



stats sa

Department:
Statistics South Africa
REPUBLIC OF SOUTH AFRICA

Private Bag X44, Pretoria, 0001, South Africa, ISibalo House, Koch Street, Salvokop, Pretoria, 0002

www.statssa.gov.za, info@statssa.gov.za, Tel +27 12 310 8911

STATISTICAL RELEASE

P0309.3

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

2017

Embargoed until:

26 March 2020

11:00

ENQUIRIES:

User information services

012 310 2600

FORTHCOMING ISSUE:

2018

EXPECTED RELEASE DATE

October 2020

Preface

This statistical release presents information on mortality and causes of death in South Africa for deaths that occurred in 2017. Deaths for the years 1997–2016 are also included to show trends in mortality and causes of death, using updated information that includes late registrations. The statistical release is based on deaths collected through the South African civil registration system maintained by the Department of Home Affairs. The information on causes of death is as recorded on death notification forms completed by medical practitioners and other certifying officials.



Mr Risenga Maluleke

Statistical General

Table of Contents

1. Introduction	1
1.1 Background	1
1.2 Objectives of this statistical release	2
1.3 Scope of this statistical release	2
1.4 Organisation and presentation of this statistical release	2
2. Data and methods.....	3
2.1 Data source	3
2.2 Data processing	3
2.2.1 Classification of the causes of death.....	4
2.2.2 Generation of the underlying causes of death	5
2.3 Data editing	5
2.4 Assessment of the quality of data	6
2.5 Data analysis.....	6
3. Mortality	8
3.1 Levels and trends of mortality	8
3.2 Age differentials.....	10
3.3 Sex differentials.....	12
3.4 Age and sex differentials	13
3.4.1 Distribution of deaths by age and sex	13
3.4.2 Median ages at death by sex	14
3.4.3 Sex ratios by age.....	15
3.5 Population group differences in mortality	17
3.6 Marital status differences in mortality	18
3.7 Differences in mortality by smoking status.....	18
3.8 Differences in mortality by place or institution of death occurrence.....	19
3.9 Geographic variations in mortality	20
3.9.1 Differences by province, age and sex	20
3.9.2 Differences by district municipality, age and sex	21
4. Causes of death.....	22
4.1 Introduction.....	22
4.2 Reported causes of death	23
4.3 Method of ascertaining cause of death	24
*For perinatal deaths only.....	24
4.4 Main groups of the underlying causes of death	25
4.5 Natural and non-natural causes of death	28
4.5.1 Natural and non-natural causes of death by age	30
4.6 Major groups of causes of death as per Global Burden of Disease	31

4.7	Broad groups of natural causes of death	35
4.7.1	Overall pattern of the leading underlying natural causes of death.....	35
4.7.2	Leading underlying natural causes of death by sex.....	36
4.7.3	Leading underlying natural causes of death by age	39
4.7.4	Leading underlying natural causes of death for children aged below five years by age group	41
4.7.5	Leading underlying natural causes of death for the population aged 15–24 years	43
4.7.6	Leading underlying natural causes of death by province of death occurrence.....	43
4.7.7	Underlying causes of death by district/metropolitan municipality of death occurrence	46
4.7.8	Underlying natural causes of death by population group	48
4.8	Non-natural causes of death	48
4.8.1	Non-natural causes of death by age and sex	50
4.8.2	Non-natural causes of death by province of death occurrence	52
4.8.3	Non-natural causes of death by district municipality.....	54
4.9	Comparison between immediate, contributing and underlying causes of death	54
5.	Conclusion	57
6.	References.....	59
Appendices		61
Appendix A: Glossary.....		61
Appendix B: Death Notification form		62
Appendix C: Assessment of the quality of data		62
Appendix D: Number of deaths by age, sex and year of death, 1997–1999.....		73
Appendix D1: Number of deaths by age, sex and year of death, 2000–2002.....		74
Appendix D2: Number of deaths by age, sex and year of death, 2003–2005.....		75
Appendix D3: Number of deaths by age, sex and year of death, 2006–2008.....		76
Appendix D4: Number of deaths by age, sex and year of death, 2009–2011.....		77
Appendix D5: Number of deaths by age, sex and year of death, 2012–2014.....		78
Appendix D6: Number of deaths by age, sex and year of death, 2015–2017.....		79
Appendix E: Year-to-year percentage changes in number of deaths by sex, 1997–2017		80
Appendix F: Age-specific death rates (ASDR) by year of death, 2013–2017.....		81
Appendix G: Sex ratios at death by year of death, 1997–2017		82
Appendix H: Number of deaths by province of death occurrence and province usual residence of the deceased, 2017.....		83
Appendix H1: Percentage distribution of deaths by province of death occurrence and province of usual residence of deceased, 2017.....		84
Appendix I: Number of deaths by age, province and district municipality of death occurrence, 2017		85

Appendix I1: Percentage distribution of deaths by age, province and district municipality of death occurrence, 2017	87
Appendix J: Number of deaths by sex, province and district municipality of death occurrence, 2017*89	
Appendix K: All underlying causes of death, 2017	91
Appendix L: Detailed description of the broad-based groups of natural causes of death which were among the ten leading causes, 2017	96
Appendix M: The ten leading underlying natural causes of death by age and sex: South Africa, 2017	99
Appendix M1: The ten leading underlying natural causes of death by age and sex: Western Cape, 2017	101
Appendix M2: The ten leading underlying natural causes of death by age and sex: Eastern Cape, 2017	103
Appendix M3: The ten leading underlying natural causes of death by age and sex: Northern Cape, 2017	105
Appendix M4: The ten leading underlying natural causes of death by age and sex: Free State, 2017	107
Appendix M5: The ten leading underlying natural causes of death by age and sex: KwaZulu-Natal, 2017	109
Appendix M6: The ten leading underlying natural causes of death by age and sex: North West, 2017	111
Appendix M7: The ten leading underlying natural causes of death by age and sex: Gauteng, 2017	113
Appendix M8: The ten leading underlying natural causes of death by age and sex: Mpumalanga, 2017	115
Appendix M9: The ten leading underlying natural causes of death by age and sex: Limpopo, 2017	117
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), 2017	119
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), 2017	120
Appendix N2: Number of deaths by main groups of causes of death and district municipality of death occurrence (Gauteng, Mpumalanga and Limpopo), 2017	121
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), 2017	122
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), 2017	123
Appendix O2: Percentage of deaths by main groups of causes of death and district municipality of death occurrence (Gauteng, Mpumalanga and Limpopo), 2017	124
Appendix P: The ten leading underlying natural causes of death by district municipality of death occurrence, Western Cape 2017	125
Appendix P1: The ten leading underlying natural causes of death by district municipality of death occurrence, Eastern Cape, 2017	126

Appendix P2: The ten leading underlying natural causes of death by district municipality of death occurrence, Northern Cape, 2017.....	128
Appendix P3: The ten leading underlying natural causes of death by district municipality of death occurrence, Free State, 2017	129
Appendix P4: The ten leading underlying natural causes of death by district municipality of death occurrence, KwaZulu-Natal, 2017.....	130
Appendix P5: The ten leading underlying natural causes of death by district municipality of death occurrence, North West, 2017	132
Appendix P6: The ten leading underlying natural causes of death by district municipality of death occurrence, Gauteng, 2017	133
Appendix P7: The ten leading underlying natural causes of death by district municipality of death occurrence, Mpumalanga 2017	134
Appendix P8: The ten leading underlying natural causes of death by district municipality of death occurrence, Limpopo 2017	135
Appendix Q: Population group differences	136
Appendix Q1: The ten leading underlying natural causes of death by population group, 2017	137

List of tables

Table 3. 1 Number and percentage distribution of deaths by age, 2017.....	10
Table 3.2: Number and percentage distribution of deaths by population group, 2017.....	17
Table 3.3: Number and percentage of deaths by marital status, 2017.....	18
Table 3.4: Number and percentage distribution of deaths by smoking status among those aged 16 years and older, 2017.....	18
Table 3.5: Number and percentage distribution of deaths by place of death occurrence, 2017 ...	19
Table 3.6: Distribution of deaths by province of death occurrence and province of usual residence of the deceased, 2017.....	20
Table 4.1: Distribution of death notification forms by number of causes recorded on the form	23
Table 4.2: Number and percentage distribution of deaths by method used to ascertain the cause of death, 2017.....	24
Table 4.3: Distribution of deaths by main groups of causes of death, 2017.....	26
Table 4.4: Number of natural and non-natural deaths by year of death, 1997–2017.....	28
Table 4.5: The ten leading underlying natural causes of death, 2015–2017.....	36
Table 4.6: The ten leading underlying natural causes of death for males and females, 2017	37
Table 4.7: The ten leading underlying natural causes of death for broad age groups, 2017	40
Table 4. 8: The ten leading underlying natural causes of death for infants and children aged below five years, 2017	42
Table 4. 9: The ten leading underlying natural causes of death for the population aged 15–24 years, 2017.....	43
Table 4.10: The ten leading underlying natural causes of death in each province of death occurrence, 2017.....	45
Table 4. 11: Distribution of non-natural causes of death by broad groups, 2017.....	48
Table 4.12: Distribution of deaths due to other external causes of accidental injury, 2017	49
Table 4.13: Underlying non-natural causes of death by age group and sex, 2017.....	51
Table 4. 14: Underlying non-natural causes of death by province, 2017	53
Table 4.15: Distribution of the 20 most commonly reported causes of death, 2017	55
Table 4.16: Number and percentage of deaths selected as underlying or reported as immediate or contributing causes of death, 2017	56
Table C1: Distribution of deaths by the number of days it took to register the death, 2017.....	63
Table C2: Number of deaths published in December 2017 and late registrations processed during the 2018/2019 processing phase by year of death, 1997–2017	64
Table C3: Number of ill-defined causes of death by sex, 2017	68
Table C4: Percentage of deaths classified as unknown/unspecified for selected variables, 2017.....	71
Table C5: Assessment of the 2017 South African death statistics from civil registration system using the framework proposed by Mahapatra et al. (2007)	72

List of figures

Figure 3.1: Number of registered deaths by year of death, 1997–2017	9
Figure 3.2: Percentage distribution of deaths by age and year, 2013–2017	11
Figure 3.3: Percentage distributions of deaths by sex and year of death, 1997–2017	12
Figure 3.4: Percentage distribution of deaths by age and sex, 2017	13
Figure 3.5: Median ages at death by sex and year of death, 1999–2017	14
Figure 3.6: Sex ratios by age and year of death, 2013–2017	16
Figure 4.1: Percentage distribution of deaths by main groups of causes of death, 2015–2017	27
Figure 4.2: Percentage distribution of natural and non-natural causes of death by year of death occurrence, 1997–2017	29
Figure 4.3: Percentage distribution of natural and non-natural causes of death by age, 2017	30
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, 1997–2017	32
Figure 4.5: Percentage of deaths due to communicable diseases (Group I), non-communicable diseases (Group II) and injuries (Group III) by sex and age group, 2017	34
Figure 4.6: Distribution of deaths for the leading causes of death by year of death and sex, 2015–2017	38

1. Introduction

1.1 Background

Reliable mortality statistics, are the cornerstone of national health information systems, and are necessary for population health assessment, health policy and service planning; and programme evaluation. They are essential for studying the occurrence and distribution of health-related events, their determinants and management of related health problems. These data are particularly critical for monitoring the Sustainable Development Goals (SDGs) and Agenda 2063 which share the same goal for a high standard of living and quality of life, sound health and well-being for all and at all ages. (African Union Commission, 2015; United Nations, 2017). Mortality statistics are also required for assessing the impact of non-communicable diseases (NCD's), emerging infectious diseases, injuries and natural disasters.

The majority of deaths occurring globally, are attributable to non-communicable diseases which are chronic, and are growing at elevated rates. *Cardiovascular diseases, diabetes, cancer, and chronic respiratory diseases* are now the most common causes of premature death and disability with 80% of the deaths occurring in low and middle income countries (LMICs), (World Health Organization, 2015). The epidemiological shift from communicable to NCDs means countries now suffer from a double burden of infectious and non-infectious diseases, and South Africa is amongst the countries undergoing this transition. Although *tuberculosis* is the leading cause of death in South Africa, year-on-year it continues to decline, whilst *diabetes mellitus*, the second leading cause of the death, is on the rise.

The quadruple burden of health challenges facing the country relates to, diseases such as *tuberculosis*; maternal and child morbidity and mortality; non-communicable diseases (mainly related to lifestyle); and violence, injuries and trauma, resulted in South Africa adopting the National Development Plan (NDP) which is the country's vision for 2030. The priority for the health area is to increase life expectancy of South Africans to at least 70 years; produce a generation of under-20s that is largely free of HIV; achieve an infant mortality rate of less than 20 deaths per thousand live births, including an under-five mortality rate of less than 30 per thousand; (National Planning Commission (NPC), 2011).

The continuous production of mortality statistics is made possible through provision of registered administrative deaths records from the efficient, high-coverage civil registration system. The system provides this invaluable information at national and local area levels. The Department of Home Affairs (DHA) is the steward of the civil registration system inclusive of administrative records. The registered deaths administrative records from DHA are the exclusive data source used for production of statistics on mortality and the causes of death in South Africa. The Births and Deaths Registration Act 1992 (Act No. 51 of 1992) mandates the DHA to be the custodian of births and deaths registration records. The Act has been amended a few times, with the last alteration made in 2010 [Births and Deaths Registration Amendment (Act No. 18 of 2010)].

The principal Act directs that notice of death ought to be given as soon as practicable. To improve the registration system, the 2014 regulations of the Act stipulates the registration of deaths within 72 hours (three days) from date of event (Republic of South Africa, 2014). Additionally, the Act further purports that a medical practitioner should prescribe the cause of death if satisfied that the death was due to natural causes. However, if in doubt such a death must be reported to the police. Subsequent to investigation to the circumstances of the death in terms of the Inquests Act, 1959 (Act No. 58 of 1959), the medical practitioner shall certify the cause of death (Republic of South Africa, 1959). Upon completion of death registration, a death certificate is issued to the informant.

In the process of compiling this report, all death notification forms are collected by Statistics South Africa (Stats SA) from DHA bi-weekly for capturing, processing, assessment, analysis and dissemination of the statistical reports and datasets on mortality and causes of death. Pursuant to ensuring an efficient operation and management of the civil registration system, Stats SA partnered with key stakeholders including the DHA, National Department of Health (NDoH) and other stakeholders. The continued collaborations between partners are viewed to be fundamental for improving mortality statistics, as a result the findings from this statistical release will inform efforts aimed at strengthening the civil registration and vital statistics systems in South Africa.

Stats SA is mandated by the Statistics Act (Act No. 6 of 1999) to provide reliable information on the levels and causes of mortality through the application of appropriate quality criteria and standards, classifications and procedures for vital statistics (Republic of South Africa, 1999). Unlike Stats SA, the DHA is primarily expected to provide a complete and accurate national death register (Republic of South Africa, 1992), while the NDoH anticipates progress in health outcomes through access to comprehensive quality health care services (NDoH, 2015).

