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Mortality and causes of death in South Africa, 2015: Findings from death notification

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www.statssa.gov.za

info@statssa.gov.za

T +27 12 310 8911

F +27 12 310 8500

Private Bag X44, Pretoria, 0001, South Africa

ISibalo House, Koch Street, Salvokop, Pretoria, 0002



Preface

This statistical release presents information on mortality and causes of death in South Africa for deaths that occurred in 2015. It also provides information on death occurrences from 1997 to 2014 to show trends and patterns in mortality and causes of death. The release is based on deaths registered and collated through the South African civil registration system maintained by the Department of Home Affairs.

PJ Lehohla
Statistician-General

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1 Introduction

1.1 Background

Deaths including causes of death from the civil registration system are the “gold standard” for mortality statistics as they are primary inputs in monitoring of health programmes, development goals and in formulating evidence-based health policies (United Nations [UN], 2014). In addition, the mortality statistics classified by socio-demographic and geographic characteristics have significance in understanding differential mortality patterns. Mortality statistics from adequate, high-coverage civil registration systems provide invaluable information at national and local geographic levels, thus allowing for the implementation and evaluation of public health at every administrative level. Essentially, the statistics on mortality and causes of death provide information needed to combat infectious diseases such as tuberculosis and HIV/AIDS, non-communicable diseases and mortality from injuries as well as to estimate demographic indicators such as infant mortality, child mortality and maternal mortality.

Statistics from the civil registration system are the only national source of information on mortality and causes of death. Civil registration in South Africa is a mandate of the Department of Home Affairs (DHA). The Births and Deaths Registration Act 1992 (Act No. 51 of 1992), last amended in 2010, governs the registration of births and deaths in the country (Republic of South Africa, 1992; Republic of South Africa, 2010). The Act states that notice of death should be given as soon as practicable. However, as a measure towards improving civil registration system, the 2014 regulations of the Act mandate the registration of all deaths within 72 hours of death occurrence (Republic of South Africa, 2014). The Act further states that, if there is any doubt whether the death was not due to natural causes, such a death must be reported to a police officer. After an investigation as to the circumstances of a death due to other than natural causes, the medical practitioner concerned shall, as soon as he/she is satisfied that the corpse concerned is no longer required for the purposes of an examination, issue a prescribed certificate to that effect. After death registration is completed, a death certificate is issued to the informant. All death notification forms are then collected by Statistics South Africa (Stats SA) regularly for capturing, processing, assessment, analysis and dissemination of statistical releases and data sets on mortality and causes of death.

While the legal framework is a fundamental pillar that ensures efficient operation and management of the civil registration and vital statistics system, continued partnerships between agencies administering registration of deaths and the statistical production agency are crucial for the legal framework to be successfully operationalised. Stats SA as the vital statistics agency, in close collaboration with the registration agencies the DHA and the Department of Health (DoH), has ensured annual data from the civil registration system as well as improvement in the quality of mortality and causes of death data. Reliable, continuous and timely mortality statistics from the civil registration system are crucial to the South African government’s momentum to achieve the “*Health care for all by 2030*” development objective outlined in the National Development Plan (National Planning Commission [NPC], 2011). The statistics also provide information needed for assessing population health and formulating health policies as prescribed in the National Public Health Institute of South Africa (NAPISA) Bill that was passed in 2015 (Republic of South Africa, 2015). Further, the statistics will be important in providing baselines and monitoring the Sustainable Development Goals (SDGs), in particular, targets for under-five mortality, neonatal mortality, and mortality attributed to *cardiovascular disease, cancer, diabetes or chronic lower respiratory diseases* among those aged 30–70 years.

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 19-year period (1997–2015) and differentials in mortality by selected socio-demographic and geographic characteristics for deaths that occurred in 2015; and
- To present statistics on the causes of death for deaths that occurred in 2015, 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 2015 or earlier that reached Stats SA during the 2015 processing phase are covered. The main focus is on deaths that occurred in 2015. Deaths that occurred during the period 1997 to 2014 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 54).

1.4 Organisation and presentation of this statistical release

This release is structured into five sections: introduction, data and methods, mortality, causes of death, and summary and concluding remarks.

The introductory section provides an overview of the background, objectives and scope of the release.

The second section describes the data source and methods applied in data processing, data editing and data analysis. Additionally, data quality assessment methods used in the evaluation of the mortality and causes of death data are discussed.

The third section on mortality provides the overall levels, trends and differentials in mortality with a particular focus on age, sex, population group, marital status, smoking status, institution of death occurrence, and spatial analysis of death occurrence.

The fourth section is devoted to the analysis of causes of death with emphasis on the underlying causes of death for all deaths that occurred and that were registered in 2015, including comparisons with data from 1997 to 2014. Further analysis distinguishes between natural and non-natural causes, as well as comparisons between immediate, contributing and underlying causes of death.

The summary of findings and concluding remarks are presented in the fifth section.

2 Data and methods

This section provides information on data sources, data processing methods, data editing methods and data analysis procedures. The section also covers an assessment of the quality of data on mortality and causes of death for 2015.

2.1 Data source

Administrative records from death notification forms collected from the DHA are the exclusive data source used to produce this statistical release. The data reported in this release are based on two death notification forms: Form BI-1663, which was introduced in 1998 (see Appendix B on pages 55–57) and Forms DHA-1663 A and B (see Appendices B1 and B2 on pages 58–61), which was introduced in 2009 as a replacement of Form BI-1663. The BI-1663 form will continue to be in use until its stock is depleted. The two forms can be merged into a single dataset because most data elements in the two forms are largely comparable. The major difference between the two forms is in the registration of perinatal deaths. The DHA-1663 has a dedicated section for recording causes of death for perinatal deaths, whereas the BI-1663 records perinatal deaths in the same section as all other deaths.

In terms of the legislative framework governing the registration of deaths in South Africa, the Births and Deaths Registration Act, 1992 (Act No. 51 of 1992) mandates that a medical practitioner must certify the cause of death if satisfied that the death was due to natural causes, for any person attended before death or any corpse examined. However, if the medical practitioner is of the opinion that the death was not due to natural causes, he/she shall report such a death to a police officer. Subject to the provisions of the Inquest Act, 1959 (Act No. 58 of 1959), the police officer shall investigate the circumstance of the death while a district surgeon or any other medical practitioner shall issue a prescribed certificate in that regard (Republic of South Africa, 1992). In instances where a death occurs in remote areas where there is no medical practitioner, a chief or tribal leader completes the DHA-1680 as confirmation of death occurrence, without the cause of death information. This information is then submitted to the nearest DHA office where it is transcribed into either the BI-1663 form or the DHA-1663 form.

A total of 460 263 deaths that occurred in 2015 were registered at the DHA and reached Stats SA in time for the 2015/2016 data processing phase. Additionally, 28 855 late registrations for deaths that occurred over the years 1997 to 2014 but were registered in 2015, were processed during the 2015/2016 data processing phase. Approximately 94,3% of these deaths were registered using form DHA-1663, while 5,7% of the deaths were registered on the BI-1663 form. Overall, the use of the BI-1663 form continues to decline as expected. These results indicate a decrease of 8,0 percentage points in BI-1663 forms used from 13,7% in 2014.

2.2 Data processing

The completed death notification forms are obtained by Stats SA for data processing and analysis of mortality and causes of death. Data processing takes place at Stats SA Data Processing Centre. The stages of data processing include sorting of forms by year of deaths, pasting labels of unique identifiers on each form, coding socio-demographic variables, coding causes of death and data capturing.

2.2.1 Classification of the causes of death

The cause-of-death-statistics released in this document are ascertained in accordance with the 2010 Edition 10th Revision International Statistical Classification of Diseases and Related Health Problems (ICD) developed by the World Health Organization (WHO). All member states of the United Nations (UN), including South Africa, agreed to use the ICD standard classification system. The ICD is designed to permit countries to systematically record, analyse, interpret and compare mortality data in a standard manner. It contains approximately 8 000 categories of causes of death and provides information on coding in terms of diseases, injuries and a wide range of signs, symptoms and other abnormal findings. It also provides the rules for selecting the underlying cause of death from the several diagnoses that may be reported on the death notification form, as well as definitions, tabulation lists, guidelines for the death notification form, and regulations on the use of the classification.

The basic ICD is a single coded list of three-character categories each of which can be further divided into 10 four-character sub-categories. The processing of 2015 data on causes of death used mostly four-character coding. Cases that could not be categorised into the fourth-character were coded at the three-character level.

Stats SA follows the principle of 'what you see is what you code' in coding the information on causes of death provided by certifying officials. However, in some instances, medical practitioners are contacted to verify some details of the certified event. The Stats SA coders use ICD-10 for categories of causes of death found in the ICD-10 tool. Stats SA has outlined specific procedures and guidelines for coding *immunosuppression and acquired immune suppression* which do not have codes in the ICD-10 tool. In terms of these procedures and guidelines, *immunosuppression* is coded as *immunodeficiency*, not as *human immunodeficiency virus (HIV) disease*. Medical practitioners sometimes report the cause of death as *acquired immune suppression*. In terms of Stats SA procedures and guidelines, this is coded as *HIV disease* and given an HIV code (group B20–B24). If *HIV* is written on the form, it is given precedence over other mentioned causes of death and is coded in the HIV group as required by the ICD tool. Codes U51 and U52 were assigned to *multi-drug resistant tuberculosis (MDR-TB)* and *extensively drug-resistant tuberculosis (XDR-TB)* respectively and grouped into the *tuberculosis (A15–A19)* broad group of causes of death.

2.2.2 Generation of the underlying causes of death

The underlying cause of death is the cause of death that has been designated for primary statistical tabulation purposes since, according to the ICD-10 manual, it is the precipitating cause and as such, is amenable to prevention or cure. It is defined as the "(a) the disease or injury which initiated the train of events leading directly to death, or (b) the circumstance of the accident or violence which produced the fatal injury" (UN, 2014: 47). Under international rules for selecting the underlying cause from the reported causes, every death is attributed to one (and only one) underlying cause of death.

Stats SA uses a computerised coding system to derive the underlying cause of death called Automated Classification of Medical Entities (ACME 2011) developed by the United States National Center for Health Statistics (NCHS). The ACME program applies the WHO rules on the selection of the underlying cause of death and is used as an international standard in automated coding of causes of death.

During the processing of 2015 deaths, an additional software called IRIS was also used to derive the underlying causes of death. The IRIS software is an automated system for coding multiple causes of death and for the selection of the underlying cause of death. The coding of causes of death on both ACME and IRIS follow the ICD rules and guidelines. Both ACME and IRIS derived the same underlying cause for 96,1% of the death notification forms. The results from one program were used where the other failed to select the underlying cause. Where both programs failed to derive the underlying cause of death, experienced coders from Stats SA manually applied mortality rules until the final underlying cause of death could be selected.

2.3 Data editing

Stats SA developed a Statistical Software Analysis (SAS) editing program to check for data accuracy, consistency and quality as well as edit the mortality and causes of death data. During the processing of the mortality and causes of death statistics, a number of quality checks are put in place at different stages, including verification on coding of causes of death. Following data editing, the data are further analysed using the "Analysing mortality levels and causes-of-death" (ANACOD) electronic tool, version 2.0 and the CoDEdit version 1.0 electronic tool (WHO, 2014a and WHO, 2014b, respectively). Both tools were developed by the WHO to automatically assess the causes of death data for data consistency, plausibility and quality. When used on the mortality and causes of death data for 2015, both tools highlighted diseases or conditions that were unlikely to cause death generally or for specific ages and sexes. These were manually investigated by checking on the original form, verifying and correction where necessary. The advantage of also using CoDEdit is that it checks and flags errors and alerts about possible misuse of codes of each unit record, whereas ANACOD executes analysis at an aggregate level. However, the importance of ANACOD is not undermined as it provides additional information not available on CoDEdit, for example, crude death rates and life expectancy at death.

2.4 Assessment of the quality of data

The quality of mortality and causes of death data from the civil registration system can be affected by the completeness level of death registration, timeliness of registrations, timeliness of publishing of statistics, accuracy of reported events, proportion of ill-defined causes and misreporting of causes of death. An analysis of the level of data quality is essential in providing both the data producers and users with a good understanding of the strengths and weaknesses of the data. An accurate, complete and timely civil registration system provides the foundation for the production of reliable and continuous vital statistics.

While this sub-section provides a summary of the results of the assessment of data quality, a detailed section is provided in Appendix C (see pages 62–69). This release also adopted the framework proposed by Mahapatra et al. (2007) to assess the causes of death data from the South African civil registration system in terms of quality dimensions of accuracy level, relevance, comparability, timeliness and accessibility. Overall completeness for adult (15 years and above) death registration for the 2011–2016 intercensal/survey period was estimated at 96%, up from 94% for the period 2007–2011. Data processing of the 2015 registered deaths took 14 months resulting in the publication of the 2015 statistical release 14 months after the end of the 2015 year of reference. For 2015 deaths, 77,5% of the deaths were registered within the 72 hours (3 days) of occurrence mandated in the Regulations for the Registration of Births and Deaths published in 2014.

Generally, age, sex, province of death occurrence and province of usual residence of the deceased were well reported, each with less than 2% missing information. Other variables such as population group, place or institution of death occurrence, method used to ascertain cause of death, marital status, smoking status, pregnancy status, education, occupation, and industry had high proportions of missing cases. In terms of the accuracy of cause-of-death statistics, 50,% of the deaths occurred within a health care facility and 12,4% of the deaths were attributed to ill-defined causes of death.

2.5 Data analysis

The analysis conducted in this statistical release is divided into two sections: mortality section and the causes-of-death section. The first section on mortality uses frequency distributions and cross-tabulations to present information on the differentials in mortality by selected socio-demographic and geographic characteristics of the deaths. The section also provides demographic indicators on the median ages at death, sex ratios at death and age specific death rates. The median ages at death are an indicator of how early or late mortality occurs in a population while the sex ratios generally show the ratio of male deaths per 100 female deaths. The age-specific death rates (number of deaths in a specified age group per 1 000 population in that age group) show variations in mortality taking into account population size of each age group.

The second section provides an analysis of the causes of death mainly based on ranking the natural underlying causes of death and providing the proportions of deaths due to specific causes. The ranking of the natural underlying causes of death is useful for illustrating the relative burdens of cause-specific deaths. The ranking simply denotes the frequency of causes of death among those eligible to be ranked, and does not in any way reflect the causes of death in terms of their importance from a public health perspective.

Causes that had the highest number of deaths received the top rank and formed part of the leading natural underlying causes of death. Causes with the same number of deaths received the same rank (e.g. *tuberculosis* and *HIV disease* sharing position 3), and a rank was skipped for the next cause of death (e.g. *diabetes* becomes position 3 when we skip rank 2). In ranking natural underlying causes of death, *symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (R00-R99)*, were excluded as information is not detailed enough to be of use for public health policy and evidence-based decision-making.

The section also provides an overview of non-natural causes of death such as *transport accidents, intentional self-harm* and *assault*, which are important in the understanding of the mortality burden of a population. However, the non-natural causes were not ranked. The section, however, disaggregates the non-natural causes of death by important characteristics of the deceased such as age, sex and province of death.

The information on causes of death is also provided based on the global burden of disease study that categorises causes of death into three broad categories, namely Group I (communicable diseases), Group II (non-communicable diseases) and Group III (injuries). The ill-defined causes of death (R00-R99), which are natural causes of death that could not be coded into underlying causes of death, were proportionately redistributed into the communicable and non-communicable broad categories.

Tables on mortality and causes of death for district municipalities in the country are presented in the appendices. This release does not provide analysis at the local municipality levels, however, this information can be made available to users on request. The boundaries for local and district municipalities as well as for provinces are based on 2011 municipality demarcations. It must be noted that the boundaries will be updated to 2016 municipality boundaries in the forthcoming release.

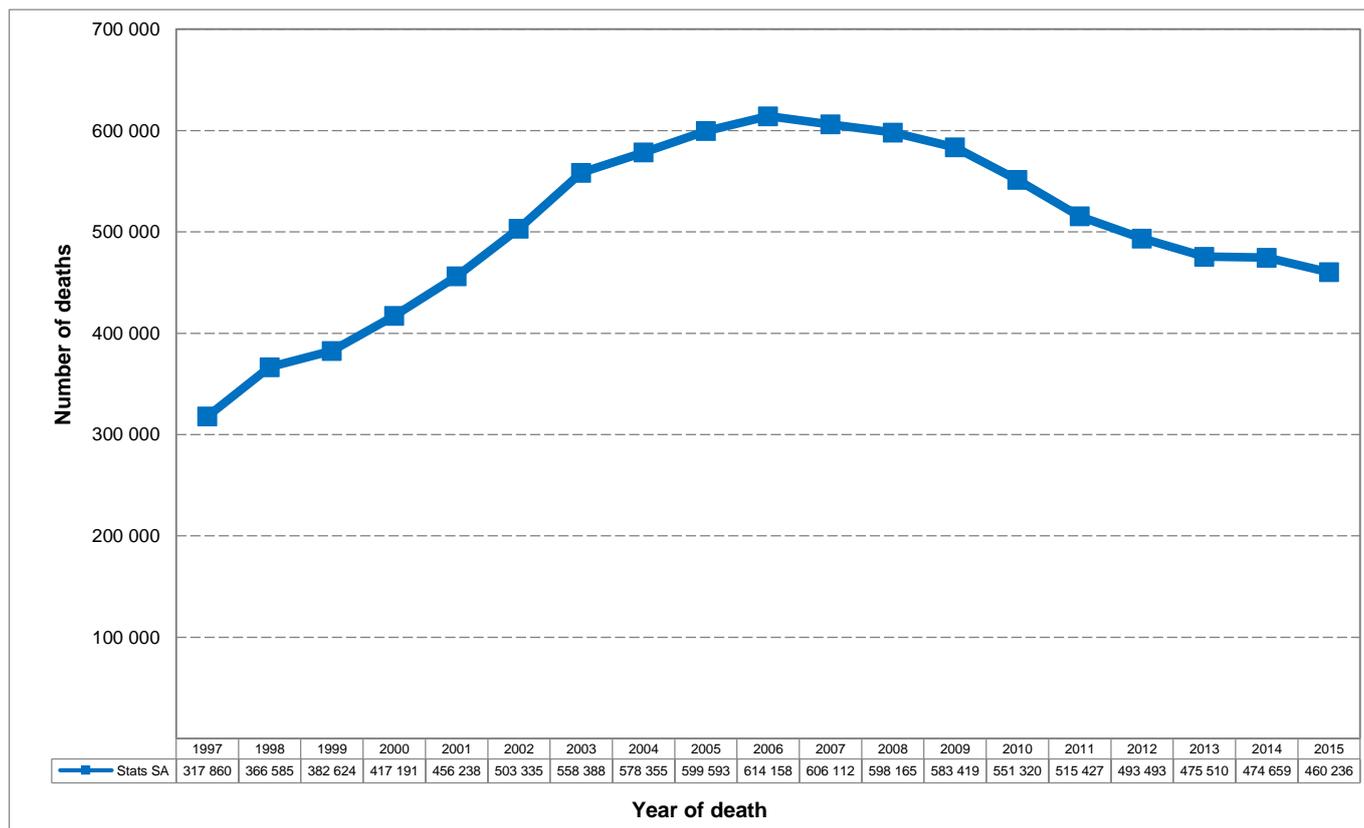
3 Mortality

This chapter provides analysis on the distribution of 2015 registered deaths that reached Statistics South Africa (Stats SA) during the 2015/2016 processing phase. The section mainly focuses on absolute numbers and percentage distributions of 2015 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 a 19-year period (1997–2015) are also included.

3.1 Levels and trends of mortality

Figure 3.1 shows data on mortality processed by Stats SA for the years 1997 to 2015. Over the 19-year period, two distinct patterns can be observed from the figure. The number of deaths increased consistently from 1993 (317 860) and peaked in 2006 (614 158). The second pattern shows yearly declines in the number of deaths from 2007 (606 112) to 2015 (460 236). In 2014, the number of deaths processed by Stats SA was 474 659, indicating 3,0% more deaths processed than in 2015. Although the findings generally indicate that the number of deaths in South Africa continues to decline, the number of deaths per year is expected to increase as figures are updated with late registrations or delayed death notifications. The information will be updated in the next statistical release.

Figure 3.1: Number of registered deaths by year of death, 1997–2015*



*Data for 1997–2014 have been updated with late registrations/delayed death notification forms processed in 2015/2016.

3.2 Age differentials

The distribution of deaths by age for 2015 is presented in Table 3.1. The age group with the highest percentage of deaths was age group 60–64 years (7,8%), followed by age group 65–69 years (7,5%) and 55–59 years (7,4%). Approximately 5,3% of all registered deaths occurred before the first birthday (age 0 years). The lowest percentage of deaths was among those aged 5–9 and 10–14 years, each representing 0,7% of total deaths in 2015.

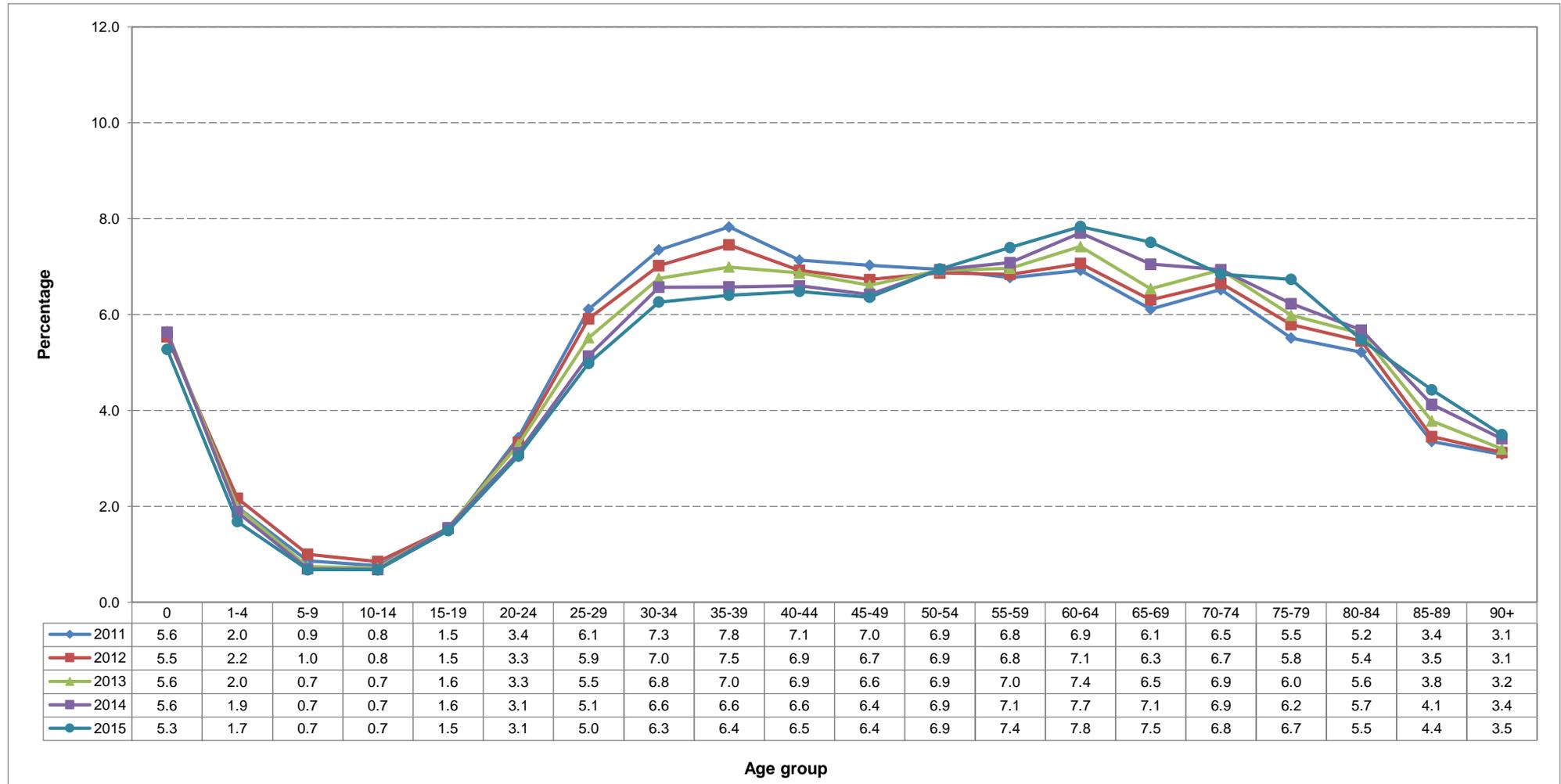
Table 3.1: Number and percentage distribution of deaths by age, 2015

Age group	Number	Percentage
0	24 216	5,3
1-4	7 722	1,7
5-9	3 109	0,7
10-14	3 107	0,7
15-19	6 854	1,5
20-24	14 004	3,0
25-29	22 867	5,0
30-34	28 740	6,2
35-39	29 385	6,4
40-44	29 743	6,5
45-49	29 196	6,3
50-54	31 893	6,9
55-59	33 947	7,4
60-64	35 961	7,8
65-69	34 452	7,5
70-74	31 410	6,8
75-79	30 909	6,7
80-84	25 122	5,5
85-89	20 343	4,4
90+	16 034	3,5
Unspecified	1 222	0,3
Total	460 236	100,0

The percentage distribution of deaths by age and year of death for the past five years (2011–2015) is presented in Figure 3.2. Absolute numbers showing the distribution of deaths by age, sex and year of death from 1997 to 2015 are provided in Appendices D (1997–1999), D.1 (2000–2002), D.2 (2003–2005), D.3 (2006–2008), D.4 (2009–2011), D.5 (2012–2014) and D.6 (2015) [see pages 70–76]. Figure 3.2 indicates that the age pattern of mortality was uniform over the five-year period, with consistent declines in proportions observed for age groups 25–29 to 35–39 and consistent increases for age groups 60–64 to 65–69 and age groups 75–79 and 85–89.

In 2011 and 2012 the highest proportion of deaths was amongst those aged 35–39 years, after which age group 60–64 years had the highest percentage of deaths for the period 2013–2015. It is worth noting that those aged 35–39 years moved to the second position in 2013, sixth position in 2014 and further down to the eighth position in 2015. On the other hand, those aged 60–64 years had the fifth highest percentage of deaths in 2011 and moved up to the second position in 2012. For all the years, the lowest proportions of deaths occurred in age groups 5–9 and 10–14 years (proportions less than 1,0%).

Figure 3.2: Percentage distribution of deaths by age and year of death, 2011–2015*



*(1) Excluding deaths with unspecified age.

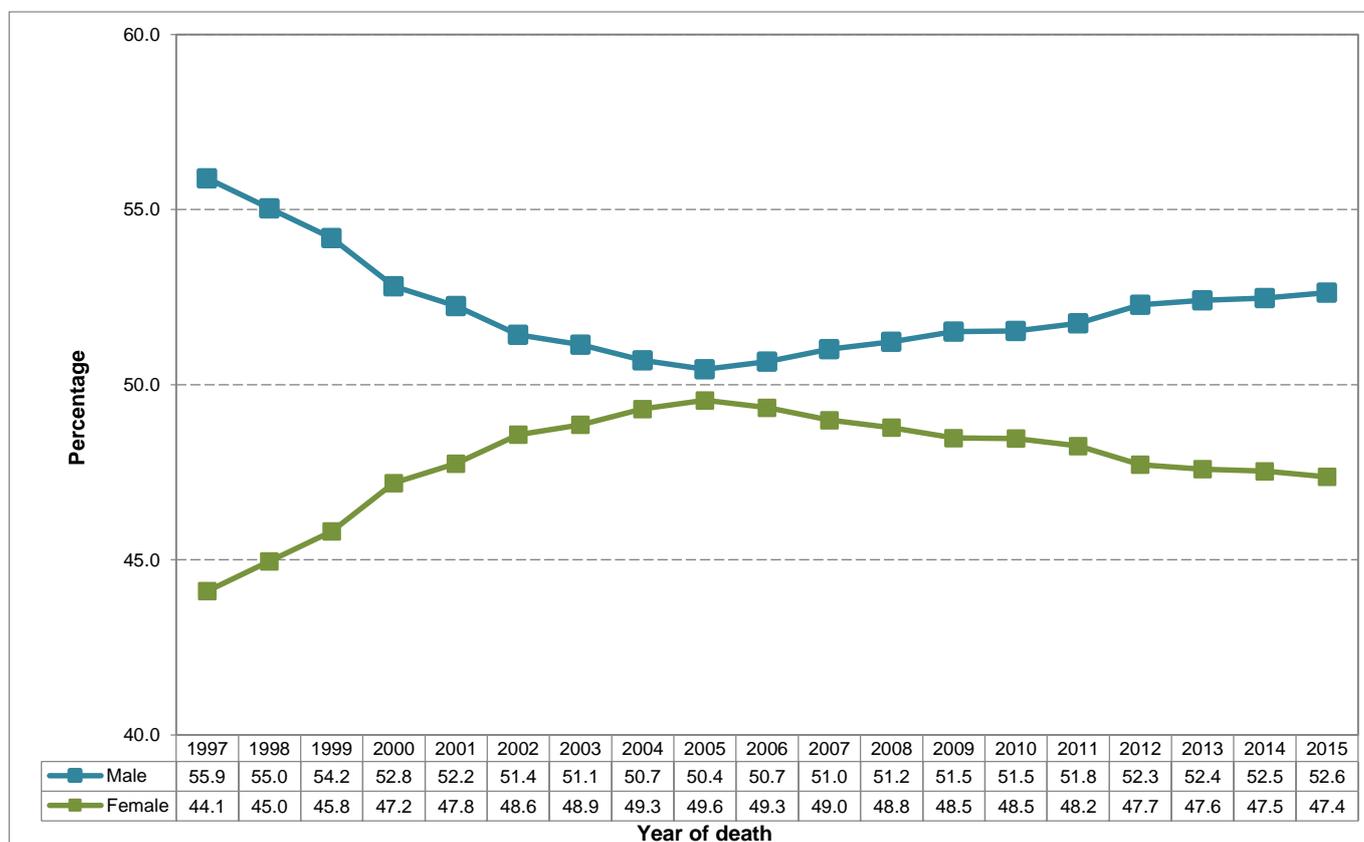
(2) Data for 2011–2014 have been updated with late registrations/delayed death notification forms processed in 2015/2016.

3.3 Sex differentials

Figure 3.3 shows the percentage distribution of deaths by age and sex from 1997 to 2015. A general observation is that there were consistent and persistent disparities in mortality characterised by excess male deaths over the 19-year period. The figure shows that similar to previous years, there were slightly more male (52,6%) than female deaths (47,4%) in 2015. The distribution of the deaths shows that there was a huge gap in the proportion of male and female deaths in 1997 (11,8 percentage points), but this narrowed yearly until 2005 (0,9 percentage points) and broadened again thereafter, reaching a male excess of 5,3 percentage points in 2015.

The percentage of male deaths was highest in 1997 (55,9%) and decreased gradually to a low of 50,4% in 2005. The pattern reversed from 2006 to 2015, where the proportion of male deaths increased yearly from 50,7% in 2006 to 52,6% in 2015. Conversely, the percentage of female deaths increased from 44,1% in 1997 to 49,6% in 2005. Since 2006 female deaths decreased steadily from 49,3% to 47,4%.

Figure 3.3: Percentage distribution of deaths by sex and year of death, 1997–2015*



*(1) Excluding deaths with unspecified sex.

*(2) Data for 1997–2014 have been updated with late registrations / delayed death notification forms processed in 2014/2015.

The annual percentage changes in the number of deaths from one year to the next by sex from 1997–1998 to 2014–2015 are provided in Appendix E (see page 77).

In order to provide an indication of the variation in mortality by age group from 2011 to 2015, taking into consideration population size of each age group, Age-Specific Death Rates (ASDR) were calculated and are presented in Appendix F (see page 78). However, these results should be treated with caution as they are based on observed numbers of deaths that have not been adjusted for variations in completeness of death registration by age category.

3.4 Age and sex differentials

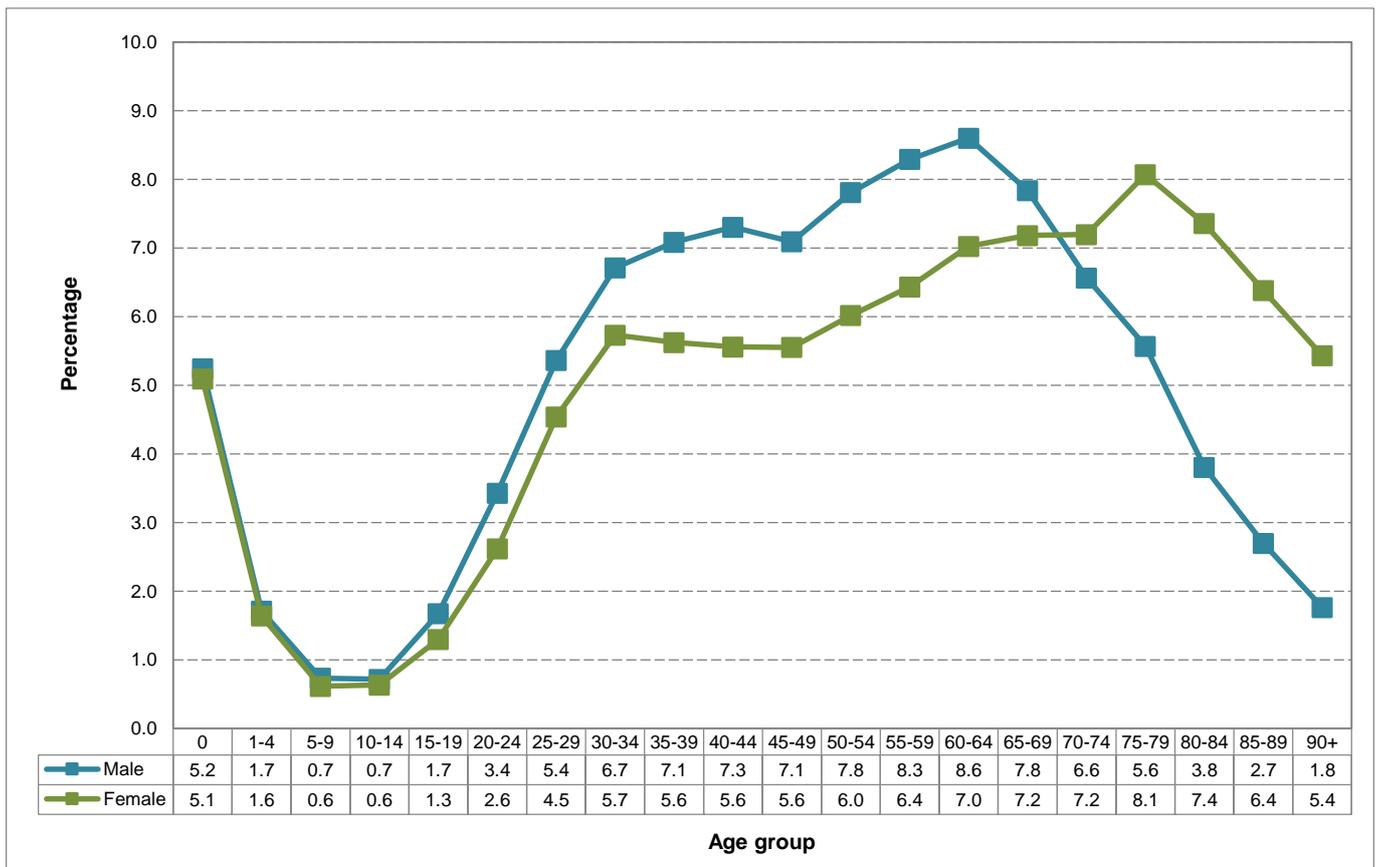
3.4.1 Distribution of deaths by age and sex

The age and sex percentage distribution of deaths that occurred in 2015 is presented in Figure 3.4. Absolute numbers are shown in Appendix D.6 [see page 76]. The graph shows that for both males and females, percentages of deaths were both lowest and somewhat similar for those aged 5–14 years (0,7% for males and 0,6% for females). For male deaths, 5,2% of the deaths occurred amongst those aged 0, while amongst females, infants constituted 5,1% of all female deaths.

Age and sex differentials further show that from age group 0 to 65–69 years, male deaths comprised higher proportions of deaths than female deaths. The proportions of female deaths exceeded those of male deaths for all the remaining older age groups (70–74 years up to age 90 years and older). Figure 3.4 also shows that the gap in proportions of males and females was much wider for age groups 84–89 years up to age 90 and older, where female deaths exceeded male deaths by 3,7 percentage points for both age groups.

As shown in the graph, the highest percentage of male deaths occurred amongst those aged 60–64 years (8,6%), closely followed by age group 55–59 (8,3%) as well as age groups 50–54 and 65–69 (around 7,8% per age group). For female deaths, the first three highest proportions of deaths were in the age groups 75–79 years (8,1%), 80–84 years (7,4%) and a tie for age group 65–69 and 70–74, both accounting for 7,2% of all female deaths.

Figure 3.4: Percentage distribution of deaths by age and sex, 2015*



* Excluding deaths with unspecified age and sex.

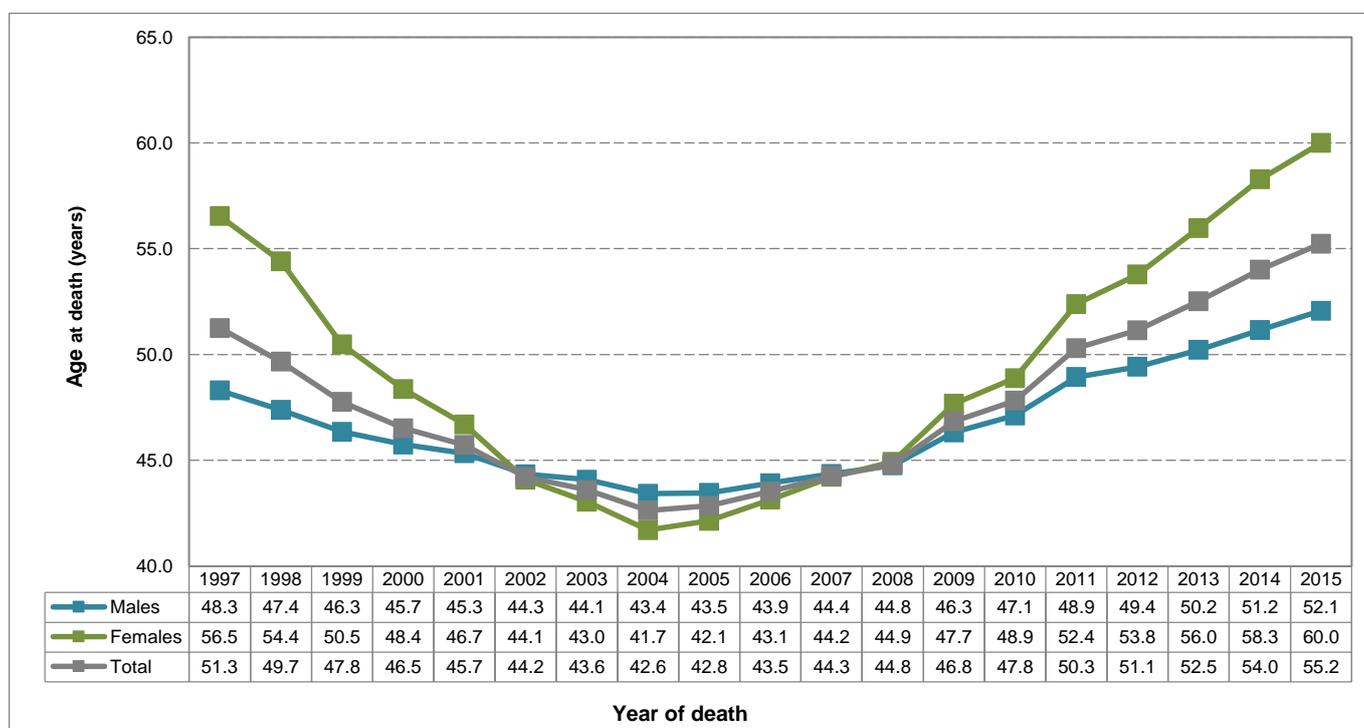
3.4.2 Median ages at death by sex

Figure 3.5 shows the median ages at death by sex and year of death for 1997 to 2015. The median age at death indicates the age at which exactly half of all registered deaths occur, and specifies how early or late mortality occurs in a population. An analysis of median ages can reveal changes in patterns of mortality over time, such as a decrease in the proportion of deaths occurring at older ages and a corresponding increase in the proportion of deaths occurring at younger ages.

Overall, the median ages at death show two distinct patterns of male, female and total median ages over time. The first pattern shows the median ages declining gradually from 1997 to 2004. In the second pattern, the median ages at death took an upward trend from 2005 to 2015. The median ages at death for total deaths decreased by 8,7 percentage points from 51,3 years in 1997 to a low of 42,6 years in 2004. Thereafter they increased by 12,4 years from 42,8 years in 2005 to a high of 55,2 years in 2015. The declines and subsequent increases in median ages were more pronounced for females than for males. The median age at death for females declined by 14,8 years from 56,5 years in 1997 to 41,7 years in 2004, while the median age at death for males decreased by 4,9 years from 48,3 years in 1997 to 43,4 years in 2004. From 2005 to 2015, the median ages increased for both sexes, indicating decreasing mortality. The median ages for females increased sharply by 17,9 years between 2005 and 2015 (42,1 years in 2005 and 60,0 years in 2015), while for males they increased modestly by 8,6 years (43,5 years in 2005 to 52,1 years in 2015).

A comparison of males and females shows that between 1997 and 2001, females mostly died at a later age than males, on average. The pattern reversed throughout 2003 to 2006, where on average the median age at death for males was higher than that of females. The differences between males and females were non-existent in 2007 and 2008, with both sexes having a median age at death of approximately 44 years in 2007 and 45 years in 2008. From 2009 to 2015, female deaths started to occur at later ages than male deaths. In 2015, the gap between the median ages of females (60,0 years) and males (52,1 years) was 7,9 years.

Figure 3.5: Median ages at death by sex and year of death, 1997–2015*



* Data for 1997–2014 have been updated with late registrations/delayed death notification forms processed in 2015/2016.

3.9.1 Sex ratios by age

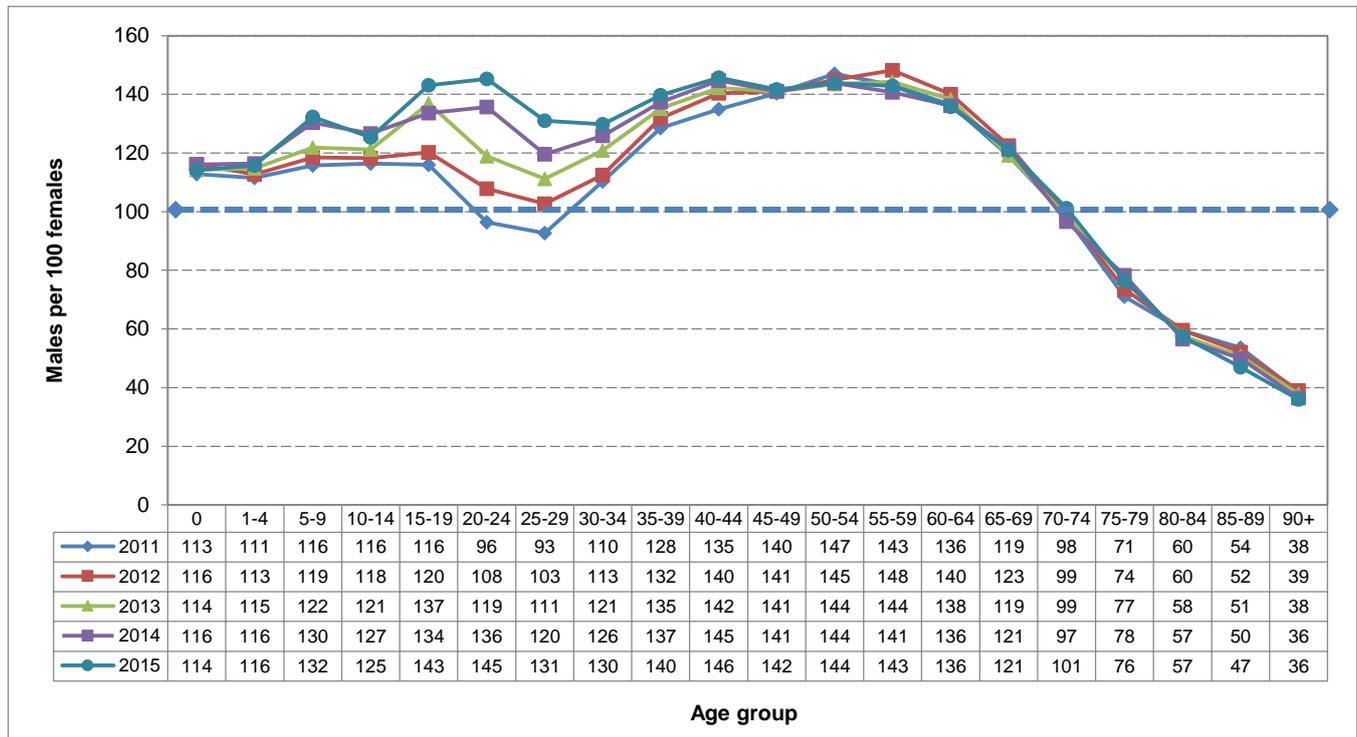
The sex ratio at death is an important demographic indicator, highlighting the number of male deaths relative to the number of female deaths. When there are equal numbers of male and female deaths, the sex ratio at death is equal to 100. If there are more males than female deaths, the sex ratio is above 100 and excess female deaths are indicated by a sex ratio at death that is less than 100. Figure 3.6 presents the sex ratio at death classified by age group of the deceased and year of death for the years 2011–2015. There were more male than female deaths from age 0 up to age group 15–19 years for all the years from 2011–2015. From age group 20–24 years to age group 25–29 years, there were more female deaths than male deaths in 2011, but for the period 2012 to 2014, the figure shows that male deaths continued to exceed female deaths up to age group 65–69 years. Thereafter female deaths outnumbered male deaths from age group 65–69 years to the oldest age group, with the exception of 2015 where male deaths were higher than female deaths in age group 70–74 years.

In 2015, male deaths were in excess from age 0 year to age group 70–74 years. Overall, female deaths were consistently more than male deaths from age group 70–74 years to 90 years and older for the years between 2011 and 2014. In 2015, female deaths exceeded male deaths for ages 75 years and above. Over the five years (2011–2015), there has been a gradual increase in sex ratios from age group 15–19 years to 40–44 years. This indicates improvements in female mortality in these age groups.

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 38 male deaths per 100 female deaths in 2011 to 36 male deaths per 100 female deaths in 2015. Between 2011 and 2013, age groups 50–54 and 55–59 years had the highest excess male deaths. In 2014, the pattern slightly shifted as age groups 40–44 and 50–54 years had the highest sex ratio. The age groups that recorded the highest sex ratios in 2015 were age group 40–44 years (146 male deaths per 100 females) and age group 20–24 years (145 male deaths per 100 female deaths).

Appendix G (see page 79) presents the overall sex ratios for 1997 to 2015. The sex ratio for 2015 deaths was 111 male deaths per 100 female deaths, indicating that there were more male than female deaths that occurred in 2015. Over the 19-year period, sex ratios at death were always over 100, showing that male deaths have always exceeded female deaths. However, sex ratios decreased from 127 male deaths per 100 female deaths in 1997 to 102 male deaths per 100 female deaths in 2005. Sex ratios then increased by one male death per 100 female deaths every year from 2006 to 2009 and have remained constant between 2009 and 2010. The sex ratio at death remained at 110 male deaths per 100 female deaths between 2012 and 2014, increasing to 111 male deaths per 100 female deaths in 2015.

Figure 3.6: Sex ratios by age and year of death, 2011–2015*



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

(2) Data for 2011–2014 have been updated to include late registrations processed/delayed death notification forms processed in 2015/2016.

3.5 Population group differences in mortality

The absolute and percentage distribution of deaths by population group for 2015 is shown in Table 3.2. The highest percentage of deaths was amongst black Africans (70,5%) and the lowest was for Indians/Asians (1,6%). The white population group comprised 8,7% of all registered deaths and about 7,1% of the deaths were from the coloured population group. This pattern is consistent with the previous years and the proportions observed are somewhat in line with variations in population size by population groups, particularly for black Africans and Indians/Asians. The results show that in 2015, out of a total population of about 55 million, black Africans accounted for 80,5% of the South African population. Other population groups comprised less than 10,0% each, ranging from 8,8% for the white population group, 8,3% for coloured to 2,5% for the Indian/Asian population group.

Information on population group was unknown or unspecified in 12,0% of all registered deaths. While there is an improvement in the recording of population group on the death notification forms, the proportion of deaths with missing information remain high. Consequently, these results should be treated with caution.

Table 3.2: Number and percentage of deaths by population group, 2015

Population group	Number of deaths	Percentage of deaths	Population group size	Percentage of population group
Black African	324 265	70,5	44 228 000	80,5
White	40 155	8,7	4 832 900	8,8
Indian/Asian	7 270	1,6	1 362 000	2,5
Coloured	32 688	7,1	4 534 000	8,3
Other	615	0,1	0	0,0
Unknown or unspecified	55 243	12,0	0	0,0
Total	460 236	100,0	54 956 900	100,0

3.6 Marital status differences in mortality

Table 3.3 shows the distribution of 2015 registered deaths by the marital status of the deceased. The results show that 46,7% of total deaths were to people who were never married and 24,4% of the deceased were married at the time of their death. It is illustrated that approximately 10,6% of the deceased were registered as widowed, while 2,0% were reported as divorced. The pattern observed in 2015 for the marital status variable is consistent with that observed in 2014 and previous years.

The table also shows that the marital status of the deceased was unknown or unspecified in 16,2% of the deaths, thus results need to be carefully interpreted.

Table 3.3: Number and percentage distribution of deaths by marital status, 2015

Marital status	Number	Percentage
Never married	214 854	46,7
Married	112 522	24,4
Widowed	48 984	10,6
Divorced	9 325	2,0
Unknown or unspecified	74 551	16,2
Total	460 236	100,0

3.7 Differences in mortality by smoking status

The number and percentage distribution of 2015 registered deaths classified by smoking status is depicted in Table 3.4. Both the old death notification (BI-1663) and the DHA-1663 define smoking status of the deceased 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 (41,3%), while approximately 18,9% of the registered deaths occurred among people who were smokers.

The high proportion of missing cases indicates poor reporting of this information on the death notification forms and therefore should be interpreted with caution. About 33,8% of the eligible death notification forms had missing information on smoking status of the deceased and 6,0% of the informants did not know the smoking status of the deceased.

Table 3.4: Number and percentage distribution of deaths by smoking status among those aged 16 years and older, 2015

Smoking status	Number	Percentage
Yes	79 957	18,9
No	173 824	41,3
Do not know	25 467	6,0
Unknown or unspecified	141 854	33,8
Total	421 102	100,00

3.8 Differences in mortality by place or institution of death occurrence

The distribution of registered deaths by place or institution of death occurrence for 2015 is shown in Table 3.5. The highest proportion of deaths (49,7%) took place in a health care facility (45,0% in hospitals, 2,9% in nursing homes and 1,8% emergency room or outpatient deaths). This was followed by deaths that occurred at home (22,2%) and 2,1% were dead on arrival.

The table also shows that 21,9% of all registered deaths had unknown or unspecified information on place or institution of death occurrence. The high percentage of deaths with missing information compromises analyses on place or institution of death occurrence and has to be treated with caution.

Table 3.5: Number and percentage distribution of deaths by place of death occurrence, 2015

Place of death	Number	Percentage
Hospital	207 142	45,0
Home	101 952	22,2
Nursing home	13 285	2,9
Emergency room / Outpatient	8 234	1,8
Dead on arrival	9 783	2,1
Other	18 916	4,1
Unknown or unspecified	100 924	21,9
Total	460 236	100,0

3.9 Geographic variations in mortality

This section presents the distribution of 2015 registered deaths by the deceased's province of death occurrence, province of usual residence and district of death occurrence. It must be noted that provincial and district municipality information was derived from place names that were based on 2011 municipality boundaries. However, for the next release 2016 municipality boundaries will be used.

Appendices H and H.1 (absolute numbers and percentages, respectively [see page 80]) provide the distribution of deaths by province of death occurrence and province of usual residence of the deceased. The number and percentage distribution of deaths at provincial and district municipality levels by age are provided in Appendices I and I.1 respectively (see pages 81–84), the sex distribution is presented in Appendix J (see pages 85–86).

3.9.1 Differences by province, age and sex

Table 3.6 shows the distribution of 2015 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. However, Table 3.6 shows that the distribution of deaths by province of death occurrence is largely similar to the distribution of deaths by province of usual of residence, illustrating that most deaths occurred in the same province where the deceased resided.

The highest percentage of deaths occurred in Gauteng (21,3%), followed by KwaZulu-Natal (17,7%) and Eastern Cape (14,9%). The order of province of usual residence of the deceased remained the same as that of death occurrence, with Gauteng (20,5%) comprising the highest, followed by KwaZulu-Natal (17,6%) and Eastern Cape (14,8%). It must be noted that the percentages may be reflective of the population sizes of the province of death occurrence or usual residence.

The lowest proportions of deaths occurred in Northern Cape (3,0%) and Free State (6,9%). The two provinces also accounted for the lowest proportions of deaths registered in the province of usual residence, depicting similar proportions as observed in the province of death occurrence (3,0% and 6,9% for Northern Cape and Free State, respectively). There were 652 (0,1%) people whose deaths occurred outside of South Africa and a total of 1 357 (0,3%) were registered as usual residents of a foreign country. The table further shows that for 2015 deaths, both

province of death occurrence and province of usual residence were well reported with 0,1% and 0,9% deaths classified as unknown or unspecified, respectively.

Further analysis of the province of death occurrence and province of usual residence of the deceased shows that 2015 registered deaths were predominantly characterised by deaths that occurred within the province of usual residence (refer to appendices H and H1 on page 80). Over 90% of deaths occurred in the province of usual residence, with KwaZulu-Natal having the highest proportion at 96,0% and Gauteng having the lowest proportion of 91,4%. As was the case in 2014, the highest proportion of people who died outside South Africa were residing in Gauteng (35,4%).

Additional analysis on geography focuses only on place of death occurrence, not on deceased's place of residence or place of birth. The information on place of residence and place of birth of the deceased are obtainable on request from Stats SA.

Table 3.6: Distribution of deaths by province of death occurrence and province of usual residence of the deceased, 2015

Province	Province of death occurrence		Province of usual residence of deceased	
	Number	Percentage	Number	Percentage
Western Cape	49 932	10,8	48 713	10,6
Eastern Cape	68 423	14,9	68 085	14,8
Northern Cape	13 758	3,0	13 629	3,0
Free State	31 941	6,9	31 821	6,9
KwaZulu-Natal	81 320	17,7	80 943	17,6
North West	34 428	7,5	35 015	7,6
Gauteng	98 191	21,3	94 204	20,5
Mpumalanga	34 286	7,4	35 017	7,6
Limpopo	46 923	10,2	47 272	10,3
Foreign	652	0,1	1 357	0,3
Unspecified	382	0,1	4 180	0,9
Total	460 236	100,0	460 236	100,0

Appendix I (see page 81) shows the number of deaths by age, district and province of death occurrence for 2015, while Appendix I1 shows the proportion of deaths by age, district municipality and province of death occurrence for 2015. It is worth noting that the distribution of deaths in these district municipalities does not account for potential underreporting of deaths at specific ages, which may vary by district of death occurrence.

In terms of proportions, North West (7,2%) had the highest percentage of infant deaths followed by Limpopo (6,7%); however, in terms of absolute infant deaths, Gauteng and KwaZulu-Natal were the provinces with the highest number of infant deaths – Gauteng with 5 833 and KwaZulu-Natal with 4 058. This is indicative of the population size of these provinces relative to the rest of the other provinces. Eastern Cape (3,2%) had the lowest proportion of infant deaths followed by Western Cape (3,8%). Limpopo (4,5%) had the highest proportion of deaths between the ages of 1 and 14 years, followed by Mpumalanga (3,8%). The highest proportions of deaths for those aged 15–44 years were in Mpumalanga (32,8%). For those aged 45–64 years, Northern Cape had the highest proportions of death at 32,3%. Western Cape had the highest proportion of elderly deaths (ages 65 years and older) at 40,0%, followed closely by Limpopo at 37,3% deaths.

Appendix J (see pages 85–86) shows the sex distribution of the deceased by province and district municipality of death occurrence, as well as their associated sex ratios at death. In 2015, sex ratios at death ranged from as low as 97 male deaths per 100 female deaths in Limpopo to as high as 122 male deaths per 100 female deaths in Western Cape. Western Cape was followed by Gauteng with 117 male deaths per 100 females.

3.9.2 Differences by district municipality, age and sex

The number of deaths by age, province and district municipality of death occurrence is shown in Appendix I, while Appendix I1 (see page 81) shows percentage variations in 2015 deaths by age, province and district municipality. The results show that the district municipalities that had the highest number of deaths were City of Cape Town (31 053), City of Johannesburg (29 957), Ekurhuleni (26 296) and City of Tshwane (21 199). These were the only municipalities which had deaths in excess of 20 000.

Regarding the district municipalities with the highest proportions of deaths, John Taolo Gaetsewe (9,3%) in Northern Cape had the highest proportion of infant deaths (children aged 0), followed by Dr Ruth Segomotsi Mompati (9,2%). Among children aged 1–14, the highest proportion of deaths were found in Vhembe district in Limpopo and O.R. Tambo district in Eastern Cape, both accounting for 5,0% deaths in each province. The highest proportion of deaths among those aged 15–44 years were in O.R. Tambo (34,9%) in Eastern Cape, followed by Ehlanzeni (34,1%) in Mpumalanga. Pixley Ka Seme district (34,4%) in Northern Cape had the highest proportion of deaths for those aged 45–64, closely followed by Cacadu (33,5%) in Eastern Cape. For the elderly, Overberg (46,1%) in Western Cape had the highest proportion of deaths, followed by Namakwa (45,3%) in Northern Cape and Amathole (42,0%) in Eastern Cape.

Appendix J (see pages 85–86) presents sex distribution of the deceased by district municipality and province of death occurrence. All the provinces, except Limpopo, had sex ratios at death of 100 or more, indicating that there were more male than female deaths. The districts with highest sex ratios at death were West Coast (131) in Western Cape, and John Taolo Gaetsewe (130) and Overberg (130), in Northern Cape and Western Cape respectively. There were six district municipalities which had more female than male deaths, and these were distributed between Free State, Limpopo and KwaZulu-Natal provinces. Xhariep in Free State had the lowest sex ratio at death of 79, followed by the three district municipalities in Limpopo: Mopani (92), Vhembe (93) and Greater Sekhukhune (94). Sisonke and uMzinyathi district municipalities in KwaZulu-Natal each had a sex ratio at death of 97.

4 Causes of death

4.1 Introduction

Information presented in this section focuses on causes of death for deaths that occurred in 2015 and were processed by Stats SA for the period 01 January 2015 to 27 August 2016. The sections have 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, 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.

Information of the cause of death can only be completed by medical practitioners according to the Births and Deaths Registration Act (Act No. 51 of 1992).

Due to concerns about 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 encompass all deaths that were not caused by, or may not have been attributable to natural causes. In terms of the Inquests Act (Act No. 58 of 1959), these deaths are subject to medico-legal investigation. An autopsy must be done to find the cause of death, and an inquest is required. The results of the inquest are then sent to the Department of Home Affairs, which issues the final death certificate.

