant neoplasms of eye, brain and other parts of central nervous system (C69-C72)	10	1,4	9	Diseases of liver (K70-K77)	5	1,2	9	Intestinal infectious diseases (A00-A09)	6	2,2
10	Episodic and paroxysmal disorders (G40-G47)	9	1,3	10	Other forms of heart disease (I30-I52)	5	1,2	10	Malignant neoplasms of ill-defined, secondary and unspecified sites (C76-C80)	6	2,2
	Non-natural	280	39,8		Non-natural	194	45,9		Other Natural	105	37,8
	Other Natural	226	32,1		Other Natural	116	27,4		Non-natural	84	30,2
	All causes	703	100,0		All causes	423	100,0		All causes	278	100,0
Western Cape, 15-44				Western Cape, Male, 15-44				Western Cape, Female, 15-44			
	No	%		No	%		No	%		No	%
1	Human immunodeficiency virus [HIV] disease (B20-B24)	1785	15,7	1	Human immunodeficiency virus [HIV] disease (B20-B24)	819	11	1	Human immunodeficiency virus [HIV] disease (B20-B24)	957	24,8
2	Tuberculosis (A15-A19)	1112	9,8	2	Tuberculosis (A15-A19)	659	8,9	2	Tuberculosis (A15-A19)	448	11,6
3	Other viral diseases (B25-B34)	191	1,7	3	Other forms of heart disease (I30-I52)	118	1,6	3	Malignant neoplasms of breast (C50)	115	3
4	Cerebrovascular diseases (I60-I69)	184	1,6	4	Ischaemic heart diseases (I20-I25)	101	1,4	4	Other viral diseases (B25-B34)	112	2,9
5	Other forms of heart disease (I30-I52)	182	1,6	5	Cerebrovascular diseases (I60-I69)	99	1,3	5	Malignant neoplasms of female genital organs (C51-C58)	94	2,4
6	Ischaemic heart diseases (I20-I25)	153	1,3	6	Other viral diseases (B25-B34)	79	1,1	6	Cerebrovascular diseases (I60-I69)	84	2,2
7	Diabetes mellitus (E10-E14)	153	1,3	7	Diabetes mellitus (E10-E14)	77	1	7	Diabetes mellitus (E10-E14)	76	2
8	Malignant neoplasms of digestive organs (C15-C26)	132	1,2	8	Malignant neoplasms of digestive organs (C15-C26)	75	1	8	Certain disorders involving the immune mechanism (D80-D89)	71	1,8
9	Chronic lower respiratory diseases (J40-J47)	129	1,1	9	Chronic lower respiratory diseases (J40-J47)	74	1	9	Other forms of heart disease (I30-I52)	63	1,6
10	Influenza and pneumonia (J09-J18)	121	1,1	10	Episodic and paroxysmal disorders (G40-G47)	69	0,9	10	Malignant neoplasms of digestive organs (C15-C26)	57	1,5
	Non-natural	4358	38,4		Non-natural	3816	51,3		Other Natural	1248	32,4
	Other Natural	2838	25		Other Natural	1457	19,6		Non-natural	528	13,7
	All causes	11338	100,0		All causes	7443	100,0		All causes	3853	100,0

Appendix M1: The ten leading underlying natural causes of death by age and sex: Western Cape, 2018 (concluded)

Western Cape, 45-64				Western Cape, Male, 45-64				Western Cape, Female, 45-64			
		No	%		No	%		No	%		
1	Diabetes mellitus (E10-E14)	1386	9,4	1	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	689	7,9	1	Diabetes mellitus (E10-E14)	751	12,5
2	Chronic lower respiratory diseases (J40-J47)	996	6,8	2	Tuberculosis (A15-A19)	657	7,6	2	Cerebrovascular diseases (I60-I69)	358	5,9
3	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	994	6,8	3	Chronic lower respiratory diseases (J40-J47)	650	7,5	3	Human immunodeficiency virus [HIV] disease (B20-B24)	350	5,8
4	Tuberculosis (A15-A19)	960	6,5	4	Ischaemic heart diseases (I20-I25)	650	7,5	4	Malignant neoplasms of digestive organs (C15-C26)	349	5,8
5	Ischaemic heart diseases (I20-I25)	953	6,5	5	Diabetes mellitus (E10-E14)	632	7,3	5	Chronic lower respiratory diseases (J40-J47)	344	5,7
6	Human immunodeficiency virus [HIV] disease (B20-B24)	858	5,8	6	Human immunodeficiency virus [HIV] disease (B20-B24)	503	5,8	6	Malignant neoplasms of breast (C50)	339	5,6
7	Malignant neoplasms of digestive organs (C15-C26)	852	5,8	7	Malignant neoplasms of digestive organs (C15-C26)	501	5,8	7	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	305	5,1
8	Cerebrovascular diseases (I60-I69)	827	5,6	8	Cerebrovascular diseases (I60-I69)	467	5,4	8	Ischaemic heart diseases (I20-I25)	302	5
9	Hypertensive diseases (I10-I15)	492	3,3	9	Hypertensive diseases (I10-I15)	241	2,8	9	Tuberculosis (A15-A19)	301	5
10	Other forms of heart disease (I30-I52)	399	2,7	10	Other forms of heart disease (I30-I52)	235	2,7	10	Hypertensive diseases (I10-I15)	251	4,2
	Other Natural	4946	33,6		Other Natural	2629	30,3		Other Natural	2139	35,5
	Non-natural	1061	7,2		Non-natural	816	9,4		Non-natural	242	4
	All causes	14724	100,0		All causes	8670	100,0		All causes	6031	100,0
Western Cape, 65+				Western Cape, Male, 65+				Western Cape, Female, 65+			
		No	%		No	%		No	%		
1	Diabetes mellitus (E10-E14)	2160	10,9	1	Ischaemic heart diseases (I20-I25)	891	9,8	1	Diabetes mellitus (E10-E14)	1322	12,2
2	Cerebrovascular diseases (I60-I69)	1833	9,2	2	Diabetes mellitus (E10-E14)	835	9,2	2	Cerebrovascular diseases (I60-I69)	1131	10,5
3	Ischaemic heart diseases (I20-I25)	1829	9,2	3	Chronic lower respiratory diseases (J40-J47)	717	7,9	3	Ischaemic heart diseases (I20-I25)	938	8,7
4	Chronic lower respiratory diseases (J40-J47)	1336	6,7	4	Cerebrovascular diseases (I60-I69)	700	7,7	4	Hypertensive diseases (I10-I15)	845	7,8
5	Hypertensive diseases (I10-I15)	1242	6,2	5	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	618	6,8	5	Chronic lower respiratory diseases (J40-J47)	618	5,7
6	Malignant neoplasms of digestive organs (C15-C26)	1188	6	6	Malignant neoplasms of digestive organs (C15-C26)	592	6,5	6	Malignant neoplasms of digestive organs (C15-C26)	595	5,5
7	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	1062	5,3	7	Malignant neoplasms of male genital organs (C60-C63)	507	5,6	7	Other forms of heart disease (I30-I52)	590	5,5
8	Other forms of heart disease (I30-I52)	982	4,9	8	Hypertensive diseases (I10-I15)	396	4,4	8	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	438	4,1
9	Malignant neoplasms of male genital organs (C60-C63)	507	2,5	9	Other forms of heart disease (I30-I52)	390	4,3	9	Malignant neoplasms of breast (C50)	342	3,2
10	Influenza and pneumonia (J09-J18)	486	2,4	10	Influenza and pneumonia (J09-J18)	210	2,3	10	Organic, including symptomatic, mental disorders (F00-F09)	278	2,6
	Other Natural	6756	34		Other Natural	2917	32,2		Other Natural	3488	32,3
	Non-natural	513	2,6		Non-natural	295	3,3		Non-natural	217	2,0
	All causes	19894	100,0		All causes	9068	100,0		All causes	10802	100,0

Appendix M2: The ten leading underlying natural causes of death by age and sex: Eastern Cape, 2018

Eastern Cape, all ages		No	%		Eastern Cape,Males, all ages		No	%		Eastern Cape, Females, all ages		No	%
1	Tuberculosis (A15-A19)	5454	8,1	1	Tuberculosis (A15-A19)	3380	9,6	1	Diabetes mellitus (E10-E14)	2509	7,9		
2	Human immunodeficiency virus [HIV] disease (B20-B24)	3991	5,9	2	Human immunodeficiency virus [HIV] disease (B20-B24)	1959	5,5	2	Tuberculosis (A15-A19)	2064	6,5		
3	Diabetes mellitus (E10-E14)	3905	5,8	3	Chronic lower respiratory diseases (J40-J47)	1703	4,8	3	Hypertensive diseases (I10-I15)	2057	6,5		
4	Cerebrovascular diseases (I60-I69)	3315	4,9	4	Cerebrovascular diseases (I60-I69)	1420	4	4	Human immunodeficiency virus [HIV] disease (B20-B24)	2028	6,4		
5	Hypertensive diseases (I10-I15)	3166	4,7	5	Diabetes mellitus (E10-E14)	1394	3,9	5	Cerebrovascular diseases (I60-I69)	1894	6		
6	Chronic lower respiratory diseases (J40-J47)	2914	4,3	6	Other forms of heart disease (I30-I52)	1169	3,3	6	Other forms of heart disease (I30-I52)	1404	4,4		
7	Other forms of heart disease (I30-I52)	2577	3,8	7	Hypertensive diseases (I10-I15)	1107	3,1	7	Chronic lower respiratory diseases (J40-J47)	1207	3,8		
8	Influenza and pneumonia (J09-J18)	1874	2,8	8	Influenza and pneumonia (J09-J18)	970	2,7	8	Influenza and pneumonia (J09-J18)	900	2,8		
9	Malignant neoplasms of digestive organs (C15-C26)	1676	2,5	9	Malignant neoplasms of digestive organs (C15-C26)	907	2,6	9	Other viral diseases (B25-B34)	770	2,4		
10	Other viral diseases (B25-B34)	1392	2,1	10	Ischaemic heart diseases (I20-I25)	659	1,9	10	Malignant neoplasms of digestive organs (C15-C26)	766	2,4		
	Other Natural	28765	42,9		Other Natural	14380	40,7		Other Natural	14270	45,1		
	Non-natural	8090	12,1		Non-natural	6279	17,8		Non-natural	1794	5,7		
	All causes	67119	100,0		All causes	35327	100,0		All causes	31663	100,0		
Eastern Cape, 0		No	%		Eastern Cape, Males,0		No	%		Eastern Cape, females, 0		No	%
1	Influenza and pneumonia (J09-J18)	169	10	1	Influenza and pneumonia (J09-J18)	95	10,5	1	Influenza and pneumonia (J09-J18)	74	9,5		
2	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	128	7,6	2	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	70	7,7	2	Intestinal infectious diseases (A00-A09)	62	8		
3	Intestinal infectious diseases (A00-A09)	125	7,4	3	Intestinal infectious diseases (A00-A09)	62	6,9	3	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	56	7,2		
4	Other disorders originating in the perinatal period (P90-P96)	70	4,1	4	Other disorders originating in the perinatal period (P90-P96)	43	4,8	4	Other disorders originating in the perinatal period (P90-P96)	27	3,5		
5	Congenital malformations of the circulatory system (Q20-Q28)	64	3,8	5	Congenital malformations of the circulatory system (Q20-Q28)	39	4,3	5	Congenital malformations of the circulatory system (Q20-Q28)	24	3,1		
6	Malnutrition (E40-E46)	60	3,5	6	Malnutrition (E40-E46)	37	4,1	6	Malnutrition (E40-E46)	23	3		
7	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	40	2,4	7	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	23	2,5	7	Disorders related to length of gestation and fetal growth (P05-P08)	22	2,8		
8	Disorders related to length of gestation and fetal growth (P05-P08)	40	2,4	8	Other bacterial diseases (A30-A49)	19	2,1	8	Infections specific to the perinatal period (P35-P39)	18	2,3		
9	Infections specific to the perinatal period (P35-P39)	33	2	9	Other acute lower respiratory infections (J20-J22)	19	2,1	9	Tuberculosis (A15-A19)	16	2,1		
10	Tuberculosis (A15-A19)	29	1,7	10	Disorders related to length of gestation and fetal growth (P05-P08)	17	1,9	10	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	16	2,1		
	Other Natural	813	48,1		Other Natural	424	46,9		Other Natural	376	48,4		
	Non-natural	120	7,1		Non-natural	57	6,3		Non-natural	63	8,1		
	All causes	1691	100,0		All causes	905	100,0		All causes	777	100,0		

Appendix M2: The ten leading underlying natural causes of death by age and sex: Eastern Cape, 2018 (Continued)

Eastern Cape 1-14				Eastern Cape, Male, 1-14				Eastern Cape, Female, 1-14			
	No	%		No	%		No	%		No	%
1	Influenza and pneumonia (J09-J18)	81	4,6	1	Intestinal infectious diseases (A00-A09)	43	4,3	1	Influenza and pneumonia (J09-J18)	44	5,7
2	Intestinal infectious diseases (A00-A09)	73	4,1	2	Influenza and pneumonia (J09-J18)	37	3,7	2	Tuberculosis (A15-A19)	34	4,4
3	Tuberculosis (A15-A19)	69	3,9	3	Tuberculosis (A15-A19)	35	3,5	3	Intestinal infectious diseases (A00-A09)	30	3,9
4	Other forms of heart disease (I30-I52)	45	2,5	4	Malnutrition (E40-E46)	26	2,6	4	Human immunodeficiency virus [HIV] disease (B20-B24)	23	3
5	Human immunodeficiency virus [HIV] disease (B20-B24)	43	2,4	5	Other forms of heart disease (I30-I52)	24	2,4	5	Other forms of heart disease (I30-I52)	21	2,7
6	Malnutrition (E40-E46)	41	2,3	6	Cerebral palsy and other paralytic syndromes (G80-G83)	23	2,3	6	Episodic and paroxysmal disorders (G40-G47)	17	2,2
7	Cerebral palsy and other paralytic syndromes (G80-G83)	40	2,3	7	Human immunodeficiency virus [HIV] disease (B20-B24)	20	2	7	Cerebral palsy and other paralytic syndromes (G80-G83)	17	2,2
8	Episodic and paroxysmal disorders (G40-G47)	32	1,8	8	Episodic and paroxysmal disorders (G40-G47)	15	1,5	8	Malnutrition (E40-E46)	14	1,8
9	Inflammatory diseases of the central nervous system (G00-G09)	23	1,3	9	Congenital malformations of the circulatory system (Q20-Q28)	11	1,1	9	Inflammatory diseases of the central nervous system (G00-G09)	13	1,7
10	Chronic lower respiratory diseases (J40-J47)	20	1,1	10	Inflammatory diseases of the central nervous system (G00-G09)	10	1	10	Chronic lower respiratory diseases (J40-J47)	12	1,5
	Other Natural	729	41,1		Non-natural	375	37,8		Other Natural	351	45,2
	Non-natural	577	32,5		Other Natural	372	37,5		Non-natural	200	25,8
	All causes	1773	100,0		All causes	991	100,0		All causes	776	100,0
Eastern Cape, 15-44				Eastern Cape, Male, 15-44				Eastern Cape, Female, 15-44			
	No	%		No	%		No	%		No	%
1	Human immunodeficiency virus [HIV] disease (B20-B24)	2428	13,4	1	Tuberculosis (A15-A19)	1326	12,1	1	Human immunodeficiency virus [HIV] disease (B20-B24)	1310	18,6
2	Tuberculosis (A15-A19)	2288	12,7	2	Human immunodeficiency virus [HIV] disease (B20-B24)	1115	10,2	2	Tuberculosis (A15-A19)	955	13,5
3	Other viral diseases (B25-B34)	807	4,5	3	Other viral diseases (B25-B34)	333	3	3	Other viral diseases (B25-B34)	469	6,7
4	Certain disorders involving the immune mechanism (D80-D89)	529	2,9	4	Certain disorders involving the immune mechanism (D80-D89)	263	2,4	4	Certain disorders involving the immune mechanism (D80-D89)	265	3,8
5	Influenza and pneumonia (J09-J18)	346	1,9	5	Episodic and paroxysmal disorders (G40-G47)	189	1,7	5	Other forms of heart disease (I30-I52)	166	2,4
6	Other forms of heart disease (I30-I52)	323	1,8	6	Influenza and pneumonia (J09-J18)	183	1,7	6	Influenza and pneumonia (J09-J18)	163	2,3
7	Episodic and paroxysmal disorders (G40-G47)	288	1,6	7	Other forms of heart disease (I30-I52)	155	1,4	7	Malignant neoplasms of female genital organs (C51-C58)	122	1,7
8	Chronic lower respiratory diseases (J40-J47)	224	1,2	8	Chronic lower respiratory diseases (J40-J47)	133	1,2	8	Diabetes mellitus (E10-E14)	109	1,5
9	Cerebrovascular diseases (I60-I69)	212	1,2	9	Cerebrovascular diseases (I60-I69)	122	1,1	9	Episodic and paroxysmal disorders (G40-G47)	97	1,4
10	Renal failure (N17-N19)	181	1	10	Inflammatory diseases of the central nervous system (G00-G09)	97	0,9	10	Renal failure (N17-N19)	94	1,3
	Other Natural	5330	29,5		Non-natural	4307	39,3		Other Natural	2506	35,5
	Non-natural	5112	28,3		Other Natural	2741	25		Non-natural	796	11,3
	All causes	18068	100,0		All causes	10964	100,0		All causes	7052	100,0

Appendix M2: The ten leading underlying natural causes of death by age and sex: Eastern Cape, 2018 (concluded)

Eastern Cape, 45-64				Eastern Cape, Male, 45-64				Eastern Cape, Female, 45-64			
	No	%		No	%		No	%			
1	Tuberculosis (A15-A19)	1861	9,6	1	Tuberculosis (A15-A19)	1304	11,5	1	Diabetes mellitus (E10-E14)	878	10,9
2	Diabetes mellitus (E10-E14)	1400	7,2	2	Human immunodeficiency virus [HIV] disease (B20-B24)	709	6,3	2	Human immunodeficiency virus [HIV] disease (B20-B24)	609	7,6
3	Human immunodeficiency virus [HIV] disease (B20-B24)	1319	6,8	3	Chronic lower respiratory diseases (J40-J47)	610	5,4	3	Tuberculosis (A15-A19)	554	6,9
4	Cerebrovascular diseases (I60-I69)	982	5,1	4	Diabetes mellitus (E10-E14)	522	4,6	4	Hypertensive diseases (I10-I15)	482	6
5	Chronic lower respiratory diseases (J40-J47)	913	4,7	5	Cerebrovascular diseases (I60-I69)	507	4,5	5	Cerebrovascular diseases (I60-I69)	475	5,9
6	Hypertensive diseases (I10-I15)	821	4,2	6	Other forms of heart disease (I30-I52)	421	3,7	6	Other forms of heart disease (I30-I52)	304	3,8
7	Other forms of heart disease (I30-I52)	726	3,7	7	Malignant neoplasms of digestive organs (C15-C26)	383	3,4	7	Chronic lower respiratory diseases (J40-J47)	301	3,7
8	Malignant neoplasms of digestive organs (C15-C26)	643	3,3	8	Hypertensive diseases (I10-I15)	338	3	8	Malignant neoplasms of female genital organs (C51-C58)	291	3,6
9	Influenza and pneumonia (J09-J18)	491	2,5	9	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	311	2,8	9	Malignant neoplasms of digestive organs (C15-C26)	259	3,2
10	Other viral diseases (B25-B34)	474	2,4	10	Influenza and pneumonia (J09-J18)	307	2,7	10	Other viral diseases (B25-B34)	255	3,2
	Other Natural	8249	42,5		Other Natural	4771	42,2		Other Natural	3261	40,5
	Non-natural	1513	7,8		Non-natural	1125	9,9		Non-natural	386	4,8
	All causes	19392	100,0		All causes	11308	100,0		All causes	8055	100,0
Eastern Cape, 65+				Eastern Cape, Male, 65+				Eastern Cape, Female, 65+			
	No	%		No	%		No	%			
1	Diabetes mellitus (E10-E14)	2317	8,9	1	Chronic lower respiratory diseases (J40-J47)	946	8,5	1	Diabetes mellitus (E10-E14)	1512	10,1
2	Hypertensive diseases (I10-I15)	2225	8,5	2	Diabetes mellitus (E10-E14)	803	7,2	2	Hypertensive diseases (I10-I15)	1506	10
3	Cerebrovascular diseases (I60-I69)	2111	8,1	3	Cerebrovascular diseases (I60-I69)	786	7,1	3	Cerebrovascular diseases (I60-I69)	1324	8,8
4	Chronic lower respiratory diseases (J40-J47)	1737	6,6	4	Hypertensive diseases (I10-I15)	718	6,4	4	Other forms of heart disease (I30-I52)	907	6,1
5	Other forms of heart disease (I30-I52)	1470	5,6	5	Tuberculosis (A15-A19)	700	6,3	5	Chronic lower respiratory diseases (J40-J47)	791	5,3
6	Tuberculosis (A15-A19)	1204	4,6	6	Other forms of heart disease (I30-I52)	562	5	6	Tuberculosis (A15-A19)	504	3,4
7	Malignant neoplasms of digestive organs (C15-C26)	891	3,4	7	Malignant neoplasms of digestive organs (C15-C26)	440	4	7	Malignant neoplasms of digestive organs (C15-C26)	450	3
8	Influenza and pneumonia (J09-J18)	785	3	8	Malignant neoplasms of male genital organs (C60-C63)	378	3,4	8	Influenza and pneumonia (J09-J18)	437	2,9
9	Ischaemic heart diseases (I20-I25)	709	2,7	9	Influenza and pneumonia (J09-J18)	346	3,1	9	Ischaemic heart diseases (I20-I25)	391	2,6
10	Renal failure (N17-N19)	431	1,6	10	Ischaemic heart diseases (I20-I25)	318	2,9	10	Malignant neoplasms of female genital organs (C51-C58)	251	1,7
	Other Natural	11520	44,1		Other Natural	4732	42,5		Other Natural	6574	43,9
	Non-natural	748	2,9		Non-natural	403	3,6		Non-natural	344	2,3
	All causes	26148	100,0		All causes	11132	100,0		All causes	14991	100,0

Appendix M3: The ten leading underlying natural causes of death by age and sex: Northern Cape, 2018