1.2 Objectives of this statistical release

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

- To outline emerging trends spanning a 21-year period (1997–2017) and differentials in mortality by selected socio-demographic and geographic characteristics for deaths that occurred in 2017; and
- To present statistics on the causes of death for deaths that occurred in 2017, 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 2017 or earlier that reached Stats SA during the 2018/2019 processing phase are covered. The main focus is on deaths that occurred in 2017. Deaths that occurred during the period 1997 to 2016 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 61).

1.4 Organisation and presentation of this statistical release

This release is composed of five sections. The first section consists of information on the background and purpose of the release. Section two lays out the data and methods approaches which focuses on data sources, including methods used in data processing, data editing, quality assurance and data analysis. The third section on registered deaths presents mortality levels, trends and differentials, specifically focusing on sociodemographic and geographic characteristics of the deceased.

The fourth section mainly covers information on the underlying causes of death for 2017 death occurrences. In addition, the section provides information on immediate, contributing and underlying causes of death differentials in causes of death by natural versus non-natural causes, as well as the Global Burden of Disease (GBDs). Causes of death for the years 1997 to 2016 are also included to show patterns in mortality over the years. Finally, the last section presents a summary of the findings and concluding remarks.

2. Data and methods

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

2.1 Data source

The statistics presented in this release are based solely on administrative records from death notification forms obtained from the Department of Home Affairs. The DHA uses two types of death notification forms to capture deaths: Form BI-1663 which was introduced in 1998 and Form DHA-1663 which was introduced in 2009 as a replacement of Form BI-1663 (see Appendix B on pages 62). BI-1663 forms will continue to be used until all the remaining forms are depleted. In instances where there is no medical practitioner available to complete the death notification form, e.g. in rural areas, a traditional leader may complete it and if authorised it may also issue a Death Report form also known as Form B1-1680 which certifies the occurrence of death and a description of the circumstances that resulted in the death.

The Death Report is then sent to DHA where the information is transcribed on to either the BI-1663 or the DHA-1663. The major difference between the two forms is that stillbirths and deaths occurring within the first seven days of life (perinatal deaths) on Form BI-1663 are recorded in the same section as all other deaths, whereas Form DHA-1663 has a separate section that records perinatal deaths.

The Births and Deaths Registration Act, 1992 (Act No. 51 of 1992) amended in 2010 as the Births and Deaths Registration Amendment Act, 2010 (Act No. 18 of 2010) is the legislation governing the registration of deaths in South Africa (Republic of South Africa, 1992; Republic of South Africa, 2010). Additionally, the 2014 Births and Deaths Regulations which rescinded the 1992 Regulations prescribe that notice of occurrence of death including a stillbirth must be given within 72 hours by an informant, regardless of citizenship status of the deceased. After registration of the death, the DHA issues a death certificate to the informant and updates the National Population Register (NPR).

The NPR only includes deaths for South African citizens and permanent residents whose birth records were already captured onto the NPR prior to death. Persons not eligible for inclusion in the NPR are non-South African citizens who were temporarily in the country. South African citizens and permanent residents who died before notice of their births had been registered would also not be captured in the NPR. Stats SA, on the other-hand, collects all death notification forms, irrespective of the deceased's citizenship status for processing, analysis and dissemination of mortality and causes of death information. On this basis, the figure of deaths processed by Stats SA will always be higher than the figure of deaths recorded on the NPR for the same period.

The 2017 statistical release is based on a total of 446 544 deaths that occurred in 2017 and 18 742 late death registrations for 1997 to 2016 that were registered at the DHA and reached Stats SA in time for the 2018/2019 processing phase. About 99,94% of these deaths were registered using the new form DHA-1663, and 0,06% were registered using the old form BI-1663.

2.2 Data processing

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

2.2.1 Classification of the causes of death

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

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

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

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

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

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

2.2.2 Generation of the underlying causes of death

The underlying cause of death is defined as: “(a) the disease or injury that initiated the sequence of events leading directly to death, or (b) the circumstances of the accident or violence that produced the fatal injury” (WHO, 2016: 31). Stats SA uses two software packages, namely Automated Classification of Medical Entities (ACME 2011) and IRIS, for the automated derivation of the underlying causes of death. The ACME software was developed by the United States National Centre for Health Statistics (NCHS). It applies the WHO ICD-10 rules on the selection of the underlying cause of death. The IRIS software is used for comparison of results with ACME. Similarly, this software uses the WHO rules international death certificate form and the causes of death are coded according to WHO ICD-10 rules.

The low concordance of the two systems in comparison to previous years is attributed to comparison at four-character level, whereas previously, comparison was done at three-character level. Where one software failed to derive the underlying cause, the results of the other software were used. In occasions where both software packages failed to derive the underlying cause of death, experienced coders at Stats SA derived the underlying cause of death manually.

2.3 Data editing

On completion of all data processing, the Stats SA editing program was used to check for accuracy and flag implausible causes of death for further investigation. Additionally, two electronic tools both developed by WHO: Analyzing mortality levels and causes-of-death (ANACoD) version 2.0 and CoDEdit version 1.0 were used to further check data consistency and plausibility (WHO, 2014a and WHO, 2014b, respectively). The tools were developed to enhance the value of mortality statistics in informing health policies and programmes.

The Analyzing mortality levels and causes-of-death (ANACoD) version 2.0 and CoDEdit version 1.0 tools were used to automatically check the 2017 mortality data for accuracy and consistency. The tools were also used for highlighting cases with causes that were unlikely to cause death categorised by age and sex (sex-specific causes, age-specific causes and notifiable diseases) and possible misuse of ICD-10 codes as well as providing a summary of the records within the dataset (WHO, 2014a; WHO, 2014b). For instance, regarding causes of death that are specific to one sex, the tools warn and flag for errors when the combination of sex and cause is incorrect.

Errors flagged by the tools, were manually investigated for verification and corrections were made where necessary. The main difference between the two tools is that CoDEdit assesses data consistency and plausibility for each unit record, while ANACoD checks the data at an aggregate level.

2.4 Assessment of the quality of data

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

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

For the purpose of this statistical release in addition to the ANACoD and CoDEdit electronic tools, the framework proposed by Mahapatra et al. (2007) was used to assess the quality of the 2017 causes of death data. This section presents a summary of the results of this assessment. A detailed discussion of the assessment is provided in Appendix C (see page 62).

The 2017 statistical release data processing, analysis and publication took 24 months from the end of the 2017 reporting year. In the 2015 statistical release (Stats SA, 2017), an estimated 96% of total adult deaths (15 years and older) completeness level was reported for the 2011–2016 intercensal/survey period. Male adults had a completeness level of 97%, higher than the adult female completeness level of 95%. Estimate for the 2017 deaths completeness level remains the same, and a revised estimate will be provided when new population data are available.

2.5 Data analysis

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

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

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

The process of ranking natural underlying causes of death excluded symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (R00–R99), because the information is not sufficiently detailed to be of use for public health purposes. It is therefore essential to raise awareness among certifying practitioners to seek sufficient evidence to assign causes of these deaths to the more

precise categories through training programmes and other initiatives. Due to concerns about violence and deaths due to accidents in South Africa, natural and non-natural causes have been separated. Although non-natural causes of death were not ranked, for analysis they were disaggregated by characteristics such as age, sex and province of death of the deceased that relay important information on the levels and patterns of non-natural deaths.

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

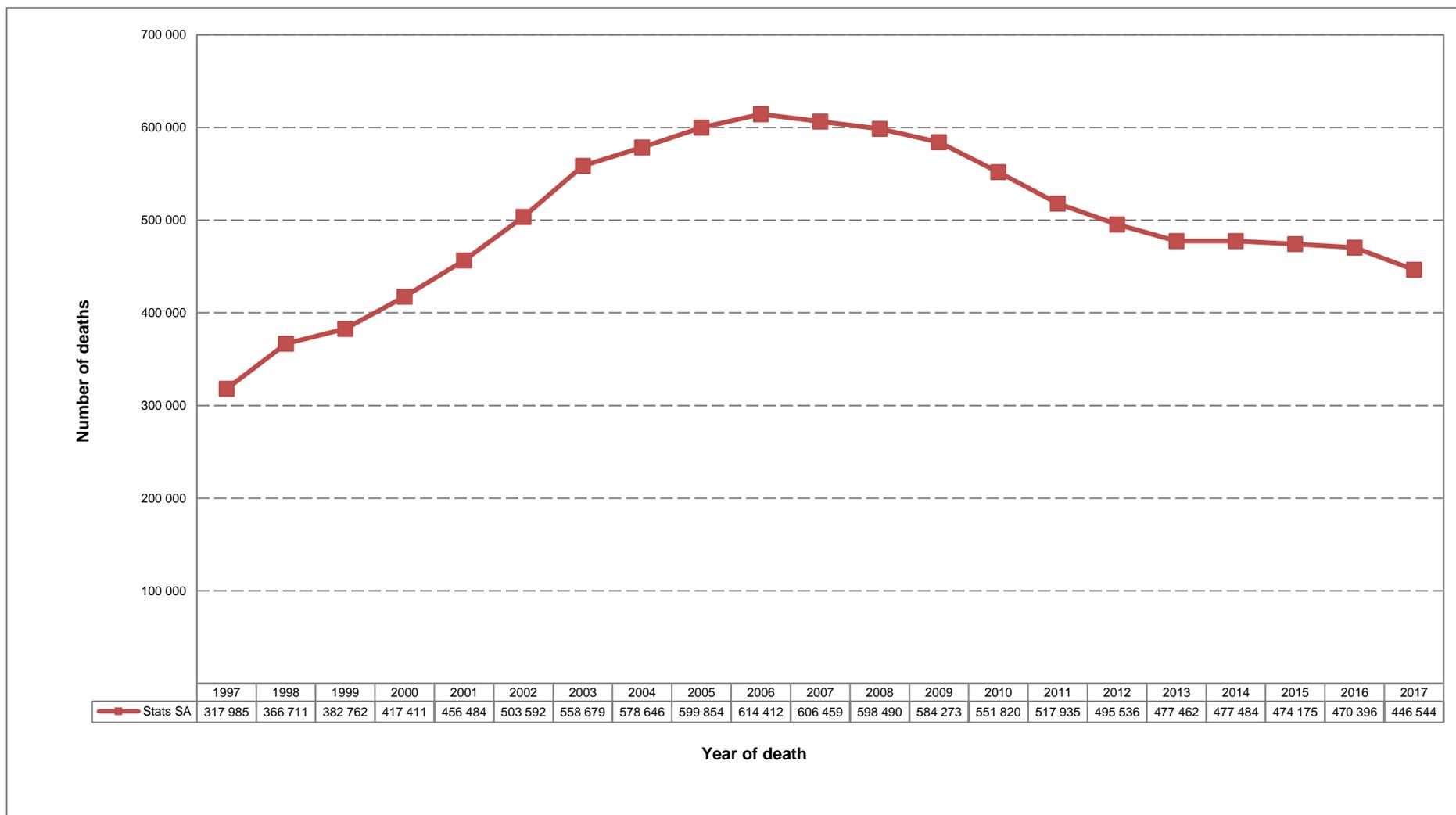
3. Mortality

This chapter provides analysis on the distribution of 2017 registered deaths that reached Statistics South Africa (Stats SA) during the 2018/2019 processing phase. The section mainly focuses on absolute numbers and percentage distributions of 2017 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 (1997–2016) are also included.

3.1 Levels and trends of mortality

Figure 3.1 shows that the total number of deaths registered at the Department of Home Affairs and processed by Stats SA in 2017 were 446 554. This indicates a 5, 1% decrease from the 470 396 deaths that occurred in 2016. The general trend in the number of registered deaths processed by Stats SA indicates an increase from 1997 to 2006 when the number of deaths peaked at 614 412, and a decrease thereafter. The overall number of deaths per year increases as additional forms are processed at Stats SA. Additional forms may result from delayed registration or delayed transmission of forms from DHA to Stats SA. It is, therefore, expected that additional forms, 2017 forms in particular, and for the previous years will still be received for processing at Stats SA. Updated information will be provided in the next statistical release. Overall, mortality levels are declining in the country as observed from the 5,1% decrease in deaths between the years 2016 and 2017 and 3,0% decline between 2015 and 2016.

Figure 3.1: Number of registered deaths by year of death, 1997–2017*



*Data for 1997–2016 have been updated with late registrations/delayed death notification forms processed in 2018/2019.

3.2 Age differentials

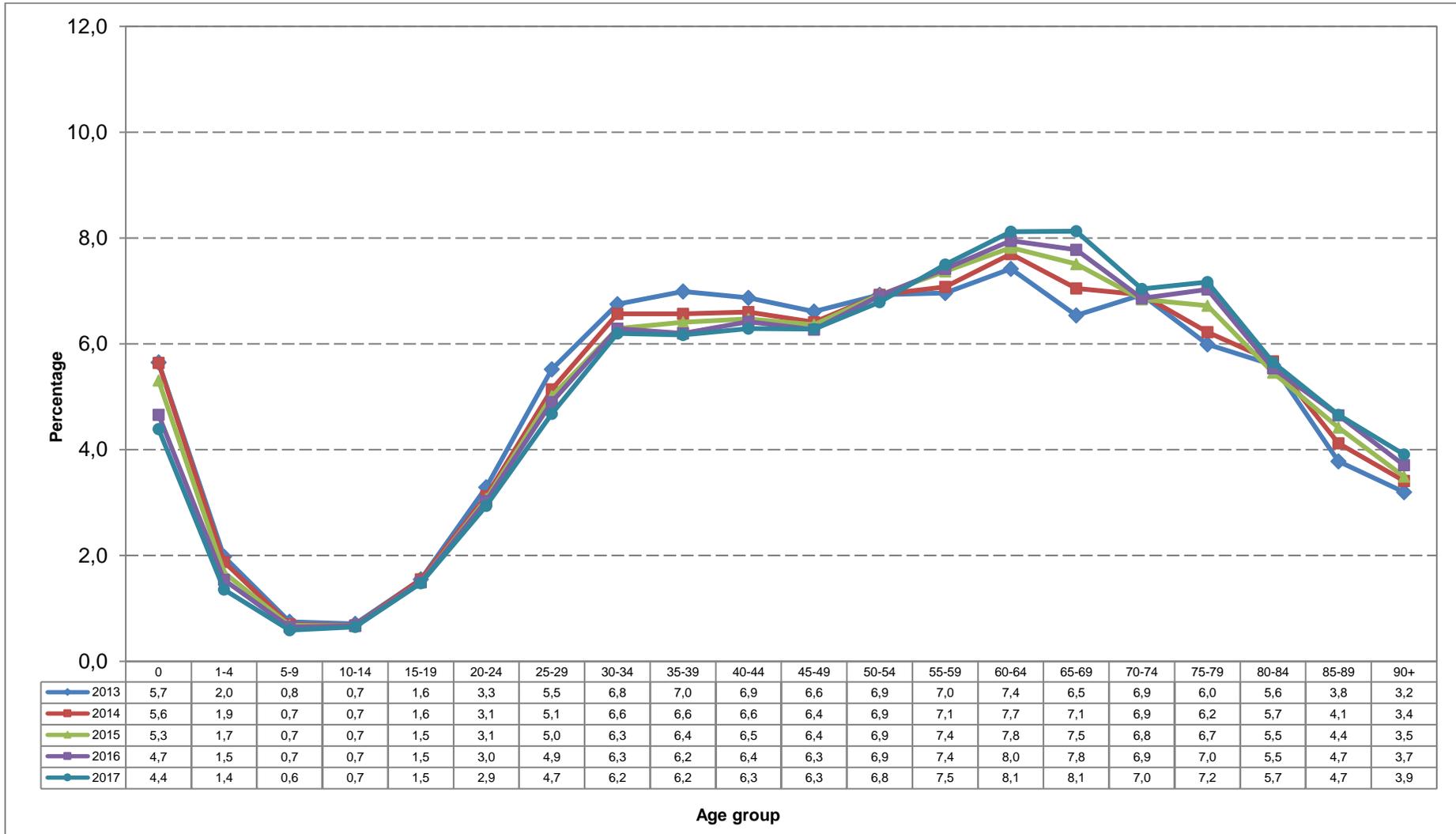
Table 3.1 shows the number and percentage distribution of deaths by age for 2017. The age groups 60–64 and 65–69 had the highest proportion of deaths in 2017 both at 8,1%, followed by age group 55–59 at 7,5%. The lowest proportions of deaths were observed in age groups 5–9 years and 10–14 years with each at 0,6 % of the 2017 deaths. Deaths that occurred amongst those aged 0 accounted for 4,4% of all deaths registered in 2017.