Causes of death data in this publication are classified using the 10th revision of the International Classification of Diseases (ICD-10). The analysis undertaken focuses mainly on the underlying cause of death, which 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).

Considering the rise in non-communicable diseases, this section also includes analysis on Global Burden of Disease. Global Burden of Disease is a critical resource for informed policymaking, as it provides a tool to quantify and compare the effects of different diseases in a population.

Trend analysis for the period 1997–2015 was also done to establish patterns between the natural and non-natural causes of death. A summary of causes of death by age, sex and province of occurrence was also included in this section.

The final subsection provides a comparison between underlying, immediate and contributing causes of death. This analysis basically gives an overview of the recorded instances of multiple causes of death, as death notification forms allow for reporting one or more causes of death on each form.

4.2 Reported causes of death

Both the BI-1663 and DHA-1663 forms make provision for the 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 a chain of events leading directly to death, with the immediate cause of death on line (a) and the underlying cause on the lowest used line. Part 2 is for reporting other conditions that contributed to death, but did not cause any of the causes of death mentioned in Part 1. These are other important diseases or conditions that were present at the time of death and may have contributed, but did not lead to the underlying cause of death listed in Part 1.

Information on the number of causes of death provided on each death notification form for deaths that occurred in 2015 is provided in Table 4.1. The majority of the death notifications (53,2%) had only one cause recorded, followed by 26,1% of death notification forms which had two causes of death recorded and 13,7% which had three causes recorded.

A total of 3 082 (0,7%) of the death notification forms did not have any information on the cause of death. For the 3 082 forms, in 62,3% of the forms, doctors indicated that it was a natural cause, however, they did not fill in the cause of death while for 37,7% 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). For records where there was no reported cause of death, these 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).

Table 4.1: Number and percentage distribution of death notification forms by the number of causes entered on the notification form, 2015

Number of the reported causes of death	Number of death notification forms	Percentage
No cause	3 082	0,7
One cause	244 959	53,2
Two causes	120 084	26,1
Three causes	63 261	13,7
Four causes	22 265	4,8
Five causes	6 564	1,4
Six causes	21	0,0
Total	460 236	100,0

4.3 Method of ascertaining cause of death

There is a section in the death notification forms for an indication by the certifying official on the method used to ascertain the cause of death. These options differ by the type of form used by the official:

There are differences in the options available between the two forms:

- Form BI-1663 has six options, namely autopsy, opinion of attending medical practitioner, opinion of attending medical practitioner on duty, opinion of professional nurse, interview of family member, and other (refer to Appendix B, section G).

In the DHA-1663 B, there are two sections for the method of ascertaining the cause of death depending on the age of the deceased:

- For deaths occurring after one week of birth, DHA-1663 B has the same six options as BI-1663 plus an additional option of “post-mortem examination” (refer to Appendix B1, section G.1).

- For stillbirths and deaths occurring within one week of birth, form DHA-1663 B has three options, namely autopsy, autopsy results may be available later, and autopsy not performed (refer to Appendix B1, section G.2).

The resulting categories, after combining comparable information in BI-1663 and DHA-1663, are provided in Table 4.2. Post-mortem examination was the most used method of ascertaining death, with 24,3% deaths determined through this method in 2015. This was followed by 17,3% deaths ascertained through opinion of attending medical practitioner, then opinion of registered professional nurse with 11,4% deaths ascertained through this method.

Table 4.2: Number and percentage distribution of deaths by method used to ascertain the cause of death, 2015

Method of ascertaining the cause of death	Number	Percentage
Autopsy	42 925	9,3
Post-mortem examination	111 754	24,3
Opinion of attending medical practitioner	79 841	17,3
Opinion of attending medical practitioner on duty	10 085	2,2
Opinion of registered professional nurse	52 245	11,4
Interview of family member	8 791	1,9
Other	6 113	1,3
Autopsy results may be available later*	42	0,0
Autopsy not performed*	1 283	0,3
Unknown	2 534	0,6
Unspecified	144 623	31,4
Total	460 236	100,0

*For perinatal deaths only.

4.4 Main groups of the underlying causes of death

This subsection presents an overview of the underlying causes of death for main groups (chapters) of classification of causes of death. The ICD-10 classifies diseases and related health problems into 22 chapters, of which 19 are used in the reporting of information on underlying causes of death (see Table 4.3). The three chapters excluded, but which are on the ICD-10, are:

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 has codes for special purposes (U00-U89). These codes are used by WHO for the provisional assignment of new diseases of uncertain aetiology and bacterial agents resistant to antibiotics. U51 and U52 were used for *coding multidrug-resistant tuberculosis (MDR-TB)* and *extensively drug-resistant tuberculosis (XDR-TB)*. In this release, both were recoded to the broad group of *tuberculosis (A15-A19)* in the analyses.

The number and percentage distribution of deaths by the 19 main groups (chapters) of the classification of causes of death are shown in Table 4.3 below. Of the main due to natural causes (i.e. groups 1–17), *certain infections and parasitic diseases* comprising 19,5% of all deaths was the most common main group of causes of death in 2015. Included also in this group were 1 115 deaths due to *multidrug-resistant tuberculosis (MDR-TB)* and 162 deaths due to *extensively drug-resistant tuberculosis (XDR-TB)*.

The second most common main group of natural causes of death was *diseases of the circulatory system* (17,8%), followed by *diseases of the respiratory system* (9,6%). *Neoplasms* comprised 9,1% of all deaths, *certain conditions originating in the perinatal period* contributed to 2,1% of all deaths, while *pregnancy, childbirth and puerperium* contributed to 0,2% of all deaths.

Deaths due to *external causes of morbidity and mortality* comprised 11,1% of all deaths, whilst *ill-defined deaths symptoms and signs not elsewhere classified (R00-R99)* contributed 12,4%.

Table 4.3: Distribution of deaths by main groups of causes of death, 2015

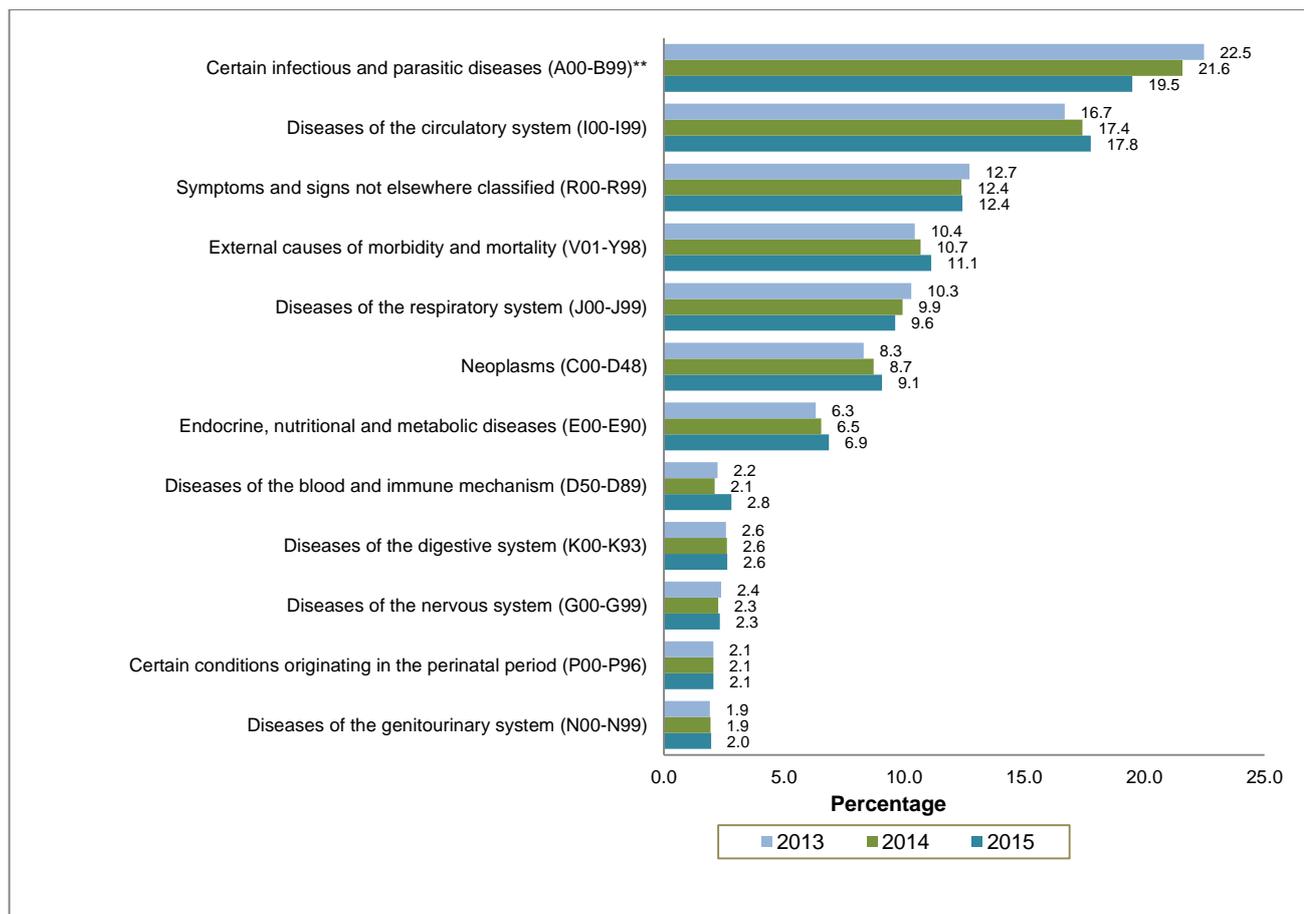
No.	Main groups of underlying causes of death (based on ICD-10)	Number	Percentage
1	Certain infectious and parasitic diseases (A00-B99)*	89 727	19,5
2	Neoplasms (C00-D48)	41 799	9,1
3	Diseases of the blood and immune mechanism (D50-D89)	12 949	2,8
4	Endocrine, nutritional and metabolic diseases (E00-E90)	31 623	6,9
5	Mental and behavioural disorders (F00-F99)	1 901	0,4
6	Diseases of the nervous system (G00-G99)	10 735	2,3
7	Diseases of the eye and adnexa (H00-H59)	24	0,0
8	Diseases of the ear and mastoid process (H60-H95)	58	0,0
9	Diseases of the circulatory system (I00-I99)	81 782	17,8
10	Diseases of the respiratory system (J00-J99)	44 327	9,6
11	Diseases of the digestive system (K00-K93)	12 151	2,6
12	Diseases of the skin and subcutaneous tissue (L00-L99)	1 325	0,3
13	Diseases of the musculoskeletal system etc. (M00-M99)	1 667	0,4
14	Diseases of the genitourinary system (N00-N99)	9 035	2,0
15	Pregnancy, childbirth and puerperium (O00-O99)	942	0,2
16	Certain conditions originating in the perinatal period (P00-P96)	9 515	2,1
17	Congenital malformations (Q00-Q99)	2 248	0,5
18	Symptoms and signs not elsewhere classified (R00-R99)	57 201	12,4
19	External causes of morbidity and mortality (V01-Y98)	51 227	11,1
Total		460 236	100

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

The proportion of deaths by selected main groups of causes of death for 2013–2015 is shown in Figure 4.1. For the three-year period, there has been a consistent increase in the number of deaths observed for *diseases of the circulatory system*, *external causes of morbidity and mortality*, *neoplasms*, and *endocrine, nutritional and metabolic diseases*.

There also has been a consistent decrease for *certain infectious and parasitic diseases* and *diseases of the respiratory system*. *Diseases of the nervous system* and *symptoms and signs not elsewhere classified* decreased from 2013 to 2014, remaining constant thereafter. *Diseases of the digestive system* and *certain conditions originating in the perinatal period* remained constant in the three-year period. For *diseases of the blood and immune mechanism*, the proportions were inconsistent over time, thus showing no evident pattern.

Figure 4.1: Percentage distribution of deaths by main groups of causes of death, 2013–2015*



*(1) Data for 2013–2014 have been updated with late registrations/delayed death notification forms processed in 2015/2016.

(2) Excluding main groups with less than 1% of deaths.

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

4.5 Natural and non-natural causes of death

Due to the high levels of violence and deaths attributed to accidents, natural and non-natural underlying causes of death are treated as separate groups. Non-natural causes of death comprise all deaths that were not attributable, or may not have been attributable to natural causes. All causes of death from chapter 1 to 18 of ICD-10 are classified as natural causes and chapter 19 as non-natural causes.

Table 4.4 shows the number of deaths due to natural and non-natural causes from 1997 to 2015, with the number of natural deaths always surpassing non-natural deaths. The highest number of natural deaths was observed in 2006 and thereafter the number of deaths due to natural causes has been declining, whereas there is no obvious pattern in the number of non-natural deaths from 2006 to 2015, except for the period of 2007 to 2011, where the number of non-natural deaths was decreasing.

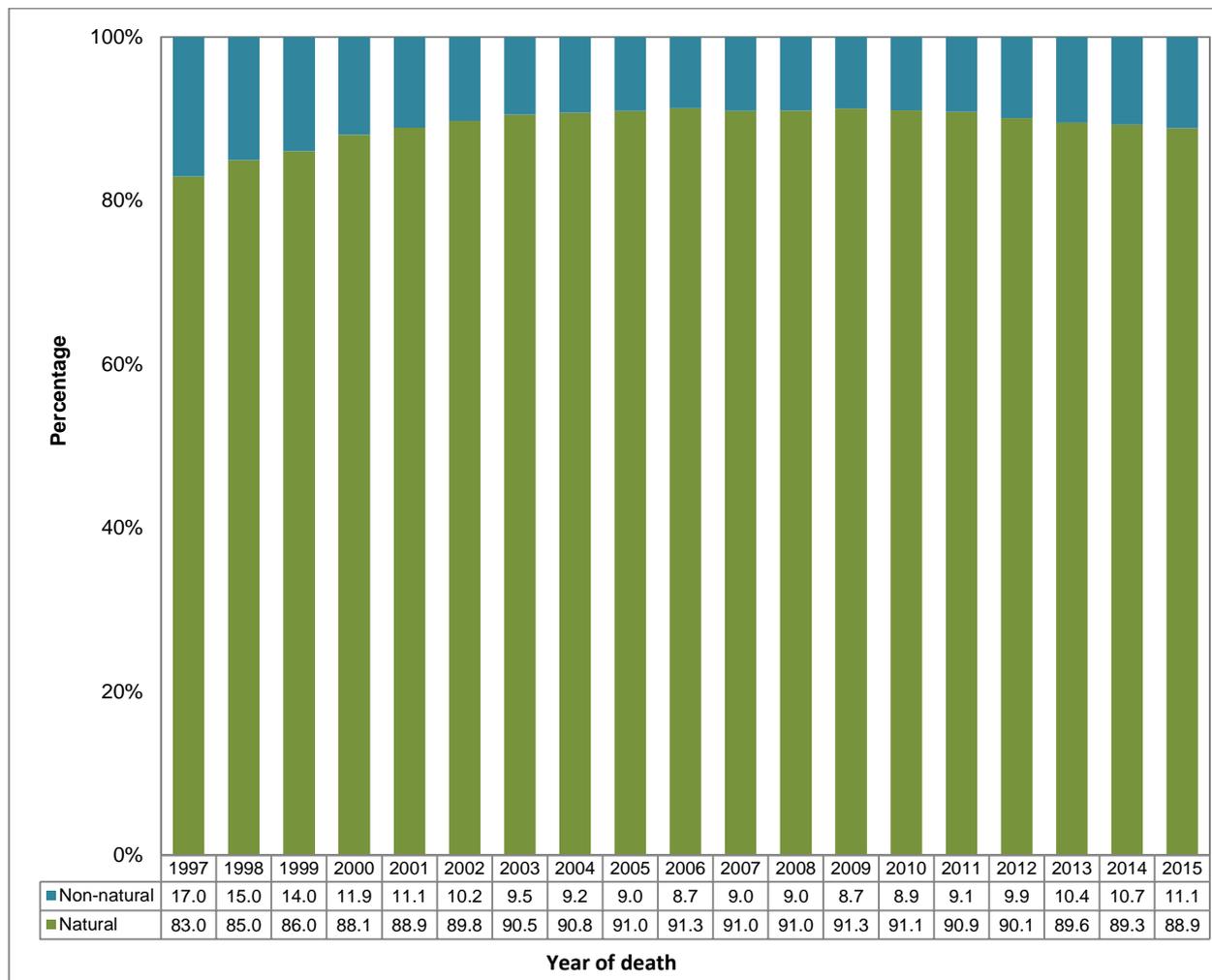
Table 4.4: Number of natural and non-natural deaths by year of death, 1997–2015*

Year of death	Number of natural deaths	Number of non-natural deaths	Total
1997	263 714	54 146	317 860
1998	311 421	55 164	366 585
1999	329 231	53 393	382 624
2000	367 352	49 839	417 191
2001	405 814	50 424	456 238
2002	451 783	51 552	503 335
2003	505 442	52 946	558 388
2004	524 906	53 449	578 355
2005	545 523	54 070	599 593
2006	560 854	53 304	614 158
2007	551 482	54 630	606 112
2008	544 497	53 668	598 165
2009	532 636	50 783	583 419
2010	502 002	49 318	551 320
2011	468 352	47 075	515 427
2012	444 719	48 774	493 493
2013	425 829	49 681	475 510
2014	423 967	50 692	474 659
2015	409 009	51 227	460 236

*Data for 1997–2014 have been updated with late registrations/delayed death notification forms processed in 2015/2016.

Percentage of deaths due to natural and non-natural causes between 1997 and 2015 are shown in Figure 4.2. The majority (over 80%) of deaths were due to natural causes throughout the 19-year period, though with declining proportions from 2010. Conversely, the proportion of deaths due to non-natural underlying causes of death has been on the increase since 2010 (from 8,7% in 2009 to 11,1% in 2015).

Figure 4.2: Percentage distribution of natural and non-natural causes of death by year of death, 1997–2015*

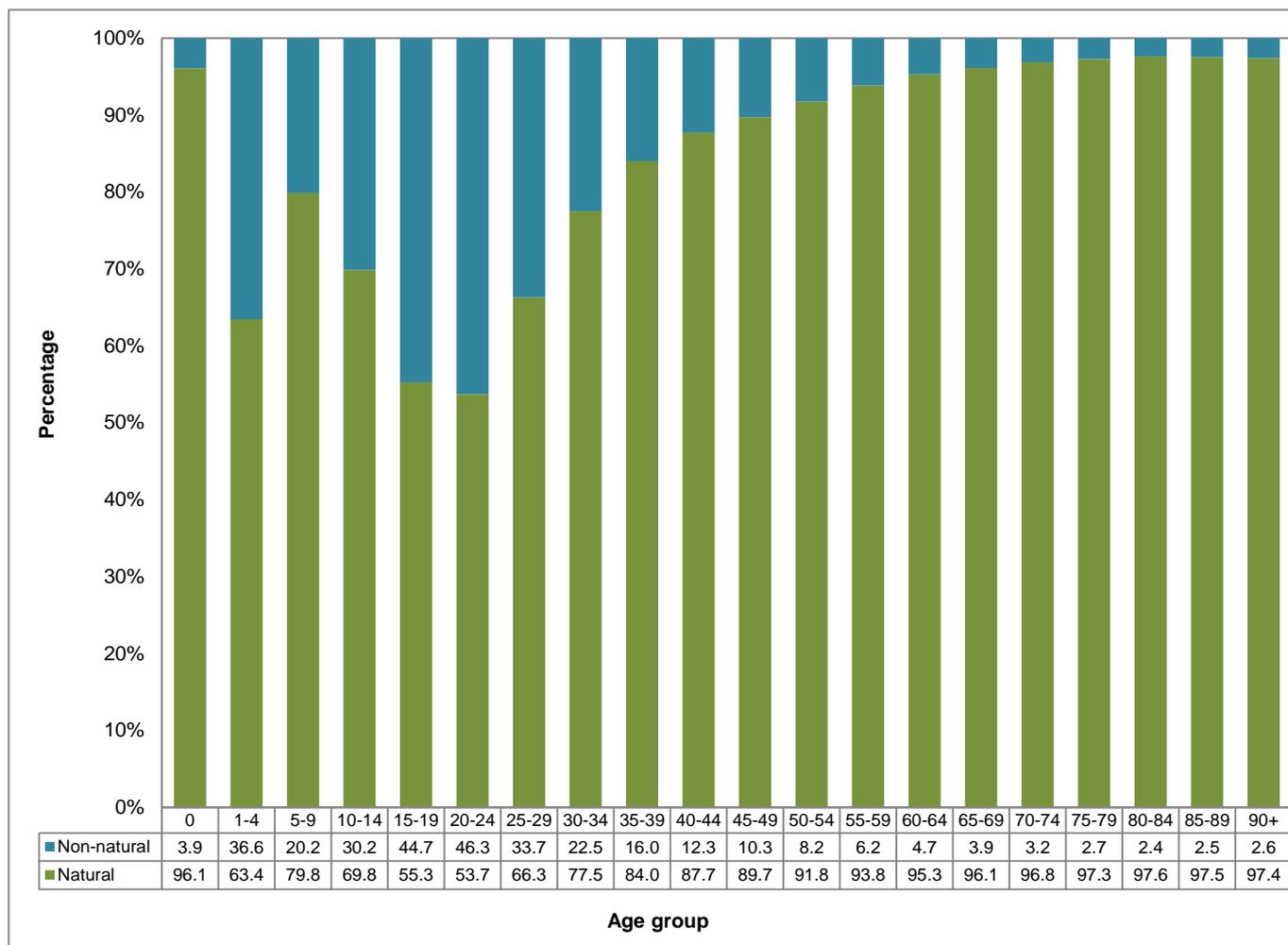


*Data for 1997–2014 have been updated with late registrations/delayed death notification forms processed in 2015/2016.

Natural and non-natural causes of death by age

Figure 4.3 shows the percentage distribution of deaths due to natural and non-natural causes classified by age group for deaths that occurred in 2015. Generally, population age groups massively affected by non-natural deaths are 15–19 (44,7%) and 20–24 (46,3%). At infancy (age 0) and older ages (60 years and older), non-natural causes of death were less than 5% for each age group. Other ages with higher proportions (over 20%) of deaths due to non-natural causes were age groups 1–4 years to 10–14 years and age groups 25–29 and 30–34.

Figure 4.3: Percentage distribution of natural and non-natural causes of death by age, 2015*



*Excluding deaths with unspecified age.

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 from 1990 to the present and makes comparisons across populations, enabling understanding of the 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 the 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*)

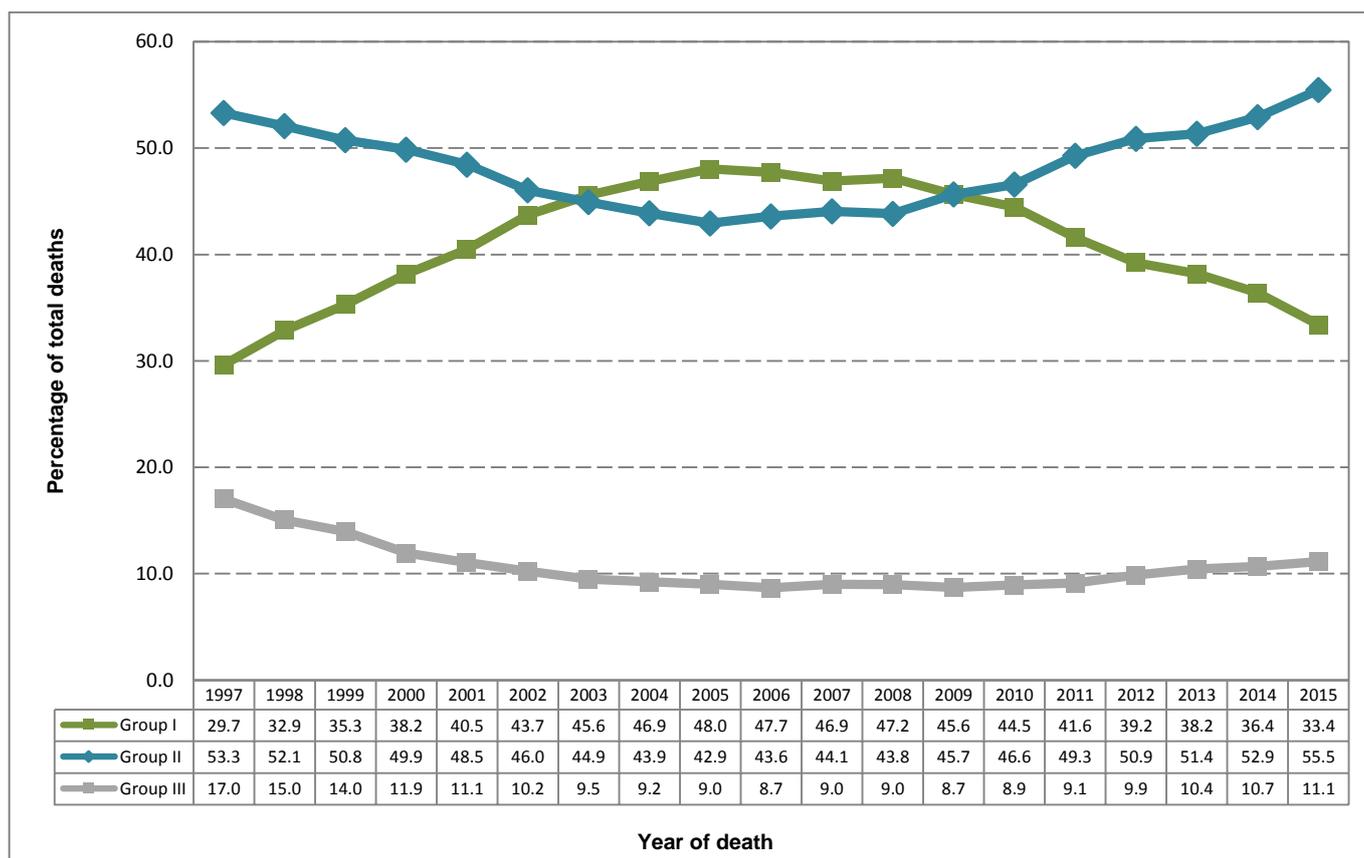
Group III: External causes of mortality (e.g. *accidents, homicide and suicide*)

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 the year 2009, communicable and non-communicable were equal. From 2010 to 2015, the gap between the communicable and non-communicable diseases became wider with more deaths resulting from non-communicable diseases. A closer look at the recent patterns (2010–2015) 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.

Deaths due to injuries (Group III) follow the same argument as previously discussed in section 4.5.

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, 1997–2015*



*(1) Data for 1997–2014 have been updated with late registrations/delayed death notification forms processed in 2015/2016.

(2) Redistributed ill-defined diseases (R00-R99) proportionately to causes in Group I and Group II.

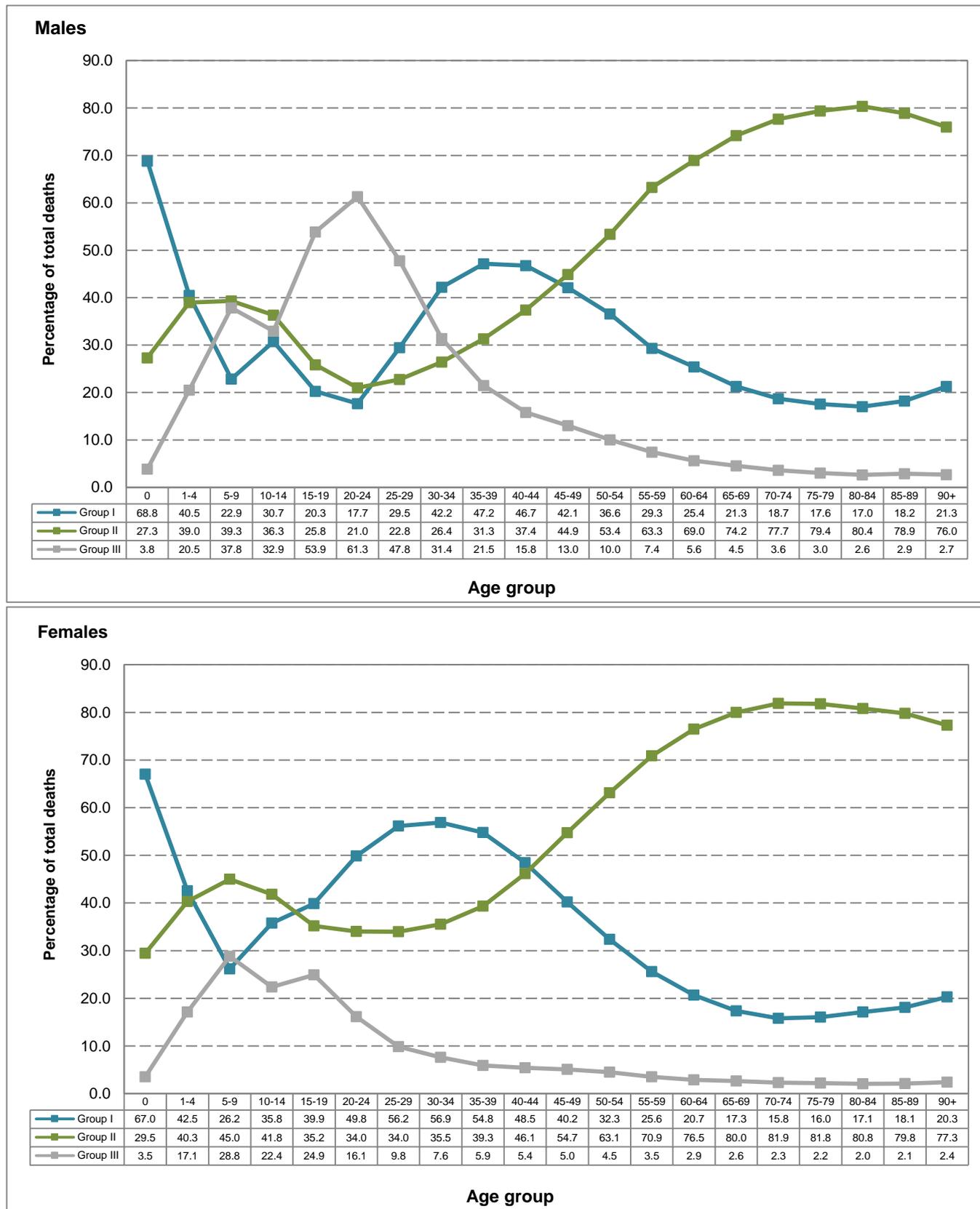
The percentage distribution of group type by sex and age group is presented in Figure 4.5. The highest proportion of deaths due to communicable diseases occurred among infants (aged 0 years) for both sexes (68,8% for males and 67,0% for females). For males, deaths due to non-communicable diseases peaked at age group 80–84 years, while for females, deaths attributed to non-communicable diseases peaked at age group 70–74 years. Communicable diseases were lowest amongst the elderly (65 years and older up to age group 85–89) for females compared to the

other age groups, and among males these were lowest for age groups 20–24 years and age groups 70–74 years to 85–89.

Generally, the observed trend for both sexes was that the proportion of deaths due to Group II causes increased with age from the age of 20 years. It was relatively low for infants (aged 0) for both sexes and increased remarkably until age group 10–14 years, and decreased thereafter up until age group 20–24 years amongst males, and 25–29 years 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 and age group 5–9 years amongst females. Deaths due to external causes were much higher for males than for females in the age groups 15–19 to age group 60–64.

Figure 4.5: Percentage distribution of deaths due to communicable diseases (Group I), non-communicable diseases (Group II) and injuries (Group III) by sex and age group, 2015*



*Redistributed unknown age and ill-defined diseases (R00-R99) proportionately to causes in Group I and Group II.

4.7 Broad groups of natural causes of death

This subsection presents information on the leading underlying natural causes of death. The ten leading causes are identified by ranking the causes of death by frequency among those eligible for ranking as described in section 2. The top-ranking causes determined the leading underlying natural causes of death. The ranking of the leading causes of death in this release excludes *symptoms, signs and abnormal findings, not elsewhere classified* as well as all non-natural deaths (external causes of morbidity and mortality). Non-natural causes will be discussed in the next subsection.

4.7.1 Overall pattern of the leading underlying natural causes of death

Table 4.5 shows the ten leading underlying causes of death in South Africa in 2013–2015. The table provides changes in the ten leading underlying causes of death by absolute numbers and percentages over the three-year period. These three years are selected to show recent trends in natural causes of death. 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 2015 is shown in Appendix K (see pages 87–90), while the breakdown of individual causes for the broad groups that were among the ten leading causes in 2015 is provided in Appendix L (see pages 91–93).

Table 4.5 shows that nine of the ten leading natural underlying causes of death were the same for the three-year period, with the exception of *ischaemic heart diseases* which was amongst the ten leading underlying causes of death only in 2015, replacing *intestinal infectious diseases* on the ten leading underlying causes of death in this period. Only *tuberculosis* and *hypertensive diseases* maintained the same ranks, while the other causes varied between the years.

The most notable interchange was *influenza and pneumonia*, which moved from being the second leading cause of death in 2013 to the sixth ranked underlying cause of death in 2015. This is a significant improvement in deaths due to *influenza and pneumonia*. The second most notable change was that of *diabetes mellitus*, which moved from the fifth leading underlying cause of death in 2013 to being the second underlying cause of death in 2015, accounting for 5,4% deaths.

Tuberculosis was the leading cause of death during the three years, accounting for at least 7% of all deaths each year (8,8% in 2013; 8,3% in 2014; and 7,2% in 2015). This indicates that the proportion of deaths due to *tuberculosis* has been consistently decreasing over the years. *Diabetes mellitus* was the second leading underlying cause of death in 2015, accounting for 5,4% deaths, followed by *cerebrovascular diseases* as the third leading underlying cause of death, accounting for 5,0% deaths. *Diabetes mellitus* and *cerebrovascular diseases* exchanged their rankings between 2014 and 2015, with *diabetes mellitus* assuming a higher rank.

Human immunodeficiency virus (HIV) disease was the sixth leading cause of death in 2014 and moved to fifth in 2015, accounting for 4,8% of all deaths in each year, having decreased from the third leading cause in 2013. *Other forms of heart disease* moved from ranked sixth in 2013 to the fourth rank in both 2014 and 2015, accounting for 4,8% deaths in 2015. *Ischaemic heart diseases* was not amongst the ten leading underlying causes of death both in 2013 and 2014, however, it was the tenth leading underlying cause of death in 2015.

Table 4.5: The ten leading underlying natural causes of death, 2013–2015*

Causes of death (based on ICD-10)	2013			2014			2015		
	Rank	Number	%	Rank	Number	%	Rank	Number	%
Tuberculosis (A15-A19)**	1	41 904	8,8	1	39 495	8,3	1	33 063	7,2
Diabetes mellitus (E10-E14)	5	23 133	4,9	3	23 966	5,0	2	25 070	5,4
Cerebrovascular diseases (I60-I69)	4	23 158	4,9	2	24 131	5,1	3	22 879	5,0
Other forms of heart disease (I30-I52)	6	22 189	4,7	4	22 928	4,8	4	22 215	4,8
Human immunodeficiency virus [HIV] disease (B20-B24)	3	23 825	5,0	6	22 729	4,8	5	21 926	4,8
Influenza and pneumonia (J09-J18)	2	24 345	5,1	5	22 813	4,8	6	20 570	4,5
Hypertensive diseases (I10-I15)	7	17 104	3,6	7	18 319	3,9	7	19 443	4,2
Other viral diseases (B25-B34)	9	14 101	3,0	9	14 508	3,1	8	16 097	3,5
Chronic lower respiratory diseases (J40-J47)	10	12 384	2,6	10	12 690	2,7	9	12 667	2,8
Ischaemic heart diseases (I20-I25)	...	...	...	...	...	...	10	12 239	2,7
Intestinal infectious diseases (A00-A09)	8	16 163	3,4	8	14 795	3,1	...	...	...
Other natural causes		207 523	43,6		207 593	43,7		202 840	44,1
Non-natural causes		49 681	10,4		50 692	10,7		51 227	11,1
All causes		475 510	100,0		474 659	100,0		460 236	100,0

*Data from 2013–2014 have been updated with late registrations/delayed death notification forms processed in 2015/2016.

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

... Category not in top ten.

4.7.2 Leading underlying natural causes of death by sex

Table 4.6 presents the ten leading underlying causes of death by sex in 2015. Overall, nine of the ten leading causes were the same for both sexes, although with different ranks. *Chronic lower respiratory diseases* was among the ten leading causes of death for males, but not for females, whereas *intestinal infectious diseases* was among the top ten underlying causes of death for only females. *Ischaemic heart disease* was the only underlying cause of death which had the same rank (10th) for both sexes, accounting for 2,9% deaths amongst males and 2,4% deaths for females.

The first leading underlying cause of death for males was *tuberculosis*, accounting for 8,3% of male deaths while for females, *diabetes mellitus* was the leading underlying cause of death responsible for 7,1% deaths amongst females. *Tuberculosis* was the third underlying cause of death responsible for 5,9% deaths for females. *Human immunodeficiency virus* ranked second for males (4,7%) while it was ranked sixth for females (4,9%). The second leading underlying cause of death for females was *cerebrovascular diseases*, accounting for 6,1% deaths.

Three of the top five leading underlying causes of death amongst males were communicable diseases, while the top five leading underlying causes of death amongst females were dominated by non-communicable diseases, with only *tuberculosis* as a communicable disease.

In the top ten underlying causes of death for both sexes, the underlying causes where there was a big gap in terms of rankings was *hypertensive diseases*, which had a wider gap (5) ranked ninth for males while it ranked fourth for females. This was followed by *human immunodeficiency virus* which ranked second for males and sixth for females, as well as *influenza and pneumonia* which ranked third for males and seventh for females.

Table 4.6: The ten leading underlying natural causes of death for males and females, 2015*

Causes of death (based on ICD-10)	Male			Female		
	Rank	Number	%	Rank	Number	%
Tuberculosis (A15-A19)**	1	20 111	8,3	3	12 811	5,9
Human immunodeficiency virus [HIV] disease (B20-B24)	2	11 275	4,7	6	10 545	4,9
Influenza and pneumonia (J09-J18)	3	10 507	4,4	7	9 970	4,6
Other forms of heart disease (I30-I52)	4	10 265	4,3	5	11 894	5,5
Cerebrovascular diseases (I60-I69)	5	9 696	4,0	2	13 146	6,1
Diabetes mellitus (E10-E14)	6	9 657	4,0	1	15 396	7,1
Other viral diseases (B25-B34)	7	7 698	3,2	8	8 356	3,8
Chronic lower respiratory diseases (J40-J47)	8	7 691	3,2	...	...	...
Hypertensive diseases (I10-I15)	9	7 342	3,0	4	12 078	5,6
Ischaemic heart diseases (I20-I25)	10	6 944	2,9	10	5 280	2,4
Intestinal infectious diseases (A00-A09)	...	...	...	9	5 292	2,4
Other natural causes		100 668	41,7		100 804	46,4
Non-natural causes		39 302	16,3		11 515	5,3
All causes		241 156	100,0		217 087	100,0

*Excluding deaths with unspecified sex.

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

... Category not in top ten.

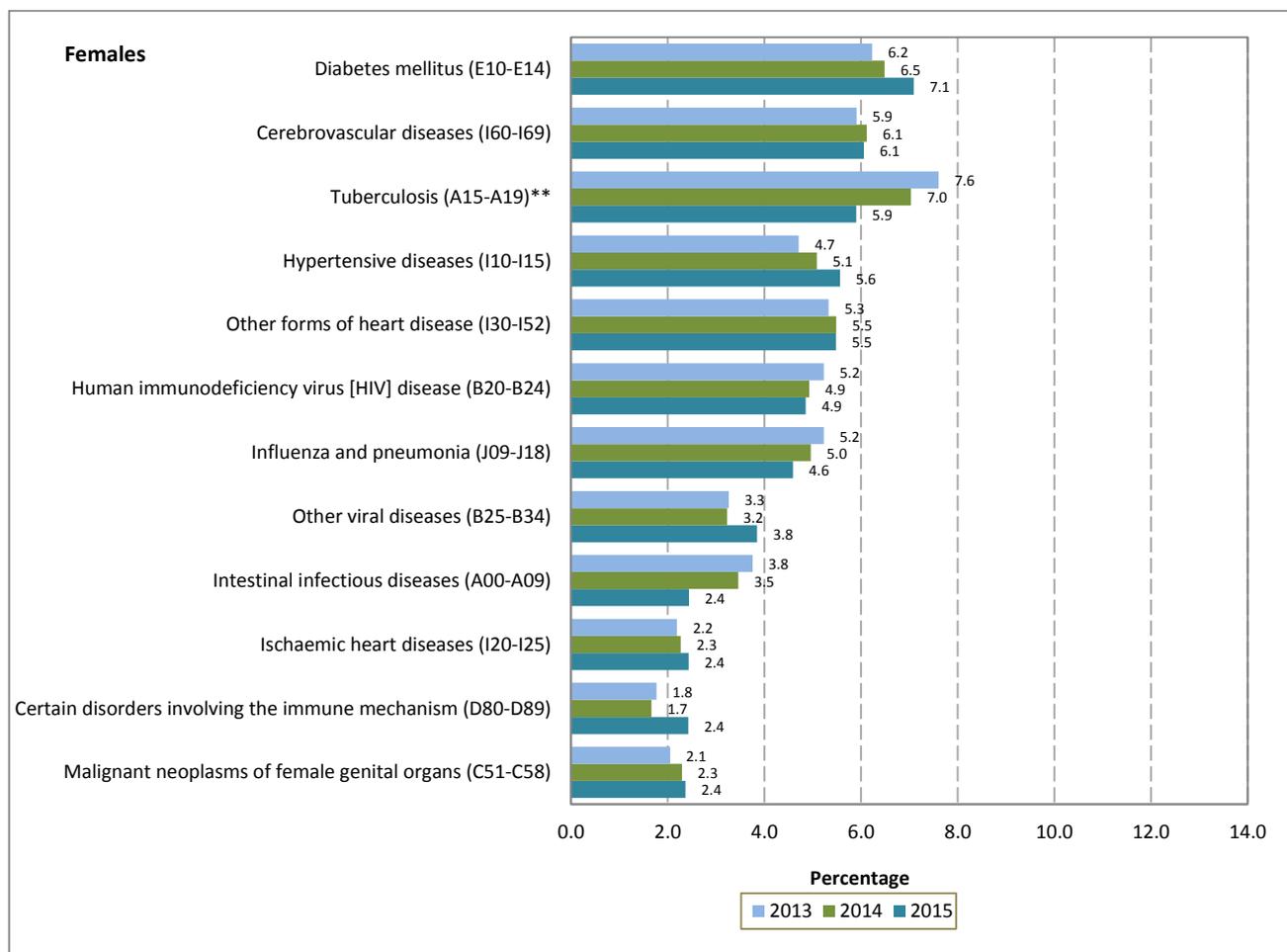
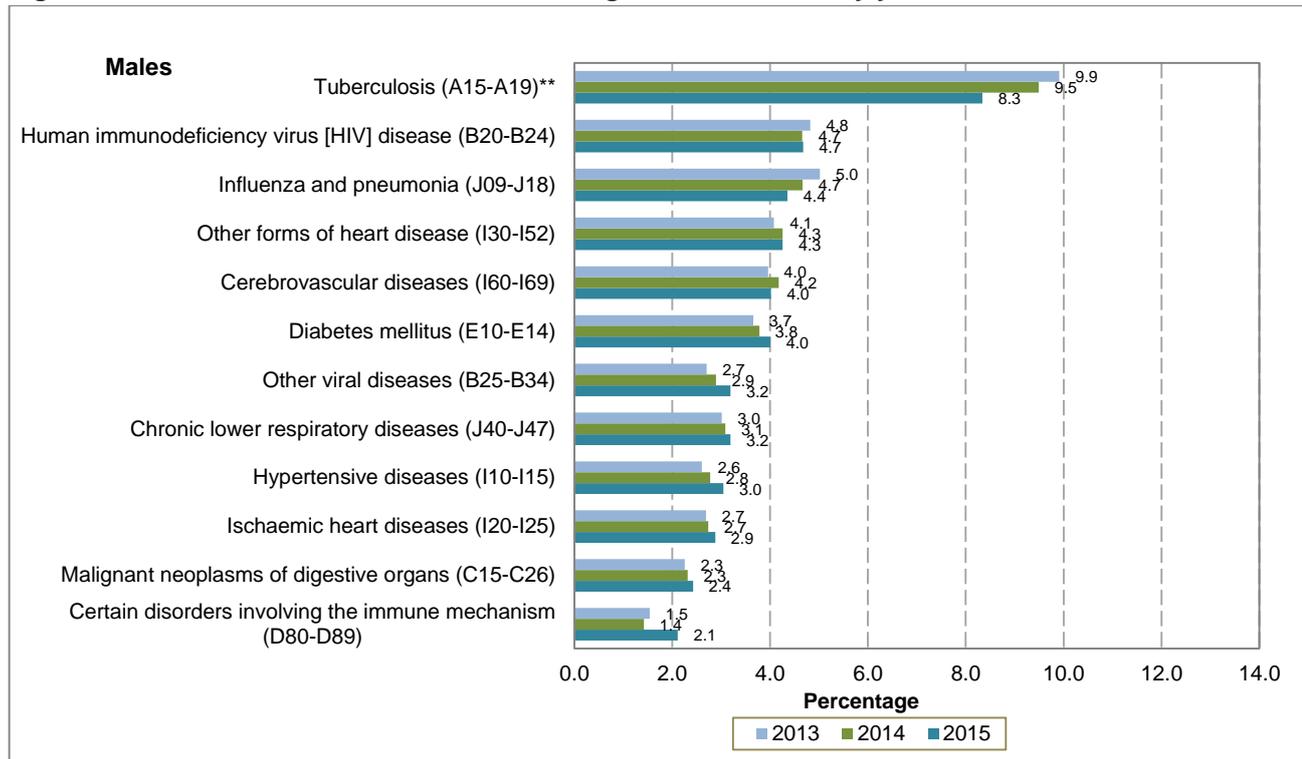
The percentage distributions of the ten leading causes of death classified by sex for the period 2013 to 2015 are depicted in Figure 4.6. Over the three-year period, *tuberculosis* was the leading cause of death for both males and females in 2013 and 2014, although declining over time. In 2015, it was the leading cause of death for only males, with *diabetes mellitus* as the leading cause of death for females. It can further be observed that deaths due to *tuberculosis* for males have been declining over time while deaths due to *diabetes mellitus* have been steadily increasing over the three-year period for females, from 6,2% in 2013 to 7,1% in 2015.

In general for males, there was a reduction in the proportion of deaths due to *tuberculosis* and *influenza and pneumonia* between 2013 and 2015, while there was a rise in the proportion of male deaths due to *diabetes mellitus*, *other viral diseases*, *chronic lower respiratory diseases*, *hypertensive disease*, *ischaemic heart disease* as well as *malignant neoplasm of digestive organs*.

Similarly, patterns as those observed amongst males were also observed amongst females, whereby there was a notable reduction in the proportion of deaths due to *tuberculosis*, *influenza and pneumonia* and *intestinal infectious diseases* in the three-year period. For females, there was a notable rise in the proportion of deaths due to *diabetes mellitus*, *hypertensive diseases*, *ischaemic heart diseases* as well as *malignant neoplasm of female genital organs* in the same period.

For both sexes, increases were observed in the proportion of deaths due to *diabetes mellitus*, *hypertensive diseases* and *ischaemic heart diseases* between 2013 and 2015.

Figure 4.6: Distribution of deaths for the leading causes of death by year of death and sex, 2013–2015*



*Data for 2013–2014 have been updated with late registrations/delayed death notification forms processed in 2015/2016.

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

4.7.3 Leading underlying natural causes of death by age

Analysis of the broad age groups (0, 1–14, 15–44, 45–64, and 65 years and older) is recommended by the World Health Organization for classifying ages for 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 are provided in Tables 4.8 (under 5 years) and 4.9 (15–24 years).

It is observed that *influenza and pneumonia* was the only underlying cause of death common for all age groups. However, the ranking varied greatly by age. For example, deaths due to *influenza and pneumonia* were the third leading underlying cause of death for age 0 (8,4%), second for age group 1–14 (6,8%), fifth for age group 15–44 (4,2%) and seventh for both age groups 45–64 (4,0%) and 65 years and older (4,3%). *Tuberculosis* and *other forms of heart diseases* were part of the ten underlying causes of death in all age groups, except infants, while *intestinal infectious diseases* were causes of death in all age groups, except for ages 45 years and older.

The leading underlying cause of death for infant deaths (age 0) was *respiratory and cardiovascular disorders specific to the perinatal period*, responsible for 15,6% deaths at this age. *Intestinal infectious diseases* was the second leading cause of death, accounting for 9,5% deaths, followed by *influenza and pneumonia*, which constituted 8,4% deaths in this age group. *Malnutrition* was on the ten leading underlying causes for only infants and age group 1–14 and ranked eighth for infants, responsible for 3,4% deaths.

The leading underlying cause of death for age group 1–14 years was *intestinal infectious diseases* responsible for 8,9% deaths in this age group, followed by *influenza and pneumonia* with 6,8% deaths in this age group. *Malnutrition* was the third leading cause of death (5,0%), followed by *tuberculosis* (3,6%). *Cerebral palsy and other paralytic syndromes* ranked eighth among the top ten leading underlying causes of death only for age group 1–14, and responsible for 2,3% deaths in this age group.

The leading underlying cause of death for age group 15–44 years was *tuberculosis*, constituting 12,4% deaths, followed by *human immunodeficiency virus [HIV] diseases*, accounting for 10,5% deaths. *Other viral diseases* was ranked third, accounting for 7,4% deaths. *Certain disorders involving the immune mechanism*, which ranked fourth with 4,7% deaths, was amongst the ten leading causes of death only for this age group. *Influenza and pneumonia* and *other forms of heart disease* ranked fifth and sixth accounting for 4,2% and 2,4%, respectively.

Eight 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, contributing 8,9% of deaths in this age group, it was the ninth leading cause of death among those aged 65 and older, accounting for 2,7% of deaths. Conversely, *diabetes mellitus* was the leading cause of death for those aged 65 and older (9,1%) and the second leading cause of death for those aged 45–64 (7,0%).

The two underlying causes of death not common between the two groups are *other viral diseases* and *human immunodeficiency virus*, which is on the age group 45–64 but not on the age group 65 years and older, while *ischaemic heart diseases* and *acute kidney failure* and *chronic kidney disease* are on the 65 years and older age group, but not on the 45–64 age group. Additionally, these two age groups are dominated by non-communicable diseases, with only *tuberculosis* and *influenza and pneumonia* which are communicable disease.

Table 4. 7: The ten leading underlying natural causes of death for broad age groups, 2015*

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	3 786	15,6	...	...	...	...	...	...	...	...	...	...	...	...
Intestinal infectious diseases (A00-A09)	2	2 290	9,5	1	1 246	8,9	7	2 037	1,5	...	...	...	...	...	...
Influenza and pneumonia (J09-J18)	3	2 024	8,4	2	946	6,8	5	5 463	4,2	7	5 232	4,0	7	6 870	4,3
Disorders related to length of gestation and fetal growth (P05-P08)	4	1 339	5,5	...	...	...	...	...	...	...	...	...	...	...	...
Other disorders originating in the perinatal period (P90-P96)	5	1 303	5,4	...	...	...	...	...	...	...	...	...	...	...	...
Infections specific to the perinatal period (P35-P39)	6	1 169	4,8	...	...	...	...	...	...	...	...	...	...	...	...
Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	7	901	3,7	...	...	...	...	...	...	...	...	...	...	...	...
Malnutrition (E40-E46)	8	832	3,4	3	701	5,0	...	...	...	...	...	...	...	...	...
Congenital malformations of the circulatory system (Q20-Q28)	9	517	2,1	...	...	...	...	...	...	...	...	...	...	...	...
Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	10	486	2,0	...	...	...	...	...	...	...	...	...	...	...	...
Tuberculosis (A15-A19)**	...	...	...	4	499	3,6	1	16 258	12,4	1	11 689	8,9	9	4 340	2,7
Other viral diseases (B25-B34)	...	...	...	5	412	3,0	3	9 699	7,4	8	4 916	3,8	...	...	...
Human immunodeficiency virus [HIV] disease (B20-B24)	...	...	...	6	335	2,4	2	13 842	10,5	4	6 657	5,1	...	...	...
Other forms of heart disease (I30-I52)	...	...	...	7	318	2,3	6	3 142	2,4	5	6 128	4,7	4	12 334	7,8
Cerebral palsy and other paralytic syndromes (G80-G83)	...	...	...	8	317	2,3	...	...	...	...	...	...	...	...	...
Inflammatory diseases of the central nervous system (G00-G09)	...	...	...	9	237	1,7	8	1 779	1,4	...	...	...	...	...	...
Episodic and paroxysmal disorders (G40-G47)	...	...	...	10	227	1,6	...	...	...	9	4 551	3,5	6	6 991	4,4
Certain disorders involving the immune mechanism (D80-D89)	...	...	...	...	...	...	4	6 162	4,7	...	...	...	...	...	...
Cerebrovascular diseases (I60-I69)	...	...	...	...	...	...	9	1 751	1,3	3	6 722	5,1	2	14 293	9,0
Acute kidney failure and chronic kidney disease (N17-N19)	...	...	...	...	...	...	10	1 430	1,1	...	...	...	10	3 159	2,0
Diabetes mellitus (E10-E14)	...	...	...	...	...	...	...	...	...	2	9 176	7,0	1	14 428	9,1
Hypertensive diseases (I10-I15)	...	...	...	...	...	...	...	...	...	6	5 350	4,1	3	13 036	8,2
Malignant neoplasms of digestive organs (C15-C26)	...	...	...	...	...	...	...	...	...	10	4 341	3,3	8	5 151	3,3
Ischaemic heart diseases (I20-I25)	...	...	...	...	...	...	...	...	...	...	...	...	5	7 408	4,7
Other natural causes	...	8 618	35,6	...	5 068	36,4	...	37 943	28,8	...	56 809	43,4	...	65 559	41,4
Non-natural causes	...	951	3,9	...	3 632	26,1	...	32 087	24,4	...	9 426	7,2	...	4 701	3,0
All causes	...	24 216	100,0	...	13 938	100,0	...	131 593	100,0	...	130 997	100,0	...	158 270	100,0

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

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

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.

Results in Table 4.8 show that, with the exception of *intestinal infectious diseases* and *congenital malformations of the circulatory system*, there were no overlapping leading underlying causes of death for those who died during the neonatal and post-neonatal periods. However, there was a much smaller percentage of deaths due to *intestinal infectious diseases* for neonatal deaths (1,5%) as compared to post-neonatal deaths (15,7%), and moreover, there was a much smaller percentage of deaths due to *congenital malformations of the circulatory system* for post-neonatal deaths (2,0%) as compared to neonatal deaths (2,3%).

Neonatal deaths mainly resulted from *respiratory and cardiovascular disorders specific to the perinatal period*, which was the leading underlying cause of death among neonates, and responsible for 35,1% deaths. The second leading underlying cause of death for neonatal deaths was *other disorders originating in the perinatal period*, accounting for 12,0% of all neonatal deaths, followed by *disorders related to the length of gestation and fetal growth*, responsible for 11,2% deaths in this age group. The ten leading underlying causes of death during the neonatal period constituted 91,0% of deaths in this age group.

The leading cause of death for those who died during the post-neonatal period was *intestinal infectious diseases* (15,7%), followed by *influenza and pneumonia* (14,9%). These two causes were the highest contributors of post-neonatal deaths, accounting for more than a quarter (30,6%) of deaths occurring during this period. *Malnutrition* (6,1%) was the third leading cause of death, *other acute lower respiratory infections* (3,2%) the fourth, and *HIV disease* (1,7%) the tenth.

For overall infants (less than one year), the first leading underlying cause of deaths was *respiratory and cardiovascular disorders specific to the perinatal period* (15,6%). *Intestinal infectious diseases* (9,5%) was ranked second. *Influenza and pneumonia* (8,4%), *disorders related to length of gestation and fetal growth* (5,5%) and *other disorders originating in the perinatal period* (5,4%) were ranked third, fourth and fifth, respectively.

The three leading causes of death for those aged 1–4 years were *intestinal infectious diseases* (12,3%), *influenza and pneumonia* (8,6%) and *malnutrition* (8,4%), in that order. *Tuberculosis* (2,5%) was the fourth leading cause of death while *other viral diseases* (2,3%), *other forms of heart disease* (2,2%), and *HIV disease* (1,7%) were the fifth, sixth and seventh positions, respectively.

There were three common underlying causes of death for deaths occurring within the first year of life and those occurring between one and four years (*intestinal infectious diseases*, *influenza and pneumonia*, and *malnutrition*). The total contribution of these causes was 21,3% for infant deaths and 29,3% for deaths occurring between one and four years. *Other bacterial diseases*, *other diseases of the respiratory systems* and *other forms of heart diseases* appeared only among post-neonatal deaths, while *other congenital malformations* and *digestive system disorders of fetus and newborn* featured only among neonatal deaths.

For under 5, *respiratory and cardiovascular disorders specific to the perinatal period* was the leading underlying cause of death responsible for 11,9% deaths, followed by *intestinal infectious diseases* (10,1) then *influenza and pneumonia* (8,4%). *Malnutrition* was ranked the fourth leading underlying cause of death amongst the under-5 mortality, responsible for 4,6% deaths.

Table 4.8: The ten leading underlying natural causes of death for infants and children aged below five years, 2015

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	3742	35,1	...	...	...	1	3 786	15,6	...	...	...	1	3 786	11,9
Other disorders originating in the perinatal period (P90-P96)	2	1295	12,1	...	...	...	5	1 303	5,4	...	...	...	6	1 304	4,1
Disorders related to length of gestation and fetal growth (P05-P08)	3	1190	11,2	...	...	...	4	1 339	5,5	...	...	...	5	1 347	4,2
Infections specific to the perinatal period (P35-P39)	4	1135	10,6	...	...	...	6	1 169	4,8	...	...	...	7	1 169	3,7
Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	5	896	8,4	...	...	...	7	901	3,7	...	...	...	8	901	2,8
Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	6	478	4,5	...	...	...	10	486	2,0	...	...	...	...	...	...
Digestive system disorders of fetus and newborn (P75-P78)	7	297	2,8	...	...	...	...	...	...	...	...	...	...	...	...
Other congenital malformations (Q80-Q89)	8	260	2,4	...	...	...	...	...	...	...	...	...	...	...	...
Congenital malformations of the circulatory system (Q20-Q28)	9	249	2,3	8	268	2,0	9	517	2,1	...	...	...	9	605	1,9
Intestinal infectious diseases (A00-A09)	10	158	1,5	1	2 132	15,7	2	2 290	9,5	1	951	12,3	2	3 241	10,1
Influenza and pneumonia (J09-J18)	...	...	...	2	2 022	14,9	3	2 024	8,4	2	667	8,6	3	2 691	8,4
Malnutrition (E40-E46)	...	...	...	3	832	6,1	8	832	3,4	3	652	8,4	4	1 484	4,6
Other acute lower respiratory infections (J20-J22)	...	...	...	4	436	3,2	...	...	...	8	126	1,6	10	576	1,8
Other bacterial diseases (A30-A49)	...	...	...	5	397	2,9	...	...	...	...	...	...	...	...	...
Other viral diseases (B25-B34)	...	...	...	6	325	2,4	...	...	...	5	181	2,3	...	...	...
Other diseases of the respiratory system (J95-J99)	...	...	...	7	314	2,3	...	...	...	...	...	...	...	...	...
Other forms of heart disease (I30-I52)	...	...	...	9	255	1,9	...	...	...	...	...	...	...	...	...
Human immunodeficiency virus [HIV] disease (B20-B24)	...	...	...	10	225	1,7	...	...	...	7	134	1,7	...	...	...
Tuberculosis (A15-A19)*	...	...	...	...	...	...	...	...	...	4	196	2,5	...	...	...
Other forms of heart disease (I30-I52)	...	...	...	...	...	...	...	...	...	6	168	2,2	...	...	...
Other diseases of the respiratory system (J95-J99)	...	...	...	...	...	...	...	...	...	9	124	1,6	...	...	...
Inflammatory diseases of the central nervous system (G00-G09)	...	...	...	...	...	...	...	...	...	10	118	1,5	...	...	...
Other natural causes		843	7,9		5 516	40,7		8 618	35,6		2 847	36,9		12 325	38,6
Non natural causes		120	1,1		831	6,1		951	3,9		1 558	20,2		2 509	7,9
Total		10 663	100,0		13 553	100,0		24 216	100,0		7 722	100,0		31 938	100,0

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

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

The World Health Organization (WHO) recommended that the 15–24 age group must also be included in the analysis for international comparison (WHO, 1992). The ten leading causes of death for age group 15–24 are shown in Table 4.9 as per WHO recommendation.