Northern Cape, all ages				Northern Cape,Males, all ages				Northern Cape,Females, all ages			
	No	%		No	%		No	%		No	%
1	Tuberculosis (A15-A19)	913	6,5	1	Tuberculosis (A15-A19)	579	7,8	1	Hypertensive diseases (I10-I15)	520	8,0
2	Human immunodeficiency virus [HIV] disease (B20-B24)	912	6,5	2	Human immunodeficiency virus [HIV] disease (B20-B24)	438	5,9	2	Human immunodeficiency virus [HIV] disease (B20-B24)	472	7,2
3	Hypertensive diseases (I10-I15)	812	5,8	3	Chronic lower respiratory diseases (J40-J47)	368	5	3	Diabetes mellitus (E10-E14)	403	6,2
4	Cerebrovascular diseases (I60-I69)	668	4,8	4	Influenza and pneumonia (J09-J18)	344	4,6	4	Cerebrovascular diseases (I60-I69)	383	5,9
5	Diabetes mellitus (E10-E14)	659	4,7	5	Other forms of heart disease (I30-I52)	308	4,2	5	Other forms of heart disease (I30-I52)	349	5,3
6	Other forms of heart disease (I30-I52)	659	4,7	6	Hypertensive diseases (I10-I15)	292	3,9	6	Tuberculosis (A15-A19)	333	5,1
7	Chronic lower respiratory diseases (J40-J47)	614	4,4	7	Cerebrovascular diseases (I60-I69)	283	3,8	7	Influenza and pneumonia (J09-J18)	261	4,0
8	Influenza and pneumonia (J09-J18)	606	4,3	8	Certain disorders involving the immune mechanism (D80-D89)	271	3,7	8	Chronic lower respiratory diseases (J40-J47)	244	3,7
9	Certain disorders involving the immune mechanism (D80-D89)	477	3,4	9	Diabetes mellitus (E10-E14)	256	3,5	9	Ischaemic heart diseases (I20-I25)	209	3,2
10	Ischaemic heart diseases (I20-I25)	454	3,3	10	Ischaemic heart diseases (I20-I25)	245	3,3	10	Certain disorders involving the immune mechanism (D80-D89)	205	3,1
	Other Natural	5909	42,3		Other Natural	3083	41,7		Other Natural	2812	43,0
	Non-natural	1279	9,2		Non-natural	933	12,6		Non-natural	346	5,3
	All causes	13962	100,0		All causes	7400	100,0		All causes	6537	100,0
Northern Cape, 0				Northern Cape, Males,0				Northern Cape,Females, 0			
	No	%		No	%		No	%		No	%
1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	96	12,8	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	56	13,7	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	37	11,1
2	Disorders related to length of gestation and fetal growth (P05-P08)	58	7,8	2	Disorders related to length of gestation and fetal growth (P05-P08)	33	8,1	2	Influenza and pneumonia (J09-J18)	26	7,8
3	Influenza and pneumonia (J09-J18)	57	7,6	3	Influenza and pneumonia (J09-J18)	31	7,6	3	Disorders related to length of gestation and fetal growth (P05-P08)	25	7,5
4	Intestinal infectious diseases (A00-A09)	47	6,3	4	Intestinal infectious diseases (A00-A09)	22	5,4	4	Intestinal infectious diseases (A00-A09)	25	7,5
5	Other disorders originating in the perinatal period (P90-P96)	38	5,1	5	Other disorders originating in the perinatal period (P90-P96)	19	4,7	5	Other disorders originating in the perinatal period (P90-P96)	19	5,7
6	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	35	4,7	6	Congenital malformations of the circulatory system (Q20-Q28)	17	4,2	6	Infections specific to the perinatal period (P35-P39)	18	5,4
7	Infections specific to the perinatal period (P35-P39)	32	4,3	7	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	16	3,9	7	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	18	5,4
8	Other acute lower respiratory infections (J20-J22)	25	3,3	8	Other acute lower respiratory infections (J20-J22)	16	3,9	8	Other acute lower respiratory infections (J20-J22)	9	2,7
9	Malnutrition (E40-E46)	23	3,1	9	Malnutrition (E40-E46)	14	3,4	9	Malnutrition (E40-E46)	9	2,7
10	Congenital malformations of the circulatory system (Q20-Q28)	23	3,1	10	Infections specific to the perinatal period (P35-P39)	13	3,2	10	Human immunodeficiency virus [HIV] disease (B20-B24)	7	2,1
	Other Natural	285	38,1		Other Natural	153	37,5		Other Natural	129	38,7
	Non-natural	29	3,9		Non-natural	18	4,4		Non-natural	11	3,3
	All causes	748	100,0		All causes	408	100,0		All causes	333	100,0

Appendix M3: The ten leading underlying natural causes of death by age and sex: Northern Cape, 2018 (continued)

SA, 1-14		No	%		Northern Cape, Male,1-14			No	%		Northern Cape,Female, 1-14		No	%
1	Intestinal infectious diseases (A00-A09)	27	7,8	1	Intestinal infectious diseases (A00-A09)	16	7,9	1	Influenza and pneumonia (J09-J18)	13	9,1			
2	Influenza and pneumonia (J09-J18)	22	6,4	2	Cerebral palsy and other paralytic syndromes (G80-G83)	12	5,9	2	Intestinal infectious diseases (A00-A09)	11	7,7			
3	Tuberculosis (A15-A19)	18	5,2	3	Malnutrition (E40-E46)	9	4,5	3	Tuberculosis (A15-A19)	10	7,0			
4	Cerebral palsy and other paralytic syndromes (G80-G83)	17	4,9	4	Influenza and pneumonia (J09-J18)	9	4,5	4	Human immunodeficiency virus [HIV] disease (B20-B24)	8	5,6			
5	Malnutrition (E40-E46)	15	4,3	5	Tuberculosis (A15-A19)	8	4,0	5	Malnutrition (E40-E46)	5	3,5			
6	Human immunodeficiency virus [HIV] disease (B20-B24)	14	4,0	6	Human immunodeficiency virus [HIV] disease (B20-B24)	6	3,0	6	Other forms of heart disease (I30-I52)	5	3,5			
7	Other forms of heart disease (I30-I52)	7	2,0	7	Other disorders of the nervous system (G90-G99)	5	2,5	7	Cerebral palsy and other paralytic syndromes (G80-G83)	5	3,5			
8	Other disorders of the nervous system (G90-G99)	6	1,7	8	Congenital malformations of the circulatory system (Q20-Q28)	4	2,0	8	Other viral diseases (B25-B34)	4	2,8			
9	Other viral diseases (B25-B34)	5	1,4	9	Inflammatory diseases of the central nervous system (G00-G09)	3	1,5	9	Metabolic disorders (E70-E90)	3	2,1			
10	Other bacterial diseases (A30-A49)	4	1,2	10	Other bacterial diseases (A30-A49)	3	1,5	10	Diabetes mellitus (E10-E14)	2	1,4			
	Other Natural	122	35,3		Other Natural	71	35,1		Other Natural	44	30,8			
	Non-natural	89	25,7		Non-natural	56	27,7		Non-natural	33	23,1			
	All causes	346	100,0		All causes	202	100,0		All causes	143	100,0			
Northern Cape, 15-44		No	%		Northern Cape, Male, 15-44			No	%		Northern Cape, Female,15-44		No	%
1	Human immunodeficiency virus [HIV] disease (B20-B24)	560	15,5	1	Human immunodeficiency virus [HIV] disease (B20-B24)	251	12,4	1	Human immunodeficiency virus [HIV] disease (B20-B24)	308	19,6			
2	Tuberculosis (A15-A19)	439	12,2	2	Tuberculosis (A15-A19)	250	12,3	2	Tuberculosis (A15-A19)	188	12,0			
3	Certain disorders involving the immune mechanism (D80-D89)	282	7,8	3	Certain disorders involving the immune mechanism (D80-D89)	155	7,6	3	Certain disorders involving the immune mechanism (D80-D89)	126	8,0			
4	Other viral diseases (B25-B34)	169	4,7	4	Influenza and pneumonia (J09-J18)	74	3,6	4	Other viral diseases (B25-B34)	104	6,6			
5	Influenza and pneumonia (J09-J18)	135	3,7	5	Other viral diseases (B25-B34)	65	3,2	5	Influenza and pneumonia (J09-J18)	60	3,8			
6	Other forms of heart disease (I30-I52)	105	2,9	6	Other forms of heart disease (I30-I52)	54	2,7	6	Other forms of heart disease (I30-I52)	51	3,3			
7	Episodic and paroxysmal disorders (G40-G47)	58	1,6	7	Episodic and paroxysmal disorders (G40-G47)	33	1,6	7	Malignant neoplasms of female genital organs (C51-C58)	37	2,4			
8	Chronic lower respiratory diseases (J40-J47)	41	1,1	8	Ischaemic heart diseases (I20-I25)	24	1,2	8	Episodic and paroxysmal disorders (G40-G47)	25	1,6			
9	Diabetes mellitus (E10-E14)	39	1,1	9	Chronic lower respiratory diseases (J40-J47)	23	1,1	9	Hypertensive diseases (I10-I15)	22	1,4			
10	Ischaemic heart diseases (I20-I25)	39	1,1	10	Diabetes mellitus (E10-E14)	21	1,0	10	Renal failure (N17-N19)	21	1,3			
	Other Natural	965	26,8		Non-natural	613	30,2		Other Natural	466	29,7			
	Non-natural	773	21,4		Other Natural	468	23		Non-natural	160	10,2			
	All causes	3605	100,0		All causes	2031	100,0		All causes	1568	100,0			

Appendix M3: The ten leading underlying natural causes of death by age and sex: Northern Cape, 2018 (concluded)

Northern Cape, 45-64				Northern Cape, Male, 45-64				Northern Cape, Female, 45-64			
	No	%		No	%		No	%			
1	Tuberculosis (A15-A19)	362	7,9	1	Tuberculosis (A15-A19)	260	9,9	1	Diabetes mellitus (E10-E14)	157	8,1
2	Human immunodeficiency virus [HIV] disease (B20-B24)	296	6,5	2	Chronic lower respiratory diseases (J40-J47)	175	6,7	2	Human immunodeficiency virus [HIV] disease (B20-B24)	132	6,8
3	Chronic lower respiratory diseases (J40-J47)	265	5,8	3	Human immunodeficiency virus [HIV] disease (B20-B24)	163	6,2	3	Cerebrovascular diseases (I60-I69)	129	6,6
4	Diabetes mellitus (E10-E14)	256	5,6	4	Influenza and pneumonia (J09-J18)	116	4,4	4	Hypertensive diseases (I10-I15)	128	6,6
5	Cerebrovascular diseases (I60-I69)	241	5,3	5	Hypertensive diseases (I10-I15)	112	4,3	5	Other forms of heart disease (I30-I52)	103	5,3
6	Hypertensive diseases (I10-I15)	240	5,2	6	Cerebrovascular diseases (I60-I69)	111	4,2	6	Tuberculosis (A15-A19)	102	5,2
7	Other forms of heart disease (I30-I52)	212	4,6	7	Other forms of heart disease (I30-I52)	109	4,1	7	Chronic lower respiratory diseases (J40-J47)	90	4,6
8	Influenza and pneumonia (J09-J18)	179	3,9	8	Diabetes mellitus (E10-E14)	99	3,8	8	Certain disorders involving the immune mechanism (D80-D89)	71	3,6
9	Certain disorders involving the immune mechanism (D80-D89)	170	3,7	9	Certain disorders involving the immune mechanism (D80-D89)	99	3,8	9	Malignant neoplasms of female genital organs (C51-C58)	68	3,5
10	Ischaemic heart diseases (I20-I25)	162	3,5	10	Ischaemic heart diseases (I20-I25)	95	3,6	10	Ischaemic heart diseases (I20-I25)	67	3,4
	Other Natural	1955	42,7		Other Natural	1112	42,3		Other Natural	836	42,9
	Non-natural	244	5,3		Non-natural	177	6,7		Non-natural	67	3,4
	All causes	4582	100,0		All causes	2628	100,0		All causes	1950	100,0
Northern Cape, 65+				Northern Cape, Male, 65+				Northern Cape, Female, 65+			
	No	%		No	%		No	%			
1	Hypertensive diseases (I10-I15)	541	11,6	1	Hypertensive diseases (I10-I15)	171	8,1	1	Hypertensive diseases (I10-I15)	370	14,6
2	Cerebrovascular diseases (I60-I69)	389	8,3	2	Chronic lower respiratory diseases (J40-J47)	169	8	2	Cerebrovascular diseases (I60-I69)	237	9,3
3	Diabetes mellitus (E10-E14)	362	7,7	3	Cerebrovascular diseases (I60-I69)	152	7,2	3	Diabetes mellitus (E10-E14)	226	8,9
4	Other forms of heart disease (I30-I52)	326	7	4	Other forms of heart disease (I30-I52)	139	6,5	4	Other forms of heart disease (I30-I52)	185	7,3
5	Chronic lower respiratory diseases (J40-J47)	305	6,5	5	Diabetes mellitus (E10-E14)	136	6,4	5	Chronic lower respiratory diseases (J40-J47)	134	5,3
6	Ischaemic heart diseases (I20-I25)	251	5,4	6	Ischaemic heart diseases (I20-I25)	125	5,9	6	Ischaemic heart diseases (I20-I25)	126	5
7	Influenza and pneumonia (J09-J18)	212	4,5	7	Malignant neoplasms of male genital organs (C60-C63)	120	5,7	7	Influenza and pneumonia (J09-J18)	98	3,9
8	Malignant neoplasms of digestive organs (C15-C26)	128	2,7	8	Influenza and pneumonia (J09-J18)	114	5,4	8	Malignant neoplasms of digestive organs (C15-C26)	68	2,7
9	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	120	2,6	9	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	72	3,4	9	Malignant neoplasms of female genital organs (C51-C58)	53	2,1
10	Malignant neoplasms of male genital organs (C60-C63)	120	2,6	10	Malignant neoplasms of digestive organs (C15-C26)	60	2,8	10	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	48	1,9
	Other Natural	1774	38		Other Natural	797	37,5		Other Natural	922	36,3
	Non-natural	143	3,1		Non-natural	68	3,2		Non-natural	75	3
	All causes	4671	100,0		All causes	2123	100,0		All causes	2542	100,0

Appendix M4: The ten leading underlying natural causes of death by age and sex: Free State, 2018

Free State, all ages		No	%		Free State,Males, all ages		No	%		Free State,Females, all ages		No	%
1	Hypertensive diseases (I10-I15)	1748	6	1	Tuberculosis (A15-A19)	1022	6,7	1	Hypertensive diseases (I10-I15)	1084	7,9		
2	Tuberculosis (A15-A19)	1573	5,4	2	Human immunodeficiency virus [HIV] disease (B20-B24)	839	5,5	2	Diabetes mellitus (E10-E14)	1002	7,3		
3	Diabetes mellitus (E10-E14)	1565	5,4	3	Influenza and pneumonia (J09-J18)	815	5,4	3	Cerebrovascular diseases (I60-I69)	824	6		
4	Human immunodeficiency virus [HIV] disease (B20-B24)	1525	5,3	4	Hypertensive diseases (I10-I15)	660	4,4	4	Other forms of heart disease (I30-I52)	722	5,3		
5	Influenza and pneumonia (J09-J18)	1512	5,2	5	Cerebrovascular diseases (I60-I69)	642	4,2	5	Influenza and pneumonia (J09-J18)	694	5,1		
6	Cerebrovascular diseases (I60-I69)	1469	5,1	6	Other forms of heart disease (I30-I52)	575	3,8	6	Human immunodeficiency virus [HIV] disease (B20-B24)	680	5		
7	Other forms of heart disease (I30-I52)	1300	4,5	7	Diabetes mellitus (E10-E14)	561	3,7	7	Tuberculosis (A15-A19)	546	4		
8	Certain disorders involving the immune mechanism (D80-D89)	863	3	8	Chronic lower respiratory diseases (J40-J47)	445	2,9	8	Certain disorders involving the immune mechanism (D80-D89)	457	3,3		
9	Other viral diseases (B25-B34)	840	2,9	9	Other viral diseases (B25-B34)	435	2,9	9	Malignant neoplasms of female genital organs (C51-C58)	429	3,1		
10	Chronic lower respiratory diseases (J40-J47)	766	2,6	10	Certain disorders involving the immune mechanism (D80-D89)	403	2,7	10	Other viral diseases (B25-B34)	402	2,9		
	Other Natural	12607	43,6		Other Natural	6410	42,3		Other Natural	6042	44,2		
	Non-natural	3159	10,9		Non-natural	2349	15,5		Non-natural	783	5,7		
	All causes	28927	100,0		All causes	15156	100,0		All causes	13665	100,0		
Free State, 0		No	%		Free State, Males,0		No	%		Free State,Females, 0		No	%
1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	254	16,9	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	143	18	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	108	15,5		
2	Influenza and pneumonia (J09-J18)	125	8,3	2	Influenza and pneumonia (J09-J18)	67	8,4	2	Influenza and pneumonia (J09-J18)	58	8,3		
3	Infections specific to the perinatal period (P35-P39)	95	6,3	3	Infections specific to the perinatal period (P35-P39)	57	7,2	3	Disorders related to length of gestation and fetal growth (P05-P08)	46	6,6		
4	Intestinal infectious diseases (A00-A09)	85	5,7	4	Intestinal infectious diseases (A00-A09)	43	5,4	4	Intestinal infectious diseases (A00-A09)	42	6		
5	Disorders related to length of gestation and fetal growth (P05-P08)	84	5,6	5	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	41	5,2	5	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	38	5,4		
6	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	81	5,4	6	Disorders related to length of gestation and fetal growth (P05-P08)	37	4,7	6	Infections specific to the perinatal period (P35-P39)	38	5,4		
7	Malnutrition (E40-E46)	66	4,4	7	Other disorders originating in the perinatal period (P90-P96)	34	4,3	7	Malnutrition (E40-E46)	34	4,9		
8	Other disorders originating in the perinatal period (P90-P96)	63	4,2	8	Malnutrition (E40-E46)	32	4	8	Other disorders originating in the perinatal period (P90-P96)	29	4,2		
9	Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	49	3,3	9	Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	28	3,5	9	Congenital malformations of the circulatory system (Q20-Q28)	21	3		
10	Congenital malformations of the circulatory system (Q20-Q28)	39	2,6	10	Congenital malformations of the circulatory system (Q20-Q28)	17	2,1	10	Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	21	3		
	Other Natural	514	34,2		Other Natural	267	33,7		Other Natural	243	34,8		
	Non-natural	49	3,3		Non-natural	27	3,4		Non-natural	20	2,9		
	All causes	1504	100,0		All causes	793	100,0		All causes	698	100,0		

Appendix M4: The ten leading underlying natural causes of death by age and sex: Free State, 2018 (continued)

Free State, 1-14				Free State, Male,1-14				Free State,Female, 1-14			
	No	%		No	%		No	%		No	%
1	Influenza and pneumonia (J09-J18)	60	8,7	1	Influenza and pneumonia (J09-J18)	31	8,3	1	Influenza and pneumonia (J09-J18)	29	9,2
2	Intestinal infectious diseases (A00-A09)	37	5,4	2	Intestinal infectious diseases (A00-A09)	21	5,6	2	Tuberculosis (A15-A19)	19	6
3	Tuberculosis (A15-A19)	31	4,5	3	Tuberculosis (A15-A19)	12	3,2	3	Intestinal infectious diseases (A00-A09)	16	5,1
4	Human immunodeficiency virus [HIV] disease (B20-B24)	25	3,6	4	Human immunodeficiency virus [HIV] disease (B20-B24)	11	2,9	4	Human immunodeficiency virus [HIV] disease (B20-B24)	14	4,4
5	Malnutrition (E40-E46)	20	2,9	5	Other forms of heart disease (I30-I52)	10	2,7	5	Malnutrition (E40-E46)	13	4,1
6	Other viral diseases (B25-B34)	17	2,5	6	Cerebral palsy and other paralytic syndromes (G80-G83)	10	2,7	6	Other viral diseases (B25-B34)	11	3,5
7	Cerebral palsy and other paralytic syndromes (G80-G83)	15	2,2	7	Certain disorders involving the immune mechanism (D80-D89)	9	2,4	7	Congenital malformations of the circulatory system (Q20-Q28)	6	1,9
8	Other forms of heart disease (I30-I52)	14	2	8	Malnutrition (E40-E46)	7	1,9	8	Cerebral palsy and other paralytic syndromes (G80-G83)	5	1,6
9	Certain disorders involving the immune mechanism (D80-D89)	12	1,7	9	Malignant neoplasms, stated or presumed to be primary, of lymphoid, haematopoietic and related tissue (C81-C96)	7	1,9	9	Neoplasms of uncertain or unknown behaviour (D37-D48)	4	1,3
10	Other acute lower respiratory infections (J20-J22)	11	1,6	10	Other acute lower respiratory infections (J20-J22)	7	1,9	10	Other bacterial diseases (A30-A49)	4	1,3
	Other Natural	238	34,4		Other Natural	134	35,9		Other Natural	99	31,3
	Non-natural	211	30,5		Non-natural	114	30,6		Non-natural	96	30,4
	All causes	691	100,0		All causes	373	100,0		All causes	316	100,0
Free State, 15-44				Free State, Male, 15-44				Free State, Female,15-44			
	No	%		No	%		No	%		No	%
1	Human immunodeficiency virus [HIV] disease (B20-B24)	786	10,5	1	Tuberculosis (A15-A19)	447	9,9	1	Human immunodeficiency virus [HIV] disease (B20-B24)	365	12,3
2	Tuberculosis (A15-A19)	705	9,4	2	Human immunodeficiency virus [HIV] disease (B20-B24)	417	9,3	2	Tuberculosis (A15-A19)	256	8,6
3	Other viral diseases (B25-B34)	449	6	3	Other viral diseases (B25-B34)	218	4,8	3	Certain disorders involving the immune mechanism (D80-D89)	253	8,5
4	Certain disorders involving the immune mechanism (D80-D89)	446	5,9	4	Certain disorders involving the immune mechanism (D80-D89)	193	4,3	4	Other viral diseases (B25-B34)	229	7,7
5	Influenza and pneumonia (J09-J18)	311	4,1	5	Influenza and pneumonia (J09-J18)	167	3,7	5	Influenza and pneumonia (J09-J18)	143	4,8
6	Other forms of heart disease (I30-I52)	167	2,2	6	Other forms of heart disease (I30-I52)	83	1,8	6	Malignant neoplasms of female genital organs (C51-C58)	94	3,2
7	Cerebrovascular diseases (I60-I69)	135	1,8	7	Cerebrovascular diseases (I60-I69)	63	1,4	7	Other forms of heart disease (I30-I52)	83	2,8
8	Intestinal infectious diseases (A00-A09)	103	1,4	8	Intestinal infectious diseases (A00-A09)	60	1,3	8	Cerebrovascular diseases (I60-I69)	72	2,4
9	Hypertensive diseases (I10-I15)	100	1,3	9	Renal failure (N17-N19)	60	1,3	9	Diabetes mellitus (E10-E14)	55	1,8
10	Diabetes mellitus (E10-E14)	98	1,3	10	Episodic and paroxysmal disorders (G40-G47)	52	1,2	10	Hypertensive diseases (I10-I15)	54	1,8
	Other Natural	2223	29,6		Non-natural	1576	35		Other Natural	971	32,6
	Non-natural	1993	26,5		Other Natural	1165	25,9		Non-natural	400	13,4
	All causes	7516	100,0		All causes	4501	100,0		All causes	2975	100,0

Appendix M4: The ten leading underlying natural causes of death by age and sex: Free State, 2018 (concluded)