Table 3.1: Number and percentage distribution of deaths by age, 2017

Age group	Number	Percentage
0	19 549	4,4
1–4	6 051	1,4
5–9	2 617	0,6
10–14	2 900	0,6
15–19	6 572	1,5
20–24	13 075	2,9
25–29	20 834	4,7
30–34	27 620	6,2
35–39	27 484	6,2
40–44	28 011	6,3
45–49	27 962	6,3
50–54	30 246	6,8
55–59	33 376	7,5
60–64	36 141	8,1
65–69	36 196	8,1
70–74	31 364	7,0
75–79	31 912	7,1
80–84	25 141	5,6
85–89	20 728	4,6
90+	17 423	3,9
Unspecified	1 342	0,3
Total	446 544	100,0

The percentage distribution of deaths by age and year of death for the past five years (2013 to 2017) is presented in Figure 3.2. Overall, the age pattern of mortality was uniform over the five-year period, with consistent declines in the proportions observed from age group 20–24 up to age group 50–54, and consistent increases from age group 55–59 up to 90 years and above. Beginning from 2013 to 2017, the highest percentage of deaths was observed for age groups 60–64 with proportions rising from 7,4% to 8,1% in 2017. This was followed by age group 55–59, however, from 2015 age group 65–69 had the second highest proportion of deaths (7,5% to 8,1%). The lowest proportions of deaths occurred in the age groups 5–9 and 10–14, each representing less than one per cent of deaths per year in the five-year period.

Figure 3.2: Percentage distribution of deaths by age and year, 2013–2017*



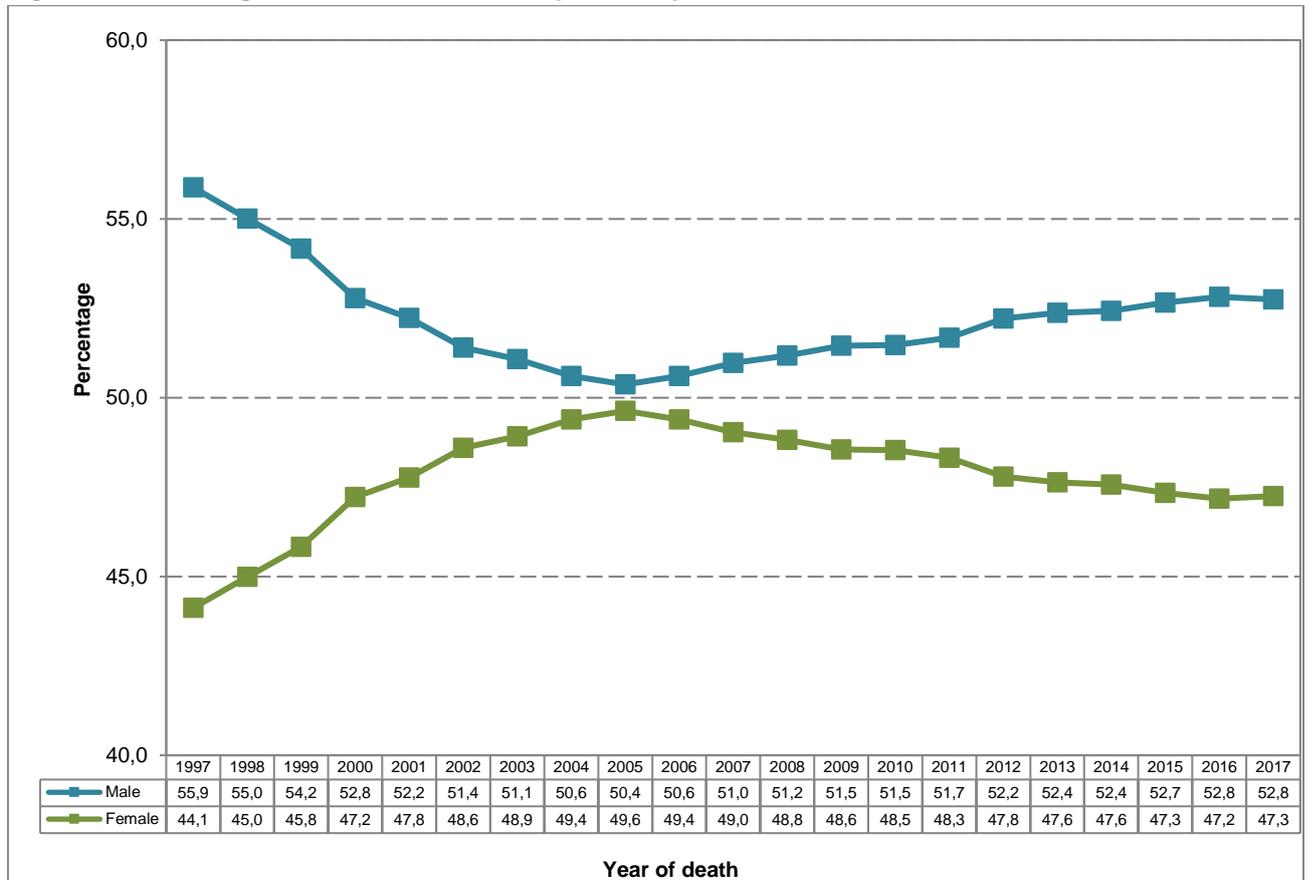
*(1) Excluding deaths with unspecified age.

(2) Data for 2013–2016 have been updated with late registrations / delayed death notification forms processed in 2018/2019.

3.3 Sex differentials

The distribution of deaths by sex and year of death from 1997–2017 is shown in Figure 3.3. The figure shows that in general, the percentages of male deaths exceeded the percentages of female deaths over the 21-year period (1997–2017). The percentage of male deaths was highest in 1997 (55,9%) and consistently declined over time, reaching 50,4% in 2005. The proportions of female deaths, although consistently lower than the proportions of male deaths, increased yearly from 44,1% in 1997 and reached a peak of 49,6% in 2005. The reverse in the proportions for both males and females was observed from 2006. Female deaths took a downward trend from 49,4% in 2006 and reached 47,2% in 2017, whilst the proportion of male deaths increased from 50,6% in 2006 to 52,3% in 2017. The gap between the proportion of male and female deaths has been widening from 2006 and 2017.

Figure 3.3: Percentage distributions of deaths by sex and year of death, 1997–2017*



(1) Excluding deaths with unspecified sex.
 (2) Data for 1997–2016 have been updated with late registrations / delayed death notification forms processed in 2018/2019.

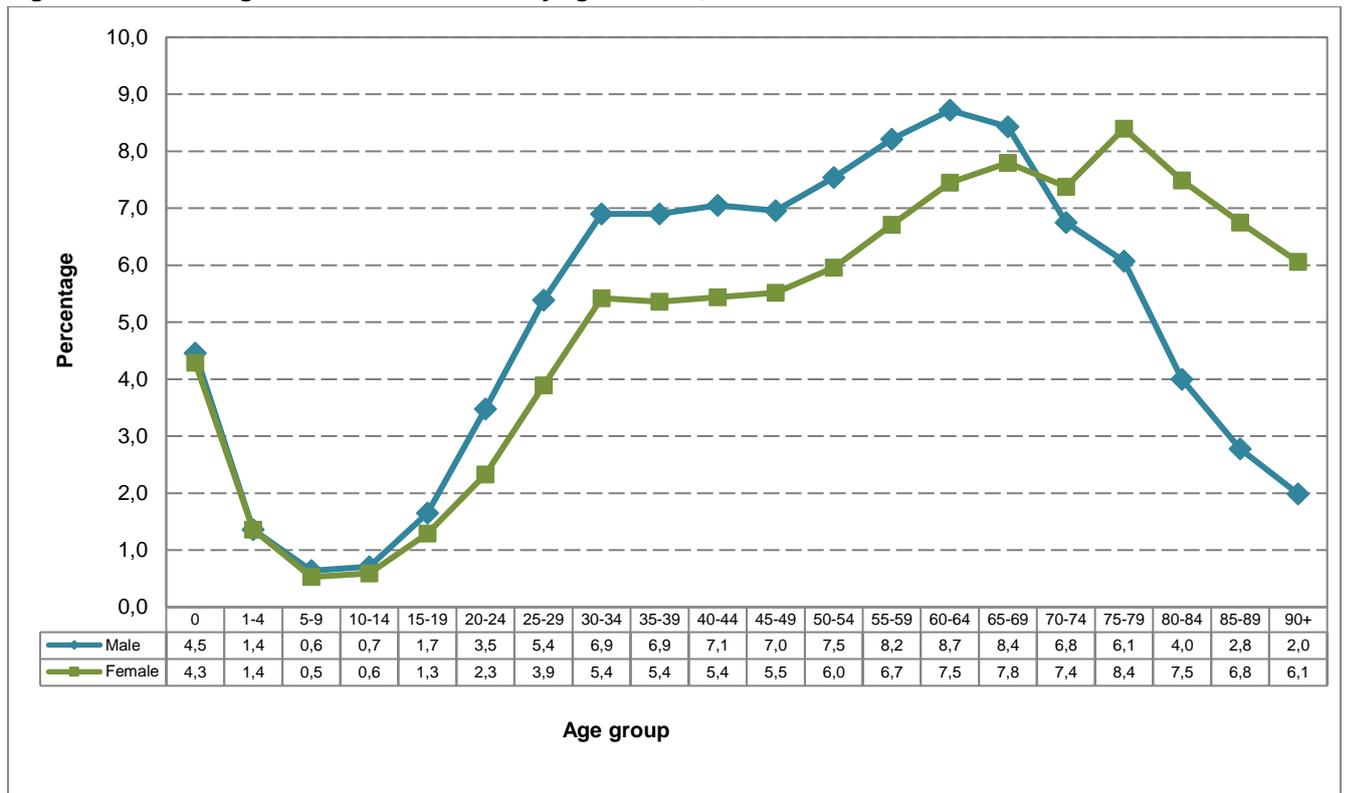
Appendix E (see page 80) presents the annual percentage changes in the number of deaths from one year to the next from 1997–1998 to 2016–2017. It is shown that, between the years 1997 and 2005, female deaths increased at a higher rate than male deaths. In contrast, female deaths went on to decline at a higher pace than male deaths between the years 2006 and 2017. Appendix F (see page 81) provides Age-specific Death Rates (ASDRs) for the years 2013 to 2017 in order to show differentials in mortality by age group, taking into account the population size of each age group. The ASDRs provided should be interpreted with caution as they are based on observed number of deaths that have not been adjusted for incomplete death registration which may vary by age group.

3.4 Age and sex differentials

3.4.1 Distribution of deaths by age and sex

Figure 3.4 shows the age and sex percentage distribution of deaths for 2017 (absolute numbers are presented in Appendix D.6 (see page 79)). It is observed that proportions of deaths for males and females were both lowest and somewhat similar for the age groups 5–9 and 10–14. Overall, the male deaths exceeded those of female deaths from age group zero up to 65–69 years. From ages 70 years and above there were slightly more female than male deaths. The gap in the proportion for male and female deaths was highest between age groups 75–79 up to 90 years and above, where female deaths surpassed male deaths by 3,5% at age group 80–84 and by 4,0% at age groups 85–89 and 90 years and above.

Figure 3.4: Percentage distribution of deaths by age and sex, 2017*

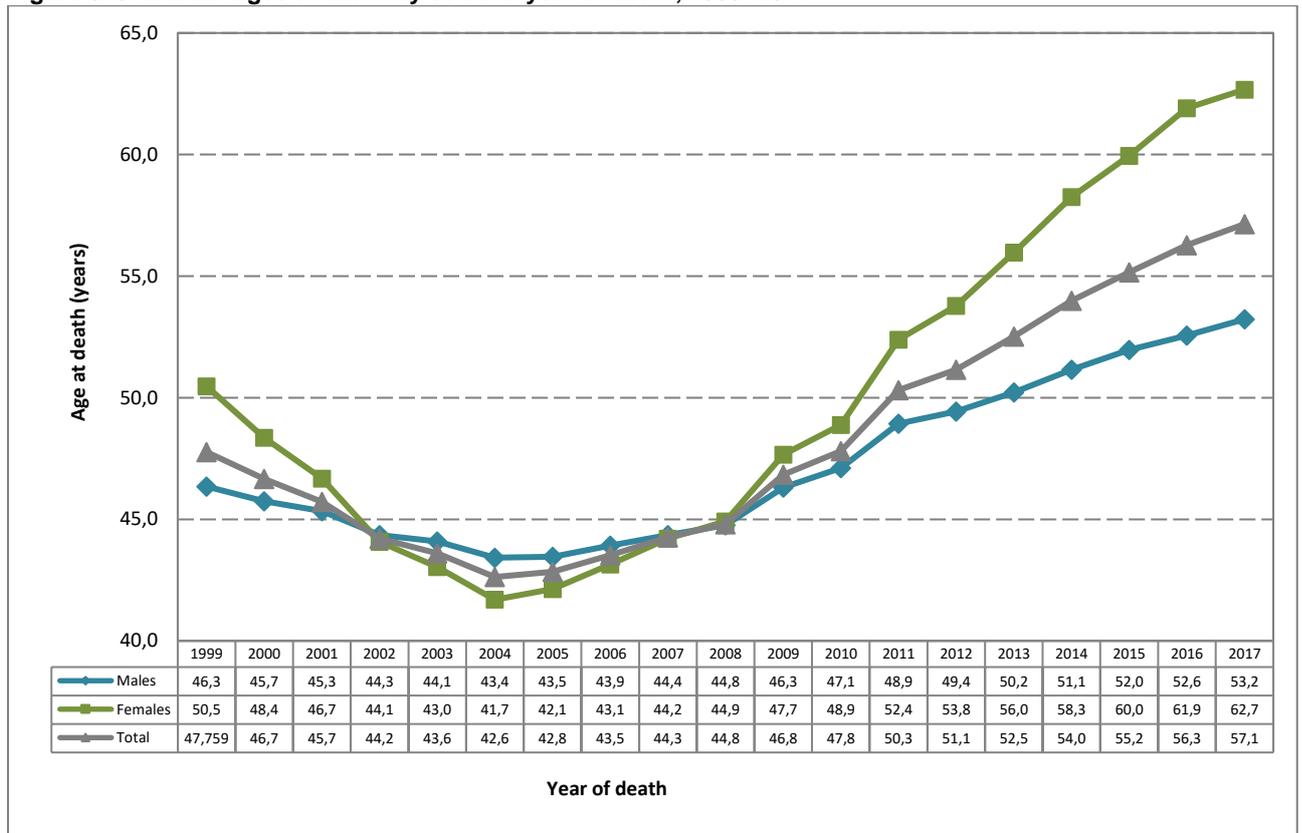


*Excluding deaths with unspecified age and sex.