Tuberculosis was the leading cause of death in this age group, accounting for 8,1% of the deaths in this age group. *HIV disease* (5,4%) was the second leading underlying cause of death, followed by *other viral diseases* (4,2%). *Influenza and pneumonia* (2,9%), *certain disorders involving the immune mechanism* (2,7%) and *other forms of heart disease* (1,9%) were the fourth, fifth and sixth leading causes of death, respectively. *Episodic and paroxysmal disorders* was ranked seventh, and was responsible for 1,7% deaths in this age group.

Table 4.9: The ten leading underlying natural causes of death for the population aged 15–24 years, 2015

Causes of death (based on ICD-10)	15-24		
	Rank	Number	Percentage
Tuberculosis (A15-A19)*	1	1 688	8,1
Human immunodeficiency virus [HIV] disease (B20-B24)	2	1 133	5,4
Other viral diseases (B25-B34)	3	880	4,2
Influenza and pneumonia (J09-J18)	4	602	2,9
Certain disorders involving the immune mechanism (D80-D89)	5	559	2,7
Other forms of heart disease (I30-I52)	6	405	1,9
Episodic and paroxysmal disorders (G40-G47)	7	361	1,7
Inflammatory diseases of the central nervous system (G00-G09)	8	329	1,6
Intestinal infectious diseases (A00-A09)	9	265	1,3
Malignant neoplasms, stated or presumed to be primary, of lymphoid, haematopoietic and related tissue (C81-C96)	10	161	0,8
Other natural causes		4 927	23,6
Non natural		9 548	45,8
All causes		20 858	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 for 2015 deaths 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.

Tuberculosis was the leading cause of death in all provinces except Western Cape, Gauteng and Limpopo. *Diabetes mellitus* was the leading cause of death accounting for 7,2% deaths in Western Cape, *other forms of heart diseases* (5,9%) was the leading cause in Gauteng, while *influenza and pneumonia* was the leading cause of death in Limpopo, accounting for 7,5% deaths. Six of the ten leading underlying causes of death were common for all the provinces. These were *diabetes mellitus*, *HIV disease*, *cerebrovascular diseases*, *tuberculosis*, *hypertensive diseases* and *other forms of heart diseases*.

The highest proportion of deaths due to *tuberculosis* was recorded in KwaZulu-Natal with 9,1% deaths in the province, followed by Eastern Cape with 8,6% deaths. Western Cape (5,3%) had the lowest proportion of deaths due to *tuberculosis*. For Western Cape, the second leading underlying cause of death was *HIV disease* (6,1%) whereas for Gauteng and Limpopo, *tuberculosis* was the second leading underlying cause of death accounting for 5,5% and 6,6% deaths in each province, in that order. The other provinces where *HIV disease* was the second leading underlying cause of death was Eastern Cape (6,0%) and Northern Cape (6,4%), while it was the third leading underlying cause of death in KwaZulu-Natal (6,1%) and Free State (5,2%).

Diabetes mellitus, which was the leading underlying cause of death only in the Western Cape, was ranked second in KwaZulu-Natal (6,6%) and third in Eastern Cape (4,9%), Northern Cape (5,1%) and Limpopo (6,3%). It was ranked lowest (seventh) in the North West province, responsible for 4,5% deaths in the province. *Malignant neoplasms of respiratory and intrathoracic organs* was in the top ten leading underlying causes of death for only Western Cape, and *malignant neoplasm of the digestive organs* was in the top ten leading causes of death only in Western Cape, Eastern Cape and Gauteng, though the ranks were different.

Influenza and pneumonia was not in the top ten leading underlying causes of death only in the Western Cape. *Ischaemic heart diseases* featured in four provinces, namely Western Cape, Northern Cape, KwaZulu-Natal and Gauteng. *Malignant neoplasms of digestive organs* were in the top ten only in two provinces (Western Cape and Eastern Cape), while *intestinal infectious diseases* were not among the leading causes of death in Western Cape, Northern Cape, Eastern Cape and Gauteng.

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 with seven of the ten. Six out of the ten underlying causes of death for the provinces Eastern Cape and Mpumalanga were communicable diseases, and the rest of the provinces had five out of the ten leading underlying causes being communicable diseases. 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 94–113).

Table 4.10: The ten leading underlying natural causes of death in each province of death occurrence, 2015

Causes of death (based on ICD-10)	Western Cape			Eastern Cape			Northern Cape			Free State			KwaZulu-Natal			North West			Gauteng			Mpumalanga			Limpopo			
	Rank	No.	%	Rank	No.	%	Rank	No.	%	Rank	No.	%	Rank	No.	%	Rank	No.	%	Rank	No.	%	Rank	No.	%	Rank	No.	%	
Diabetes mellitus (E10-E14)	1	3 584	7,2	3	3 340	4,9	3	695	5,1	6	1 605	5,0	2	5 331	6,6	7	1 563	4,5	4	4 201	4,3	4	1 783	5,2	3	2 942	6,3	
Human immunodeficiency virus [HIV] disease (B20-B24)	2	3 061	6,1	2	4 079	6,0	2	879	6,4	3	1 659	5,2	3	4 925	6,1	8	1 353	3,9	9	2 879	2,9	6	1 677	4,9	9	1 399	3,0	
Ischaemic heart diseases (I20-I25)	3	2 887	5,8	...	...	...	8	488	3,5	...	...	...	9	2 122	2,6	...	...	...	7	2 986	3,0	...	...	...	...	...	...
Cerebrovascular diseases (I60-I69)	4	2 812	5,6	4	3 170	4,6	6	642	4,7	4	1 649	5,2	4	4 800	5,9	5	1 585	4,6	5	3 903	4,0	2	1 813	5,3	5	2 470	5,3	
Tuberculosis (A15-A19)*	5	2 664	5,3	1	5 883	8,6	1	1 065	7,7	1	2 102	6,6	1	7 361	9,1	1	2 743	8,0	2	5 412	5,5	1	2 714	7,9	2	3 086	6,6	
Chronic lower respiratory diseases (J40-J47)	6	2 527	5,1	7	2 640	3,9	5	653	4,7
Malignant neoplasms of digestive organs (C15-C26)	7	2 234	4,5	10	1 683	2,5	...	...	...	...	...	...	...	...	...	...	...	...	10	2 411	2,5	...	...	...	...	...	...
Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	8	2 227	4,5
Hypertensive diseases (I10-I15)	9	1 996	4,0	6	2 720	4,0	4	690	5,0	5	1 613	5,0	7	2 997	3,7	3	1 942	5,6	6	3 356	3,4	7	1 613	4,7	4	2 488	5,3	
Other forms of heart disease (I30-I52)	10	1 579	3,2	5	3 080	4,5	10	403	2,9	7	1 560	4,9	5	4 489	5,5	2	2 129	6,2	1	5 773	5,9	9	1 374	4,0	8	1 781	3,8	
Other viral diseases (B25-B34)	...	...	...	8	2 257	3,3	...	...	...	8	1 213	3,8	6	3 156	3,9	6	1 578	4,6	8	2 880	2,9	3	1 797	5,2	6	2 320	4,9
Influenza and pneumonia (J09-J18)	...	...	...	9	2 143	3,1	7	567	4,1	2	1 949	6,1	8	2 938	3,6	4	1 793	5,2	3	4 837	4,9	5	1 694	4,9	1	3 505	7,5
Certain disorders involving the immune mechanism (D80-D89)	...	...	...	...	...	...	9	477	3,5	9	1 007	3,2	...	...	...	9	1 185	3,4	...	...	...	8	1 412	4,1	10	1 176	2,5
Intestinal infectious diseases (A00-A09)	...	...	...	...	...	...	...	...	...	10	816	2,6	10	2 012	2,5	10	878	2,6	...	...	...	10	1 154	3,4	7	2 012	4,3
Other natural causes		17 784	35,6		29 528	43,2		5 712	41,5		13 552	42,4		31 862	39,2		14 618	42,5		48 033	48,9		13 410	39,1		19 594	41,8	
Non-natural		6 577	13,2		7 900	11,5		1 487	10,8		3 216	10,1		9 327	11,5		3 061	8,9		11 520	11,7		3 845	11,2		4 150	8,8	
All causes		49 932	100,0		68 423	100,0		13 758	100,0		31 941	100,0		81 320	100,0		34 428	100,0		98 191	100,0		34 286	100,0		46 923	100,0	

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

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

Main group

The appendices N to N.2 and O to O.2 provide the main groups of underlying causes of death by district/metropolitan municipalities. Appendices N to N.2 (see pages 114–116) provide the number of deaths by main groups for each district/metropolitan municipality of death occurrence, while appendices O to O.2 (see pages 117–119) show their percentage distribution. The main groups or ICD chapters have been 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, disease of the skin and subcutaneous tissue, disease of musculoskeletal system, diseases of the genitourinary system, congenital malformations, symptoms and signs not elsewhere classified and pregnancy, childbirth and puerperium*. This was done to simplify analysis at the district level.

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

Appendices O to O.2 show that *certain infectious and parasitic diseases* was the most common main group of causes of death in all provinces with the exception of Western Cape and Gauteng, where *diseases of the circulatory system* was the most common main group of causes of death for each province. For the Western Cape, *neoplasms* were the second most common main group of causes of death and *neoplasms* were lowest in Limpopo (6,0%).

Certain infectious and parasitic diseases was highest in KwaZulu-Natal, responsible for 23,3% of deaths occurring in KwaZulu-Natal, followed closely by Mpumalanga (23,2%). Western Cape and Gauteng had the lowest proportion of deaths due to *certain infectious and parasitic diseases* with 15,0% and 15,3% of deaths in each province, respectively. The district municipalities worst affected by *certain infectious and parasitic diseases* were predominantly those in the northern parts of KwaZulu-Natal, particularly uMkhanyakude (30,8%), iLembe (27,2%), Zululand (26,1%) and uThukela (25,7%). The other district with the highest number of deaths due to *certain infectious and parasitic diseases* was Ehlanzeni in Mpumalanga, accounting for 26,1% of all deaths in the district. *Certain infectious and parasitic diseases* were the most common main group of underlying causes for all districts in Mpumalanga and Limpopo.

Diseases of the circulatory system, which was the second most common main group of underlying causes of death for all deaths in 2015, was also the second most common cause of death for all provinces except for Western Cape and Gauteng. The second most common main group of underlying causes for Western Cape was *neoplasms* (18,0%), while for Gauteng, *certain infectious and parasitic diseases* was the second most common cause of death responsible for 15,3% deaths. *Diseases of the circulatory system* was the most common main group of underlying causes for all districts in the Western Cape; all districts in Gauteng except Ekurhuleni; three districts in Free State (Fezile Dabi, Lejweleputswa and Xhariep); and one district in KwaZulu-Natal (eThekweni), North West (Ngaka Modiri Molema), Eastern Cape (Nelson Mandela Bay), and Northern Cape (Namakwa).

Diseases of the respiratory system was more prevalent in Limpopo (11,3%) and Northern Cape (11,9%). The district/metropolitan municipalities where diseases of the respiratory system was more prevalent were Amathole (14,1%) in Eastern Cape; Central Karoo (13,9%) in Western Cape; Siyanda (13,0%) in Northern Cape; and Sedibeng (12,9%) in Gauteng. *Diseases from perinatal conditions* which generally affects infants were more widespread in Dr Ruth Segomotsi Mompati (4,3%) in North West and John Taolo Gaetsewe (4,0%) in Northern Cape.

Broad groups

Appendices P to P.8 (see pages 120–130) 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 2015: *Tuberculosis* (30); *influenza and pneumonia* (6); *other forms of heart diseases* (4); *human immunodeficiency virus* (4); *diabetes mellitus* (4); *chronic lower respiratory diseases* (2); *ischaemic heart diseases* (1); and *cerebrovascular diseases*(1).

Tuberculosis was the leading underlying cause of death in more than half (30) of the 52 districts in South Africa. It was the leading underlying cause of death in at least one district for all the provinces. The provinces with the highest number of districts affected by *tuberculosis* was Eastern Cape and KwaZulu-Natal, where seven of the eight districts had *tuberculosis* in Eastern Cape and nine of the eleven in KwaZulu-Natal. For Limpopo and Gauteng, only one district had *tuberculosis* as the leading underlying cause of death in each province.

South Africa has eight metropolitan municipalities (metros). Four of the metros had communicable diseases as the leading underlying causes of death. *Tuberculosis* was the leading underlying cause of death for Ekurhuleni, eThekweni and Buffalo city, while *HIV disease* was the leading underlying cause for Mangaung. The rest of the metros had non-communicable diseases as the leading cause of death. *Diabetes mellitus* was the leading underlying cause of death for City of Cape Town in Western Cape and Nelson Mandela Bay in Eastern Cape, whereas *other forms of heart diseases* were the leading underlying causes of death for the City of Tshwane and City of Johannesburg.

HIV disease was among the ten leading underlying causes of death in at least one district municipality in all provinces. It was part of the ten leading causes of death for all districts in Eastern Cape, KwaZulu-Natal, North West and Mpumalanga. The four districts where *HIV disease* was the leading underlying cause of death were Cape Winelands in Western Cape, John Taolo Gaetsewe in Northern Cape, uMkhanyakude in KwaZulu-Natal and Mangaung in Free State. uMkhanyakude had the highest proportion of deaths amongst all districts, with 13,4% deaths as a result of *HIV disease*. The only districts where *HIV disease* was not among the ten leading underlying causes of death were Sedibeng in Gauteng, Fezile Dabi and Lejweleputswa both in Free State, Namakwa in Northern Cape, Vhembe and Mopani both in Limpopo and Overberg in Western Cape.

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 discussion and distribution of underlying causes of death by population group are provided in appendices Q and Q.1 (see pages 131–132).

4.8 Non-natural causes of death

The focus of this subsection is on non-natural causes of death. On completion of the death notification forms, medical practitioners need to specify whether the death was due to natural or non-natural causes. This release uses non-natural cause of death as derived from the information supplied about the cause of death specified on the death notification form. *All external causes of morbidity and mortality (V01-Y98)* are treated as non-natural causes of death.

Results on non-natural causes of death should, however, be interpreted mindful of the fact that nearly three-quarters of non-natural causes of deaths were not adequately classified, therefore interpretation of results of non-natural causes must be treated with caution given this high percentage of misclassified causes of death. Where insufficient details are provided 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 the recommendations of WHO in classifying unknown non-natural causes of death (WHO, 2009b). As such, 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* are as a result of causes misclassified as *other external causes of accidental injury or event of undetermined intent*.

Table 4.3 previously discussed in section 4.4 showed that more than a tenth (11,1%) of all deaths that occurred in 2015 were due to *external causes of morbidity and mortality*. Table 4.11 unpacks the *external causes of morbidity and mortality* by broad groups. It is observed that the majority of non-natural causes of death resulted from *other external causes of accidental injury* (62,5% of non-natural deaths and 7,0% of all deaths).

Assault was the second most common non-natural cause of death, accounting for 14,1% of non-natural causes and 1,6% of all deaths. The third most common cause of non-natural deaths was *transport accidents* (12,3%), followed by *event of undetermined intent* (6,7%). *Complications of medical and surgical care* accounted for 3,4% of non-natural deaths while 0,9% of non-natural deaths were due to *intentional self-harm*. *Sequelae of external causes of morbidity and mortality* and *legal intervention and operations of war* were negligible, each accounting for less than 1% of non-natural causes of death.

Table 4.11: Distribution of non-natural causes of death by broad groups, 2015

Causes of death (based on ICD-10, 1992)	Number	Percentage of non-natural causes	Percentage of all causes (N = 460 236)
Other external causes of accidental injury (W00-X59)	32 006	62,5	7,0
Assault (X85-Y09)	7 201	14,1	1,6
Transport accidents (V01-V99)	6 300	12,3	1,4
Event of undetermined intent (Y10-Y34)	3 415	6,7	0,7
Complications of medical and surgical care (Y40-Y84)	1 732	3,4	0,4
Intentional self-harm (X60-X84)	485	0,9	0,1
Sequelae of external causes of morbidity and mortality (Y85-Y89)	86	0,2	0,0
Legal intervention and operations of war (Y35-Y36)	2	0,0	0,0
Total	51 227	100,0	

A breakdown of the 32 006 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 nearly two-thirds of all non-natural deaths.

The table shows that almost half of these deaths were due to *accidental exposure to other and unspecified factors*. This includes *exposure to unspecified factor causing fracture* and *exposure to other unspecified factors*. Deaths due to *exposure to inanimate mechanical forces* were the second leading cause, responsible for 17,4% 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* (15,2%), which includes *accidental hanging and strangulation*. *Accidental hanging and strangulation* accounted for 80,6% of deaths due to *other accidental threats to breathing* (results not shown). The fourth most commonly reported deaths due to *other external causes of accidental injury* was *exposure to smoke, fire and flames* (7,4%), followed by *accidental drowning and submersion* (4,4%).

Table 4.12: Distribution of deaths due to other external causes of accidental injury, 2015

Cause of death (based on ICD-10)	Number	Percentage
Accidental exposure to other and unspecified factors (X58-X59)	15 880	49,6
Exposure to inanimate mechanical forces (W20-W49)	5 573	17,4
Other accidental threats to breathing (W75-W84)	4 872	15,2
Exposure to smoke, fire and flames (X00-X09)	2 360	7,4
Accidental drowning and submersion (W65-W74)	1 411	4,4
Accidental poisoning by and exposure to noxious substances (X40-X49)	939	2,9
Exposure to electric current, radiation and extreme ambient air temperature and pressure (W85-W99)	372	1,2
Exposure to forces of nature (X30-X39)	273	0,9
Falls (W00-W19)	211	0,7
Contact with venomous animals and plants (X20-X29)	62	0,2
Exposure to animate mechanical forces (W50-W64)	36	0,1
Overexertion, travel and privation (X50-X57)	12	0,0
Contact with heat and hot substances (X10-X19)	5	0,0
Total	32 006	100,0

4.8.1 Non-natural causes of death by age and sex

This subsection looks at 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+). For international comparison, age group 15–44 has been divided into two age groups (15–29 and 30–44) as recommended by the WHO (1992).

Table 4.13 shows 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) for deaths that occurred in 2015. 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 have been excluded.

The first section of Table 4.13 showing both sexes indicates that for both sexes, the age group mostly affected by non-natural causes of death was age group 15–29, where 39,5% of all deaths in this age group were due to non-natural causes. The age group least affected by non-natural causes for both sexes was 65 years and older, where just 3% of deaths in this age group were due to non-natural causes. *Assault* was more common among those aged 15–29, accounting for 22,4% of non-natural deaths in this age group. *Complications of medical and surgical care* were highest amongst the elderly (14,9%).

Differentials by sex show higher proportions of non-natural deaths for males at 16,2% compared to 5,3% of female non-natural deaths. Moreover, for each of the age groups, males had higher proportions of deaths due to non-natural causes compared to females, with the gap much wider at age group 15–29 where as much as 57,2% of male deaths resulted from non-natural cause compared to 15,2% of females in the same age group. This is the only age group where the proportion of non-natural deaths is more than that of natural deaths for males.

For both sexes, non-natural deaths due to *complications of medical and surgical care* were higher at infancy (those aged less than a year) as well as among the elderly (those aged 65 years and older). This cause of death was also highest amongst females as compared to males for all age groups, with the proportion of female deaths due to *complications of medical and surgical care* thrice as much (7,3%) as those of their male counterparts (2,3%). The proportion of deaths due to *assault* were more than twice as high for males (16,2%) as compared to females (6,9%).

The proportion of non-natural deaths due to *transport accidents* were higher amongst females (13,8%) as compared to males (11,9%). For each of the sexes, *intentional self-harm* and *sequelae of external causes of morbidity and mortality* were uncommon, each comprising less than 2% of deaths for each sex.

For all age groups, *other external cause of accidental injury* was the highest non-natural cause of death, followed by *event of undetermined intent* in these age groups. However, these broad groups do not give valuable information as they cover non-natural deaths not adequately classified.

Table 4.13: Underlying non-natural causes of death by age group and sex, 2015*

Causes of death based on ICD-10	Number							Percentage						
	0	1-14	15-29	30-44	45-64	65+	Total	0	1-14	15-29	30-44	45-64	65+	Total
Both sexes**														
Transport accidents (V01-V99)	35	599	1 944	1 964	1 339	360	6 241	3,8	16,5	11,3	13,3	14,2	7,7	12,3
Other external causes of accidental injury (W00-X59)	784	2 586	9 766	9 160	6 018	3 190	31 504	85,0	71,4	56,9	62,2	64,0	67,9	62,3
Intentional self-harm (X60-X84)		19	199	157	79	30	484	0,0	0,5	1,2	1,1	0,8	0,6	1,0
Assault (X85-Y09)	16	88	3 850	2 222	757	185	7 118	1,7	2,4	22,4	15,1	8,1	3,9	14,1
Event of undetermined intent (Y10-Y34)	22	262	1 260	993	640	203	3 380	2,4	7,2	7,3	6,7	6,8	4,3	6,7
Legal intervention and operations of war (Y35-Y36)					2		2							
Complications of medical and surgical care (Y40-Y84)	65	67	141	214	541	698	1 726	7,0	1,8	0,8	1,5	5,8	14,9	3,4
Sequelae of external causes of morbidity and mortality (Y85-Y89)		1	10	20	24	31	86	0,0	0,0	0,1	0,1	0,3	0,7	0,2
Subtotal	922	3 622	17 170	14 730	9 400	4 697	50 541	100,0	100,0	100,0	100,0	100,0	100,0	100,0
Non-natural causes	922	3 622	17 170	14 730	9 400	4 697	50 541	3,9	26,1	39,5	16,8	7,2	3,0	11,1
Natural causes	22 730	10 254	26 332	72 696	121 341	153 476	406 829	96,1	73,9	60,5	83,2	92,8	97,0	88,9
All causes	23 652	13 876	43 502	87 426	130 741	158 173	457 370	100,0	100,0	100,0	100,0	100,0	100,0	100,0
Males**														
Transport accidents (V01-V99)	21	360	1 508	1 563	993	211	4 656	4,1	16,2	10,5	12,7	13,9	8,4	11,9
Other external causes of accidental injury (W00-X59)	428	1 611	8 191	7 658	4 696	1 696	24 280	83,9	72,4	56,9	62,4	65,7	67,4	62,2
Intentional self-harm (X60-X84)		12	151	133	58	24	378	0,0	0,5	1,0	1,1	0,8	1,0	1,0
Assault (X85-Y09)	12	59	3 545	1 986	607	113	6 322	2,4	2,7	24,6	16,2	8,5	4,5	16,2
Event of undetermined intent (Y10-Y34)	12	145	906	806	484	126	2 479	2,4	6,5	6,3	6,6	6,8	5,0	6,3
Legal intervention and operations of war (Y35-Y36)					2		2	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Complications of medical and surgical care (Y40-Y84)	37	36	83	108	289	332	885	7,3	1,6	0,6	0,9	4,0	13,2	2,3
Sequelae of external causes of morbidity and mortality (Y85-Y89)		1	7	14	17	14	53	0,0	0,0	0,0	0,1	0,2	0,6	0,1
Subtotal	510	2 224	14 391	12 268	7 146	2 516	39 055	100,0	100,0	100,0	100,0	100,0	100,0	100,0
Non-natural causes	510	2 224	14 391	12 268	7 146	2 516	39 055	4,0	29,2	57,2	24,2	9,3	3,7	16,2
Natural causes	12 098	5 384	10 777	38 471	69 315	65 391	201 436	96,0	70,8	42,8	75,8	90,7	96,3	83,8
All causes	12 608	7 608	25 168	50 739	76 461	67 907	240 491	100,0	100,0	100,0	100,0	100,0	100,0	100,0
Females**														
Transport accidents (V01-V99)	14	239	436	401	346	149	1 585	3,4	17,1	15,7	16,3	15,4	6,8	13,8
Other external causes of accidental injury (W00-X59)	356	975	1 575	1 502	1 322	1 494	7 224	86,4	69,7	56,7	61,0	58,7	68,5	62,9
Intentional self-harm (X60-X84)		7	48	24	21	6	106	0,0	0,5	1,7	1,0	0,9	0,3	0,9
Assault (X85-Y09)	4	29	305	236	150	72	796	1,0	2,1	11,0	9,6	6,7	3,3	6,9
Event of undetermined intent (Y10-Y34)	10	117	354	187	156	77	901	2,4	8,4	12,7	7,6	6,9	3,5	7,8
Complications of medical and surgical care (Y40-Y84)	28	31	58	106	252	366	841	6,8	2,2	2,1	4,3	11,2	16,8	7,3
Sequelae of external causes of morbidity and mortality (Y85-Y89)			3	6	7	17	33	0,0	0,0	0,1	0,2	0,3	0,8	0,3
Subtotal	412	1 398	2 779	2 462	2 254	2 181	11 486	100,0	100,0	100,0	100,0	100,0	100,0	100,0
Non-natural causes	412	1 398	2 779	2 462	2 254	2 181	11 486	3,7	22,3	15,2	6,7	4,2	2,4	5,3
Natural causes	10 632	4 870	15 555	34 225	52 026	88 085	205 393	96,3	77,7	84,8	93,3	95,8	97,6	94,7
All causes	11 044	6 268	18 334	36 687	54 280	90 266	216 879	100,0	100,0	100,0	100,0	100,0	100,0	100,0

*excluding cases with unspecified sex

**Excluding cases with unspecified age

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 2015 deaths. Western Cape (13,2%) and Gauteng (11,7%) 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 (8,8%) and North West (8,9%).

For all the provinces, with the exception of Northern Cape, deaths due to *other external causes of accidental injury* accounted for more than 50% of non-natural deaths and were the most common non-natural cause of death. In Northern Cape, deaths due to other external causes of accidental injury were 36,0%. Mpumalanga (76,2%) had the highest proportion of deaths due to *external and other causes of accidental injury*, followed by Gauteng (72,1%).

For all nine provinces, the second most common causes of non-natural deaths were either *transport accidents* or *assault*, with the exception of Gauteng where it was *event of undetermined intent*. *Transport accidents* were the second most common cause of non-natural deaths in Limpopo, Northern Cape, Mpumalanga, North West and Free State, with Limpopo having the highest number of deaths due to this cause responsible for 31,9% of deaths. *Assault* was the second most common non-natural cause of death in Eastern Cape, Western Cape and KwaZulu-Natal with the highest being in Eastern Cape, responsible for 22,3% deaths in the province.

Event of undetermined intent was highest in Gauteng (10,8%). *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, except for *intentional self-harm* in Northern Cape which accounted for 5,3% of non-natural deaths, and *complications of medical and surgical care* in Gauteng which were 5,1% of non-natural deaths.

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 118–120). 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 Central Karoo and City of Cape Town, both in Western Cape, each with 14,3% of deaths due to non-natural causes. They were closely followed by Overberg (13,5%), also in Western Cape, then City of Johannesburg with 13,3% deaths due to non-natural causes. The lowest percentage of deaths due to non-natural causes was observed in Dr Ruth Segomotsi Mompati in North West (7,0%), followed by Ngaka Modiri Molema, also in North West (7,6%).

Table 4.14: Underlying causes of death by province, 2015*

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)	447	6,8	1 027	13,0	430	28,9	659	20,5	1 142	12,2	519	17,0	286	2,5	431	11,2	1 324	31,9
Other external causes of accidental injury (W00-X59)	4 106	62,4	4 325	54,7	535	36,0	1 729	53,8	6 015	64,5	1 752	57,2	8 307	72,1	2 928	76,2	2 224	53,6
Intentional self-harm (X60-X84)	34	0,5	30	0,4	79	5,3	38	1,2	201	2,2	38	1,2	18	0,2	032	0,8	12	0,3
Assault (X85-Y09)	1 421	21,6	1 758	22,3	321	21,6	517	16,1	1 228	13,2	369	12,1	1 056	9,2	217	5,6	304	7,3
Event of undetermined intent (Y10-Y34)	299	4,5	560	7,1	58	3,9	165	5,1	416	4,5	299	9,8	1 241	10,8	162	4,2	207	5,0
Legal intervention and operations of war (Y35-Y36)	1	0,0		0,0		0,0		0,0		0,0		0,0		0,0		0,0		0,0
Complications of medical and surgical care (Y40-Y84)	244	3,7	187	2,4	60	4,0	104	3,2	315	3,4	83	2,7	591	5,1	72	1,9	74	1,8
Sequelae of external causes of morbidity and mortality (Y85-Y89)	25	0,4	13	0,2	4	0,3	4	0,1	10	0,1	1	0,0	21	0,2	3	0,1	5	0,1
Subtotal	6 577	100,0	7 900	100,0	1 487	100,0	3 216	100,0	9 327	100,0	3 061	100,0	11 520	100,0	3 845	100,0	4 150	100,0
Non-natural	6 577	13,2	7 900	11,5	1 487	10,8	3 216	10,1	9 327	11,5	3 061	8,9	11 520	11,7	3 845	11,2	4 150	8,8
Natural causes	43 355	86,8	60 523	88,5	12 271	89,2	28 725	89,9	71 993	88,5	31 367	91,1	86 671	88,3	30 441	88,8	42 773	91,2
Total	49 932	100,0	68 423	100,0	13 758	100,0	31 941	100,0	81 320	100,0	34 428	100,0	98 191	100,0	34 286	100,0	46 923	100,0

*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

This subsection provides information on the total number of causes of death reported on each form. As previously mentioned in section 4.2, the death notification form provides for the recording of multiple causes of death. Section G of both death notification forms (BI-1663 and DHA-1663) makes provision for several causes to be reported on the form (see Appendix B on page 59 and Appendix B1 on page 63). A maximum number of six causes can be recorded on the death notification form. These causes are recorded as immediate, contributing or underlying causes of death (see definitions in Appendix A on page 56).

Table 4.15 aggregates the total number of causes mentioned on each form and groups these in broad groups of causes of death. The broad groups of causes of death were then ranked, and the 20 leading causes based on all causes of death recorded on each form are shown in Table 4.15. The list includes all causes of death (natural and non-natural), 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.

In 2015, the most frequently reported cause of death was *other forms of heart disease* and was recorded on 54 017 death notification forms. In terms of percentage distribution, about 11,7% of all death notification forms had *other forms of heart disease* recorded as either an immediate, contributing or underlying cause of death. The second most commonly reported cause was *hypertensive diseases*, representing 51 928 (11,3%) deaths. *Tuberculosis* was the third most reported cause of death (11,3%), mentioned on 51 871 forms. *Ill-defined and unknown causes of mortality* and *influenza and pneumonia* were fourth and fifth respectively. *Ill-defined and unknown causes of mortality* was reported on 51 297 (11,1%) death notification forms, and *influenza and pneumonia* reported on 43 991 (9,6%) forms.

Table 4.15: Distribution of the 20 most commonly reported causes of death, 2015

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)	54 017	11,7
2	Hypertensive diseases (I10-I15)	51 928	11,3
3	Tuberculosis (A15-A19)*	51 871	11,3
4	Ill-defined and unknown causes of mortality (R95-R99)	51 297	11,1
5	Influenza and pneumonia (J09-J18)	43 991	9,6
6	Cerebrovascular diseases (I60-I69)	34 742	7,5
7	Other external causes of accidental injury (W00-X59)	33 420	7,3
8	Diabetes mellitus (E10-E14)	28 872	6,3
9	Other viral diseases (B25-B34)	27 615	6,0
10	Renal failure (N17-N19)	27 114	5,9
11	Other bacterial diseases (A30-A49)	26 360	5,7
12	Human immunodeficiency virus [HIV] disease (B20-B24)	22 895	5,0
13	Ischaemic heart diseases (I20-I25)	19 040	4,1
14	Chronic lower respiratory diseases (J40-J47)	18 788	4,1
15	Intestinal infectious diseases (A00-A09)	17 814	3,9
16	Other diseases of the respiratory system (J95-J99)	17 063	3,7
17	Metabolic disorders (E70-E90)	16 994	3,7
18	Malignant neoplasm of ill-defined, secondary and unspecified sites (C76-C80)	13 570	2,9
19	Certain disorders involving the immune mechanism (D80-D89)	13 032	2,8
20	Malignant neoplasm of digestive organs (C15-C26)	11 096	2,4

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

The ten leading underlying natural causes of death shown in Table 4.5 (page 31) for 2015 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.

It is important to note that 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, 22 879 deaths had *cerebrovascular diseases* as the underlying cause and another 11 863 deaths had it as an immediate or contributing cause. This gives a total of 34 742 death notification forms. Thus proportionally underlying causes contribute more than the immediate or contributing cause.

The percentage distributions show that *human immunodeficiency virus [HIV] disease* was selected in 95,8% of cases as the underlying cause where the disease was reported on the form. Furthermore, where *diabetes mellitus* was reported on the form, it was selected as the underlying cause in 86,8% of the forms, while *chronic lower respiratory diseases* was selected as the underlying cause in 67,4% of the forms. The causes of death which, when mentioned, were least selected as the underlying causes were *hypertensive diseases* (37,4%) and *other forms of heart disease* (41,1%).

Table 4.16: Number and percentage of deaths selected as underlying or reported as immediate or contributing causes of death, 2015

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	33 063	18 808	51 871	63,7	36,3	100,0
Diabetes mellitus (E10-E14)	2	25 070	3 802	28 872	86,8	13,2	100,0
Cerebrovascular diseases (I60-I69)	3	22 879	11 863	34 742	65,9	34,1	100,0
Other forms of heart disease (I30-I52)	4	22 215	31 802	54 017	41,1	58,9	100,0
Human immunodeficiency virus [HIV] disease (B20-B24)	5	21 926	969	22 895	95,8	4,2	100,0
Influenza and pneumonia (J09-J18)	6	20 570	23 421	43 991	46,8	53,2	100,0
Hypertensive diseases (I10-I15)	7	19 443	32 485	51 928	37,4	62,6	100,0
Other viral diseases (B25-B34)	8	16 097	11 518	27 615	58,3	41,7	100,0
Chronic lower respiratory diseases (J40-J47)	9	12 667	6 121	18 788	67,4	32,6	100,0
Ischaemic heart diseases (I20-I25)	10	12 239	6 801	19 040	64,3	35,7	100,0

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

5 Summary and concluding remarks

Observation on mortality showed that there has been a continuous decline in the number of deaths in the country. The total number of deaths which occurred in 2015 was 460 236, indicating a decline of 3,0% percentage points from 474 659 deaths which occurred in 2014. The 453 360 deaths which were published in the 2014 report have been updated with 21 299 deaths that were registered and processed in the year 2015/2016.

The highest number of deaths that occurred in 2015 were among those aged 60–64 (7,8%) years, while the lowest number was observed among those aged 5–9 and 10–14 years. Overall, there were more male deaths than female deaths in 2015 from infancy until age 65–69, after which there were more female than male deaths.

A look at global burden of diseases showed that in 2015, over half (55,5%) of deaths were attributed to the group of non-communicable diseases. Communicable diseases accounted for 33,4% of deaths, while injuries were responsible for 11,1% of deaths. The trend has been the same since 2009, whereby more deaths were due to non-communicable diseases than the other two groups. As can be expected, deaths due to non-natural causes were highest amongst the youth, with young males being the highest victims.

The analysis of the ten leading underlying natural causes of death showed that six of the top ten causes were non-communicable diseases, while the other four were communicable diseases. Once again *tuberculosis* was the leading underlying natural cause of death in 2015, accounting for 7,2% deaths, followed by *diabetes mellitus* with 5,4% deaths. Although *tuberculosis* has maintained its position as the number one leading underlying natural cause of death, the proportions over time have been declining, whilst proportions for *diabetes mellitus*, *hypertensive diseases*, *other viral diseases* and *chronic lower respiratory diseases* have been increasing. The most notable change in rank was for *influenza and pneumonia* which moved from being ranked second in 2013 to sixth in 2015, whilst *diabetes mellitus* has steadily climbed ranks from fifth position in 2013 to second position in 2015.

The leading underlying natural cause of death amongst males was *tuberculosis*, responsible for 8,3% deaths, while among females *diabetes mellitus* was the first leading underlying natural cause of death responsible for 7,1% deaths. *Tuberculosis* was the third leading underlying natural cause for females, while *diabetes mellitus* was the sixth leading underlying natural cause of death amongst males. *Diabetes mellitus* was the leading underlying natural cause of death only in the Western Cape, even though it was on the ten leading underlying natural causes for all the other provinces.

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. Timeliness strengthens methods to identify deaths of high public health interest. In South Africa, 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 2015, the majority of the deaths (77,4%) were registered within the three days stipulated by the legislative framework. In 2015, at least 64,5% deaths were certified by a medical practitioner, with only 1,9% deaths certified through interviewing a family member. For causes of death, it is of vital importance that deaths are certified by a medical practitioner as they are trained in completing the cause of death information, and it is most likely to be completed correctly as compared to using interview of family member. 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 unknown in the population group.

6 References

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Appendices

Appendix A: Definitions

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 (BI-1663)



REPUBLIC OF SOUTH AFRICA
DEPARTMENT OF HOME AFFAIRS

BI - 1663

NOTIFICATION / REGISTER OF DEATH / STILL BIRTH

in terms of the Births and Deaths Registration Act,
1992 (Act No. 51 of 1992)

Space for Bar Code

* Must be completed in black ink (please tick where applicable)

SERIAL No:

* Please refer to instructions

A 0 1857265

FILE No:

DATE:

A PARTICULARS OF DECEASED INDIVIDUAL / STILLBORN CHILD

Identity number of deceased

Grid for identity number

Date of death

Grid for date of death

Date of birth

Grid for date of birth

Surname

Grid for surname

Age at last birthday

Grid for age at last birthday

Maiden Name (If female)

Grid for maiden name

Sex

Grid for sex

Forenames

Grid for forenames

If death occurred within 24 hours after birth

Grid for 24 hours after birth

No. of hours alive

Grid for hours alive

MARITAL STATUS OF DECEASED

Single Civil Marriage Living as married Widowed
Religious Law Marriage Divorced Customary Marriage

PLACE OF BIRTH (municipal district or country if abroad)

PLACE OF DEATH (City / Town / Village)

PLACE OF REGISTRATION OF DEATH

CITIZENSHIP OF DECEASED

Left thumb print of deceased

B PARTICULARS OF INFORMANT

Identity number

Grid for identity number

Initials and Surname

Grid for initials and surname

Relationship to deceased

Parent Spouse Child Other (specify)

Postal address

Grid for postal address

Postal Code

Grid for postal code

Dialling Code

Grid for dialling code

Was the next of kin of the deceased a smoker* during the past five years?

Yes No Refuse to answer

Telephone No.

Grid for telephone number

Date

Grid for date

Signature

Left thumb print of informant

C PARTICULARS OF FUNERAL UNDERTAKER

Initials and Surname

Grid for initials and surname

Designation No.

Grid for designation number

Place of burial / cremation

Date

Grid for date

Signature

Office Stamp of Funeral Undertaker

D CERTIFICATE BY ATTENDING MEDICAL PRACTITIONER / PROFESSIONAL NURSE

I, the undersigned, hereby certify that the deceased named in Section A, to the best of my knowledge and belief, died solely and exclusively due to NATURAL CAUSES specified in Section G

I, the undersigned, am not in the position to certify that the deceased died exclusively due to natural causes

INITIALS AND SURNAME

SIGNATURE

Grid for initials and signature

Postal Code

Grid for postal code

SAMDC / SANC Reg. No.

Grid for SAMDC / SANC Reg. No.

Date signed

Grid for date signed

CERTIFICATE BY DISTRICT SURGEON / FORENSIC PATHOLOGIST

I, the undersigned, hereby certify that a medicolegal post-mortem examination has been conducted on the body of the person whose particulars are given in Section A and that the body is no longer required for the purpose of the Inquest Act, 1959 (Act No. 58 of 1959) and that the cause of death is:

Unnatural Under investigation

Natural (Cause of Death as indicated in Section G)

Initials and Surname

Grid for initials and surname

Place of post-mortem

Grid for place of post-mortem

Date

Grid for date

Mortuary Reference

Grid for mortuary reference

Signature

Grid for signature

Date signed

Grid for date signed

SAMDC Reg. No.

Grid for SAMDC Reg. No.

E FOR OFFICIAL USE ONLY

Registration of death approved and burial order issued

Initials and Surname of Registrar

Grid for registrar initials and surname

Address

Grid for address

Force No. / Designation No.

Grid for force / designation number

Persal No.

Grid for persal number

Office Stamp

Grid for office stamp

Date

Grid for date

Signature

Grid for signature

* Someone who smokes tobacco on most days

Appendix B: Death notification form (BI-1663)



REPUBLIC OF SOUTH AFRICA
DEPARTMENT OF HOME AFFAIRS

BI - 1663

NOTIFICATION / REGISTER OF DEATH / STILL BIRTH

in terms of the Births and Deaths Registration Act,
1992 (Act No. 51 of 1992)

Space for Bar Code

* Must be completed in black ink (please tick where applicable)

SERIAL No:

* Please refer to instructions

A 0 1857265

FILE No:

DATE:

A PARTICULARS OF DECEASED INDIVIDUAL / STILLBORN CHILD

Identity number of deceased

Grid for identity number

Date of death

Grid for date of death

Date of birth

Grid for date of birth

Surname

Grid for surname

Age at last birthday

Grid for age at last birthday

Maiden Name (If female)

Grid for maiden name

Sex

Grid for sex

Forenames

Grid for forenames

If death occurred within 24 hours after birth

No. of hours alive

Grid for hours alive

MARITAL STATUS OF DECEASED

Single Civil Marriage Living as married Widowed
Religious Law Marriage Divorced Customary Marriage

PLACE OF BIRTH (municipal district or country if abroad)

PLACE OF DEATH (City / Town / Village)

PLACE OF REGISTRATION OF DEATH

CITIZENSHIP OF DECEASED

Left thumb print of deceased

B PARTICULARS OF INFORMANT

Identity number

Grid for identity number

Initials and Surname

Grid for initials and surname

Relationship to deceased

Parent Spouse Child Other (specify)

Postal address

Grid for postal address

Postal Code

Grid for postal code

Dialling Code

Grid for dialling code

Was the next of kin of the deceased a smoker* during the past five years?

Yes No Refuse to answer

Telephone No.

Grid for telephone number

Date

Grid for date

Signature

Left thumb print of informant

C PARTICULARS OF FUNERAL UNDERTAKER

Initials and Surname

Grid for initials and surname

Designation No.

Grid for designation number

Place of burial / cremation

Office Stamp of Funeral Undertaker

D CERTIFICATE BY ATTENDING MEDICAL PRACTITIONER / PROFESSIONAL NURSE

I, the undersigned, hereby certify that the deceased named in Section A, to the best of my knowledge and belief, died solely and exclusively due to NATURAL CAUSES specified in Section G

I, the undersigned, am not in the position to certify that the deceased died exclusively due to natural causes

INITIALS AND SURNAME

SIGNATURE

Postal Address

Grid for postal address

Postal Code

Grid for postal code

SAMDC / SANC Reg. No.

Grid for SAMDC / SANC Reg. No.

Date signed

Grid for date signed

CERTIFICATE BY DISTRICT SURGEON / FORENSIC PATHOLOGIST

I, the undersigned, hereby certify that a medicolegal post-mortem examination has been conducted on the body of the person whose particulars are given in Section A and that the body is no longer required for the purpose of the Inquest Act, 1959 (Act No. 58 of 1959) and that the cause of death is:

Unnatural

Under investigation

Natural (Cause of Death as indicated in Section G)

Postal Address

Grid for postal address

Postal Code

Grid for postal code

Initials and Surname

Grid for initials and surname

Place of post-mortem

Date

Grid for date

Mortuary Reference

Signature

Grid for signature

Date signed

Grid for date signed

SAMDC Reg. No.

Grid for SAMDC Reg. No.

E FOR OFFICIAL USE ONLY

Registration of death approved and burial order issued

Initials and Surname of Registrar

Address

Grid for address

Force No. / Designation No.

Grid for force / designation number

Persal No.

Grid for persal number

Office Stamp

Date

Grid for date

Signature

Office Stamp area

* Someone who smokes tobacco on most days

Appendix B1: Death notification form (DHA-1663A)

G.P.-S. 09/09



REPUBLIC OF SOUTH AFRICA
DEPARTMENT OF HOME AFFAIRS

DHA-1663 A
Page 1 of 3

NOTICE OF DEATH / STILL BIRTH
[Births and Deaths Registration Act 51 of 1992]
[Regulations 11 and 14]

BARCODE

To be completed in full and submitted at the Department of Home Affairs' office by the informant or authorised funeral undertaker. The form to be completed in black ink with BLOCK LETTERS. Please mark with the CORRECT box, where required. All fields are COMPULSORY. Incomplete applications and applications that are not legible may be considered invalid. (Note: The fingerprints of the deceased, the informant and the undertaker must be taken by the undertaker)

Serial number

A. PARTICULARS OF THE DECEASED

Instructions: Section A to be filled out by **Authorised Medical Practitioner / Professional Nurse**, who is responsible for examining the body to determine the cause of death. The **Informant must verify**, and where necessary, complete in full the personal particulars and other information of the deceased below.

1. Was this a death or a still birth? 1.1 Death 1.2 Still birth

2. Identification of the deceased (tick one box):

2.1 The deceased was identified with an ID document / passport (if foreigner) produced by the family

2.2 Still born child

2.3 The features of the deceased do not seem to match the features on the ID document or passport of deceased

2.4 ID document or passport of the deceased was not presented. The deceased was identified through word of mouth

2.5 The deceased was already buried prior to the completion of this form

2.6 The deceased was unidentifiable: 2.6.1 Burnt 2.6.2 Decomposed 2.6.3 Other (specify) _____

2.6.4 DNA samples retrieved for identification purposes 2.6.5 Dental records taken for identification purposes

3. Date of Death / still birth: Y Y Y Y M M D D

4.1 Place of Death/still birth (City/Town/Village)

4.2 Province of Death/still birth

5. Place of Registration of Death / still birth

6. If death occurred within 24 hours after birth, number of hours alive

7. Home telephone no.

8. Identity No. (Passport No. if foreigner)

9. Age at last birthday if DOB is unknown

10. Date of Birth if there is no ID number: Y Y Y Y M M D D

11. Gender: 11.1 Male 11.2 Female 11.3 Indeterminable

12. Surname

13. Previous / Maiden Surname

14. Forenames

15. Usual* Residential Address: Street, Town, Province, Postal code

16. Citizenship

16.1 Place of Birth (City / Town / Village) or Country of Birth, if abroad

16.2 Province of Birth

17. Marital Status of the deceased: 17.1 Single 17.2 Married 17.3 Widowed 17.4 Divorced

18. Education level of deceased, (Specify only the highest class completed)

Non e	Gr R	Gr 1	Gr 2	Gr 3	Gr 4	Gr 5	Gr 6	Gr 7	Gr 8 Form 1	Gr 9 Form 2	Gr 10 Form 3 NTC 1	Gr 11 Form 4 NTC 2	Gr 12 Form 5 NTC 3	Univ Tech	Unk now n
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(mark with a)

19. Usual occupation of deceased (type of work done during most of working life)

20. Type of business / industry: (mark with a)

1. Agriculture, hunting, forestry and fishing	2. Mining and quarrying	3. Manufacturing	4. Electricity, gas and water supply	5. Construction	6. Wholesale and retail trade; repair of motor vehicles, motor cycles and personal and household goods; hotels and restaurants	7. Transport, storage and communication	8. Financial intermediation, insurance, real estate and business services	9. Community, social and personal services	10. Private households, external organisations, representatives of foreign governments & other activities not adequately defined
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21. Was the deceased a regular** smoker five years ago? (mark with a)

21.1 Yes 21.2 No 21.3 Do not know 21.4 Not applicable (minor)

* Where the deceased lived on most days. **Smoking tobacco on most days.

Left thumbprint of deceased
 Right thumbprint of deceased

Appendix B1: Death notification form (DHA-1663A) – page 2 of 3

G.P.-S. 09/09



REPUBLIC OF SOUTH AFRICA
DEPARTMENT OF HOME AFFAIRS

DHA-1663 A
Page 2 of 3

NOTICE OF DEATH / STILL BIRTH

[Births and Deaths Registration Act 51 of 1992]

[Regulations 11 and 14]

BARCODE

Serial number

To be completed in full and submitted at the Department of Home Affairs' office by the informant or authorised funeral undertaker. The form to be completed in black ink with BLOCK LETTERS. Please mark with the CORRECT box, where required. All fields are COMPULSORY. Incomplete applications and applications that are not legible may be considered invalid. (Note: The fingerprints of the deceased, the informant and the undertaker must be taken by the undertaker)

B. CERTIFICATE BY ATTENDING MEDICAL PRACTITIONER / PROFESSIONAL NURSE

Instructions: Section B to be filled out by the same Medical Practitioner / Professional Nurse who completed Section A.

22.1 I, the undersigned, hereby certify that the deceased named in Section A, to the best of my knowledge and belief, died solely and exclusively due to Natural Causes

22.2 I, the undersigned, am not in a position to certify that the deceased died exclusively due to Natural Causes

Particulars of the Medical Practitioner / Professional Nurse who filled out the form: 23. HPCSA Registration No. [grid]
24. Surname [grid]
25. Forenames [grid]
26. Name of Health Facility / Practice [grid] 27. Facility / Practice No. [grid]
28. Business Address: Street [grid]
Town [grid] Province [grid]
Telephone No. (Office) [grid] Postal Code [grid]
Office stamp of health facility or practice
I, the undersigned, hereby certify that I examined the body of the deceased named in section A and declare that the deceased, to the best of my knowledge and belief, died solely and exclusively due to natural or unnatural causes as indicated on paragraph 22 and in case this is not true, I shall be guilty of an offence and on conviction liable to a fine or to imprisonment for a period not exceeding five years or to both such fine and such imprisonment (Section 31(1)(b) of the Act 51 of 1992.)
Place signed _____
Date signed [Y Y Y Y M M D D] Signature _____

C. CERTIFICATE BY MEDICAL PRACTITIONER/ FORENSIC PATHOLOGIST

Instructions: Section C to be filled out by Medical Practitioner or Forensic Pathologist, who is conducting medico-legal investigation of death.

29. I, the undersigned, hereby certify that a medico-legal investigation of death has been conducted on the body of the person whose particulars are given in Section A and that the body is no longer required for the purpose of the Inquest Act, 1959 (Act No. 58 of 1959) and the cause of death is:

30.1 Natural 30.2 Unnatural 30.3 Under investigation

31. Date of Post-mortem [Y Y Y Y M M D D]
32. Name of Medico-legal Mortuary / Mortuary [grid] 33. Mortuary No. [grid]
34. Mortuary Reference Number of Deceased [grid]
35. SAPS Case No. [grid] 36. Name of Police Station [grid]
Particulars of the Medical Practitioner / Forensic Pathologist who filled out the form: HPCSA Registration No. [grid]
37. Surname [grid]
38. Forenames [grid]
39. Business Address: Street [grid]
Town [grid] Province [grid] Postal Code [grid]
Telephone No. (Office) [grid]
Office stamp of mortuary
I, the undersigned, hereby certify that I examined the body of the deceased named in section A and the deceased, to the best of my knowledge and belief, died solely and exclusively due to natural or unnatural causes as indicated on paragraph 29 and in case this is not true, I shall be guilty of an offence and on conviction liable to a fine or to imprisonment for a period not exceeding five years or to both such fine and such imprisonment (Section 31(1)(b) of the Act 51 of 1992.)
Place signed _____
Date signed [Y Y Y Y M M D D] Signature _____

D. PARTICULARS OF INFORMANT

Instructions: Section D to be completed by informant. Informant is responsible for certifying the identity of the deceased.

40. Identity No. (Passport No. if foreigner) [grid] 41. Date of Birth [Y Y Y Y M M D D]
42. Citizenship [grid]
43. Surname [grid]
44. Forenames [grid]
45. Residential Address: Street [grid]
Town [grid] Province [grid] Postal Code [grid]
Telephone No. (Home) [grid] Cellphone No. [grid]
46. The Deceased is my: 46.1 Parent 46.2 Spouse 46.3 Child 46.4 Other, Specify _____
I, the undersigned, hereby certify that the identity of the deceased mentioned in section A is to the best of my knowledge and belief true and correct in case it is not true, I shall be guilty of an offence and on conviction liable to a fine or to imprisonment for a period not exceeding five years or to both such fine and such imprisonment (Section 31(1)(b) of the Act 51 of 1992.)
Signature _____ Date signed [Y Y Y Y M M D D] Place signed _____

Appendix B1: Death notification form (DHA-1663A) – page 3 of 3

G.P.-S. 09/09



REPUBLIC OF SOUTH AFRICA
DEPARTMENT OF HOME AFFAIRS

NOTICE OF DEATH / STILL BIRTH
[Births and Deaths Registration Act 51 of 1992]
[Regulations 11 and 14]

DHA-1663 A
Page 3 of 3

BARCODE

To be completed in full and submitted at the Department of Home Affairs' office by the informant or authorised funeral undertaker. The form to be completed in black ink with BLOCK LETTERS. Please mark with the CORRECT box, where required. All fields are COMPULSORY. Incomplete applications and applications that are not legible may be considered invalid. (Note: The fingerprints of the deceased, the informant and the undertaker must be taken by the undertaker)

Serial number

E. PARTICULARS OF FUNERAL UNDERTAKER

Instructions: Section E to be completed by Funeral Undertaker. The undertaker must take his or her finger print, the finger print of the deceased and the informant. **Authorised Funeral Undertaker or Informant** may submit the completed form to the nearest Home Affairs office.

47. Name of Funeral Parlour

48. DHA Designation No. 49. Company Reg. No.

50. SARS Reg. No. (Income tax reference no.)

Details of Funeral Undertaker or Authorised Representative

51. Identity No. (Passport No. if foreigner)

52. Surname

53. Forenames

54. Business Address

Street

Town

Province Postal Code

Telephone No. (Office) Cellphone No.

55. Date of collection of corpse Y Y Y Y M M D D 56. Date of Cremation (if applicable) Y Y Y Y M M D D

57. Place of Burial (City / Town / Village) Province

58. Date of Burial Y Y Y Y M M D D 59. Grave No. (if available)

Name of person who collected the deceased:

60. Identity No. (Passport No. if foreigner)

61. Surname

62. Forenames

Place signed _____

Date signed Y Y Y Y M M D D Signature _____

Office stamp of funeral undertaker

F. FOR OFFICIAL USE ONLY

Registration of death approved, DHA-1663 received by (particulars of DHA official):

63. Identity No.

64. Surname

65. Forenames

66. Persal No.

Documents included with this notice:

Copy of the deceased's ID Copy of ID document of the informant

DHA - 6 (if applicable) DHA - 1680 (if applicable)

DHA-1663 was submitted by:

Informant Funeral Undertaker

Office stamp of DHA

Left thumbprint of funeral undertaker

Appendix C: Assessment of the quality of data

This section focuses on assessing the quality of the mortality and causes of death data from the South African civil registration system. Quality assurance of the data is inherently essential as the capacity to improve lives through better vital statistics depends on the ability to accurately register vital events (Kiregyera, 2015). A civil registration system is defined as a continuous, permanent, universal and compulsory recording of the occurrence and characteristics of vital events pertaining to populations (UN [United Nations], 2014). Accordingly, mortality statistics derived from the civil registration system are the optimal source of mortality and cause of death data as they are, in principle, intended to cover the entire population, making it possible to disaggregate them at lower administrative levels. A well-developed and articulated civil registration system is pivotal for monitoring progress towards national and international goals (Kiregyera, 2015). Reliable high-quality death statistics on the levels and trends in mortality and causes of death are essential for obtaining the indicators needed to track progress in health programmes and to establish the population's health status (Kiregyera, 2015).

The usefulness of vital statistics from administrative data depends entirely on satisfactory quality dimensions. These dimensions include: accuracy (quality of age and sex reporting, completeness of information for variables, completeness of death reporting); timely and reliable data (in South Africa the standard measure is within 3 days of death occurrence); quality of cause of death reporting (percentage of deaths due to ill-defined causes, percentage of deaths that are medically certified, underreporting or misreporting of certain causes and age and sex improbable classifications); generalisability (availability of sub-national data). Other dimensions such as accessibility, comparability and coherence are also important.

Completeness of death registration

The estimation of completeness of registration is one of a number of methods used in the assessment of quality of mortality. Two methods commonly used in the estimation of adult mortality in a non-stable population are the GGB method (Hill, 1987) and the synthetic extinct generations (SEG) method developed by Bennett and Horiuchi (1981, 1984). The former method uses information on deaths and growth rates cumulated above a series of ages x to estimate the completeness of registrations, while the latter method uses the age-specific growth rates to convert the age distribution of deaths into that of a population in the estimation (Queiroz & Lima, 2014).

Ideally the input data required for estimation of completeness of deaths is the age distribution of a population from two censuses and deaths registered in the applicable intercensal period by age. In the case of the 2011–2016 intercensal completeness estimation, the population was obtained from Census 2011 and Community Survey 2016 data, and thus not ideal. In such cases where the possibilities for differential coverage of enumeration exist, Hill *et al* (2009) proposed the use of a combination of the GGB and SEG methods, which yield a more robust estimate than the application of the two methods separately. The adjusted method involves application of GGB to obtain estimates of the change in the population enumeration (k_1/k_2); this ratio is used to adjust the coverage of both census populations. Murray *et al* (2010) refers to this method as GGBSEG; the method also allows relaxation of SEG assumption of constant coverage between censuses. The resulting adjusted population is applied to the SEG method to determine the registration coverage (Queiroz & Lima, 2014). This method is used in the current estimation, with no assumption for migration. The overall completeness of adult death registration of 97% and 95% for males and females respectively is estimated for the period 2011–2016, while a combined completeness of 96% is estimated for the same period.

Timeliness of death registration

The difference between the date of death occurrence and the date of death registration is used to measure timeliness. Timeliness in death registration implies that deaths are registered within the stipulated interval, which many vary from country to country. In South Africa, enshrined in the Regulations for the Registration of Births and Deaths published in 2014, is that deaths ought to be registered within 72 hours (3 days) of occurrence (Republic of South Africa, 2014).