Free State, 45-64					Free State, Male,45-64					Free State, Female,45-64				
	No	%			No	%			No	%				
1	Diabetes mellitus (E10-E14)	632	7	1	Tuberculosis (A15-A19)	412	8	1	Diabetes mellitus (E10-E14)	377	9,8			
2	Human immunodeficiency virus [HIV] disease (B20-B24)	603	6,7	2	Human immunodeficiency virus [HIV] disease (B20-B24)	357	7	2	Hypertensive diseases (I10-I15)	277	7,2			
3	Tuberculosis (A15-A19)	597	6,6	3	Influenza and pneumonia (J09-J18)	312	6,1	3	Human immunodeficiency virus [HIV] disease (B20-B24)	245	6,4			
4	Influenza and pneumonia (J09-J18)	493	5,5	4	Cerebrovascular diseases (I60-I69)	275	5,4	4	Cerebrovascular diseases (I60-I69)	196	5,1			
5	Hypertensive diseases (I10-I15)	484	5,4	5	Diabetes mellitus (E10-E14)	255	5	5	Other forms of heart disease (I30-I52)	188	4,9			
6	Cerebrovascular diseases (I60-I69)	471	5,2	6	Other forms of heart disease (I30-I52)	213	4,2	6	Malignant neoplasms of female genital organs (C51-C58)	183	4,8			
7	Other forms of heart disease (I30-I52)	401	4,5	7	Hypertensive diseases (I10-I15)	206	4	7	Tuberculosis (A15-A19)	183	4,8			
8	Certain disorders involving the immune mechanism (D80-D89)	343	3,8	8	Certain disorders involving the immune mechanism (D80-D89)	170	3,3	8	Influenza and pneumonia (J09-J18)	180	4,7			
9	Other viral diseases (B25-B34)	300	3,3	9	Other viral diseases (B25-B34)	169	3,3	9	Certain disorders involving the immune mechanism (D80-D89)	170	4,4			
10	Chronic lower respiratory diseases (J40-J47)	255	2,8	10	Chronic lower respiratory diseases (J40-J47)	159	3,1	10	Other viral diseases (B25-B34)	130	3,4			
	Other Natural	3804	42,3		Other Natural	2130	41,6		Other Natural	1578	41			
	Non-natural	610	6,8		Non-natural	466	9,1		Non-natural	141	3,7			
	All causes	8993	100,0		All causes	5124	100,0		All causes	3848	100,0			
Free State, 65+					Free State, Male, 65+					Free State, Female, 65+				
	No	%			No	%			No	%				
1	Hypertensive diseases (I10-I15)	1158	11,4	1	Hypertensive diseases (I10-I15)	405	9,3	1	Hypertensive diseases (I10-I15)	750	12,9			
2	Cerebrovascular diseases (I60-I69)	859	8,4	2	Cerebrovascular diseases (I60-I69)	302	7	2	Diabetes mellitus (E10-E14)	568	9,8			
3	Diabetes mellitus (E10-E14)	833	8,2	3	Other forms of heart disease (I30-I52)	266	6,1	3	Cerebrovascular diseases (I60-I69)	554	9,5			
4	Other forms of heart disease (I30-I52)	710	7	4	Diabetes mellitus (E10-E14)	263	6,1	4	Other forms of heart disease (I30-I52)	443	7,6			
5	Influenza and pneumonia (J09-J18)	518	5,1	5	Chronic lower respiratory diseases (J40-J47)	257	5,9	5	Influenza and pneumonia (J09-J18)	283	4,9			
6	Chronic lower respiratory diseases (J40-J47)	456	4,5	6	Influenza and pneumonia (J09-J18)	234	5,4	6	Ischaemic heart diseases (I20-I25)	200	3,4			
7	Ischaemic heart diseases (I20-I25)	408	4	7	Ischaemic heart diseases (I20-I25)	207	4,8	7	Chronic lower respiratory diseases (J40-J47)	198	3,4			
8	Malignant neoplasms of digestive organs (C15-C26)	270	2,7	8	Malignant neoplasms of male genital organs (C60-C63)	174	4	8	Malignant neoplasms of female genital organs (C51-C58)	152	2,6			
9	Tuberculosis (A15-A19)	230	2,3	9	Tuberculosis (A15-A19)	145	3,3	9	Malignant neoplasms of digestive organs (C15-C26)	125	2,1			
10	Renal failure (N17-N19)	218	2,1	10	Malignant neoplasms of digestive organs (C15-C26)	144	3,3	10	Renal failure (N17-N19)	104	1,8			
	Other Natural	4244	41,7		Other Natural	1783	41,1		Other Natural	2321	39,9			
	Non-natural	281	2,8		Non-natural	155	3,6		Non-natural	124	2,1			
	All causes	10185	100,0		All causes	4335	100,0		All causes	5822	100,0			

Appendix M5: The ten leading underlying natural causes of death by age and sex: KwaZulu-Natal, 2018

KZN, all ages		No	%	KZN,Males, all ages		No	%	KZN,Females, all ages		No	%
1	Other forms of heart disease (I30-I52)	6930	8,2	1	Tuberculosis (A15-A19)	3652	8,4	1	Other forms of heart disease (I30-I52)	3885	9,5
2	Diabetes mellitus (E10-E14)	6022	7,1	2	Other forms of heart disease (I30-I52)	3033	6,9	2	Diabetes mellitus (E10-E14)	3876	9,5
3	Tuberculosis (A15-A19)	5761	6,8	3	Human immunodeficiency virus [HIV] disease (B20-B24)	2410	5,5	3	Cerebrovascular diseases (I60-I69)	2937	7,2
4	Cerebrovascular diseases (I60-I69)	4866	5,7	4	Diabetes mellitus (E10-E14)	2142	4,9	4	Human immunodeficiency virus [HIV] disease (B20-B24)	2151	5,3
5	Human immunodeficiency virus [HIV] disease (B20-B24)	4571	5,4	5	Cerebrovascular diseases (I60-I69)	1925	4,4	5	Hypertensive diseases (I10-I15)	2148	5,3
6	Hypertensive diseases (I10-I15)	3254	3,8	6	Ischaemic heart diseases (I20-I25)	1398	3,2	6	Tuberculosis (A15-A19)	2085	5,1
7	Influenza and pneumonia (J09-J18)	2763	3,3	7	Influenza and pneumonia (J09-J18)	1374	3,1	7	Influenza and pneumonia (J09-J18)	1381	3,4
8	Ischaemic heart diseases (I20-I25)	2494	2,9	8	Hypertensive diseases (I10-I15)	1101	2,5	8	Malignant neoplasms of female genital organs (C51-C58)	1287	3,2
9	Other viral diseases (B25-B34)	1855	2,2	9	Chronic lower respiratory diseases (J40-J47)	1084	2,5	9	Ischaemic heart diseases (I20-I25)	1095	2,7
10	Malignant neoplasms of digestive organs (C15-C26)	1771	2,1	10	Other viral diseases (B25-B34)	953	2,2	10	Other viral diseases (B25-B34)	897	2,2
	Other Natural	33070	39		Other Natural	15787	36,1		Other Natural	16578	40,6
	Non-natural	11421	13,5		Non-natural	8860	20,3		Non-natural	2517	6,2
	All causes	84778	100,0		All causes	43719	100,0		All causes	40837	100,0
KZN, 0		No	%	KZN, Males,0		No	%	KZN,Females, 0		No	%
1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	489	14,6	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	265	14,6	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	211	14,2
2	Intestinal infectious diseases (A00-A09)	262	7,8	2	Intestinal infectious diseases (A00-A09)	143	7,9	2	Intestinal infectious diseases (A00-A09)	117	7,9
3	Disorders related to length of gestation and fetal growth (P05-P08)	244	7,3	3	Disorders related to length of gestation and fetal growth (P05-P08)	134	7,4	3	Influenza and pneumonia (J09-J18)	114	7,7
4	Influenza and pneumonia (J09-J18)	242	7,2	4	Influenza and pneumonia (J09-J18)	126	6,9	4	Disorders related to length of gestation and fetal growth (P05-P08)	108	7,2
5	Other disorders originating in the perinatal period (P90-P96)	170	5,1	5	Other disorders originating in the perinatal period (P90-P96)	100	5,5	5	Infections specific to the perinatal period (P35-P39)	72	4,8
6	Infections specific to the perinatal period (P35-P39)	161	4,8	6	Infections specific to the perinatal period (P35-P39)	85	4,7	6	Other disorders originating in the perinatal period (P90-P96)	66	4,4
7	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	143	4,3	7	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	79	4,3	7	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	60	4
8	Congenital malformations of the circulatory system (Q20-Q28)	108	3,2	8	Congenital malformations of the circulatory system (Q20-Q28)	51	2,8	8	Congenital malformations of the circulatory system (Q20-Q28)	56	3,8
9	Other forms of heart disease (I30-I52)	92	2,7	9	Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	47	2,6	9	Other forms of heart disease (I30-I52)	47	3,2
10	Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	72	2,1	10	Other forms of heart disease (I30-I52)	44	2,4	10	Malnutrition (E40-E46)	32	2,1
	Other Natural	1232	36,7		Other Natural	672	36,9		Other Natural	540	36,2
	Non-natural	142	4,2		Non-natural	75	4,1		Non-natural	67	4,5
	All causes	3357	100,0		All causes	1821	100,0		All causes	1490	100,0

Appendix M5: The ten leading underlying natural causes of death by age and sex: KwaZulu-Natal, 2018 (continued)

KZN, 1-14		No	%		KZN, Male, 1-14		No	%		KZN, Female, 1-14		No	%
1	Intestinal infectious diseases (A00-A09)	154	6,3	1	Influenza and pneumonia (J09-J18)	81	6	1	Other forms of heart disease (I30-I52)	80	7,4		
2	Influenza and pneumonia (J09-J18)	151	6,2	2	Intestinal infectious diseases (A00-A09)	78	5,7	2	Intestinal infectious diseases (A00-A09)	76	7		
3	Other forms of heart disease (I30-I52)	135	5,5	3	Other forms of heart disease (I30-I52)	54	4	3	Influenza and pneumonia (J09-J18)	69	6,4		
4	Tuberculosis (A15-A19)	82	3,4	4	Tuberculosis (A15-A19)	52	3,8	4	Human immunodeficiency virus [HIV] disease (B20-B24)	37	3,4		
5	Human immunodeficiency virus [HIV] disease (B20-B24)	73	3	5	Cerebral palsy and other paralytic syndromes (G80-G83)	39	2,9	5	Tuberculosis (A15-A19)	30	2,8		
6	Cerebral palsy and other paralytic syndromes (G80-G83)	62	2,5	6	Human immunodeficiency virus [HIV] disease (B20-B24)	36	2,7	6	Cerebral palsy and other paralytic syndromes (G80-G83)	23	2,1		
7	Episodic and paroxysmal disorders (G40-G47)	52	2,1	7	Episodic and paroxysmal disorders (G40-G47)	31	2,3	7	Episodic and paroxysmal disorders (G40-G47)	21	1,9		
8	Malnutrition (E40-E46)	47	1,9	8	Malnutrition (E40-E46)	29	2,1	8	Inflammatory diseases of the central nervous system (G00-G09)	19	1,8		
9	Inflammatory diseases of the central nervous system (G00-G09)	44	1,8	9	Inflammatory diseases of the central nervous system (G00-G09)	25	1,8	9	Malnutrition (E40-E46)	18	1,7		
10	Other disorders of the nervous system (G90-G99)	32	1,3	10	Chronic lower respiratory diseases (J40-J47)	20	1,5	10	Other viral diseases (B25-B34)	16	1,5		
	Other Natural	810	33,2		Non-natural	501	36,9		Other Natural	394	36,5		
	Non-natural	799	32,7		Other Natural	412	30,3		Non-natural	297	27,5		
	All causes	2441	100,0		All causes	1358	100,0		All causes	1080	100,0		
KZN, 15-44		No	%		KZN, Male, 15-44		No	%		KZN, Female, 15-44		No	%
1	Tuberculosis (A15-A19)	2985	12,1	1	Tuberculosis (A15-A19)	1799	11,8	1	Human immunodeficiency virus [HIV] disease (B20-B24)	1387	14,7		
2	Human immunodeficiency virus [HIV] disease (B20-B24)	2844	11,5	2	Human immunodeficiency virus [HIV] disease (B20-B24)	1449	9,5	2	Tuberculosis (A15-A19)	1174	12,4		
3	Other forms of heart disease (I30-I52)	1105	4,5	3	Other forms of heart disease (I30-I52)	599	3,9	3	Other viral diseases (B25-B34)	540	5,7		
4	Other viral diseases (B25-B34)	1065	4,3	4	Other viral diseases (B25-B34)	521	3,4	4	Other forms of heart disease (I30-I52)	505	5,3		
5	Influenza and pneumonia (J09-J18)	650	2,6	5	Influenza and pneumonia (J09-J18)	339	2,2	5	Malignant neoplasms of female genital organs (C51-C58)	368	3,9		
6	Certain disorders involving the immune mechanism (D80-D89)	452	1,8	6	Certain disorders involving the immune mechanism (D80-D89)	236	1,6	6	Influenza and pneumonia (J09-J18)	310	3,3		
7	Malignant neoplasms of female genital organs (C51-C58)	368	1,5	7	Cerebrovascular diseases (I60-I69)	190	1,2	7	Certain disorders involving the immune mechanism (D80-D89)	215	2,3		
8	Cerebrovascular diseases (I60-I69)	336	1,4	8	Renal failure (N17-N19)	170	1,1	8	Renal failure (N17-N19)	150	1,6		
9	Renal failure (N17-N19)	322	1,3	9	Episodic and paroxysmal disorders (G40-G47)	167	1,1	9	Cerebrovascular diseases (I60-I69)	144	1,5		
10	Intestinal infectious diseases (A00-A09)	299	1,2	10	Inflammatory diseases of the central nervous system (G00-G09)	160	1,1	10	Intestinal infectious diseases (A00-A09)	141	1,5		
	Non-natural	7604	30,8		Non-natural	6335	41,7		Other Natural	3259	34,5		
	Other Natural	6688	27,1		Other Natural	3244	21,3		Non-natural	1248	13,2		
	All causes	24718	100,0		All causes	15209	100,0		All causes	9441	100,0		

Appendix M5: The ten leading underlying natural causes of death by age and sex: KwaZulu-Natal, 2018, (concluded)

KZN, 45-64		No	%		KZN, Male,45-64		No	%		KZN, Female,45-64		No	%
1	Diabetes mellitus (E10-E14)	2112	9,3	1	Tuberculosis (A15-A19)	1324	10,2	1	Diabetes mellitus (E10-E14)	1251	12,8		
2	Tuberculosis (A15-A19)	1863	8,2	2	Other forms of heart disease (I30-I52)	990	7,6	2	Other forms of heart disease (I30-I52)	860	8,8		
3	Other forms of heart disease (I30-I52)	1852	8,1	3	Diabetes mellitus (E10-E14)	860	6,6	3	Human immunodeficiency virus [HIV] disease (B20-B24)	586	6		
4	Human immunodeficiency virus [HIV] disease (B20-B24)	1390	6,1	4	Human immunodeficiency virus [HIV] disease (B20-B24)	803	6,2	4	Cerebrovascular diseases (I60-I69)	563	5,7		
5	Cerebrovascular diseases (I60-I69)	1216	5,3	5	Cerebrovascular diseases (I60-I69)	653	5	5	Malignant neoplasms of female genital organs (C51-C58)	562	5,7		
6	Hypertensive diseases (I10-I15)	841	3,7	6	Ischaemic heart diseases (I20-I25)	537	4,1	6	Tuberculosis (A15-A19)	529	5,4		
7	Ischaemic heart diseases (I20-I25)	791	3,5	7	Malignant neoplasms of digestive organs (C15-C26)	422	3,3	7	Hypertensive diseases (I10-I15)	457	4,7		
8	Malignant neoplasms of digestive organs (C15-C26)	701	3,1	8	Chronic lower respiratory diseases (J40-J47)	399	3,1	8	Influenza and pneumonia (J09-J18)	281	2,9		
9	Influenza and pneumonia (J09-J18)	679	3	9	Influenza and pneumonia (J09-J18)	396	3,1	9	Malignant neoplasms of digestive organs (C15-C26)	277	2,8		
10	Other viral diseases (B25-B34)	632	2,8	10	Hypertensive diseases (I10-I15)	383	3	10	Other viral diseases (B25-B34)	277	2,8		
	Other Natural	8821	38,7		Other Natural	4754	36,7		Other Natural	3696	37,7		
	Non-natural	1902	8,3		Non-natural	1441	11,1		Non-natural	456	4,7		
	All causes	22800	100,0		All causes	12962	100,0		All causes	9795	100,0		
KZN, 65+		No	%		KZN, Male, 65+		No	%		KZN, Female, 65+		No	%
1	Other forms of heart disease (I30-I52)	3740	11,9	1	Other forms of heart disease (I30-I52)	1341	10,9	1	Diabetes mellitus (E10-E14)	2484	13,1		
2	Diabetes mellitus (E10-E14)	3643	11,6	2	Diabetes mellitus (E10-E14)	1156	9,4	2	Other forms of heart disease (I30-I52)	2392	12,6		
3	Cerebrovascular diseases (I60-I69)	3297	10,5	3	Cerebrovascular diseases (I60-I69)	1071	8,7	3	Cerebrovascular diseases (I60-I69)	2224	11,7		
4	Hypertensive diseases (I10-I15)	2293	7,3	4	Ischaemic heart diseases (I20-I25)	751	6,1	4	Hypertensive diseases (I10-I15)	1630	8,6		
5	Ischaemic heart diseases (I20-I25)	1551	5	5	Hypertensive diseases (I10-I15)	659	5,4	5	Ischaemic heart diseases (I20-I25)	799	4,2		
6	Influenza and pneumonia (J09-J18)	1034	3,3	6	Chronic lower respiratory diseases (J40-J47)	574	4,7	6	Influenza and pneumonia (J09-J18)	606	3,2		
7	Chronic lower respiratory diseases (J40-J47)	951	3	7	Tuberculosis (A15-A19)	451	3,7	7	Malignant neoplasms of digestive organs (C15-C26)	458	2,4		
8	Malignant neoplasms of digestive organs (C15-C26)	864	2,8	8	Influenza and pneumonia (J09-J18)	426	3,5	8	Renal failure (N17-N19)	421	2,2		
9	Tuberculosis (A15-A19)	791	2,5	9	Malignant neoplasms of male genital organs (C60-C63)	409	3,3	9	Chronic lower respiratory diseases (J40-J47)	376	2		
10	Renal failure (N17-N19)	753	2,4	10	Malignant neoplasms of digestive organs (C15-C26)	405	3,3	10	Malignant neoplasms of female genital organs (C51-C58)	357	1,9		
	Other Natural	11467	36,6		Other Natural	4549	37,1		Other Natural	6812	35,8		
	Non-natural	931	3		Non-natural	482	3,9		Non-natural	445	2,3		
	All causes	31315	100,0		All causes	12274	100,0		All causes	19004	100,0		

Appendix M6: The ten leading underlying natural causes of death by age and sex: North West, 2018

	NW, All ages	No	%		NW, Male	No	%		NW, Female,	No	%
1	Tuberculosis (A15-A19)	2143	6,8	1	Tuberculosis (A15-A19)	1328	7,9	1	Hypertensive diseases (I10-I15)	1044	7,1
2	Hypertensive diseases (I10-I15)	1773	5,6	2	Influenza and pneumonia (J09-J18)	775	4,6	2	Diabetes mellitus (E10-E14)	955	6,5
3	Human immunodeficiency virus [HIV] disease (B20-B24)	1598	5,1	3	Human immunodeficiency virus [HIV] disease (B20-B24)	774	4,6	3	Human immunodeficiency virus [HIV] disease (B20-B24)	820	5,6
4	Diabetes mellitus (E10-E14)	1561	5	4	Other forms of heart disease (I30-I52)	764	4,6	4	Tuberculosis (A15-A19)	808	5,5
5	Other forms of heart disease (I30-I52)	1536	4,9	5	Hypertensive diseases (I10-I15)	727	4,3	5	Other forms of heart disease (I30-I52)	770	5,3
6	Influenza and pneumonia (J09-J18)	1415	4,5	6	Cerebrovascular diseases (I60-I69)	688	4,1	6	Cerebrovascular diseases (I60-I69)	688	4,7
7	Cerebrovascular diseases (I60-I69)	1376	4,4	7	Diabetes mellitus (E10-E14)	605	3,6	7	Influenza and pneumonia (J09-J18)	633	4,3
8	Other viral diseases (B25-B34)	975	3,1	8	Chronic lower respiratory diseases (J40-J47)	527	3,2	8	Other viral diseases (B25-B34)	487	3,3
9	Chronic lower respiratory diseases (J40-J47)	817	2,6	9	Other viral diseases (B25-B34)	484	2,9	9	Malignant neoplasms of female genital organs (C51-C58)	363	2,5
10	Certain disorders involving the immune mechanism (D80-D89)	784	2,5	10	Certain disorders involving the immune mechanism (D80-D89)	425	2,5	10	Certain disorders involving the immune mechanism (D80-D89)	358	2,4
	Other Natural	14611	46,4		Other Natural	7482	44,7		Other Natural	6994	47,7
	Non-natural	2897	9,2		Non-natural	2146	12,8		Non-natural	733	5
	All causes	31486	100,1		All causes	16725	99,8		All causes	14653	99,9
	NW, 0	No	%		NW, Male, 0	No	%		NW, Female, 0	No	%
1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	320	16,3	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	162	15,7	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	152	16,9
2	Intestinal infectious diseases (A00-A09)	158	8,1	2	Intestinal infectious diseases (A00-A09)	80	7,8	2	Influenza and pneumonia (J09-J18)	77	8,6
3	Influenza and pneumonia (J09-J18)	153	7,8	3	Influenza and pneumonia (J09-J18)	74	7,2	3	Intestinal infectious diseases (A00-A09)	77	8,6
4	Other disorders originating in the perinatal period (P90-P96)	121	6,2	4	Other disorders originating in the perinatal period (P90-P96)	63	6,1	4	Other disorders originating in the perinatal period (P90-P96)	53	5,9
5	Infections specific to the perinatal period (P35-P39)	98	5	5	Infections specific to the perinatal period (P35-P39)	54	5,2	5	Infections specific to the perinatal period (P35-P39)	43	4,8
6	Disorders related to length of gestation and fetal growth (P05-P08)	85	4,3	6	Malnutrition (E40-E46)	40	3,9	6	Disorders related to length of gestation and fetal growth (P05-P08)	42	4,7
7	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	76	3,9	7	Disorders related to length of gestation and fetal growth (P05-P08)	39	3,8	7	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	37	4,1
8	Malnutrition (E40-E46)	75	3,8	8	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	34	3,3	8	Malnutrition (E40-E46)	33	3,7
9	Congenital malformations of the circulatory system (Q20-Q28)	48	2,4	9	Other acute lower respiratory infections (J20-J22)	28	2,7	9	Congenital malformations of the circulatory system (Q20-Q28)	24	2,7
10	Other acute lower respiratory infections (J20-J22)	43	2,2	10	Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	24	2,3	10	Other bacterial diseases (A30-A49)	17	1,9
	Other Natural	717	36,6		Other Natural	399	38,7		Other Natural	309	34,4
	Non-natural	66	3,4		Non-natural	33	3,2		Non-natural	33	3,7
	All causes	1960	100		All causes	1030	99,9		All causes	897	100