3.4.2 Median ages at death by sex

The median age at death indicates the age at which exactly half of all registered deaths occurred 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 an increase in the proportions of deaths occurring at older ages and a corresponding decrease in the proportions of deaths occurring at younger ages. Figure 3.5 shows that the median ages at death for total deaths declined notably from 47,7 years in 1999 and reached their lowest level of 42,6 years in 2004. The decreases were more rapid for females as compared to males. The median age at death for females decreased by 8,8 years from 50,5 years in 1999 to 41,7 years in 2004, while the median age at death for males decreased by 2,9 years from 46,3 years in 1999 to 43,4 years in 2004. Since 2005, the median ages at death for both males and females have been increasing, reflecting improvement in mortality.

Figure 3. 5: Median ages at death by sex and year of death, 1999–2017*



*Data for 1999–2016 have been updated with late registrations / delayed death notification forms processed in 2018/2019.

3.4.3 Sex ratios by age

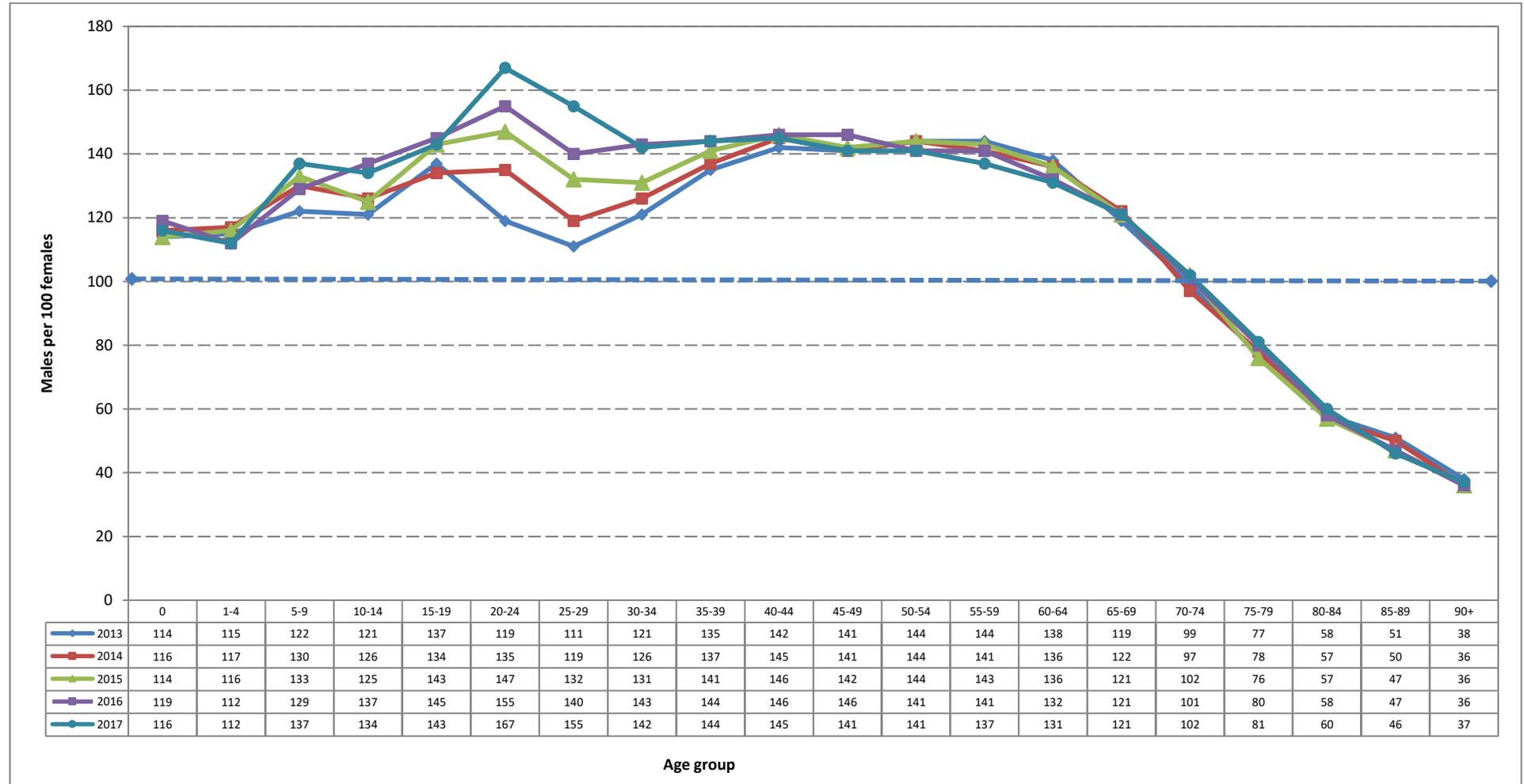
Figure 3.6 represents the sex ratio at death by age and year of death for the period 2013–2017. The sex ratio at death is defined as the number of male deaths per 100 female deaths. A ratio of 100 indicates an equal number of male and female deaths, a number less than 100 indicates relatively more female deaths and a number above 100 is indicative of relatively more male deaths.

The figure shows that for all the years there were more male deaths than female deaths from age 0 to age group 65–69 whereas female deaths consistently exceeded male deaths for ages 75 years and above. There were more female deaths for age group 70–74 years between 2012 and 2014. Thereafter, male deaths slightly exceeded female deaths for the years 2015 to 2017.

The results also indicate that in 2017, the highest sex ratio (167 male deaths per 100 female deaths) was observed in 2017 in the age group 20–24 years. This pattern has continued for three consecutive years, beginning in 2015. A trend analysis of the sex ratio at death for age group 20–24 years shows that it moved from a low of 119 male deaths per 100 female deaths in 2013 to a high of 167 male deaths per 100 female deaths in 2017, indicating an increase of 40,3% (48 years) from the 2013 sex ratio.

The overall sex ratios for 1997 to 2017 are shown in Appendix G (see page 82). Over this 21-year period, sex ratios at death were consistently higher for males (above 100) as compared to females.

Figure 3.6: Sex ratios by age and year of death, 2013–2017*



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

(2) Data for 2013–2016 have been updated to include late registrations processed / delayed death notification forms processed in 2018/2019.

3.5 Population group differences in mortality

Table 3.2 shows the distribution of deaths by population group in 2017. The population group with the highest proportion of deaths was black Africans who accounted for 68,5% of all deaths. The Indian/Asian population group accounted for the least percentage of deaths with only 1,5% of all registered deaths. The table also indicates that 7,7% and 9,5% of all deaths were for the coloured and white population groups, respectively. The proportions observed are indicative of the variations in population size by population group. Information on population group was unknown or unspecified in 12,3% of all registered deaths. While there has been an improvement in the recording of population group on the death notification forms, the proportion of deaths with unknown or unspecified population group remains considerably high and therefore, these results should be interpreted with caution.

Table 3.2: Number and percentage distribution of deaths by population group, 2017

Population group	Number of deaths	Percentage of deaths	RSA Population group size	Percentage of RSA population group
Black African	305 938	68,5	45 656 400	80,8
White	42 548	9,5	4 962 921	8,8
Indian/Asian	8 150	1,8	1 409 103	2,5
Coloured	34 182	7,7	4 493 522	8,0
Other	799	0,2		0,0
Unknown or unspecified	54 927	12,3		0,0
Total	446 544	100,0	56 521 946	100,0

3.6 Marital status differences in mortality

Table 3.3 depicts the number and percentage distribution of deaths by marital status of the deceased. The majority of the deaths (38,9%) occurred amongst the people that had never been married, followed by those who are married (23,8%) and the widowed (10,8%). About 2,3% of the deaths occurred among people that were divorced.

It is worth noting that the variations in the percentage of deaths by marital status may be affected by differences in population sizes across the marital status categories. In addition, caution should be exercised when interpreting the results, as 24,1% of the death notification forms had missing information on marital status of the deceased.

Table 3.3: Number and percentage of deaths by marital status, 2017

Marital status	Number	Percentage
Never married	173 772	38,9
Married	106 444	23,8
Widowed	48 098	10,8
Divorced	10 416	2,3
Unknown/unspecified/not applicable	107 814	24,1
Total	446 544	100,0

3.7 Differences in mortality by smoking status

Table 3.4 shows the distribution of deaths by smoking status. Smoking status refers to smoking tobacco on most days in the five years preceding death. It is observed that approximately 20,31% of the deaths occurred among people who were smoking, while the highest percentage of deaths were among people who were non-smokers (41,22%). The table also shows that 32,63% of registered deaths in 2017 had smoking status classified as unknown or unspecified. The high proportion of deaths with missing information on smoking status shows a poor reporting of this information on the death notification forms. The condition also worsened when compared to 2016 where the proportion was 23,2%, representing a 40,6% increase.

Table 3.4: Number and percentage distribution of deaths by smoking status among those aged 16 years and older, 2017

Smoking status	Number	Percentage
Yes	83 957	20,31
No	170 411	41,22
Do not know	24 170	5,85
Unknown or unspecified	134 903	32,63
Total	413 441	100,00

3.8 Differences in mortality by place or institution of death occurrence

Table 3.5 shows the number and percentage distribution of registered deaths by place or institution of death occurrence for 2017. The results indicate that 42,6% of the deaths took place in hospitals, 2,1% were emergency room or outpatient facility deaths and 2,1% died in nursing homes. These three places of death occurrence account for 46,8% of total deaths that occurred within a health care facility. A total of 23,4% of all deaths occurred at home in 2017, while 2,2% were amongst people who had already died by the time they reached the hospital. Only 5,4% of the death notification forms had unknown or unspecified information on place or institution of death of the deceased compared to 23,4% in 2016.

Table 3.5: Number and percentage distribution of deaths by place of death occurrence, 2017

Place of death	Number	Percentage
Hospital	190 234	42,6
Emergency room / Out patient	9 561	2,1
Dead on arrival	9 819	2,2
Nursing home	9 309	2,1
Home	104 602	23,4
Other	13 367	3,0
Unknown/ unspecified	24 055	5,4
Total	446 544	100,0

3.9 Geographic variations in mortality

This section presents information on the distribution of registered deaths by province and district municipality where the death occurred and by the deceased usual residences. The districts and provinces information were derived based on the 2016 municipal boundaries. The number and percentage distribution of deaths by province of the deceased are provided in Appendix I and I1 on pages 85 and 87 (absolute numbers and percentages, respectively); and Appendix J presents the sex distribution of these (see page 89).

3.9.1 Differences by province, age and sex

The distribution of deaths by province of death occurrence and province of usual residence of the deceased in 2017 is presented in Table 3.6. The distribution of deaths by province of death occurrence shows that the highest proportion of deaths (20,7%) occurred in Gauteng province, followed by KwaZulu-Natal (17,2%) and then Eastern Cape (14,6%). The lowest proportion of deaths were in Northern Cape (2,8%). These percentages may be indicative of the population sizes of the provinces of death occurrence.

The proportions of deaths by province of death occurrence and usual residence of the deceased were largely similar and changed little from the observation made in 2016. For province of usual residence, Gauteng (20,7%) had the highest proportion of deaths, followed by KwaZulu-Natal (17,2%) and then Eastern Cape (14,6%).

Further analysis on the province of death occurrence and province of usual residence of the deceased, shows that 2017 deaths were predominantly characterised by deaths that occurred within the province of usual residence (refer to appendices H and H1 on pages 83 and 84). Appendix H1 shows that more than 90% of deaths occurred within the province where the deceased stayed most her/his living life.

It must be noted that analysis on geographic distribution of deaths is based only on place of death occurrence, not place of residence or place of birth of the deceased. However, information on the distribution of deaths by place of residence and place of birth of the deceased is available on request from Stats SA.

Table 3.6: Distribution of deaths by province of death occurrence and province of usual residence of the deceased, 2017

Province	Province of death occurrence		Province of usual residence of deceased	
	Number	Percentage	Number	Percentage
Western Cape	45 715	10,2	47 995	10,7
Eastern Cape	65 162	14,6	66 537	14,9
Northern Cape	12 638	2,8	12 948	2,9
Free State	31 208	7,0	31 557	7,1
KwaZulu-Natal	76 605	17,2	76 683	17,2
North West	32 473	7,3	33 908	7,6
Gauteng	92 523	20,7	93 008	20,8
Mpumalanga	29 300	6,6	33 205	7,4
Limpopo	43 707	9,8	45 559	10,2
Unspecified	17 213	3,9	5 144	1,2
Total	446 544	100,0	446 544	100,0

The number and percentage distribution of deaths by age, province and district municipality of death occurrence for 2017 are presented in Appendix I and I1 (see pages 85 and 87). It must be noted that the proportions provided may reflect underreporting of deaths at specified ages as the numbers were not adjusted for incomplete reporting which may differ by province and for specific ages.

Percentage variations at province level by age in Appendix I1 show that among children aged below one year, North West had the highest proportion of deaths (6,1%). Limpopo also had the highest percentage of deaths among children aged 1–4 (3,7%). Mpumalanga had the highest percentage of deaths for age groups 15–44 (31,8%) and Northern Cape had the highest proportion of deaths occurring at age groups 45–64 (41,2%). For ages 65 and older, Western Cape had the highest proportion of deaths (41,2%).

The sex ratios at death depicted in Appendix J (see page 89) show that Western Cape (with 121 male deaths per 100 female deaths) had the highest sex ratio of death followed by Gauteng and Northern Cape – equally at 117 male deaths per 100 females. Limpopo was the only province with a sex ratio of 100 (100 male deaths per 100 female deaths). Other provinces ranged from a sex ratio of 107 male deaths per 100 female deaths (KwaZulu-Natal) to 116 male deaths per 100 female deaths (North West).