Table C.1 shows the number of days it took to register deaths that occurred in 2015. Of the total deaths that occurred in 2015 and were registered at the Department of Home Affairs (DHA), 15,1% were registered on the day of death, 30,5% were registered by the first day and 18,7% were registered by the second day after death occurrence. The cumulative percentages show that by the third day (within 72 hours), 77,5% of the deaths that occurred in 2015 were registered. A vast majority of deaths (92,9%) were registered by the first week of death occurrence, and by the end of the first month, 98,4% deaths were registered. In general, for the deaths that were reported, timeliness of registration was satisfactory, and as such placing vital statistics as a practical option for real-time surveillance of mortality and causes of death. However, there is a shortcoming that results from late or delayed registrations that do not reach Stats SA in time for the processing phase. Improved timeliness of death registration (i.e. within the 72 hours) is required as it is possible for informants to forget the details of the deaths or fail to register the event, with the former leading to misreporting and the latter to under-reporting of deaths.

Table C.1: Distribution of deaths by the number of days it took to register the death, 2015

Number of days	Number of deaths	Percentage	Cumulative percentage
Within a day of death	69 609	15,1	15,1
1 day	140 318	30,5	45,6
2 days	86 231	18,7	64,3
3 days	60 397	13,1	77,5
4 days	37 402	8,1	85,6
5 days	21 338	4,6	90,2
6 days	12 201	2,7	92,9
7-13 days	20 168	4,4	97,3
14-20 days	3 200	0,7	98,0
21-30 days	2 056	0,4	98,4
31-364 days	7 149	1,6	100,0
1 year+	167	0,0	100,0
Total	460 236	100,0	

Timeliness of publication of statistics

The United Nations (UN) recommends that a one-year time lapse from the end of the reference period to publication and dissemination of death statistics from the civil registration be maintained in order for vital statistics to be considered timely (UN, 2014). This statistical release fell short of this recommendation as it is published 14 months after the end of 2015. 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 2014 mortality and causes of death report for the years 1997 to 2014, and late or delayed death registrations processed during the processing of deaths registered in 2015. The table shows that 28 855 additional death notification forms for deaths that occurred between 1997 and 2014 were processed during the 2015 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 [21 299 (73,8%)] of the additional forms were for deaths that occurred in 2014, followed by 2 126 (7,4%) deaths that occurred in 2013. The distribution of deaths for 1997 to 2015 updated for late or delayed death notification forms is provided in Appendices D (1997–1999), D.1 (2000–2002), D.2 (2003–2005), D.3 (2006–2008), D.4 (2009–2011), D.5 (2012–2014) and D.6 (2015) [see pages 70–76].

Table C.2: Number of deaths published in 2014 statistical release and late registrations processed during the 2015 data processing phase by year of death, 1997–2014

Year of death	Number of deaths published in 2014 statistical release	Additional forms received in the 2015 processing phase	Total number of deaths (October 2016)
1997	317 727	133	317 860
1998	366 477	108	366 585
1999	382 530	94	382 624
2000	417 042	149	417 191
2001	456 054	184	456 238
2002	503 160	175	503 335
2003	558 258	130	558 388
2004	578 217	138	578 355
2005	599 267	326	599 593
2006	614 014	144	614 158
2007	605 949	163	606 112
2008	597 781	384	598 165
2009	582 956	463	583 419
2010	550 401	919	551 320
2011	514 938	489	515 427
2012	492 062	1 431	493 493
2013	473 384	2 126	475 510
2014	453 360	21 299	474 659
Total	9 063 577	28 855	9 092 432

Data confrontation

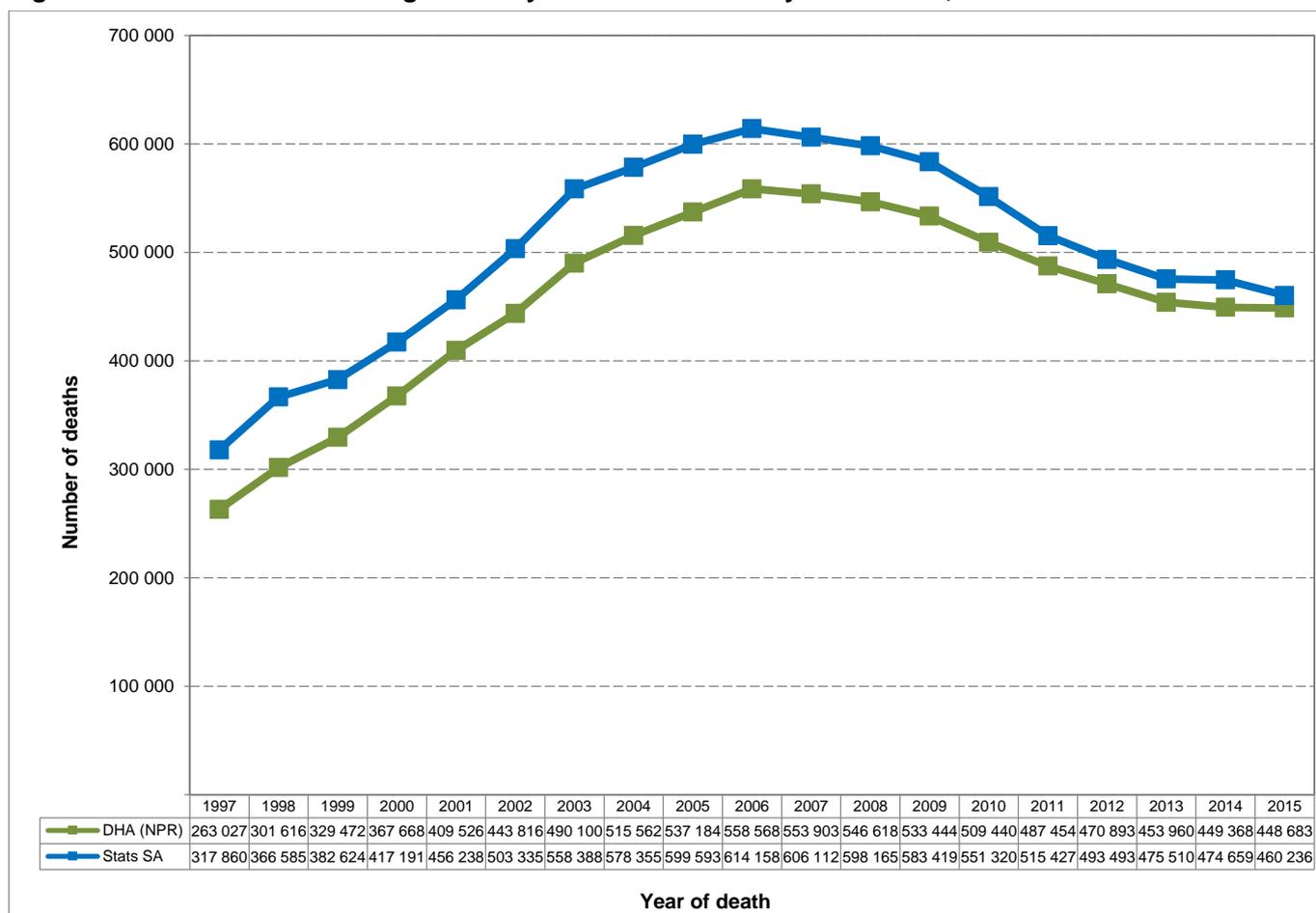
Figure C.1 presents the number of registered deaths processed by Stats SA and those recorded on the National Population Register (NPR) maintained by the DHA from 1997–2015. Comparing data from the two systems provides another means of evaluating the quality in terms of completeness of deaths from the civil registration system over time. Trends in the number of deaths from Stats SA and those from the DHA (NPR) follow a similar pattern over time, however, the numbers from Stats SA are always expected to be higher than those from the DHA (NPR). This is attributed to two reasons:

- The DHA (NPR) includes South African citizens and permanent residents whose birth records already exist on the DHA (NPR). In contrast, the number of deaths processed by Stats SA also includes deaths eligible to be included on the DHA (NPR), deaths of foreign citizens and South African citizens whose births were not registered on the DHA (NPR).
- Stats SA reports on all deaths registered at the DHA, but the number of deaths processed are less than the deaths that may have been registered at the DHA because they did not reach Stats SA in time for processing. Consequently, the magnitude of the difference between the two data sources may be affected by the delayed transmission of forms to Stats SA.

Figure C.1 shows that in the past 19 years (1997–2015), the number of deaths processed by Stats SA has been higher than that recorded on the DHA (NPR). The trend analysis reveals that both data sources had consistent increases in the number of deaths for the period 1997–2006 and gradual decreases from 2007–2015. The figure shows that in 2015, the number of deaths processed by Stats SA was 460 236, which was a decline of 3,0% from the 474 659 deaths processed for 2014. The number of deaths recorded on the DHA (NPR) decreased by 0,2% from 449 368 in 2014 to 448 683 in 2015. The high number of deaths processed by Stats SA as compared to the deaths

recorded on the NPR is also noticeable when processing late registrations. For example, for 2014, updated deaths show increases in deaths from both sources, with Stats SA deaths increasing from 453 360 to 474 659 and deaths on the NPR DHA (NPR) increasing from 449 004 to 449 368. This is indicative of a 4,7% increase for Stats SA and 0,1% increase for deaths registered on the NPR.

Figure C.1: Number of deaths registered by source of data and year of death, 1997–2015*



*Data for 1997–2014 have been updated with late registrations/delayed death notification forms processed in 2015/2016.

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.2 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 109 363 deceased with

ill-defined causes, with males accounting for 52 754 (48,2%) of the ill-defined deaths as compared to 56 609 (51,8%) for females. For both sexes, *symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified* accounted for 52,1% of ill-defined underlying causes of death. Males had 52,6% of deaths classified as *symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified* whilst females had 51,6%. 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* were 10,0% amongst males and 11,6% for females. There was a huge gap of 3,7 percentage points between females (11,6%) and males (10%) in the proportion of deaths due to *essential (primary) hypertension*. The ill-defined causes attributed to *event of undetermined intent* were higher between males (4,7%) than amongst females (1,6%), with a gap of 3,1 percentage points.

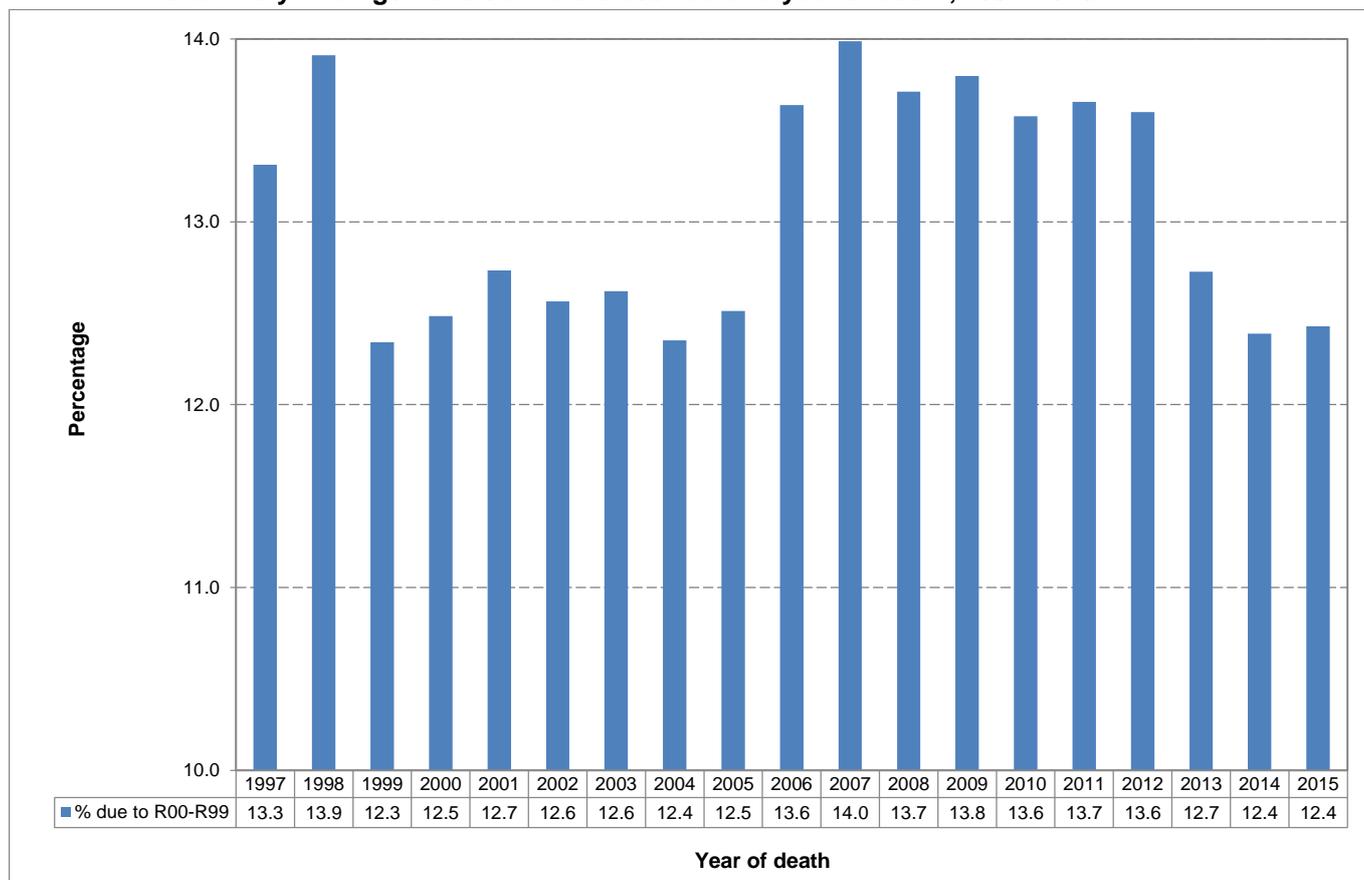
Table C.2: Number and percentage distribution of ill-defined causes of death by sex of the deceased, 2015*

Underlying cause of death (based in ICD-10)	Number			Percentage		
	Male	Female	Both sexes	Male	Female	Both sexes
Streptococcal septicaemia (A40)	0	1	1	0,0	0,0	0,0
Other septicaemia (A41)	2 324	2 721	5 045	4,4	4,8	4,6
Malignant neoplasm of other and ill-defined sites (C76)	184	238	422	0,3	0,4	0,4
Malignant neoplasm without specification of site (C80)	1 994	1 914	3 908	3,8	3,4	3,6
Malignant neoplasm of independent (primary) multiple sites (C97)	7	8	15	0,0	0,0	0,0
Disseminated intravascular coagulation [defibrination syndrome] (D65)	44	64	108	0,1	0,1	0,1
Volume depletion (E86)	602	588	1 190	1,1	1,0	1,1
Essential (primary) hypertension (I10)	3 808	6 187	9 995	7,2	10,9	9,1
Cardiac arrest (I46)	2 276	2 545	4 821	4,3	4,5	4,4
Heart failure (I50)	5 287	6 578	11 865	10,0	11,6	10,8
Complications and ill-defined descriptions of heart disease (I51)	520	518	1 038	1,0	0,9	0,9
Other and unspecified disorders of circulatory system (I99)	41	38	79	0,1	0,1	0,1
Pulmonary oedema (J81)	153	191	344	0,3	0,3	0,3
Respiratory failure, not elsewhere classified (J96)	985	887	1 872	1,9	1,6	1,7
Hepatic failure, not elsewhere classified (J96)	741	617	1 358	1,4	1,1	1,2
Acute renal failure (N17)	479	477	956	0,9	0,8	0,9
Chronic renal failure (N18)	959	918	1 877	1,8	1,6	1,7
Unspecified renal failure (N19)	2 133	1 987	4 120	4,0	3,5	3,8
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (R00-R99)	27 726	29 231	56 957	52,6	51,6	52,1
Event of undetermined intent (Y10-Y34)	2 491	901	3 392	4,7	1,6	3,1
Total of ill-defined	52 754	56 609	109 363	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.2 presents the percentage distribution of deaths attributed to *symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified* over a 19-year period (1997–2015). Overall, the proportions ranged between 12% and 14% over the 19 years. The highest percentage of 14,0% was recorded in 2007 while the lowest (12,3%) was recorded in 1999. Between 2008 and 2012, the percentages hovered in the range of 13,6%–13,8%; after which the proportions declined to 12,7% in 2013. Between 2014 and 2015, the percentages of deaths attributed to *symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified* were somewhat similar at around 12,4%. This figure continues to fall short of the 10% stipulated by WHO as the minimum threshold for ill-defined deaths.

Figure C.2: Percentage distribution of deaths assigned to symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified and year of death, 1997–2015*



*Data for 1997–1999 have been updated with late registrations/delayed death notification forms processed in 2015/2016.

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 2015 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. The first three dimensions are evaluated for quality both in the general vital statistics category and in the causes of death statistics category.

Tables C.3 and C.4 show the results of the assessment framework for the 2015 mortality and causes of deaths. In general, Table C.3 provides the proportion of deaths with unknown or unspecified information for selected key variables. 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 2015, less than 1% of deaths had missing information for province of usual residence (0,9%), sex of deceased (0,4%), age of deceased (0,3%) and province of death occurrence (0,1%). Generally, notable improvements have been observed for province of usual residence in the recent years (1,8% in 2013 and 1,2% in 2014), whereas the other variables have been well reported over time.

Missing information for province of birth was 17,1%, while marital status was missing in 16,2% of the cases. Incomplete information for population group was 12,0% in 2015, down from 12,7% in 2014. In 2015, occupation (69,9%), industry (52,0%), and pregnancy status (80,2%) remained the three variables with more than half of information unknown or unspecified. However, it is worth noting that while industry has high missing cases,

improvements have been noted over time, from 62,2% in 2012 to 53,5% in 2013, and further down to 52,5% in 2014. Method used to ascertain death also remained at 32,0%, whilst this is important in cause of death reporting.

Table C.4 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 96% for the 2011–2016 intercensal/survey period. This was a slight improvement from the 94% adult deaths completeness level estimated for the 2007–2011 intercensal/survey period. This shows an improvement in the completeness of death registration, allowing for improved coverage in death registration.

The table also shows that the civil registration data is considered complete with regard to relevance and comparability criteria and indicators. The tools used in coding causes of death for 2015 were comparable to those in previous years, and the 2015 variables are also consistent with variables from previous years. The proportion of deaths that occurred in a health care facility approximates the percentage of death notification forms that are more likely to contain correctly certified causes of death. The results indicate that for causes-of-death statistics, half (50,0%) of the deaths occurred in a health care facility. This is an improvement from 48,0% in 2014, but continues to compromise the quality of causes of death reporting. Mahapatra *et al.* (2007) propose that, at most, 10% of cause-of-death statistics be assigned to the *symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified* category. The 2015 deaths data do not meet this recommended threshold, as 10,0% of the deaths were attributed to *symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified*.

The mortality and causes of death data are routinely stratified by sex and 5-year age groups. The data are also based on the 2011 demarcations and, as such, can be disaggregated by nine provinces and 52 district municipalities. Additionally, local municipality data are also available on request from Stats SA. Accordingly, the civil registration deaths are considered completely relevant.

Processing 2015 deaths took 14 months, and thus impacted on the mean time from end of reference period to publication to 14 months. In terms of accessibility, the data can be accessed in multiple dissemination formats and can be accessed through the Stats SA website, and also by making use of Stats SA's User Information Services.

Table C.3: Percentage of deaths classified as unknown/unspecified for selected variables, 2015

Variables	Applicable group	Percentage unknown or unspecified
Sex	All	0,4
Age	All	0,3
Province of death occurrence	All	0,1
Province of usual residence of deceased	All	0,9
Province of birth	All	17,1
Population group	All	12,0
Place or institution of death occurrence	All	21,9
Method used to ascertain cause of death	All	32,0
Marital status	All	16,2
Smoking status	Aged 16 and older	33,7
Education	Aged 6 and older	49,3
Occupation	Aged 15 and older	69,9
Industry	Aged 15 and older (economically active)	52,0
Pregnancy status	Females aged 10–55	80,2

Table C.4: Assessment of the 2015 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 C.3	96%	Accuracy Proportion of deaths that occurred in healthcare facilities Proportion of deaths assigned to symptoms and signs of disease not elsewhere classified	50,0% 12,4%
Relevance Routine tabulations by sex and 5-year age groups Deaths in children under five years tabulated by 0 and 1-4 years 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	14 months 14 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 group	1997				1998				1999			
	Male	Female	Unsp.	Total	Male	Female	Unsp.	Total	Male	Female	Unsp.	Total
0	12 990	11 546	203	24 739	14 930	13 260	314	28 504	14 736	13 458	438	28 632
1-4	4 053	3 651	52	7 756	4 862	4 489	96	9 447	5 070	4 640	98	9 808
5-9	1 706	1 255	17	2 978	1 780	1 435	36	3 251	1 897	1 510	34	3 441
10-14	1 547	1 195	20	2 762	1 695	1 288	23	3 006	1 651	1 306	23	2 980
15-19	3 777	2 480	23	6 280	4 111	2 910	63	7 084	4 356	3 336	89	7 781
20-24	8 185	5 468	54	13 707	8 800	6 929	113	15 842	8 651	8 309	107	17 067
25-29	10 941	7 467	44	18 452	13 092	9 894	113	23 099	13 907	12 674	142	26 723
30-34	11 860	7 213	52	19 125	14 396	9 754	130	24 280	16 320	12 307	121	28 748
35-39	12 006	6 890	52	18 948	14 632	8 952	98	23 682	16 481	10 846	111	27 438
40-44	11 815	6 426	37	18 278	13 971	7 953	95	22 019	15 241	8 947	92	24 280
45-49	12 250	6 387	52	18 689	14 217	7 699	90	22 006	15 005	8 539	103	23 647
50-54	11 334	6 257	31	17 622	13 027	7 222	79	20 328	13 902	7 776	81	21 759
55-59	12 680	7 938	46	20 664	13 951	8 890	108	22 949	14 092	8 690	85	22 867
60-64	11 207	9 299	51	20 557	12 446	10 002	60	22 508	12 705	10 056	85	22 846
65-69	12 491	11 054	49	23 594	13 266	12 464	85	25 815	12 847	12 325	91	25 263
70-74	11 301	10 067	49	21 417	12 748	11 801	53	24 602	12 868	12 258	71	25 197
75-79	11 211	12 345	46	23 602	11 430	12 486	87	24 003	10 705	11 588	63	22 356
80-84	6 607	8 786	34	15 427	7 885	11 045	49	18 979	7 605	11 324	73	19 002
85-89	3 955	6 920	26	10 901	4 262	7 808	35	12 105	4 453	7 947	51	12 451
90+	2 032	4 732	13	6 777	2 363	5 565	29	7 957	2 211	5 382	30	7 623
Unspecified	3 113	2 366	106	5 585	2 822	2 101	196	5 119	1 491	1 112	112	2 715
Total	177 061	139 742	1 057	317 860	200 686	163 947	1 952	366 585	206 194	174 330	2 100	382 624

*Data for 1997–1999 have been updated with late registrations/delayed death notification forms processed in 2015/2016.

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

Age group	2000				2001				2002			
	Male	Female	Unsp.	Total	Male	Female	Unsp.	Total	Male	Female	Unsp.	Total
0	15 013	13 532	352	28 897	15 484	14 075	307	29 866	17 892	16 213	340	34 445
1-4	5 387	4 934	86	10 407	5 892	5 308	78	11 278	6 325	5 698	87	12 110
5-9	1 999	1 599	29	3 627	2 126	1 708	29	3 863	2 404	1 964	17	4 385
10-14	1 723	1 338	36	3 097	1 751	1 467	22	3 240	1 868	1 489	24	3 381
15-19	4 322	3 492	72	7 886	4 482	3 916	63	8 461	4 742	4 294	60	9 096
20-24	8 884	9 911	88	18 883	8 949	10 969	86	20 004	9 587	12 528	112	22 227
25-29	15 099	15 767	106	30 972	16 886	19 358	113	36 357	18 665	23 397	136	42 198
30-34	18 518	15 848	112	34 478	20 950	18 792	112	39 854	23 937	23 594	154	47 685
35-39	18 576	13 652	97	32 325	21 139	15 910	101	37 150	24 123	19 496	129	43 748
40-44	17 174	11 051	84	28 309	19 388	12 915	96	32 399	21 633	15 543	118	37 294
45-49	16 144	9 586	80	25 810	17 954	10 969	63	28 986	19 319	12 694	112	32 125
50-54	15 314	9 119	67	24 500	16 947	10 166	74	27 187	18 652	11 265	103	30 020
55-59	13 969	8 881	75	22 925	14 609	9 138	66	23 813	15 435	10 021	71	25 527
60-64	14 265	11 265	69	25 599	15 137	12 082	67	27 286	16 204	12 715	82	29 001
65-69	12 606	12 077	53	24 736	13 037	12 825	65	25 927	13 761	13 296	65	27 122
70-74	13 130	14 151	67	27 348	14 071	15 140	60	29 271	13 805	15 483	62	29 350
75-79	10 358	11 542	48	21 948	10 867	12 058	61	22 986	11 113	12 842	71	24 026
80-84	8 494	12 648	32	21 174	9 173	13 932	47	23 152	9 552	14 208	60	23 820
85-89	4 683	8 231	27	12 941	4 586	8 374	31	12 991	4 379	8 320	34	12 733
90+	2 531	6 533	31	9 095	3 027	7 168	28	10 223	3 295	7 669	33	10 997
Unspecified	1 192	896	146	2 234	1 054	789	101	1 944	1 139	791	115	2 045
Total	219 381	196 053	1 757	417 191	237 509	217 059	1 670	456 238	257 830	243 520	1 985	503 335

*Data for 2000–2002 have been updated with late registrations/delayed death notification forms processed in 2015/2016.

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

Age group	2003				2004				2005			
	Male	Female	Unsp.	Total	Male	Female	Unsp.	Total	Male	Female	Unsp.	Total
0	19 971	18 052	435	38 458	21 793	19 212	533	41 538	24 081	21 962	475	46 518
1-4	7 148	6 292	79	13 519	8 277	7 638	71	15 986	8 237	7 329	80	15 646
5-9	2 780	2 205	28	5 013	3 192	2 804	13	6 009	3 369	2 804	21	6 194
10-14	2 004	1 643	25	3 672	2 142	1 781	13	3 936	2 151	1 862	17	4 030
15-19	4 840	4 565	70	9 475	4 689	4 625	42	9 356	4 779	4 553	53	9 385
20-24	10 358	14 216	106	24 680	10 379	15 112	78	25 569	10 501	14 908	90	25 499
25-29	20 056	26 300	154	46 510	19 837	27 626	112	47 575	19 341	27 314	110	46 765
30-34	27 549	28 193	145	55 887	28 497	30 705	79	59 281	28 838	31 337	108	60 283
35-39	26 475	22 709	114	49 298	28 260	25 208	88	53 556	29 452	26 310	101	55 863
40-44	24 795	18 473	123	43 391	26 516	20 609	70	47 195	27 512	21 508	86	49 106
45-49	22 087	14 498	90	36 675	23 123	16 279	67	39 469	24 482	17 414	79	41 975
50-54	20 628	12 899	68	33 595	21 146	14 119	47	35 312	21 544	14 980	57	36 581
55-59	17 228	11 001	49	28 278	18 089	12 037	33	30 159	19 730	13 324	47	33 101
60-64	17 415	13 321	58	30 794	16 990	13 410	31	30 431	16 863	13 255	34	30 152
65-69	14 684	13 896	53	28 633	15 225	13 813	26	29 064	16 384	15 203	38	31 625
70-74	14 488	16 399	57	30 944	13 454	15 433	26	28 913	12 919	15 098	35	28 052
75-79	12 081	14 133	56	26 270	11 823	14 090	16	25 929	12 233	15 930	35	28 198
80-84	9 455	13 709	39	23 203	8 652	11 967	21	20 640	8 444	11 847	21	20 312
85-89	5 439	10 205	37	15 681	5 041	9 478	19	14 538	5 456	10 352	17	15 825
90+	3 382	8 157	18	11 557	3 292	7 481	14	10 787	3 292	7 889	15	11 196
Unspecified	1 681	959	215	2 855	1 935	931	246	3 112	1 978	1 083	226	3 287
Total	284 544	271 825	2 019	558 388	292 352	284 358	1 645	578 355	301 586	296 262	1 745	599 593

*Data for 2003–2005 have been updated with late registrations/delayed death notification forms processed in 2015/2016.

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

Age group	2006				2007				2008			
	Male	Female	Unsp.	Total	Male	Female	Unsp.	Total	Male	Female	Unsp.	Total
0	25 520	22 126	725	48 371	24 892	21 727	414	47 033	24 161	21 461	299	45 921
1-4	8 406	7 595	117	16 118	7 850	7 061	47	14 958	8 239	7 226	31	15 496
5-9	3 032	2 554	17	5 603	2 882	2 507	4	5 393	2 740	2 311	7	5 058
10-14	2 389	1 920	15	4 324	2 251	1 912	2	4 165	2 237	1 894	2	4 133
15-19	4 854	4 606	39	9 499	4 895	4 219	16	9 130	4 870	4 143	27	9 040
20-24	10 881	14 839	98	25 818	10 945	13 806	53	24 804	10 752	12 953	44	23 749
25-29	19 038	26 237	86	45 361	18 560	24 679	72	43 311	18 523	23 645	48	42 216
30-34	28 923	31 094	96	60 113	28 467	29 242	69	57 778	26 913	27 382	57	54 352
35-39	29 535	26 159	80	55 774	29 496	24 967	50	54 513	29 238	24 487	48	53 773
40-44	28 165	21 904	79	50 148	27 183	21 281	49	48 513	26 190	20 317	31	46 538
45-49	25 190	17 986	45	43 221	24 955	17 965	43	42 963	24 915	17 634	31	42 580
50-54	22 835	15 641	42	38 518	22 966	15 693	17	38 676	22 850	15 628	21	38 499
55-59	20 680	14 205	42	34 927	21 490	14 662	23	36 175	21 686	15 010	22	36 718
60-64	17 088	13 360	27	30 475	17 533	13 515	11	31 059	17 817	13 958	17	31 792
65-69	17 773	15 829	25	33 627	18 007	15 882	9	33 898	18 127	15 666	12	33 805
70-74	13 608	15 616	28	29 252	13 857	15 877	8	29 742	14 199	15 369	2	29 570
75-79	12 743	17 032	25	29 800	12 618	17 108	4	29 730	12 628	17 255	4	29 887
80-84	8 957	12 358	21	21 336	8 929	12 951	4	21 884	9 067	13 898	2	22 967
85-89	6 155	12 036	12	18 203	6 376	12 229	2	18 607	6 007	11 232	1	17 240
90+	3 568	8 721	9	12 298	3 688	8 801	12	12 501	4 003	9 582	27	13 612
Unspecified	869	357	146	1 372	823	344	112	1 279	786	271	162	1 219
Total	310 209	302 175	1 774	614 158	308 663	296 428	1 021	606 112	305 948	291 322	895	598 165

*Data for 2006–2008 have been updated with late registrations/delayed death notification forms processed in 2015/2016.

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

Age group	2009				2010				2011			
	Male	Female	Unsp.	Total	Male	Female	Unsp.	Total	Male	Female	Unsp.	Total
0	21 050	17 770	465	39 285	18 342	16 137	381	34 860	14 912	13 217	500	28 629
1-4	6 684	6 108	31	12 823	7 053	6 135	44	13 232	5 344	4 793	47	10 184
5-9	2 370	2 043	6	4 419	2 567	2 125	5	4 697	2 366	2 044	9	4 419
10-14	2 387	2 074	4	4 465	2 449	2 133	3	4 585	2 103	1 806	5	3 914
15-19	4 679	4 150	25	8 854	4 435	3 983	18	8 436	4 133	3 564	25	7 722
20-24	10 007	11 857	56	21 920	9 451	10 735	35	20 221	8 601	8 921	83	17 605
25-29	17 785	21 733	68	39 586	16 533	19 554	63	36 150	15 001	16 180	147	31 328
30-34	25 045	24 249	81	49 375	22 470	21 482	71	44 023	19 687	17 841	143	37 671
35-39	27 721	22 434	57	50 212	24 820	20 437	52	45 309	22 504	17 519	114	40 137
40-44	25 210	19 230	54	44 494	23 389	17 701	47	41 137	20 954	15 526	100	36 580
45-49	24 393	17 383	45	41 821	22 968	16 408	58	39 434	21 002	14 959	68	36 029
50-54	22 873	15 613	39	38 525	22 042	15 256	31	37 329	21 141	14 382	74	35 597
55-59	21 829	15 158	29	37 016	21 005	14 356	33	35 394	20 414	14 252	54	34 720
60-64	19 254	14 423	20	33 697	20 130	14 835	29	34 994	20 445	14 984	61	35 490
65-69	18 251	15 757	16	34 024	17 324	14 633	21	31 978	17 016	14 295	26	31 337
70-74	15 200	15 977	17	31 194	15 874	16 732	15	32 621	16 556	16 863	21	33 440
75-79	12 759	17 819	9	30 587	11 796	16 162	8	27 966	11 724	16 515	18	28 257
80-84	9 806	15 159	9	24 974	9 949	16 255	11	26 215	9 973	16 760	14	26 747
85-89	6 165	11 250	2	17 417	5 773	10 523	5	16 301	5 999	11 183	13	17 195
90+	5 255	11 680	1	16 936	4 092	10 747	9	14 848	4 389	11 420	7	15 816
Unspecified	1 217	376	202	1 795	1 005	261	324	1 590	1 371	644	595	2 610
Total	299 940	282 243	1 236	583 419	283 467	266 590	1 263	551 320	265 635	247 668	2 124	515 427

*Data for 2009–2011 have been updated with late registrations/delayed death notification forms processed in 2015/2016.

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

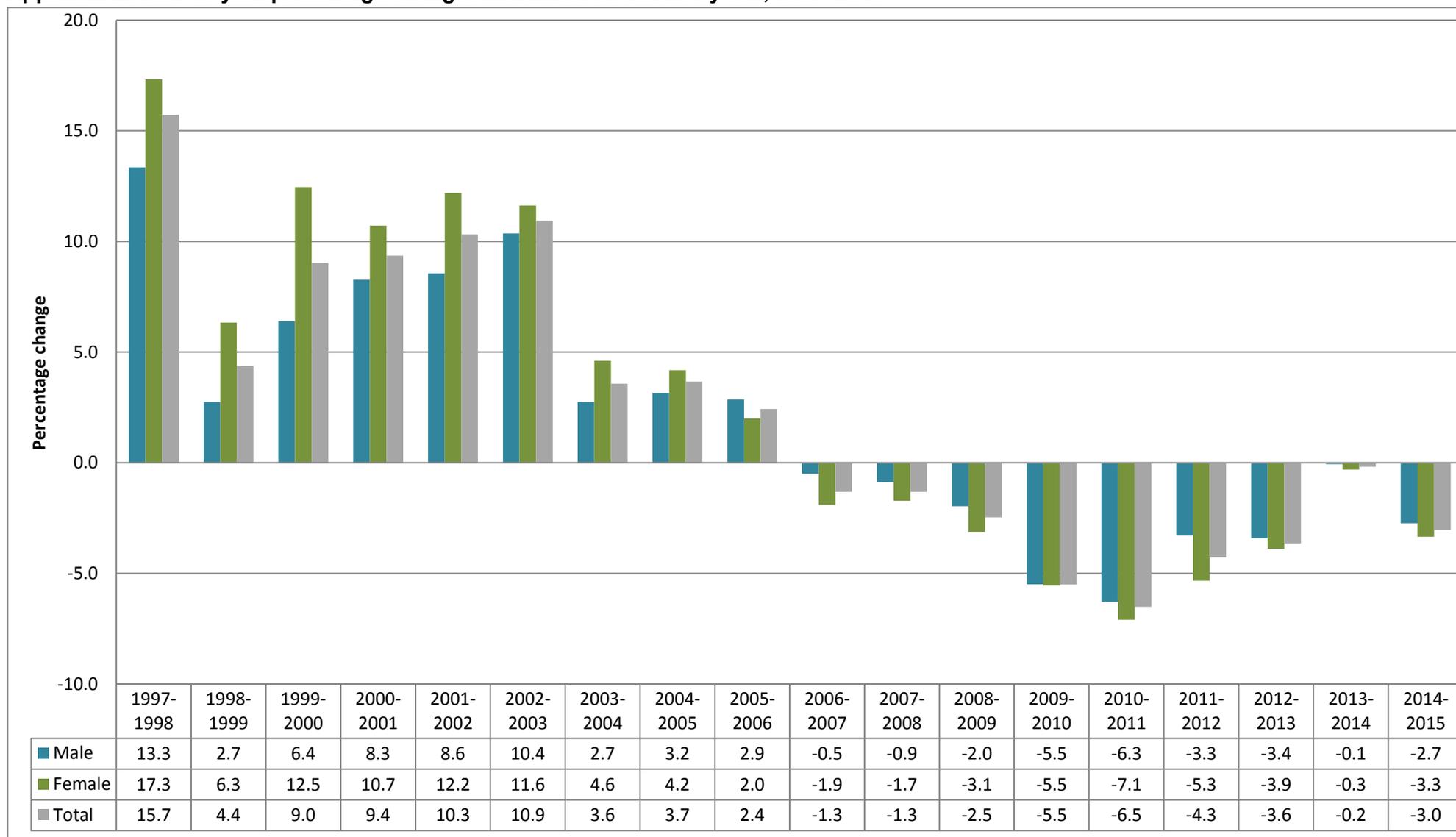
Age group	2012				2013				2014			
	Male	Female	Unsp.	Total	Male	Female	Unsp.	Total	Male	Female	Unsp.	Total
0	14 316	12 317	525	27 158	13 992	12 248	512	26 752	14 033	12 086	533	26 652
1-4	5 609	4 977	48	10 634	4 980	4 339	66	9 385	4 756	4 085	64	8 905
5-9	2 661	2 245	7	4 913	1 930	1 584	12	3 526	1 859	1 426	10	3 295
10-14	2 255	1 906	4	4 165	1 852	1 528	6	3 386	1 803	1 424	8	3 235
15-19	4 116	3 422	20	7 558	4 237	3 096	31	7 364	4 197	3 141	21	7 359
20-24	8 439	7 827	84	16 350	8 424	7 082	69	15 575	8 447	6 224	80	14 751
25-29	14 629	14 243	126	28 998	13 677	12 306	140	26 123	13 135	10 986	176	24 297
30-34	18 152	16 133	155	34 440	17 421	14 408	152	31 981	17 231	13 693	169	31 093
35-39	20 727	15 714	117	36 558	18 950	14 026	134	33 110	17 918	13 045	155	31 118
40-44	19 774	14 083	96	33 953	19 024	13 373	117	32 514	18 398	12 717	113	31 228
45-49	19 268	13 658	87	33 013	18 262	12 960	78	31 300	17 728	12 567	76	30 371
50-54	19 894	13 725	71	33 690	19 274	13 428	75	32 777	19 319	13 425	73	32 817
55-59	19 998	13 494	52	33 544	19 444	13 480	52	32 976	19 555	13 901	59	33 515
60-64	20 198	14 422	30	34 650	20 362	14 722	50	35 134	20 987	15 415	40	36 442
65-69	17 029	13 894	24	30 947	16 827	14 111	33	30 971	18 291	15 055	22	33 368
70-74	16 243	16 384	15	32 642	16 286	16 516	19	32 821	16 121	16 684	17	32 822
75-79	12 027	16 358	18	28 403	12 308	16 006	24	28 338	12 930	16 515	21	29 466
80-84	9 967	16 741	11	26 719	9 694	16 813	16	26 523	9 697	17 140	17	26 854
85-89	5 798	11 141	11	16 950	6 016	11 878	13	17 907	6 492	13 024	10	19 526
90+	4 298	11 023	8	15 329	4 150	10 984	11	15 145	4 309	11 828	4	16 141
Unspecified	1 488	735	656	2 879	1 005	420	477	1 902	745	224	435	1 404
Total	256 886	234 442	2 165	493 493	248 115	225 308	2 087	475 510	247 951	224 605	2 103	474 659

*Data for 2012–2014 have been updated with late registrations/delayed death notification forms processed in 2015/2016.

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

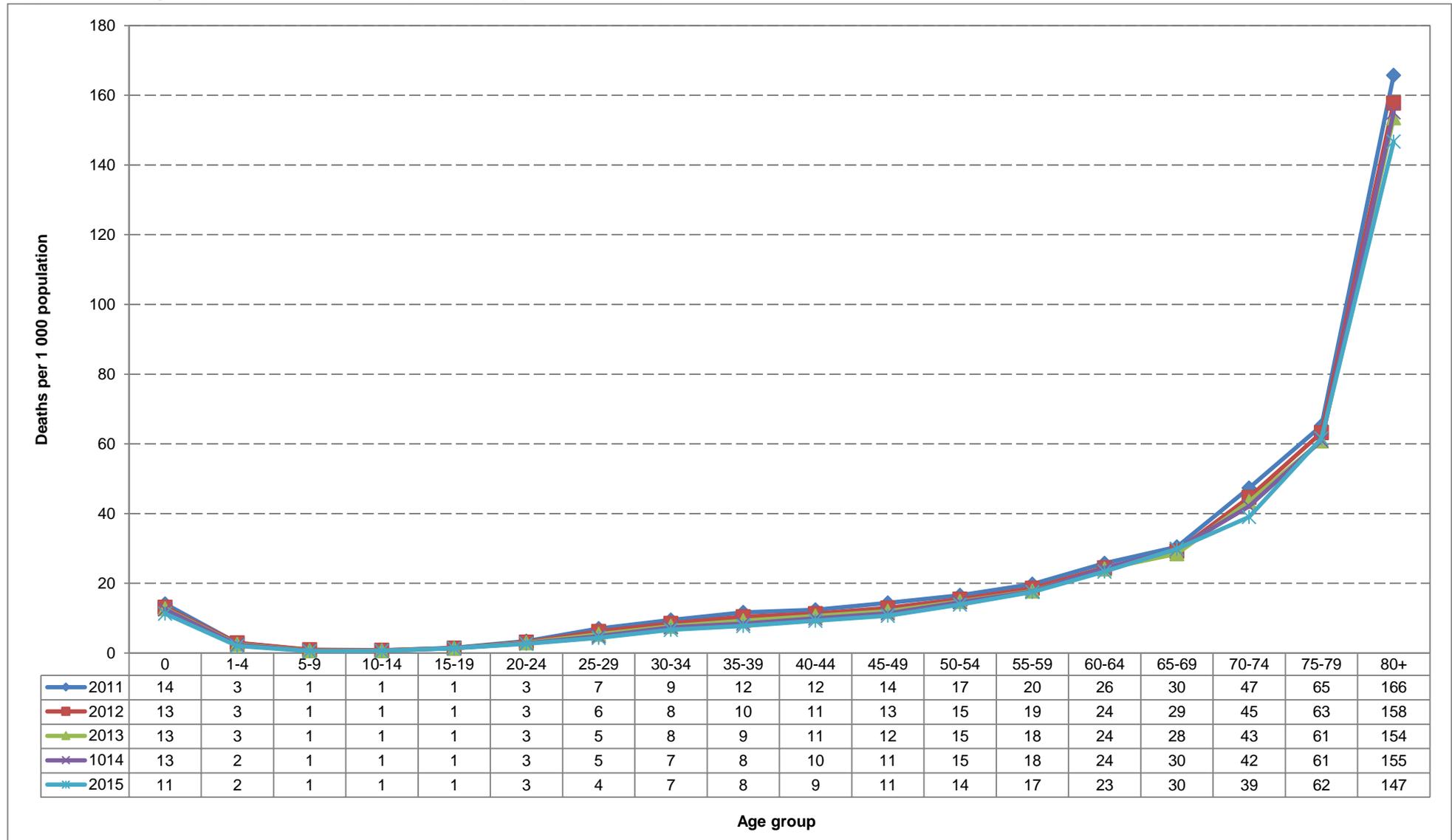
Age group	2015			
	Male	Female	Unsp.	Total
0	12 608	11 044	564	24 216
1-4	4 120	3 559	43	7 722
5-9	1 765	1 334	10	3 109
10-14	1 723	1 375	9	3 107
15-19	4 027	2 814	13	6 854
20-24	8 248	5 677	79	14 004
25-29	12 893	9 843	131	22 867
30-34	16 137	12 432	171	28 740
35-39	17 039	12 197	149	29 385
40-44	17 563	12 058	122	29 743
45-49	17 058	12 041	97	29 196
50-54	18 776	13 050	67	31 893
55-59	19 942	13 953	52	33 947
60-64	20 685	15 236	40	35 961
65-69	18 851	15 576	25	34 452
70-74	15 784	15 608	18	31 410
75-79	13 389	17 504	16	30 909
80-84	9 152	15 954	16	25 122
85-89	6 492	13 842	9	20 343
90+	4 239	11 782	13	16 034
Unspecified	665	208	349	1 222
Total	241 156	217 087	1 993	460 236

Appendix E: Year-to-year percentage changes in number of deaths by sex, 1997–2015 *



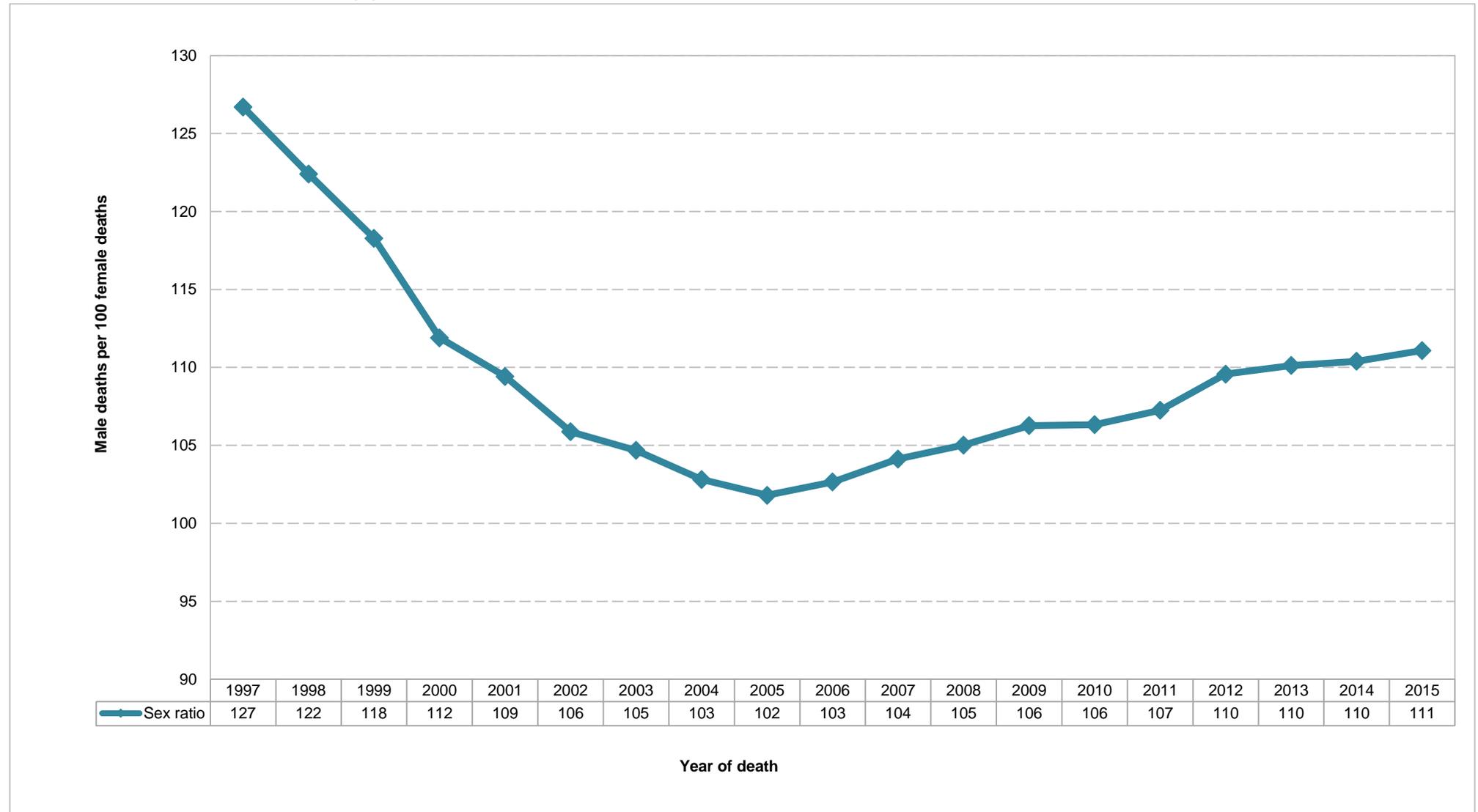
*Data for 1997–2014 have been updated with late registrations/delayed death notification forms processed in 2015/2016.

Appendix F: Age-Specific Death Rates (ASDR) by year of death, 2011–2015*



*Data for 2011–2014 have been updated with late registrations/delayed death notification forms processed in 2015/2016.

Appendix G: Sex ratios at death by year of death, 1997–2015*



* Data for 1997–2014 have been updated with late registrations/delayed death notification forms processed in 2015/2016.

Appendix H: Number of deaths by province of death occurrence and province of usual residence of the deceased, 2015

Province of death occurrence	Province of usual residence											Total
	Western Cape	Eastern Cape	Northern Cape	Free State	KwaZulu-Natal	North West	Gauteng	Mpumalanga	Limpopo	Foreign	Unspecified	
Western Cape	47 633	486	141	71	382	53	330	78	104	67	587	49 932
Eastern Cape	279	65 113	63	116	1 030	64	482	173	105	73	925	68 423
Northern Cape	124	57	12 781	152	40	286	60	21	54	19	164	13 758
Free State	61	210	237	30 153	89	301	394	51	87	167	191	31 941
KwaZulu-Natal	177	1 407	26	93	78 082	76	458	336	111	87	467	81 320
North West	30	77	193	320	27	31 709	1 306	86	300	59	321	34 428
Gauteng	278	457	97	713	621	2 082	89 792	1 604	1 240	322	985	98 191
Mpumalanga	40	133	23	83	378	86	626	31 660	887	135	235	34 286
Limpopo	32	94	48	55	191	284	463	944	44 314	313	185	46 923
Foreign	38	19	10	48	39	27	231	24	16	109	91	652
Unspecified	21	32	10	17	64	47	62	40	54	6	29	382
Total	48 713	68 085	13 629	31 821	80 943	35 015	94 204	35 017	47 272	1 357	4 180	460 236

Appendix H1: Percentage distribution of deaths by province of death occurrence and province of usual residence of deceased, 2015

Province of death occurrence	Province of usual residence											Total
	Western Cape	Eastern Cape	Northern Cape	Free State	KwaZulu-Natal	North West	Gauteng	Mpumalanga	Limpopo	Foreign	Unspecified	
Western Cape	95,4	1,0	0,3	0,1	0,8	0,1	0,7	0,2	0,2	0,1	1,2	100,0
Eastern Cape	0,4	95,2	0,1	0,2	1,5	0,1	0,7	0,3	0,2	0,1	1,4	100,0
Northern Cape	0,9	0,4	92,9	1,1	0,3	2,1	0,4	0,2	0,4	0,1	1,2	100,0
Free State	0,2	0,7	0,7	94,4	0,3	0,9	1,2	0,2	0,3	0,5	0,6	100,0
KwaZulu-Natal	0,2	1,7	0,0	0,1	96,0	0,1	0,6	0,4	0,1	0,1	0,6	100,0
North West	0,1	0,2	0,6	0,9	0,1	92,1	3,8	0,2	0,9	0,2	0,9	100,0
Gauteng	0,3	0,5	0,1	0,7	0,6	2,1	91,4	1,6	1,3	0,3	1,0	100,0
Mpumalanga	0,1	0,4	0,1	0,2	1,1	0,3	1,8	92,3	2,6	0,4	0,7	100,0
Limpopo	0,1	0,2	0,1	0,1	0,4	0,6	1,0	2,0	94,4	0,7	0,4	100,0
Foreign	5,8	2,9	1,5	7,4	6,0	4,1	35,4	3,7	2,5	16,7	14,0	100,0
Unspecified	5,5	8,4	2,6	4,5	16,8	12,3	16,2	10,5	14,1	1,6	7,6	100,0

Appendix I: Number of deaths by age, province and district municipality of death occurrence, 2015*

Province of death occurrence	District municipality of death	Age						
		0	1-14	15-44	45-64	65+	Unsp.	Total
Western Cape	Cape Winelands	204	98	1 439	2 180	2 672	16	6 609
	Central Karoo	40	20	209	265	286		820
	City of Cape Town	1 313	501	7 953	8 993	12 206	87	31 053
	Eden	186	81	1 162	1 837	2 365	2	5 633
	Overberg	78	36	415	679	1 034	1	2 243
	West Coast	88	46	814	1 154	1 405	3	3 510
	Unspecified		1	16	21	26		64
	Total	1 909	783	12 008	15 129	19 994	109	49 932
Eastern Cape	Alfred Nzo	199	172	1 492	1 250	1 856	11	4 980
	Amathole	307	354	3 090	3 205	5 057	17	12 030
	Buffalo City	244	201	2 516	2 926	3 168	6	9 061
	Cacadu	152	79	1 308	1 670	1 775	2	4 986
	Chris Hani	263	194	2 325	2 380	3 193	5	8 360
	Joe Gqabi	172	134	1 075	1 094	1 564	6	4 045
	Nelson Mandela Bay	425	223	2 943	3 585	3 877	13	11 066
	O.R. Tambo	435	690	4 813	3 302	4 518	17	13 775
	Unspecified	1	3	32	38	46		120
	Total	2 198	2 050	19 594	19 450	25 054	77	68 423
Northern Cape	Frances Baard	182	101	916	1 053	1 032	5	3 289
	John Taolo Gaetsewe	232	97	719	745	686	4	2 483
	Namakwa	33	15	200	359	505	3	1 115
	Pixley Ka Seme	208	91	1 035	1 326	1 190	3	3 853
	Siyanda	151	94	896	950	891	3	2 985
	Unspecified	2		12	10	8	1	33
	Total	808	398	3 778	4 443	4 312	19	13 758
Free State	Fezile Dabi	268	157	1366	1517	1739	11	5058
	Lejweleputswa	471	205	2032	2371	2167	17	7263
	Mangaung	441	207	2424	2773	2952	16	8813
	Thabo Mofutsanyane	551	253	2445	2539	2628	26	8442
	Xhariep	118	45	631	745	774	2	2315
	Unspecified	2	2	16	16	14	0	50
	Total	1 851	869	8 914	9 961	10 274	72	31 941
KwaZulu-Natal	Amajuba	287	147	1467	1420	1439	5	4765
	eThekwini	700	483	5554	5255	6599	38	18629
	iLembe	226	173	1690	1334	1587	15	5025
	Sisonke	272	201	1854	1479	1704	11	5521
	Ugu	347	283	2712	2215	3123	11	8691
	uMgungundlovu	383	249	3150	2878	3689	11	10360
	uMkhanyakude	217	148	1167	840	1188	8	3568
	uMzinyathi	290	162	1252	1028	1506	15	4253
	uThukela	355	218	1943	1727	2151	8	6402
	uThungulu	551	270	2569	2038	2261	25	7714
	Zululand	421	249	1978	1478	1970	15	6111
	Unspecified	9	16	91	66	98	1	281
Total	4 058	2 599	25 427	21 758	27 315	163	81 320	

Appendix I: Number of deaths by age, province and district municipality of death occurrence, 2015* (concluded)

Province of death occurrence	District municipality of death	Age						Total
		0	1-14	15-44	45-64	65+	Unsp.	
North West	Bojanala	761	404	3 281	3 497	4 050	34	12 027
	Dr Kenneth Kaunda	450	209	2 113	2 373	2 364	17	7 526
	Dr Ruth Segomotsi Mompati	507	185	1 519	1 499	1 769	5	5 484
	Ngaka Modiri Molema	737	346	2 622	2 664	2 926	11	9 306
	Unspecified	8	2	19	31	25		85
	Total	2 463	1 146	9 554	10 064	11 134	67	34 428
Gauteng	City of Johannesburg	1 856	854	8 787	8 545	9 601	314	29 957
	City of Tshwane	1 070	567	5 582	5 997	7 953	30	21 199
	Ekurhuleni	1 785	750	8 287	7 611	7 755	108	26 296
	Sedibeng	579	218	2 905	3 157	3 409	49	10 317
	West Rand	533	259	2 982	3 034	3 353	52	10 213
	Unspecified	10	7	84	65	42	1	209
	Total	5 833	2 655	28 627	28 409	32 113	554	98 191
Mpumalanga	Ehlanzeni	644	634	4 815	3 685	4 274	50	14 102
	Gert Sibande	728	316	3 165	2 697	2 597	25	9 528
	Nkangala	528	358	3 211	3 113	3 254	17	10 481
	Unspecified	7	8	71	42	45	2	175
	Total	1 907	1 316	11 262	9 537	10 170	94	34 286
Limpopo	Capricorn	913	578	3 382	3 392	4 735	12	13 012
	Greater Sekhukhune	506	378	2 483	2 419	3 795	2	9 583
	Mopani	793	464	2 458	2 399	3 447	12	9 573
	Vhembe	575	464	2 247	2 286	3 661	25	9 258
	Waterberg	365	200	1 532	1 356	1 807	8	5 268
	Unspecified	12	16	60	68	73		229
	Total	3 164	2 100	12 162	11 920	17 518	59	46 923
Foreign	Total	5	8	150	232	257	652	

*Excluding deaths with unspecified province of death occurrence.