Appendix M6: The ten leading underlying natural causes of death by age and sex: North West, 2018 (continued)

	NW, 1-14	No	%		NW, Male,1-14	No	%		NW,Female, 1-14	No	%
1	Intestinal infectious diseases (A00-A09)	69	7,7	1	Intestinal infectious diseases (A00-A09)	34	6,9	1	Intestinal infectious diseases (A00-A09)	35	8,7
2	Malnutrition (E40-E46)	68	7,5	2	Malnutrition (E40-E46)	33	6,7	2	Malnutrition (E40-E46)	33	8,2
3	Influenza and pneumonia (J09-J18)	61	6,8	3	Influenza and pneumonia (J09-J18)	33	6,7	3	Influenza and pneumonia (J09-J18)	28	6,9
4	Tuberculosis (A15-A19)	43	4,8	4	Tuberculosis (A15-A19)	21	4,3	4	Tuberculosis (A15-A19)	21	5,2
5	Cerebral palsy and other paralytic syndromes (G80-G83)	24	2,7	5	Cerebral palsy and other paralytic syndromes (G80-G83)	16	3,2	5	Episodic and paroxysmal disorders (G40-G47)	10	2,5
6	Human immunodeficiency virus [HIV] disease (B20-B24)	20	2,2	6	Human immunodeficiency virus [HIV] disease (B20-B24)	11	2,2	6	Other forms of heart disease (I30-I52)	9	2,2
7	Other forms of heart disease (I30-I52)	19	2,1	7	Other forms of heart disease (I30-I52)	10	2	7	Human immunodeficiency virus [HIV] disease (B20-B24)	9	2,2
8	Episodic and paroxysmal disorders (G40-G47)	19	2,1	8	Other viral diseases (B25-B34)	9	1,8	8	Metabolic disorders (E70-E90)	8	2
9	Other viral diseases (B25-B34)	16	1,8	9	Other bacterial diseases (A30-A49)	9	1,8	9	Cerebral palsy and other paralytic syndromes (G80-G83)	8	2
10	Other bacterial diseases (A30-A49)	15	1,7	10	Episodic and paroxysmal disorders (G40-G47)	9	1,8	10	Other viral diseases (B25-B34)	7	1,7
	Other Natural	338	37,5		Other Natural	186	37,7		Other Natural	149	37
	Non-natural	209	23,2		Non-natural	123	24,9		Non-natural	86	21,3
	All causes	901	100,1		All causes	494	100		All causes	403	99,9
	NW, 15-44	No	%		NW, Male, 15-44	No	%		NW, Female,15-44	No	%
1	Tuberculosis (A15-A19)	995	12,1	1	Tuberculosis (A15-A19)	564	12,3	1	Human immunodeficiency virus [HIV] disease (B20-B24)	461	12,7
2	Human immunodeficiency virus [HIV] disease (B20-B24)	868	10,5	2	Human immunodeficiency virus [HIV] disease (B20-B24)	406	8,8	2	Tuberculosis (A15-A19)	429	11,8
3	Other viral diseases (B25-B34)	520	6,3	3	Other viral diseases (B25-B34)	247	5,4	3	Other viral diseases (B25-B34)	270	7,5
4	Certain disorders involving the immune mechanism (D80-D89)	410	5	4	Influenza and pneumonia (J09-J18)	208	4,5	4	Certain disorders involving the immune mechanism (D80-D89)	207	5,7
5	Influenza and pneumonia (J09-J18)	388	4,7	5	Certain disorders involving the immune mechanism (D80-D89)	203	4,4	5	Influenza and pneumonia (J09-J18)	177	4,9
6	Other forms of heart disease (I30-I52)	192	2,3	6	Other forms of heart disease (I30-I52)	85	1,8	6	Other forms of heart disease (I30-I52)	106	2,9
7	Cerebrovascular diseases (I60-I69)	125	1,5	7	Cerebrovascular diseases (I60-I69)	62	1,3	7	Malignant neoplasms of female genital organs (C51-C58)	89	2,5
8	Aplastic and other anaemias (D60-D64)	101	1,2	8	Intestinal infectious diseases (A00-A09)	52	1,1	8	Aplastic and other anaemias (D60-D64)	66	1,8
9	Diabetes mellitus (E10-E14)	98	1,2	9	Episodic and paroxysmal disorders (G40-G47)	48	1	9	Cerebrovascular diseases (I60-I69)	63	1,7
10	Other bacterial diseases (A30-A49)	94	1,1	10	Hypertensive diseases (I10-I15)	45	1	10	Diabetes mellitus (E10-E14)	56	1,5
	Other Natural	2687	32,6		Non-natural	1406	30,6		Other Natural	1345	37,1
	Non-natural	1770	21,5		Other Natural	1269	27,6		Non-natural	354	9,8
	All causes	8248	100		All causes	4595	99,8		All causes	3623	99,9

Appendix M6: The ten leading underlying natural causes of death by age and sex: North West, 2018 (concluded)

NW, 45-64				NW, Male,45-64				NW, Female,45-64			
	No	%		No	%		No	%			
1	Tuberculosis (A15-A19)	797	8,4	1	Tuberculosis (A15-A19)	536	9,6	1	Diabetes mellitus (E10-E14)	319	8,2
2	Human immunodeficiency virus [HIV] disease (B20-B24)	594	6,3	2	Human immunodeficiency virus [HIV] disease (B20-B24)	312	5,6	2	Human immunodeficiency virus [HIV] disease (B20-B24)	280	7,2
3	Diabetes mellitus (E10-E14)	562	5,9	3	Other forms of heart disease (I30-I52)	277	5	3	Tuberculosis (A15-A19)	258	6,7
4	Other forms of heart disease (I30-I52)	463	4,9	4	Influenza and pneumonia (J09-J18)	276	5	4	Hypertensive diseases (I10-I15)	221	5,7
5	Influenza and pneumonia (J09-J18)	455	4,8	5	Cerebrovascular diseases (I60-I69)	272	4,9	5	Other forms of heart disease (I30-I52)	185	4,8
6	Hypertensive diseases (I10-I15)	447	4,7	6	Diabetes mellitus (E10-E14)	243	4,4	6	Other viral diseases (B25-B34)	179	4,6
7	Cerebrovascular diseases (I60-I69)	439	4,6	7	Hypertensive diseases (I10-I15)	226	4,1	7	Influenza and pneumonia (J09-J18)	177	4,6
8	Other viral diseases (B25-B34)	373	3,9	8	Chronic lower respiratory diseases (J40-J47)	207	3,7	8	Cerebrovascular diseases (I60-I69)	167	4,3
9	Certain disorders involving the immune mechanism (D80-D89)	310	3,3	9	Other viral diseases (B25-B34)	193	3,5	9	Malignant neoplasms of female genital organs (C51-C58)	162	4,2
10	Chronic lower respiratory diseases (J40-J47)	295	3,1	10	Certain disorders involving the immune mechanism (D80-D89)	188	3,4	10	Certain disorders involving the immune mechanism (D80-D89)	122	3,1
	Other Natural	4165	44		Other Natural	2412	43,4		Other Natural	1671	43,1
	Non-natural	561	5,9		Non-natural	422	7,6		Non-natural	137	3,5
	All causes	9461	99,8		All causes	5564	100,2		All causes	3878	100
NW, 65+				NW, Male, 65+				NW, Female, 65+			
	No	%		No	%		No	%			
1	Hypertensive diseases (I10-I15)	1230	11,3	1	Hypertensive diseases (I10-I15)	455	9,1	1	Hypertensive diseases (I10-I15)	773	13,2
2	Diabetes mellitus (E10-E14)	897	8,3	2	Other forms of heart disease (I30-I52)	381	7,6	2	Diabetes mellitus (E10-E14)	577	9,9
3	Other forms of heart disease (I30-I52)	844	7,8	3	Cerebrovascular diseases (I60-I69)	350	7	3	Other forms of heart disease (I30-I52)	463	7,9
4	Cerebrovascular diseases (I60-I69)	805	7,4	4	Diabetes mellitus (E10-E14)	319	6,4	4	Cerebrovascular diseases (I60-I69)	455	7,8
5	Chronic lower respiratory diseases (J40-J47)	436	4	5	Chronic lower respiratory diseases (J40-J47)	277	5,5	5	Influenza and pneumonia (J09-J18)	174	3
6	Influenza and pneumonia (J09-J18)	358	3,3	6	Tuberculosis (A15-A19)	198	4	6	Chronic lower respiratory diseases (J40-J47)	158	2,7
7	Ischaemic heart diseases (I20-I25)	311	2,9	7	Influenza and pneumonia (J09-J18)	184	3,7	7	Ischaemic heart diseases (I20-I25)	148	2,5
8	Tuberculosis (A15-A19)	294	2,7	8	Malignant neoplasms of male genital organs (C60-C63)	180	3,6	8	Malignant neoplasms of female genital organs (C51-C58)	112	1,9
9	Malignant neoplasms of digestive organs (C15-C26)	252	2,3	9	Ischaemic heart diseases (I20-I25)	163	3,3	9	Malignant neoplasms of digestive organs (C15-C26)	109	1,9
10	Renal failure (N17-N19)	210	1,9	10	Malignant neoplasms of digestive organs (C15-C26)	143	2,9	10	Renal failure (N17-N19)	104	1,8
	Other Natural	4961	45,7		Other Natural	2214	44,2		Other Natural	2650	45,3
	Non-natural	266	2,4		Non-natural	143	2,9		Non-natural	122	2,1
	All causes	10864	100		All causes	5007	100,2		All causes	5845	100

Appendix M7: The ten leading underlying natural causes of death by age and sex: Gauteng, 2018

	GP, all ages	No	%		GP, Males, all ages	No	%		GP, Females, all ages	No	%
1	Other forms of heart disease (I30-I52)	5321	5,8	1	Other forms of heart disease (I30-I52)	2609	5,4	1	Other forms of heart disease (I30-I52)	2696	6,4
2	Diabetes mellitus (E10-E14)	4252	4,7	2	Tuberculosis (A15-A19)	2423	5	2	Diabetes mellitus (E10-E14)	2397	5,7
3	Tuberculosis (A15-A19)	3912	4,3	3	Ischaemic heart diseases (I20-I25)	1858	3,9	3	Hypertensive diseases (I10-I15)	2059	4,9
4	Cerebrovascular diseases (I60-I69)	3735	4,1	4	Influenza and pneumonia (J09-J18)	1849	3,8	4	Cerebrovascular diseases (I60-I69)	1965	4,7
5	Influenza and pneumonia (J09-J18)	3540	3,9	5	Diabetes mellitus (E10-E14)	1848	3,8	5	Influenza and pneumonia (J09-J18)	1663	3,9
6	Hypertensive diseases (I10-I15)	3352	3,7	6	Cerebrovascular diseases (I60-I69)	1753	3,6	6	Tuberculosis (A15-A19)	1454	3,5
7	Ischaemic heart diseases (I20-I25)	3091	3,4	7	Chronic lower respiratory diseases (J40-J47)	1435	3	7	Malignant neoplasms of female genital organs (C51-C58)	1251	3
8	Chronic lower respiratory diseases (J40-J47)	2511	2,8	8	Malignant neoplasms of digestive organs (C15-C26)	1356	2,8	8	Ischaemic heart diseases (I20-I25)	1227	2,9
9	Malignant neoplasms of digestive organs (C15-C26)	2450	2,7	9	Hypertensive diseases (I10-I15)	1283	2,7	9	Human immunodeficiency virus [HIV] disease (B20-B24)	1130	2,7
10	Human immunodeficiency virus [HIV] disease (B20-B24)	2414	2,7	10	Human immunodeficiency virus [HIV] disease (B20-B24)	1267	2,6	10	Malignant neoplasms of digestive organs (C15-C26)	1090	2,6
	Other Natural	45523	50		Other Natural	22337	46,3		Other Natural	22762	54,1
	Non-natural	10873	12		Non-natural	8231	17,1		Non-natural	2417	5,7
	All causes	90974	100,1		All causes	48249	100		All causes	42111	100,1
	GP, 0	No	%		GP, Males, 0	No	%		GP, Females, 0	No	%
1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	692	14,6	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	384	15	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	302	14,4
2	Infections specific to the perinatal period (P35-P39)	355	7,5	2	Infections specific to the perinatal period (P35-P39)	202	7,9	2	Infections specific to the perinatal period (P35-P39)	150	7,1
3	Other disorders originating in the perinatal period (P90-P96)	283	6	3	Other disorders originating in the perinatal period (P90-P96)	156	6,1	3	Influenza and pneumonia (J09-J18)	133	6,3
4	Influenza and pneumonia (J09-J18)	283	6	4	Influenza and pneumonia (J09-J18)	144	5,6	4	Other disorders originating in the perinatal period (P90-P96)	118	5,6
5	Disorders related to length of gestation and fetal growth (P05-P08)	234	4,9	5	Disorders related to length of gestation and fetal growth (P05-P08)	139	5,4	5	Intestinal infectious diseases (A00-A09)	103	4,9
6	Intestinal infectious diseases (A00-A09)	227	4,8	6	Intestinal infectious diseases (A00-A09)	118	4,6	6	Disorders related to length of gestation and fetal growth (P05-P08)	92	4,4
7	Congenital malformations of the circulatory system (Q20-Q28)	193	4,1	7	Congenital malformations of the circulatory system (Q20-Q28)	98	3,8	7	Congenital malformations of the circulatory system (Q20-Q28)	89	4,2
8	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	173	3,6	8	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	87	3,4	8	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	85	4
9	Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	136	2,9	9	Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	72	2,8	9	Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	63	3
10	Other diseases of the respiratory system (J95-J99)	105	2,2	10	Other bacterial diseases (A30-A49)	58	2,3	10	Other congenital malformations (Q80-Q89)	47	2,2
	Other Natural	1925	40,6		Other Natural	1032	40,2		Other Natural	865	41,1
	Non-natural	136	2,9		Non-natural	76	3		Non-natural	57	2,7
	All causes	4742	100,1		All causes	2566	100,1		All causes	2104	99,9

Appendix M7: The ten leading underlying natural causes of death by age and sex: Gauteng, 2018 (continued)

	GP, 1-14	No	%		GP, Male, 1-14	No	%		GP, Female, 1-14	No	%
1	Influenza and pneumonia (J09-J18)	137	6,3	1	Influenza and pneumonia (J09-J18)	75	6,2	1	Influenza and pneumonia (J09-J18)	59	6
2	Intestinal infectious diseases (A00-A09)	111	5,1	2	Intestinal infectious diseases (A00-A09)	56	4,7	2	Intestinal infectious diseases (A00-A09)	53	5,4
3	Cerebral palsy and other paralytic syndromes (G80-G83)	74	3,4	3	Cerebral palsy and other paralytic syndromes (G80-G83)	50	4,2	3	Other forms of heart disease (I30-I52)	35	3,6
4	Other forms of heart disease (I30-I52)	71	3,2	4	Other forms of heart disease (I30-I52)	36	3	4	Cerebral palsy and other paralytic syndromes (G80-G83)	24	2,5
5	Other diseases of the respiratory system (J95-J99)	47	2,1	5	Malignant neoplasms, stated or presumed to be primary, of lymphoid, haematopoietic and related tissue (C81-C96)	34	2,8	5	Other bacterial diseases (A30-A49)	22	2,3
6	Malignant neoplasms, stated or presumed to be primary, of lymphoid, haematopoietic and related tissue (C81-C96)	44	2	6	Other diseases of the respiratory system (J95-J99)	29	2,4	6	Malnutrition (E40-E46)	19	1,9
7	Malnutrition (E40-E46)	43	2	7	Malnutrition (E40-E46)	24	2	7	Tuberculosis (A15-A19)	17	1,7
8	Other bacterial diseases (A30-A49)	41	1,9	8	Congenital malformations of the circulatory system (Q20-Q28)	19	1,6	8	Congenital malformations of the circulatory system (Q20-Q28)	17	1,7
9	Congenital malformations of the circulatory system (Q20-Q28)	36	1,6	9	Other bacterial diseases (A30-A49)	19	1,6	9	Other disorders of the nervous system (G90-G99)	16	1,6
10	Tuberculosis (A15-A19)	35	1,6	10	Tuberculosis (A15-A19)	18	1,5	10	Other diseases of the respiratory system (J95-J99)	16	1,6
	Other Natural	898	41		Other Natural	462	38,5		Other Natural	425	43,5
	Non-natural	653	29,8		Non-natural	379	31,6		Non-natural	274	28
	All causes	2190	100		All causes	1201	100,1		All causes	977	99,8
	GP, 15-44	No	%		GP, Male, 15-44	No	%		GP, Female, 15-44	No	%
1	Tuberculosis (A15-A19)	1959	8,4	1	Tuberculosis (A15-A19)	1151	8,2	1	Tuberculosis (A15-A19)	797	8,8
2	Human immunodeficiency virus [HIV] disease (B20-B24)	1365	5,8	2	Human immunodeficiency virus [HIV] disease (B20-B24)	685	4,9	2	Human immunodeficiency virus [HIV] disease (B20-B24)	669	7,4
3	Other viral diseases (B25-B34)	1028	4,4	3	Other viral diseases (B25-B34)	478	3,4	3	Other viral diseases (B25-B34)	544	6
4	Influenza and pneumonia (J09-J18)	867	3,7	4	Other forms of heart disease (I30-I52)	477	3,4	4	Certain disorders involving the immune mechanism (D80-D89)	398	4,4
5	Other forms of heart disease (I30-I52)	816	3,5	5	Influenza and pneumonia (J09-J18)	464	3,3	5	Influenza and pneumonia (J09-J18)	396	4,4
6	Certain disorders involving the immune mechanism (D80-D89)	770	3,3	6	Certain disorders involving the immune mechanism (D80-D89)	365	2,6	6	Other forms of heart disease (I30-I52)	333	3,7
7	Cerebrovascular diseases (I60-I69)	423	1,8	7	Cerebrovascular diseases (I60-I69)	237	1,7	7	Malignant neoplasms of female genital organs (C51-C58)	287	3,2
8	Renal failure (N17-N19)	346	1,5	8	Renal failure (N17-N19)	200	1,4	8	Cerebrovascular diseases (I60-I69)	183	2
9	Malignant neoplasms, stated or presumed to be primary, of lymphoid, haematopoietic and related tissue (C81-C96)	337	1,4	9	Other bacterial diseases (A30-A49)	174	1,2	9	Malignant neoplasms, stated or presumed to be primary, of lymphoid, haematopoietic and related tissue (C81-C96)	168	1,9
10	Other bacterial diseases (A30-A49)	329	1,4	10	Inflammatory diseases of the central nervous system (G00-G09)	172	1,2	10	Malignant neoplasms of breast (C50)	159	1,8
	Other Natural	8463	36,2		Non-natural	5445	38,6		Other Natural	4013	44,3
	Non-natural	6647	28,5		Other Natural	4240	30,1		Non-natural	1120	12,4
	All causes	23350	99,9		All causes	14088	100		All causes	9067	100,3

Appendix M7: The ten leading underlying natural causes of death by age and sex: Gauteng, 2018 (concluded)

	GP, 45-64	No	%		GP, Male,45-64	No	%		GP, Female,45-64	No	%
1	Other forms of heart disease (I30-I52)	1557	5,9	1	Tuberculosis (A15-A19)	982	6,4	1	Diabetes mellitus (E10-E14)	786	7
2	Diabetes mellitus (E10-E14)	1498	5,7	2	Other forms of heart disease (I30-I52)	913	6	2	Other forms of heart disease (I30-I52)	643	5,8
3	Tuberculosis (A15-A19)	1459	5,5	3	Diabetes mellitus (E10-E14)	708	4,6	3	Malignant neoplasms of female genital organs (C51-C58)	557	5
4	Cerebrovascular diseases (I60-I69)	1173	4,4	4	Ischaemic heart diseases (I20-I25)	684	4,5	4	Cerebrovascular diseases (I60-I69)	516	4,6
5	Malignant neoplasms of digestive organs (C15-C26)	1015	3,8	5	Cerebrovascular diseases (I60-I69)	653	4,3	5	Tuberculosis (A15-A19)	473	4,2
6	Ischaemic heart diseases (I20-I25)	967	3,7	6	Malignant neoplasms of digestive organs (C15-C26)	592	3,9	6	Hypertensive diseases (I10-I15)	429	3,8
7	Influenza and pneumonia (J09-J18)	919	3,5	7	Influenza and pneumonia (J09-J18)	570	3,7	7	Malignant neoplasms of digestive organs (C15-C26)	421	3,8
8	Hypertensive diseases (I10-I15)	885	3,3	8	Chronic lower respiratory diseases (J40-J47)	510	3,3	8	Human immunodeficiency virus [HIV] disease (B20-B24)	382	3,4
9	Human immunodeficiency virus [HIV] disease (B20-B24)	876	3,3	9	Human immunodeficiency virus [HIV] disease (B20-B24)	491	3,2	9	Malignant neoplasms of breast (C50)	379	3,4
10	Chronic lower respiratory diseases (J40-J47)	765	2,9	10	Hypertensive diseases (I10-I15)	454	3	10	Influenza and pneumonia (J09-J18)	346	3,1
	Other Natural	13250	50		Other Natural	7066	46,4		Other Natural	5741	51,4
	Non-natural	2117	8		Non-natural	1607	10,6		Non-natural	504	4,5
	All causes	26481	100		All causes	15230	99,9		All causes	11177	100
	GP, 65+	No	%		GP, Male, 65+	No	%		GP, Female, 65+	No	%
1	Other forms of heart disease (I30-I52)	2824	8,4	1	Other forms of heart disease (I30-I52)	1158	7,8	1	Other forms of heart disease (I30-I52)	1662	8,9
2	Diabetes mellitus (E10-E14)	2480	7,4	2	Ischaemic heart diseases (I20-I25)	1010	6,8	2	Hypertensive diseases (I10-I15)	1541	8,2
3	Hypertensive diseases (I10-I15)	2284	6,8	3	Diabetes mellitus (E10-E14)	1003	6,8	3	Diabetes mellitus (E10-E14)	1475	7,9
4	Cerebrovascular diseases (I60-I69)	2107	6,3	4	Cerebrovascular diseases (I60-I69)	845	5,7	4	Cerebrovascular diseases (I60-I69)	1255	6,7
5	Ischaemic heart diseases (I20-I25)	1880	5,6	5	Chronic lower respiratory diseases (J40-J47)	834	5,6	5	Ischaemic heart diseases (I20-I25)	869	4,6
6	Chronic lower respiratory diseases (J40-J47)	1588	4,7	6	Hypertensive diseases (I10-I15)	737	5	6	Chronic lower respiratory diseases (J40-J47)	754	4
7	Influenza and pneumonia (J09-J18)	1311	3,9	7	Malignant neoplasms of male genital organs (C60-C63)	655	4,4	7	Influenza and pneumonia (J09-J18)	725	3,9
8	Malignant neoplasms of digestive organs (C15-C26)	1184	3,5	8	Malignant neoplasms of digestive organs (C15-C26)	628	4,2	8	Malignant neoplasms of digestive organs (C15-C26)	554	3
9	Renal failure (N17-N19)	860	2,6	9	Influenza and pneumonia (J09-J18)	583	3,9	9	Renal failure (N17-N19)	458	2,4
10	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	714	2,1	10	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	433	2,9	10	Malignant neoplasms of female genital organs (C51-C58)	406	2,2
	Other Natural	15378	45,8		Other Natural	6393	43,2		Other Natural	8581	45,8
	Non-natural	972	2,9		Non-natural	527	3,6		Non-natural	442	2,4
	All causes	33582	100		All causes	14806	99,9		All causes	18722	100