3.9.2 Differences by district municipality, age and sex

The number distribution of deaths by age and district municipality of death occurrence as shown in Appendix I indicates that City of Cape Town (28 452), City of Johannesburg (27 368) and City of Tshwane (25 344) recorded the highest number of deaths. The district municipalities that recorded the least number of deaths were Central Karoo (786), Namakwa (1 435) and Overberg (2 120).

Appendix I1 also shows percentage variations by age and district municipality. John Taolo Gaetsewe district in Northern Cape had the highest proportion of deaths occurring among children below age one year (8,1%), followed by Ngaka Modiri Molema district in North West (6,8%). The highest proportions of deaths occurring among children aged 1–14 years were noted in Zululand district (4,1%) in KwaZulu-Natal and Mopani (3,9%), in Limpopo. For deaths occurring among those aged 15–44 years O.R. Tambo district in Eastern Cape (33,7%), iLembe district in KwaZulu-Natal (33,1%) and Ehlanzeni district in Mpumalanga (33,0%) had the highest proportion of deaths.

At older ages, district municipalities in Western Cape had the highest proportion of deaths. Central Karoo (37,5%), West Coast (33,9%) and Cape Winelands (33,8%) had the highest proportion of deaths occurring in ages 45–64 years, while Overberg (47,8%) Amathole (44,6%) and Eden (44,1%) had the highest proportion of deaths occurring at ages 65 years and older. The sex distribution of the deceased by district municipality of death occurrence is illustrated in Appendix J.

The district level analysis of deaths by sex shows that 2017 registered deaths were predominantly characterised by more male deaths relative to female deaths. The district with the highest sex ratio was Overberg (136 male deaths per 100 female deaths) followed by West Coast (126 male deaths per 100 female deaths) both in Western Cape. Out of the 52 district municipalities, Greater Sekhukhune, Mopani and Vhembe districts in Limpopo and uMkhanyakude district in KwaZulu-Natal had sex ratios lower than 100 (more female deaths).

4. Causes of death

4.1 Introduction

Information presented in this section focuses on causes of death for deaths that occurred in 2017 and were processed by Stats SA for the period 01 January 2018 to 20 December 2019. 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 1997–2017 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

Forms BI-1663 and DHA-1663 make provision for recording information on diseases, injuries or complications that caused death, citing one or more causes of death. Table 4.1 provides information on the number of causes of death reported on each death notification form for deaths that occurred in 2017.

A total of 3 986 (0,9%) forms had no cause of death recorded. These forms mainly include cases in which the part containing medical information on the death notification form was missing. Of the 3 986 forms with missing information, 2 079 (52,2%) of these forms had a doctor's tick to show that it was a natural cause of death while for 1 907 (47,8%) forms, the doctors stated that they were "not in a position to certify" or that the "death was under investigation". These causes were subsequently 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.

The majority of death notification forms (51,7%) had only one cause recorded while 25,7% had two causes recorded and 14,5% had three causes recorded. A total of 7,2 % of death notification forms had four or more causes recorded. The pattern of recording causes on the death notification forms has largely remained the same since 1997.

Table 4.1: Distribution of death notification forms by number of causes recorded on the form

Number of the reported causes of death	Number of death notification forms	Percentage
No cause	3 986	0,9
One cause	230 650	51,7
Two causes	114 711	25,7
Three causes	64 861	14,5
Four causes	32 336	7,2
Total	446 544	100,0

4.3 Method of ascertaining cause of death

The BI-1663 and DHA-1663 death notification forms make provision for a certifying official to indicate the method that was used to ascertain the cause of death. 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).

There are two sections for the method of ascertaining the cause of death for form DHA-1663, depending on the age of the deceased:

- For deaths occurring after one week of birth, DHA-1663 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 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. The most common method of ascertaining the cause of death in 2017 was post-mortem examination with 26,0% deaths ascertained using this method, followed by 14,5% deaths ascertained through opinion of attending medical practitioner. About 11,8% of the deaths were ascertained through the opinion of a registered professional nurse. There were 1,2% causes of death that were ascertained by conducting an interview with a family member of the deceased to establish the cause of death.

Table 4.2: Number and percentage distribution of deaths by method used to ascertain the cause of death, 2017

Method of ascertaining the cause of death	Number	Percentage
Autopsy	44 848	10,0
Post mortem examination	116 246	26,0
Opinion of attending medical practitioner	64 663	14,5
Opinion of attending medical practitioner on duty	7 777	1,7
Opinion of registered professional nurse	52 810	11,8
Interview of family member	5 238	1,2
Other	6 033	1,4
Unknown	344	0,1
Unspecified	148 585	33,3
Total	446 544	100,00

*For perinatal deaths only.

4.4 Main groups of the underlying causes of death

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

1. Chapter 19: *Injury, poisoning and certain other consequences of external causes (S00-T98)*. These codes are used to classify causes of death in other causes but not in the underlying causes.

2. Chapter 21: *Factors influencing health status and contact with health services (Z00-Z99)*. These are only used in morbidity coding.

3. Chapter 22: Codes for special purposes. These codes are used by WHO for the provisional assignment of new diseases of uncertain aetiology. U51 and U52 were used for coding *multidrug-resistant tuberculosis (MDR-TB)* and *extensively drug-resistant tuberculosis (XDR-TB)* in this release for individual causes of death, but were both recoded to the broad group of tuberculosis (A15-A19) in the analyses.

The percentage distribution of the 19 main groups (chapters) of the classification of causes of death is presented in Table 4.3. *Diseases of the circulatory system* was the top ranking main group of causes of death in 2017, comprising 18,4% of all deaths. Certain infectious and parasitic diseases was the second most reported main group of causes of death. This group also includes 1 247 deaths due to *multidrug-resistant tuberculosis (MDR-TB)* and 177 deaths due to *extensively drug-resistant tuberculosis (XDR-TB)*. Since 1997, *certain infectious and parasitic diseases* was the top ranked main group of underlying causes until 2016 where a change was observed whereby *Diseases of the circulatory system* toppled *certain infectious and parasitic diseases* as the top ranked main group of underlying causes. The observation on 2017 is consistent with that of 2016 which indicates that there has been a change in the disease profile in South Africa where a group of infectious diseases has been replaced by a group of lifestyle diseases.

Deaths due to *external causes of morbidity and mortality* comprised 11,5% of all deaths, whilst ill-defined deaths due to *symptoms and signs not elsewhere classified (R00-R99)* contributed 13,4%.

Table 4.3: Distribution of deaths by main groups of causes of death, 2017

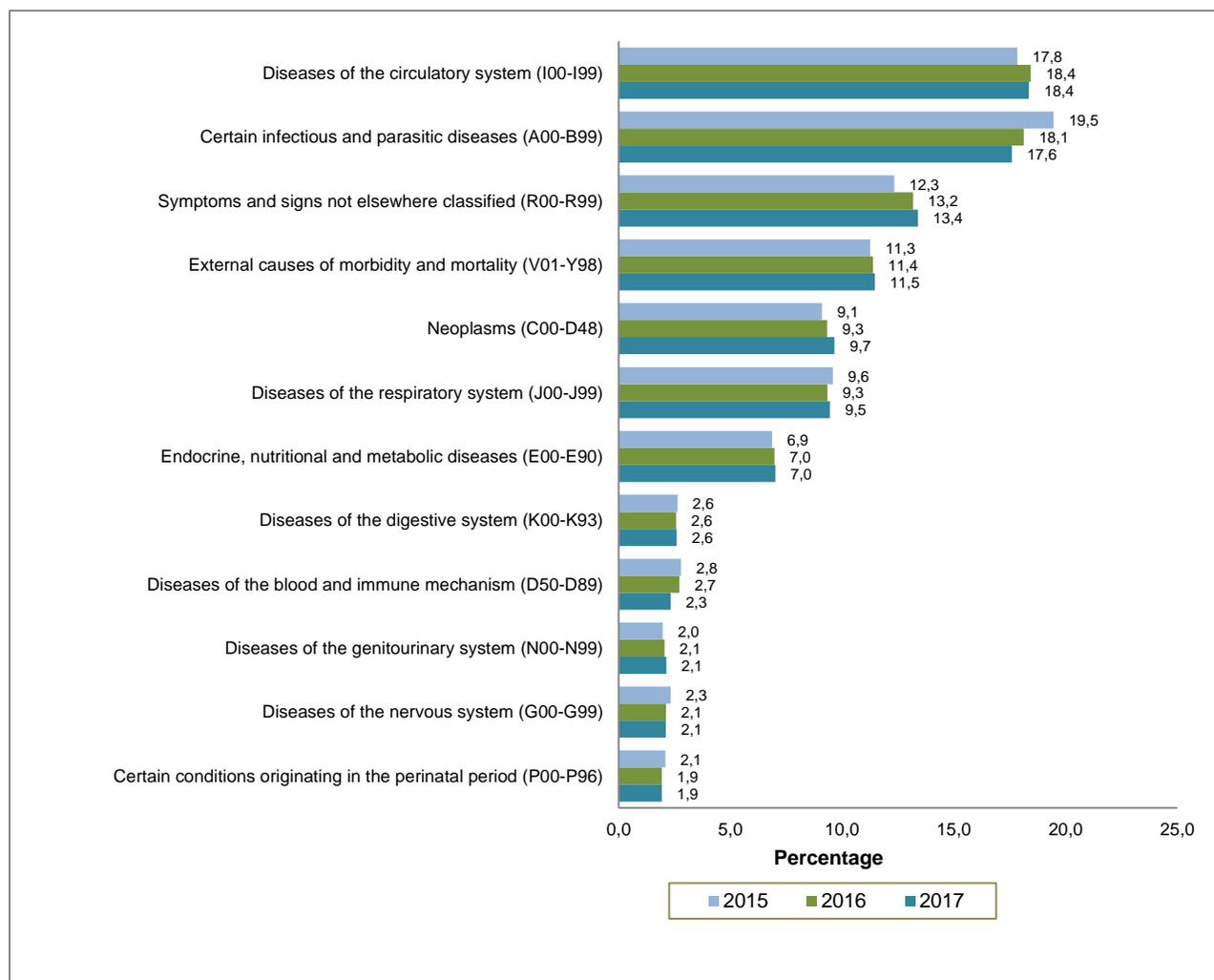
No.	Main groups of underlying causes of death (based on ICD-10)	Number	Percentage
9	Diseases of the circulatory system (I00-I99)	81 992	18,4
1	Certain infectious and parasitic diseases (A00-B99)*	78 562	17,6
18	Symptoms and signs not elsewhere classified (R00-R99)	59 773	13,4
19	External causes of morbidity and mortality (V01-Y98)	51 164	11,5
2	Neoplasms (C00-D48)	43 120	9,7
10	Diseases of the respiratory system (J00-J99)	42 202	9,5
4	Endocrine, nutritional and metabolic diseases (E00-E90)	31 362	7,0
11	Diseases of the digestive system (K00-K93)	11 598	2,6
3	Diseases of the blood and immune mechanism (D50-D89)	10 375	2,3
14	Diseases of the genitourinary system (N00-N99)	9 506	2,1
6	Diseases of the nervous system (G00-G99)	9 434	2,1
16	Certain conditions originating in the perinatal period (P00-P96)	8 619	1,9
5	Mental and behavioural disorders (F00-F99)	2 542	0,6
17	Congenital malformations (Q00-Q99)	2 367	0,5
13	Diseases of the musculoskeletal system etc. (M00-M99)	1 804	0,4
12	Diseases of the skin and subcutaneous tissue (L00-L99)	1 346	0,3
15	Pregnancy, childbirth and puerperium (O00-O99)	671	0,2
7	Diseases of the eye and adnexa (H00-H59)	61	0,0
8	Diseases of the ear and mastoid process (H60-H95)	46	0,0
Total		446 544	100

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

Figure 4.1 shows a three-year trend analysis for selected main groups of underlying causes of deaths for the years 2015 to 2017. Consistent with what was observed in 2016, the most noticeable changing patterns were those of *certain infectious and parasitic diseases* which declined from 19,5% in 2015 to a low of 17,6% in 2017 in the three-year period. *Diseases of the circulatory system* increased in the proportion from 17,8% in 2015 to 18,4% in 2017. This was the second time that deaths due to this main group were higher than deaths due to *certain infectious and parasitic diseases*.

The proportions of deaths due to *endocrine, nutritional and metabolic diseases, neoplasms* and *diseases of the genitourinary system* increased slightly each year over the three-year period, while those due to *diseases of the nervous system* decreased. There was also a slight increase in the proportion of deaths due to *external causes of morbidity and mortality* over the three-year period.

Figure 4.1: Percentage distribution of deaths by main groups of causes of death, 2015–2017*



*Data for 2015–2016 have been updated with late registrations / delayed death notification forms processed in 2018/2019.

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. According to the ICD-10 codebook, all causes of death from chapters 1 to 18 of ICD-10 are classified as natural causes and chapter 20 (V01-Y98) as non-natural causes. This section discusses both natural causes of death and chapter 20, which are deaths due to non-natural causes.

Table 4.4 shows the actual number of natural and non-natural deaths by year of death from 1997 to 2017. Throughout all the years, the number of deaths due to natural causes was always higher than the number of deaths due to non-natural causes. The results show that there has been an inconsistent pattern in the number of deaths due to non-natural causes from 1997 to 1999, followed by a steady and consistent rise in non-natural deaths from 2000 until 2005.

There has been a stable increase in the number of non-natural deaths from the year 2011 to 2016, with the highest number recorded in 2016 (53 518). The number of deaths due to this cause however declined to 51 164 in 2017.