Appendix I1: Percentage distribution of deaths by age, province and district municipality of death occurrence, 2015*

Province of death occurrence	District municipality of death	Age						Unsp.	Total
		0	1-14	15-44	45-64	65+			
Western Cape	Cape Winelands	3,1	1,5	21,8	33,0	40,4	0,2	100,0	
	Central Karoo	4,9	2,4	25,5	32,3	34,9	0,0	100,0	
	City of Cape Town	4,2	1,6	25,6	29,0	39,3	0,3	100,0	
	Eden	3,3	1,4	20,6	32,6	42,0	0,0	100,0	
	Overberg	3,5	1,6	18,5	30,3	46,1	0,0	100,0	
	West Coast	2,5	1,3	23,2	32,9	40,0	0,1	100,0	
	Unspecified	0,0	1,6	25,0	32,8	40,6	0,0	100,0	
	Total	3,8	1,6	24,0	30,3	40,0	0,2	100,0	
Eastern Cape	Alfred Nzo	4,0	3,5	30,0	25,1	37,3	0,2	100,0	
	Amathole	2,6	2,9	25,7	26,6	42,0	0,1	100,0	
	Buffalo City	2,7	2,2	27,8	32,3	35,0	0,1	100,0	
	Cacadu	3,0	1,6	26,2	33,5	35,6	0,0	100,0	
	Chris Hani	3,1	2,3	27,8	28,5	38,2	0,1	100,0	
	Joe Gqabi	4,3	3,3	26,6	27,0	38,7	0,1	100,0	
	Nelson Mandela Bay	3,8	2,0	26,6	32,4	35,0	0,1	100,0	
	O.R. Tambo	3,2	5,0	34,9	24,0	32,8	0,1	100,0	
	Unspecified	0,8	2,5	26,7	31,7	38,3	0,0	100,0	
	Total	3,2	3,0	28,6	28,4	36,6	0,1	100,0	
Northern Cape	Frances Baard	5,5	3,1	27,9	32,0	31,4	0,2	100,0	
	John Taolo Gaetsewe	9,3	3,9	29,0	30,0	27,6	0,2	100,0	
	Namakwa	3,0	1,3	17,9	32,2	45,3	0,3	100,0	
	Pixley Ka Seme	5,4	2,4	26,9	34,4	30,9	0,1	100,0	
	Siyanda	5,1	3,1	30,0	31,8	29,8	0,1	100,0	
	Unspecified	6,1	0,0	36,4	30,3	24,2	3,0	100,0	
	Total	5,9	2,9	27,5	32,3	31,3	0,1	100,0	
Free State	Fezile Dabi	5,3	3,1	27,0	30,0	34,4	0,2	100,0	
	Lejweleputswa	6,5	2,8	28,0	32,6	29,8	0,2	100,0	
	Mangaung	5,0	2,3	27,5	31,5	33,5	0,2	100,0	
	Thabo Mofutsanyane	6,5	3,0	29,0	30,1	31,1	0,3	100,0	
	Xhariep	5,1	1,9	27,3	32,2	33,4	0,1	100,0	
	Unspecified	4,0	4,0	32,0	32,0	28,0	0,0	100,0	
	Total	5,8	2,7	27,9	31,2	32,2	0,2	100,0	
KwaZulu-Natal	Amajuba	6,0	3,1	30,8	29,8	30,2	0,1	100,0	
	eThekweni	3,8	2,6	29,8	28,2	35,4	0,2	100,0	
	iLembe	4,5	3,4	33,6	26,5	31,6	0,3	100,0	
	Sisonke	4,9	3,6	33,6	26,8	30,9	0,2	100,0	
	Ugu	4,0	3,3	31,2	25,5	35,9	0,1	100,0	
	uMgungundlovu	3,7	2,4	30,4	27,8	35,6	0,1	100,0	
	uMkhanyakude	6,1	4,1	32,7	23,5	33,3	0,2	100,0	
	uMzinyathi	6,8	3,8	29,4	24,2	35,4	0,4	100,0	
	uThukela	5,5	3,4	30,3	27,0	33,6	0,1	100,0	
	uThungulu	7,1	3,5	33,3	26,4	29,3	0,3	100,0	
	Zululand	6,9	4,1	32,4	24,2	32,2	0,2	100,0	
	Unspecified	3,2	5,7	32,4	23,5	34,9	0,4	100,0	
	Total	5,0	3,2	31,3	26,8	33,6	0,2	100,0	

Appendix I1: Percentage distribution of deaths by age, province and district municipality of death occurrence, 2015* (concluded)

Province of death occurrence	District municipality of death	Age						Unsp.	Total
		0	1-14	15-44	45-64	65+			
North West	Bojanala	6,3	3,4	27,3	29,1	33,7	0,3	100,0	
	Dr Kenneth Kaunda	6,0	2,8	28,1	31,5	31,4	0,2	100,0	
	Dr Ruth Segomotsi Mompati	9,2	3,4	27,7	27,3	32,3	0,1	100,0	
	Ngaka Modiri Molema	7,9	3,7	28,2	28,6	31,4	0,1	100,0	
	Unspecified	9,4	2,4	22,4	36,5	29,4	0,0	100,0	
	Total	7,2	3,3	27,8	29,2	32,3	0,2	100,0	
Gauteng	City of Johannesburg	6,2	2,9	29,3	28,5	32,0	1,0	100,0	
	City of Tshwane	5,0	2,7	26,3	28,3	37,5	0,1	100,0	
	Ekurhuleni	6,8	2,9	31,5	28,9	29,5	0,4	100,0	
	Sedibeng	5,6	2,1	28,2	30,6	33,0	0,5	100,0	
	West Rand	5,2	2,5	29,2	29,7	32,8	0,5	100,0	
	Unspecified	4,8	3,3	40,2	31,1	20,1	0,5	100,0	
	Total	5,9	2,7	29,2	28,9	32,7	0,6	100,0	
Mpumalanga	Ehlanzeni	4,6	4,5	34,1	26,1	30,3	0,4	100,0	
	Gert Sibande	7,6	3,3	33,2	28,3	27,3	0,3	100,0	
	Nkangala	5,0	3,4	30,6	29,7	31,0	0,2	100,0	
	Unspecified	4,0	4,6	40,6	24,0	25,7	1,1	100,0	
	Total	5,6	3,8	32,8	27,8	29,7	0,3	100,0	
Limpopo	Capricorn	7,0	4,4	26,0	26,1	36,4	0,1	100,0	
	Greater Sekhukhune	5,3	3,9	25,9	25,2	39,6	0,0	100,0	
	Mopani	8,3	4,8	25,7	25,1	36,0	0,1	100,0	
	Vhembe	6,2	5,0	24,3	24,7	39,5	0,3	100,0	
	Waterberg	6,9	3,8	29,1	25,7	34,3	0,2	100,0	
	Unspecified	5,2	7,0	26,2	29,7	31,9	0,0	100,0	
	Total	6,7	4,5	25,9	25,4	37,3	0,1	100,0	
Foreign	Total	0,8	1,2	23,0	35,6	39,4	0,0	100,0	

*Excluding deaths with unspecified province of death occurrence.

Appendix J: Number of deaths by sex, province and district municipality of death occurrence, 2015*

Province of death occurrence	District municipality of death	Sex				Sex ratio at death**
		Male	Female	Unspecified	Total	
Western Cape	Cape Winelands	3 488	3 096	25	6 609	113
	Central Karoo	427	392	1	820	109
	City of Cape Town	17 114	13 832	107	31 053	124
	Eden	3 055	2 567	11	5 633	119
	Overberg	1 268	974	1	2 243	130
	West Coast	1 989	1 518	3	3 510	131
	Unspecified	30	34		64	88
	Total	27 371	22 413	148	49 932	122
Eastern Cape	Alfred Nzo	2 491	2 469	20	4 980	101
	Amathole	6 332	5 674	24	12 030	112
	Buffalo City	4 789	4 257	15	9 061	112
	Cacadu	2 666	2 306	14	4 986	116
	Chris Hani	4 373	3 961	26	8 360	110
	Joe Gqabi	2 081	1 955	9	4 045	106
	Nelson Mandela Bay	5 733	5 282	51	11 066	109
	O.R. Tambo	7 059	6 686	30	13 775	106
	Unspecified	63	57		120	111
	Total	35 587	32 647	189	68 423	109
Northern Cape	Frances Baard	1 723	1 563	3	3 289	110
	John Taolo Gaetsewe	1 401	1 075	7	2 483	130
	Namakwa	600	514	1	1 115	117
	Pixley Ka Seme	2 046	1 798	9	3 853	114
	Siyanda	1 599	1 384	2	2 985	116
	Unspecified	19	14		33	136
	Total	7 388	6 348	22	13 758	116
Free State	Fezile Dabi	2 680	2 371	7	5 058	113
	Lejweleputswa	3 912	3 325	26	7 263	118
	Mangaung	4 714	4 062	37	8 813	116
	Thabo Mofutsanyane	4 284	4 130	28	8 442	104
	Xhariep	22	28	0	50	79
	Unspecified	1 253	1 051	11	2 315	119
	Total	16 865	14 967	109	31 941	113
KwaZulu-Natal	Amajuba	2 408	2 342	15	4 765	103
	eThekweni	9 800	8 785	44	18 629	112
	iLembe	2 531	2 481	13	5 025	102
	Sisonke	2 708	2 801	12	5 521	97
	Ugu	4 512	4 163	16	8 691	108
	uMgungundlovu	5 220	5 107	33	10 360	102
	uMkhanyakude	1 789	1 746	33	3 568	102
	uMzinyathi	2 082	2 149	22	4 253	97
	uThukela	3 960	3 717	37	7 714	107
	uThungulu	3 119	2 965	27	6 111	105
	Zululand	152	129	0	281	118
	Unspecified	3 304	3 087	11	6 402	107
Total	41 585	39 472	263	81 320	105	

Appendix J: Number of deaths by sex, province and district municipality of death occurrence, 2015* (concluded)

Province of death occurrence	District municipality of death	Sex				Sex ratio at death**
		Male	Female	Unspecified	Total	
North West	Bojanala	6 458	5 522	47	12 027	117
	Dr Kenneth Kaunda	4 119	3 385	22	7 526	122
	Dr Ruth Segomotsi Mompati	2 852	2 614	18	5 484	109
	Ngaka Modiri Molema	4 927	4 354	25	9 306	113
	Unspecified	45	40	0	85	113
	Total		18 401	15 915	112	34 428	116
Gauteng	City of Johannesburg	15 986	13 533	438	29 957	118
	City of Tshwane	11 126	10 009	64	21 199	111
	Ekurhuleni	14 067	12 013	216	26 296	117
	Sedibeng	5 630	4 627	60	10 317	122
	West Rand	5 535	4 593	85	10 213	121
	Unspecified	118	90	1	209	131
	Total		52 462	44 865	864	98 191	117
Mpumalanga	Ehlanzeni	7 172	6 872	58	14 102	104
	Gert Sibande	5 080	4 423	25	9 528	115
	Nkangala	5 454	4 981	46	10 481	109
	Unspecified	96	79	0	175	122
	Total		17 802	16 355	129	34 286	109
Limpopo	Capricorn	6 509	6 466	37	13 012	101
	Greater Sekhukhune	4 631	4 925	27	9 583	94
	Mopani	4 568	4 951	54	9 573	92
	Vhembe	4 453	4 786	19	9 258	93
	Waterberg	2 780	2 478	10	5 268	112
	Unspecified	122	107	0	229	114
	Total		23 063	23 713	147	46 923	97
Foreign	Total	425	225	2	652	189

*Excluding deaths with unspecified province of death occurrence.

** Male deaths per 100 females

Appendix K: All underlying causes of death, 2015

Causes of death (based on the 10th revision, International Classification of Diseases, 1992)	Number	Percentage
All causes	460 236	100,0
Ill-defined and unknown causes of mortality (R95-R99)	54 391	11,8
Tuberculosis (A15-A19)	33 063	7,2
Other external causes of accidental injury (W00-X59)	32 006	7,0
Diabetes mellitus (E10-E14)	25 070	5,5
Cerebrovascular diseases (I60-I69)	22 879	5,0
Other forms of heart disease (I30-I52)	22 215	4,8
Human immunodeficiency virus [HIV] disease (B20-B24)	21 926	4,8
Influenza and pneumonia (J09-J18)	20 570	4,5
Hypertensive diseases (I10-I15)	19 443	4,2
Other viral diseases (B25-B34)	16 097	3,5
Chronic lower respiratory diseases (J40-J47)	12 667	2,8
Ischaemic heart diseases (I20-I25)	12 239	2,7
Malignant neoplasms of digestive organs (C15-C26)	10 432	2,3
Certain disorders involving the immune mechanism (D80-D89)	10 410	2,3
Intestinal infectious diseases (A00-A09)	9 955	2,2
Assault (X85-Y09)	7 201	1,6
Renal failure (N17-N19)	6 975	1,5
Transport accidents (V01-V99)	6 300	1,4
Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	6 105	1,3
Other bacterial diseases (A30-A49)	5 154	1,1
Malignant neoplasms of female genital organs (C51-C58)	5 137	1,1
Malignant neoplasms of ill-defined, secondary and unspecified sites (C76-C80)	4 361	1,0
Other acute lower respiratory infections (J20-J22)	4 333	0,9
Diseases of liver (K70-K77)	4 177	0,9
Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	3 795	0,8
Other diseases of the respiratory system (J95-J99)	3 718	0,8
Episodic and paroxysmal disorders (G40-G47)	3 586	0,8
Inflammatory diseases of the central nervous system (G00-G09)	3 513	0,8
Event of undetermined intent (Y10-Y34)	3 415	0,7
Malignant neoplasms of breast (C50)	3 357	0,7
Malignant neoplasms of male genital organs (C60-C63)	3 164	0,7
Malignant neoplasms, stated or presumed to be primary, of lymphoid, haematopoietic and related tissue (C81-C96)	3 053	0,7
General symptoms and signs (R50-R69)	2 810	0,6
Metabolic disorders (E70-E90)	2 789	0,6
Pulmonary heart disease and diseases of pulmonary circulation (I26-I28)	2 382	0,5
Diseases of oesophagus, stomach and duodenum (K20-K31)	2 227	0,5
Aplastic and other anaemias (D60-D64)	1 851	0,4
Malnutrition (E40-E46)	1 779	0,4
Complications of medical and surgical care (Y40-Y84)	1 732	0,4
Other diseases of intestines (K55-K63)	1 539	0,3
Other respiratory diseases principally affecting the interstitium (J80-J84)	1 504	0,3
Diseases of arteries, arterioles and capillaries (I70-I79)	1 424	0,3
Disorders related to length of gestation and fetal growth (P05-P08)	1 350	0,3

Appendix K: All underlying causes of death, 2015 (continued)

Causes of death (based on the 10th revision, International Classification of Diseases, 1992)	Number	Percentage
All causes	460 236	100,0
Other diseases of the digestive system (K90-K93)	1 215	0,3
Infections specific to the perinatal period (P35-P39)	1 170	0,3
Malignant neoplasms of mesothelial and soft tissue (C45-C49)	1 149	0,3
Neoplasms of uncertain or unknown behaviour (D37-D48)	1 112	0,2
Protozoal diseases (B50-B64)	1 073	0,2
Organic, including symptomatic, mental disorders (F00-F09)	1 071	0,2
Malignant neoplasms of lip, oral cavity and pharynx (C00-C14)	1 037	0,2
Other disorders of glucose regulation and pancreatic internal secretion (E15-E16)	1 019	0,2
Malignant neoplasms of urinary tract (C64-C68)	1 017	0,2
Sequelae of infectious and parasitic diseases (B90-B94)	1 003	0,2
Disorders of gallbladder, biliary tract and pancreas (K80-K87)	988	0,2
Other degenerative diseases of the nervous system (G30-G32)	921	0,2
Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	910	0,2
Cerebral palsy and other paralytic syndromes (G80-G83)	900	0,2
Other disorders of the nervous system (G90-G99)	895	0,2
Other disorders of the skin and subcutaneous tissue (L80-L99)	808	0,2
Arthropathies (M00-M25)	732	0,2
Congenital malformations of the circulatory system (Q20-Q28)	730	0,2
Malignant neoplasms of skin (C43-C44)	706	0,2
Lung diseases due to external agents (J60-J70)	688	0,2
Diseases of veins, lymphatic vessels and lymph nodes, not elsewhere classified (I80-I89)	683	0,2
Mycoses (B35-B49)	650	0,1
Malignant neoplasms of eye, brain and other parts of central nervous system (C69-C72)	603	0,1
Glomerular diseases (N00-N08)	591	0,1
Mental and behavioural disorders due to psychoactive substance use (F10-F19)	514	0,1
Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	487	0,1
Intentional self-harm (X60-X84)	485	0,1
Systemic connective tissue disorders (M30-M36)	474	0,1
Coagulation defects, purpura and other haemorrhagic conditions (D65-D69)	445	0,1
Extrapyramidal and movement disorders (G20-G26)	430	0,1
Obesity and other hyperalimentation (E65-E68)	412	0,1
Other congenital malformations (Q80-Q89)	397	0,1
Disorders of thyroid gland (E00-E07)	392	0,1
Other diseases of urinary system (N30-N39)	388	0,1
Chromosomal abnormalities, not elsewhere classified (Q90-Q99)	376	0,1
Infections of the skin and subcutaneous tissue (L00-L08)	368	0,1
Other diseases of pleura (J90-J94)	354	0,1
Digestive system disorders of fetus and newborn (P75-P78)	346	0,1
Diseases of male genital organs (N40-N51)	325	0,1
Viral hepatitis (B15-B19)	318	0,1
Chronic rheumatic heart diseases (I05-I09)	298	0,1
Soft tissue disorders (M60-M79)	285	0,1
Other obstetric conditions, not elsewhere classified (O95-O99)	270	0,1
Renal tubulo-interstitial diseases (N10-N16)	269	0,1

Appendix K: All underlying causes of death, 2015 (continued)

Causes of death (based on the 10th revision, International Classification of Diseases, 1992)	Number	Percentage
All Causes	460 236	100,0
Hernia (K40-K46)	254	0,1
Congenital malformations of the nervous system (Q00-Q07)	249	0,1
Diseases of peritoneum (K65-K67)	239	0,1
Other disorders of kidney and ureter (N25-N29)	228	0,1
Benign neoplasms (D10-D36)	219	0,1
Malignant neoplasms of thyroid and other endocrine glands (C73-C75)	214	0,1
Systemic atrophies primarily affecting the central nervous system (G10-G13)	212	0,1
Schizophrenia, schizotypal and delusional disorders (F20-F29)	204	0,0
Other and unspecified disorders of the circulatory system (I95-I99)	202	0,0
Oedema, proteinuria and hypertensive disorders in pregnancy, childbirth and the puerperium (O10-O16)	193	0,0
Other congenital malformations of the digestive system (Q38-Q45)	175	0,0
Diseases of appendix (K35-K38)	171	0,0
Acute upper respiratory infections (J00-J06)	155	0,0
Noninflammatory disorders of female genital tract (N80-N98)	152	0,0
Viral infections characterized by skin and mucous membrane lesions (B00-B09)	140	0,0
Complications of labour and delivery (O60-O75)	140	0,0
Complications predominantly related to the puerperium (O85-O92)	124	0,0
Congenital malformations and deformations of the musculoskeletal system (Q65-Q79)	123	0,0
Polyneuropathies and other disorders of the peripheral nervous system (G60-G64)	118	0,0
Viral infections of the central nervous system (A80-A89)	117	0,0
Nutritional anaemias (D50-D53)	112	0,0
Malignant neoplasms of bone and articular cartilage (C40-C41)	110	0,0
Pregnancy with abortive outcome (O00-O08)	110	0,0
Disorders of other endocrine glands (E20-E35)	103	0,0
Osteopathies and chondropathies (M8-M94)	99	0,0
Conditions involving the integument and temperature regulation of fetus and newborn (P80-P83)	95	0,0
Congenital malformations of the urinary system (Q60-Q64)	92	0,0
Sequelae of external causes of morbidity and mortality (Y85-Y89)	86	0,0
Infections with a predominantly sexual mode of transmission (A50-A64)	84	0,0
Other diseases of upper respiratory tract (J30-J39)	84	0,0
Diseases of oral cavity, salivary glands and jaws (K00-K14)	82	0,0
Demyelinating diseases of the central nervous system (G35-G37)	81	0,0
Congenital malformations of the respiratory system (Q30-Q34)	79	0,0
Urticaria and erythema (L50-L54)	76	0,0
Dorsopathies (M40-M54)	76	0,0
Inflammatory diseases of female pelvic organs (N70-N77)	73	0,0
Diseases of myoneural junction and muscle (G70-G73)	72	0,0
Other diseases of blood and blood-forming organs (D70-D77)	71	0,0
Helminthiases (B65-B83)	64	0,0
Haemolytic anaemias (D55-D59)	60	0,0
Other nutritional deficiencies (E50-E64)	59	0,0
Diseases of middle ear and mastoid (H65-H75)	55	0,0
Maternal care related to the fetus and amniotic cavity and possible delivery problems (O30-O48)	55	0,0
Other maternal disorders predominantly related to pregnancy (O20-O29)	50	0,0

Appendix K: All underlying causes of death, 2015 (concluded)

Causes of death (based on the 10th revision, International Classification of Diseases, 1992)	Number	Percentage
All causes	460 236	100,0
Mood [affective] disorders (F30-F39)	43	0,0
Dermatitis and eczema (L20-L30)	39	0,0
Other infectious diseases (B99)	38	0,0
Birth trauma (P10-P15)	24	0,0
Neurotic, stress-related and somatoform disorders (F40-F48)	21	0,0
Cleft lip and cleft palate (Q35-Q37)	19	0,0
Arthropod-borne viral fevers and viral haemorrhagic fevers (A90-A99)	18	0,0
Mental retardation (F70-F79)	18	0,0
Urolithiasis (N20-N23)	18	0,0
Acute rheumatic fever (I00-I02)	17	0,0
Bullous disorders (L10-L14)	17	0,0
Disorders of breast (N60-N64)	16	0,0
Malignant neoplasms of independent (primary) multiple sites (C97)	15	0,0
Behavioural syndromes associated with physiological disturbances and physical factors (F50-F59)	12	0,0
Unspecified mental disorder (F99)	11	0,0
Papulosquamous disorders (L40-L45)	11	0,0
Transitory endocrine and metabolic disorders specific to fetus and newborn (P70-P74)	10	0,0
Other spirochaetal diseases (A65-A69)	8	0,0
Rickettsioses (A75-A79)	8	0,0
In situ neoplasms (D00-D09)	8	0,0
Nerve, nerve root and plexus disorders (G50-G59)	7	0,0
Visual disturbances and blindness (H53-H54)	7	0,0
Certain zoonotic bacterial diseases (A20-A28)	5	0,0
Disorders of psychological development (F80-F89)	5	0,0
Disorders of skin appendages (L60-L75)	5	0,0
Pediculosis, acariasis and other infestations (B85-B89)	4	0,0
Disorders of eyelid, lacrimal system and orbit (H00-H06)	4	0,0
Disorders of sclera, cornea, iris and ciliary body (H15-H22)	4	0,0
Congenital malformations of eye, ear, face and neck (Q10-Q18)	4	0,0
Congenital malformations of genital organs (Q50-Q56)	4	0,0
Disorders of conjunctiva (H10-H13)	3	0,0
Other diseases caused by chlamydiae (A70-A74)	2	0,0
Behavioural and emotional disorders with onset usually occurring in childhood and adolescence (F90-F98)	2	0,0
Glaucoma (H40-H42)	2	0,0
Disorders of vitreous body and globe (H43-H45)	2	0,0
Other disorders of ear (H90-H95)	2	0,0
Legal intervention and operations of war (Y35-Y36)	2	0,0
Disorders of ocular muscles, binocular movement, accommodation and refraction (H49-H52)	1	0,0
Other disorders of eye and adnexa (H55-H59)	1	0,0
Diseases of external ear (H60-H62)	1	0,0
Radiation-related disorders of the skin and subcutaneous tissue (L55-L59)	1	0,0
Other disorders of the musculoskeletal system and connective tissue (M95-M99)	1	0,0

Appendix L: Detailed description of the broad-based groups of natural causes of death which were among the ten leading causes, 2015

Causes of death (based on ICD-10 Version: 2010)		Number	Percentage
	Tuberculosis (A15-A19)		
A16	Respiratory tuberculosis, not confirmed bacteriologically or histologically (A16)	25 379	76,8
A17	Tuberculosis of nervous system (A17)	1 884	5,7
A18	Tuberculosis of other organs (A18)	1 124	3,4
A19	Miliary tuberculosis (A19)	3 399	10,3
	Drug-resistant tuberculosis		
U51	Multi-drug resistant tuberculosis (U51)	1 115	3,4
U52	Extensively drug-resistant tuberculosis (U52)	162	0,5
	Total	33 063	100,0
	Human immunodeficiency virus [HIV] disease (B20-B24)		
B20	Human immunodeficiency virus [HIV] disease resulting in infectious and parasitic diseases (B20)	14 857	67,8
B21	Human immunodeficiency virus [HIV] disease resulting in malignant neoplasms (B21)	890	4,1
B22	Human immunodeficiency virus [HIV] disease resulting in other specified diseases (B22)	1 010	4,6
B23	Human immunodeficiency virus [HIV] disease resulting in other conditions (B23)	3 023	13,8
B24	Unspecified human immunodeficiency virus [HIV] disease (B24)	2 146	9,8
	Total	21 926	100,0
	Other viral diseases (B25-B34)		
B25	Cytomegaloviral disease (B25)	38	0,2
B26	Mumps (B26)	2	0,0
B27	Infectious mononucleosis (B27)	4	0,0
B30	Viral conjunctivitis (B30)	2	0,0
B33	Other viral diseases, not elsewhere classified (B33)	15 932	99,0
B34	Viral infection of unspecified site (B34)	119	0,7
	Total	16 097	100,0
	Diabetes Mellitus (E10-E14)		
E10	Insulin-dependent diabetes mellitus (E10)	243	1,0
E11	Non-insulin-dependent diabetes mellitus (E11)	1 811	7,2
E12	Malnutrition-related diabetes mellitus (E12)	8	0,0
E13	Other specified diabetes mellitus (E13)	1	0,0
E14	Unspecified diabetes mellitus (E14)	23 007	91,8
	Total	25 070	100,0

Appendix L: Detailed description of the broad-based groups of natural causes of death which were among the ten leading causes, 2015 (continued)

Causes of death (based on ICD-10: Version 2010)		Number	Percentage
Hypertensive disease (I10-I15)			
I10	Essential (primary) hypertension (I10)	10 005	51,5
I11	Hypertensive heart disease (I11)	7 078	36,4
I12	Hypertensive renal disease (I12)	1 847	9,5
I13	Hypertensive heart and renal disease (I13)	513	2,6
	Total	19 443	100,0
Ischaemic heart diseases (I20-I25)			
I20	Angina pectoris (I20)	104	0,8
I21	Acute myocardial infarction (I21)	9 265	75,7
I25	Chronic ischaemic heart disease (I25)	2 870	23,4
	Total	12 239	100
Other forms of heart disease (I30-I52)			
I30	Acute pericarditis (I30)	9	0,0
I31	Other diseases of pericardium (I31)	88	0,4
I33	Acute and subacute endocarditis (I33)	90	0,4
I34	Nonrheumatic mitral valve disorders (I34)	99	0,4
I35	Nonrheumatic aortic valve disorders (I35)	277	1,2
I36	Nonrheumatic tricuspid valve disorders (I36)	5	0,0
I37	Pulmonary valve disorders (I37)	2	0,0
I38	Endocarditis, valve unspecified (I38)	195	0,9
I40	Acute myocarditis (I40)	19	0,1
I42	Cardiomyopathy (I42)	2 790	12,6
I44	Atrioventricular and left bundle-branch block (I44)	21	0,1
I45	Other conduction disorders (I45)	58	0,3
I46	Cardiac arrest (I46)	4 842	21,8
I47	Paroxysmal tachycardia (I47)	28	0,1
I48	Atrial fibrillation and flutter (I48)	510	2,3
I49	Other cardiac arrhythmias (I49)	254	1,1
I50	Heart failure (I50)	11 882	53,5
I51	Complications and ill-defined descriptions of heart disease (I51)	1 046	4,7
	Total	22 215	100,0
Cerebrovascular disease (I60-I69)			
I60	Subarachnoid haemorrhage (I60)	458	2,0
I61	Intracerebral haemorrhage (I61)	1 656	7,2
I62	Other nontraumatic intracranial haemorrhage (I62)	823	3,6
I63	Cerebral infarction (I63)	454	2,0
I64	Stroke, not specified as haemorrhage or infarction (I64)	18 468	80,7
I67	Other cerebrovascular diseases (I67)	578	2,5
I69	Sequelae of cerebrovascular disease (I69)	442	1,9
	Total	22 879	100,0
Influenza and pneumonia (J09-J18)			
J09	Influenza due to certain identified influenza virus (J09)	10	0,0
J10	Influenza due to other identified influenza virus (J10)	12	0,1
J11	Influenza, virus not identified (J11)	430	2,1
J12	Viral pneumonia, not elsewhere classified (J12)	36	0,2
J13	Pneumonia due to Streptococcus pneumoniae (J13)	3	0,0
J14	Pneumonia due to Haemophilus influenzae (J14)	1	0,0
J15	Bacterial pneumonia, not elsewhere classified (J15)	105	0,5
J16	Pneumonia due to other infectious organisms, not elsewhere classified (J16)	1	0,0
J18	Pneumonia, organism unspecified (J18)	19 972	97,1
	Total	20 570	100,0

Appendix L: Detailed description of the broad-based groups of natural causes of death which were among the ten leading causes, 2015 (concluded)

Causes of death (based on ICD-10: Version 2010)		Number	Percentage
	Chronic lower respiratory diseases (J40-J47)		
J40	Bronchitis, not specified as acute or chronic (J40)	299	2,4
J42	Unspecified chronic bronchitis (J42)	251	2,0
J43	Emphysema (J43)	775	6,1
J44	Other chronic obstructive pulmonary disease (J44)	7 455	58,9
J45	Asthma (J45)	2 979	23,5
J46	Status asthmaticus (J46)	740	5,8
J47	Bronchiectasis (J47)	168	1,3
	Total	12 667	100,0

Appendix M: The ten leading underlying natural causes of death by age and sex: South Africa, 2015

South Africa, both sexes, all ages			South Africa, males, all ages			South Africa, females, all ages					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	33 063	7,2	1	Tuberculosis (A15-A19)	20 111	8,3	1	Diabetes mellitus (E10-E14)	15 396	7,1
2	Diabetes mellitus (E10-E14)	25 070	5,4	2	Human immunodeficiency virus [HIV] disease (B20-B24)	11 275	4,7	2	Cerebrovascular diseases (I60-I69)	13 146	6,1
3	Cerebrovascular diseases (I60-I69)	22 879	5,0	3	influenza and pneumonia (J09-J18)	10 507	4,4	3	Tuberculosis (A15-A19)	12 811	5,9
4	Other forms of heart disease (I30-I52)	22 215	4,8	4	Other forms of heart disease (I30-I52)	10 265	4,3	4	Hypertensive diseases (I10-I15)	12 078	5,6
5	Human immunodeficiency virus [HIV] disease (B20-B24)	21 926	4,8	5	Cerebrovascular diseases (I60-I69)	9 696	4,0	5	Other forms of heart disease (I30-I52)	11 894	5,5
6	Influenza and pneumonia (J09-J18)	20 570	4,5	6	Diabetes mellitus (E10-E14)	9 657	4,0	6	Human immunodeficiency virus [HIV] disease (B20-B24)	10 545	4,9
7	Hypertensive diseases (I10-I15)	19 443	4,2	7	Other viral diseases (B25-B34)	7 698	3,2	7	Influenza and pneumonia (J09-J18)	9 970	4,6
8	Other viral diseases (B25-B34)	16 097	3,5	8	Chronic lower respiratory diseases (J40-J47)	7 691	3,2	8	Other viral diseases (B25-B34)	8 356	3,8
9	Chronic lower respiratory diseases (J40-J47)	12 667	2,8	9	Hypertensive diseases (I10-I15)	7 342	3,0	9	Intestinal infectious diseases (A00-A09)	5 292	2,4
10	Ischaemic heart diseases (I20-I25)	12 239	2,7	10	Ischaemic heart diseases (I20-I25)	6 944	2,9	10	Ischaemic heart diseases (I20-I25)	5 280	2,4
	Other natural causes	202 840	44,1		Other natural causes	100 668	41,7		Other natural causes	100 804	46,4
	Non-natural causes	51 227	11,1		Non-natural causes	39 302	16,3		Non-natural causes	11 515	5,3
	All causes	460 236	100,0		All causes	241 156	100,0		All causes	217 087	100,0
South Africa, both sexes, 0			South Africa, males, 0			South Africa, females, 0					
	No.	%		No.	%		No.	%			
1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	3 786	15,6	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	2 003	15,9	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	1 655	15,0
2	Intestinal infectious diseases (A00-A09)	2 290	9,5	2	Intestinal infectious diseases (A00-A09)	1 180	9,4	2	Intestinal infectious diseases (A00-A09)	1 088	9,9
3	Influenza and pneumonia (J09-J18)	2 024	8,4	3	Influenza and pneumonia (J09-J18)	1 027	8,1	3	Influenza and pneumonia (J09-J18)	979	8,9
4	Disorders related to length of gestation and fetal growth (P05-P08)	1 339	5,5	4	Disorders related to length of gestation and fetal growth (P05-P08)	709	5,6	4	Disorders related to length of gestation and fetal growth (P05-P08)	589	5,3
5	Other disorders originating in the perinatal period (P90-P96)	1 303	5,4	5	Other disorders originating in the perinatal period (P90-P96)	706	5,6	5	Other disorders originating in the perinatal period (P90-P96)	541	4,9
6	Infections specific to the perinatal period (P35-P39)	1 169	4,8	6	Infections specific to the perinatal period (P35-P39)	622	4,9	6	Infections specific to the perinatal period (P35-P39)	514	4,7
7	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	901	3,7	7	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	502	4,0	7	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	376	3,4
8	Malnutrition (E40-E46)	832	3,4	8	Malnutrition (E40-E46)	446	3,5	8	Malnutrition (E40-E46)	375	3,4
9	Congenital malformations of the circulatory system (Q20-Q28)	517	2,1	9	Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	298	2,4	9	Congenital malformations of the circulatory system (Q20-Q28)	242	2,2
10	Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	486	2,0	10	Congenital malformations of the circulatory system (Q20-Q28)	266	2,1	10	Other acute lower respiratory infections (J20-J22)	221	2,0
	Other natural causes	8 618	35,6		Other natural causes	4 339	34,4		Other natural causes	4 052	36,7
	Non-natural causes	951	3,9		Non-natural causes	510	4,0		Non-natural causes	412	3,7
	All causes	24 216	100,0		All causes	12 608	100,0		All causes	11 044	100,0
South Africa, both sexes, 1-14			South Africa, males, 1-14			South Africa, females, 1-14					
	No.	%		No.	%		No.	%			
1	Intestinal infectious diseases (A00-A09)	1 246	8,9	1	Intestinal infectious diseases (A00-A09)	635	8,3	1	Intestinal infectious diseases (A00-A09)	606	9,7
2	Influenza and pneumonia (J09-J18)	946	6,8	2	Influenza and pneumonia (J09-J18)	469	6,2	2	Influenza and pneumonia (J09-J18)	470	7,5
3	Malnutrition (E40-E46)	701	5,0	3	Malnutrition (E40-E46)	372	4,9	3	Malnutrition (E40-E46)	324	5,2
4	Tuberculosis (A15-A19)	499	3,6	4	Tuberculosis (A15-A19)	263	3,5	4	Tuberculosis (A15-A19)	236	3,8
5	Other viral diseases (B25-B34)	412	3,0	5	Other viral diseases (B25-B34)	217	2,9	5	Other viral diseases (B25-B34)	193	3,1
6	Human immunodeficiency virus [HIV] disease (B20-B24)	335	2,4	6	Cerebral palsy and other paralytic syndromes (G80-G83)	186	2,4	6	Human immunodeficiency virus [HIV] disease (B20-B24)	150	2,4
7	Other forms of heart disease (I30-I52)	318	2,3	7	Human immunodeficiency virus [HIV] disease (B20-B24)	185	2,4	7	Other forms of heart disease (I30-I52)	150	2,4
8	Cerebral palsy and other paralytic syndromes (G80-G83)	317	2,3	8	Other forms of heart disease (I30-I52)	167	2,2	8	Cerebral palsy and other paralytic syndromes (G80-G83)	130	2,1
9	Inflammatory diseases of the central nervous system (G00-G09)	237	1,7	9	Inflammatory diseases of the central nervous system (G00-G09)	134	1,8	9	Inflammatory diseases of the central nervous system (G00-G09)	102	1,6
10	Episodic and paroxysmal disorders (G40-G47)	227	1,6	10	Episodic and paroxysmal disorders (G40-G47)	132	1,7	10	Certain disorders involving the immune mechanism (D80-D89)	99	1,6
	Other natural causes	5 068	36,4		Other natural causes	2 624	34,5		Other natural causes	2 410	38,4
	Non-natural causes	3 632	26,1		Non-natural causes	2 224	29,2		Non-natural causes	1 398	22,3
	Total	13 938	100,0		All causes	7 608	100,0		All causes	6 268	100,0

Appendix M: The ten leading underlying natural causes of death by age and sex: South Africa, 2015 (concluded)

All provinces, both sexes, 15-44			All provinces, males, 15-44			All provinces, females, 15-44					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	16 258	12,4	1	Tuberculosis (A15-A19)	9 006	11,9	1	Tuberculosis (A15-A19)	7 169	13,0
2	Human immunodeficiency virus [HIV] disease (B20-B24)	13 842	10,5	2	Human immunodeficiency virus [HIV] disease (B20-B24)	6 688	8,8	2	Human immunodeficiency virus [HIV] disease (B20-B24)	7 089	12,9
3	Other viral diseases (B25-B34)	9 699	7,4	3	Other viral diseases (B25-B34)	4 300	5,7	3	Other viral diseases (B25-B34)	5 369	9,8
4	Certain disorders involving the immune mechanism (D80-D89)	6 162	4,7	4	Certain disorders involving the immune mechanism (D80-D89)	2 750	3,6	4	Certain disorders involving the immune mechanism (D80-D89)	3 388	6,2
5	Influenza and pneumonia (J09-J18)	5 463	4,2	5	Influenza and pneumonia (J09-J18)	2 694	3,5	5	Influenza and pneumonia (J09-J18)	2 739	5,0
6	Other forms of heart disease (I30-I52)	3 142	2,4	6	Other forms of heart disease (I30-I52)	1 614	2,1	6	Other forms of heart disease (I30-I52)	1 503	2,7
7	Intestinal infectious diseases (A00-A09)	2 037	1,5	7	Intestinal infectious diseases (A00-A09)	968	1,3	7	Malignant neoplasms of female genital organs (C51-C58)	1 163	2,1
8	Inflammatory diseases of the central nervous system (G00-G09)	1 779	1,4	8	Episodic and paroxysmal disorders (G40-G47)	950	1,3	8	Intestinal infectious diseases (A00-A09)	1 058	1,9
9	Cerebrovascular diseases (I60-I69)	1 751	1,3	9	Inflammatory diseases of the central nervous system (G00-G09)	923	1,2	9	Inflammatory diseases of the central nervous system (G00-G09)	850	1,5
10	Renal failure (N17-N19)	1 430	1,1	10	Cerebrovascular diseases (I60-I69)	897	1,2	10	Cerebrovascular diseases (I60-I69)	845	1,5
	Other natural causes	37 943	28,8		Other natural causes	18 458	24,3		Other natural causes	18 607	33,8
	Non-natural causes	32 087	24,4		Non-natural causes	26 659	35,1		Non-natural causes	5 241	9,5
	All causes	131 593	100,0		All causes	75 907	100,0		All causes	55 021	100,0
All provinces, both sexes, 45-64			All provinces, males, 45-64			All provinces, females, 45-64					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	11 689	8,9	1	Tuberculosis (A15-A19)	7 992	10,5	1	Diabetes mellitus (E10-E14)	5 154	9,5
2	Diabetes mellitus (E10-E14)	9 176	7,0	2	Diabetes mellitus (E10-E14)	4 018	5,3	2	Tuberculosis (A15-A19)	3 670	6,8
3	Cerebrovascular diseases (I60-I69)	6 722	5,1	3	Human immunodeficiency virus [HIV] disease (B20-B24)	3 842	5,0	3	Cerebrovascular diseases (I60-I69)	3 143	5,8
4	Human immunodeficiency virus [HIV] disease (B20-B24)	6 657	5,1	4	Cerebrovascular diseases (I60-I69)	3 568	4,7	4	Human immunodeficiency virus [HIV] disease (B20-B24)	2 793	5,1
5	Other forms of heart disease (I30-I52)	6 128	4,7	5	Other forms of heart disease (I30-I52)	3 456	4,5	5	Hypertensive diseases (I10-I15)	2 783	5,1
6	Hypertensive diseases (I10-I15)	5 350	4,1	6	Influenza and pneumonia (J09-J18)	3 224	4,2	6	Other forms of heart disease (I30-I52)	2 664	4,9
7	Influenza and pneumonia (J09-J18)	5 232	4,0	7	Chronic lower respiratory diseases (J40-J47)	3 030	4,0	7	Malignant neoplasms of female genital organs (C51-C58)	2 252	4,1
8	Other viral diseases (B25-B34)	4 916	3,8	8	Other viral diseases (B25-B34)	2 664	3,5	8	Other viral diseases (B25-B34)	2 248	4,1
9	Chronic lower respiratory diseases (J40-J47)	4 551	3,5	9	Ischaemic heart diseases (I20-I25)	2 645	3,5	9	Influenza and pneumonia (J09-J18)	1 990	3,7
10	Malignant neoplasms of digestive organs (C15-C26)	4 341	3,3	10	Malignant neoplasms of digestive organs (C15-C26)	2 642	3,5	10	Malignant neoplasms of digestive organs (C15-C26)	1 694	3,1
	Other natural causes	56 809	43,4		Other natural causes	32 234	42,2		Other natural causes	23 635	43,5
	Non-natural causes	9 426	7,2		Non-natural causes	7 146	9,3		Non-natural causes	2 254	4,2
	All causes	130 997	100,0		All causes	76 461	100,0		All causes	54 280	100,0
All provinces, both sexes, 65+			All provinces, males, 65+			All provinces, females, 65+					
	No.	%		No.	%		No.	%			
1	Diabetes mellitus (E10-E14)	14 428	9,1	1	Cerebrovascular diseases (I60-I69)	5 164	7,6	1	Diabetes mellitus (E10-E14)	9 439	10,5
2	Cerebrovascular diseases (I60-I69)	14 293	9,0	2	Diabetes mellitus (E10-E14)	4 984	7,3	2	Cerebrovascular diseases (I60-I69)	9 116	10,1
3	Hypertensive diseases (I10-I15)	13 036	8,2	3	Other forms of heart disease (I30-I52)	4 876	7,2	3	Hypertensive diseases (I10-I15)	8 725	9,7
4	Other forms of heart disease (I30-I52)	12 334	7,8	4	Hypertensive diseases (I10-I15)	4 305	6,3	4	Other forms of heart disease (I30-I52)	7 454	8,3
5	Ischaemic heart diseases (I20-I25)	7 408	4,7	5	Chronic lower respiratory diseases (J40-J47)	4 037	5,9	5	Influenza and pneumonia (J09-J18)	3 787	4,2
6	Chronic lower respiratory diseases (J40-J47)	6 991	4,4	6	Ischaemic heart diseases (I20-I25)	3 694	5,4	6	Ischaemic heart diseases (I20-I25)	3 713	4,1
7	Influenza and pneumonia (J09-J18)	6 870	4,3	7	Influenza and pneumonia (J09-J18)	3 079	4,5	7	Chronic lower respiratory diseases (J40-J47)	2 948	3,3
8	Malignant neoplasms of digestive organs (C15-C26)	5 151	3,3	8	Tuberculosis (A15-A19)	2 697	4,0	8	Malignant neoplasms of digestive organs (C15-C26)	2 476	2,7
9	Tuberculosis (A15-A19)	4 340	2,7	9	Malignant neoplasms of digestive organs (C15-C26)	2 671	3,9	9	Renal failure (N17-N19)	1 724	1,9
10	Renal failure (N17-N19)	3 159	2,0	10	Malignant neoplasms of male genital organs (C60-C63)	2 501	3,7	10	Malignant neoplasms of female genital organs (C51-C58)	1 716	1,9
	Other natural causes	65 559	41,4		Other natural causes	27 383	40,3		Other natural causes	36 987	41,0
	Non-natural causes	4 701	3,0		Non-natural causes	2 516	3,7		Non-natural causes	2 181	2,4
	All causes	158 270	100,0		All causes	67 907	100,0		All causes	90 266	100,0

Appendix M1: The ten leading underlying natural causes of death by age and sex: Western Cape, 2015

Western Cape, both sexes, all ages			Western Cape, males, all ages			Western Cape, females, all ages					
	No.	%		No.	%		No.	%			
1	Diabetes mellitus (E10-E14)	3 584	7,2	1	Tuberculosis (A15-A19)	1 711	6,3	1	Diabetes mellitus (E10-E14)	2 130	9,5
2	Human immunodeficiency virus [HIV] disease (B20-B24)	3 061	6,1	2	Ischaemic heart diseases (I20-I25)	1 626	5,9	2	Cerebrovascular diseases (I60-I69)	1 597	7,1
3	Ischaemic heart diseases (I20-I25)	2 887	5,8	3	Human immunodeficiency virus [HIV] disease (B20-B24)	1 514	5,5	3	Human immunodeficiency virus [HIV] disease (B20-B24)	1 526	6,8
4	Cerebrovascular diseases (I60-I69)	2 812	5,6	4	Chronic lower respiratory diseases (J40-J47)	1 481	5,4	4	Ischaemic heart diseases (I20-I25)	1 258	5,6
5	Tuberculosis (A15-A19)	2 664	5,3	5	Diabetes mellitus (E10-E14)	1 452	5,3	5	Hypertensive diseases (I10-I15)	1 178	5,3
6	Chronic lower respiratory diseases (J40-J47)	2 527	5,1	6	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	1 432	5,2	6	Chronic lower respiratory diseases (J40-J47)	1 042	4,6
7	Malignant neoplasms of digestive organs (C15-C26)	2 234	4,5	7	Malignant neoplasms of digestive organs (C15-C26)	1 230	4,5	7	Malignant neoplasms of digestive organs (C15-C26)	1 001	4,5
8	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	2 227	4,5	8	Cerebrovascular diseases (I60-I69)	1 209	4,4	8	Tuberculosis (A15-A19)	945	4,2
9	Hypertensive diseases (I10-I15)	1 996	4,0	9	Hypertensive diseases (I10-I15)	816	3,0	9	Other forms of heart disease (I30-I52)	856	3,8
10	Other forms of heart disease (I30-I52)	1 579	3,2	10	Other forms of heart disease (I30-I52)	722	2,6	10	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	795	3,5
	Other natural causes	17 784	35,6		Other natural causes	8 854	32,3		Other natural causes	8 858	39,5
	Non-natural causes	6 577	13,2		Non-natural causes	5 324	19,5		Non-natural causes	1 227	5,5
	All causes	49 932	100,0		All causes	27 371	100,0		All causes	22 413	100,0
All Western Cape, both sexes, 0			All Western Cape, males, 0			All Western Cape, females, 0					
	No.	%		No.	%		No.	%			
1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	217	11,4	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	123	12,5	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	89	10,0
2	Disorders related to length of gestation and fetal growth (P05-P08)	163	8,5	2	Disorders related to length of gestation and fetal growth (P05-P08)	85	8,6	2	Disorders related to length of gestation and fetal growth (P05-P08)	71	8,0
3	Other disorders originating in the perinatal period (P90-P96)	134	7,0	3	Other disorders originating in the perinatal period (P90-P96)	76	7,7	3	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	61	6,9
4	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	121	6,3	4	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	60	6,1	4	Influenza and pneumonia (J09-J18)	53	6,0
5	Influenza and pneumonia (J09-J18)	110	5,8	5	Influenza and pneumonia (J09-J18)	56	5,7	5	Other disorders originating in the perinatal period (P90-P96)	51	5,7
6	Infections specific to the perinatal period (P35-P39)	104	5,4	6	Infections specific to the perinatal period (P35-P39)	53	5,4	6	Infections specific to the perinatal period (P35-P39)	49	5,5
7	Intestinal infectious diseases (A00-A09)	86	4,5	7	Intestinal infectious diseases (A00-A09)	46	4,7	7	Intestinal infectious diseases (A00-A09)	39	4,4
8	Congenital malformations of the circulatory system (Q20-Q28)	67	3,5	8	Congenital malformations of the circulatory system (Q20-Q28)	33	3,4	8	Congenital malformations of the circulatory system (Q20-Q28)	34	3,8
9	Other diseases of the respiratory system (J95-J99)	59	3,1	9	Other diseases of the respiratory system (J95-J99)	32	3,3	9	Other diseases of the respiratory system (J95-J99)	27	3,0
10	Digestive system disorders of fetus and newborn (P75-P78)	44	2,3	10	Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	24	2,4	10	Digestive system disorders of fetus and newborn (P75-P78)	27	3,0
	Other natural causes	752	39,4		Other natural causes	369	37,5		Other natural causes	363	40,9
	Non-natural causes	52	2,7		Non-natural causes	27	2,7		Non-natural causes	23	2,6
	All causes	1 909	100,0		All causes	984	100,0		All causes	887	100,0
All Western Cape, both sexes, 1-14			All Western Cape, males, 1-14			All Western Cape, females, 1-14					
	No.	%		No.	%		No.	%			
1	Cerebral palsy and other paralytic syndromes (G80-G83)	34	4,3	1	Cerebral palsy and other paralytic syndromes (G80-G83)	22	4,9	1	Influenza and pneumonia (J09-J18)	20	6,0
2	Influenza and pneumonia (J09-J18)	33	4,2	2	Malignant neoplasms, stated or presumed to be primary, of lymphoid, haematopoietic and related tissue (C81-C96)	15	3,4	2	Other forms of heart disease (I30-I52)	14	4,2
3	Intestinal infectious diseases (A00-A09)	24	3,1	3	Intestinal infectious diseases (A00-A09)	13	2,9	3	Cerebral palsy and other paralytic syndromes (G80-G83)	12	3,6
4	Other forms of heart disease (I30-I52)	21	2,7	4	Influenza and pneumonia (J09-J18)	12	2,7	4	Intestinal infectious diseases (A00-A09)	10	3,0
5	Malignant neoplasms, stated or presumed to be primary, of lymphoid, haematopoietic and related tissue (C81-C96)	19	2,4	5	Human immunodeficiency virus [HIV] disease (B20-B24)	10	2,2	5	Malnutrition (E40-E46)	7	2,1
6	Human immunodeficiency virus [HIV] disease (B20-B24)	16	2,0	6	Other viral diseases (B25-B34)	10	2,2	6	Episodic and paroxysmal disorders (G40-G47)	7	2,1
7	Malnutrition (E40-E46)	14	1,8	7	Tuberculosis (A15-A19)	9	2,0	7	Human immunodeficiency virus [HIV] disease (B20-B24)	6	1,8
8	Congenital malformations of the circulatory system (Q20-Q28)	14	1,8	8	Other diseases of the respiratory system (J95-J99)	9	2,0	8	Other acute lower respiratory infections (J20-J22)	5	1,5
9	Tuberculosis (A15-A19)	13	1,7	9	Congenital malformations of the circulatory system (Q20-Q28)	9	2,0	9	Chronic lower respiratory diseases (J40-J47)	5	1,5
10	Other viral diseases (B25-B34)	13	1,7	10	Inflammatory diseases of the central nervous system (G00-G09)	7	1,6	10	Congenital malformations of the circulatory system (Q20-Q28)	5	1,5
	Other natural causes	278	35,5		Other natural causes	138	31,0		Other natural causes	131	39,3
	Non-natural causes	304	38,8		Non-natural causes	191	42,9		Non-natural causes	111	33,3
	All causes	783	100,0		All causes	445	100,0		All causes	333	100,0

Appendix M1: The ten leading underlying natural causes of death by age and sex: Western Cape, 2015 (concluded)

All Western Cape, both sexes, 15-44			All Western Cape, males, 15-44			All Western Cape, females, 15-44					
	No.	%		No.	%		No.	%			
1	Human immunodeficiency virus [HIV] disease (B20-B24)	2 058	17,1	1	Human immunodeficiency virus [HIV] disease (B20-B24)	960	12,2	1	Human immunodeficiency virus [HIV] disease (B20-B24)	1 083	26,3
2	Tuberculosis (A15-A19)	1 204	10,0	2	Tuberculosis (A15-A19)	730	9,3	2	Tuberculosis (A15-A19)	471	11,5
3	Other viral diseases (B25-B34)	310	2,6	3	Other viral diseases (B25-B34)	141	1,8	3	Other viral diseases (B25-B34)	169	4,1
4	Certain disorders involving the immune mechanism (D80-D89)	188	1,6	4	Ischaemic heart diseases (I20-I25)	129	1,6	4	Certain disorders involving the immune mechanism (D80-D89)	107	2,6
5	Other forms of heart disease (I30-I52)	188	1,6	5	Other forms of heart disease (I30-I52)	106	1,4	5	Cerebrovascular diseases (I60-I69)	95	2,3
6	Cerebrovascular diseases (I60-I69)	178	1,5	6	Influenza and pneumonia (J09-J18)	91	1,2	6	Malignant neoplasms of breast (C50)	90	2,2
7	Ischaemic heart diseases (I20-I25)	167	1,4	7	Cerebrovascular diseases (I60-I69)	82	1,0	7	Diabetes mellitus (E10-E14)	86	2,1
8	Diabetes mellitus (E10-E14)	157	1,3	8	Certain disorders involving the immune mechanism (D80-D89)	80	1,0	8	Other forms of heart disease (I30-I52)	82	2,0
9	Influenza and pneumonia (J09-J18)	153	1,3	9	Malignant neoplasms of digestive organs (C15-C26)	73	0,9	9	Malignant neoplasms of female genital organs (C51-C58)	74	1,8
10	Malignant neoplasms of digestive organs (C15-C26)	138	1,1	10	Chronic lower respiratory diseases (J40-J47)	72	0,9	10	Malignant neoplasms of digestive organs (C15-C26)	65	1,6
	Other natural causes	2 768	23,1		Other natural causes	1 457	18,6		Other natural causes	1 225	29,8
	Non-natural causes	4 499	37,5		Non-natural causes	3 917	50,0		Non-natural causes	565	13,7
	All causes	12 008	100,0		All causes	7 838	100,0		All causes	4 112	100,0
All Western Cape, both sexes, 45-64			All Western Cape, males, 45-64			All Western Cape, females, 45-64					
	No.	%		No.	%		No.	%			
1	Diabetes mellitus (E10-E14)	1 343	8,9	1	Tuberculosis (A15-A19)	747	8,4	1	Diabetes mellitus (E10-E14)	726	11,8
2	Tuberculosis (A15-A19)	1 095	7,2	2	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	744	8,3	2	Cerebrovascular diseases (I60-I69)	415	6,7
3	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	1 061	7,0	3	Chronic lower respiratory diseases (J40-J47)	665	7,5	3	Chronic lower respiratory diseases (J40-J47)	389	6,3
4	Chronic lower respiratory diseases (J40-J47)	1 058	7,0	4	Diabetes mellitus (E10-E14)	617	6,9	4	Human immunodeficiency virus [HIV] disease (B20-B24)	375	6,1
5	Malignant neoplasms of digestive organs (C15-C26)	933	6,2	5	Ischaemic heart diseases (I20-I25)	577	6,5	5	Malignant neoplasms of digestive organs (C15-C26)	364	5,9
6	Cerebrovascular diseases (I60-I69)	868	5,7	6	Malignant neoplasms of digestive organs (C15-C26)	568	6,4	6	Tuberculosis (A15-A19)	345	5,6
7	Human immunodeficiency virus [HIV] disease (B20-B24)	865	5,7	7	Human immunodeficiency virus [HIV] disease (B20-B24)	485	5,4	7	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	317	5,1
8	Ischaemic heart diseases (I20-I25)	846	5,6	8	Cerebrovascular diseases (I60-I69)	450	5,0	8	Malignant neoplasms of breast (C50)	317	5,1
9	Hypertensive diseases (I10-I15)	559	3,7	9	Hypertensive diseases (I10-I15)	305	3,4	9	Malignant neoplasms of female genital organs (C51-C58)	271	4,4
10	Other forms of heart disease (I30-I52)	356	2,4	10	Other forms of heart disease (I30-I52)	209	2,3	10	Ischaemic heart diseases (I20-I25)	267	4,3
	Other natural causes	5 074	33,5		Other natural causes	2 734	30,6		Other natural causes	2 140	34,7
	Non-natural causes	1 071	7,1		Non-natural causes	825	9,2		Non-natural causes	246	4,0
	All causes	15 129	100,0		All causes	8 926	100,0		All causes	6 172	100,0
All Western Cape, both sexes, 65+			All Western Cape, males, 65+			All Western Cape, females, 65+					
	No.	%		No.	%		No.	%			
1	Diabetes mellitus (E10-E14)	2 083	10,4	1	Ischaemic heart diseases (I20-I25)	918	10,1	1	Diabetes mellitus (E10-E14)	1 317	12,1
2	Ischaemic heart diseases (I20-I25)	1 870	9,4	2	Diabetes mellitus (E10-E14)	765	8,4	2	Cerebrovascular diseases (I60-I69)	1 084	10,0
3	Cerebrovascular diseases (I60-I69)	1 760	8,8	3	Chronic lower respiratory diseases (J40-J47)	741	8,1	3	Ischaemic heart diseases (I20-I25)	952	8,8
4	Chronic lower respiratory diseases (J40-J47)	1 346	6,7	4	Cerebrovascular diseases (I60-I69)	675	7,4	4	Hypertensive diseases (I10-I15)	878	8,1
5	Hypertensive diseases (I10-I15)	1 334	6,7	5	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	619	6,8	5	Chronic lower respiratory diseases (J40-J47)	605	5,6
6	Malignant neoplasms of digestive organs (C15-C26)	1 160	5,8	6	Malignant neoplasms of digestive organs (C15-C26)	589	6,5	6	Other forms of heart disease (I30-I52)	604	5,6
7	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	1 075	5,4	7	Malignant neoplasms of male genital organs (C60-C63)	489	5,4	7	Malignant neoplasms of digestive organs (C15-C26)	569	5,2
8	Other forms of heart disease (I30-I52)	995	5,0	8	Hypertensive diseases (I10-I15)	456	5,0	8	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	456	4,2
9	Influenza and pneumonia (J09-J18)	616	3,1	9	Other forms of heart disease (I30-I52)	391	4,3	9	Influenza and pneumonia (J09-J18)	340	3,1
10	Malignant neoplasms of male genital organs (C60-C63)	489	2,4	10	Influenza and pneumonia (J09-J18)	276	3,0	10	Malignant neoplasms of breast (C50)	327	3,0
	Other natural causes	6 658	33,3		Other natural causes	2 861	31,4		Other natural causes	3 468	31,9
	Non-natural causes	608	3,0		Non-natural causes	330	3,6		Non-natural causes	277	2,5
	All causes	19 994	100,0		All causes	9 110	100,0		All causes	10 877	100,0

Appendix M2: The ten leading underlying natural causes of death by age and sex: Eastern Cape, 2015