Appendix M8: The ten leading underlying natural causes of death by age and sex: Mpumalanga, 2018

MP, all ages		No	%		MP, Males, all ages		No	%		MP, Females, all ages		No	%
1	Tuberculosis (A15-A19)	2191	7,3	1	Tuberculosis (A15-A19)	1346	8,6	1	Diabetes mellitus (E10-E14)	1004	7		
2	Hypertensive diseases (I10-I15)	1656	5,5	2	Influenza and pneumonia (J09-J18)	768	4,9	2	Hypertensive diseases (I10-I15)	977	6,8		
3	Diabetes mellitus (E10-E14)	1651	5,5	3	Human immunodeficiency virus [HIV] disease (B20-B24)	705	4,5	3	Cerebrovascular diseases (I60-I69)	849	5,9		
4	Influenza and pneumonia (J09-J18)	1507	5	4	Hypertensive diseases (I10-I15)	671	4,3	4	Tuberculosis (A15-A19)	840	5,9		
5	Cerebrovascular diseases (I60-I69)	1467	4,9	5	Diabetes mellitus (E10-E14)	645	4,1	5	Human immunodeficiency virus [HIV] disease (B20-B24)	742	5,2		
6	Human immunodeficiency virus [HIV] disease (B20-B24)	1452	4,8	6	Ischaemic heart diseases (I20-I25)	645	4,1	6	Influenza and pneumonia (J09-J18)	735	5,1		
7	Ischaemic heart diseases (I20-I25)	1260	4,2	7	Cerebrovascular diseases (I60-I69)	615	3,9	7	Ischaemic heart diseases (I20-I25)	610	4,2		
8	Other forms of heart disease (I30-I52)	1091	3,6	8	Other forms of heart disease (I30-I52)	515	3,3	8	Other forms of heart disease (I30-I52)	573	4		
9	Other viral diseases (B25-B34)	980	3,3	9	Other viral diseases (B25-B34)	431	2,8	9	Other viral diseases (B25-B34)	546	3,8		
10	Intestinal infectious diseases (A00-A09)	769	2,6	10	Intestinal infectious diseases (A00-A09)	402	2,6	10	Malignant neoplasms of female genital organs (C51-C58)	401	2,8		
	Other Natural	12815	42,5		Other Natural	6386	40,8		Other Natural	6333	44,1		
	Non-natural	3283	10,9		Non-natural	2520	16,1		Non-natural	747	5,2		
	All causes	30122	100,1		All causes	15649	100		All causes	14357	100		
	MP, 0	No	%		MP, Males, 0	No	%		MP, Females, 0	No	%		
1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	216	15,3	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	129	17,2	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	86	13,3		
2	Intestinal infectious diseases (A00-A09)	177	12,5	2	Intestinal infectious diseases (A00-A09)	100	13,4	2	Intestinal infectious diseases (A00-A09)	79	12,2		
3	Influenza and pneumonia (J09-J18)	110	7,8	3	Influenza and pneumonia (J09-J18)	56	7,5	3	Influenza and pneumonia (J09-J18)	53	8,2		
4	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	74	5,2	4	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	41	5,5	4	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	30	4,6		
5	Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	48	3,4	5	Other disorders originating in the perinatal period (P90-P96)	30	4	5	Disorders related to length of gestation and fetal growth (P05-P08)	24	3,7		
6	Infections specific to the perinatal period (P35-P39)	47	3,3	6	Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	28	3,7	6	Congenital malformations of the circulatory system (Q20-Q28)	21	3,2		
7	Other disorders originating in the perinatal period (P90-P96)	46	3,3	7	Infections specific to the perinatal period (P35-P39)	27	3,6	7	Other acute lower respiratory infections (J20-J22)	20	3,1		
8	Disorders related to length of gestation and fetal growth (P05-P08)	43	3	8	Other acute lower respiratory infections (J20-J22)	21	2,8	8	Other disorders originating in the perinatal period (P90-P96)	19	2,9		
9	Other acute lower respiratory infections (J20-J22)	40	2,8	9	Disorders related to length of gestation and fetal growth (P05-P08)	21	2,8	9	Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	19	2,9		
10	Congenital malformations of the circulatory system (Q20-Q28)	31	2,2	10	Malnutrition (E40-E46)	18	2,4	10	Infections specific to the perinatal period (P35-P39)	17	2,6		
	Other Natural	523	37		Other Natural	254	33,9		Other Natural	245	37,9		
	Non-natural	58	4,1		Non-natural	24	3,2		Non-natural	34	5,3		
	All Causes	1 413	99,9		All causes	749	100		All causes	647	99,9		

Appendix M8: The ten leading underlying natural causes of death by age and sex: Mpumalanga, 2018 (continued)

	MP, 1-14	No	%		MP, Male, 1-14	No	%		MP, Female, 1-14	No	%
1	Intestinal infectious diseases (A00-A09)	82	8,3	1	Intestinal infectious diseases (A00-A09)	45	8,2	1	Influenza and pneumonia (J09-J18)	37	8,4
2	Influenza and pneumonia (J09-J18)	76	7,7	2	Influenza and pneumonia (J09-J18)	39	7,1	2	Intestinal infectious diseases (A00-A09)	36	8,2
3	Other acute lower respiratory infections (J20-J22)	35	3,5	3	Other acute lower respiratory infections (J20-J22)	20	3,7	3	Tuberculosis (A15-A19)	19	4,3
4	Tuberculosis (A15-A19)	31	3,1	4	Other viral diseases (B25-B34)	14	2,6	4	Malnutrition (E40-E46)	18	4,1
5	Malnutrition (E40-E46)	30	3	5	Cerebral palsy and other paralytic syndromes (G80-G83)	12	2,2	5	Other acute lower respiratory infections (J20-J22)	15	3,4
6	Other viral diseases (B25-B34)	22	2,2	6	Tuberculosis (A15-A19)	12	2,2	6	Human immunodeficiency virus [HIV] disease (B20-B24)	13	3
7	Inflammatory diseases of the central nervous system (G00-G09)	21	2,1	7	Inflammatory diseases of the central nervous system (G00-G09)	12	2,2	7	Other bacterial diseases (A30-A49)	10	2,3
8	Human immunodeficiency virus [HIV] disease (B20-B24)	20	2	8	Malnutrition (E40-E46)	12	2,2	8	Inflammatory diseases of the central nervous system (G00-G09)	9	2,1
9	Cerebral palsy and other paralytic syndromes (G80-G83)	17	1,7	9	Ischaemic heart diseases (I20-I25)	10	1,8	9	Other viral diseases (B25-B34)	8	1,8
10	Episodic and paroxysmal disorders (G40-G47)	16	1,6	10	Other disorders of the nervous system (G90-G99)	10	1,8	10	Other forms of heart disease (I30-I52)	8	1,8
	Other Natural	381	38,6		Other Natural	199	36,4		Other Natural	171	39
	Non-natural	256	25,9		Non-natural	161	29,5		Non-natural	95	21,6
	All causes	987	99,7		All causes	546	99,9		All causes	439	100
	MP, 15-44	No	%		MP, Male, 15-44	No	%		MP, Female, 15-44	No	%
1	Tuberculosis (A15-A19)	1128	12,6	1	Tuberculosis (A15-A19)	619	12,4	1	Tuberculosis (A15-A19)	505	12,9
2	Human immunodeficiency virus [HIV] disease (B20-B24)	830	9,3	2	Human immunodeficiency virus [HIV] disease (B20-B24)	376	7,5	2	Human immunodeficiency virus [HIV] disease (B20-B24)	452	11,5
3	Other viral diseases (B25-B34)	524	5,9	3	Other viral diseases (B25-B34)	199	4	3	Other viral diseases (B25-B34)	323	8,2
4	Influenza and pneumonia (J09-J18)	392	4,4	4	Influenza and pneumonia (J09-J18)	179	3,6	4	Influenza and pneumonia (J09-J18)	212	5,4
5	Certain disorders involving the immune mechanism (D80-D89)	233	2,6	5	Ischaemic heart diseases (I20-I25)	105	2,1	5	Certain disorders involving the immune mechanism (D80-D89)	133	3,4
6	Other acute lower respiratory infections (J20-J22)	219	2,4	6	Other acute lower respiratory infections (J20-J22)	104	2,1	6	Other acute lower respiratory infections (J20-J22)	113	2,9
7	Ischaemic heart diseases (I20-I25)	191	2,1	7	Certain disorders involving the immune mechanism (D80-D89)	100	2	7	Malignant neoplasms of female genital organs (C51-C58)	104	2,7
8	Intestinal infectious diseases (A00-A09)	176	2	8	Intestinal infectious diseases (A00-A09)	97	1,9	8	Ischaemic heart diseases (I20-I25)	86	2,2
9	Other forms of heart disease (I30-I52)	155	1,7	9	Other forms of heart disease (I30-I52)	85	1,7	9	Intestinal infectious diseases (A00-A09)	78	2
10	Diabetes mellitus (E10-E14)	121	1,4	10	Renal failure (N17-N19)	62	1,2	10	Other forms of heart disease (I30-I52)	69	1,8
	Other Natural	2920	32,6		Non-natural	1690	33,8		Other Natural	1480	37,8
	Non-natural	2061	23		Other Natural	1379	27,6		Non-natural	362	9,2
	All causes	8950	100		All causes	4995	99,9		All causes	3917	100

Appendix M8: The ten leading underlying natural causes of death by age and sex: Mpumalanga, 2018 (concluded)

	MP, 45-64	No	%		MP, Male,45-64	No	%		MP, Female,45-64	No	%
1	Tuberculosis (A15-A19)	739	8,6	1	Tuberculosis (A15-A19)	507	10,5	1	Diabetes mellitus (E10-E14)	338	9,1
2	Diabetes mellitus (E10-E14)	586	6,8	2	Human immunodeficiency virus [HIV] disease (B20-B24)	274	5,7	2	Tuberculosis (A15-A19)	231	6,2
3	Human immunodeficiency virus [HIV] disease (B20-B24)	497	5,8	3	Diabetes mellitus (E10-E14)	248	5,1	3	Human immunodeficiency virus [HIV] disease (B20-B24)	221	6
4	Hypertensive diseases (I10-I15)	412	4,8	4	Ischaemic heart diseases (I20-I25)	243	5	4	Hypertensive diseases (I10-I15)	202	5,5
5	Ischaemic heart diseases (I20-I25)	409	4,8	5	Influenza and pneumonia (J09-J18)	238	4,9	5	Cerebrovascular diseases (I60-I69)	182	4,9
6	Cerebrovascular diseases (I60-I69)	398	4,6	6	Cerebrovascular diseases (I60-I69)	215	4,4	6	Malignant neoplasms of female genital organs (C51-C58)	182	4,9
7	Influenza and pneumonia (J09-J18)	384	4,5	7	Hypertensive diseases (I10-I15)	207	4,3	7	Other viral diseases (B25-B34)	167	4,5
8	Other viral diseases (B25-B34)	341	4	8	Other viral diseases (B25-B34)	174	3,6	8	Ischaemic heart diseases (I20-I25)	166	4,5
9	Other forms of heart disease (I30-I52)	284	3,3	9	Other forms of heart disease (I30-I52)	158	3,3	9	Influenza and pneumonia (J09-J18)	145	3,9
10	Chronic lower respiratory diseases (J40-J47)	230	2,7	10	Chronic lower respiratory diseases (J40-J47)	155	3,2	10	Other forms of heart disease (I30-I52)	126	3,4
	Other Natural	3675	42,9		Other Natural	1962	40,5		Other Natural	1596	43,2
	Non-natural	607	7,1		Non-natural	466	9,6		Non-natural	141	3,8
	All causes	8562	99,9		All causes	4847	100,1		All causes	3697	99,9
	MP, 65+	No	%		MP, Male, 65+	No	%		MP, Female, 65+	No	%
1	Hypertensive diseases (I10-I15)	1170	11,6	1	Hypertensive diseases (I10-I15)	430	9,7	1	Hypertensive diseases (I10-I15)	735	13
2	Cerebrovascular diseases (I60-I69)	954	9,4	2	Cerebrovascular diseases (I60-I69)	343	7,7	2	Cerebrovascular diseases (I60-I69)	609	10,8
3	Diabetes mellitus (E10-E14)	933	9,2	3	Diabetes mellitus (E10-E14)	339	7,6	3	Diabetes mellitus (E10-E14)	592	10,5
4	Ischaemic heart diseases (I20-I25)	631	6,2	4	Ischaemic heart diseases (I20-I25)	281	6,3	4	Other forms of heart disease (I30-I52)	369	6,5
5	Other forms of heart disease (I30-I52)	628	6,2	5	Other forms of heart disease (I30-I52)	257	5,8	5	Ischaemic heart diseases (I20-I25)	349	6,2
6	Influenza and pneumonia (J09-J18)	542	5,4	6	Influenza and pneumonia (J09-J18)	253	5,7	6	Influenza and pneumonia (J09-J18)	288	5,1
7	Chronic lower respiratory diseases (J40-J47)	313	3,1	7	Tuberculosis (A15-A19)	198	4,5	7	Chronic lower respiratory diseases (J40-J47)	124	2,2
8	Tuberculosis (A15-A19)	278	2,7	8	Chronic lower respiratory diseases (J40-J47)	189	4,2	8	Malignant neoplasms of female genital organs (C51-C58)	114	2
9	Renal failure (N17-N19)	224	2,2	9	Malignant neoplasms of male genital organs (C60-C63)	177	4	9	Renal failure (N17-N19)	107	1,9
10	Intestinal infectious diseases (A00-A09)	205	2	10	Renal failure (N17-N19)	116	2,6	10	Intestinal infectious diseases (A00-A09)	106	1,9
	Other Natural	3972	39,3		Other Natural	1713	38,5		Other Natural	2137	37,9
	Non-natural	264	2,6		Non-natural	152	3,4		Non-natural	112	2
	All causes	10114	99,9		All causes	4448	100		All causes	5642	100

Appendix M9: The ten leading underlying natural causes of death by age and sex: Limpopo, 2018

	LP, all ages	No	%		LP,Males, all ages	No	%		LP, Females, all ages	No	%
1	Influenza and pneumonia (J09-J18)	2854	6,8	1	Influenza and pneumonia (J09-J18)	1421	6,8	1	Diabetes mellitus (E10-E14)	1675	7,9
2	Diabetes mellitus (E10-E14)	2787	6,6	2	Tuberculosis (A15-A19)	1326	6,3	2	Cerebrovascular diseases (I60-I69)	1545	7,3
3	Cerebrovascular diseases (I60-I69)	2607	6,2	3	Diabetes mellitus (E10-E14)	1109	5,3	3	Influenza and pneumonia (J09-J18)	1431	6,7
4	Hypertensive diseases (I10-I15)	2319	5,5	4	Cerebrovascular diseases (I60-I69)	1062	5,1	4	Hypertensive diseases (I10-I15)	1426	6,7
5	Tuberculosis (A15-A19)	2226	5,3	5	Hypertensive diseases (I10-I15)	891	4,3	5	Human immunodeficiency virus [HIV] disease (B20-B24)	1106	5,2
6	Human immunodeficiency virus [HIV] disease (B20-B24)	1962	4,6	6	Human immunodeficiency virus [HIV] disease (B20-B24)	854	4,1	6	Tuberculosis (A15-A19)	895	4,2
7	Other viral diseases (B25-B34)	1447	3,4	7	Other viral diseases (B25-B34)	714	3,4	7	Other viral diseases (B25-B34)	729	3,4
8	Other forms of heart disease (I30-I52)	1286	3	8	Other forms of heart disease (I30-I52)	633	3	8	Other forms of heart disease (I30-I52)	651	3,1
9	Intestinal infectious diseases (A00-A09)	1204	2,8	9	Renal failure (N17-N19)	595	2,8	9	Intestinal infectious diseases (A00-A09)	639	3
10	Renal failure (N17-N19)	1147	2,7	10	Intestinal infectious diseases (A00-A09)	564	2,7	10	Malignant neoplasms of female genital organs (C51-C58)	556	2,6
	Other Natural	18658	44,1		Other Natural	9013	43,1		Other Natural	9590	45,1
	Non-natural	3773	8,9		Non-natural	2720	13		Non-natural	1035	4,9
	All causes	42270	99,9		All causes	20902	99,9		All causes	21278	100,1
	LP, 0	No	%		LP, Males,0	No	%		LP,Females, 0	No	%
1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	412	17,1	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	235	18,4	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	174	15,7
2	Influenza and pneumonia (J09-J18)	259	10,8	2	Influenza and pneumonia (J09-J18)	135	10,5	2	Influenza and pneumonia (J09-J18)	124	11,2
3	Intestinal infectious diseases (A00-A09)	254	10,5	3	Intestinal infectious diseases (A00-A09)	131	10,2	3	Intestinal infectious diseases (A00-A09)	123	11,1
4	Other disorders originating in the perinatal period (P90-P96)	124	5,1	4	Other disorders originating in the perinatal period (P90-P96)	73	5,7	4	Other disorders originating in the perinatal period (P90-P96)	49	4,4
5	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	104	4,3	5	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	58	4,5	5	Disorders related to length of gestation and fetal growth (P05-P08)	49	4,4
6	Disorders related to length of gestation and fetal growth (P05-P08)	91	3,8	6	Infections specific to the perinatal period (P35-P39)	44	3,4	6	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	44	4
7	Infections specific to the perinatal period (P35-P39)	74	3,1	7	Disorders related to length of gestation and fetal growth (P05-P08)	41	3,2	7	Infections specific to the perinatal period (P35-P39)	27	2,4
8	Other bacterial diseases (A30-A49)	51	2,1	8	Congenital malformations of the circulatory system (Q20-Q28)	28	2,2	8	Other bacterial diseases (A30-A49)	25	2,3
9	Congenital malformations of the circulatory system (Q20-Q28)	48	2	9	Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	28	2,2	9	Other congenital malformations (Q80-Q89)	22	2
10	Malnutrition (E40-E46)	47	2	10	Other bacterial diseases (A30-A49)	26	2	10	Malnutrition (E40-E46)	22	2
	Other Natural	857	35,6		Other Natural	430	33,6		Other Natural	411	37,2
	Non-natural	87	3,6		Non-natural	51	4		Non-natural	36	3,3
	All causes	2408	100		All causes	1280	99,9		All causes	1106	100

Appendix M9: The ten leading underlying natural causes of death by age and sex: Limpopo, 2018 (continued)

	LP, 1-14	No	%		LP, Male,1-14	No	%		LP,Female, 1-14	No	%
1	Influenza and pneumonia (J09-J18)	182	11,3	1	Influenza and pneumonia (J09-J18)	91	10,9	1	Influenza and pneumonia (J09-J18)	91	11,9
2	Intestinal infectious diseases (A00-A09)	142	8,8	2	Intestinal infectious diseases (A00-A09)	69	8,3	2	Intestinal infectious diseases (A00-A09)	72	9,4
3	Tuberculosis (A15-A19)	62	3,9	3	Malnutrition (E40-E46)	38	4,6	3	Tuberculosis (A15-A19)	26	3,4
4	Malnutrition (E40-E46)	62	3,9	4	Tuberculosis (A15-A19)	36	4,3	4	Malnutrition (E40-E46)	24	3,1
5	Other bacterial diseases (A30-A49)	37	2,3	5	Cerebral palsy and other paralytic syndromes (G80-G83)	19	2,3	5	Other viral diseases (B25-B34)	19	2,5
6	Cerebral palsy and other paralytic syndromes (G80-G83)	37	2,3	6	Other bacterial diseases (A30-A49)	19	2,3	6	Cerebral palsy and other paralytic syndromes (G80-G83)	18	2,3
7	Human immunodeficiency virus [HIV] disease (B20-B24)	32	2	7	Human immunodeficiency virus [HIV] disease (B20-B24)	18	2,2	7	Other bacterial diseases (A30-A49)	18	2,3
8	Other viral diseases (B25-B34)	28	1,7	8	Malignant neoplasms, stated or presumed to be primary, of lymphoid, haematopoietic and related tissue (C81-C96)	14	1,7	8	Human immunodeficiency virus [HIV] disease (B20-B24)	14	1,8
9	Other forms of heart disease (I30-I52)	23	1,4	9	Episodic and paroxysmal disorders (G40-G47)	13	1,6	9	Hypertensive diseases (I10-I15)	13	1,7
10	Malignant neoplasms, stated or presumed to be primary, of lymphoid, haematopoietic and related tissue (C81-C96)	22	1,4	10	Other disorders of the nervous system (G90-G99)	12	1,4	10	Inflammatory diseases of the central nervous system (G00-G09)	13	1,7
	Other Natural	676	42,1		Other Natural	325	38,9		Other Natural	337	44
	Non-natural	303	18,9		Non-natural	181	21,7		Non-natural	121	15,8
	All causes	1606	100		All causes	835	100,2		All causes	766	99,9
	LP, 15-44	No	%		LP, Male, 15-44	No	%		LP, Female,15-44	No	%
1	Tuberculosis (A15-A19)	1080	10,7	1	Tuberculosis (A15-A19)	549	10,4	1	Human immunodeficiency virus [HIV] disease (B20-B24)	649	13,5
2	Human immunodeficiency virus [HIV] disease (B20-B24)	1054	10,4	2	Human immunodeficiency virus [HIV] disease (B20-B24)	404	7,7	2	Tuberculosis (A15-A19)	528	10,9
3	Other viral diseases (B25-B34)	807	8	3	Other viral diseases (B25-B34)	369	7	3	Other viral diseases (B25-B34)	436	9
4	Influenza and pneumonia (J09-J18)	678	6,7	4	Influenza and pneumonia (J09-J18)	284	5,4	4	Influenza and pneumonia (J09-J18)	393	8,1
5	Certain disorders involving the immune mechanism (D80-D89)	247	2,4	5	Certain disorders involving the immune mechanism (D80-D89)	106	2	5	Certain disorders involving the immune mechanism (D80-D89)	141	2,9
6	Intestinal infectious diseases (A00-A09)	224	2,2	6	Renal failure (N17-N19)	106	2	6	Intestinal infectious diseases (A00-A09)	119	2,5
7	Renal failure (N17-N19)	219	2,2	7	Intestinal infectious diseases (A00-A09)	105	2	7	Diabetes mellitus (E10-E14)	112	2,3
8	Diabetes mellitus (E10-E14)	191	1,9	8	Other forms of heart disease (I30-I52)	81	1,5	8	Renal failure (N17-N19)	111	2,3
9	Other forms of heart disease (I30-I52)	168	1,7	9	Diabetes mellitus (E10-E14)	79	1,5	9	Malignant neoplasms of female genital organs (C51-C58)	103	2,1
10	Cerebrovascular diseases (I60-I69)	128	1,3	10	Episodic and paroxysmal disorders (G40-G47)	67	1,3	10	Other forms of heart disease (I30-I52)	87	1,8
	Other Natural	3184	31,5		Non-natural	1690	32		Other Natural	1701	35,3
	Non-natural	2144	21,2		Other Natural	1435	27,2		Non-natural	445	9,2
	All causes	10124	100,2		All causes	5275	100		All causes	4825	99,9