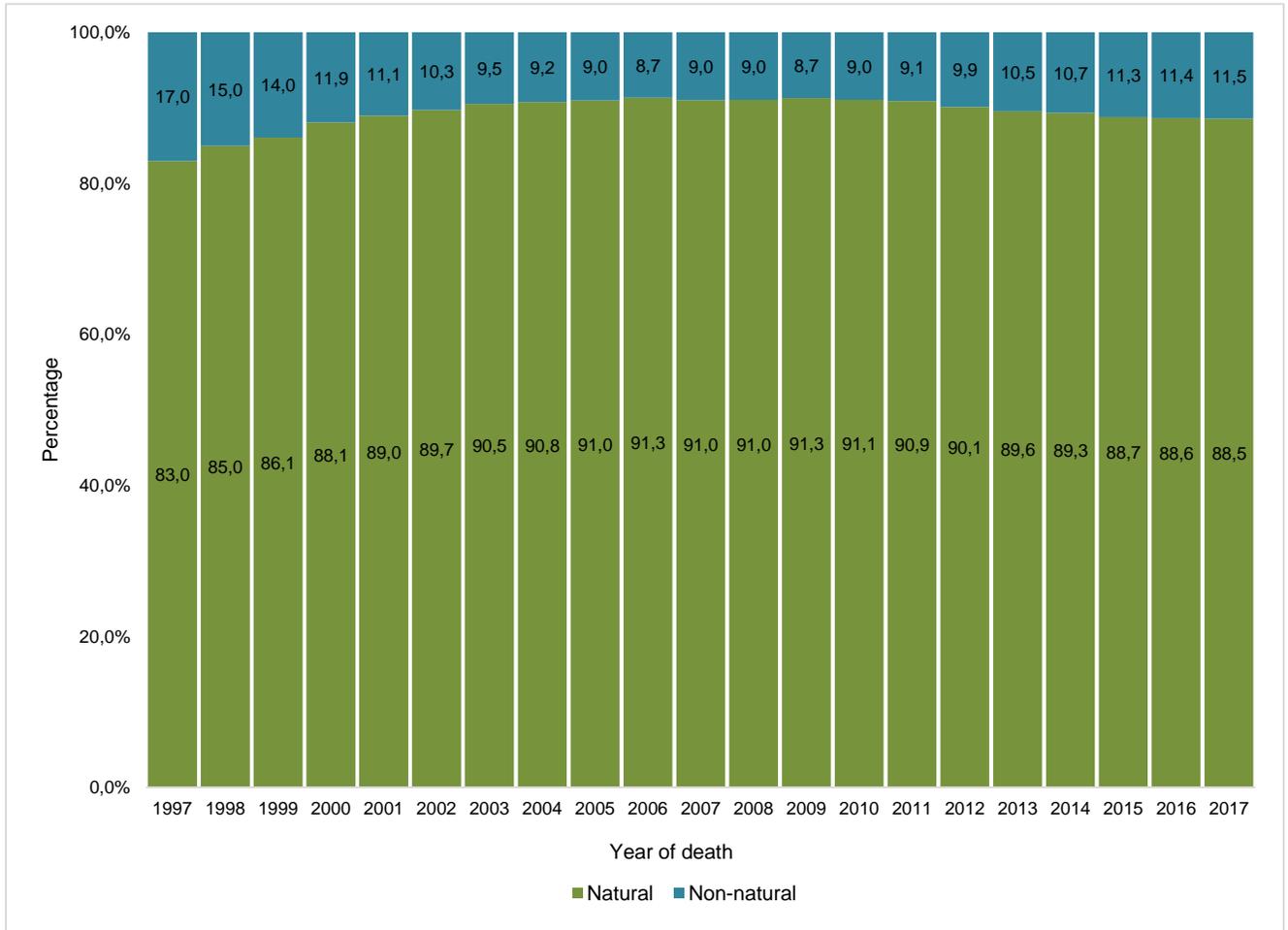
Table 4.4: Number of natural and non-natural deaths by year of death occurrence, 1997–2017*

Year of death	Number of natural deaths	Number of non-natural deaths	Total
1997	263 835	54 150	317 985
1998	311 541	55 170	366 711
1999	329 357	53 405	382 762
2000	367 561	49 850	417 411
2001	406 043	50 441	456 484
2002	451 796	51 796	503 592
2003	505 708	52 971	558 679
2004	525 181	53 465	578 646
2005	545 775	54 079	599 854
2006	561 096	53 316	614 412
2007	551 801	54 658	606 459
2008	544 788	53 702	598 490
2009	533 384	50 889	584 273
2010	502 457	49 363	551 820
2011	470 630	47 305	517 935
2012	446 570	48 966	495 536
2013	427 585	49 877	477 462
2014	426 469	51 015	477 484
2015	420 800	53 375	474 175
2016	416 878	53 518	470 396
2017	395 380	51 164	446 544

*Data for 1997–2016 have been updated with late registrations / delayed death notification forms processed in 2018/2019.

Figure 4.2 shows the percentage distribution of deaths due to natural and non-natural causes between 1997 and 2017. The majority (over 80%) of deaths were due to natural causes throughout this period. It is important to note that from the year 2006, the proportion of deaths attributed to non-natural causes in South Africa has been increasing from 8,7% in 2006 to a high of 11,5% in 2017.

Figure 4.2: Percentage distribution of natural and non-natural causes of death by year of death occurrence, 1997–2017*

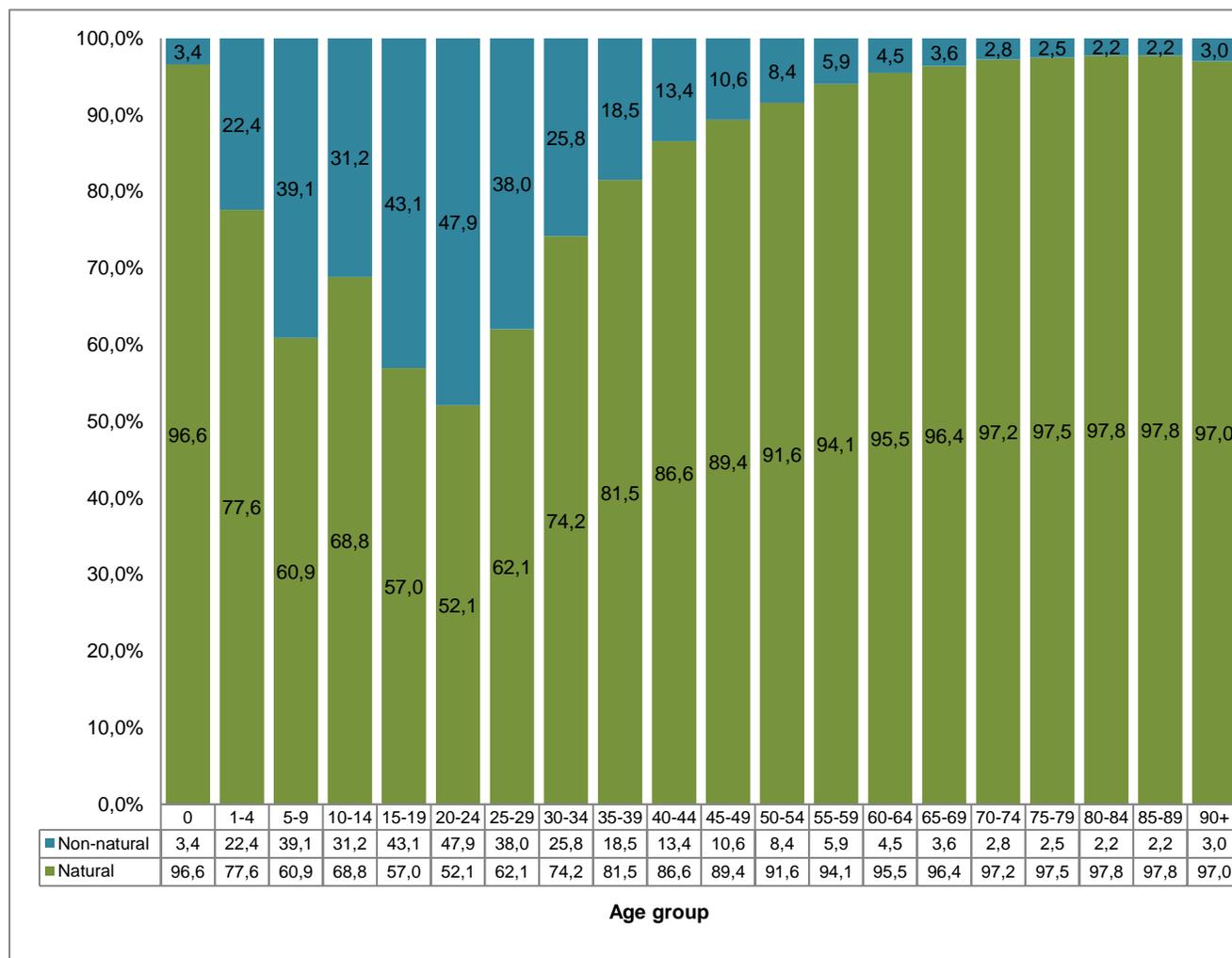


*Data for 1997–2016 have been updated with late registrations / delayed death notification forms processed in 2018/2019.

4.5.1 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 2017. Generally, population age groups massively affected by non-natural deaths are 15–19 (43,1%) and 20–24 (47,9%). 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 30%) of deaths due to non-natural causes were age groups 5–9 years to 10–14 years and age groups 25–29.

Figure 4.3: Percentage distribution of natural and non-natural causes of death by age, 2017*



*Excluding deaths with unspecified age.

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

The Global Burden of Diseases is the main and most complete effort to measure epidemiological levels and trends of health within different populations. The 19 ICD-10 chapters used in the reporting of information on underlying causes of death can be further condensed into three groups of causes of death as per the Global Burden of Disease cause list:

Group I:

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

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

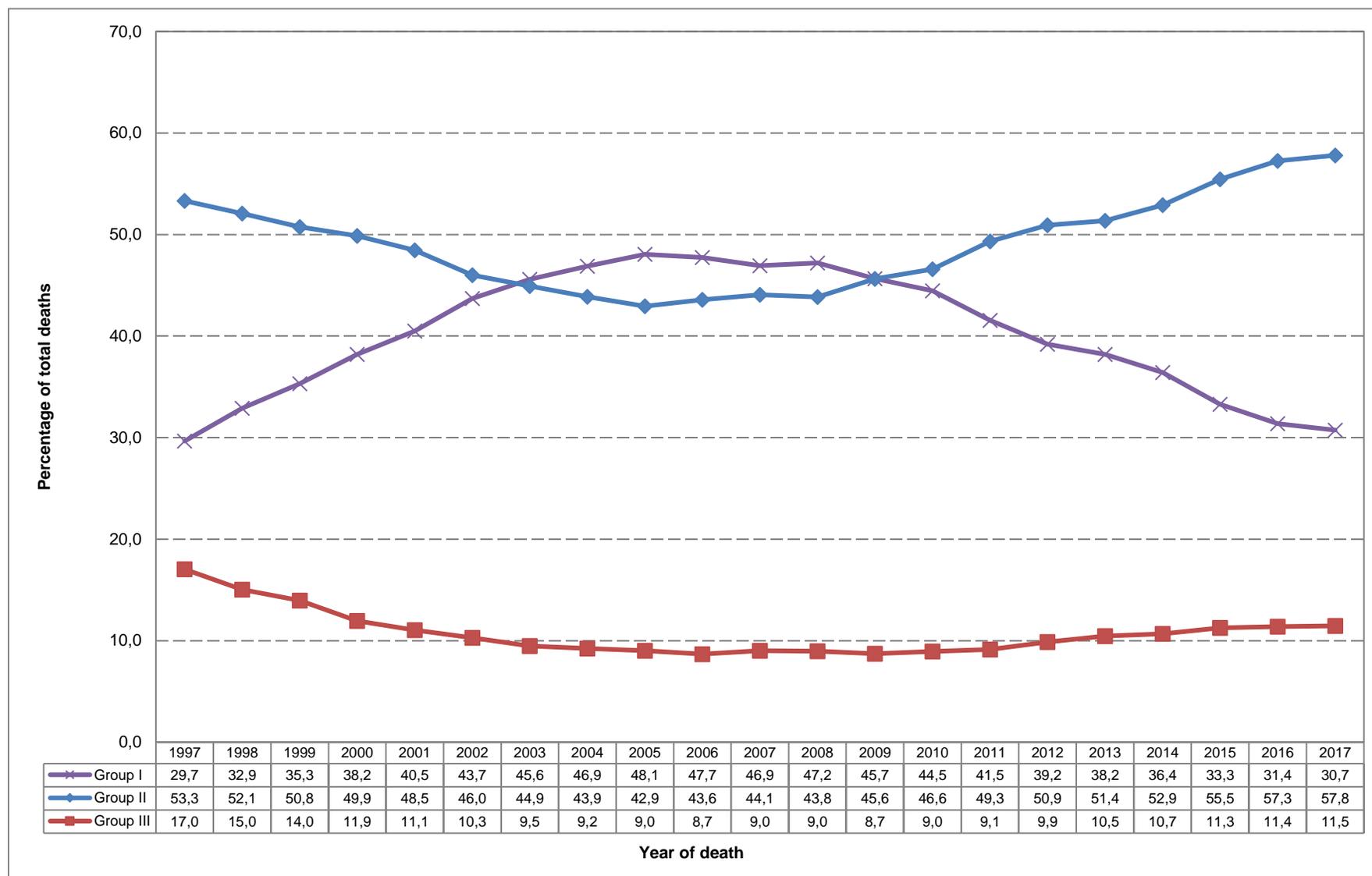
Group III: External causes of mortality (e.g. *accidents, homicide and suicide*)

Communicable diseases are diseases caused by pathogenic micro-organisms, 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 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 are the non-natural causes of death.

Figure 4.4 shows the percentage distribution of deaths by group type and year of death. The pattern observed shows that in South Africa prior to 2003, there were more deaths from non-communicable diseases relative to communicable diseases, although the gap was narrowing over time. However, from 2004 until 2008, deaths due to communicable diseases exceeded non-communicable deaths. Over the years 2010 to 2014, the gap between the communicable and non-communicable diseases widened with more deaths resulting from non-communicable diseases. Overall, the pattern shows an epidemiological shift in the main causes of death and disease, away from communicable diseases towards non-communicable diseases.

Deaths due to injuries took a downward trend from 17,0% in 1997 to 8,7% in 2006, and thereafter they remained more or less constant between 2007 and 2008. Between 2009 and 2017, a consistent increase in the proportions of deaths due to injuries was noted from 8,7% in 2009 to 11,5% in 2017.

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, 1997–2017*



* (1) Data for 1997–2016 have been updated with late registrations / delayed death notification forms processed in 2018/2019.