Eastern Cape, both sexes, all ages			Eastern Cape, males, all ages			Eastern Cape, females, all ages					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	5 883	8,6	1	Tuberculosis (A15-A19)	3 544	10,0	1	Tuberculosis (A15-A19)	2 316	7,1
2	Human immunodeficiency virus [HIV] disease (B20-B24)	4 079	6,0	2	Human immunodeficiency virus [HIV] disease (B20-B24)	2 025	5,7	2	Diabetes mellitus (E10-E14)	2 144	6,6
3	Diabetes mellitus (E10-E14)	3 340	4,9	3	Chronic lower respiratory diseases (J40-J47)	1 556	4,4	3	Human immunodeficiency virus [HIV] disease (B20-B24)	2 033	6,2
4	Cerebrovascular diseases (I60-I69)	3 170	4,6	4	Other forms of heart disease (I30-I52)	1 402	3,9	4	Cerebrovascular diseases (I60-I69)	1 841	5,6
5	Other forms of heart disease (I30-I52)	3 080	4,5	5	Cerebrovascular diseases (I60-I69)	1 328	3,7	5	Hypertensive diseases (I10-I15)	1 772	5,4
6	Hypertensive diseases (I10-I15)	2 720	4,0	6	Diabetes mellitus (E10-E14)	1 191	3,3	6	Other forms of heart disease (I30-I52)	1 674	5,1
7	Chronic lower respiratory diseases (J40-J47)	2 640	3,9	7	Influenza and pneumonia (J09-J18)	1 076	3,0	7	Other viral diseases (B25-B34)	1 265	3,9
8	Other viral diseases (B25-B34)	2 257	3,3	8	Other viral diseases (B25-B34)	991	2,8	8	Chronic lower respiratory diseases (J40-J47)	1 073	3,3
9	Influenza and pneumonia (J09-J18)	2 143	3,1	9	Hypertensive diseases (I10-I15)	946	2,7	9	Influenza and pneumonia (J09-J18)	1 061	3,2
10	Malignant neoplasms of digestive organs (C15-C26)	1 683	2,5	10	Malignant neoplasms of digestive organs (C15-C26)	866	2,4	10	Malignant neoplasms of digestive organs (C15-C26)	817	2,5
	Other natural causes	29 528	43,2		Other natural causes	14 634	41,1		Other natural causes	14 809	45,4
	Non-natural causes	7 900	11,5		Non-natural causes	6 028	16,9		Non-natural causes	1 842	5,6
	All causes	68 423	100,0		All causes	35 587	100,0		All causes	32 647	100,0
All Eastern Cape, both sexes, 0			All Eastern Cape, males, 0			All Eastern Cape, females, 0					
	No.	%		No.	%		No.	%			
1	Influenza and pneumonia (J09-J18)	260	11,8	1	Influenza and pneumonia (J09-J18)	136	12,0	1	Influenza and pneumonia (J09-J18)	120	11,8
2	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	218	9,9	2	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	117	10,3	2	Intestinal infectious diseases (A00-A09)	95	9,3
3	Intestinal infectious diseases (A00-A09)	200	9,1	3	Intestinal infectious diseases (A00-A09)	103	9,1	3	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	90	8,8
4	Malnutrition (E40-E46)	99	4,5	4	Malnutrition (E40-E46)	49	4,3	4	Malnutrition (E40-E46)	50	4,9
5	Other disorders originating in the perinatal period (P90-P96)	76	3,5	5	Other disorders originating in the perinatal period (P90-P96)	44	3,9	5	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	35	3,4
6	Disorders related to length of gestation and fetal growth (P05-P08)	75	3,4	6	Disorders related to length of gestation and fetal growth (P05-P08)	38	3,3	6	Disorders related to length of gestation and fetal growth (P05-P08)	33	3,2
7	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	72	3,3	7	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	37	3,3	7	Congenital malformations of the circulatory system (Q20-Q28)	31	3,0
8	Congenital malformations of the circulatory system (Q20-Q28)	51	2,3	8	Other acute lower respiratory infections (J20-J22)	22	1,9	8	Other disorders originating in the perinatal period (P90-P96)	30	2,9
9	Other acute lower respiratory infections (J20-J22)	42	1,9	9	Other viral diseases (B25-B34)	21	1,8	9	Other acute lower respiratory infections (J20-J22)	20	2,0
10	Infections specific to the perinatal period (P35-P39)	37	1,7	10	Other congenital malformations (Q80-Q89)	20	1,8	10	Infections specific to the perinatal period (P35-P39)	19	1,9
	Other natural causes	946	43,0		Other natural causes	482	42,4		Other natural causes	444	43,6
	Non-natural causes	122	5,6		Non-natural causes	68	6,0		Non-natural causes	52	5,1
	All causes	2 198	100,0		All causes	1 137	100,0		All causes	1 019	100,0
All Eastern Cape, both sexes, 1-14			All Eastern Cape, males, 1-14			All Eastern Cape, females, 1-14					
	No.	%		No.	%		No.	%			
1	Intestinal infectious diseases (A00-A09)	127	6,2	1	Intestinal infectious diseases (A00-A09)	67	6,2	1	Intestinal infectious diseases (A00-A09)	60	6,3
2	Influenza and pneumonia (J09-J18)	96	4,7	2	Influenza and pneumonia (J09-J18)	42	3,9	2	Influenza and pneumonia (J09-J18)	53	5,5
3	Tuberculosis (A15-A19)	82	4,0	3	Malnutrition (E40-E46)	40	3,7	3	Tuberculosis (A15-A19)	44	4,6
4	Malnutrition (E40-E46)	78	3,8	4	Tuberculosis (A15-A19)	38	3,5	4	Malnutrition (E40-E46)	37	3,9
5	Human immunodeficiency virus [HIV] disease (B20-B24)	62	3,0	5	Human immunodeficiency virus [HIV] disease (B20-B24)	35	3,2	5	Human immunodeficiency virus [HIV] disease (B20-B24)	27	2,8
6	Other viral diseases (B25-B34)	46	2,2	6	Cerebral palsy and other paralytic syndromes (G80-G83)	25	2,3	6	Other viral diseases (B25-B34)	27	2,8
7	Cerebral palsy and other paralytic syndromes (G80-G83)	44	2,1	7	Episodic and paroxysmal disorders (G40-G47)	20	1,8	7	Cerebral palsy and other paralytic syndromes (G80-G83)	19	2,0
8	Other forms of heart disease (I30-I52)	34	1,7	8	Other viral diseases (B25-B34)	19	1,8	8	Other forms of heart disease (I30-I52)	17	1,8
9	Episodic and paroxysmal disorders (G40-G47)	31	1,5	9	Other forms of heart disease (I30-I52)	17	1,6	9	Inflammatory diseases of the central nervous system (G00-G09)	14	1,5
10	Inflammatory diseases of the central nervous system (G00-G09)	27	1,3	10	Chronic lower respiratory diseases (J40-J47)	14	1,3	10	Chronic lower respiratory diseases (J40-J47)	12	1,3
	Other natural causes	834	40,7		Other natural causes	412	38,0		Other natural causes	417	43,5
	Non-natural causes	589	28,7		Non-natural causes	356	32,8		Non-natural causes	232	24,2
	All causes	2 050	100,0		All causes	1 085	100,0		All causes	959	100,0

Appendix M2: The ten leading underlying natural causes of death by age and sex: Eastern Cape, 2015 (concluded)

All Eastern Cape, both sexes, 15-44			All Eastern Cape, males, 15-44			All Eastern Cape, females, 15-44					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	1 364	12,1	1	Human immunodeficiency virus [HIV] disease (B20-B24)	2 642	13,5	1	Human immunodeficiency virus [HIV] disease (B20-B24)	1 409	17,2
2	Human immunodeficiency virus [HIV] disease (B20-B24)	1 221	10,8	2	Tuberculosis (A15-A19)	2 515	12,8	2	Tuberculosis (A15-A19)	1 138	13,9
3	Other viral diseases (B25-B34)	582	5,1	3	Other viral diseases (B25-B34)	1 446	7,4	3	Other viral diseases (B25-B34)	863	10,5
4	Certain disorders involving the immune mechanism (D80-D89)	366	3,2	4	Certain disorders involving the immune mechanism (D80-D89)	766	3,9	4	Certain disorders involving the immune mechanism (D80-D89)	399	4,9
5	Influenza and pneumonia (J09-J18)	208	1,8	5	Influenza and pneumonia (J09-J18)	422	2,2	5	Influenza and pneumonia (J09-J18)	214	2,6
6	Other forms of heart disease (I30-I52)	200	1,8	6	Other forms of heart disease (I30-I52)	386	2,0	6	Other forms of heart disease (I30-I52)	184	2,2
7	Episodic and paroxysmal disorders (G40-G47)	197	1,7	7	Episodic and paroxysmal disorders (G40-G47)	294	1,5	7	Episodic and paroxysmal disorders (G40-G47)	97	1,2
8	Chronic lower respiratory diseases (J40-J47)	128	1,1	8	Chronic lower respiratory diseases (J40-J47)	219	1,1	8	Cerebrovascular diseases (I60-I69)	96	1,2
9	Cerebrovascular diseases (I60-I69)	116	1,0	9	Cerebrovascular diseases (I60-I69)	212	1,1	9	Malignant neoplasms of female genital organs (C51-C58)	92	1,1
10	Intestinal infectious diseases (A00-A09)	90	0,8	10	Intestinal infectious diseases (A00-A09)	179	0,9	10	Inflammatory diseases of the central nervous system (G00-G09)	89	1,1
	Other natural causes	2 653	23,5		Other natural causes	5 507	28,1		Other natural causes	2 827	34,4
	Non-natural causes	4 177	37,0		Non-natural causes	5 006	25,5		Non-natural causes	806	9,8
	All causes	11 302	100,0		All causes	19 594	100,0		All causes	8 214	100,0
All Eastern Cape, both sexes, 45-64			All Eastern Cape, males, 45-64			All Eastern Cape, females, 45-64					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	1 996	10,3	1	Tuberculosis (A15-A19)	1 408	12,3	1	Diabetes mellitus (E10-E14)	771	9,7
2	Diabetes mellitus (E10-E14)	1 241	6,4	2	Human immunodeficiency virus [HIV] disease (B20-B24)	679	5,9	2	Tuberculosis (A15-A19)	579	7,2
3	Human immunodeficiency virus [HIV] disease (B20-B24)	1 199	6,2	3	Chronic lower respiratory diseases (J40-J47)	623	5,5	3	Human immunodeficiency virus [HIV] disease (B20-B24)	514	6,4
4	Cerebrovascular diseases (I60-I69)	949	4,9	4	Cerebrovascular diseases (I60-I69)	491	4,3	4	Cerebrovascular diseases (I60-I69)	458	5,7
5	Chronic lower respiratory diseases (J40-J47)	898	4,6	5	Other forms of heart disease (I30-I52)	474	4,1	5	Hypertensive diseases (I10-I15)	439	5,5
6	Other forms of heart disease (I30-I52)	864	4,4	6	Diabetes mellitus (E10-E14)	469	4,1	6	Other forms of heart disease (I30-I52)	390	4,9
7	Hypertensive diseases (I10-I15)	755	3,9	7	Malignant neoplasms of digestive organs (C15-C26)	372	3,3	7	Malignant neoplasms of digestive organs (C15-C26)	308	3,9
8	Malignant neoplasms of digestive organs (C15-C26)	680	3,5	8	Other viral diseases (B25-B34)	334	2,9	8	Other viral diseases (B25-B34)	301	3,8
9	Other viral diseases (B25-B34)	635	3,3	9	Influenza and pneumonia (J09-J18)	322	2,8	9	Chronic lower respiratory diseases (J40-J47)	273	3,4
10	Influenza and pneumonia (J09-J18)	505	2,6	10	Hypertensive diseases (I10-I15)	315	2,8	10	Malignant neoplasms of female genital organs (C51-C58)	248	3,1
	Other natural causes	8 305	42,7		Other natural causes	4 907	42,9		Other natural causes	3 321	41,6
	Non-natural causes	1 423	7,3		Non-natural causes	1 034	9,0		Non-natural causes	387	4,8
	All causes	19 450	100,0		All causes	11 428	100,0		All causes	7 989	100,0
All Eastern Cape, both sexes, 65+			All Eastern Cape, males, 65+			All Eastern Cape, females, 65+					
	No.	%		No.	%		No.	%			
1	Cerebrovascular diseases (I60-I69)	1 996	8,0	1	Chronic lower respiratory diseases (J40-J47)	787	7,4	1	Cerebrovascular diseases (I60-I69)	1 281	8,9
2	Diabetes mellitus (E10-E14)	1 916	7,6	2	Cerebrovascular diseases (I60-I69)	714	6,7	2	Diabetes mellitus (E10-E14)	1 279	8,9
3	Hypertensive diseases (I10-I15)	1 825	7,3	3	Tuberculosis (A15-A19)	714	6,7	3	Hypertensive diseases (I10-I15)	1 251	8,7
4	Other forms of heart disease (I30-I52)	1 771	7,1	4	Other forms of heart disease (I30-I52)	699	6,6	4	Other forms of heart disease (I30-I52)	1 071	7,4
5	Chronic lower respiratory diseases (J40-J47)	1 486	5,9	5	Diabetes mellitus (E10-E14)	635	6,0	5	Chronic lower respiratory diseases (J40-J47)	695	4,8
6	Tuberculosis (A15-A19)	1 258	5,0	6	Hypertensive diseases (I10-I15)	573	5,4	6	Tuberculosis (A15-A19)	544	3,8
7	Malignant neoplasms of digestive organs (C15-C26)	886	3,5	7	Malignant neoplasms of digestive organs (C15-C26)	424	4,0	7	Influenza and pneumonia (J09-J18)	492	3,4
8	Influenza and pneumonia (J09-J18)	860	3,4	8	Influenza and pneumonia (J09-J18)	368	3,5	8	Malignant neoplasms of digestive organs (C15-C26)	462	3,2
9	Ischaemic heart diseases (I20-I25)	663	2,6	9	Ischaemic heart diseases (I20-I25)	314	3,0	9	Ischaemic heart diseases (I20-I25)	349	2,4
10	Other diseases of the respiratory system (J95-J99)	364	1,5	10	Malignant neoplasms of male genital organs (C60-C63)	292	2,8	10	Intestinal infectious diseases (A00-A09)	204	1,4
	Other natural causes	11 290	45,1		Other natural causes	4 693	44,3		Other natural causes	6 460	44,7
	Non-natural causes	739	2,9		Non-natural causes	376	3,6		Non-natural causes	363	2,5
	All causes	25 054	100,0		All causes	10 589	100,0		All causes	14 451	100,0

Appendix M3: The ten leading underlying natural causes of death by age and sex: Northern Cape, 2015

Northern Cape, both sexes, all ages			Northern Cape, males, all ages			Northern Cape, females, all ages					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	1 065	7,7	1	Tuberculosis (A15-A19)	649	8,8	1	Human immunodeficiency virus [HIV] disease (B20-B24)	480	7,6
2	Human immunodeficiency virus [HIV] disease (B20-B24)	879	6,4	2	Human immunodeficiency virus [HIV] disease (B20-B24)	399	5,4	2	Hypertensive diseases (I10-I15)	426	6,7
3	Diabetes mellitus (E10-E14)	695	5,1	3	Chronic lower respiratory diseases (J40-J47)	397	5,4	3	Diabetes mellitus (E10-E14)	424	6,7
4	Hypertensive diseases (I10-I15)	690	5,0	4	Influenza and pneumonia (J09-J18)	307	4,2	4	Tuberculosis (A15-A19)	416	6,6
5	Chronic lower respiratory diseases (J40-J47)	653	4,7	5	Cerebrovascular diseases (I60-I69)	289	3,9	5	Cerebrovascular diseases (I60-I69)	352	5,5
6	Cerebrovascular diseases (I60-I69)	642	4,7	6	Diabetes mellitus (E10-E14)	271	3,7	6	Influenza and pneumonia (J09-J18)	258	4,1
7	Influenza and pneumonia (J09-J18)	567	4,1	7	Hypertensive diseases (I10-I15)	264	3,6	7	Chronic lower respiratory diseases (J40-J47)	256	4,0
8	Ischaemic heart diseases (I20-I25)	488	3,5	8	Ischaemic heart diseases (I20-I25)	256	3,5	8	Certain disorders involving the immune mechanism (D80-D89)	249	3,9
9	Certain disorders involving the immune mechanism (D80-D89)	477	3,5	9	Certain disorders involving the immune mechanism (D80-D89)	228	3,1	9	Ischaemic heart diseases (I20-I25)	231	3,6
10	Other forms of heart disease (I30-I52)	403	2,9	10	Malignant neoplasms of digestive organs (C15-C26)	225	3,0	10	Other forms of heart disease (I30-I52)	216	3,4
	Other natural causes	5 712	41,5		Other natural causes	2 964	40,1		Other natural causes	2 695	42,5
	Non-natural causes	1 487	10,8		Non-natural causes	1 139	15,4		Non-natural causes	345	5,4
	All causes	13 758	100,0		All causes	7 388	100,0		All causes	6 348	100,0
All Northern Cape, both sexes, 0			All Northern Cape, males, 0			All Northern Cape, females, 0					
	No.	%		No.	%		No.	%			
1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	107	13,2	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	59	13,5	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	46	12,8
2	Intestinal infectious diseases (A00-A09)	84	10,4	2	Disorders related to length of gestation and fetal growth (P05-P08)	42	9,6	2	Intestinal infectious diseases (A00-A09)	43	11,9
3	Disorders related to length of gestation and fetal growth (P05-P08)	70	8,7	3	Intestinal infectious diseases (A00-A09)	41	9,4	3	Influenza and pneumonia (J09-J18)	30	8,3
4	Influenza and pneumonia (J09-J18)	67	8,3	4	Influenza and pneumonia (J09-J18)	37	8,5	4	Disorders related to length of gestation and fetal growth (P05-P08)	25	6,9
5	Infections specific to the perinatal period (P35-P39)	43	5,3	5	Other disorders originating in the perinatal period (P90-P96)	27	6,2	5	Other acute lower respiratory infections (J20-J22)	17	4,7
6	Other disorders originating in the perinatal period (P90-P96)	43	5,3	6	Infections specific to the perinatal period (P35-P39)	26	5,9	6	Infections specific to the perinatal period (P35-P39)	17	4,7
7	Other acute lower respiratory infections (J20-J22)	37	4,6	7	Other acute lower respiratory infections (J20-J22)	19	4,3	7	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	14	3,9
8	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	30	3,7	8	Malnutrition (E40-E46)	17	3,9	8	Other disorders originating in the perinatal period (P90-P96)	14	3,9
9	Malnutrition (E40-E46)	29	3,6	9	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	16	3,7	9	Malnutrition (E40-E46)	11	3,1
10	Human immunodeficiency virus [HIV] disease (B20-B24)	17	2,1	10	Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	14	3,2	10	Human immunodeficiency virus [HIV] disease (B20-B24)	9	2,5
	Other natural causes	257	31,8		Other natural causes	123	28,1		Other natural causes	126	35,0
	Non-natural causes	24	3,0		Non-natural causes	16	3,7		Non-natural causes	8	2,2
	All causes	808	100,0		All causes	437	100,0		All causes	360	100,0
All Northern Cape, both sexes, 1-14			All Northern Cape, males, 1-14			All Northern Cape, females, 1-14					
	No.	%		No.	%		No.	%			
1	Intestinal infectious diseases (A00-A09)	47	11,8	1	Intestinal infectious diseases (A00-A09)	27	12,2	1	Malnutrition (E40-E46)	21	12,0
2	Malnutrition (E40-E46)	46	11,6	2	Malnutrition (E40-E46)	24	10,8	2	Intestinal infectious diseases (A00-A09)	20	11,4
3	Influenza and pneumonia (J09-J18)	23	5,8	3	Tuberculosis (A15-A19)	14	6,3	3	Influenza and pneumonia (J09-J18)	13	7,4
4	Tuberculosis (A15-A19)	20	5,0	4	Influenza and pneumonia (J09-J18)	10	4,5	4	Human immunodeficiency virus [HIV] disease (B20-B24)	7	4,0
5	Human immunodeficiency virus [HIV] disease (B20-B24)	15	3,8	5	Human immunodeficiency virus [HIV] disease (B20-B24)	8	3,6	5	Tuberculosis (A15-A19)	6	3,4
6	Cerebral palsy and other paralytic syndromes (G80-G83)	10	2,5	6	Other viral diseases (B25-B34)	6	2,7	6	Episodic and paroxysmal disorders (G40-G47)	5	2,9
7	Other viral diseases (B25-B34)	9	2,3	7	Cerebral palsy and other paralytic syndromes (G80-G83)	5	2,3	7	Cerebral palsy and other paralytic syndromes (G80-G83)	5	2,9
8	Episodic and paroxysmal disorders (G40-G47)	9	2,3	8	Other bacterial diseases (A30-A49)	4	1,8	8	Other acute lower respiratory infections (J20-J22)	5	2,9
9	Metabolic disorders (E70-E90)	6	1,5	9	Metabolic disorders (E70-E90)	4	1,8	9	Other viral diseases (B25-B34)	3	1,7
10	Other acute lower respiratory infections (J20-J22)	5	1,3	10	Episodic and paroxysmal disorders (G40-G47)	4	1,8	10	Viral hepatitis (B15-B19)	2	1,1
	Other natural causes	101	25,4		Other natural causes	44	19,8		Other natural causes	53	30,3
	Non-natural causes	107	26,9		Non-natural causes	72	32,4		Non-natural causes	35	20,0
	All causes	398	100,0		All causes	222	100,0		All causes	175	100,0

Appendix M3: The ten leading underlying natural causes of death by age and sex: Northern Cape, 2015 (concluded)

All Northern Cape, both sexes, 15-44			All Northern Cape, males, 15-44			All Northern Cape, females, 15-44					
	No.	%		No.	%		No.	%			
1	Human immunodeficiency virus [HIV] disease (B20-B24)	547	14,5	1	Tuberculosis (A15-A19)	288	13,3	1	Human immunodeficiency virus [HIV] disease (B20-B24)	335	20,8
2	Tuberculosis (A15-A19)	523	13,8	2	Human immunodeficiency virus [HIV] disease (B20-B24)	212	9,8	2	Tuberculosis (A15-A19)	235	14,6
3	Certain disorders involving the immune mechanism (D80-D89)	292	7,7	3	Certain disorders involving the immune mechanism (D80-D89)	126	5,8	3	Certain disorders involving the immune mechanism (D80-D89)	166	10,3
4	Other viral diseases (B25-B34)	213	5,6	4	Other viral diseases (B25-B34)	108	5,0	4	Other viral diseases (B25-B34)	105	6,5
5	Influenza and pneumonia (J09-J18)	121	3,2	5	Influenza and pneumonia (J09-J18)	67	3,1	5	Influenza and pneumonia (J09-J18)	54	3,4
6	Other forms of heart disease (I30-I52)	53	1,4	6	Other forms of heart disease (I30-I52)	34	1,6	6	Malignant neoplasms of female genital organs (C51-C58)	23	1,4
7	Diseases of liver (K70-K77)	53	1,4	7	Episodic and paroxysmal disorders (G40-G47)	34	1,6	7	Diseases of liver (K70-K77)	21	1,3
8	Episodic and paroxysmal disorders (G40-G47)	52	1,4	8	Diseases of liver (K70-K77)	32	1,5	8	Hypertensive diseases (I10-I15)	21	1,3
9	Cerebrovascular diseases (I60-I69)	47	1,2	9	Cerebrovascular diseases (I60-I69)	29	1,3	9	Chronic lower respiratory diseases (J40-J47)	19	1,2
10	Chronic lower respiratory diseases (J40-J47)	46	1,2	10	Chronic lower respiratory diseases (J40-J47)	27	1,2	10	Other forms of heart disease (I30-I52)	18	1,1
	Other natural causes	909	24,1		Other natural causes	442	20,4		Other natural causes	458	28,4
	Non-natural causes	922	24,4		Non-natural causes	763	35,3		Non-natural causes	156	9,7
	All causes	3 778	100,0		All causes	2 162	100,0		All causes	1 611	100,0
All Northern Cape, both sexes, 45-64			All Northern Cape, males, 45-64			All Northern Cape, females, 45-64					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	416	9,4	1	Tuberculosis (A15-A19)	273	10,6	1	Diabetes mellitus (E10-E14)	165	8,8
2	Chronic lower respiratory diseases (J40-J47)	295	6,6	2	Chronic lower respiratory diseases (J40-J47)	179	7,0	2	Tuberculosis (A15-A19)	143	7,6
3	Diabetes mellitus (E10-E14)	284	6,4	3	Human immunodeficiency virus [HIV] disease (B20-B24)	150	5,8	3	Chronic lower respiratory diseases (J40-J47)	116	6,2
4	Human immunodeficiency virus [HIV] disease (B20-B24)	262	5,9	4	Influenza and pneumonia (J09-J18)	120	4,7	4	Human immunodeficiency virus [HIV] disease (B20-B24)	112	6,0
5	Cerebrovascular diseases (I60-I69)	219	4,9	5	Diabetes mellitus (E10-E14)	119	4,6	5	Hypertensive diseases (I10-I15)	112	6,0
6	Hypertensive diseases (I10-I15)	213	4,8	6	Malignant neoplasms of digestive organs (C15-C26)	119	4,6	6	Cerebrovascular diseases (I60-I69)	102	5,4
7	Influenza and pneumonia (J09-J18)	196	4,4	7	Cerebrovascular diseases (I60-I69)	116	4,5	7	Influenza and pneumonia (J09-J18)	75	4,0
8	Ischaemic heart diseases (I20-I25)	174	3,9	8	Ischaemic heart diseases (I20-I25)	108	4,2	8	Other forms of heart disease (I30-I52)	73	3,9
9	Malignant neoplasms of digestive organs (C15-C26)	162	3,6	9	Hypertensive diseases (I10-I15)	101	3,9	9	Ischaemic heart diseases (I20-I25)	66	3,5
10	Certain disorders involving the immune mechanism (D80-D89)	153	3,4	10	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	96	3,7	10	Certain disorders involving the immune mechanism (D80-D89)	65	3,5
	Other natural causes	1 776	40,0		Other natural causes	979	38,1		Other natural causes	759	40,5
	Non-natural causes	293	6,6		Non-natural causes	209	8,1		Non-natural causes	84	4,5
	All causes	4 443	100,0		All causes	2 569	100,0		All causes	1 872	100,0
All Northern Cape, both sexes, 65+			All Northern Cape, males, 65+			All Northern Cape, females, 65+					
	No.	%		No.	%		No.	%			
1	Hypertensive diseases (I10-I15)	449	10,4	1	Chronic lower respiratory diseases (J40-J47)	188	9,5	1	Hypertensive diseases (I10-I15)	293	12,6
2	Cerebrovascular diseases (I60-I69)	373	8,7	2	Hypertensive diseases (I10-I15)	156	7,9	2	Diabetes mellitus (E10-E14)	241	10,4
3	Diabetes mellitus (E10-E14)	370	8,6	3	Cerebrovascular diseases (I60-I69)	141	7,1	3	Cerebrovascular diseases (I60-I69)	232	10,0
4	Chronic lower respiratory diseases (J40-J47)	307	7,1	4	Diabetes mellitus (E10-E14)	129	6,5	4	Ischaemic heart diseases (I20-I25)	157	6,8
5	Ischaemic heart diseases (I20-I25)	286	6,6	5	Ischaemic heart diseases (I20-I25)	129	6,5	5	Other forms of heart disease (I30-I52)	121	5,2
6	Other forms of heart disease (I30-I52)	206	4,8	6	Malignant neoplasms of male genital organs (C60-C63)	97	4,9	6	Chronic lower respiratory diseases (J40-J47)	119	5,1
7	Influenza and pneumonia (J09-J18)	160	3,7	7	Malignant neoplasms of digestive organs (C15-C26)	92	4,6	7	Influenza and pneumonia (J09-J18)	86	3,7
8	Malignant neoplasms of digestive organs (C15-C26)	156	3,6	8	Other forms of heart disease (I30-I52)	85	4,3	8	Malignant neoplasms of digestive organs (C15-C26)	63	2,7
9	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	119	2,8	9	Influenza and pneumonia (J09-J18)	73	3,7	9	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	53	2,3
10	Tuberculosis (A15-A19)	102	2,4	10	Tuberculosis (A15-A19)	72	3,6	10	Malignant neoplasms of female genital organs (C51-C58)	51	2,2
	Other natural causes	1 651	38,3		Other natural causes	751	37,8		Other natural causes	848	36,5
	Non-natural causes	133	3,1		Non-natural causes	72	3,6		Non-natural causes	61	2,6
	All causes	4 312	100,0		All causes	1 985	100,0		All causes	2 325	100,0

Appendix M4: The ten leading underlying natural causes of death by age and sex: Free State, 2015

Free State, both sexes, all ages			Free State, males, all ages			Free State, females, all ages					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	2 102	6,6	1	Tuberculosis (A15-A19)	1 313	7,8	1	Diabetes mellitus (E10-E14)	1 014	6,8
2	Influenza and pneumonia (J09-J18)	1 949	6,1	2	Influenza and pneumonia (J09-J18)	1 057	6,3	2	Hypertensive diseases (I10-I15)	976	6,5
3	Human immunodeficiency virus [HIV] disease (B20-B24)	1 659	5,2	3	Human immunodeficiency virus [HIV] disease (B20-B24)	893	5,3	3	Cerebrovascular diseases (I60-I69)	937	6,3
4	Cerebrovascular diseases (I60-I69)	1 649	5,2	4	Other forms of heart disease (I30-I52)	729	4,3	4	Influenza and pneumonia (J09-J18)	882	5,9
5	Hypertensive diseases (I10-I15)	1 613	5,0	5	Cerebrovascular diseases (I60-I69)	712	4,2	5	Other forms of heart disease (I30-I52)	829	5,5
6	Diabetes mellitus (E10-E14)	1 605	5,0	6	Hypertensive diseases (I10-I15)	632	3,7	6	Tuberculosis (A15-A19)	782	5,2
7	Other forms of heart disease (I30-I52)	1 560	4,9	7	Other viral diseases (B25-B34)	593	3,5	7	Human immunodeficiency virus [HIV] disease (B20-B24)	762	5,1
8	Other viral diseases (B25-B34)	1 213	3,8	8	Diabetes mellitus (E10-E14)	589	3,5	8	Other viral diseases (B25-B34)	619	4,1
9	Certain disorders involving the immune mechanism (D80-D89)	1 007	3,2	9	Certain disorders involving the immune mechanism (D80-D89)	533	3,2	9	Certain disorders involving the immune mechanism (D80-D89)	469	3,1
10	Intestinal infectious diseases (A00-A09)	816	2,6	10	Chronic lower respiratory diseases (J40-J47)	488	2,9	10	Intestinal infectious diseases (A00-A09)	433	2,9
	Other natural causes	13 552	42,4		Other natural causes	6 872	40,7		Other natural causes	6 514	43,5
	Non-natural causes	3 216	10,1		Non-natural causes	2 454	14,6		Non-natural causes	750	5,0
	All causes	31 941	100,0		All causes	16 865	100,0		All causes	14 967	100,0
All Free State, both sexes, 0			All Free State, males, 0			All Free State, females, 0					
	No.	%		No.	%		No.	%			
1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	310	16,7	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	161	17,1	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	142	16,1
2	Intestinal infectious diseases (A00-A09)	193	10,4	2	Intestinal infectious diseases (A00-A09)	95	10,1	2	Intestinal infectious diseases (A00-A09)	96	10,9
3	Influenza and pneumonia (J09-J18)	171	9,2	3	Influenza and pneumonia (J09-J18)	84	8,9	3	Influenza and pneumonia (J09-J18)	87	9,9
4	Malnutrition (E40-E46)	128	6,9	4	Malnutrition (E40-E46)	75	7,9	4	Malnutrition (E40-E46)	53	6,0
5	Disorders related to length of gestation and fetal growth (P05-P08)	93	5,0	5	Disorders related to length of gestation and fetal growth (P05-P08)	56	5,9	5	Disorders related to length of gestation and fetal growth (P05-P08)	37	4,2
6	Infections specific to the perinatal period (P35-P39)	89	4,8	6	Infections specific to the perinatal period (P35-P39)	52	5,5	6	Other disorders originating in the perinatal period (P90-P96)	37	4,2
7	Other disorders originating in the perinatal period (P90-P96)	84	4,5	7	Other disorders originating in the perinatal period (P90-P96)	46	4,9	7	Infections specific to the perinatal period (P35-P39)	35	4,0
8	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	72	3,9	8	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	42	4,4	8	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	29	3,3
9	Other acute lower respiratory infections (J20-J22)	49	2,6	9	Other acute lower respiratory infections (J20-J22)	24	2,5	9	Other acute lower respiratory infections (J20-J22)	25	2,8
10	Congenital malformations of the circulatory system (Q20-Q28)	36	1,9	10	Other bacterial diseases (A30-A49)	18	1,9	10	Congenital malformations of the circulatory system (Q20-Q28)	21	2,4
	Other natural causes	544	29,4		Other natural causes	245	26,0		Other natural causes	285	32,3
	Non-natural causes	82	4,4		Non-natural causes	46	4,9		Non-natural causes	35	4,0
	All causes	1 851	100,0		All causes	944	100,0		All causes	882	100,0
All Free State, both sexes, 1-14			All Free State, males, 1-14			All Free State, females, 1-14					
	No.	%		No.	%		No.	%			
1	Intestinal infectious diseases (A00-A09)	88	10,1	1	Intestinal infectious diseases (A00-A09)	38	7,9	1	Intestinal infectious diseases (A00-A09)	50	13,1
2	Influenza and pneumonia (J09-J18)	79	9,1	2	Malnutrition (E40-E46)	38	7,9	2	Influenza and pneumonia (J09-J18)	42	11,0
3	Malnutrition (E40-E46)	68	7,8	3	Influenza and pneumonia (J09-J18)	36	7,4	3	Malnutrition (E40-E46)	30	7,9
4	Human immunodeficiency virus [HIV] disease (B20-B24)	29	3,3	4	Other viral diseases (B25-B34)	19	3,9	4	Human immunodeficiency virus [HIV] disease (B20-B24)	12	3,1
5	Other viral diseases (B25-B34)	29	3,3	5	Other forms of heart disease (I30-I52)	19	3,9	5	Cerebral palsy and other paralytic syndromes (G80-G83)	12	3,1
6	Cerebral palsy and other paralytic syndromes (G80-G83)	26	3,0	6	Human immunodeficiency virus [HIV] disease (B20-B24)	17	3,5	6	Other viral diseases (B25-B34)	10	2,6
7	Other forms of heart disease (I30-I52)	26	3,0	7	Tuberculosis (A15-A19)	15	3,1	7	Tuberculosis (A15-A19)	9	2,4
8	Tuberculosis (A15-A19)	24	2,8	8	Cerebral palsy and other paralytic syndromes (G80-G83)	13	2,7	8	Certain disorders involving the immune mechanism (D80-D89)	7	1,8
9	Certain disorders involving the immune mechanism (D80-D89)	16	1,8	9	Episodic and paroxysmal disorders (G40-G47)	11	2,3	9	Other forms of heart disease (I30-I52)	7	1,8
10	Episodic and paroxysmal disorders (G40-G47)	15	1,7	10	Certain disorders involving the immune mechanism (D80-D89)	9	1,9	10	Other acute lower respiratory infections (J20-J22)	7	1,8
	Other natural causes	242	27,8		Other natural causes	133	27,5		Other natural causes	105	27,5
	Non-natural causes	227	26,1		Non-natural causes	136	28,1		Non-natural causes	91	23,8
	All causes	869	100,0		All causes	484	100,0		All causes	382	100,0

Appendix M4: The ten leading underlying natural causes of death by age and sex: Free State, 2015 (concluded)

All Free State, both sexes, 15-44			All Free State, males, 15-44			All Free State, females, 15-44					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	1 056	11,8	1	Tuberculosis (A15-A19)	603	11,7	1	Human immunodeficiency virus [HIV] disease (B20-B24)	467	12,6
2	Human immunodeficiency virus [HIV] disease (B20-B24)	973	10,9	2	Human immunodeficiency virus [HIV] disease (B20-B24)	503	9,7	2	Tuberculosis (A15-A19)	447	12,1
3	Other viral diseases (B25-B34)	692	7,8	3	Other viral diseases (B25-B34)	337	6,5	3	Other viral diseases (B25-B34)	355	9,6
4	Certain disorders involving the immune mechanism (D80-D89)	554	6,2	4	Certain disorders involving the immune mechanism (D80-D89)	275	5,3	4	Certain disorders involving the immune mechanism (D80-D89)	276	7,5
5	Influenza and pneumonia (J09-J18)	469	5,3	5	Influenza and pneumonia (J09-J18)	255	4,9	5	Influenza and pneumonia (J09-J18)	209	5,7
6	Other forms of heart disease (I30-I52)	196	2,2	6	Other forms of heart disease (I30-I52)	100	1,9	6	Other forms of heart disease (I30-I52)	94	2,5
7	Intestinal infectious diseases (A00-A09)	166	1,9	7	Episodic and paroxysmal disorders (G40-G47)	87	1,7	7	Intestinal infectious diseases (A00-A09)	90	2,4
8	Episodic and paroxysmal disorders (G40-G47)	122	1,4	8	Intestinal infectious diseases (A00-A09)	74	1,4	8	Cerebrovascular diseases (I60-I69)	64	1,7
9	Cerebrovascular diseases (I60-I69)	120	1,3	9	Renal failure (N17-N19)	64	1,2	9	Malignant neoplasms of female genital organs (C51-C58)	62	1,7
10	Renal failure (N17-N19)	120	1,3	10	Inflammatory diseases of the central nervous system (G00-G09)	59	1,1	10	Hypertensive diseases (I10-I15)	60	1,6
	Other natural causes	2 470	27,7		Other natural causes	1 199	23,2		Other natural causes	1 216	32,9
	Non-natural causes	1 976	22,2		Non-natural causes	1 617	31,3		Non-natural causes	352	9,5
	All causes	8 914	100,0		All causes	5 173	100,0		All causes	3 692	100,0
All Free State, both sexes, 45-64			All Free State, males, 45-64			All Free State, females, 45-64					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	790	7,9	1	Tuberculosis (A15-A19)	544	9,4	1	Diabetes mellitus (E10-E14)	366	8,8
2	Diabetes mellitus (E10-E14)	641	6,4	2	Influenza and pneumonia (J09-J18)	403	7,0	2	Cerebrovascular diseases (I60-I69)	270	6,5
3	Influenza and pneumonia (J09-J18)	622	6,2	3	Human immunodeficiency virus [HIV] disease (B20-B24)	333	5,7	3	Hypertensive diseases (I10-I15)	253	6,1
4	Cerebrovascular diseases (I60-I69)	578	5,8	4	Cerebrovascular diseases (I60-I69)	308	5,3	4	Tuberculosis (A15-A19)	246	5,9
5	Human immunodeficiency virus [HIV] disease (B20-B24)	575	5,8	5	Diabetes mellitus (E10-E14)	274	4,7	5	Human immunodeficiency virus [HIV] disease (B20-B24)	241	5,8
6	Hypertensive diseases (I10-I15)	491	4,9	6	Other forms of heart disease (I30-I52)	261	4,5	6	Influenza and pneumonia (J09-J18)	216	5,2
7	Other forms of heart disease (I30-I52)	460	4,6	7	Hypertensive diseases (I10-I15)	237	4,1	7	Other viral diseases (B25-B34)	205	4,9
8	Other viral diseases (B25-B34)	418	4,2	8	Certain disorders involving the immune mechanism (D80-D89)	225	3,9	8	Other forms of heart disease (I30-I52)	199	4,8
9	Certain disorders involving the immune mechanism (D80-D89)	383	3,8	9	Other viral diseases (B25-B34)	213	3,7	9	Malignant neoplasms of female genital organs (C51-C58)	181	4,4
10	Chronic lower respiratory diseases (J40-J47)	290	2,9	10	Chronic lower respiratory diseases (J40-J47)	186	3,2	10	Certain disorders involving the immune mechanism (D80-D89)	156	3,8
	Other natural causes	4 107	41,2		Other natural causes	2 330	40,2		Other natural causes	1 693	40,8
	Non-natural causes	606	6,1		Non-natural causes	481	8,3		Non-natural causes	123	3,0
	All causes	9 961	100,0		All causes	5 795	100,0		All causes	4 149	100,0
All Free State, both sexes, 65+			All Free State, males, 65+			All Free State, females, 65+					
	No.	%		No.	%		No.	%			
1	Hypertensive diseases (I10-I15)	1 010	9,8	1	Hypertensive diseases (I10-I15)	347	7,8	1	Hypertensive diseases (I10-I15)	662	11,3
2	Cerebrovascular diseases (I60-I69)	945	9,2	2	Other forms of heart disease (I30-I52)	346	7,8	2	Cerebrovascular diseases (I60-I69)	601	10,3
3	Diabetes mellitus (E10-E14)	872	8,5	3	Cerebrovascular diseases (I60-I69)	344	7,8	3	Diabetes mellitus (E10-E14)	600	10,3
4	Other forms of heart disease (I30-I52)	871	8,5	4	Chronic lower respiratory diseases (J40-J47)	282	6,4	4	Other forms of heart disease (I30-I52)	525	9,0
5	Influenza and pneumonia (J09-J18)	604	5,9	5	Influenza and pneumonia (J09-J18)	276	6,2	5	Influenza and pneumonia (J09-J18)	328	5,6
6	Ischaemic heart diseases (I20-I25)	488	4,7	6	Diabetes mellitus (E10-E14)	272	6,2	6	Ischaemic heart diseases (I20-I25)	231	3,9
7	Chronic lower respiratory diseases (J40-J47)	456	4,4	7	Ischaemic heart diseases (I20-I25)	257	5,8	7	Chronic lower respiratory diseases (J40-J47)	174	3,0
8	Malignant neoplasms of digestive organs (C15-C26)	276	2,7	8	Malignant neoplasms of male genital organs (C60-C63)	180	4,1	8	Malignant neoplasms of digestive organs (C15-C26)	138	2,4
9	Tuberculosis (A15-A19)	217	2,1	9	Tuberculosis (A15-A19)	143	3,2	9	Malignant neoplasms of female genital organs (C51-C58)	134	2,3
10	Intestinal infectious diseases (A00-A09)	208	2,0	10	Malignant neoplasms of digestive organs (C15-C26)	138	3,1	10	Intestinal infectious diseases (A00-A09)	123	2,1
	Other natural causes	4 023	39,2		Other natural causes	1 679	38,0		Other natural causes	2 186	37,4
	Non-natural causes	304	3,0		Non-natural causes	157	3,6		Non-natural causes	147	2,5
	All causes	10 274	100,0		All causes	4 421	100,0		All causes	5 849	100,0

Appendix M5: The ten leading underlying natural causes of death by age and sex: KwaZulu-Natal, 2015

KwaZulu-Natal, both sexes, all ages			KwaZulu-Natal, males, all ages			KwaZulu-Natal, females, all ages					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	7 361	9,1	1	Tuberculosis (A15-A19)	4 518	10,9	1	Diabetes mellitus (E10-E14)	3 462	8,8
2	Diabetes mellitus (E10-E14)	5 331	6,6	2	Human immunodeficiency virus [HIV] disease (B20-B24)	2 588	6,2	2	Cerebrovascular diseases (I60-I69)	2 937	7,4
3	Human immunodeficiency virus [HIV] disease (B20-B24)	4 925	6,1	3	Other forms of heart disease (I30-I52)	1 934	4,7	3	Tuberculosis (A15-A19)	2 824	7,2
4	Cerebrovascular diseases (I60-I69)	4 800	5,9	4	Diabetes mellitus (E10-E14)	1 868	4,5	4	Other forms of heart disease (I30-I52)	2 547	6,5
5	Other forms of heart disease (I30-I52)	4 489	5,5	5	Cerebrovascular diseases (I60-I69)	1 861	4,5	5	Human immunodeficiency virus [HIV] disease (B20-B24)	2 317	5,9
6	Other viral diseases (B25-B34)	3 156	3,9	6	Other viral diseases (B25-B34)	1 568	3,8	6	Hypertensive diseases (I10-I15)	1 957	5,0
7	Hypertensive diseases (I10-I15)	2 997	3,7	7	Influenza and pneumonia (J09-J18)	1 478	3,6	7	Other viral diseases (B25-B34)	1 580	4,0
8	Influenza and pneumonia (J09-J18)	2 938	3,6	8	Ischaemic heart diseases (I20-I25)	1 162	2,8	8	Influenza and pneumonia (J09-J18)	1 452	3,7
9	Ischaemic heart diseases (I20-I25)	2 122	2,6	9	Hypertensive diseases (I10-I15)	1 038	2,5	9	Malignant neoplasms of female genital organs (C51-C58)	1 082	2,7
10	Intestinal infectious diseases (A00-A09)	2 012	2,5	10	Intestinal infectious diseases (A00-A09)	929	2,2	10	Intestinal infectious diseases (A00-A09)	1 077	2,7
	Other natural causes	31 862	39,2		Other natural causes	15 550	37,4		Other natural causes	16 046	40,7
	Non-natural causes	9 327	11,5		Non-natural causes	7 091	17,1		Non-natural causes	2 191	5,6
	All causes	81 320	100,0		All causes	41 585	100,0		All causes	39 472	100,0
All KwaZulu-Natal, both sexes, 0			All KwaZulu-Natal, males, 0			All KwaZulu-Natal, females, 0					
	No.	%		No.	%		No.	%			
1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	634	15,6	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	324	15,7	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	282	14,9
2	Intestinal infectious diseases (A00-A09)	422	10,4	2	Intestinal infectious diseases (A00-A09)	226	11,0	2	Intestinal infectious diseases (A00-A09)	194	10,3
3	Disorders related to length of gestation and fetal growth (P05-P08)	355	8,7	3	Disorders related to length of gestation and fetal growth (P05-P08)	170	8,2	3	Disorders related to length of gestation and fetal growth (P05-P08)	174	9,2
4	Influenza and pneumonia (J09-J18)	293	7,2	4	Influenza and pneumonia (J09-J18)	143	6,9	4	Influenza and pneumonia (J09-J18)	146	7,7
5	Infections specific to the perinatal period (P35-P39)	217	5,3	5	Infections specific to the perinatal period (P35-P39)	117	5,7	5	Infections specific to the perinatal period (P35-P39)	93	4,9
6	Other disorders originating in the perinatal period (P90-P96)	190	4,7	6	Malnutrition (E40-E46)	94	4,6	6	Other disorders originating in the perinatal period (P90-P96)	91	4,8
7	Malnutrition (E40-E46)	172	4,2	7	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	92	4,5	7	Malnutrition (E40-E46)	73	3,9
8	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	161	4,0	8	Other disorders originating in the perinatal period (P90-P96)	92	4,5	8	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	59	3,1
9	Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	89	2,2	9	Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	51	2,5	9	Other bacterial diseases (A30-A49)	41	2,2
10	Other bacterial diseases (A30-A49)	85	2,1	10	Other bacterial diseases (A30-A49)	44	2,1	10	Congenital malformations of the circulatory system (Q20-Q28)	37	2,0
	Other natural causes	1 262	31,1		Other natural causes	624	30,2		Other natural causes	612	32,4
	Non-natural causes	178	4,4		Non-natural causes	86	4,2		Non-natural causes	86	4,6
	All causes	4 058	100,0		All causes	2 063	100,0		All causes	1 888	100,0
All KwaZulu-Natal, both sexes, 1-14			All KwaZulu-Natal, males, 1-14			All KwaZulu-Natal, females, 1-14					
	No.	%		No.	%		No.	%			
1	Intestinal infectious diseases (A00-A09)	220	8,5	1	Intestinal infectious diseases (A00-A09)	108	7,7	1	Intestinal infectious diseases (A00-A09)	111	9,4
2	Influenza and pneumonia (J09-J18)	161	6,2	2	Influenza and pneumonia (J09-J18)	78	5,6	2	Influenza and pneumonia (J09-J18)	83	7,0
3	Malnutrition (E40-E46)	129	5,0	3	Malnutrition (E40-E46)	67	4,8	3	Malnutrition (E40-E46)	60	5,1
4	Tuberculosis (A15-A19)	110	4,2	4	Tuberculosis (A15-A19)	56	4,0	4	Tuberculosis (A15-A19)	54	4,6
5	Human immunodeficiency virus [HIV] disease (B20-B24)	99	3,8	5	Human immunodeficiency virus [HIV] disease (B20-B24)	54	3,8	5	Human immunodeficiency virus [HIV] disease (B20-B24)	45	3,8
6	Other viral diseases (B25-B34)	97	3,7	6	Other viral diseases (B25-B34)	53	3,8	6	Other viral diseases (B25-B34)	44	3,7
7	Other forms of heart disease (I30-I52)	79	3,0	7	Other forms of heart disease (I30-I52)	38	2,7	7	Other forms of heart disease (I30-I52)	41	3,5
8	Cerebral palsy and other paralytic syndromes (G80-G83)	53	2,0	8	Cerebral palsy and other paralytic syndromes (G80-G83)	31	2,2	8	Episodic and paroxysmal disorders (G40-G47)	24	2,0
9	Episodic and paroxysmal disorders (G40-G47)	51	2,0	9	Episodic and paroxysmal disorders (G40-G47)	27	1,9	9	Inflammatory diseases of the central nervous system (G00-G09)	23	1,9
10	Inflammatory diseases of the central nervous system (G00-G09)	44	1,7	10	Inflammatory diseases of the central nervous system (G00-G09)	21	1,5	10	Cerebral palsy and other paralytic syndromes (G80-G83)	22	1,9
	Other natural causes	831	32,0		Other natural causes	445	31,7		Other natural causes	383	32,3
	Non-natural causes	725	27,9		Non-natural causes	427	30,4		Non-natural causes	294	24,8
	All causes	2 599	100,0		All causes	1 405	100,0		All causes	1 184	100,0

Appendix M5: The ten leading underlying natural causes of death by age and sex: KwaZulu-Natal, 2015 (concluded)

All KwaZulu-Natal, both sexes, 15-44			All KwaZulu-Natal, males, 15-44			All KwaZulu-Natal, females, 15-44					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	3 939	15,5	1	Tuberculosis (A15-A19)	2 260	15,2	1	Tuberculosis (A15-A19)	1 664	15,9
2	Human immunodeficiency virus [HIV] disease (B20-B24)	3 222	12,7	2	Human immunodeficiency virus [HIV] disease (B20-B24)	1 608	10,8	2	Human immunodeficiency virus [HIV] disease (B20-B24)	1 600	15,3
3	Other viral diseases (B25-B34)	1 993	7,8	3	Other viral diseases (B25-B34)	945	6,4	3	Other viral diseases (B25-B34)	1 042	10,0
4	Certain disorders involving the immune mechanism (D80-D89)	853	3,4	4	Certain disorders involving the immune mechanism (D80-D89)	393	2,6	4	Certain disorders involving the immune mechanism (D80-D89)	459	4,4
5	Influenza and pneumonia (J09-J18)	768	3,0	5	Influenza and pneumonia (J09-J18)	387	2,6	5	Influenza and pneumonia (J09-J18)	378	3,6
6	Other forms of heart disease (I30-I52)	597	2,3	6	Other forms of heart disease (I30-I52)	290	2,0	6	Malignant neoplasms of female genital organs (C51-C58)	312	3,0
7	Intestinal infectious diseases (A00-A09)	461	1,8	7	Intestinal infectious diseases (A00-A09)	239	1,6	7	Other forms of heart disease (I30-I52)	305	2,9
8	Inflammatory diseases of the central nervous system (G00-G09)	434	1,7	8	Inflammatory diseases of the central nervous system (G00-G09)	227	1,5	8	Intestinal infectious diseases (A00-A09)	221	2,1
9	Cerebrovascular diseases (I60-I69)	345	1,4	9	Episodic and paroxysmal disorders (G40-G47)	202	1,4	9	Inflammatory diseases of the central nervous system (G00-G09)	206	2,0
10	Malignant neoplasms of female genital organs (C51-C58)	312	1,2	10	Cerebrovascular diseases (I60-I69)	185	1,2	10	Cerebrovascular diseases (I60-I69)	160	1,5
	Other natural causes	6 593	25,9		Other natural causes	3 243	21,8		Other natural causes	3 122	29,8
	Non-natural causes	5 910	23,2		Non-natural causes	4 891	32,9		Non-natural causes	993	9,5
	All causes	25 427	100,0		All causes	14 870	100,0		All causes	10 462	100,0
All KwaZulu-Natal, both sexes, 45-64			All KwaZulu-Natal, males, 45-64			All KwaZulu-Natal, females, 45-64					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	2 371	10,9	1	Tuberculosis (A15-A19)	1 651	13,2	1	Diabetes mellitus (E10-E14)	1 091	11,9
2	Diabetes mellitus (E10-E14)	1 876	8,6	2	Human immunodeficiency virus [HIV] disease (B20-B24)	792	6,3	2	Tuberculosis (A15-A19)	720	7,8
3	Human immunodeficiency virus [HIV] disease (B20-B24)	1 361	6,3	3	Diabetes mellitus (E10-E14)	784	6,2	3	Cerebrovascular diseases (I60-I69)	627	6,8
4	Cerebrovascular diseases (I60-I69)	1 296	6,0	4	Other forms of heart disease (I30-I52)	686	5,5	4	Human immunodeficiency virus [HIV] disease (B20-B24)	566	6,2
5	Other forms of heart disease (I30-I52)	1 226	5,6	5	Cerebrovascular diseases (I60-I69)	669	5,3	5	Other forms of heart disease (I30-I52)	540	5,9
6	Other viral diseases (B25-B34)	853	3,9	6	Ischaemic heart diseases (I20-I25)	472	3,8	6	Hypertensive diseases (I10-I15)	450	4,9
7	Hypertensive diseases (I10-I15)	824	3,8	7	Other viral diseases (B25-B34)	470	3,7	7	Malignant neoplasms of female genital organs (C51-C58)	450	4,9
8	Influenza and pneumonia (J09-J18)	699	3,2	8	Influenza and pneumonia (J09-J18)	440	3,5	8	Other viral diseases (B25-B34)	383	4,2
9	Ischaemic heart diseases (I20-I25)	688	3,2	9	Malignant neoplasms of digestive organs (C15-C26)	398	3,2	9	Influenza and pneumonia (J09-J18)	258	2,8
10	Malignant neoplasms of digestive organs (C15-C26)	634	2,9	10	Hypertensive diseases (I10-I15)	374	3,0	10	Malignant neoplasms of digestive organs (C15-C26)	236	2,6
	Other natural causes	8 298	38,1		Other natural causes	4 589	36,6		Other natural causes	3 466	37,7
	Non-natural causes	1 632	7,5		Non-natural causes	1 222	9,7		Non-natural causes	409	4,4
	All causes	21 758	100,0		All causes	12 547	100,0		All causes	9 196	100,0
All KwaZulu-Natal, both sexes, 65+			All KwaZulu-Natal, males, 65+			All KwaZulu-Natal, females, 65+					
	No.	%		No.	%		No.	%			
1	Diabetes mellitus (E10-E14)	3 237	11,9	1	Cerebrovascular diseases (I60-I69)	986	9,3	1	Diabetes mellitus (E10-E14)	2 256	13,5
2	Cerebrovascular diseases (I60-I69)	3 128	11,5	2	Diabetes mellitus (E10-E14)	981	9,3	2	Cerebrovascular diseases (I60-I69)	2 140	12,8
3	Other forms of heart disease (I30-I52)	2 532	9,3	3	Other forms of heart disease (I30-I52)	896	8,5	3	Other forms of heart disease (I30-I52)	1 635	9,8
4	Hypertensive diseases (I10-I15)	2 032	7,4	4	Ischaemic heart diseases (I20-I25)	600	5,7	4	Hypertensive diseases (I10-I15)	1 436	8,6
5	Ischaemic heart diseases (I20-I25)	1 295	4,7	5	Hypertensive diseases (I10-I15)	596	5,6	5	Ischaemic heart diseases (I20-I25)	695	4,2
6	Influenza and pneumonia (J09-J18)	1 014	3,7	6	Tuberculosis (A15-A19)	519	4,9	6	Influenza and pneumonia (J09-J18)	586	3,5
7	Tuberculosis (A15-A19)	886	3,2	7	Chronic lower respiratory diseases (J40-J47)	473	4,5	7	Intestinal infectious diseases (A00-A09)	386	2,3
8	Chronic lower respiratory diseases (J40-J47)	790	2,9	8	Influenza and pneumonia (J09-J18)	428	4,0	8	Tuberculosis (A15-A19)	367	2,2
9	Malignant neoplasms of digestive organs (C15-C26)	693	2,5	9	Malignant neoplasms of digestive organs (C15-C26)	349	3,3	9	Renal failure (N17-N19)	350	2,1
10	Renal failure (N17-N19)	606	2,2	10	Malignant neoplasms of male genital organs (C60-C63)	314	3,0	10	Malignant neoplasms of digestive organs (C15-C26)	344	2,1
	Other natural causes	10 255	37,5		Other natural causes	4 019	37,9		Other natural causes	6 105	36,5
	Non-natural causes	847	3,1		Non-natural causes	442	4,2		Non-natural causes	405	2,4
	All causes	27 315	100,0		All causes	10 603	100,0		All causes	16 705	100,0

Appendix M6: The ten leading underlying natural causes of death by age and sex: North West, 2015

North West, both sexes, all ages			North West, males, all ages			North West, females, all ages					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	2 743	8,0	1	Tuberculosis (A15-A19)	1 735	9,4	1	Hypertensive diseases (I10-I15)	1 220	7,7
2	Other forms of heart disease (I30-I52)	2 129	6,2	2	Other forms of heart disease (I30-I52)	1 041	5,7	2	Other forms of heart disease (I30-I52)	1 086	6,8
3	Hypertensive diseases (I10-I15)	1 942	5,6	3	Influenza and pneumonia (J09-J18)	981	5,3	3	Tuberculosis (A15-A19)	990	6,2
4	Influenza and pneumonia (J09-J18)	1 793	5,2	4	Other viral diseases (B25-B34)	848	4,6	4	Diabetes mellitus (E10-E14)	976	6,1
5	Cerebrovascular diseases (I60-I69)	1 585	4,6	5	Cerebrovascular diseases (I60-I69)	764	4,2	5	Cerebrovascular diseases (I60-I69)	820	5,2
6	Other viral diseases (B25-B34)	1 578	4,6	6	Human immunodeficiency virus [HIV] disease (B20-B24)	744	4,0	6	Influenza and pneumonia (J09-J18)	809	5,1
7	Diabetes mellitus (E10-E14)	1 563	4,5	7	Hypertensive diseases (I10-I15)	720	3,9	7	Other viral diseases (B25-B34)	726	4,6
8	Human immunodeficiency virus [HIV] disease (B20-B24)	1 353	3,9	8	Diabetes mellitus (E10-E14)	587	3,2	8	Certain disorders involving the immune mechanism (D80-D89)	613	3,9
9	Certain disorders involving the immune mechanism (D80-D89)	1 185	3,4	9	Certain disorders involving the immune mechanism (D80-D89)	566	3,1	9	Human immunodeficiency virus [HIV] disease (B20-B24)	607	3,8
10	Intestinal infectious diseases (A00-A09)	878	2,6	10	Chronic lower respiratory diseases (J40-J47)	512	2,8	10	Intestinal infectious diseases (A00-A09)	468	2,9
	Other natural causes	14 618	42,5		Other natural causes	7 576	41,2		Other natural causes	6 880	43,2
	Non-natural causes	3 061	8,9		Non-natural causes	2 327	12,6		Non-natural causes	720	4,5
	All causes	34 428	100,0		All causes	18 401	100,0		All causes	15 915	100,0
All North West, both sexes, 0			All North West, males, 0			All North West, females, 0					
	No.	%		No.	%		No.	%			
1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	387	15,7	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	220	16,9	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	158	14,1
2	Intestinal infectious diseases (A00-A09)	288	11,7	2	Intestinal infectious diseases (A00-A09)	138	10,6	2	Intestinal infectious diseases (A00-A09)	148	13,2
3	Influenza and pneumonia (J09-J18)	193	7,8	3	Other disorders originating in the perinatal period (P90-P96)	110	8,5	3	Influenza and pneumonia (J09-J18)	102	9,1
4	Other disorders originating in the perinatal period (P90-P96)	180	7,3	4	Influenza and pneumonia (J09-J18)	91	7,0	4	Other disorders originating in the perinatal period (P90-P96)	65	5,8
5	Infections specific to the perinatal period (P35-P39)	137	5,6	5	Infections specific to the perinatal period (P35-P39)	76	5,8	5	Infections specific to the perinatal period (P35-P39)	58	5,2
6	Disorders related to length of gestation and fetal growth (P05-P08)	127	5,2	6	Disorders related to length of gestation and fetal growth (P05-P08)	70	5,4	6	Disorders related to length of gestation and fetal growth (P05-P08)	52	4,6
7	Malnutrition (E40-E46)	107	4,3	7	Malnutrition (E40-E46)	62	4,8	7	Malnutrition (E40-E46)	45	4,0
8	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	93	3,8	8	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	51	3,9	8	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	39	3,5
9	Other viral diseases (B25-B34)	49	2,0	9	Other viral diseases (B25-B34)	27	2,1	9	Digestive system disorders of fetus and newborn (P75-P78)	24	2,1
10	Digestive system disorders of fetus and newborn (P75-P78)	49	2,0	10	Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	27	2,1	10	Other viral diseases (B25-B34)	22	2,0
	Other natural causes	785	31,9		Other natural causes	392	30,2		Other natural causes	375	33,5
	Non-natural causes	68	2,8		Non-natural causes	36	2,8		Non-natural causes	32	2,9
	All causes	2 463	100,0		All causes	1 300	100,0		All causes	1 120	100,0
All North West, both sexes, 1-14			All North West, males, 1-14			All North West, females, 1-14					
	No.	%		No.	%		No.	%			
1	Intestinal infectious diseases (A00-A09)	142	12,4	1	Intestinal infectious diseases (A00-A09)	74	11,8	1	Intestinal infectious diseases (A00-A09)	67	13,0
2	Influenza and pneumonia (J09-J18)	92	8,0	2	Influenza and pneumonia (J09-J18)	55	8,7	2	Malnutrition (E40-E46)	38	7,4
3	Malnutrition (E40-E46)	80	7,0	3	Malnutrition (E40-E46)	42	6,7	3	Influenza and pneumonia (J09-J18)	36	7,0
4	Tuberculosis (A15-A19)	57	5,0	4	Tuberculosis (A15-A19)	36	5,7	4	Tuberculosis (A15-A19)	21	4,1
5	Other viral diseases (B25-B34)	47	4,1	5	Other viral diseases (B25-B34)	26	4,1	5	Other viral diseases (B25-B34)	21	4,1
6	Cerebral palsy and other paralytic syndromes (G80-G83)	30	2,6	6	Cerebral palsy and other paralytic syndromes (G80-G83)	17	2,7	6	Certain disorders involving the immune mechanism (D80-D89)	15	2,9
7	Certain disorders involving the immune mechanism (D80-D89)	26	2,3	7	Episodic and paroxysmal disorders (G40-G47)	14	2,2	7	Cerebral palsy and other paralytic syndromes (G80-G83)	13	2,5
8	Other forms of heart disease (I30-I52)	22	1,9	8	Other bacterial diseases (A30-A49)	12	1,9	8	Other forms of heart disease (I30-I52)	12	2,3
9	Episodic and paroxysmal disorders (G40-G47)	21	1,8	9	Other acute lower respiratory infections (J20-J22)	12	1,9	9	Human immunodeficiency virus [HIV] disease (B20-B24)	9	1,7
10	Other acute lower respiratory infections (J20-J22)	21	1,8	10	Other diseases of the respiratory system (J95-J99)	12	1,9	10	Other acute lower respiratory infections (J20-J22)	9	1,7
	Other natural causes	382	33,3		Other natural causes	203	32,3		Other natural causes	174	33,8
	Non-natural causes	226	19,7		Non-natural causes	126	20,0		Non-natural causes	100	19,4
	All causes	1 146	100,0		All causes	629	100,0		All causes	515	100,0