Appendix M9: The ten leading underlying natural causes of death by age and sex: Limpopo, 2018 (concluded)

	LP, 45-64	No	%		LP, Male,45-64	No	%		LP, Female,45-64	No	%
1	Diabetes mellitus (E10-E14)	942	8,6	1	Tuberculosis (A15-A19)	531	8,5	1	Diabetes mellitus (E10-E14)	540	11,6
2	Tuberculosis (A15-A19)	767	7	2	Influenza and pneumonia (J09-J18)	457	7,3	2	Human immunodeficiency virus [HIV] disease (B20-B24)	384	8,3
3	Influenza and pneumonia (J09-J18)	742	6,8	3	Diabetes mellitus (E10-E14)	401	6,4	3	Influenza and pneumonia (J09-J18)	284	6,1
4	Human immunodeficiency virus [HIV] disease (B20-B24)	740	6,8	4	Human immunodeficiency virus [HIV] disease (B20-B24)	356	5,7	4	Hypertensive diseases (I10-I15)	260	5,6
5	Cerebrovascular diseases (I60-I69)	553	5,1	5	Cerebrovascular diseases (I60-I69)	313	5	5	Malignant neoplasms of female genital organs (C51-C58)	257	5,5
6	Hypertensive diseases (I10-I15)	511	4,7	6	Other viral diseases (B25-B34)	275	4,4	6	Cerebrovascular diseases (I60-I69)	240	5,2
7	Other viral diseases (B25-B34)	493	4,5	7	Hypertensive diseases (I10-I15)	251	4	7	Tuberculosis (A15-A19)	235	5,1
8	Other forms of heart disease (I30-I52)	331	3	8	Other forms of heart disease (I30-I52)	200	3,2	8	Other viral diseases (B25-B34)	217	4,7
9	Renal failure (N17-N19)	327	3	9	Renal failure (N17-N19)	194	3,1	9	Renal failure (N17-N19)	131	2,8
10	Malignant neoplasms of female genital organs (C51-C58)	257	2,3	10	Chronic lower respiratory diseases (J40-J47)	168	2,7	10	Other forms of heart disease (I30-I52)	131	2,8
	Other Natural	4513	41,3		Other Natural	2579	41,1		Other Natural	1760	37,8
	Non-natural	764	7		Non-natural	551	8,8		Non-natural	212	4,6
	All causes	10940	100,1		All causes	6276	100,2		All causes	4651	100,1
	LP, 65+	No	%		LP, Male, 65+	No	%		LP, Female, 65+	No	%
1	Cerebrovascular diseases (I60-I69)	1910	11,1	1	Cerebrovascular diseases (I60-I69)	677	9,4	1	Cerebrovascular diseases (I60-I69)	1233	12,4
2	Hypertensive diseases (I10-I15)	1662	9,7	2	Diabetes mellitus (E10-E14)	624	8,6	2	Hypertensive diseases (I10-I15)	1084	10,9
3	Diabetes mellitus (E10-E14)	1642	9,6	3	Hypertensive diseases (I10-I15)	578	8	3	Diabetes mellitus (E10-E14)	1016	10,2
4	Influenza and pneumonia (J09-J18)	992	5,8	4	Influenza and pneumonia (J09-J18)	453	6,3	4	Influenza and pneumonia (J09-J18)	539	5,4
5	Other forms of heart disease (I30-I52)	759	4,4	5	Other forms of heart disease (I30-I52)	339	4,7	5	Other forms of heart disease (I30-I52)	418	4,2
6	Renal failure (N17-N19)	562	3,3	6	Chronic lower respiratory diseases (J40-J47)	311	4,3	6	Renal failure (N17-N19)	283	2,9
7	Chronic lower respiratory diseases (J40-J47)	466	2,7	7	Renal failure (N17-N19)	279	3,9	7	Intestinal infectious diseases (A00-A09)	219	2,2
8	Intestinal infectious diseases (A00-A09)	355	2,1	8	Malignant neoplasms of male genital organs (C60-C63)	238	3,3	8	Malignant neoplasms of female genital organs (C51-C58)	195	2
9	Tuberculosis (A15-A19)	304	1,8	9	Tuberculosis (A15-A19)	204	2,8	9	Chronic lower respiratory diseases (J40-J47)	155	1,6
10	Ischaemic heart diseases (I20-I25)	295	1,7	10	Malignant neoplasms of digestive organs (C15-C26)	146	2	10	Ischaemic heart diseases (I20-I25)	154	1,6
	Other Natural	7753	45,2		Other Natural	3131	43,4		Other Natural	4409	44,4
	Non-natural	461	2,7		Non-natural	238	3,3		Non-natural	221	2,2
	All causes	17161	100,1		All causes	7218	100		All causes	9926	100

Appendix N: Number of deaths by main groups of causes of death and district municipality of death occurrence (Western Cape, Eastern Cape and Northern Cape), 2018

Province of death		Main group of underlying causes											Total
		Certain infectious and parasitic diseases (A00-B99)	Neoplasms (C00-D48)	Diseases of the blood and immune mechanism (D50-D89)	Endocrine, nutritional and metabolic diseases (E00-E90)	Diseases of the nervous system (G00-G99)	Diseases of the circulatory system (I00-I99)	Diseases of the respiratory system (J00-J99)	Diseases of the digestive system (K00-K93)	Certain conditions originating in the perinatal period (P00-P96)	other natural causes	External causes of morbidity and mortality (V01-Y98)	
Western Cape	Cape Winelands	1 033	1 121	42	594	163	1 273	639	158	91	722	712	6 548
	Central Karoo	133	127	5	54	13	179	116	18	9	53	73	780
	City of Cape Town	3 841	5 530	199	2 711	741	5 972	2 254	709	492	3 068	4 432	29 949
	Eden	867	962	53	447	135	1 193	527	140	45	434	507	5 310
	Overberg	254	446	6	169	59	462	189	43	26	172	221	2 047
	West Coast	605	616	38	346	58	849	412	91	49	347	331	3 742
	Total	6 733	8 802	343	4 321	1 169	9 928	4 137	1 159	712	4 796	6 276	48 376
Eastern Cape	Alfred Nzo	1 100	200	71	255	114	657	447	121	40	3 919	1 075	7 999
	Amathole	1 456	601	198	626	271	1 621	1 176	131	35	1 213	989	8 317
	Buffalo City	1 633	1 130	166	702	209	1 976	811	163	50	696	1 029	8 565
	Chris Hani	1 861	698	218	786	230	1 633	950	239	58	1 535	934	9 142
	Joe Gqabi	555	172	112	161	83	448	263	75	34	807	272	2 982
	Nelson Mandela Bay	2 660	1 805	198	1 218	379	2 730	1 089	357	69	1 060	1 374	12 939
	O.R.Tambo	2 564	667	205	569	280	1 147	1 003	260	37	4 477	2 061	13 270
	Sarah Baartman	758	441	120	315	93	837	406	97	28	454	356	3 905
Total	12 587	5 714	1 288	4 632	1 659	11 049	6 145	1 443	351	14 161	8 090	67 119	
Northern Cape	Frances Baard	911	560	286	372	129	971	469	169	93	708	430	5 098
	John Taolo Gaetsewe	531	141	17	113	43	508	233	27	77	556	212	2 458
	Namakwa	125	230	25	107	31	283	162	37	14	139	127	1 280
	Pixley ka Seme	433	192	92	113	44	482	295	69	56	255	222	2 253
	Z F Mgcawu	524	297	159	184	82	541	426	56	41	275	288	2 873
	Total	2 524	1 420	579	889	329	2 785	1 585	358	281	1 933	1 279	13 962

Appendix N1: Number of deaths by main groups of causes of death and district municipality of death occurrence (Free State, KwaZulu-Natal and North West), 2018

Province of death		Main group of underlying causes											Total
		Certain infectious and parasitic diseases (A00-B99)	Neoplasms (C00-D48)	Diseases of the blood and immune mechanism (D50-D89)	Endocrine, nutritional and metabolic diseases (E00-E90)	Diseases of the nervous system (G00-G99)	Diseases of the circulatory system (I00-I99)	Diseases of the respiratory system (J00-J99)	Diseases of the digestive system (K00-K93)	Certain conditions originating in the perinatal period (P00-P96)	other natural causes	External causes of morbidity and mortality (V01-Y98)	
Free State	Fezile Dabi	801	401	174	369	95	1 076	530	149	97	458	483	4 633
	Lejweleputswa	833	383	393	383	109	1 046	764	133	188	1 150	635	6 017
	Mangaung	1 461	968	271	558	172	1 497	699	265	174	2 173	1 063	9 301
	Thabo Mofutsanyane	1 664	548	242	707	155	1 710	822	248	184	737	877	7 894
	Xharies	202	99	33	73	12	231	123	23	7	178	101	1 082
	Total	4 961	2 399	1 113	2 090	543	5 560	2 938	818	650	4 696	3 159	28 927
Kwa-Zulu Natal	Amajuba	784	359	57	353	109	938	451	155	88	632	566	4 492
	Harry Gwala	909	289	104	345	104	850	518	100	51	813	682	4 765
	Ugu	1 384	629	119	631	164	1 202	481	141	115	1 421	909	7 196
	Zululand	1 061	302	91	365	115	810	382	133	101	1 652	623	5 635
	eThekwini	4 035	2 836	384	2 149	534	7 390	1 837	630	495	3 538	3 914	27 742
	iLembe	969	322	78	398	102	876	346	126	70	520	581	4 388
	uMgungundlovu	1 827	1 094	124	1 132	240	2 084	828	316	128	1 232	1 326	10 331
	uMkhanyakude	839	288	43	191	65	576	152	86	43	593	443	3 319
	uMzinyathi	851	248	67	348	102	1 256	355	108	97	482	566	4 480
	uThukela	1 279	400	95	482	152	1 408	441	187	90	462	796	5 792
	uThungulu	1 243	566	120	530	124	1 066	368	229	74	1 303	1 015	6 638
Total	15 181	7 333	1 282	6 924	1 811	18 456	6 159	2 211	1 352	12 648	11 421	84 778	
North West	Bojanala	2 022	802	328	885	184	1 786	980	278	266	1 767	1 054	10 352
	Dr Kenneth Kaunda	1 568	919	251	484	143	1 337	666	219	159	1 336	736	7 818
	Dr Ruth Segomotsi Mompati	1 043	254	145	272	108	1 030	571	84	128	1 017	390	5 042
	Ngaka Modiri Molema	1 205	396	387	431	129	1 402	754	175	220	2 458	717	8 274
	Total	5 838	2 371	1 111	2 072	564	5 555	2 971	756	773	6 578	2 897	31 486

Appendix N2: Number of deaths by main groups of causes of death and district municipality of death occurrence (Gauteng, Mpumalanga and Limpopo), 2018

Province of death		Main group of underlying causes											Total
		Certain infectious and parasitic diseases (A00-B99)	Neoplasms (C00-D48)	Diseases of the blood and immune mechanism (D50-D89)	Endocrine, nutritional and metabolic diseases (E00-E90)	Diseases of the nervous system (G00-G99)	Diseases of the circulatory system (I00-I99)	Diseases of the respiratory system (J00-J99)	Diseases of the digestive system (K00-K93)	Certain conditions originating in the perinatal period (P00-P96)	other natural causes	External causes of morbidity and mortality (V01-Y98)	
Gauteng	City of Johannesburg	3 549	3 667	545	1 441	613	4 495	2 195	745	688	7 829	4 169	29 936
	City of Tshwane	3 276	3 615	446	1 988	751	6 119	2 456	809	520	4 038	2 454	26 472
	Ekurhuleni	2 371	1 812	519	1 051	438	3 213	2 117	529	464	4 070	2 323	18 907
	Sedibeng	1 484	1 046	313	738	290	2 477	1 232	323	207	1 416	1 250	10 776
	West Rand	622	458	236	268	91	726	419	128	114	1 144	677	4 883
	Total	11 302	10 598	2 059	5 486	2 183	17 030	8 419	2 534	1 993	18 497	10 873	90 974
Mpumalanga	Ehlanzeni	3 048	1 047	304	895	285	2 795	1 190	347	145	1 375	1 304	12 735
	Gert Sibande	1 580	556	280	527	157	1 159	703	243	211	1 441	956	7 813
	Nkangala	1 436	592	190	672	168	1 796	1 209	217	155	2 116	1 023	9 574
	Total	6 064	2 195	774	2 094	610	5 750	3 102	807	511	4 932	3 283	30 122
Limpopo	Capricorn	2 240	1 024	223	981	207	1 928	1 423	339	266	2 641	1 202	12 474
	Mopani	1 555	524	200	768	138	1 232	849	261	281	2 377	718	8 903
	Sekhukhune	1 434	408	124	580	145	2 084	1 215	165	101	1 166	668	8 090
	Vhembe	1 061	430	147	576	89	688	399	202	138	2 895	655	7 280
	Waterberg	1 311	418	112	448	117	1 071	607	138	96	675	530	5 523
	Total	7 601	2 804	806	3 353	696	7 003	4 493	1 105	882	9 754	3 773	42 270

Appendix O: Percentage of deaths by main groups of causes of death and district municipality of death occurrence (Western Cape, Eastern Cape and NorthernCape), 2018

Province of death		Main group of underlying causes											
		Certain infectious and parasitic diseases (A00-B99)	Neoplasms (C00-D48)	Diseases of the blood and immune mechanism (D50-D89)	Endocrine, nutritional and metabolic diseases (E00-E90)	Diseases of the nervous system (G00-G99)	Diseases of the circulatory system (I00-I99)	Diseases of the respiratory system (J00-J99)	Diseases of the digestive system (K00-K93)	Certain conditions originating in the perinatal period (P00-P96)	other natural causes	External causes of morbidity and mortality (V01-Y98)	Total
Western Cape	Cape Winelands	15,8	17,1	0,6	9,1	2,5	19,4	9,8	2,4	1,4	11,0	10,9	100
	Central Karoo	17,1	16,3	0,6	6,9	1,7	23,0	14,9	2,3	1,2	6,8	9,4	100
	City of Cape Town	12,8	18,5	0,7	9,1	2,5	19,9	7,5	2,4	1,6	10,2	14,8	100
	Eden	16,3	18,1	1,0	8,4	2,5	22,5	9,9	2,6	0,9	8,2	9,6	100
	Overberg	12,4	21,8	0,3	8,3	2,9	22,6	9,2	2,1	1,3	8,4	10,8	100
	West Coast	16,2	16,5	1,0	9,3	1,6	22,7	11,0	2,4	1,3	9,3	8,9	100
	Total	13,9	18,2	0,7	8,9	2,4	20,5	8,6	2,4	1,5	9,9	13,0	100
Eastern Cape	Alfred Nzo	13,8	2,5	0,9	3,2	1,4	8,2	5,6	1,5	0,5	49,0	13,4	100
	Amathole	17,5	7,2	2,4	7,5	3,3	19,5	14,1	1,6	0,4	14,6	11,9	100
	Buffalo City	19,1	13,2	1,9	8,2	2,4	23,1	9,5	1,9	0,6	8,1	12,0	100
	Chris Hani	20,4	7,6	2,4	8,6	2,5	17,9	10,4	2,6	0,6	16,8	10,2	100
	Joe Gqabi	18,6	5,8	3,8	5,4	2,8	15,0	8,8	2,5	1,1	27,1	9,1	100
	Nelson Mandela Bay	20,6	14,0	1,5	9,4	2,9	21,1	8,4	2,8	0,5	8,2	10,6	100
	O.R.Tambo	19,3	5,0	1,5	4,3	2,1	8,6	7,6	2,0	0,3	33,7	15,5	100
	Sarah Baartman	19,4	11,3	3,1	8,1	2,4	21,4	10,4	2,5	0,7	11,6	9,1	100
	Total	18,8	8,5	1,9	6,9	2,5	16,5	9,2	2,2	0,5	21,1	12,1	100
Northern Cape	Frances Baard	17,9	11,0	5,6	7,3	2,5	19,1	9,2	3,3	1,8	13,9	8,4	100
	John Taolo Gaetsewe	21,6	5,7	0,7	4,6	1,8	20,7	9,5	1,1	3,1	22,6	8,6	100
	Namakwa	9,8	18,0	2,0	8,4	2,4	22,1	12,7	2,9	1,1	10,9	9,9	100
	Pixley ka Seme	19,2	8,5	4,1	5,0	2,0	21,4	13,1	3,1	2,5	11,3	9,9	100
	Z F Mgcawu	18,2	10,3	5,5	6,4	2,9	18,8	14,8	2,0	1,4	9,6	10,0	100
	Total	18,1	10,2	4,2	6,4	2,4	20,0	11,4	2,6	2,0	13,8	9,2	100

Appendix O1: Number of deaths by main groups of causes of death and district municipality of death occurrence (Free State, KwaZulu-Natal and North West), 2018

Province of death		Main group of underlying causes											Total
		Certain infectious and parasitic diseases (A00-B99)	Neoplasms (C00-D48)	Diseases of the blood and immune mechanism (D50-D89)	Endocrine, nutritional and metabolic diseases (E00-E90)	Diseases of the nervous system (G00-G99)	Diseases of the circulatory system (I00-I99)	Diseases of the respiratory system (J00-J99)	Diseases of the digestive system (K00-K93)	Certain conditions originating in the perinatal period (P00-P96)	other natural causes	External causes of morbidity and mortality (V01-Y98)	
Free State	Fezile Dabi	17,3	8,7	3,8	8,0	2,1	23,2	11,4	3,2	2,1	9,9	10,4	100
	Lejweleputswa	13,8	6,4	6,5	6,4	1,8	17,4	12,7	2,2	3,1	19,1	10,6	100
	Mangaung	15,7	10,4	2,9	6,0	1,9	16,1	7,5	2,9	1,9	23,4	11,4	100
	Thabo Mofutsanyane	21,1	6,9	3,1	9,0	2,0	21,7	10,4	3,1	2,3	9,3	11,1	100
	Xhariep	18,7	9,2	3,1	6,8	1,1	21,4	11,4	2,1	0,7	16,4	9,3	100
	Total	17,2	8,3	3,9	7,2	1,9	19,2	10,2	2,8	2,3	16,2	10,9	100
Kwa-Zulu Natal	Amajuba	17,5	8,0	1,3	7,9	2,4	20,9	10,0	3,5	2,0	14,1	12,6	100
	Harry Gwala	19,1	6,1	2,2	7,2	2,2	17,8	10,9	2,1	1,1	17,1	14,3	100
	Ugu	19,2	8,7	1,7	8,8	2,3	16,7	6,7	2,0	1,6	19,8	12,6	100
	Zululand	18,8	5,4	1,6	6,5	2,0	14,4	6,8	2,4	1,8	29,3	11,1	100
	eThekwini	14,5	10,2	1,4	7,8	1,9	26,6	6,6	2,3	1,8	12,8	14,1	100
	iLembe	22,1	7,3	1,8	9,1	2,3	20,0	7,9	2,9	1,6	11,9	13,2	100
	uMgungundlovu	17,7	10,6	1,2	11,0	2,3	20,2	8,0	3,1	1,2	11,9	12,8	100
	uMkhanyakude	25,3	8,7	1,3	5,8	2,0	17,4	4,6	2,6	1,3	17,9	13,4	100
	uMzinyathi	19,0	5,5	1,5	7,8	2,3	28,0	7,9	2,4	2,2	10,8	12,6	100
	uThukela	22,1	6,9	1,6	8,3	2,6	24,3	7,6	3,2	1,6	8,0	13,7	100
	uThungulu	18,7	8,5	1,8	8,0	1,9	16,1	5,5	3,5	1,1	19,6	15,3	100
	Total	17,9	8,7	1,5	8,2	2,1	21,8	7,3	2,6	1,6	14,9	13,5	100
North West	Bojanala	19,5	7,8	3,2	8,6	1,8	17,3	9,5	2,7	2,6	17,1	10,2	100
	Dr Kenneth Kaunda	20,1	11,8	3,2	6,2	1,8	17,1	8,5	2,8	2,0	17,1	9,4	100
	Dr Ruth Segomotsi Mompati	20,7	5,0	2,9	5,4	2,1	20,4	11,3	1,7	2,5	20,2	7,7	100
	Ngaka Modiri Molema	14,6	4,8	4,7	5,2	1,6	16,9	9,1	2,1	2,7	29,7	8,7	100
	Total	18,5	7,5	3,5	6,6	1,8	17,6	9,4	2,4	2,5	20,9	9,2	100

Appendix O2: Number of deaths by main groups of causes of death and district municipality of death occurrence (Gauteng, Mpumalanga and Limpopo), 2018