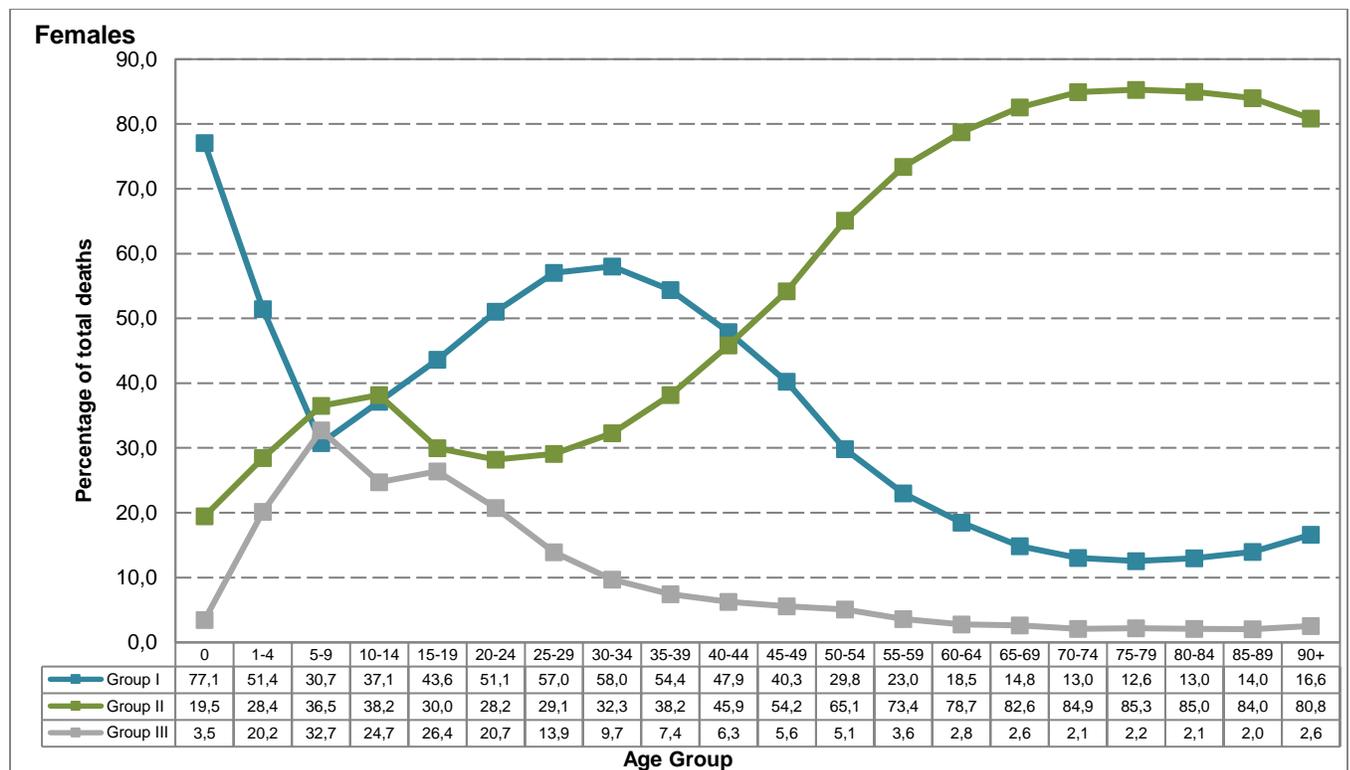
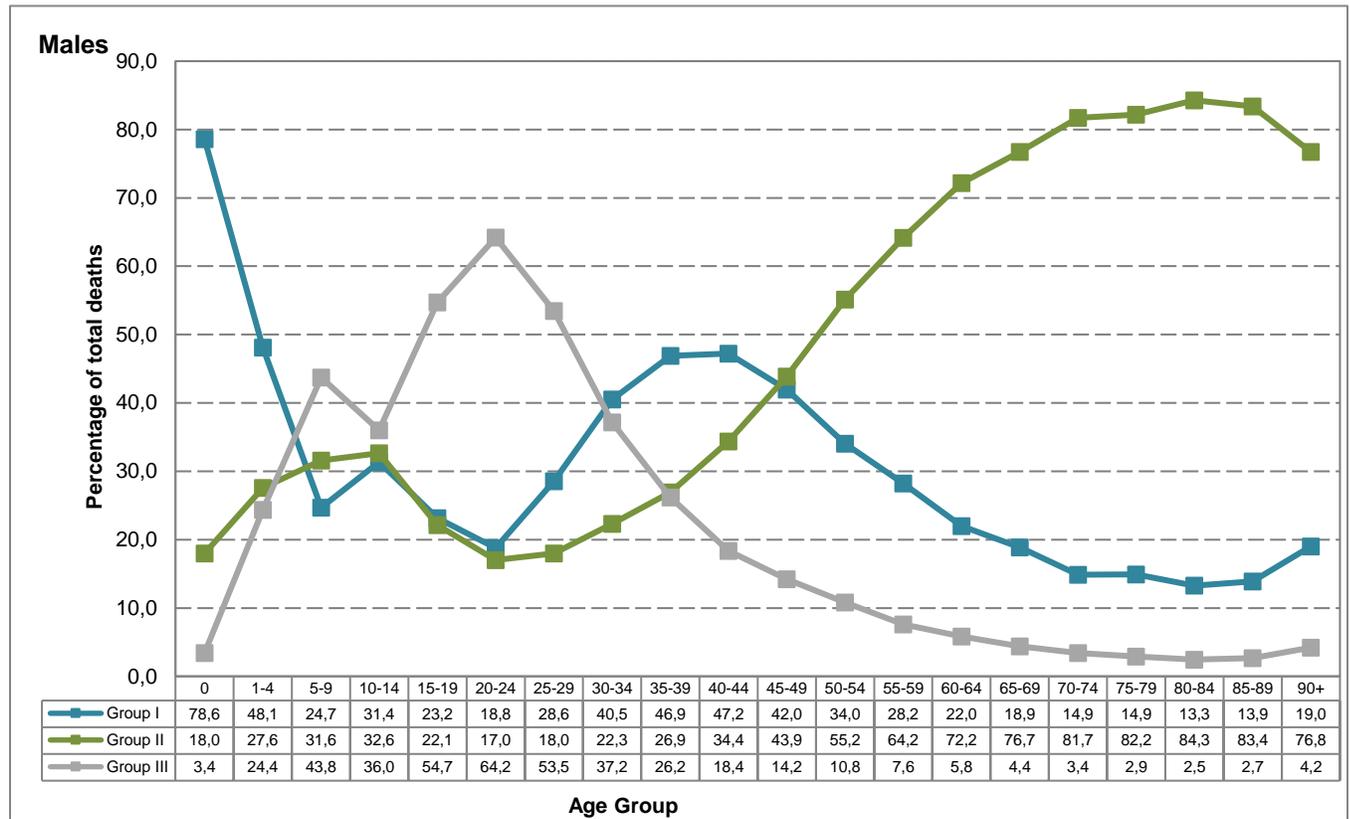
(2) Redistributed ill-defined diseases R00-R99 proportionately to causes in Group I and Group II.

The percentage distribution of group type by sex and age group is shown in Figure 4.5. For 2017 deaths, the proportion of deaths due to **Group I** causes (*communicable diseases, maternal, perinatal and nutritional conditions*) was high amongst children for both males and females. For both sexes, deaths due to **Group I** causes were low amongst the elderly (65 years and older) as compared to the other age groups. [For males, deaths due to non-communicable diseases peaked at age groups 35–39 years and 40–44 years, while for females, deaths attributed to non-communicable diseases peaked at groups 25–29 years and 30–34 years].

The proportion of deaths due to **Group II** causes increased with age. 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 for both sexes. It rose notably at older ages for both sexes due to the increasing incidence of cancers and cardiovascular diseases.

The proportion of deaths due to **Group III** causes, i.e. external causes of death including accidents and violence, was generally highest among the youth. This pattern was especially marked among males.

Figure 4. 5: Percentage of deaths due to communicable diseases (Group I), non-communicable diseases (Group II) and injuries (Group III) by sex and age group, 2017*



*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 causes of death in South Africa for the period 2015–2017. The inclusion of information for 2015 and 2016 was added to identify recent trends in the 10 leading causes of death. The ranks of all the broad groups of causes of death (including non-natural causes) for 2017 are shown in Appendix K and also the breakdown of individual causes for the broad groups that were among the ten leading causes in 2012 is provided in Appendix L (refer to pages 91 to 96).

Table 4.5 shows that all ten leading causes of death between 2015 and 2017 were the same but differed only in the ranking and in the contribution of each cause to the overall number of deaths per year. *Tuberculosis* was the leading cause of death over the three-year period and *diabetes mellitus* remained the second leading cause of death. Despite maintaining the same rank as the leading cause of death, the proportion of deaths due to tuberculosis decreased from 7,2% in 2015 to 6,4% in 2017, while on the contrary though diabetes mellitus remained the second leading underlying cause of death, its proportion increased from 5,4% in 2015 to 5,7% in 2017.

Cerebrovascular diseases was the third leading underlying cause of death in 2017, accounting for 5,% of deaths, followed by *other forms of heart diseases* as the fourth leading underlying cause of death, which accounted for 4,9% deaths. The only diseases which maintained the same rank between 2016 and 2017 were tuberculosis (1st), diabetes mellitus (2nd), Human immunodeficiency virus [HIV] disease (5th), Hypertensive diseases (6th), Influenza and pneumonia (7th) and Ischaemic heart diseases (9th).

Diseases which moved a position higher between 2016 and 2017 were cerebrovascular diseases which moved a position higher from 4th to 3rd position while Chronic lower respiratory diseases moved two positions higher from 10th in 2016 to 8th in 2017.

Table 4.5: The ten leading underlying natural causes of death, 2015–2017*

Causes of death (based on ICD-10)	2015			2016			2017		
	Rank	Number	%	Rank	Number	%	Rank	Number	%
Tuberculosis (A15-A19)**	1	34 106	7,2	1	30 441	6,5	1	28 678	6,4
Diabetes mellitus (E10-E14)	2	25 805	5,4	2	25 799	5,5	2	25 336	5,7
Cerebrovascular diseases (I60-I69)	3	23 540	5,0	4	23 695	5,0	3	22 259	5,0
Other forms of heart disease (I30-I52)	4	23 324	4,9	3	24 552	5,2	4	22 098	4,9
Human immunodeficiency virus [HIV] disease (B20-B24)	5	22 594	4,8	5	22 483	4,8	5	21 439	4,8
Hypertensive diseases (I10-I15)	7	19 876	4,2	6	20 289	4,3	6	19 900	4,5
Influenza and pneumonia (J09-J18)	6	21 055	4,4	7	20 152	4,3	7	18 837	4,2
Chronic lower respiratory diseases (J40-J47)	9	13 031	2,7	10	13 040	2,8	8	13 167	2,9
Ischaemic heart diseases (I20-I25)	10	12 726	2,7	9	13 269	2,8	9	12 766	2,9
Other viral diseases (B25-B34)	8	16 501	3,5	8	16 877	3,6	10	12 622	2,8
Other natural causes		208 242	43,9		206 281	43,9		198 278	44,4
Non-natural causes		53 375	11,3		53 518	11,4		51 164	11,5
All causes		474 175	100,0		470 396	100,1		446 544	100,0

*Data from 2014–2015 have been updated with late registrations/delayed death notification forms processed in 2018/2019.

** 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

The distribution of the ten leading underlying natural causes of death in 2017 by sex is shown in Table 4.6. Overall, nine of the ten leading causes were the same for both sexes, although with different rankings. *Tuberculosis* was the leading underlying cause of death for males accounting for 7,6% of male deaths while the leading underlying cause of death amongst females was diabetes mellitus accounting for 7,3% of female deaths. Human immunodeficiency virus [HIV] disease (4,7%) was the second leading cause of death for the males, followed by Other forms of heart disease (4,4%). Cerebrovascular diseases (6,0%) was the second leading underlying cause of death for females.

There were no leading causes of death between the two sexes which had the same rank. The vast difference in terms of rankings between the two sexes were for the hypertensive diseases, cerebrovascular diseases, tuberculosis and Human immunodeficiency diseases – with the highest difference being hypertensive diseases which ranked 5 positions high for females compared to males. Hypertensive diseases ranked 3rd for males while it ranked 8th for females. The other causes had a 4 position difference and the most notable being human immunodeficiency diseases which ranked 2nd for males but were 6th for females.

In terms of the global burden on diseases, three of the top five leading underlying causes of death for males were communicable diseases whilst among females, tuberculosis was the only communicable disease and the rest being non-communicable diseases.

Table 4.6: The ten leading underlying natural causes of death for males and females, 2017

Causes of death (based on ICD-10)	Male			Female		
	Rank	Number	%	Rank	Number	%
Diabetes mellitus (E10-E14)	4	9 993	4,2	1	15 343	7,3
Cerebrovascular diseases (I60-I69)	6	9 643	4,1	2	12 614	6,0
Hypertensive diseases (I10-I15)	8	7 725	3,3	3	12 175	5,8
Other forms of heart disease (I30-I52)	3	10 422	4,4	4	11 671	5,5
Tuberculosis (A15-A19)*	1	17 840	7,6	5	10 820	5,1
Human immunodeficiency virus [HIV] disease (B20-B24)	2	11 044	4,7	6	10 392	4,9
Influenza and pneumonia (J09-J18)	5	9 746	4,1	7	9 072	4,3
Other viral diseases (B25-B34)	10	6 156	2,6	8	6 462	3,1
Malignant neoplasms of female genital organs (C51-C58)	...	...	...	9	5 653	2,7
Ischaemic heart diseases (I20-I25)	9	7 182	3,0	10	5 579	2,7
Chronic lower respiratory diseases (J40-J47)	7	7 991	3,4	...	...	...
Other Natural causes		98 362	41,7		99 296	47,2
Non-natural causes		39 593	16,8		11 430	5,4
All causes		235 697	99,9		210 507	100,0

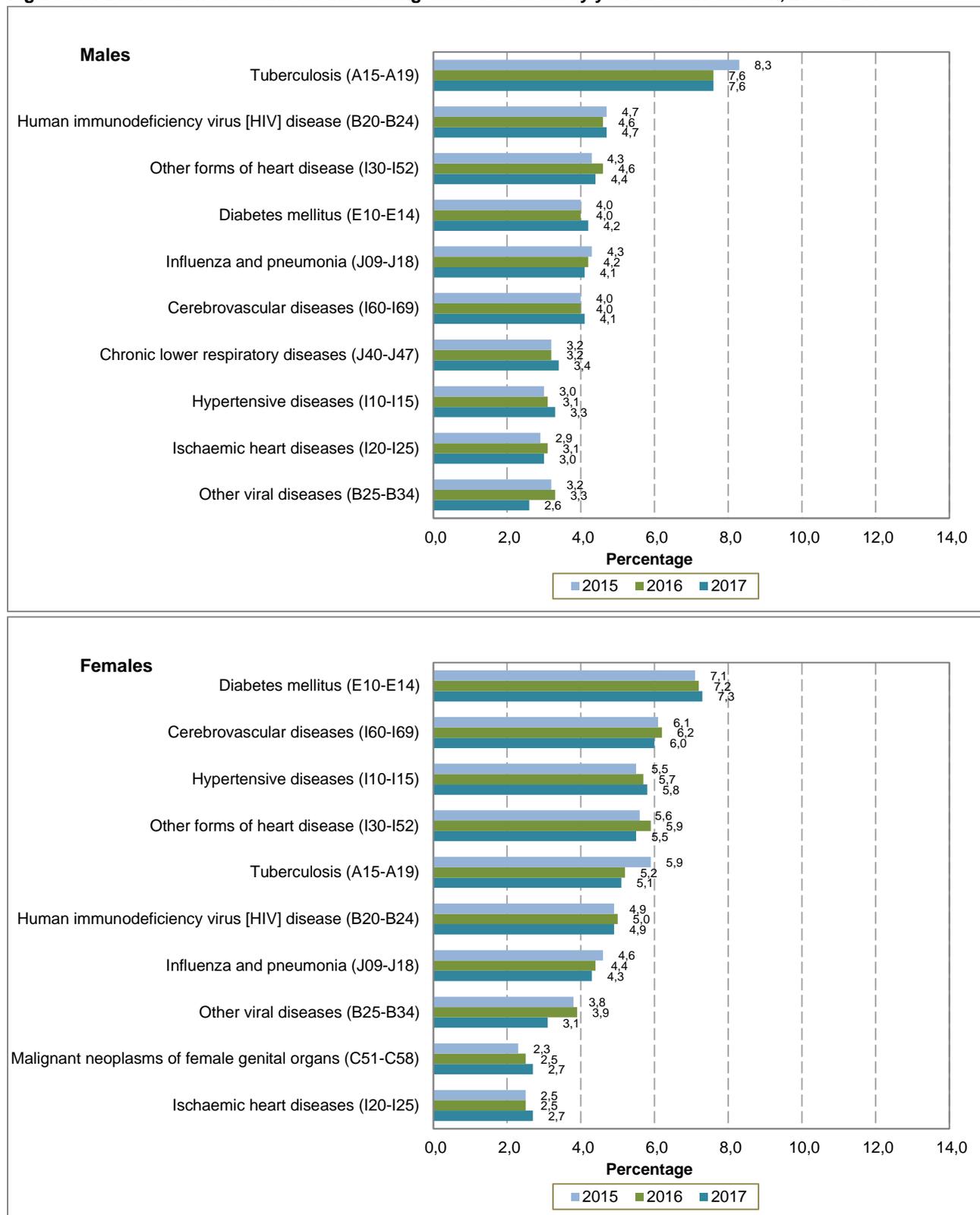
* Including deaths due to *MDR-TB* and *XDR-TB*.