Appendix M6: The ten leading underlying natural causes of death by age and sex: North West, 2015 (concluded)

All North West, both sexes, 15-44			All North West, males, 15-44			All North West, females, 15-44					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	1 269	13,3	1	Tuberculosis (A15-A19)	710	13,4	1	Tuberculosis (A15-A19)	549	13,1
2	Other viral diseases (B25-B34)	877	9,2	2	Other viral diseases (B25-B34)	446	8,4	2	Other viral diseases (B25-B34)	427	10,2
3	Human immunodeficiency virus [HIV] disease (B20-B24)	782	8,2	3	Human immunodeficiency virus [HIV] disease (B20-B24)	409	7,7	3	Certain disorders involving the immune mechanism (D80-D89)	390	9,3
4	Certain disorders involving the immune mechanism (D80-D89)	689	7,2	4	Certain disorders involving the immune mechanism (D80-D89)	296	5,6	4	Human immunodeficiency virus [HIV] disease (B20-B24)	373	8,9
5	Influenza and pneumonia (J09-J18)	596	6,2	5	Influenza and pneumonia (J09-J18)	290	5,5	5	Influenza and pneumonia (J09-J18)	304	7,2
6	Other forms of heart disease (I30-I52)	246	2,6	6	Other forms of heart disease (I30-I52)	133	2,5	6	Other forms of heart disease (I30-I52)	112	2,7
7	Episodic and paroxysmal disorders (G40-G47)	128	1,3	7	Episodic and paroxysmal disorders (G40-G47)	80	1,5	7	Malignant neoplasms of female genital organs (C51-C58)	80	1,9
8	Intestinal infectious diseases (A00-A09)	120	1,3	8	Inflammatory diseases of the central nervous system (G00-G09)	67	1,3	8	Intestinal infectious diseases (A00-A09)	63	1,5
9	Inflammatory diseases of the central nervous system (G00-G09)	118	1,2	9	Cerebrovascular diseases (I60-I69)	62	1,2	9	Diabetes mellitus (E10-E14)	61	1,5
10	Cerebrovascular diseases (I60-I69)	113	1,2	10	Intestinal infectious diseases (A00-A09)	57	1,1	10	Other bacterial diseases (A30-A49)	54	1,3
	Other natural causes	2 703	28,3		Other natural causes	1 224	23,0		Other natural causes	1 428	34,0
	Non-natural causes	1 913	20,0		Non-natural causes	1 543	29,0		Non-natural causes	363	8,6
	All causes	9 554	100,0		All causes	5 317	100,0		All causes	4 204	100,0
All North West, both sexes, 45-64			All North West, males, 45-64			All North West, females, 45-64					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	1 042	10,4	1	Tuberculosis (A15-A19)	725	12,0	1	Diabetes mellitus (E10-E14)	345	8,6
2	Other forms of heart disease (I30-I52)	624	6,2	2	Other forms of heart disease (I30-I52)	365	6,1	2	Tuberculosis (A15-A19)	311	7,7
3	Diabetes mellitus (E10-E14)	565	5,6	3	Influenza and pneumonia (J09-J18)	317	5,3	3	Hypertensive diseases (I10-I15)	277	6,9
4	Other viral diseases (B25-B34)	539	5,4	4	Other viral diseases (B25-B34)	316	5,2	4	Other forms of heart disease (I30-I52)	259	6,4
5	Hypertensive diseases (I10-I15)	527	5,2	5	Human immunodeficiency virus [HIV] disease (B20-B24)	288	4,8	5	Other viral diseases (B25-B34)	223	5,5
6	Influenza and pneumonia (J09-J18)	496	4,9	6	Cerebrovascular diseases (I60-I69)	257	4,3	6	Human immunodeficiency virus [HIV] disease (B20-B24)	194	4,8
7	Human immunodeficiency virus [HIV] disease (B20-B24)	483	4,8	7	Hypertensive diseases (I10-I15)	249	4,1	7	Influenza and pneumonia (J09-J18)	179	4,4
8	Cerebrovascular diseases (I60-I69)	434	4,3	8	Certain disorders involving the immune mechanism (D80-D89)	229	3,8	8	Cerebrovascular diseases (I60-I69)	177	4,4
9	Certain disorders involving the immune mechanism (D80-D89)	393	3,9	9	Diabetes mellitus (E10-E14)	220	3,7	9	Certain disorders involving the immune mechanism (D80-D89)	163	4,0
10	Chronic lower respiratory diseases (J40-J47)	284	2,8	10	Chronic lower respiratory diseases (J40-J47)	196	3,3	10	Malignant neoplasms of female genital organs (C51-C58)	126	3,1
	Other natural causes	4 071	40,5		Other natural causes	2 386	39,6		Other natural causes	1 640	40,7
	Non-natural causes	606	6,0		Non-natural causes	473	7,9		Non-natural causes	131	3,3
	All causes	10 064	100,0		All causes	6 021	100,0		All causes	4 025	100,0
All North West, both sexes, 65+			All North West, males, 65+			All North West, females, 65+					
	No.	%		No.	%		No.	%			
1	Hypertensive diseases (I10-I15)	1 331	12,0	1	Other forms of heart disease (I30-I52)	514	10,1	1	Hypertensive diseases (I10-I15)	899	14,9
2	Other forms of heart disease (I30-I52)	1 199	10,8	2	Cerebrovascular diseases (I60-I69)	445	8,7	2	Other forms of heart disease (I30-I52)	685	11,3
3	Cerebrovascular diseases (I60-I69)	1 036	9,3	3	Hypertensive diseases (I10-I15)	431	8,5	3	Cerebrovascular diseases (I60-I69)	590	9,8
4	Diabetes mellitus (E10-E14)	891	8,0	4	Diabetes mellitus (E10-E14)	323	6,3	4	Diabetes mellitus (E10-E14)	568	9,4
5	Chronic lower respiratory diseases (J40-J47)	436	3,9	5	Chronic lower respiratory diseases (J40-J47)	269	5,3	5	Influenza and pneumonia (J09-J18)	187	3,1
6	Influenza and pneumonia (J09-J18)	413	3,7	6	Tuberculosis (A15-A19)	243	4,8	6	Chronic lower respiratory diseases (J40-J47)	166	2,7
7	Tuberculosis (A15-A19)	341	3,1	7	Influenza and pneumonia (J09-J18)	226	4,4	7	Ischaemic heart diseases (I20-I25)	151	2,5
8	Ischaemic heart diseases (I20-I25)	314	2,8	8	Ischaemic heart diseases (I20-I25)	163	3,2	8	Intestinal infectious diseases (A00-A09)	111	1,8
9	Malignant neoplasms of digestive organs (C15-C26)	260	2,3	9	Malignant neoplasms of male genital organs (C60-C63)	151	3,0	9	Malignant neoplasms of digestive organs (C15-C26)	110	1,8
10	Renal failure (N17-N19)	198	1,8	10	Malignant neoplasms of digestive organs (C15-C26)	150	2,9	10	Malignant neoplasms of female genital organs (C51-C58)	102	1,7
	Other natural causes	4 486	40,3		Other natural causes	2 035	40,0		Other natural causes	2 378	39,4
	Non-natural causes	229	2,1		Non-natural causes	137	2,7		Non-natural causes	92	1,5
	All causes	11 134	100,0		All causes	5 087	100,0		All causes	6 039	100,0

Appendix M7: The ten leading underlying natural causes of death by age and sex: Gauteng, 2015

Gauteng, both sexes, all ages			Gauteng, males, all ages			Gauteng, females, all ages					
	No.	%		No.	%		No.	%			
1	Other forms of heart disease (I30-I52)	5 773	5,9	1	Tuberculosis (A15-A19)	3 227	6,2	1	Other forms of heart disease (I30-I52)	2 992	6,7
2	Tuberculosis (A15-A19)	5 412	5,5	2	Other forms of heart disease (I30-I52)	2 746	5,2	2	Diabetes mellitus (E10-E14)	2 375	5,3
3	Influenza and pneumonia (J09-J18)	4 837	4,9	3	Influenza and pneumonia (J09-J18)	2 451	4,7	3	Influenza and pneumonia (J09-J18)	2 342	5,2
4	Diabetes mellitus (E10-E14)	4 201	4,3	4	Cerebrovascular diseases (I60-I69)	1 856	3,5	4	Tuberculosis (A15-A19)	2 134	4,8
5	Cerebrovascular diseases (I60-I69)	3 903	4,0	5	Diabetes mellitus (E10-E14)	1 820	3,5	5	Hypertensive diseases (I10-I15)	2 048	4,6
6	Hypertensive diseases (I10-I15)	3 356	3,4	6	Ischaemic heart diseases (I20-I25)	1 788	3,4	6	Cerebrovascular diseases (I60-I69)	2 028	4,5
7	Ischaemic heart diseases (I20-I25)	2 986	3,0	7	Human immunodeficiency virus [HIV] disease (B20-B24)	1 571	3,0	7	Other viral diseases (B25-B34)	1 462	3,3
8	Other viral diseases (B25-B34)	2 880	2,9	8	Other viral diseases (B25-B34)	1 402	2,7	8	Human immunodeficiency virus [HIV] disease (B20-B24)	1 281	2,9
9	Human immunodeficiency virus [HIV] disease (B20-B24)	2 879	2,9	9	Chronic lower respiratory diseases (J40-J47)	1 386	2,6	9	Certain disorders involving the immune mechanism (D80-D89)	1 199	2,7
10	Malignant neoplasms of digestive organs (C15-C26)	2 411	2,5	10	Malignant neoplasms of digestive organs (C15-C26)	1 376	2,6	10	Ischaemic heart diseases (I20-I25)	1 194	2,7
	Other natural causes	48 033	48,9		Other natural causes	24 046	45,8		Other natural causes	23 310	52,0
	Non-natural causes	11 520	11,7		Non-natural causes	8 793	16,8		Non-natural causes	2 500	5,6
	All causes	98 191	100,0		All causes	52 462	100,0		All causes	44 865	100,0
All Gauteng, both sexes, 0			All Gauteng, males, 0			All Gauteng, females, 0					
	No.	%		No.	%		No.	%			
1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	1 089	18,7	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	563	18,3	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	487	18,9
2	Infections specific to the perinatal period (P35-P39)	404	6,9	2	Infections specific to the perinatal period (P35-P39)	211	6,8	2	Infections specific to the perinatal period (P35-P39)	180	7,0
3	Other disorders originating in the perinatal period (P90-P96)	365	6,3	3	Other disorders originating in the perinatal period (P90-P96)	191	6,2	3	Intestinal infectious diseases (A00-A09)	161	6,3
4	Intestinal infectious diseases (A00-A09)	348	6,0	4	Intestinal infectious diseases (A00-A09)	180	5,8	4	Influenza and pneumonia (J09-J18)	155	6,0
5	Influenza and pneumonia (J09-J18)	316	5,4	5	Influenza and pneumonia (J09-J18)	157	5,1	5	Other disorders originating in the perinatal period (P90-P96)	149	5,8
6	Disorders related to length of gestation and fetal growth (P05-P08)	236	4,0	6	Disorders related to length of gestation and fetal growth (P05-P08)	123	4,0	6	Disorders related to length of gestation and fetal growth (P05-P08)	110	4,3
7	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	185	3,2	7	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	108	3,5	7	Congenital malformations of the circulatory system (Q20-Q28)	76	3,0
8	Congenital malformations of the circulatory system (Q20-Q28)	185	3,2	8	Congenital malformations of the circulatory system (Q20-Q28)	105	3,4	8	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	73	2,8
9	Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	154	2,6	9	Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	93	3,0	9	Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	59	2,3
10	Other bacterial diseases (A30-A49)	129	2,2	10	Other bacterial diseases (A30-A49)	71	2,3	10	Other bacterial diseases (A30-A49)	56	2,2
	Other natural causes	2 225	38,1		Other natural causes	1 172	38,0		Other natural causes	987	38,4
	Non-natural causes	197	3,4		Non-natural causes	107	3,5		Non-natural causes	79	3,1
	All causes	5 833	100,0		All causes	3 081	100,0		All causes	2 572	100,0
All Gauteng, both sexes, 1-14			All Gauteng, males, 1-14			All Gauteng, females, 1-14					
	No.	%		No.	%		No.	%			
1	Intestinal infectious diseases (A00-A09)	152	5,7	1	Intestinal infectious diseases (A00-A09)	70	4,8	1	Intestinal infectious diseases (A00-A09)	81	6,8
2	Influenza and pneumonia (J09-J18)	137	5,2	2	Influenza and pneumonia (J09-J18)	66	4,6	2	Influenza and pneumonia (J09-J18)	71	6,0
3	Other forms of heart disease (I30-I52)	92	3,5	3	Other forms of heart disease (I30-I52)	52	3,6	3	Other forms of heart disease (I30-I52)	39	3,3
4	Malnutrition (E40-E46)	77	2,9	4	Malnutrition (E40-E46)	39	2,7	4	Malnutrition (E40-E46)	38	3,2
5	Tuberculosis (A15-A19)	73	2,7	5	Tuberculosis (A15-A19)	38	2,6	5	Tuberculosis (A15-A19)	35	3,0
6	Other diseases of the respiratory system (J95-J99)	63	2,4	6	Other diseases of the respiratory system (J95-J99)	35	2,4	6	Other diseases of the respiratory system (J95-J99)	27	2,3
7	Cerebral palsy and other paralytic syndromes (G80-G83)	53	2,0	7	Malignant neoplasms, stated or presumed to be primary, of lymphoid, haematopoietic and related tissue (C81-C96)	33	2,3	7	Congenital malformations of the circulatory system (Q20-Q28)	25	2,1
8	Congenital malformations of the circulatory system (Q20-Q28)	52	2,0	8	Cerebral palsy and other paralytic syndromes (G80-G83)	32	2,2	8	Other viral diseases (B25-B34)	23	1,9
9	Malignant neoplasms, stated or presumed to be primary, of lymphoid, haematopoietic and related tissue (C81-C96)	47	1,8	9	Congenital malformations of the circulatory system (Q20-Q28)	27	1,9	9	Human immunodeficiency virus [HIV] disease (B20-B24)	22	1,9
10	Other viral diseases (B25-B34)	46	1,7	10	Inflammatory diseases of the central nervous system (G00-G09)	24	1,7	10	Cerebral palsy and other paralytic syndromes (G80-G83)	21	1,8
	Other natural causes	1 100	41,4		Other natural causes	560	38,7		Other natural causes	511	43,2
	Non-natural causes	763	28,7		Non-natural causes	470	32,5		Non-natural causes	290	24,5
	All causes	2 655	100,0		All causes	1 446	100,0		All causes	1 183	100,0

Appendix M7: The ten leading underlying natural causes of death by age and sex: Gauteng, 2015 (concluded)

All Gauteng, both sexes, 15-44			All Gauteng, males, 15-44			All Gauteng, females, 15-44					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	2 891	10,1	1	Tuberculosis (A15-A19)	1 621	9,6	1	Tuberculosis (A15-A19)	1 244	10,8
2	Other viral diseases (B25-B34)	1 718	6,0	2	Human immunodeficiency virus [HIV] disease (B20-B24)	901	5,4	2	Other viral diseases (B25-B34)	959	8,3
3	Human immunodeficiency virus [HIV] disease (B20-B24)	1 714	6,0	3	Influenza and pneumonia (J09-J18)	799	4,7	3	Human immunodeficiency virus [HIV] disease (B20-B24)	798	6,9
4	Influenza and pneumonia (J09-J18)	1 548	5,4	4	Other viral diseases (B25-B34)	748	4,4	4	Certain disorders involving the immune mechanism (D80-D89)	758	6,6
5	Certain disorders involving the immune mechanism (D80-D89)	1 349	4,7	5	Certain disorders involving the immune mechanism (D80-D89)	579	3,4	5	Influenza and pneumonia (J09-J18)	733	6,4
6	Other forms of heart disease (I30-I52)	1 048	3,7	6	Other forms of heart disease (I30-I52)	553	3,3	6	Other forms of heart disease (I30-I52)	479	4,2
7	Inflammatory diseases of the central nervous system (G00-G09)	466	1,6	7	Inflammatory diseases of the central nervous system (G00-G09)	256	1,5	7	Malignant neoplasms of female genital organs (C51-C58)	277	2,4
8	Cerebrovascular diseases (I60-I69)	453	1,6	8	Cerebrovascular diseases (I60-I69)	244	1,4	8	Inflammatory diseases of the central nervous system (G00-G09)	205	1,8
9	Other bacterial diseases (A30-A49)	403	1,4	9	Renal failure (N17-N19)	220	1,3	9	Cerebrovascular diseases (I60-I69)	201	1,7
10	Renal failure (N17-N19)	401	1,4	10	Other bacterial diseases (A30-A49)	199	1,2	10	Other bacterial diseases (A30-A49)	201	1,7
	Other natural causes	9 559	33,4		Other natural causes	4 841	28,8		Other natural causes	4 532	39,3
	Non-natural causes	7 077	24,7		Non-natural causes	5 870	34,9		Non-natural causes	1 131	9,8
	All causes	28 627	100,0		All causes	16 831	100,0		All causes	11 518	100,0
All Gauteng, both sexes, 45-64			All Gauteng, males, 45-64			All Gauteng, females, 45-64					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	1 908	6,7	1	Tuberculosis (A15-A19)	1 254	7,5	1	Diabetes mellitus (E10-E14)	782	6,7
2	Other forms of heart disease (I30-I52)	1 684	5,9	2	Other forms of heart disease (I30-I52)	950	5,7	2	Other forms of heart disease (I30-I52)	727	6,2
3	Diabetes mellitus (E10-E14)	1 571	5,5	3	Diabetes mellitus (E10-E14)	788	4,7	3	Tuberculosis (A15-A19)	649	5,6
4	Cerebrovascular diseases (I60-I69)	1 295	4,6	4	Influenza and pneumonia (J09-J18)	775	4,7	4	Cerebrovascular diseases (I60-I69)	559	4,8
5	Influenza and pneumonia (J09-J18)	1 288	4,5	5	Cerebrovascular diseases (I60-I69)	732	4,4	5	Influenza and pneumonia (J09-J18)	504	4,3
6	Malignant neoplasms of digestive organs (C15-C26)	971	3,4	6	Ischaemic heart diseases (I20-I25)	652	3,9	6	Malignant neoplasms of female genital organs (C51-C58)	488	4,2
7	Hypertensive diseases (I10-I15)	970	3,4	7	Malignant neoplasms of digestive organs (C15-C26)	588	3,5	7	Hypertensive diseases (I10-I15)	463	4,0
8	Human immunodeficiency virus [HIV] disease (B20-B24)	966	3,4	8	Human immunodeficiency virus [HIV] disease (B20-B24)	564	3,4	8	Other viral diseases (B25-B34)	418	3,6
9	Other viral diseases (B25-B34)	955	3,4	9	Other viral diseases (B25-B34)	534	3,2	9	Human immunodeficiency virus [HIV] disease (B20-B24)	399	3,4
10	Ischaemic heart diseases (I20-I25)	950	3,3	10	Hypertensive diseases (I10-I15)	504	3,0	10	Malignant neoplasms of digestive organs (C15-C26)	381	3,3
	Other natural causes	13 683	48,2		Other natural causes	7 638	45,9		Other natural causes	5 802	49,7
	Non-natural causes	2 168	7,6		Non-natural causes	1 652	9,9		Non-natural causes	500	4,3
	All causes	28 409	100,0		All causes	16 631	100,0		All causes	11 672	100,0
All Gauteng, both sexes, 65+			All Gauteng, males, 65+			All Gauteng, females, 65+					
	No.	%		No.	%		No.	%			
1	Other forms of heart disease (I30-I52)	2 836	8,8	1	Other forms of heart disease (I30-I52)	1 123	7,9	1	Other forms of heart disease (I30-I52)	1 711	9,6
2	Diabetes mellitus (E10-E14)	2 305	7,2	2	Ischaemic heart diseases (I20-I25)	978	6,9	2	Hypertensive diseases (I10-I15)	1 470	8,2
3	Hypertensive diseases (I10-I15)	2 171	6,8	3	Diabetes mellitus (E10-E14)	881	6,2	3	Diabetes mellitus (E10-E14)	1 422	8,0
4	Cerebrovascular diseases (I60-I69)	2 116	6,6	4	Cerebrovascular diseases (I60-I69)	857	6,0	4	Cerebrovascular diseases (I60-I69)	1 255	7,0
5	Ischaemic heart diseases (I20-I25)	1 804	5,6	5	Chronic lower respiratory diseases (J40-J47)	803	5,6	5	Influenza and pneumonia (J09-J18)	876	4,9
6	Influenza and pneumonia (J09-J18)	1 525	4,7	6	Hypertensive diseases (I10-I15)	701	4,9	6	Ischaemic heart diseases (I20-I25)	825	4,6
7	Chronic lower respiratory diseases (J40-J47)	1 396	4,3	7	Malignant neoplasms of digestive organs (C15-C26)	657	4,6	7	Chronic lower respiratory diseases (J40-J47)	592	3,3
8	Malignant neoplasms of digestive organs (C15-C26)	1 209	3,8	8	Influenza and pneumonia (J09-J18)	648	4,6	8	Malignant neoplasms of digestive organs (C15-C26)	551	3,1
9	Renal failure (N17-N19)	772	2,4	9	Malignant neoplasms of male genital organs (C60-C63)	592	4,2	9	Renal failure (N17-N19)	418	2,3
10	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	651	2,0	10	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	383	2,7	10	Malignant neoplasms of female genital organs (C51-C58)	382	2,1
	Other natural causes	14 238	44,3		Other natural causes	6 008	42,2		Other natural causes	7 861	44,0
	Non-natural causes	1 090	3,4		Non-natural causes	596	4,2		Non-natural causes	491	2,8
	All causes	32 113	100,0		All causes	14 227	100,0		All causes	17 854	100,0

Appendix M8: The ten leading underlying natural causes of death by age and sex: Mpumalanga, 2015

Mpumalanga, both sexes, all ages			Mpumalanga, males, all ages			Mpumalanga, females, all ages					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	2 714	7,9	1	Tuberculosis (A15-A19)	1 589	8,9	1	Tuberculosis (A15-A19)	1 115	6,8
2	Cerebrovascular diseases (I60-I69)	1 813	5,3	2	Human immunodeficiency virus [HIV] disease (B20-B24)	898	5,0	2	Diabetes mellitus (E10-E14)	1 103	6,7
3	Other viral diseases (B25-B34)	1 797	5,2	3	Influenza and pneumonia (J09-J18)	867	4,9	3	Cerebrovascular diseases (I60-I69)	1 086	6,6
4	Diabetes mellitus (E10-E14)	1 783	5,2	4	Other viral diseases (B25-B34)	801	4,5	4	Other viral diseases (B25-B34)	988	6,0
5	Influenza and pneumonia (J09-J18)	1 694	4,9	5	Certain disorders involving the immune mechanism (D80-D89)	727	4,1	5	Hypertensive diseases (I10-I15)	980	6,0
6	Human immunodeficiency virus [HIV] disease (B20-B24)	1 677	4,9	6	Cerebrovascular diseases (I60-I69)	723	4,1	6	Influenza and pneumonia (J09-J18)	821	5,0
7	Hypertensive diseases (I10-I15)	1 613	4,7	7	Diabetes mellitus (E10-E14)	680	3,8	7	Human immunodeficiency virus [HIV] disease (B20-B24)	773	4,7
8	Certain disorders involving the immune mechanism (D80-D89)	1 412	4,1	8	Other forms of heart disease (I30-I52)	640	3,6	8	Other forms of heart disease (I30-I52)	733	4,5
9	Other forms of heart disease (I30-I52)	1 374	4,0	9	Hypertensive diseases (I10-I15)	630	3,5	9	Certain disorders involving the immune mechanism (D80-D89)	682	4,2
10	Intestinal infectious diseases (A00-A09)	1 154	3,4	10	Intestinal infectious diseases (A00-A09)	560	3,1	10	Intestinal infectious diseases (A00-A09)	590	3,6
	Other natural causes	13 410	39,1		Other natural causes	6 734	37,8		Other natural causes	6 614	40,4
	Non-natural causes	3 845	11,2		Non-natural causes	2 953	16,6		Non-natural causes	870	5,3
	All causes	34 286	100,0		All causes	17 802	100,0		All causes	16 355	100,0
All Mpumalanga, both sexes, 0			All Mpumalanga, males, 0			All Mpumalanga, females, 0					
	No.	%		No.	%		No.	%			
1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	308	16,2	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	166	16,6	1	Intestinal infectious diseases (A00-A09)	133	15,4
2	Intestinal infectious diseases (A00-A09)	275	14,4	2	Intestinal infectious diseases (A00-A09)	140	14,0	2	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	131	15,2
3	Influenza and pneumonia (J09-J18)	174	9,1	3	Influenza and pneumonia (J09-J18)	93	9,3	3	Influenza and pneumonia (J09-J18)	79	9,2
4	Disorders related to length of gestation and fetal growth (P05-P08)	100	5,2	4	Disorders related to length of gestation and fetal growth (P05-P08)	61	6,1	4	Malnutrition (E40-E46)	51	5,9
5	Malnutrition (E40-E46)	95	5,0	5	Other disorders originating in the perinatal period (P90-P96)	46	4,6	5	Disorders related to length of gestation and fetal growth (P05-P08)	37	4,3
6	Other disorders originating in the perinatal period (P90-P96)	76	4,0	6	Malnutrition (E40-E46)	42	4,2	6	Other acute lower respiratory infections (J20-J22)	27	3,1
7	Certain disorders involving the immune mechanism (D80-D89)	58	3,0	7	Certain disorders involving the immune mechanism (D80-D89)	37	3,7	7	Other disorders originating in the perinatal period (P90-P96)	27	3,1
8	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	50	2,6	8	Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	30	3,0	8	Other viral diseases (B25-B34)	26	3,0
9	Other acute lower respiratory infections (J20-J22)	48	2,5	9	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	29	2,9	9	Certain disorders involving the immune mechanism (D80-D89)	21	2,4
10	Other viral diseases (B25-B34)	45	2,4	10	Other acute lower respiratory infections (J20-J22)	20	2,0	10	Infections specific to the perinatal period (P35-P39)	19	2,2
	Other natural causes	595	31,2		Other natural causes	286	28,6		Other natural causes	279	32,3
	Non-natural causes	83	4,4		Non-natural causes	50	5,0		Non-natural causes	33	3,8
	All causes	1 907	100,0		All causes	1 000	100,0		All causes	863	100,0
All Mpumalanga, both sexes, 1-14			All Mpumalanga, males, 1-14			All Mpumalanga, females, 1-14					
	No.	%		No.	%		No.	%			
1	Intestinal infectious diseases (A00-A09)	172	13,1	1	Intestinal infectious diseases (A00-A09)	89	12,0	1	Intestinal infectious diseases (A00-A09)	82	14,3
2	Influenza and pneumonia (J09-J18)	97	7,4	2	Influenza and pneumonia (J09-J18)	47	6,3	2	Influenza and pneumonia (J09-J18)	49	8,6
3	Malnutrition (E40-E46)	60	4,6	3	Malnutrition (E40-E46)	32	4,3	3	Malnutrition (E40-E46)	28	4,9
4	Other viral diseases (B25-B34)	53	4,0	4	Certain disorders involving the immune mechanism (D80-D89)	28	3,8	4	Other viral diseases (B25-B34)	26	4,5
5	Tuberculosis (A15-A19)	50	3,8	5	Other viral diseases (B25-B34)	26	3,5	5	Tuberculosis (A15-A19)	25	4,4
6	Certain disorders involving the immune mechanism (D80-D89)	46	3,5	6	Tuberculosis (A15-A19)	25	3,4	6	Certain disorders involving the immune mechanism (D80-D89)	18	3,1
7	Other acute lower respiratory infections (J20-J22)	32	2,4	7	Inflammatory diseases of the central nervous system (G00-G09)	20	2,7	7	Other diseases of the respiratory system (J95-J99)	17	3,0
8	Cerebral palsy and other paralytic syndromes (G80-G83)	31	2,4	8	Cerebral palsy and other paralytic syndromes (G80-G83)	19	2,6	8	Other acute lower respiratory infections (J20-J22)	13	2,3
9	Inflammatory diseases of the central nervous system (G00-G09)	30	2,3	9	Other acute lower respiratory infections (J20-J22)	19	2,6	9	Cerebral palsy and other paralytic syndromes (G80-G83)	12	2,1
10	Human immunodeficiency virus [HIV] disease (B20-B24)	29	2,2	10	Human immunodeficiency virus [HIV] disease (B20-B24)	18	2,4	10	Human immunodeficiency virus [HIV] disease (B20-B24)	11	1,9
	Other natural causes	410	31,2		Other natural causes	226	30,5		Other natural causes	177	30,9
	Non-natural causes	306	23,3		Non-natural causes	192	25,9		Non-natural causes	114	19,9
	All causes	1 316	100,0		All causes	741	100,0		All causes	572	100,0

Appendix M8: The ten leading underlying natural causes of death by age and sex: Mpumalanga, 2015 (concluded)

All Mpumalanga, both sexes, 15-44			All Mpumalanga, males, 15-44			All Mpumalanga, females, 15-44					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	1 343	11,9	1	Tuberculosis (A15-A19)	690	11,1	1	Tuberculosis (A15-A19)	645	12,8
2	Other viral diseases (B25-B34)	1 103	9,8	2	Human immunodeficiency virus [HIV] disease (B20-B24)	517	8,3	2	Other viral diseases (B25-B34)	631	12,5
3	Human immunodeficiency virus [HIV] disease (B20-B24)	1 023	9,1	3	Other viral diseases (B25-B34)	467	7,5	3	Human immunodeficiency virus [HIV] disease (B20-B24)	503	10,0
4	Certain disorders involving the immune mechanism (D80-D89)	778	6,9	4	Certain disorders involving the immune mechanism (D80-D89)	371	6,0	4	Certain disorders involving the immune mechanism (D80-D89)	405	8,0
5	Influenza and pneumonia (J09-J18)	522	4,6	5	Influenza and pneumonia (J09-J18)	242	3,9	5	Influenza and pneumonia (J09-J18)	279	5,5
6	Other acute lower respiratory infections (J20-J22)	280	2,5	6	Other acute lower respiratory infections (J20-J22)	153	2,5	6	Intestinal infectious diseases (A00-A09)	129	2,6
7	Intestinal infectious diseases (A00-A09)	242	2,1	7	Intestinal infectious diseases (A00-A09)	113	1,8	7	Other acute lower respiratory infections (J20-J22)	126	2,5
8	Other forms of heart disease (I30-I52)	195	1,7	8	Other forms of heart disease (I30-I52)	99	1,6	8	Malignant neoplasms of female genital organs (C51-C58)	120	2,4
9	Inflammatory diseases of the central nervous system (G00-G09)	172	1,5	9	Inflammatory diseases of the central nervous system (G00-G09)	81	1,3	9	Other forms of heart disease (I30-I52)	95	1,9
10	Cerebrovascular diseases (I60-I69)	142	1,3	10	Renal failure (N17-N19)	71	1,1	10	Inflammatory diseases of the central nervous system (G00-G09)	91	1,8
	Other natural causes	3 070	27,3		Other natural causes	1 443	23,3		Other natural causes	1 574	31,3
	Non-natural causes	2 392	21,2		Non-natural causes	1 946	31,4		Non-natural causes	434	8,6
	All causes	11 262	100,0		All causes	6 193	100,0		All causes	5 032	100,0
All Mpumalanga, both sexes, 45-64			All Mpumalanga, males, 45-64			All Mpumalanga, females, 45-64					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	963	10,1	1	Tuberculosis (A15-A19)	631	11,6	1	Diabetes mellitus (E10-E14)	368	9,0
2	Diabetes mellitus (E10-E14)	660	6,9	2	Human immunodeficiency virus [HIV] disease (B20-B24)	315	5,8	2	Tuberculosis (A15-A19)	331	8,1
3	Human immunodeficiency virus [HIV] disease (B20-B24)	524	5,5	3	Diabetes mellitus (E10-E14)	292	5,4	3	Other viral diseases (B25-B34)	257	6,3
4	Other viral diseases (B25-B34)	508	5,3	4	Influenza and pneumonia (J09-J18)	257	4,7	4	Cerebrovascular diseases (I60-I69)	244	6,0
5	Cerebrovascular diseases (I60-I69)	496	5,2	5	Cerebrovascular diseases (I60-I69)	251	4,6	5	Hypertensive diseases (I10-I15)	233	5,7
6	Hypertensive diseases (I10-I15)	427	4,5	6	Other viral diseases (B25-B34)	250	4,6	6	Human immunodeficiency virus [HIV] disease (B20-B24)	208	5,1
7	Influenza and pneumonia (J09-J18)	420	4,4	7	Certain disorders involving the immune mechanism (D80-D89)	232	4,3	7	Malignant neoplasms of female genital organs (C51-C58)	184	4,5
8	Certain disorders involving the immune mechanism (D80-D89)	403	4,2	8	Other forms of heart disease (I30-I52)	195	3,6	8	Certain disorders involving the immune mechanism (D80-D89)	170	4,2
9	Other forms of heart disease (I30-I52)	343	3,6	9	Hypertensive diseases (I10-I15)	193	3,5	9	Influenza and pneumonia (J09-J18)	162	4,0
10	Ischaemic heart diseases (I20-I25)	280	2,9	10	Chronic lower respiratory diseases (J40-J47)	171	3,1	10	Other forms of heart disease (I30-I52)	148	3,6
	Other natural causes	3 765	39,5		Other natural causes	2 082	38,2		Other natural causes	1 599	39,3
	Non-natural causes	748	7,8		Non-natural causes	578	10,6		Non-natural causes	168	4,1
	All causes	9 537	100,0		All causes	5 447	100,0		All causes	4 072	100,0
All Mpumalanga, both sexes, 65+			All Mpumalanga, males, 65+			All Mpumalanga, females, 65+					
	No.	%		No.	%		No.	%			
1	Cerebrovascular diseases (I60-I69)	1 170	11,5	1	Cerebrovascular diseases (I60-I69)	408	9,4	1	Cerebrovascular diseases (I60-I69)	759	13,1
2	Hypertensive diseases (I10-I15)	1 085	10,7	2	Hypertensive diseases (I10-I15)	390	8,9	2	Hypertensive diseases (I10-I15)	694	12,0
3	Diabetes mellitus (E10-E14)	985	9,7	3	Diabetes mellitus (E10-E14)	334	7,7	3	Diabetes mellitus (E10-E14)	651	11,2
4	Other forms of heart disease (I30-I52)	807	7,9	4	Other forms of heart disease (I30-I52)	329	7,5	4	Other forms of heart disease (I30-I52)	478	8,2
5	Influenza and pneumonia (J09-J18)	481	4,7	5	Tuberculosis (A15-A19)	235	5,4	5	Influenza and pneumonia (J09-J18)	252	4,3
6	Ischaemic heart diseases (I20-I25)	409	4,0	6	Influenza and pneumonia (J09-J18)	228	5,2	6	Ischaemic heart diseases (I20-I25)	208	3,6
7	Tuberculosis (A15-A19)	342	3,4	7	Ischaemic heart diseases (I20-I25)	201	4,6	7	Intestinal infectious diseases (A00-A09)	144	2,5
8	Chronic lower respiratory diseases (J40-J47)	324	3,2	8	Chronic lower respiratory diseases (J40-J47)	185	4,2	8	Chronic lower respiratory diseases (J40-J47)	139	2,4
9	Intestinal infectious diseases (A00-A09)	239	2,4	9	Malignant neoplasms of male genital organs (C60-C63)	171	3,9	9	Renal failure (N17-N19)	120	2,1
10	Renal failure (N17-N19)	209	2,1	10	Malignant neoplasms of digestive organs (C15-C26)	104	2,4	10	Other acute lower respiratory infections (J20-J22)	115	2,0
	Other natural causes	3 840	37,8		Other natural causes	1 614	37,0		Other natural causes	2 119	36,6
	Non-natural causes	279	2,7		Non-natural causes	161	3,7		Non-natural causes	118	2,0
	All causes	10 170	100,0		All causes	4 360	100,0		All causes	5 797	100,0

Appendix M9: The ten leading underlying natural causes of death by age and sex: Limpopo, 2015

Limpopo, both sexes, all ages			Limpopo, males, all ages			Limpopo, females, all ages					
	No.	%		No.	%		No.	%			
1	Influenza and pneumonia (J09-J18)	3 505	0,1	1	Tuberculosis (A15-A19)	1 801	7,8	1	Influenza and pneumonia (J09-J18)	1 764	7,4
2	Tuberculosis (A15-A19)	3 086	0,1	2	Influenza and pneumonia (J09-J18)	1 729	7,5	2	Diabetes mellitus (E10-E14)	1 753	7,4
3	Diabetes mellitus (E10-E14)	2 942	0,1	3	Diabetes mellitus (E10-E14)	1 188	5,2	3	Cerebrovascular diseases (I60-I69)	1 529	6,4
4	Hypertensive diseases (I10-I15)	2 488	0,1	4	Other viral diseases (B25-B34)	1 060	4,6	4	Hypertensive diseases (I10-I15)	1 509	6,4
5	Cerebrovascular diseases (I60-I69)	2 470	0,1	5	Hypertensive diseases (I10-I15)	977	4,2	5	Tuberculosis (A15-A19)	1 280	5,4
6	Other viral diseases (B25-B34)	2 320	0,0	6	Cerebrovascular diseases (I60-I69)	938	4,1	6	Other viral diseases (B25-B34)	1 256	5,3
7	Intestinal infectious diseases (A00-A09)	2 012	0,0	7	Intestinal infectious diseases (A00-A09)	920	4,0	7	Intestinal infectious diseases (A00-A09)	1 084	4,6
8	Other forms of heart disease (I30-I52)	1 781	0,0	8	Other forms of heart disease (I30-I52)	837	3,6	8	Other forms of heart disease (I30-I52)	942	4,0
9	Human immunodeficiency virus [HIV] disease (B20-B24)	1 399	0,0	9	Human immunodeficiency virus [HIV] disease (B20-B24)	635	2,8	9	Human immunodeficiency virus [HIV] disease (B20-B24)	761	3,2
10	Certain disorders involving the immune mechanism (D80-D89)	1 176	0,0	10	Chronic lower respiratory diseases (J40-J47)	536	2,3	10	Certain disorders involving the immune mechanism (D80-D89)	642	2,7
	Other natural causes	19 594	0,4		Other natural causes	9 360	40,6		Other natural causes	10 149	42,8
	Non-natural causes	4 150	0,1		Non-natural causes	3 082	13,4		Non-natural causes	1 044	4,4
	All causes	46 923	1,0		All causes	23 063	100,0		All causes	23 713	100,0
All Limpopo, both sexes, 0			All Limpopo, males, 0			All Limpopo, females, 0					
	No.	%		No.	%		No.	%			
1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	513	16,2	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	269	16,3	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	228	15,8
2	Influenza and pneumonia (J09-J18)	438	13,8	2	Influenza and pneumonia (J09-J18)	229	13,9	2	Influenza and pneumonia (J09-J18)	206	14,3
3	Intestinal infectious diseases (A00-A09)	392	12,4	3	Intestinal infectious diseases (A00-A09)	209	12,6	3	Intestinal infectious diseases (A00-A09)	179	12,4
4	Other disorders originating in the perinatal period (P90-P96)	154	4,9	4	Other disorders originating in the perinatal period (P90-P96)	74	4,5	4	Other disorders originating in the perinatal period (P90-P96)	76	5,3
5	Malnutrition (E40-E46)	118	3,7	5	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	66	4,0	5	Malnutrition (E40-E46)	62	4,3
6	Disorders related to length of gestation and fetal growth (P05-P08)	118	3,7	6	Disorders related to length of gestation and fetal growth (P05-P08)	63	3,8	6	Disorders related to length of gestation and fetal growth (P05-P08)	49	3,4
7	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	115	3,6	7	Malnutrition (E40-E46)	55	3,3	7	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	47	3,3
8	Infections specific to the perinatal period (P35-P39)	98	3,1	8	Infections specific to the perinatal period (P35-P39)	52	3,1	8	Infections specific to the perinatal period (P35-P39)	44	3,1
9	Inflammatory diseases of the central nervous system (G00-G09)	67	2,1	9	Inflammatory diseases of the central nervous system (G00-G09)	32	1,9	9	Inflammatory diseases of the central nervous system (G00-G09)	31	2,2
10	Other acute lower respiratory infections (J20-J22)	51	1,6	10	Other viral diseases (B25-B34)	29	1,8	10	Other acute lower respiratory infections (J20-J22)	28	1,9
	Other natural causes	959	30,3		Other natural causes	501	30,3		Other natural causes	427	29,6
	Non-natural causes	141	4,5		Non-natural causes	74	4,5		Non-natural causes	64	4,4
	All causes	3 164	100,0		All causes	1 653	100,0		All causes	1 441	100,0
All Limpopo, both sexes, 1-14			All Limpopo, males, 1-14			All Limpopo, females, 1-14					
	No.	%		No.	%		No.	%			
1	Intestinal infectious diseases (A00-A09)	271	12,9	1	Intestinal infectious diseases (A00-A09)	148	13,0	1	Intestinal infectious diseases (A00-A09)	123	12,9
2	Influenza and pneumonia (J09-J18)	224	10,7	2	Influenza and pneumonia (J09-J18)	120	10,5	2	Influenza and pneumonia (J09-J18)	102	10,7
3	Malnutrition (E40-E46)	148	7,0	3	Malnutrition (E40-E46)	83	7,3	3	Malnutrition (E40-E46)	65	6,8
4	Other viral diseases (B25-B34)	72	3,4	4	Other viral diseases (B25-B34)	35	3,1	4	Tuberculosis (A15-A19)	38	4,0
5	Tuberculosis (A15-A19)	70	3,3	5	Inflammatory diseases of the central nervous system (G00-G09)	35	3,1	5	Other viral diseases (B25-B34)	36	3,8
6	Inflammatory diseases of the central nervous system (G00-G09)	64	3,0	6	Tuberculosis (A15-A19)	32	2,8	6	Other bacterial diseases (A30-A49)	28	2,9
7	Other bacterial diseases (A30-A49)	43	2,0	7	Cerebral palsy and other paralytic syndromes (G80-G83)	22	1,9	7	Inflammatory diseases of the central nervous system (G00-G09)	28	2,9
8	Certain disorders involving the immune mechanism (D80-D89)	40	1,9	8	Certain disorders involving the immune mechanism (D80-D89)	17	1,5	8	Certain disorders involving the immune mechanism (D80-D89)	23	2,4
9	Cerebral palsy and other paralytic syndromes (G80-G83)	36	1,7	9	Episodic and paroxysmal disorders (G40-G47)	17	1,5	9	Episodic and paroxysmal disorders (G40-G47)	14	1,5
10	Episodic and paroxysmal disorders (G40-G47)	31	1,5	10	Other bacterial diseases (A30-A49)	15	1,3	10	Cerebral palsy and other paralytic syndromes (G80-G83)	14	1,5
	Other natural causes	722	34,4		Other natural causes	364	32,0		Other natural causes	356	37,2
	Non-natural causes	379	18,0		Non-natural causes	250	22,0		Non-natural causes	129	13,5
	All causes	2 100	100,0		All causes	1 138	100,0		All causes	956	100,0

Appendix M9: The ten leading underlying natural causes of death by age and sex: Limpopo, 2015 (concluded)

All Limpopo, both sexes, 15-44			All Limpopo, males, 15-44			All Limpopo, females, 15-44					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	1 502	12,3	1	Tuberculosis (A15-A19)	728	12,0	1	Other viral diseases (B25-B34)	812	13,3
2	Other viral diseases (B25-B34)	1 338	11,0	2	Other viral diseases (B25-B34)	523	8,6	2	Tuberculosis (A15-A19)	772	12,7
3	Human immunodeficiency virus [HIV] disease (B20-B24)	871	7,2	3	Influenza and pneumonia (J09-J18)	353	5,8	3	Human immunodeficiency virus [HIV] disease (B20-B24)	518	8,5
4	Influenza and pneumonia (J09-J18)	859	7,1	4	Human immunodeficiency virus [HIV] disease (B20-B24)	351	5,8	4	Influenza and pneumonia (J09-J18)	503	8,3
5	Certain disorders involving the immune mechanism (D80-D89)	685	5,6	5	Certain disorders involving the immune mechanism (D80-D89)	260	4,3	5	Certain disorders involving the immune mechanism (D80-D89)	424	7,0
6	Intestinal infectious diseases (A00-A09)	404	3,3	6	Intestinal infectious diseases (A00-A09)	167	2,8	6	Intestinal infectious diseases (A00-A09)	235	3,9
7	Inflammatory diseases of the central nervous system (G00-G09)	233	1,9	7	Inflammatory diseases of the central nervous system (G00-G09)	100	1,7	7	Inflammatory diseases of the central nervous system (G00-G09)	133	2,2
8	Other forms of heart disease (I30-I52)	227	1,9	8	Other forms of heart disease (I30-I52)	96	1,6	8	Other forms of heart disease (I30-I52)	131	2,2
9	Diabetes mellitus (E10-E14)	187	1,5	9	Episodic and paroxysmal disorders (G40-G47)	83	1,4	9	Malignant neoplasms of female genital organs (C51-C58)	123	2,0
10	Renal failure (N17-N19)	144	1,2	10	Diabetes mellitus (E10-E14)	73	1,2	10	Diabetes mellitus (E10-E14)	113	1,9
	Other natural causes	3 403	28,0		Other natural causes	1 448	23,9		Other natural causes	1 892	31,1
	Non-natural causes	2 309	19,0		Non-natural causes	1 865	30,8		Non-natural causes	428	7,0
	All causes	12 162	100,0		All causes	6 047	100,0		All causes	6 084	100,0
All Limpopo, both sexes, 45-64			All Limpopo, males, 45-64			All Limpopo, females, 45-64					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	1 095	9,2	1	Tuberculosis (A15-A19)	750	10,9	1	Diabetes mellitus (E10-E14)	536	10,6
2	Diabetes mellitus (E10-E14)	985	8,3	2	Influenza and pneumonia (J09-J18)	477	6,9	2	Tuberculosis (A15-A19)	342	6,8
3	Influenza and pneumonia (J09-J18)	794	6,7	3	Diabetes mellitus (E10-E14)	449	6,5	3	Influenza and pneumonia (J09-J18)	315	6,3
4	Other viral diseases (B25-B34)	717	6,0	4	Other viral diseases (B25-B34)	403	5,9	4	Other viral diseases (B25-B34)	314	6,2
5	Cerebrovascular diseases (I60-I69)	580	4,9	5	Cerebrovascular diseases (I60-I69)	291	4,2	5	Hypertensive diseases (I10-I15)	304	6,0
6	Hypertensive diseases (I10-I15)	577	4,8	6	Hypertensive diseases (I10-I15)	273	4,0	6	Cerebrovascular diseases (I60-I69)	287	5,7
7	Other forms of heart disease (I30-I52)	421	3,5	7	Other forms of heart disease (I30-I52)	243	3,5	7	Malignant neoplasms of female genital organs (C51-C58)	242	4,8
8	Human immunodeficiency virus [HIV] disease (B20-B24)	417	3,5	8	Human immunodeficiency virus [HIV] disease (B20-B24)	234	3,4	8	Intestinal infectious diseases (A00-A09)	186	3,7
9	Intestinal infectious diseases (A00-A09)	386	3,2	9	Certain disorders involving the immune mechanism (D80-D89)	205	3,0	9	Human immunodeficiency virus [HIV] disease (B20-B24)	182	3,6
10	Certain disorders involving the immune mechanism (D80-D89)	353	3,0	10	Intestinal infectious diseases (A00-A09)	200	2,9	10	Other forms of heart disease (I30-I52)	177	3,5
	Other natural causes	4 749	39,8		Other natural causes	2 696	39,3		Other natural causes	1 954	38,8
	Non-natural causes	846	7,1		Non-natural causes	645	9,4		Non-natural causes	200	4,0
	All causes	11 920	100,0		All causes	6 866	100,0		All causes	5 039	100,0
All Limpopo, both sexes, 65+			All Limpopo, males, 65+			All Limpopo, females, 65+					
	No.	%		No.	%		No.	%			
1	Hypertensive diseases (I10-I15)	1 779	10,2	1	Diabetes mellitus (E10-E14)	659	9,0	1	Cerebrovascular diseases (I60-I69)	1 161	11,4
2	Diabetes mellitus (E10-E14)	1 753	10,0	2	Hypertensive diseases (I10-I15)	647	8,8	2	Hypertensive diseases (I10-I15)	1 130	11,1
3	Cerebrovascular diseases (I60-I69)	1 745	10,0	3	Cerebrovascular diseases (I60-I69)	583	8,0	3	Diabetes mellitus (E10-E14)	1 094	10,7
4	Influenza and pneumonia (J09-J18)	1 189	6,8	4	Influenza and pneumonia (J09-J18)	550	7,5	4	Influenza and pneumonia (J09-J18)	638	6,3
5	Other forms of heart disease (I30-I52)	1 091	6,2	5	Other forms of heart disease (I30-I52)	478	6,5	5	Other forms of heart disease (I30-I52)	613	6,0
6	Intestinal infectious diseases (A00-A09)	558	3,2	6	Chronic lower respiratory diseases (J40-J47)	302	4,1	6	Intestinal infectious diseases (A00-A09)	361	3,5
7	Renal failure (N17-N19)	490	2,8	7	Tuberculosis (A15-A19)	273	3,7	7	Renal failure (N17-N19)	255	2,5
8	Chronic lower respiratory diseases (J40-J47)	437	2,5	8	Renal failure (N17-N19)	235	3,2	8	Inflammatory diseases of the central nervous system (G00-G09)	206	2,0
9	Tuberculosis (A15-A19)	393	2,2	9	Malignant neoplasms of male genital organs (C60-C63)	214	2,9	9	Malignant neoplasms of female genital organs (C51-C58)	194	1,9
10	Inflammatory diseases of the central nervous system (G00-G09)	313	1,8	10	Intestinal infectious diseases (A00-A09)	196	2,7	10	Other bacterial diseases (A30-A49)	157	1,5
	Other natural causes	7 310	41,7		Other natural causes	2 949	40,3		Other natural causes	4 153	40,8
	Non-natural causes	460	2,6		Non-natural causes	238	3,2		Non-natural causes	222	2,2
	All causes	17 518	100,0		All causes	7 324	100,0		All causes	10 184	100,0

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), 2015

Province of death	District municipality of death	Certain infectious and parasitic diseases	Neoplasms	Diseases of the blood and immune mechanism	Endocrine, nutritional and metabolic diseases	Diseases of the nervous system	Diseases of the circulatory system	Diseases of the respiratory system	Diseases of the digestive system	Perinatal conditions	Other natural causes	External causes of morbidity and mortality	Total
		A00-B99*	C00-D48	D50-D89	E00-E90	G00-G99	I00-I99	J00-J99	K00-K93	P00-P96	Other	V01-Y98	
Western Cape	Cape Winelands	1 160	1 222	43	516	127	1 333	629	151	78	634	716	6 609
	Central Karoo	132	115	15	57	23	176	114	18	11	42	117	820
	City of Cape Town	4 410	5 561	243	2 678	720	5 942	2 495	722	570	3 280	4 432	31 053
	Eden	953	1 053	67	423	130	1 238	573	162	89	382	563	5 633
	Overberg	250	444	23	160	54	492	217	42	40	218	303	2 243
	West Coast	559	559	52	299	80	769	346	70	42	296	438	3 510
	Unspecified	8	12	-	10	-	11	7	-	-	8	8	64
Total	7 472	8 966	443	4 143	1 134	9 961	4 381	1 165	830	4 860	6 577	49 932	
Eastern Cape	Alfred Nzo	739	113	53	122	69	334	225	47	42	2 741	495	4 980
	Amathole	2 589	724	193	666	334	2 112	1 700	249	39	1 993	1 431	12 030
	Buffalo City	1 917	1 181	181	636	211	1 684	1 064	211	77	811	1 088	9 061
	Cacadu	1 073	489	99	373	106	1 016	554	123	44	547	562	4 986
	Chris Hani	1 781	468	220	515	177	1 332	886	197	70	1 769	945	8 360
	Joe Gqabi	656	189	167	191	62	489	304	71	41	1 454	421	4 045
	Nelson Mandela Bay	2 164	1 337	344	1 052	297	2 390	919	295	167	944	1 157	11 066
	O.R.Tambo	3 135	616	180	575	90	1 410	881	295	63	4 546	1 784	13 775
	Unspecified	24	11	1	7	1	18	11	-	1	29	17	120
Total	14 078	5 128	1 438	4 137	1 547	10 785	6 544	1 488	544	14 834	7 900	68 423	
Northern Cape	Frances Baard	716	394	171	224	57	523	297	95	71	393	348	3 289
	John Taolo Gaetsewe	661	126	62	154	57	370	357	48	100	316	232	2 483
	Namakwa	122	200	23	96	28	258	134	15	19	91	129	1 115
	Pixley ka Seme	750	419	139	277	82	722	463	125	78	423	375	3 853
	Siyanda	571	305	156	210	69	505	389	81	58	247	394	2 985
	Unspecified	6	2	2	4	-	3	2	-	1	4	9	33
Total	2 826	1 446	553	965	293	2 381	1 642	364	327	1 474	1 487	13 758	

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

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), 2015

Province of death	District municipality of death	Certain infectious and parasitic diseases	Neoplasms	Diseases of the blood and immune mechanism	Endocrine, nutritional and metabolic diseases	Diseases of the nervous system	Diseases of the circulatory system	Diseases of the respiratory system	Diseases of the digestive system	Perinatal conditions	Other natural causes	External causes of morbidity and mortality	Total
		A00-B99*	C00-D48	D50-D89	E00-E90	G00-G99	I00-I99	J00-J99	K00-K93	P00-P96	Other	V01-Y98	
Free State	Fezile Dabi	1 034	353	217	400	99	1 156	565	144	128	464	498	5 058
	Lejweleputswa	1 173	437	382	533	179	1 276	1 056	223	178	1 062	764	7 263
	Mangaung	1 627	951	270	542	174	1 391	664	244	193	1 872	885	8 813
	Thabo Mofutsanyane	2 069	515	277	673	198	1 756	937	235	182	805	795	8 442
	Xhariep	393	189	114	130	54	463	254	49	37	364	268	2 315
	Unspecified	8	2	4	3	1	16	5	-	-	5	6	50
	Total	6 304	2 447	1 264	2 281	705	6 058	3 481	895	718	4 572	3 216	31 941
KwaZulu-Natal	Amajuba	1 210	337	82	385	129	978	524	164	125	359	472	4 765
	eThekweni	3 541	1 834	321	1 511	417	4 041	1 270	490	321	2 630	2 253	18 629
	iLembe	1 369	381	128	458	155	838	339	131	110	530	586	5 025
	Sisonke	1 382	388	181	411	146	895	472	155	133	876	482	5 521
	Ugu	1 993	577	236	694	204	1 550	660	200	127	1 376	1 074	8 691
	uMgungundlovu	2 164	1 050	159	974	226	2 121	692	333	153	1 317	1 171	10 360
	uMkhanyakude	1 098	220	59	191	74	577	186	88	82	600	393	3 568
	uMzinyathi	1 044	208	98	277	72	780	402	96	129	673	474	4 253
	uThukela	1 647	381	96	509	205	1 392	596	197	116	488	775	6 402
	uThungulu	1 882	633	246	566	147	965	450	267	281	1 364	913	7 714
	Zululand	1 598	349	147	423	141	929	487	154	158	1 041	684	6 111
Unspecified	44	14	4	26	7	48	31	6	3	48	50	281	
Total	18 972	6 372	1 757	6 425	1 923	15 114	6 109	2 281	1 738	11 302	9 327	81 320	
North West	Bojanala	2 368	684	489	866	212	2 327	1 191	285	301	2 057	1 247	12 027
	Dr Kenneth Kaunda	1 857	815	217	431	156	1 246	654	196	198	1 039	717	7 526
	Dr Ruth Segomotsi Mompati	1 336	310	256	329	131	1 098	605	100	238	697	384	5 484
	Ngaka Modiri Molema	1 587	391	482	543	171	1 823	986	180	297	2 141	705	9 306
	Unspecified	16	4	1	4	2	23	6	1	2	18	8	85
	Total	7 164	2 204	1 445	2 173	672	6 517	3 442	762	1 036	5 952	3 061	34 428

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

Appendix N2: Number of deaths by main groups of causes of death and district municipality of death occurrence (Gauteng, Mpumalanga and Limpopo), 2015