Province of death		Main group of underlying causes											Total
		Certain infectious and parasitic diseases (A00-B99)	Neoplasms (C00-D48)	Diseases of the blood and immune mechanism (D50-D89)	Endocrine, nutritional and metabolic diseases (E00-E90)	Diseases of the nervous system (G00-G99)	Diseases of the circulatory system (I00-I99)	Diseases of the respiratory system (J00-J99)	Diseases of the digestive system (K00-K93)	Certain conditions originating in the perinatal period (P00-P96)	other natural causes	External causes of morbidity and mortality (V01-Y98)	
Gauteng	City of Johannesburg	11,9	12,3	1,8	4,8	2,1	15,0	7,3	2,5	2,3	26,2	13,9	100
	City of Tshwane	12,4	13,7	1,7	7,5	2,8	23,1	9,3	3,1	2,0	15,3	9,3	100
	Ekurhuleni	12,5	9,6	2,8	5,6	2,3	17,0	11,2	2,8	2,5	21,5	12,3	100
	Sedibeng	13,8	9,7	2,9	6,9	2,7	23,0	11,4	3,0	1,9	13,1	11,6	100
	West Rand	12,7	9,4	4,8	5,5	1,9	14,9	8,6	2,6	2,3	23,4	13,9	100
	Total	12,4	11,7	2,3	6,0	2,4	18,7	9,3	2,8	2,2	20,3	12,0	100
Mpumalanga	Ehlanzeni	23,9	8,2	2,4	7,0	2,2	22,0	9,3	2,7	1,1	10,8	10,2	100
	Gert Sibande	20,2	7,1	3,6	6,8	2,0	14,8	9,0	3,1	2,7	18,4	12,2	100
	Nkangala	15,0	6,2	2,0	7,0	1,8	18,8	12,6	2,3	1,6	22,1	10,7	100
	Total	20,1	7,3	2,6	7,0	2,0	19,1	10,3	2,7	1,7	16,4	10,9	100
Limpopo	Capricorn	18,0	8,2	1,8	7,9	1,7	15,5	11,4	2,7	2,1	21,2	9,6	100
	Mopani	17,5	5,9	2,3	8,6	1,6	13,8	9,5	2,9	3,2	26,7	8,1	100
	Sekhukhune	17,7	5,0	1,5	7,2	1,8	25,8	15,0	2,0	1,3	14,4	8,3	100
	Vhembe	14,6	5,9	2,0	7,9	1,2	9,5	5,5	2,8	1,9	39,8	9,0	100
	Waterberg	23,7	7,6	2,0	8,1	2,1	19,4	11,0	2,5	1,7	12,2	9,6	100
	Total	18,0	6,6	1,9	7,9	1,7	16,6	10,6	2,6	2,1	23,1	8,9	100

Appendix P: The ten leading underlying natural causes of death by district municipality of death occurrence, Western Cape 2018*

Cape Winelands		No	%	Central Karoo		No	%	City of Cape Town		No	%
Diabetes mellitus (E10-E14)	1	520	7,9	Chronic lower respiratory diseases (J40-J47)	1	74	9,5	Diabetes mellitus (E10-E14)	1	2312	7,7
Cerebrovascular diseases (I60-I69)	2	452	6,9	Tuberculosis (A15-A19)	2	69	8,8	Ischaemic heart diseases (I20-I25)	2	1882	6,3
Human immunodeficiency virus [HIV] disease (B20- B24)	3	432	6,6	Cerebrovascular diseases (I60-I69)	3	54	6,9	Human immunodeficiency virus [HIV] disease (B20-B24)	3	1649	5,5
Chronic lower respiratory diseases (J40-J47)	4	424	6,5	Hypertensive diseases (I10-I15)	4	43	5,5	Cerebrovascular diseases (I60-I69)	4	1544	5,2
Tuberculosis (A15-A19)	5	367	5,6	Diabetes mellitus (E10-E14)	5	43	5,5	Malignant neoplasms of digestive organs (C15-C26)	5	1360	4,5
Ischaemic heart diseases (I20-I25)	6	322	4,9	Ischaemic heart diseases (I20-I25)	6	37	4,7	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	6	1298	4,3
Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	7	307	4,7	Other forms of heart disease (I30-I52)	7	36	4,6	Tuberculosis (A15-A19)	7	1261	4,2
Malignant neoplasms of digestive organs (C15-C26)	8	286	4,4	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	8	34	4,4	Chronic lower respiratory diseases (J40-J47)	8	1226	4,1
Hypertensive diseases (I10-I15)	9	230	3,5	Human immunodeficiency virus [HIV] disease (B20-B24)	9	28	3,6	Hypertensive diseases (I10-I15)	9	1124	3,8
Other forms of heart disease (I30-I52)	10	185	2,8	Malignant neoplasms of digestive organs (C15-C26)	10	26	3,3	Other forms of heart disease (I30-I52)	10	983	3,3
Other Natural	11	2311	35,3	Other Natural	11	263	33,7	Other Natural	11	10878	36,3
Non-natural	12	712	10,9	Non-natural	12	73	9,4	Non-natural	12	4432	14,8
All causes		6548	100,0	All causes		780	100,0	All causes		29949	100,0
Eden		No	%	Overberg		No	%	West Coast		No	%
Cerebrovascular diseases (I60-I69)	1	403	7,6	Cerebrovascular diseases (I60-I69)	1	151	7,4	Chronic lower respiratory diseases (J40-J47)	1	305	8,2
Diabetes mellitus (E10-E14)	2	388	7,3	Ischaemic heart diseases (I20-I25)	2	147	7,2	Diabetes mellitus (E10-E14)	2	292	7,8
Tuberculosis (A15-A19)	3	355	6,7	Diabetes mellitus (E10-E14)	3	144	7,0	Tuberculosis (A15-A19)	3	268	7,2
Human immunodeficiency virus [HIV] disease (B20- B24)	4	328	6,2	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	4	128	6,3	Ischaemic heart diseases (I20-I25)	4	251	6,7
Chronic lower respiratory diseases (J40-J47)	5	315	5,9	Chronic lower respiratory diseases (J40-J47)	5	125	6,1	Cerebrovascular diseases (I60-I69)	5	249	6,7
Ischaemic heart diseases (I20-I25)	6	302	5,7	Human immunodeficiency virus [HIV] disease (B20-B24)	6	111	5,4	Human immunodeficiency virus [HIV] disease (B20-B24)	6	209	5,6
Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	7	232	4,4	Malignant neoplasms of digestive organs (C15-C26)	7	107	5,2	Malignant neoplasms of digestive organs (C15-C26)	7	174	4,6
Malignant neoplasms of digestive organs (C15-C26)	8	221	4,2	Hypertensive diseases (I10-I15)	8	76	3,7	Hypertensive diseases (I10-I15)	8	170	4,5
Hypertensive diseases (I10-I15)	9	202	3,8	Tuberculosis (A15-A19)	9	73	3,6	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	9	157	4,2
Other forms of heart disease (I30-I52)	10	193	3,6	Other forms of heart disease (I30-I52)	10	68	3,3	Other forms of heart disease (I30-I52)	10	120	3,2
Other Natural		1864	35,1	Other Natural		696	34,0	Other Natural		1216	32,5
Non-natural		507	9,5	Non-natural		221	10,8	Non-natural		331	8,8
All causes		5310	100,0	All causes		2047	100,0	All causes		3742	100,0

Appendix P1: The ten leading underlying natural causes of death by district municipality of death occurrence, Eastern Cape, 2018*

Alfred Nzo		No	%	Amathole		No	%	Buffalo City		No	%
Human immunodeficiency virus [HIV] disease (B20-B24)	1	386	4,8	Tuberculosis (A15-A19)	1	674	8,1	Tuberculosis (A15-A19)	1	713	8,3
Tuberculosis (A15-A19)	2	380	4,8	Hypertensive diseases (I10-I15)	2	562	6,8	Diabetes mellitus (E10-E14)	2	603	7,0
Other forms of heart disease (I30-I52)	3	264	3,3	Diabetes mellitus (E10-E14)	3	540	6,5	Hypertensive diseases (I10-I15)	3	558	6,5
Diabetes mellitus (E10-E14)	4	201	2,5	Chronic lower respiratory diseases (J40-J47)	4	533	6,4	Human immunodeficiency virus [HIV] disease (B20-B24)	4	520	6,1
Cerebrovascular diseases (I60-I69)	5	190	2,4	Cerebrovascular diseases (I60-I69)	5	501	6,0	Cerebrovascular diseases (I60-I69)	5	511	6,0
Influenza and pneumonia (J09-J18)	6	182	2,3	Other forms of heart disease (I30-I52)	6	411	4,9	Other forms of heart disease (I30-I52)	6	490	5,7
Other viral diseases (B25-B34)	7	146	1,8	Human immunodeficiency virus [HIV] disease (B20-B24)	7	372	4,5	Chronic lower respiratory diseases (J40-J47)	7	392	4,6
Hypertensive diseases (I10-I15)	8	132	1,7	Influenza and pneumonia (J09-J18)	8	360	4,3	Malignant neoplasms of digestive organs (C15-C26)	8	368	4,3
Chronic lower respiratory diseases (J40-J47)	9	131	1,6	Malignant neoplasms of digestive organs (C15-C26)	9	225	2,7	Influenza and pneumonia (J09-J18)	9	251	2,9
Intestinal infectious diseases (A00-A09)	10	109	1,4	Episodic and paroxysmal disorders (G40-G47)	10	190	2,3	Ischaemic heart diseases (I20-I25)	10	247	2,9
Other Natural		4803	60,0	Other Natural		2960	35,6	Other Natural		2883	33,7
Non-natural		1075	13,4	Non-natural		989	11,9	Non-natural		1029	12,0
All causes		7999	100,0	All causes		8317	100,0	All causes		8565	100,0
Chris Hani		No	%	Joe Gqabi		No	%	Nelson Mandela Bay		No	%
Tuberculosis (A15-A19)	1	787	8,6	Tuberculosis (A15-A19)	1	252	8,5	Tuberculosis (A15-A19)	1	1150	8,9
Diabetes mellitus (E10-E14)	2	656	7,2	Other forms of heart disease (I30-I52)	2	144	4,8	Diabetes mellitus (E10-E14)	2	1092	8,4
Human immunodeficiency virus [HIV] disease (B20-B24)	3	559	6,1	Influenza and pneumonia (J09-J18)	3	136	4,6	Human immunodeficiency virus [HIV] disease (B20-B24)	3	978	7,6
Cerebrovascular diseases (I60-I69)	4	516	5,6	Cerebrovascular diseases (I60-I69)	4	134	4,5	Hypertensive diseases (I10-I15)	4	852	6,6
Chronic lower respiratory diseases (J40-J47)	5	488	5,3	Human immunodeficiency virus [HIV] disease (B20-B24)	5	116	3,9	Cerebrovascular diseases (I60-I69)	5	803	6,2
Hypertensive diseases (I10-I15)	6	479	5,2	Diabetes mellitus (E10-E14)	6	106	3,6	Chronic lower respiratory diseases (J40-J47)	6	615	4,8
Other forms of heart disease (I30-I52)	7	333	3,6	Certain disorders involving the immune mechanism (D80-D89)	7	98	3,3	Ischaemic heart diseases (I20-I25)	7	498	3,8
Other viral diseases (B25-B34)	8	261	2,9	Hypertensive diseases (I10-I15)	8	95	3,2	Other forms of heart disease (I30-I52)	8	450	3,5
Influenza and pneumonia (J09-J18)	9	241	2,6	Other viral diseases (B25-B34)	9	84	2,8	Malignant neoplasms of digestive organs (C15-C26)	9	402	3,1
Malignant neoplasms of digestive organs (C15-C26)	10	224	2,5	Chronic lower respiratory diseases (J40-J47)	10	65	2,2	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	10	336	2,6
Other Natural		3664	40,1	Other Natural		1480	49,6	Other Natural		4389	33,9
Non-natural		934	10,2	Non-natural		272	9,1	Non-natural		1374	10,6
All causes		9142	100,0	All causes		2982	100,0	All causes		12939	100,0

Appendix P1: The ten leading underlying natural causes of death by district municipality of death occurrence, Eastern Cape, 2018* (concluded)

O.R.Tambo		No	%	Sarah Baartman		No	%
Tuberculosis (A15-A19)	1	1214	9,1	Human immunodeficiency virus [HIV] disease (B20-B24)	1	334	8,6
Human immunodeficiency virus [HIV] disease (B20-B24)	2	726	5,5	Diabetes mellitus (E10-E14)	2	284	7,3
Chronic lower respiratory diseases (J40-J47)	3	458	3,5	Tuberculosis (A15-A19)	3	284	7,3
Cerebrovascular diseases (I60-I69)	4	443	3,3	Hypertensive diseases (I10-I15)	4	270	6,9
Diabetes mellitus (E10-E14)	5	423	3,2	Chronic lower respiratory diseases (J40-J47)	5	232	5,9
Other forms of heart disease (I30-I52)	6	326	2,5	Cerebrovascular diseases (I60-I69)	6	217	5,6
Influenza and pneumonia (J09-J18)	7	294	2,2	Other forms of heart disease (I30-I52)	7	159	4,1
Other viral diseases (B25-B34)	8	281	2,1	Ischaemic heart diseases (I20-I25)	8	152	3,9
Malignant neoplasms of digestive organs (C15-C26)	9	233	1,8	Influenza and pneumonia (J09-J18)	9	118	3,0
Hypertensive diseases (I10-I15)	10	218	1,6	Malignant neoplasms of digestive organs (C15-C26)	10	114	2,9
Other Natural		6593	49,7	Other Natural		1385	35,5
Non-natural		2061	15,5	Non-natural		356	9,1
All causes		13270	100,0	All causes		3905	100,0

Appendix P2: The ten leading underlying natural causes of death by district municipality of death occurrence, Northern Cape, 2018*

Frances Baard		No	%	John Taolo Gaetsewe		No	%	Namakwa		No	%
Human immunodeficiency virus [HIV] disease (B20-B24)	1	344	6,7	Other forms of heart disease (I30-I52)	1	281	11,4	Chronic lower respiratory diseases (J40-J47)	1	95	7,4
Hypertensive diseases (I10-I15)	2	326	6,4	Human immunodeficiency virus [HIV] disease (B20-B24)	2	239	9,7	Ischaemic heart diseases (I20-I25)	2	85	6,6
Tuberculosis (A15-A19)	3	321	6,3	Influenza and pneumonia (J09-J18)	3	126	5,1	Diabetes mellitus (E10-E14)	3	84	6,6
Diabetes mellitus (E10-E14)	4	284	5,6	Tuberculosis (A15-A19)	4	113	4,6	Hypertensive diseases (I10-I15)	4	76	5,9
Cerebrovascular diseases (I60-I69)	5	261	5,1	Hypertensive diseases (I10-I15)	5	91	3,7	Tuberculosis (A15-A19)	5	66	5,2
Certain disorders involving the immune mechanism (D80-D89)	6	235	4,6	Other viral diseases (B25-B34)	6	88	3,6	Cerebrovascular diseases (I60-I69)	6	60	4,7
Chronic lower respiratory diseases (J40-J47)	7	198	3,9	Cerebrovascular diseases (I60-I69)	7	79	3,2	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	7	60	4,7
Influenza and pneumonia (J09-J18)	8	173	3,4	Diabetes mellitus (E10-E14)	8	71	2,9	Malignant neoplasms of digestive organs (C15-C26)	8	57	4,5
Other forms of heart disease (I30-I52)	9	165	3,2	Intestinal infectious diseases (A00-A09)	9	59	2,4	Other forms of heart disease (I30-I52)	9	47	3,7
Ischaemic heart diseases (I20-I25)	10	139	2,7	Ischaemic heart diseases (I20-I25)	10	45	1,8	Influenza and pneumonia (J09-J18)	10	37	2,9
Other Natural		2222	43,6	Other Natural		1054	42,9	Other Natural		486	38,0
Non-natural		430	8,4	Non-natural		212	8,6	Non-natural		127	9,9
All causes		5098	100,0	All causes		2458	100,0	All causes		1280	100,1
Pixley ka Seme		No	%	Z F Mgcawu		No	%				
Tuberculosis (A15-A19)	1	181	8,0	Tuberculosis (A15-A19)	1	232	8,1				
Human immunodeficiency virus [HIV] disease (B20-B24)	2	158	7,0	Hypertensive diseases (I10-I15)	2	194	6,8				
Cerebrovascular diseases (I60-I69)	3	139	6,2	Chronic lower respiratory diseases (J40-J47)	3	184	6,4				
Influenza and pneumonia (J09-J18)	4	126	5,6	Human immunodeficiency virus [HIV] disease (B20-B24)	4	154	5,4				
Hypertensive diseases (I10-I15)	5	125	5,5	Influenza and pneumonia (J09-J18)	5	144	5,0				
Chronic lower respiratory diseases (J40-J47)	6	108	4,8	Diabetes mellitus (E10-E14)	6	139	4,8				
Ischaemic heart diseases (I20-I25)	7	105	4,7	Certain disorders involving the immune mechanism (D80-D89)	7	137	4,8				
Other forms of heart disease (I30-I52)	8	83	3,7	Cerebrovascular diseases (I60-I69)	8	129	4,5				
Diabetes mellitus (E10-E14)	9	81	3,6	Other forms of heart disease (I30-I52)	9	83	2,9				
Certain disorders involving the immune mechanism (D80-D89)	10	78	3,5	Ischaemic heart diseases (I20-I25)	10	80	2,8				
Other Natural		847	37,6	Other Natural		1109	38,6				
Non-natural		222	9,9	Non-natural		288	10,0				
All causes		2253	100,1	All causes		2873	100,1				

Appendix P3: The ten leading underlying natural causes of death by district municipality of death occurrence, Free State, 2018*

Fezile Dabi				Lejweleputswa				Mangaung			
	No	%		No	%	No	%	No	%		
Hypertensive diseases (I10-I15)	1	327	7,1	Influenza and pneumonia (J09-J18)	1	452	7,5	Human immunodeficiency virus [HIV] disease (B20-B24)	1	682	7,3
Tuberculosis (A15-A19)	2	295	6,4	Certain disorders involving the immune mechanism (D80-D89)	2	337	5,6	Hypertensive diseases (I10-I15)	2	504	5,4
Diabetes mellitus (E10-E14)	3	283	6,1	Tuberculosis (A15-A19)	3	331	5,5	Diabetes mellitus (E10-E14)	3	434	4,7
Other forms of heart disease (I30-I52)	4	271	5,8	Cerebrovascular diseases (I60-I69)	4	307	5,1	Tuberculosis (A15-A19)	4	359	3,9
Cerebrovascular diseases (I60-I69)	5	249	5,4	Hypertensive diseases (I10-I15)	5	264	4,4	Cerebrovascular diseases (I60-I69)	5	358	3,8
Influenza and pneumonia (J09-J18)	6	247	5,3	Other forms of heart disease (I30-I52)	6	255	4,2	Other forms of heart disease (I30-I52)	6	312	3,4
Human immunodeficiency virus [HIV] disease (B20-B24)	7	207	4,5	Diabetes mellitus (E10-E14)	7	251	4,2	Influenza and pneumonia (J09-J18)	7	291	3,1
Ischaemic heart diseases (I20-I25)	8	156	3,4	Ischaemic heart diseases (I20-I25)	8	157	2,6	Chronic lower respiratory diseases (J40-J47)	8	261	2,8
Other viral diseases (B25-B34)	9	149	3,2	Chronic lower respiratory diseases (J40-J47)	9	155	2,6	Malignant neoplasms of digestive organs (C15-C26)	9	220	2,4
Certain disorders involving the immune mechanism (D80-D89)	10	131	2,8	Other viral diseases (B25-B34)	10	145	2,4	Certain disorders involving the immune mechanism (D80-D89)	10	202	2,2
Other Natural		1835	39,6	Other Natural		2728	45,3	Other Natural		4615	49,6
Non-natural		483	10,4	Non-natural		635	10,6	Non-natural		1063	11,4
All causes		4633	100	All causes		6017	100	All causes		9301	100

Thabo Mofutsanyane				Xhariep			
	No	%		No	%		%
Hypertensive diseases (I10-I15)	1	565	7,2	Hypertensive diseases (I10-I15)	1	88	8,1
Diabetes mellitus (E10-E14)	2	542	6,9	Tuberculosis (A15-A19)	2	76	7,0
Tuberculosis (A15-A19)	3	512	6,5	Cerebrovascular diseases (I60-I69)	3	75	6,9
Cerebrovascular diseases (I60-I69)	4	480	6,1	Chronic lower respiratory diseases (J40-J47)	4	55	5,1
Influenza and pneumonia (J09-J18)	5	472	6,0	Diabetes mellitus (E10-E14)	5	55	5,1
Human immunodeficiency virus [HIV] disease (B20-B24)	6	472	6,0	Influenza and pneumonia (J09-J18)	6	50	4,6
Other forms of heart disease (I30-I52)	7	427	5,4	Other viral diseases (B25-B34)	7	49	4,5
Other viral diseases (B25-B34)	8	336	4,3	Human immunodeficiency virus [HIV] disease (B20-B24)	8	46	4,3
Intestinal infectious diseases (A00-A09)	9	201	2,5	Other forms of heart disease (I30-I52)	9	35	3,2
Certain disorders involving the immune mechanism (D80-D89)	10	167	2,1	Malignant neoplasms of digestive organs (C15-C26)	10	26	2,4
Other Natural		2843	36,0	Other Natural		426	39,4
Non-natural		877	11,1	Non-natural		101	9,3
All causes		7894	100,1	All causes		1082	100

Appendix P4: The ten leading underlying natural causes of death by district municipality of death occurrence, KwaZulu-Natal, 2018*

Amajuba	No	%	Harry Gwala	No	%	Ugu	No	%			
Tuberculosis (A15-A19)	1	350	7,8	Tuberculosis (A15-A19)	1	345	7,2	Tuberculosis (A15-A19)	1	557	7,7
Other forms of heart disease (I30-I52)	2	335	7,5	Cerebrovascular diseases (I60-I69)	2	313	6,6	Diabetes mellitus (E10-E14)	2	555	7,7
Diabetes mellitus (E10-E14)	3	301	6,7	Human immunodeficiency virus [HIV] disease (B20-B24)	3	310	6,5	Cerebrovascular diseases (I60-I69)	3	471	6,5
Cerebrovascular diseases (I60-I69)	4	271	6,0	Diabetes mellitus (E10-E14)	4	286	6,0	Human immunodeficiency virus [HIV] disease (B20-B24)	4	406	5,6
Influenza and pneumonia (J09-J18)	5	226	5,0	Influenza and pneumonia (J09-J18)	5	215	4,5	Hypertensive diseases (I10-I15)	5	298	4,1
Hypertensive diseases (I10-I15)	6	200	4,5	Other forms of heart disease (I30-I52)	6	209	4,4	Other viral diseases (B25-B34)	6	225	3,1
Human immunodeficiency virus [HIV] disease (B20-B24)	7	192	4,3	Hypertensive diseases (I10-I15)	7	185	3,9	Other forms of heart disease (I30-I52)	7	224	3,1
Renal failure (N17-N19)	8	141	3,1	Chronic lower respiratory diseases (J40-J47)	8	175	3,7	Influenza and pneumonia (J09-J18)	8	191	2,7
Malignant neoplasms of digestive organs (C15-C26)	9	100	2,2	Intestinal infectious diseases (A00-A09)	9	102	2,1	Chronic lower respiratory diseases (J40-J47)	9	186	2,6
Other viral diseases (B25-B34)	10	99	2,2	Other viral diseases (B25-B34)	10	89	1,9	Malignant neoplasms of digestive organs (C15-C26)	10	177	2,5
Other Natural		1711	38,1	Other Natural		1854	38,9	Other Natural		2997	41,6
Non-natural		566	12,6	Non-natural		682	14,3	Non-natural		909	12,6
All causes		4492	100	All causes		4765	100	All causes		7196	100
uMgungundlovu	No	%	uMkhanyakude	No	%	uMzinyathi	No	%			
Diabetes mellitus (E10-E14)	1	1017	9,8	Human immunodeficiency virus [HIV] disease (B20-B24)	1	416	12,5	Other forms of heart disease (I30-I52)	1	559	12,5
Human immunodeficiency virus [HIV] disease (B20-B24)	2	650	6,3	Tuberculosis (A15-A19)	2	225	6,8	Tuberculosis (A15-A19)	2	317	7,1
Cerebrovascular diseases (I60-I69)	3	616	6,0	Cerebrovascular diseases (I60-I69)	3	216	6,5	Cerebrovascular diseases (I60-I69)	3	303	6,8
Hypertensive diseases (I10-I15)	4	607	5,9	Diabetes mellitus (E10-E14)	4	155	4,7	Diabetes mellitus (E10-E14)	4	298	6,7
Tuberculosis (A15-A19)	5	595	5,8	Other forms of heart disease (I30-I52)	5	149	4,5	Hypertensive diseases (I10-I15)	5	236	5,3
Other forms of heart disease (I30-I52)	6	450	4,4	Hypertensive diseases (I10-I15)	6	122	3,7	Human immunodeficiency virus [HIV] disease (B20-B24)	6	203	4,5
Influenza and pneumonia (J09-J18)	7	318	3,1	Influenza and pneumonia (J09-J18)	7	72	2,2	Other viral diseases (B25-B34)	7	175	3,9
Ischaemic heart diseases (I20-I25)	8	300	2,9	Malignant neoplasms of digestive organs (C15-C26)	8	65	2,0	Influenza and pneumonia (J09-J18)	8	135	3,0
Chronic lower respiratory diseases (J40-J47)	9	280	2,7	Renal failure (N17-N19)	9	63	1,9	Intestinal infectious diseases (A00-A09)	9	92	2,1
Malignant neoplasms of digestive organs (C15-C26)	10	261	2,5	Other viral diseases (B25-B34)	10	60	1,8	Other acute lower respiratory infections (J20-J22)	10	85	1,9
Other Natural		3911	37,9	Other Natural		1333	40,2	Other Natural		1511	33,7
Non-natural		1326	12,8	Non-natural		443	13,3	Non-natural		566	12,6
All causes		10331	100	All causes		3319	100	All causes		4480	100