Province of death	District municipality of death	Certain infectious and parasitic diseases	Neoplasms	Diseases of the blood and immune mechanism	Endocrine, nutritional and metabolic diseases	Diseases of the nervous system	Diseases of the circulatory system	Diseases of the respiratory system	Diseases of the digestive system	Perinatal conditions	Other natural causes	External causes of morbidity and mortality	Total
		A00-B99*	C00-D48	D50-D89	E00-E90	G00-G99	I00-I99	J00-J99	K00-K93	P00-P96	Other	V01-Y98	
Gauteng	City of Johannesburg	3 935	3 504	768	1 384	652	4 565	2 456	733	780	7 201	3 979	29 957
	City of Tshwane	3 540	2 729	518	1 528	506	4 679	2 081	661	418	2 688	1 851	21 199
	Ekurhuleni	4 482	2 155	868	1 420	654	4 238	2 990	740	868	4 820	3 061	26 296
	Sedibeng	1 595	827	352	619	305	2 261	1 333	346	284	1 128	1 267	10 317
	West Rand	1 484	1 027	436	576	258	1 793	1 031	300	217	1 784	1 307	10 213
	Unspecified	29	21	5	6	5	26	18	2	5	37	55	209
	Total	15 065	10 263	2 947	5 533	2 380	17 562	9 909	2 782	2 572	17 658	11 520	98 191
Mpumalanga	Ehlanzeni	3 677	1 018	624	899	341	2 573	1 186	466	222	1 673	1 423	14 102
	Gert Sibande	2 338	510	663	670	131	1 290	877	267	256	1 409	1 117	9 528
	Nkangala	1 912	500	383	709	190	1 897	1 382	332	187	1 726	1 263	10 481
	Unspecified	29	9	2	8	2	27	16	3	2	35	42	175
	Total	7 956	2 037	1 672	2 286	664	5 787	3 461	1 068	667	4 843	3 845	34 286
Limpopo	Capricorn	2 671	1 052	228	1 002	270	1 964	1 463	385	345	2 425	1 207	13 012
	Greater Sekhukhune	2 298	422	223	735	194	1 922	1 459	259	119	1 153	799	9 583
	Mopani	1 939	493	451	760	675	1 491	1 189	315	292	1 190	778	9 573
	Vhembe	1 520	511	338	773	140	1 020	548	233	179	3 238	758	9 258
	Waterberg	1 319	336	168	369	112	1 010	617	138	135	488	576	5 268
	Unspecified	44	16	4	14	8	45	26	2	3	35	32	229
	Total	9 791	2 830	1 412	3 653	1 399	7 452	5 302	1 332	1 073	8 529	4 150	46 923

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

Appendix O: Percentage of deaths by main groups of causes of death and district municipality of death occurrence (Western Cape, Eastern Cape and Northern Cape), 2015

Province of death	District municipality of death	Certain infectious and parasitic diseases	Neoplasms	Diseases of the blood and immune mechanism	Endocrine, nutritional and metabolic diseases	Diseases of the nervous system	Diseases of the circulatory system	Diseases of the respiratory system	Diseases of the digestive system	Perinatal conditions	Other natural causes	External causes of morbidity and mortality	Total
		A00-B99*	C00-D48	D50-D89	E00-E90	G00-G99	I00-I99	J00-J99	K00-K93	P00-P96	Other	V01-Y98	
Western Cape	Cape Winelands	17,6	18,5	0,7	7,8	1,9	20,2	9,5	2,3	1,2	9,6	10,8	100,0
	Central Karoo	16,1	14,0	1,8	7,0	2,8	21,5	13,9	2,2	1,3	5,1	14,3	100,0
	City of Cape Town	14,2	17,9	0,8	8,6	2,3	19,1	8,0	2,3	1,8	10,6	14,3	100,0
	Eden	16,9	18,7	1,2	7,5	2,3	22,0	10,2	2,9	1,6	6,8	10,0	100,0
	Overberg	11,1	19,8	1,0	7,1	2,4	21,9	9,7	1,9	1,8	9,7	13,5	100,0
	West Coast	15,9	15,9	1,5	8,5	2,3	21,9	9,9	2,0	1,2	8,4	12,5	100,0
	Unspecified	12,5	18,8	0,0	15,6	0,0	17,2	10,9	0,0	0,0	12,5	12,5	100,0
	Total	15,0	18,0	0,9	8,3	2,3	19,9	8,8	2,3	1,7	9,7	13,2	100,0
Eastern Cape	Alfred Nzo	14,8	2,3	1,1	2,4	1,4	6,7	4,5	0,9	0,8	55,0	9,9	100,0
	Amathole	21,5	6,0	1,6	5,5	2,8	17,6	14,1	2,1	0,3	16,6	11,9	100,0
	Buffalo City	21,2	13,0	2,0	7,0	2,3	18,6	11,7	2,3	0,8	9,0	12,0	100,0
	Cacadu	21,5	9,8	2,0	7,5	2,1	20,4	11,1	2,5	0,9	11,0	11,3	100,0
	Chris Hani	21,3	5,6	2,6	6,2	2,1	15,9	10,6	2,4	0,8	21,2	11,3	100,0
	Joe Gqabi	16,2	4,7	4,1	4,7	1,5	12,1	7,5	1,8	1,0	35,9	10,4	100,0
	Nelson Mandela Bay	19,6	12,1	3,1	9,5	2,7	21,6	8,3	2,7	1,5	8,5	10,5	100,0
	O.R.Tambo	22,8	4,5	1,3	4,2	2,1	10,2	6,4	2,1	0,5	33,0	13,0	100,0
	Unspecified	20,0	9,2	0,8	5,8	0,8	15,0	9,2	0,0	0,8	24,2	14,2	100,0
	Total	20,6	7,5	2,1	6,0	2,3	15,8	9,6	2,2	0,8	21,7	11,5	100,0
Northern Cape	Frances Baard	21,8	12,0	5,2	6,8	1,7	15,9	9,0	2,9	2,2	11,9	10,6	100,0
	John Taolo Gaetsewe	26,6	5,1	2,5	6,2	2,3	14,9	14,4	1,9	4,0	12,7	9,3	100,0
	Namakwa	10,9	17,9	2,1	8,6	2,5	23,1	12,0	1,3	1,7	8,2	11,6	100,0
	Pixley ka Seme	19,5	10,9	3,6	7,2	2,1	18,7	12,0	3,2	2,0	11,0	9,7	100,0
	Siyanda	19,1	10,2	5,2	7,0	2,3	16,9	13,0	2,7	1,9	8,3	13,2	100,0
	Unspecified	18,2	6,1	6,1	12,1	0,0	9,1	6,1	0,0	3,0	12,1	27,3	100,0
	Total	20,5	10,5	4,0	7,0	2,1	17,3	11,9	2,6	2,4	10,7	10,8	100,0

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

Appendix O1: Percentage of deaths by main groups of causes of death and district municipality of death occurrence (Free State, KwaZulu-Natal and North West), 2015

Province of death	District municipality of death	Certain infectious and parasitic diseases	Neoplasms	Diseases of the blood and immune mechanism	Endocrine, nutritional and metabolic diseases	Diseases of the nervous system	Diseases of the circulatory system	Diseases of the respiratory system	Diseases of the digestive system	Perinatal conditions	Other natural causes	External causes of morbidity and mortality	Total
		A00-B99*	C00-D48	D50-D89	E00-E90	G00-G99	I00-I99	J00-J99	K00-K93	P00-P96	Other	V01-Y98	
Free State	Fezile Dabi	20,4	7,0	4,3	7,9	2,0	22,9	11,2	2,8	2,5	9,2	9,8	100,0
	Lejweleputswa	16,2	6,0	5,3	7,3	2,5	17,6	14,5	3,1	2,5	14,6	10,5	100,0
	Mangaung	18,5	10,8	3,1	6,2	2,0	15,8	7,5	2,8	2,2	21,2	10,0	100,0
	Thabo Mofutsanyane	24,5	6,1	3,3	8,0	2,3	20,8	11,1	2,8	2,2	9,5	9,4	100,0
	Xhariep	17,0	8,2	4,9	5,6	2,3	20,0	11,0	2,1	1,6	15,7	11,6	100,0
	Unspecified	16,0	4,0	8,0	6,0	2,0	32,0	10,0	0,0	0,0	10,0	12,0	100,0
	Total	19,7	7,7	4,0	7,1	2,2	19,0	10,9	2,8	2,2	14,3	10,1	100,0
KwaZulu-Natal	Amajuba	25,4	7,1	1,7	8,1	2,7	20,5	11,0	3,4	2,6	7,5	9,9	100,0
	eThekweni	19,0	9,8	1,7	8,1	2,2	21,7	6,8	2,6	1,7	14,1	12,1	100,0
	iLembe	27,2	7,6	2,5	9,1	3,1	16,7	6,7	2,6	2,2	10,5	11,7	100,0
	Sisonke	25,0	7,0	3,3	7,4	2,6	16,2	8,5	2,8	2,4	15,9	8,7	100,0
	Ugu	22,9	6,6	2,7	8,0	2,3	17,8	7,6	2,3	1,5	15,8	12,4	100,0
	UMgungundlovu	20,9	10,1	1,5	9,4	2,2	20,5	6,7	3,2	1,5	12,7	11,3	100,0
	uMkhanyakude	30,8	6,2	1,7	5,4	2,1	16,2	5,2	2,5	2,3	16,8	11,0	100,0
	uMzinyathi	24,5	4,9	2,3	6,5	1,7	18,3	9,5	2,3	3,0	15,8	11,1	100,0
	uThukela	25,7	6,0	1,5	8,0	3,2	21,7	9,3	3,1	1,8	7,6	12,1	100,0
	uThungulu	24,4	8,2	3,2	7,3	1,9	12,5	5,8	3,5	3,6	17,7	11,8	100,0
	Zululand	26,1	5,7	2,4	6,9	2,3	15,2	8,0	2,5	2,6	17,0	11,2	100,0
	Unspecified	15,7	5,0	1,4	9,3	2,5	17,1	11,0	2,1	1,1	17,1	17,8	100,0
Total	23,3	7,8	2,2	7,9	2,4	18,6	7,5	2,8	2,1	13,9	11,5	100,0	
North West	Bojanala	19,7	5,7	4,1	7,2	1,8	19,3	9,9	2,4	2,5	17,1	10,4	100,0
	Dr Kenneth Kaunda	24,7	10,8	2,9	5,7	2,1	16,6	8,7	2,6	2,6	13,8	9,5	100,0
	Dr Ruth Segomotsi Mompoti	24,4	5,7	4,7	6,0	2,4	20,0	11,0	1,8	4,3	12,7	7,0	100,0
	Ngaka Modiri Molema	17,1	4,2	5,2	5,8	1,8	19,6	10,6	1,9	3,2	23,0	7,6	100,0
	Unspecified	18,8	4,7	1,2	4,7	2,4	27,1	7,1	1,2	2,4	21,2	9,4	100,0
Total	20,8	6,4	4,2	6,3	2,0	18,9	10,0	2,2	3,0	17,3	8,9	100,0	

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

Appendix O2: Percentage of deaths by main groups of causes of death and district municipality of death occurrence (Gauteng, Mpumalanga and Limpopo), 2015

Province of death	District municipality of death	Certain infectious and parasitic diseases	Neoplasms	Diseases of the blood and immune mechanism	Endocrine, nutritional and metabolic diseases	Diseases of the nervous system	Diseases of the circulatory system	Diseases of the respiratory system	Diseases of the digestive system	Perinatal conditions	Other natural causes	External causes of morbidity and mortality	Total
		A00-B99*	C00-D48	D50-D89	E00-E90	G00-G99	I00-I99	J00-J99	K00-K93	P00-P96	Other	V01-Y98	
Gauteng	City of Johannesburg	13,1	11,7	2,6	4,6	2,2	15,2	8,2	2,4	2,6	24,0	13,3	100,0
	City of Tshwane	16,7	12,9	2,4	7,2	2,4	22,1	9,8	3,1	2,0	12,7	8,7	100,0
	Ekurhuleni	17,0	8,2	3,3	5,4	2,5	16,1	11,4	2,8	3,3	18,3	11,6	100,0
	Sedibeng	15,5	8,0	3,4	6,0	3,0	21,9	12,9	3,4	2,8	10,9	12,3	100,0
	West Rand	14,5	10,1	4,3	5,6	2,5	17,6	10,1	2,9	2,1	17,5	12,8	100,0
	Unspecified	13,9	10,0	2,4	2,9	2,4	12,4	8,6	1,0	2,4	17,7	26,3	100,0
	Total		15,3	10,5	3,0	5,6	2,4	17,9	10,1	2,8	2,6	18,0	11,7	100,0
Mpumalanga	Ehlanzeni	26,1	7,2	4,4	6,4	2,4	18,2	8,4	3,3	1,6	11,9	10,1	100,0
	Gert Sibande	24,5	5,4	7,0	7,0	1,4	13,5	9,2	2,8	2,7	14,8	11,7	100,0
	Nkangala	18,2	4,8	3,7	6,8	1,8	18,1	13,2	3,2	1,8	16,5	12,1	100,0
	Unspecified	16,6	5,1	1,1	4,6	1,1	15,4	9,1	1,7	1,1	20,0	24,0	100,0
	Total		23,2	5,9	4,9	6,7	1,9	16,9	10,1	3,1	1,9	14,1	11,2	100,0
Limpopo	Capricorn	20,5	8,1	1,8	7,7	2,1	15,1	11,2	3,0	2,7	18,6	9,3	100,0
	Greater Sekhukhune	24,0	4,4	2,3	7,7	2,0	20,1	15,2	2,7	1,2	12,0	8,3	100,0
	Mopani	20,3	5,1	4,7	7,9	7,1	15,6	12,4	3,3	3,1	12,4	8,1	100,0
	Vhembe	16,4	5,5	3,7	8,3	1,5	11,0	5,9	2,5	1,9	35,0	8,2	100,0
	Waterberg	25,0	6,4	3,2	7,0	2,1	19,2	11,7	2,6	2,6	9,3	10,9	100,0
	Unspecified	19,2	7,0	1,7	6,1	3,5	19,7	11,4	0,9	1,3	15,3	14,0	100,0
	Total		20,9	6,0	3,0	7,8	3,0	15,9	11,3	2,8	2,3	18,2	8,8	100,0

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

Appendix P: The ten leading underlying natural causes of death by district municipality of death occurrence, Western Cape, 2015*

Cape Winelands		No.	%	Central Karoo		No.	%	City of Cape Town		No.	%
1	Human immunodeficiency virus [HIV] disease (B20-B24)	473	7,2	1	Chronic lower respiratory diseases (J40-J47)	75	9,1	1	Diabetes mellitus (E10-E14)	2 344	7,5
2	Cerebrovascular diseases (I60-I69)	459	6,9	2	Tuberculosis (A15-A19)**	55	6,7	2	Human immunodeficiency virus [HIV] disease (B20-B24)	1 942	6,3
3	Diabetes mellitus (E10-E14)	441	6,7	3	Cerebrovascular diseases (I60-I69)	51	6,2	3	Ischaemic heart diseases (I20-I25)	1 767	5,7
4	Tuberculosis (A15-A19)**	434	6,6	4	Human immunodeficiency virus [HIV] disease (B20-B24)	43	5,2	4	Cerebrovascular diseases (I60-I69)	1 523	4,9
5	Chronic lower respiratory diseases (J40-J47)	410	6,2	5	Diabetes mellitus (E10-E14)	43	5,2	5	Tuberculosis (A15-A19)**	1 392	4,5
6	Ischaemic heart diseases (I20-I25)	362	5,5	6	Hypertensive diseases (I10-I15)	43	5,2	6	Chronic lower respiratory diseases (J40-J47)	1 355	4,4
7	Malignant neoplasms (C15-C26)	333	5,0	7	Malignant neoplasms (C15-C26)	34	4,1	7	Malignant neoplasms (C15-C26)	1 340	4,3
8	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	332	5,0	8	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	33	4,0	8	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	1 308	4,2
9	Hypertensive diseases (I10-I15)	221	3,3	9	Ischaemic heart diseases (I20-I25)	33	4,0	9	Hypertensive diseases (I10-I15)	1 286	4,1
10	Other forms of heart disease (I30-I52)	211	3,2	10	Other forms of heart disease (I30-I52)	31	3,8	10	Other forms of heart disease (I30-I52)	964	3,1
	Other natural causes	2 217	33,5		Other natural causes	262	32,0		Other natural causes	11 400	36,7
	Non-natural causes	716	10,8		Non-natural causes	117	14,3		Non-natural causes	4 432	14,3
	All causes	6 609	100		All causes	820	100,0		All causes	31 053	100,0
Eden		No.	%	Overberg		No.	%	West Coast		No.	%
1	Tuberculosis (A15-A19)**	394	7,0	1	Ischaemic heart diseases (I20-I25)	160	7,1	1	Tuberculosis (A15-A19)**	276	7,9
2	Human immunodeficiency virus [HIV] disease (B20-B24)	377	6,7	2	Cerebrovascular diseases (I60-I69)	147	6,6	2	Diabetes mellitus (E10-E14)	261	7,4
3	Cerebrovascular diseases (I60-I69)	373	6,6	3	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	146	6,5	3	Cerebrovascular diseases (I60-I69)	254	7,2
4	Ischaemic heart diseases (I20-I25)	358	6,4	4	Diabetes mellitus (E10-E14)	136	6,1	4	Chronic lower respiratory diseases (J40-J47)	232	6,6
5	Diabetes mellitus (E10-E14)	349	6,2	5	Chronic lower respiratory diseases (J40-J47)	125	5,6	5	Ischaemic heart diseases (I20-I25)	204	5,8
6	Chronic lower respiratory diseases (J40-J47)	326	5,8	6	Tuberculosis (A15-A19)**	112	5,0	6	Hypertensive diseases (I10-I15)	161	4,6
7	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	274	4,9	7	Malignant neoplasms (C15-C26)	110	4,9	7	Human immunodeficiency virus [HIV] disease (B20-B24)	160	4,6
8	Malignant neoplasms (C15-C26)	261	4,6	8	Hypertensive diseases (I10-I15)	89	4,0	8	Malignant neoplasms (C15-C26)	154	4,4
9	Other forms of heart disease (I30-I52)	210	3,7	9	Other forms of heart disease (I30-I52)	75	3,3	9	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	129	3,7
10	Hypertensive diseases (I10-I15)	194	3,4	10	Influenza and pneumonia (J09-J18)	62	2,8	10	Other forms of heart disease (I30-I52)	87	2,5
	Other natural causes	1 954	34,7		Other natural causes	778	34,7		Other natural causes	1 154	32,9
	Non-natural causes	563	10,0		Non-natural causes	303	13,5		Non-natural causes	438	12,5
	All causes	5 633	100,0		All causes	2 243	100,0		All causes	3 510	100,0

*Excluding cases with unspecified district municipality.

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

Appendix P1: The ten leading underlying natural causes of death by district municipality of death occurrence, Eastern Cape, 2015*

Alfred Nzo			No.	%	Amathole			No.	%	Buffalo City			No.	%
1	Tuberculosis (A15-A19)**	290	5,8	1	Tuberculosis (A15-A19)**	1 203	10,0	1	Tuberculosis (A15-A19)**	854	9,4			
2	Other viral diseases (B25-B34)	151	3,0	2	Chronic lower respiratory diseases (J40-J47)	683	5,7	2	Human immunodeficiency virus [HIV] disease (B20-B24)	537	5,9			
3	Other forms of heart disease (I30-I52)	142	2,9	3	Other forms of heart disease (I30-I52)	659	5,5	3	Other forms of heart disease (I30-I52)	531	5,9			
4	Human immunodeficiency virus [HIV] disease (B20-B24)	136	2,7	4	Cerebrovascular diseases (I60-I69)	647	5,4	4	Diabetes mellitus (E10-E14)	527	5,8			
5	Cerebrovascular diseases (I60-I69)	115	2,3	5	Hypertensive diseases (I10-I15)	569	4,7	5	Cerebrovascular diseases (I60-I69)	460	5,1			
6	Intestinal infectious diseases (A00-A09)	103	2,1	6	Influenza and pneumonia (J09-J18)	527	4,4	6	Malignant neoplasms of digestive organs (C15-C26)	414	4,6			
7	Influenza and pneumonia (J09-J18)	91	1,8	7	Diabetes mellitus (E10-E14)	515	4,3	7	Chronic lower respiratory diseases (J40-J47)	387	4,3			
8	Diabetes mellitus (E10-E14)	89	1,8	8	Other viral diseases (B25-B34)	513	4,3	8	Hypertensive diseases (I10-I15)	345	3,8			
9	Chronic lower respiratory diseases (J40-J47)	55	1,1	9	Human immunodeficiency virus [HIV] disease (B20-B24)	452	3,8	9	Other diseases of the respiratory system (J95-J99)	298	3,3			
10	Hypertensive diseases (I10-I15)	43	0,9	10	Malignant neoplasms of digestive organs (C15-C26)	323	2,7	10	Other viral diseases (B25-B34)	286	3,2			
	Other natural causes	3 270	65,7		Other natural causes	4 508	37,5		Other natural causes	3 334	36,8			
	Non-natural causes	495	9,9		Non-natural causes	1 431	11,9		Non-natural causes	1 088	12,0			
	All causes	4 980	100,0		All causes	12 030	100,0		All causes	9 061	100,0			
Cacadu			No.	%	Chris Hani			No.	%	Joe Gqabi			No.	%
1	Tuberculosis (A15-A19)**	421	8,4	1	Tuberculosis (A15-A19)**	701	8,4	1	Tuberculosis (A15-A19)**	264	6,5			
2	Human immunodeficiency virus [HIV] disease (B20-B24)	421	8,4	2	Human immunodeficiency virus [HIV] disease (B20-B24)	530	6,3	2	Human immunodeficiency virus [HIV] disease (B20-B24)	203	5,0			
3	Hypertensive diseases (I10-I15)	325	6,5	3	Cerebrovascular diseases (I60-I69)	435	5,2	3	Cerebrovascular diseases (I60-I69)	161	4,0			
4	Chronic lower respiratory diseases (J40-J47)	308	6,2	4	Diabetes mellitus (E10-E14)	408	4,9	4	Certain disorders involving the immune mechanism (D80-D89)	161	4,0			
5	Diabetes mellitus (E10-E14)	306	6,1	5	Hypertensive diseases (I10-I15)	386	4,6	5	Other forms of heart disease (I30-I52)	156	3,9			
6	Cerebrovascular diseases (I60-I69)	287	5,8	6	Chronic lower respiratory diseases (J40-J47)	378	4,5	6	Diabetes mellitus (E10-E14)	153	3,8			
7	Other forms of heart disease (I30-I52)	190	3,8	7	Other viral diseases (B25-B34)	337	4,0	7	Influenza and pneumonia (J09-J18)	129	3,2			
8	Ischaemic heart diseases (I20-I25)	174	3,5	8	Other forms of heart disease (I30-I52)	326	3,9	8	Other viral diseases (B25-B34)	94	2,3			
9	Influenza and pneumonia (J09-J18)	160	3,2	9	Influenza and pneumonia (J09-J18)	311	3,7	9	Hypertensive diseases (I10-I15)	91	2,2			
10	Malignant neoplasms of digestive organs (C15-C26)	137	2,7	10	Certain disorders involving the immune mechanism (D80-D89)	192	2,3	10	Chronic lower respiratory diseases (J40-J47)	89	2,2			
	Other natural causes	1 695	34,0		Other natural causes	3 411	40,8		Other natural causes	2 123	52,5			
	Non-natural causes	562	11,3		Non-natural causes	945	11,3		Non-natural causes	421	10,4			
	All causes	4 986	100,0		All causes	8 360	100,0		All causes	4 045	100,0			

*Excluding cases with unspecified district municipality.

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

Appendix P1: The ten leading underlying natural causes of death by district municipality of death occurrence, Eastern Cape, 2015* (concluded)

Nelson Mandela Bay		No.	%	O.R. Tambo		No.	%
1	Diabetes mellitus (E10-E14)	918	8,3	1	Tuberculosis (A15-A19)**	1 256	9,1
2	Tuberculosis (A15-A19)**	885	8,0	2	Human immunodeficiency virus [HIV] disease (B20-B24)	1 018	7,4
3	Human immunodeficiency virus [HIV] disease (B20-B24)	776	7,0	3	Other forms of heart disease (I30-I52)	591	4,3
4	Hypertensive diseases (I10-I15)	728	6,6	4	Other viral diseases (B25-B34)	464	3,4
5	Cerebrovascular diseases (I60-I69)	627	5,7	5	Cerebrovascular diseases (I60-I69)	433	3,1
6	Other forms of heart disease (I30-I52)	481	4,3	6	Diabetes mellitus (E10-E14)	417	3,0
7	Chronic lower respiratory diseases (J40-J47)	469	4,2	7	Influenza and pneumonia (J09-J18)	350	2,5
8	Ill-defined and unknown causes of mortality (R95-R99)	465	4,2	8	Chronic lower respiratory diseases (J40-J47)	265	1,9
9	Ischaemic heart diseases (I20-I25)	436	3,9	9	Intestinal infectious diseases (A00-A09)	246	1,8
10	Malignant neoplasms of digestive organs (C15-C26)	325	2,9	10	Hypertensive diseases (I10-I15)	227	1,6
	Other natural causes	3 799	34,3		Other natural causes	6 724	48,8
	Non-natural causes	1 157	10,5		Non-natural causes	1 784	13,0
	All causes	11 066	100,0		All causes	13 775	100,0

*Excluding cases with unspecified district municipality.

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

Appendix P2: The ten leading underlying natural causes of death by district municipality of death occurrence, Northern Cape, 2015*

Frances Baard		No.	%	John Taolo Gaetsewe		No.	%	Namakwa		No.	%
1	Tuberculosis (A15-A19)**	233	7,1	1	Human immunodeficiency virus [HIV] disease (B20-B24)	217	8,7	1	Chronic lower respiratory diseases (J40-J47)	101	9,1
2	Human immunodeficiency virus [HIV] disease (B20-B24)	227	6,9	2	Hypertensive diseases (I10-I15)	200	8,1	2	Ischaemic heart diseases (I20-I25)	98	8,8
3	Diabetes mellitus (E10-E14)	164	5,0	3	Tuberculosis (A15-A19)**	185	7,5	3	Diabetes mellitus (E10-E14)	85	7,6
4	Cerebrovascular diseases (I60-I69)	153	4,7	4	Influenza and pneumonia (J09-J18)	181	7,3	4	Tuberculosis (A15-A19)**	69	6,2
5	Certain disorders involving the immune mechanism (D80-D89)	148	4,5	5	Other viral diseases (B25-B34)	116	4,7	5	Hypertensive diseases (I10-I15)	62	5,6
6	Hypertensive diseases (I10-I15)	140	4,3	6	Intestinal infectious diseases (A00-A09)	113	4,6	6	Cerebrovascular diseases (I60-I69)	57	5,1
7	Other viral diseases (B25-B34)	132	4,0	7	Diabetes mellitus (E10-E14)	111	4,5	7	Malignant neoplasms (C15-C26)	51	4,6
8	Chronic lower respiratory diseases (J40-J47)	128	3,9	8	Other acute lower respiratory infections (J20-J22)	97	3,9	8	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	51	4,6
9	Influenza and pneumonia (J09-J18)	106	3,2	9	Other forms of heart disease (I30-I52)	57	2,3	9	Other forms of heart disease (I30-I52)	28	2,5
10	Ischaemic heart diseases (I20-I25)	105	3,2	10	Cerebrovascular diseases (I60-I69)	56	2,3	10	Malignant neoplasms of ill-defined, secondary and unspecified sites (C76-C80)	26	2,3
	Other natural causes	1 405	42,7		Other natural causes	918	37,0		Other natural causes	358	32,1
	Non-natural causes	348	10,6		Non-natural causes	232	9,3		Non-natural causes	129	11,6
	All causes	3 289	100,0		All causes	2 483	100,0		All causes	1 115	100,0
Pixley Ka Seme		No.	%	Siyanda		No.	%				
1	Tuberculosis (A15-A19)**	320	8,3	1	Tuberculosis (A15-A19)**	254	8,5				
2	Human immunodeficiency virus [HIV] disease (B20-B24)	277	7,2	2	Chronic lower respiratory diseases (J40-J47)	165	5,5				
3	Cerebrovascular diseases (I60-I69)	245	6,4	3	Hypertensive diseases (I10-I15)	147	4,9				
4	Chronic lower respiratory diseases (J40-J47)	210	5,5	4	Diabetes mellitus (E10-E14)	146	4,9				
5	Diabetes mellitus (E10-E14)	186	4,8	5	Certain disorders involving the immune mechanism (D80-D89)	143	4,8				
6	Influenza and pneumonia (J09-J18)	153	4,0	6	Human immunodeficiency virus [HIV] disease (B20-B24)	136	4,6				
7	Ischaemic heart diseases (I20-I25)	151	3,9	7	Cerebrovascular diseases (I60-I69)	130	4,4				
8	Hypertensive diseases (I10-I15)	140	3,6	8	Influenza and pneumonia (J09-J18)	111	3,7				
9	Other forms of heart disease (I30-I52)	119	3,1	9	Other forms of heart disease (I30-I52)	107	3,6				
10	Certain disorders involving the immune mechanism (D80-D89)	116	3,0	10	Ischaemic heart diseases (I20-I25)	85	2,8				
	Other natural causes	1 561	40,5		Other natural causes	1 167	39,1				
	Non-natural causes	375	9,7		Non-natural causes	394	13,2				
	All causes	3 853	100,0		All causes	2 985	100,0				

*Excluding cases with unspecified district municipality.

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

Appendix P3: The ten leading underlying natural causes of death by district municipality of death occurrence, Free State, 2015*

Fezile Dabi		No.	%	Lejweleputswa		No.	%	Mangaung		No.	%
1	Tuberculosis (A15-A19)**	424	8,4	1	Influenza and pneumonia (J09-J18)	725	10,0	1	Human immunodeficiency virus [HIV] disease (B20-B24)	619	7,0
2	Other forms of heart disease (I30-I52)	344	6,8	2	Tuberculosis (A15-A19)**	453	6,2	2	Tuberculosis (A15-A19)**	461	5,2
3	Hypertensive diseases (I10-I15)	326	6,4	3	Hypertensive diseases (I10-I15)	359	4,9	3	Cerebrovascular diseases (I60-I69)	449	5,1
4	Diabetes mellitus (E10-E14)	296	5,9	4	Diabetes mellitus (E10-E14)	350	4,8	4	Diabetes mellitus (E10-E14)	376	4,3
5	Influenza and pneumonia (J09-J18)	294	5,8	5	Other forms of heart disease (I30-I52)	323	4,4	5	Hypertensive diseases (I10-I15)	359	4,1
6	Cerebrovascular diseases (I60-I69)	269	5,3	6	Certain disorders involving the immune mechanism (D80-D89)	316	4,4	6	Influenza and pneumonia (J09-J18)	340	3,9
7	Other viral diseases (B25-B34)	248	4,9	7	Cerebrovascular diseases (I60-I69)	310	4,3	7	Other forms of heart disease (I30-I52)	273	3,1
8	Certain disorders involving the immune mechanism (D80-D89)	161	3,2	8	Intestinal infectious diseases (A00-A09)	239	3,3	8	Other viral diseases (B25-B34)	262	3,0
9	Ischaemic heart diseases (I20-I25)	157	3,1	9	Other viral diseases (B25-B34)	210	2,9	9	Malignant neoplasms of digestive organs (C15-C26)	227	2,6
10	Intestinal infectious diseases (A00-A09)	143	2,8	10	Ischaemic heart diseases (I20-I25)	184	2,5	10	Certain disorders involving the immune mechanism (D80-D89)	203	2,3
	Other natural causes	1 898	37,5		Other natural causes	3 030	41,7		Other natural causes	4 359	49,5
	Non-natural causes	498	9,8		Non-natural causes	764	10,5		Non-natural causes	885	10,0
	All causes	5 058	100,0		All causes	7 263	100,0		All causes	8 813	100,0
Thabo Mofutsanyane		No.	%	Xhariep		No.	%				
1	Tuberculosis (A15-A19)**	641	7,6	1	Cerebrovascular diseases (I60-I69)	166	7,2				
2	Human immunodeficiency virus [HIV] disease (B20-B24)	592	7,0	2	Human immunodeficiency virus [HIV] disease (B20-B24)	150	6,5				
3	Other forms of heart disease (I30-I52)	509	6,0	3	Influenza and pneumonia (J09-J18)	133	5,7				
4	Diabetes mellitus (E10-E14)	496	5,9	4	Tuberculosis (A15-A19)**	119	5,1				
5	Hypertensive diseases (I10-I15)	465	5,5	5	Other forms of heart disease (I30-I52)	107	4,6				
6	Influenza and pneumonia (J09-J18)	453	5,4	6	Certain disorders involving the immune mechanism (D80-D89)	101	4,4				
7	Cerebrovascular diseases (I60-I69)	451	5,3	7	Hypertensive diseases (I10-I15)	97	4,2				
8	Other viral diseases (B25-B34)	448	5,3	8	Diabetes mellitus (E10-E14)	85	3,7				
9	Intestinal infectious diseases (A00-A09)	266	3,2	9	Chronic lower respiratory diseases (J40-J47)	85	3,7				
10	Certain disorders involving the immune mechanism (D80-D89)	223	2,6	10	Ischaemic heart diseases (I20-I25)	67	2,9				
	Other natural causes	3 103	36,8		Other natural causes	937	40,5				
	Non-natural causes	795	9,4		Non-natural causes	268	11,6				
	All causes	8 442	100,0		All causes	2 315	100,0				

*Excluding cases with unspecified district municipality.

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

Appendix P4: The ten leading underlying natural causes of death by district municipality of death occurrence, KwaZulu-Natal, 2015*

Amajuba		No.	%	eThekweni		No.	%	iLembe		No.	%
1	Tuberculosis (A15-A19)**	428	9,0	1	Tuberculosis (A15-A19)**	1 576	8,5	1	Tuberculosis (A15-A19)	668	13,3
2	Other forms of heart disease (I30-I52)	312	6,5	2	Other forms of heart disease (I30-I52)	1 567	8,4	2	Diabetes mellitus (E10-E14)	377	7,5
3	Cerebrovascular diseases (I60-I69)	307	6,4	3	Diabetes mellitus (E10-E14)	1 295	7,0	3	Cerebrovascular diseases (I60-I69)	338	6,7
4	Diabetes mellitus (E10-E14)	303	6,4	4	Cerebrovascular diseases (I60-I69)	963	5,2	4	Other viral diseases (B25-B34)	232	4,6
5	Other viral diseases (B25-B34)	294	6,2	5	Ischaemic heart diseases (I20-I25)	888	4,8	5	Human immunodeficiency virus [HIV] disease (B20-B24)	193	3,8
6	Human immunodeficiency virus [HIV] disease (B20-B24)	284	6,0	6	Human immunodeficiency virus [HIV] disease (B20-B24)	821	4,4	6	Intestinal infectious diseases (A00-A09)	181	3,6
7	Hypertensive diseases (I10-I15)	232	4,9	7	Influenza and pneumonia (J09-J18)	572	3,1	7	Hypertensive diseases (I10-I15)	162	3,2
8	Influenza and pneumonia (J09-J18)	226	4,7	8	Other viral diseases (B25-B34)	506	2,7	8	Ischaemic heart diseases (I20-I25)	157	3,1
9	Other acute lower respiratory infections (J20-J22)	173	3,6	9	Hypertensive diseases (I10-I15)	481	2,6	9	Influenza and pneumonia (J09-J18)	157	3,1
10	Intestinal infectious diseases (A00-A09)	134	2,8	10	Malignant neoplasms of digestive organs (C15-C26)	469	2,5	10	Other forms of heart disease (I30-I52)	156	3,1
	Other natural causes	1 600	33,6		Other natural causes	7 238	38,9		Other natural causes	1 818	36,2
	Non-natural causes	472	9,9		Non-natural causes	2 253	12,1		Non-natural causes	586	11,7
	All causes	4 765	100,0		All causes	18 629	100,0		All causes	5 025	100,0
Sisonke		No.	%	Ugu		No.	%	uMgungundlovu		No.	%
1	Tuberculosis (A15-A19)**	550	10,0	1	Tuberculosis (A15-A19)**	778	9,0	1	Diabetes mellitus (E10-E14)	845	8,2
2	Human immunodeficiency virus [HIV] disease (B20-B24)	416	7,5	2	Cerebrovascular diseases (I60-I69)	600	6,9	2	Human immunodeficiency virus [HIV] disease (B20-B24)	817	7,9
3	Diabetes mellitus (E10-E14)	337	6,1	3	Diabetes mellitus (E10-E14)	583	6,7	3	Tuberculosis (A15-A19)**	667	6,4
4	Cerebrovascular diseases (I60-I69)	305	5,5	4	Human immunodeficiency virus [HIV] disease (B20-B24)	555	6,4	4	Cerebrovascular diseases (I60-I69)	627	6,1
5	Other forms of heart disease (I30-I52)	263	4,8	5	Hypertensive diseases (I10-I15)	392	4,5	5	Other forms of heart disease (I30-I52)	569	5,5
6	Influenza and pneumonia (J09-J18)	255	4,6	6	Other viral diseases (B25-B34)	349	4,0	6	Hypertensive diseases (I10-I15)	519	5,0
7	Hypertensive diseases (I10-I15)	215	3,9	7	Other forms of heart disease (I30-I52)	327	3,8	7	Ischaemic heart diseases (I20-I25)	298	2,9
8	Other viral diseases (B25-B34)	188	3,4	8	Influenza and pneumonia (J09-J18)	283	3,3	8	Influenza and pneumonia (J09-J18)	266	2,6
9	Certain disorders involving the immune mechanism (D80-D89)	151	2,7	9	Chronic lower respiratory diseases (J40-J47)	224	2,6	9	Intestinal infectious diseases (A00-A09)	257	2,5
10	Intestinal infectious diseases (A00-A09)	140	2,5	10	General symptoms and signs (R50-R69)	220	2,5	10	Malignant neoplasms of digestive organs (C15-C26)	253	2,4
	Other natural causes	2 219	40,2		Other natural causes	3 306	38,0		Other natural causes	4 071	39,3
	Non-natural causes	482	8,7		Non-natural causes	1 074	12,4		Non-natural causes	1 171	11,3
	All causes	5 521	100,0		All causes	8 691	100,0		All causes	10 360	100,0

*Excluding cases with unspecified district municipality.

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

Appendix P4: The ten leading underlying natural causes of death by district municipality of death occurrence, KwaZulu-Natal, 2015* (concluded)

uMkhanyakude		No.	%	uMzinyathi		No.	%	uThukela		No.	%
1	Human immunodeficiency virus [HIV] disease (B20-B24)	477	13,4	1	Tuberculosis (A15-A19)**	329	7,7	1	Tuberculosis (A15-A19)**	620	9,7
2	Tuberculosis (A15-A19)**	311	8,7	2	Cerebrovascular diseases (I60-I69)	314	7,4	2	Cerebrovascular diseases (I60-I69)	449	7,0
3	General symptoms and signs (R50-R69)	241	6,8	3	Other viral diseases (B25-B34)	308	7,2	3	Diabetes mellitus (E10-E14)	416	6,5
4	Other forms of heart disease (I30-I52)	206	5,8	4	Other forms of heart disease (I30-I52)	248	5,8	4	Human immunodeficiency virus [HIV] disease (B20-B24)	370	5,8
5	Cerebrovascular diseases (I60-I69)	176	4,9	5	Diabetes mellitus (E10-E14)	212	5,0	5	Influenza and pneumonia (J09-J18)	370	5,8
6	Other viral diseases (B25-B34)	157	4,4	6	Influenza and pneumonia (J09-J18)	199	4,7	6	Other forms of heart disease (I30-I52)	313	4,9
7	Diabetes mellitus (E10-E14)	146	4,1	7	Human immunodeficiency virus [HIV] disease (B20-B24)	195	4,6	7	Hypertensive diseases (I10-I15)	307	4,8
8	Hypertensive diseases (I10-I15)	136	3,8	8	Intestinal infectious diseases (A00-A09)	129	3,0	8	Other viral diseases (B25-B34)	273	4,3
9	Influenza and pneumonia (J09-J18)	99	2,8	9	Hypertensive diseases (I10-I15)	123	2,9	9	Intestinal infectious diseases (A00-A09)	272	4,2
10	Intestinal infectious diseases (A00-A09)	96	2,7	10	Other acute lower respiratory infections (J20-J22)	84	2,0	10	Ischaemic heart diseases (I20-I25)	213	3,3
	Other natural causes	1 130	31,7		Other natural causes	1 638	38,5		Other natural causes	2 024	31,6
	Non-natural causes	393	11,0		Non-natural causes	474	11,1		Non-natural causes	775	12,1
	All causes	3 568	100,0		All causes	4 253	100,0		All causes	6 402	100,0
uThungulu		No.	%	Zululand		No.	%				
1	Tuberculosis (A15-A19)**	730	9,5	1	Tuberculosis (A15-A19)**	685	11,2				
2	Human immunodeficiency virus [HIV] disease (B20-B24)	487	6,3	2	Diabetes mellitus (E10-E14)	335	5,5				
3	Diabetes mellitus (E10-E14)	460	6,0	3	Cerebrovascular diseases (I60-I69)	328	5,4				
4	Cerebrovascular diseases (I60-I69)	381	4,9	4	Other forms of heart disease (I30-I52)	301	4,9				
5	Other viral diseases (B25-B34)	334	4,3	5	Human immunodeficiency virus [HIV] disease (B20-B24)	300	4,9				
6	Hypertensive diseases (I10-I15)	237	3,1	6	Other viral diseases (B25-B34)	288	4,7				
7	Influenza and pneumonia (J09-J18)	221	2,9	7	Influenza and pneumonia (J09-J18)	271	4,4				
8	Other forms of heart disease (I30-I52)	213	2,8	8	Intestinal infectious diseases (A00-A09)	207	3,4				
9	Certain disorders involving the immune mechanism (D80-D89)	192	2,5	9	Hypertensive diseases (I10-I15)	178	2,9				
10	Intestinal infectious diseases (A00-A09)	160	2,1	10	Certain disorders involving the immune mechanism (D80-D89)	92	1,5				
	Other natural causes	3 386	43,9		Other natural causes	2 442	40,0				
	Non-natural causes	913	11,8		Non-natural causes	684	11,2				
	All causes	7 714	100,0		All causes	6 111	100,0				

*Excluding cases with unspecified district municipality.

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

Appendix P5: The ten leading underlying natural causes of death by district municipality of death occurrence, North West, 2015*

Bojanala		No.	%	Dr Kenneth Kaunda		No.	%	Dr Ruth Segomotsi Mompoti		No.	%
1	Tuberculosis (A15-A19)**	857	7,1	1	Tuberculosis (A15-A19)**	668	8,9	1	Tuberculosis (A15-A19)**	528	9,6
2	Hypertensive diseases (I10-I15)	769	6,4	2	Human immunodeficiency virus [HIV] disease (B20-B24)	572	7,6	2	Other viral diseases (B25-B34)	373	6,8
3	Other forms of heart disease (I30-I52)	735	6,1	3	Hypertensive diseases (I10-I15)	391	5,2	3	Other forms of heart disease (I30-I52)	330	6,0
4	Diabetes mellitus (E10-E14)	689	5,7	4	Other viral diseases (B25-B34)	354	4,7	4	Hypertensive diseases (I10-I15)	325	5,9
5	Influenza and pneumonia (J09-J18)	652	5,4	5	Cerebrovascular diseases (I60-I69)	334	4,4	5	Influenza and pneumonia (J09-J18)	300	5,5
6	Cerebrovascular diseases (I60-I69)	589	4,9	6	Diabetes mellitus (E10-E14)	312	4,1	6	Cerebrovascular diseases (I60-I69)	255	4,6
7	Other viral diseases (B25-B34)	586	4,9	7	Influenza and pneumonia (J09-J18)	307	4,1	7	Human immunodeficiency virus [HIV] disease (B20-B24)	223	4,1
8	Certain disorders involving the immune mechanism (D80-D89)	398	3,3	8	Other forms of heart disease (I30-I52)	247	3,3	8	Certain disorders involving the immune mechanism (D80-D89)	203	3,7
9	Intestinal infectious diseases (A00-A09)	369	3,1	9	Chronic lower respiratory diseases (J40-J47)	213	2,8	9	Diabetes mellitus (E10-E14)	182	3,3
10	Human immunodeficiency virus [HIV] disease (B20-B24)	284	2,4	10	Malignant neoplasms (C15-C26)	184	2,4	10	Intestinal infectious diseases (A00-A09)	148	2,7
	Other natural causes	4 852	40,3		Other natural causes	3 227	42,9		Other natural causes	2 233	40,7
	Non-natural causes	1 247	10,4		Non-natural causes	717	9,5		Non-natural causes	384	7,0
	All causes	12 027	100,0		All causes	7 526	100,0		All causes	5 484	100,0
Ngaka Modiri Molema		No.	%								
1	Other forms of heart disease (I30-I52)	807	8,7								
2	Tuberculosis (A15-A19)**	685	7,4								
3	Influenza and pneumonia (J09-J18)	529	5,7								
4	Hypertensive diseases (I10-I15)	451	4,8								
5	Certain disorders involving the immune mechanism (D80-D89)	409	4,4								
6	Cerebrovascular diseases (I60-I69)	402	4,3								
7	Diabetes mellitus (E10-E14)	377	4,1								
8	Human immunodeficiency virus [HIV] disease (B20-B24)	271	2,9								
9	Other viral diseases (B25-B34)	262	2,8								
10	Intestinal infectious diseases (A00-A09)	251	2,7								
	Other natural causes	4 157	44,7								
	Non-natural causes	705	7,6								
	All causes	9 306	100,0								

*Excluding cases with unspecified district municipality.

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

Appendix P6: The ten leading underlying natural causes of death by district municipality of death occurrence, Gauteng, 2015*

City of Johannesburg		No.	%	City of Tshwane		No.	%	Ekurhuleni		No.	%
1	Other forms of heart disease (I30-I52)	1 471	4,9	1	Other forms of heart disease (I30-I52)	1 601	7,6	1	Tuberculosis (A15-A19)**	1 708	6,5
2	Tuberculosis (A15-A19)**	1 209	4,0	2	Tuberculosis (A15-A19)**	1 225	5,8	2	Other forms of heart disease (I30-I52)	1 353	5,1
3	Influenza and pneumonia (J09-J18)	1 206	4,0	3	Diabetes mellitus (E10-E14)	1 211	5,7	3	Influenza and pneumonia (J09-J18)	1 318	5,0
4	Human immunodeficiency virus [HIV] disease (B20-B24)	1 086	3,6	4	Hypertensive diseases (I10-I15)	1 072	5,1	4	Other viral diseases (B25-B34)	1 119	4,3
5	Cerebrovascular diseases (I60-I69)	1 046	3,5	5	Influenza and pneumonia (J09-J18)	1 023	4,8	5	Diabetes mellitus (E10-E14)	1 020	3,9
6	Diabetes mellitus (E10-E14)	1 041	3,5	6	Cerebrovascular diseases (I60-I69)	911	4,3	6	Cerebrovascular diseases (I60-I69)	1 014	3,9
7	Ischaemic heart diseases (I20-I25)	871	2,9	7	Other viral diseases (B25-B34)	799	3,8	7	Hypertensive diseases (I10-I15)	780	3,0
8	Malignant neoplasms of digestive organs (C15-C26)	822	2,7	8	Ischaemic heart diseases (I20-I25)	761	3,6	8	Ischaemic heart diseases (I20-I25)	724	2,8
9	Chronic lower respiratory diseases (J40-J47)	678	2,3	9	Human immunodeficiency virus [HIV] disease (B20-B24)	674	3,2	9	Certain disorders involving the immune mechanism (D80-D89)	686	2,6
10	Hypertensive diseases (I10-I15)	673	2,2	10	Malignant neoplasms of digestive organs (C15-C26)	632	3,0	10	Human immunodeficiency virus [HIV] disease (B20-B24)	632	2,4
	Other natural causes	15 875	53,0		Other natural causes	9 439	44,5		Other natural causes	12 881	49,0
	Non-natural causes	3 979	13,3		Non-natural causes	1 851	8,7		Non-natural causes	3 061	11,6
	All causes	29 957	100,0		All causes	21 199	100,0		All causes	26 296	100,0
Sedibeng		No.	%	West Rand		No.	%				
1	Influenza and pneumonia (J09-J18)	761	7,4	1	Other forms of heart disease (I30-I52)	624	6,1				
2	Other forms of heart disease (I30-I52)	713	6,9	2	Tuberculosis (A15-A19)**	554	5,4				
3	Tuberculosis (A15-A19)**	705	6,8	3	Influenza and pneumonia (J09-J18)	521	5,1				
4	Hypertensive diseases (I10-I15)	543	5,3	4	Diabetes mellitus (E10-E14)	430	4,2				
5	Cerebrovascular diseases (I60-I69)	527	5,1	5	Cerebrovascular diseases (I60-I69)	400	3,9				
6	Diabetes mellitus (E10-E14)	497	4,8	6	Certain disorders involving the immune mechanism (D80-D89)	364	3,6				
7	Ischaemic heart diseases (I20-I25)	288	2,8	7	Ischaemic heart diseases (I20-I25)	338	3,3				
8	Certain disorders involving the immune mechanism (D80-D89)	285	2,8	8	Hypertensive diseases (I10-I15)	285	2,8				
9	Chronic lower respiratory diseases (J40-J47)	285	2,8	9	Chronic lower respiratory diseases (J40-J47)	267	2,6				
10	Intestinal infectious diseases (A00-A09)	244	2,4	10	Human immunodeficiency virus [HIV] disease (B20-B24)	258	2,5				
	Other natural causes	4 202	40,7		Other natural causes	4 865	47,6				
	Non-natural causes	1 267	12,3		Non-natural causes	1 307	12,8				
	All causes	10 317	100,0		All causes	10 213	100,0				

*Excluding cases with unspecified district municipality.

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

Appendix P7: The ten leading underlying natural causes of death by district municipality of death occurrence, Mpumalanga, 2015*

Ehlanzeni		No.	%	Gert Sibande		No.	%	Nkangala		No.	%
1	Tuberculosis (A15-A19)**	1 428	10,1	1	Tuberculosis (A15-A19)**	654	6,9	1	Influenza and pneumonia (J09-J18)	712	6,8
2	Cerebrovascular diseases (I60-I69)	927	6,6	2	Human immunodeficiency virus [HIV] disease (B20-B24)	618	6,5	2	Hypertensive diseases (I10-I15)	650	6,2
3	Other viral diseases (B25-B34)	708	5,0	3	Certain disorders involving the immune mechanism (D80-D89)	597	6,3	3	Tuberculosis (A15-A19)**	622	5,9
4	Human immunodeficiency virus [HIV] disease (B20-B24)	693	4,9	4	Other viral diseases (B25-B34)	579	6,1	4	Diabetes mellitus (E10-E14)	583	5,6
5	Diabetes mellitus (E10-E14)	686	4,9	5	Diabetes mellitus (E10-E14)	506	5,3	5	Other viral diseases (B25-B34)	502	4,8
6	Other forms of heart disease (I30-I52)	651	4,6	6	Influenza and pneumonia (J09-J18)	455	4,8	6	Cerebrovascular diseases (I60-I69)	498	4,8
7	Hypertensive diseases (I10-I15)	531	3,8	7	Hypertensive diseases (I10-I15)	422	4,4	7	Other forms of heart disease (I30-I52)	416	4,0
8	Intestinal infectious diseases (A00-A09)	530	3,8	8	Cerebrovascular diseases (I60-I69)	383	4,0	8	Human immunodeficiency virus [HIV] disease (B20-B24)	363	3,5
9	Influenza and pneumonia (J09-J18)	522	3,7	9	Intestinal infectious diseases (A00-A09)	342	3,6	9	Certain disorders involving the immune mechanism (D80-D89)	296	2,8
10	Certain disorders involving the immune mechanism (D80-D89)	517	3,7	10	Other forms of heart disease (I30-I52)	300	3,1	10	Intestinal infectious diseases (A00-A09)	277	2,6
	Other natural causes	5 486	38,9		Other natural causes	3 555	37,3		Other natural causes	4 299	41,0
	Non-natural causes	1 423	10,1		Non-natural causes	1 117	11,7		Non-natural causes	1 263	12,1
	All causes	14 102	100,0		All causes	9 528	100,0		All causes	10 481	100,0

*Excluding cases with unspecified district municipality.

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

Appendix P8: The ten leading underlying natural causes of death by district municipality of death occurrence, Limpopo, 2015*

Capricorn		No.	%	Greater Sekhukhune		No.	%	Mopani		No.	%
1	Influenza and pneumonia (J09-J18)	985	7,6	1	Influenza and pneumonia (J09-J18)	1 073	11,2	1	Influenza and pneumonia (J09-J18)	736	7,7
2	Diabetes mellitus (E10-E14)	858	6,6	2	Cerebrovascular diseases (I60-I69)	883	9,2	2	Tuberculosis (A15-A19)**	707	7,4
3	Tuberculosis (A15-A19)**	773	5,9	3	Other viral diseases (B25-B34)	640	6,7	3	Diabetes mellitus (E10-E14)	584	6,1
4	Hypertensive diseases (I10-I15)	750	5,8	4	Tuberculosis (A15-A19)**	635	6,6	4	Hypertensive diseases (I10-I15)	583	6,1
5	General symptoms and signs (R50-R69)	657	5,0	5	Diabetes mellitus (E10-E14)	632	6,6	5	Inflammatory diseases of the central nervous system (G00-G09)	554	5,8
6	Human immunodeficiency virus [HIV] disease (B20-B24)	596	4,6	6	Intestinal infectious diseases (A00-A09)	543	5,7	6	Other viral diseases (B25-B34)	440	4,6
7	Other viral diseases (B25-B34)	568	4,4	7	Hypertensive diseases (I10-I15)	525	5,5	7	Cerebrovascular diseases (I60-I69)	438	4,6
8	Cerebrovascular diseases (I60-I69)	539	4,1	8	Other forms of heart disease (I30-I52)	394	4,1	8	Certain disorders involving the immune mechanism (D80-D89)	400	4,2
9	Intestinal infectious diseases (A00-A09)	526	4,0	9	Other bacterial diseases (A30-A49)	218	2,3	9	Intestinal infectious diseases (A00-A09)	383	4,0
10	Other forms of heart disease (I30-I52)	433	3,3	10	Human immunodeficiency virus [HIV] disease (B20-B24)	209	2,2	10	Other forms of heart disease (I30-I52)	360	3,8
	Other natural causes	5 120	39,3		Other natural causes	3 032	31,6		Other natural causes	3 610	37,7
	Non-natural causes	1 207	9,3		Non-natural causes	799	8,3		Non-natural causes	778	8,1
	All causes	13 012	100,0		All causes	9 583	100,0		All causes	9 573	100,0
Vhembe		No.	%	Waterberg		No.	%				
1	Diabetes mellitus (E10-E14)	549	5,9	1	Tuberculosis (A15-A19)**	444	8,4				
2	Tuberculosis (A15-A19)**	512	5,5	2	Influenza and pneumonia (J09-J18)	400	7,6				
3	Other viral diseases (B25-B34)	432	4,7	3	Hypertensive diseases (I10-I15)	329	6,2				
4	Cerebrovascular diseases (I60-I69)	377	4,1	4	Other forms of heart disease (I30-I52)	324	6,2				
5	Influenza and pneumonia (J09-J18)	291	3,1	5	Diabetes mellitus (E10-E14)	307	5,8				
6	Certain disorders involving the immune mechanism (D80-D89)	288	3,1	6	Intestinal infectious diseases (A00-A09)	292	5,5				
7	Hypertensive diseases (I10-I15)	287	3,1	7	Human immunodeficiency virus [HIV] disease (B20-B24)	286	5,4				
8	Intestinal infectious diseases (A00-A09)	257	2,8	8	Other viral diseases (B25-B34)	232	4,4				
9	Other forms of heart disease (I30-I52)	247	2,7	9	Cerebrovascular diseases (I60-I69)	225	4,3				
10	Renal failure (N17-N19)	225	2,4	10	Certain disorders involving the immune mechanism (D80-D89)	138	2,6				
	Other natural causes	5 035	54,4		Other natural causes	1 715	32,6				
	Non-natural causes	758	8,2		Non-natural causes	576	10,9				
	All causes	9 258	100,0		All causes	5 268	100,0				

*Excluding cases with unspecified district municipality.

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

Appendix Q: Population group differences

The ten leading underlying natural causes of death by population group for 2015 are shown in Appendix Q1 (see page 133). The results show that four 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* and *hypertensive disease*. These common natural causes of death had different ranks and different contributions to the overall number of deaths for each population group. For example, *other forms of heart diseases* were the second leading cause of death among the white population group (accounting for 7,1% of all deaths in this group); third among the Indian/Asian population group (6.7%); sixth among black Africans (4,9%); and tenth among the coloured population group (2,9%).

Tuberculosis was the first leading underlying natural cause of death for black Africans, accounting for 8,7% deaths while it ranked second for the coloured population, accounting for 7,0% 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. *Other viral diseases*, *certain disorders involving the immune mechanism* and *intestinal infectious diseases* were on the leading underlying natural causes of death for only black Africans.

The leading underlying natural cause of death among Indians/Asians was *diabetes mellitus*, while *ischaemic heart diseases* were the leading underlying natural cause of death among the white population group. *Malignant neoplasms of ill-defined, secondary and unspecified sites* were among the ten leading underlying natural causes of death only for the white population. *Renal failure* was in the top leading underlying natural causes of death for only the Indian/Asian population group.

The second leading underlying natural cause of death for black Africans was *HIV disease*, responsible for 5,8% of deaths. It ranked seventh amongst the coloured population group and was not in the ten leading underlying natural causes of death for both the Indian/Asian and white population groups.

Appendix Q1: The ten leading underlying natural causes of death by population group, 2015

Causes of death (based on ICD Version 2010)	Black African			White			Indian/Asian			Coloured			Other/Unknown/Unspecified		
	Rank	No.	%	Rank	No.	%	Rank	No.	%	Rank	No.	%	Rank	No.	%
Tuberculosis (A15-A19)	1	28 056	8,7	...	...	...	...	...	...	2	2 274	7,0	1	2 441	4,4
Human immunodeficiency virus [HIV] disease (B20-B24)	2	18 931	5,8	...	...	...	...	...	...	7	1 416	4,3	7	1 465	2,6
Diabetes mellitus (E10-E14)	3	17 582	5,4	6	1 773	4,4	1	1 112	15,3	1	2 528	7,7	2	2 075	3,7
Cerebrovascular diseases (I60-I69)	4	16 493	5,1	5	2 146	5,3	4	357	4,9	4	1 956	6,0	4	1 926	3,5
Influenza and pneumonia (J09-J18)	5	16 014	4,9	7	1 670	4,2	9	159	2,2	...	...	...	5	1 922	3,5
Other forms of heart disease (I30-I52)	6	15 940	4,9	2	2 847	7,1	3	485	6,7	10	959	2,9	3	1 984	3,6
Hypertensive diseases (I10-I15)	7	14 839	4,6	9	1 204	3,0	7	238	3,3	6	1 524	4,7	6	1 638	2,9
Other viral diseases (B25-B34)	8	14 725	4,5	...	...	...	...	...	...	...	...	...	10	932	1,7
Certain disorders involving the immune mechanism (D80-D89)	9	9 362	2,9	...	...	...	...	...	...	...	...	...	...	...	...
Intestinal infectious diseases (A00-A09)	10	8 694	2,7	...	...	...	...	...	...	...	...	...	...	...	...
Ischaemic heart diseases (I20-I25)	...	...	...	1	4 489	11,2	2	953	13,1	5	1 627	5,0	9	1 279	2,3
Chronic lower respiratory diseases (J40-J47)	...	...	...	3	2 287	5,7	5	268	3,7	3	2 181	6,7	8	1 408	2,5
Malignant neoplasms of digestive organs (C15-C26)	...	...	...	4	2 215	5,5	6	265	3,6	9	1 308	4,0	...	...	...
Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	...	...	...	8	1 423	3,5	10	137	1,9	8	1 383	4,2	...	...	...
Malignant neoplasms of ill-defined, secondary and unspecified sites (C76-C80)	...	...	...	10	878	2,2	...	...	...	...	...	...	...	...	...
Renal failure (N17-N19)	...	...	...	...	...	...	8	197	2,7	...	...	...	...	...	...
Other natural causes		126 416	39,0		15 739	39,2		2 349	32,3		11 722	35,9		32 817	58,6
Non-natural causes		37 213	11,5		3 484	8,7		750	10,3		3 810	11,7		5 970	10,7
All causes		324 265	100,0		40 155	100		7 270	100,0		32 688	100,0		55 585	100,0