Appendix P4: The ten leading underlying natural causes of death by district municipality of death occurrence, KwaZulu-Natal, 2018* (concluded)

uThukela		No	%	uThungulu		No	%	Zululand		No	%
Tuberculosis (A15-A19)	1	529	9,1	Tuberculosis (A15-A19)	1	529	8,0	Human immunodeficiency virus [HIV] disease (B20-B24)	1	413	7,3
Cerebrovascular diseases (I60-I69)	2	488	8,4	Diabetes mellitus (E10-E14)	2	447	6,7	Tuberculosis (A15-A19)	2	361	6,4
Diabetes mellitus (E10-E14)	3	415	7,2	Cerebrovascular diseases (I60-I69)	3	377	5,7	Diabetes mellitus (E10-E14)	3	294	5,2
Hypertensive diseases (I10-I15)	4	303	5,2	Hypertensive diseases (I10-I15)	4	317	4,8	Cerebrovascular diseases (I60-I69)	4	276	4,9
Other forms of heart disease (I30-I52)	5	266	4,6	Human immunodeficiency virus [HIV] disease (B20-B24)	5	303	4,6	Other forms of heart disease (I30-I52)	5	242	4,3
Influenza and pneumonia (J09-J18)	6	253	4,4	Other forms of heart disease (I30-I52)	6	224	3,4	Hypertensive diseases (I10-I15)	6	202	3,6
Ischaemic heart diseases (I20-I25)	7	252	4,4	Other viral diseases (B25-B34)	7	191	2,9	Influenza and pneumonia (J09-J18)	7	170	3,0
Human immunodeficiency virus [HIV] disease (B20-B24)	8	251	4,3	Influenza and pneumonia (J09-J18)	8	146	2,2	Renal failure (N17-N19)	8	118	2,1
Intestinal infectious diseases (A00-A09)	9	217	3,7	Malignant neoplasms of digestive organs (C15-C26)	9	127	1,9	Intestinal infectious diseases (A00-A09)	9	102	1,8
Other viral diseases (B25-B34)	10	175	3,0	Renal failure (N17-N19)	10	125	1,9	Other viral diseases (B25-B34)	10	96	1,7
Other Natural		1841	31,9	Other Natural		2837	42,7	Other Natural		2738	48,6
Non-natural		796	13,7	Non-natural		1015	15,3	Non-natural		623	11,1
All causes		5792	100	All causes		6638	100	All causes		5635	100
eThekweni		No	%	iLembe		No	%				
Other forms of heart disease (I30-I52)	1	4138	14,9	Tuberculosis (A15-A19)	1	446	10,2				
Diabetes mellitus (E10-E14)	2	1913	6,9	Diabetes mellitus (E10-E14)	2	341	7,8				
Tuberculosis (A15-A19)	3	1507	5,4	Ischaemic heart diseases (I20-I25)	3	304	6,9				
Human immunodeficiency virus [HIV] disease (B20-B24)	4	1255	4,5	Cerebrovascular diseases (I60-I69)	4	291	6,6				
Cerebrovascular diseases (I60-I69)	5	1244	4,5	Human immunodeficiency virus [HIV] disease (B20-B24)	5	172	3,9				
Ischaemic heart diseases (I20-I25)	6	1071	3,9	Influenza and pneumonia (J09-J18)	6	167	3,8				
Influenza and pneumonia (J09-J18)	7	870	3,1	Other viral diseases (B25-B34)	7	143	3,3				
Malignant neoplasms of digestive organs (C15-C26)	8	683	2,5	Other forms of heart disease (I30-I52)	8	134	3,1				
Hypertensive diseases (I10-I15)	9	658	2,4	Hypertensive diseases (I10-I15)	9	126	2,9				
Renal failure (N17-N19)	10	558	2,0	Intestinal infectious diseases (A00-A09)	10	121	2,8				
Other Natural		9931	35,8	Other Natural		1562	35,6				
Non-natural		3914	14,1	Non-natural		581	13,2				
All causes		27742	100	All causes		4388	100				

Appendix P5: The ten leading underlying natural causes of death by district municipality of death occurrence, North West, 2018*

Bojanala		No	%	Dr Kenneth Kaunda		No	%	Dr Ruth Segomotsi Mompoti		No	%
Tuberculosis (A15-A19)	1	784	7,6	Human immunodeficiency virus [HIV] disease (B20-B24)	1	598	7,6	Hypertensive diseases (I10-I15)	1	398	7,9
Diabetes mellitus (E10-E14)	2	727	7,0	Tuberculosis (A15-A19)	2	542	6,9	Human immunodeficiency virus [HIV] disease (B20-B24)	2	378	7,5
Hypertensive diseases (I10-I15)	3	587	5,7	Hypertensive diseases (I10-I15)	3	397	5,1	Other forms of heart disease (I30-I52)	3	359	7,1
Cerebrovascular diseases (I60-I69)	4	504	4,9	Diabetes mellitus (E10-E14)	4	341	4,4	Tuberculosis (A15-A19)	4	348	6,9
Other viral diseases (B25-B34)	5	448	4,3	Cerebrovascular diseases (I60-I69)	5	332	4,2	Influenza and pneumonia (J09-J18)	5	343	6,8
Other forms of heart disease (I30-I52)	6	420	4,1	Influenza and pneumonia (J09-J18)	6	254	3,2	Cerebrovascular diseases (I60-I69)	6	183	3,6
Influenza and pneumonia (J09-J18)	7	417	4,0	Chronic lower respiratory diseases (J40-J47)	7	251	3,2	Diabetes mellitus (E10-E14)	7	181	3,6
Human immunodeficiency virus [HIV] disease (B20-B24)	8	347	3,4	Other forms of heart disease (I30-I52)	8	251	3,2	Other viral diseases (B25-B34)	8	167	3,3
Chronic lower respiratory diseases (J40-J47)	9	291	2,8	Ischaemic heart diseases (I20-I25)	9	250	3,2	Certain disorders involving the immune mechanism (D80-D89)	9	95	1,9
Intestinal infectious diseases (A00-A09)	10	215	2,1	Malignant neoplasms of digestive organs (C15-C26)	10	210	2,7	Other acute lower respiratory infections (J20-J22)	10	88	1,7
Other Natural		4558	44,0	Other Natural		3656	46,8	Other Natural		2112	41,8
Non-natural		1054	10,2	Non-natural		736	9,4	Non-natural		390	7,7
All causes		10352	100	All causes		7818	100	All causes		5042	100
Ngaka Modiri Molema		No	%								
Other forms of heart disease (I30-I52)	1	506	6,1								
Tuberculosis (A15-A19)	2	469	5,7								
Influenza and pneumonia (J09-J18)	3	401	4,8								
Hypertensive diseases (I10-I15)	4	391	4,7								
Cerebrovascular diseases (I60-I69)	5	357	4,3								
Diabetes mellitus (E10-E14)	6	312	3,8								
Certain disorders involving the immune mechanism (D80-D89)	7	292	3,5								
Human immunodeficiency virus [HIV] disease (B20-B24)	8	275	3,3								
Chronic lower respiratory diseases (J40-J47)	9	191	2,3								
Other viral diseases (B25-B34)	10	171	2,1								
Other Natural		4192	50,7								
Non-natural		717	8,7								
All causes		8274	100								

Appendix P6: The ten leading underlying natural causes of death by district municipality of death occurrence, Gauteng, 2018*

City of Johannesburg				City of Tshwane				Ekurhuleni			
	No	%		No	%	No	%	No	%		
Other forms of heart disease (I30-I52)	1	1402	4,7	Other forms of heart disease (I30-I52)	1	2149	8,1	Other forms of heart disease (I30-I52)	1	913	4,8
Cerebrovascular diseases (I60-I69)	2	1110	3,7	Diabetes mellitus (E10-E14)	2	1556	5,9	Tuberculosis (A15-A19)	2	878	4,6
Diabetes mellitus (E10-E14)	3	1094	3,7	Hypertensive diseases (I10-I15)	3	1266	4,8	Diabetes mellitus (E10-E14)	3	804	4,3
Tuberculosis (A15-A19)	4	1077	3,6	Cerebrovascular diseases (I60-I69)	4	1191	4,5	Influenza and pneumonia (J09-J18)	4	747	4,0
Influenza and pneumonia (J09-J18)	5	1024	3,4	Tuberculosis (A15-A19)	5	1131	4,3	Cerebrovascular diseases (I60-I69)	5	726	3,8
Human immunodeficiency virus [HIV] disease (B20-B24)	6	1004	3,4	Ischaemic heart diseases (I20-I25)	6	1070	4,0	Hypertensive diseases (I10-I15)	6	636	3,4
Ischaemic heart diseases (I20-I25)	7	896	3,0	Influenza and pneumonia (J09-J18)	7	922	3,5	Ischaemic heart diseases (I20-I25)	7	618	3,3
Malignant neoplasms of digestive organs (C15-C26)	8	834	2,8	Malignant neoplasms of digestive organs (C15-C26)	8	819	3,1	Chronic lower respiratory diseases (J40-J47)	8	532	2,8
Chronic lower respiratory diseases (J40-J47)	9	704	2,4	Chronic lower respiratory diseases (J40-J47)	9	787	3,0	Other viral diseases (B25-B34)	9	484	2,6
Hypertensive diseases (I10-I15)	10	591	2,0	Human immunodeficiency virus [HIV] disease(B20-B24)	10	684	2,6	Other diseases of the respiratory system (J95-J99)	10	463	2,4
Other Natural		16031	53,6	Other Natural		12443	47,0	Other Natural		9783	51,7
Non-natural		4169	13,9	Non-natural		2454	9,3	Non-natural		2323	12,3
All causes		29936	100,0	All causes		26472	100,0	All causes		18907	100,0
Sedibeng				West Rand							
	No	%		No	%						
Hypertensive diseases (I10-I15)	1	724	6,7	Diabetes mellitus (E10-E14)	1	206	4,2				
Influenza and pneumonia (J09-J18)	2	690	6,4	Tuberculosis (A15-A19)	2	201	4,1				
Other forms of heart disease (I30-I52)	3	688	6,4	Cerebrovascular diseases (I60-I69)	3	201	4,1				
Tuberculosis (A15-A19)	4	625	5,8	Certain disorders involving the immune mechanism (D80-D89)	4	192	3,9				
Diabetes mellitus (E10-E14)	5	592	5,5	Other forms of heart disease (I30-I52)	5	169	3,5				
Cerebrovascular diseases (I60-I69)	6	507	4,7	Influenza and pneumonia (J09-J18)	6	157	3,2				
Ischaemic heart diseases (I20-I25)	7	360	3,3	Chronic lower respiratory diseases (J40-J47)	7	150	3,1				
Chronic lower respiratory diseases (J40-J47)	8	338	3,1	Ischaemic heart diseases (I20-I25)	8	147	3,0				
Human immunodeficiency virus [HIV] disease (B20-B24)	9	260	2,4	Hypertensive diseases (I10-I15)	9	135	2,8				
Malignant neoplasms of digestive organs (C15- C26)	10	247	2,3	Other viral diseases (B25-B34)	10	117	2,4				
Other Natural		4495	41,7	Other Natural		2531	51,8				
Non-natural		1250	11,6	Non-natural		677	13,9				
All causes		10776	100,0	All causes		4883	100,0				

Appendix P7: The ten leading underlying natural causes of death by district municipality of death occurrence, Mpumalanga 2018*

Ehlanzeni		No	%	Gert Sibande		No	%	Nkangala		No	%
Tuberculosis (A15-A19)	1	1143	9,0	Human immunodeficiency virus [HIV] disease (B20-B24)	1	523	6,7	Hypertensive diseases (I10-I15)	1	743	7,8
Ischaemic heart diseases (I20-I25)	2	865	6,8	Tuberculosis (A15-A19)	2	518	6,6	Tuberculosis (A15-A19)	2	530	5,5
Cerebrovascular diseases (I60-I69)	3	732	5,7	Diabetes mellitus (E10-E14)	3	407	5,2	Influenza and pneumonia (J09-J18)	3	527	5,5
Diabetes mellitus (E10-E14)	4	722	5,7	Influenza and pneumonia (J09-J18)	4	356	4,6	Diabetes mellitus (E10-E14)	4	522	5,5
Human immunodeficiency virus [HIV] disease (B20-B24)	5	704	5,5	Hypertensive diseases (I10-I15)	5	345	4,4	Cerebrovascular diseases (I60-I69)	5	416	4,3
Influenza and pneumonia (J09-J18)	6	624	4,9	Cerebrovascular diseases (I60-I69)	6	319	4,1	Other viral diseases (B25-B34)	6	318	3,3
Hypertensive diseases (I10-I15)	7	568	4,5	Other forms of heart disease (I30-I52)	7	261	3,3	Other forms of heart disease (I30-I52)	7	299	3,1
Other forms of heart disease (I30-I52)	8	531	4,2	Intestinal infectious diseases (A00-A09)	8	207	2,6	Other acute lower respiratory infections (J20-J22)	8	296	3,1
Other viral diseases (B25-B34)	9	475	3,7	Chronic lower respiratory diseases (J40-J47)	9,0	197	2,5	Chronic lower respiratory diseases (J40-J47)	9	262	2,7
Intestinal infectious diseases (A00-A09)	10	386	3,0	Certain disorders involving the immune mechanism (D80-D89)	10	196	2,5	Ischaemic heart diseases (I20-I25)	10	234	2,4
Other Natural		4681	36,8	Other Natural		3528	45,2	Other Natural		4404	46,0
Non-natural		1304	10,2	Non-natural		956	12,2	Non-natural		1023	10,7
All causes		12735	100,0	All causes		7813	99,9	All causes		9574	100,0

Appendix P8: The ten leading underlying natural causes of death by district municipality of death occurrence, Limpopo 2018*

Capricorn	No	%	Mopani	No	%	Greater Sekhukhune	No	%			
Influenza and pneumonia (J09-J18)	1	927	7,4	Diabetes mellitus (E10-E14)	1	634	7,1	Cerebrovascular diseases (I60-I69)	1	1114	13,8
Human immunodeficiency virus [HIV] disease (B20-B24)	2	869	7,0	Influenza and pneumonia (J09-J18)	2	500	5,6	Influenza and pneumonia (J09-J18)	2	882	10,9
Diabetes mellitus (E10-E14)	3	844	6,8	Renal failure (N17-N19)	3	443	5,0	Hypertensive diseases (I10-I15)	3	621	7,7
Hypertensive diseases (I10-I15)	4	817	6,5	Tuberculosis (A15-A19)	4	416	4,7	Diabetes mellitus (E10-E14)	4	473	5,8
Tuberculosis (A15-A19)	5	568	4,6	Human immunodeficiency virus [HIV] disease (B20-B24)	5	401	4,5	Other viral diseases (B25-B34)	5	436	5,4
Cerebrovascular diseases (I60-I69)	6	537	4,3	Cerebrovascular diseases (I60-I69)	6	390	4,4	Tuberculosis (A15-A19)	6	394	4,9
Intestinal infectious diseases (A00-A09)	7	360	2,9	Other forms of heart disease (I30-I52)	7	373	4,2	Intestinal infectious diseases (A00-A09)	7	261	3,2
Chronic lower respiratory diseases (J40-J47)	8	296	2,4	Hypertensive diseases (I10-I15)	8	327	3,7	Other forms of heart disease (I30-I52)	8	253	3,1
Other viral diseases (B25-B34)	9	280	2,2	Other viral diseases (B25-B34)	9	323	3,6	Human immunodeficiency virus [HIV] disease (B20-B24)	9	189	2,3
Other forms of heart disease (I30-I52)	10	278	2,2	Intestinal infectious diseases (A00-A09)	10	231	2,6	Other bacterial diseases (A30-A49)	10	128	1,6
Other Natural		5496	44,1	Other Natural		4147	46,6	Other Natural		2671	33,0
Non-natural		1202	9,6	Non-natural		718	8,1	Non-natural		668	8,3
All causes		12474	100,0	All causes		8903	100,1	All causes		8090	100,0
Vhembe	No	%	Waterberg	No	%						
Diabetes mellitus (E10-E14)	1	454	6,2	Tuberculosis (A15-A19)	1	487	8,8				
Tuberculosis (A15-A19)	2	361	5,0	Hypertensive diseases (I10-I15)	2	398	7,2				
Renal failure (N17-N19)	3	252	3,5	Diabetes mellitus (E10-E14)	3	382	6,9				
Cerebrovascular diseases (I60-I69)	4	251	3,4	Influenza and pneumonia (J09-J18)	4	363	6,6				
Other viral diseases (B25-B34)	5	204	2,8	Human immunodeficiency virus [HIV] disease (B20-B24)	5	322	5,8				
Influenza and pneumonia (J09-J18)	6	182	2,5	Cerebrovascular diseases (I60-I69)	6	315	5,7				
Human immunodeficiency virus [HIV] disease (B20-B24)	7	181	2,5	Intestinal infectious diseases (A00-A09)	7	210	3,8				
Other forms of heart disease (I30-I52)	8	174	2,4	Other forms of heart disease (I30-I52)	8	208	3,8				
Hypertensive diseases (I10-I15)	9	156	2,1	Other viral diseases (B25-B34)	9	204	3,7				
Intestinal infectious diseases (A00-A09)	10	142	2,0	Chronic lower respiratory diseases (J40-J47)	10	136	2,5				
Other Natural		4268	58,6	Other Natural		1968	35,6				
Non-natural		655	9,0	Non-natural		530	9,6				
All causes		7280	100,0	All causes		5523	100,1				

Appendix Q: Population group differences

The ten leading underlying natural causes of death by population group for 2018 are shown in Appendix Q1. The results show that five of the ten leading natural causes of death were common for the four population groups, namely *diabetes mellitus*, *cerebrovascular diseases*, *other forms of heart disease*, *hypertensive disease* and *Chronic lower respiratory diseases*. These common natural causes of death had different ranks and different contributions to the overall number of deaths for each population group. For example, *Diabetes mellitus* were the leading cause of death among the Indian/Asian population group and coloured population group accounting for 14,3% and 8,4% of all deaths in these population groups respectively. It was third among the black African population group (6.0%) and sixth among white population group (4,5%).

Tuberculosis was the first leading underlying natural cause of death for black Africans, accounting for 7,4% deaths while it ranked third for the coloured population, accounting for 6,3% deaths in this population group. It was not part of the ten leading underlying natural causes of death for the white and Indian/Asian population groups.

Renal failure and *Influenza and pneumonia* were in the leading underlying causes of death for all population groups with the exception of coloureds while *Ischaemic heart diseases* and *malignant neoplasms of digestive organs* were in the leading underlying causes of death only for the white population group.

Appendix Q1: The ten leading underlying natural causes of death by population group

Causes of death (based on ICD Version 2010)	Black Africans			Whites			Indians			Coloured			Unknown		
	Rank	Number	Percentage	Rank	Number	Percentage	Rank	Number	Percentage	Rank	Number	Percentage	Rank	Number	Percentage
Tuberculosis (A15-A19)	1	22794	7,4	...	.	,	...	.	,	3	2220	6,3	2	2093	3,6
Human immunodeficiency virus [HIV] disease (B20-B24)	2	18879	6,1	...	.	,	...	.	,	8	1494	4,2	9	1386	2,4
Diabetes mellitus (E10-E14)	3	18551	6,0	6	1964	4,5	1	1343	14,3	1	2969	8,4	3	2052	3,5
Cerebrovascular diseases (I60-I69)	4	15926	5,2	5	2333	5,4	4	482	5,1	4	2135	6,0	1	2121	3,6
Other forms of heart disease (I30-I52)	5	15874	5,2	2	3173	7,3	3	851	9,1	10	1022	2,9	4	2021	3,5
Hypertensive diseases (I10-I15)	6	15812	5,1	9	1232	2,9	8	271	2,9	6	1752	5,0	7	1509	2,6
Influenza and pneumonia (J09-J18)	7	13447	4,4	7	1535	3,6	9	220	2,3	...	.		6	1602	2,8
Other viral diseases (B25-B34)	8	9533	3,1	...	.		...			...	.		...	.
Chronic lower respiratory diseases (J40-J47)	9	6685	2,2	3	2575	6	6	301	3,2	2	2379	6,7	5	1639	2,8
Renal failure (N17-N19)	10	5899	1,9	10	922	2,1	7	290	3,1	...	.	,	...	.	,
Ischaemic heart diseases (I20-I25)	...	.	.	1	4655	10,8	2	1160	12,4	5	1898	5,4	8	1501	2,6
Malignant neoplasms of digestive organs (C15-C26)	...	.	.	4	2350	5,4	5	342	3,6	9	1340	3,8	10	946	1,6
Malignant neoplasms of respiratory and intrathoracicorgans (C30-C39)	...	.	.	8	1460	3,4	10	188	2,0	7	1570	4,4	...		
Other Natural		124962	40,6		17719	41,0		3146	33,5		12631	35,7		34701	59,7
Non-natural		39567	12,8		3258	7,5		795	8,5		3943	11,2		6597	11,3