... Category not in top ten.

The percentage distributions of the ten leading causes of death classified by sex for the period 2015 to 2017 are depicted in Figure 4.6. Over the three-year period, *tuberculosis* was the leading cause of death for males, although declining over time. For females, diabetes mellitus was the leading underlying cause of death and increasing in the same period. For the three-year period amongst females, only tuberculosis and influenza and pneumonia were in a stable decline while diabetes mellitus, hypotensive diseases, malignant neoplasm of female genital organs and ischemic heart diseases were in a steady increase. The most significant decline amongst females were deaths due to tuberculosis from 5,9% in 2015 to 5,1% in 2017. Even with males, there was a significant decline in tuberculosis deaths from 8,3% in 2015 to 7,6% in 2017.

For males, the increase in the number of deaths was observed for hypotensive diseases, cerebrovascular diseases and chronic lower respiratory diseases. For both sexes, tuberculosis recorded the highest proportion of declines. Also for both sexes, there was no observable pattern in the proportion on deaths due to Human immunodeficiency virus (HIV), other forms of heart diseases as well as other viral diseases. Chronic lower respiratory diseases were in the ten leading underlying causes of death only for males.

Figure 4.6: Distribution of deaths for the leading causes of death by year of death and sex, 2015–2017*



*Data for 2014–2015 have been updated with late registrations/delayed death notification forms processed in 2018/2019.

**TB deaths include 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 Table 4.8 (for under-5 years) and Table 4.9 (for 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 second leading underlying cause of death for age 0 (7,8%), first for age group 1–14 (7,1%), fourth for age group 15–44 (3,8%) and seventh for both age groups 45–64 (3,8%) and 65 years and older (4,2%). *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 16,2% deaths at this age. *Influenza and pneumonia* was the second leading cause of death, accounting for 7,8% deaths, followed by *disorders related to length of gestation and fetal growth*, which constituted 6,5% deaths in this age group. Intestinal infectious diseases came fourth, accounting for 6,1% of infant deaths.

The leading underlying cause of death for age group 1–14 years was *influenza and pneumonia*, responsible for 7,1% deaths, followed by *intestinal infectious diseases* with 6,2% deaths in this age group. *Tuberculosis* was the third leading cause of death (3,9%), followed by *malnutrition* (3,5%). *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. *Cerebral palsy and other paralytic syndromes* as well as *inflammatory diseases of the central nervous system* and *episodic and paroxysmal disorders* were amongst the ten leading causes of death only in this age group and these ranked fifth, eighth and ninth respectively.

The leading underlying cause of death for age group 15–44 years was *tuberculosis*, constituting 11,3% deaths, followed by *human immunodeficiency virus [HIV] diseases*, accounting for 10,6% deaths. *Other viral diseases* was ranked third, accounting for 5,9% deaths. *Certain disorders involving the immune mechanism*, which ranked fifth with 3,4% deaths, was amongst the ten leading causes of death only for this age group. *Influenza and pneumonia* and *other forms of heart disease* ranked fourth and sixth, accounting for 3,8% and 2,7%, 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, accounting for 7,9% of deaths in this age group, it was the ninth leading cause of death among those aged 65 and older, accounting for 2,5% of deaths. Conversely, *diabetes mellitus* was the leading cause of death for those aged 65 and older (9,0%) and the second leading cause of death for those aged 45–64 (7,2%).

The two underlying causes of death not common between the two groups are *other viral diseases* and *human immunodeficiency virus*, which did affect people on the age group 45–64 but not those on the age group 65 years and older, while *ischaemic heart diseases* and *renal failure affected people* on the 65 years and older age group, but not those 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, 2017*

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	3 165	16,2	...	...	...	...	...	...	...	...	...	...	...	...
Influenza and pneumonia (J09-J18)	2	1 518	7,8	1	817	7,1	4	4 645	3,8	7	4 893	3,8	7	6 894	4,2
Disorders related to length of gestation and fetal growth (P05-P08)	3	1 270	6,5	...	...	...	...	...	...	...	...	...	...	...	...
Intestinal infectious diseases (A00-A09)	4	1 186	6,1	2	722	6,2	9	1 494	1,2	...	...	...	...	...	...
Other disorders originating in the perinatal period (P90-P96)	5	1 156	5,9	...	...	...	...	...	...	...	...	...	...	...	...
Infections specific to the perinatal period (P35-P39)	6	1 133	5,8	...	...	...	...	...	...	...	...	...	...	...	...
Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	7	1 079	5,5	...	...	...	...	...	...	...	...	...	...	...	...
Congenital malformations of the circulatory system (Q20-Q28)	8	515	2,6	...	...	...	...	...	...	...	...	...	...	...	...
Malnutrition (E40-E46)	9	462	2,4	4	400	3,5	...	...	...	...	...	...	...	...	...
Other congenital malformations (Q80-Q89)	10	410	2,1	...	...	...	...	...	...	...	...	...	...	...	...
Tuberculosis (A15-A19)	...	...	...	3	446	3,9	1	13 957	11,3	1	10 083	7,9	9	3 997	2,5
Cerebral palsy and other paralytic syndromes (G80-G83)	...	...	...	5	280	2,4	...	...	...	...	...	...	...	...	...
Human immunodeficiency virus [HIV] disease (B20-B24)	...	...	...	6	279	2,4	2	13 081	10,6	3	6 889	5,4	...	...	...
Other forms of heart disease (I30-I52)	...	...	...	7	262	2,3	6	3 392	2,7	5	6 337	5,0	4	11 841	7,3
Other viral diseases (B25-B34)	...	...	...	8	229	2,0	3	7 253	5,9	10	4 183	3,3	...	...	...
Inflammatory diseases of the central nervous system (G00-G09)	...	...	...	9	185	1,6	...	...	...	...	...	...	...	...	...
Episodic and paroxysmal disorders (G40-G47)	...	...	...	10	175	1,5	...	...	...	...	...	...	...	...	...
Certain disorders involving the immune mechanism (D80-D89)	...	...	...	...	...	...	5	4 227	3,4	...	...	...	...	...	...
Cerebrovascular diseases (I60-I69)	...	...	...	...	...	...	7	1 788	1,4	4	6 447	5,0	2	13 893	8,5
Renal failure (N17-N19)	...	...	...	...	...	...	8	1 629	1,3	...	...	...	10	3 530	2,2
Diabetes mellitus (E10-E14)	...	...	...	...	...	...	10	1 474	1,2	2	9 207	7,2	1	14 605	9,0
Hypertensive diseases (I10-I15)	...	...	...	...	...	...	...	...	...	6	5 212	4,1	3	13 622	8,4
Chronic lower respiratory diseases (J40-J47)	...	...	...	...	...	...	...	...	...	8	4 619	3,6	6	7 453	4,6
Malignant neoplasms of digestive organs (C15-C26)	...	...	...	...	...	...	...	...	...	9	4 380	3,4	8	5 118	3,1
Ischaemic heart diseases (I20-I25)	...	...	...	...	...	...	...	...	...	...	...	...	5	7 763	4,8
Other Natural causes		6 985	35,7		4 492	38,8		37 683	30,5		56 341	44,1	50	69 539	42,7
Non-natural causes		670	3,4		3 281	28,4		32 973	26,7		9 134	7,2	51	4 509	2,8
All causes		19 549	100,0		11 568	100,1		123 596	100,0		127 725	100,0		162 764	100,1

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

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

Deaths among children below five years have been included in this statistical release because reducing child mortality is one of the eight Millennium Development Goals and thus it is important to have a better understanding of the leading causes of death in this age group. Table 4.8 shows the ten leading causes of death for neonatal deaths (less than 29 days), post-neonatal deaths (29 days to 11 months), all infant deaths (aged less than one year), deaths among those aged 1–4 years and among children aged below five years. Infant deaths are composed of both neonatal and post-neonatal deaths and under-five deaths are composed of both infant deaths and deaths among those aged 1–4 years.

The leading cause of death for neonatal deaths in 2017 was *respiratory and cardiovascular disorders specific to the perinatal period*, accounting for 31,3% of all neonatal deaths. This was followed by *disorders related to length of gestation and fetal growth* (11,6%). Third placed were *other disorders originating in the perinatal period* (11,3%). These however include neonatal deaths where the cause of death could not be established. *Infections specific to the perinatal period* (10,1%) were ranked fourth while *fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery* ranked fifth, accounting for 10,7% neonatal deaths. The top five causes of neonatal deaths contributed 75,9% of deaths in this period (i.e. in 2017).

For people in the post-neonatal period, the first two leading causes of death accounted for 27,7% of all causes. *Influenza and pneumonia* contributed 15,2% and *intestinal infectious diseases* contributed 11,5%. The rest of the top ten leading causes of death contributed less than 5% each to the total number of deaths for the post-neonatal period. *Malnutrition* was the third leading underlying cause of death responsible for 4,7% of deaths while *other bacterial diseases* ranked fourth, accounting for 1,5% of deaths occurring within the post-neonatal period,

For overall infant deaths, the leading cause of death was *respiratory and cardiovascular disorders specific to the perinatal period* (16,2%), followed by *influenza and pneumonia* (7,8%). *Disorders related to length of gestation* ranked third and was responsible for 6,5% of deaths and then *intestinal infectious diseases* (6,1%). Among the age group 1–4, the three leading causes of death were *influenza and pneumonia* (9,2%), *intestinal infectious diseases* (9,0%) and *malnutrition* (6,0%). *Tuberculosis* (3,3%) was ranked fourth and HIV disease ranked seventh (1,7%).

For the overall number of deaths occurring to children below five years, the leading underlying cause of death was *respiratory and cardiovascular disorders specific to the perinatal period* (12,4%), followed by *Influenza and pneumonia* (8,1%). *Intestinal infectious diseases* (6,8%) was ranked third and *disorders related to length of gestation and fetal growth* (5,0%) was ranked fourth. *Malnutrition* ranked eighth and was responsible for 3,9% of all deaths occurring before five years.

Table 4.8: The ten leading underlying natural causes of death for infants and children aged below five years, 2017*

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	3 104	31,3	...	...	...	1	3 165	16,2	...	...	...	1	3 166	12,4
Disorders related to length of gestation and fetal growth (P05-P08)	2	1 149	11,6	...	...	...	3	1 270	6,5	...	...	...	4	1 274	5,0
Other disorders originating in the perinatal period (P90-P96)	3	1 123	11,3	...	...	...	5	1 156	5,9	...	...	...	5	1 156	4,5
Infections specific to the perinatal period (P35-P39)	4	1 096	11,0	...	...	...	6	1 133	5,8	...	...	...	6	1 134	4,4
Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	5	1 064	10,7	...	...	...	7	1 079	5,5	...	...	...	7	1 081	4,2
Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	6	364	3,7	...	...	...	...	...	...	...	...	...	...	...	...
Other congenital malformations (Q80-Q89)	7	338	3,4	...	...	...	10	410	2,1	...	...	...	10	423	1,7
Congenital malformations of the circulatory system (Q20-Q28)	8	233	2,3	5	282	2,9	8	515	2,6	8	097	1,6	9	612	2,4
Digestive system disorders of fetus and newborn (P75-P78)	9	226	2,3	...	...	...	...	...	...	...	...	...	...	...	...
Chromosomal abnormalities, not elsewhere classified (Q90-Q99)	10	154	1,6	...	...	...	...	...	...	...	...	...	...	...	...
Influenza and pneumonia (J09-J18)	...	...	...	1	1 465	15,2	2	1 518	7,8	1	555	9,2	2	2 073	8,1
Intestinal infectious diseases (A00-A09)	...	...	...	2	1 102	11,5	4	1 186	6,1	2	546	9,0	3	1 732	6,8
Malnutrition (E40-E46)	...	...	...	3	455	4,7	9	462	2,4	3	366	6,0	8	828	3,2
Other bacterial diseases (A30-A49)	...	...	...	4	323	3,4	...	...	...	...	...	...	...	...	...
Other acute lower respiratory infections (J20-J22)	...	...	...	6	257	2,7	...	...	...	...	...	...	...	...	...
Other forms of heart disease (I30-I52)	...	...	...	7	216	2,2	...	...	...	5	135	2,2	...	...	...
Other diseases of the respiratory system (J95-J99)	...	...	...	8	206	2,1	...	...	...	...	...	...	...	...	...
Other viral diseases (B25-B34)	...	...	...	9	168	1,7	...	...	...	6	104	1,7	...	...	...
Metabolic disorders (E70-E90)	...	...	...	10	148	1,5	...	...	...	10	90	1,5	...	...	...
Tuberculosis (A15-A19)*	...	...	...	...	...	...	...	...	...	4	199	3,3	...	...	...
Human immunodeficiency virus [HIV] disease (B20-B24)	...	...	...	...	...	...	...	...	...	7	103	1,7	...	...	...
Cerebral palsy and other paralytic syndromes (G80-G83)	...	...	...	...	...	...	...	...	...	9	094	1,6	...	...	...
Other Natural causes		1 012	10,2		4 394	45,7		6 985	35,7		2 408	39,8		10 097	39,4
Non-natural causes		068	0,7		602	6,3		670	3,4		1 354	22,4		2 024	7,9
All causes		9 931	100		9 618	100		19 549	100		6 051	100		25 600	100

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

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 7,3% of the deaths in this age group. *HIV disease* (5,5%) was the second leading underlying cause of death, followed by *other viral diseases* (3,6%). *Influenza and pneumonia* (2,9%), *other forms of heart disease* (2,4%) and *certain disorders involving the immune mechanism* (1,8%) were the fourth, fifth and sixth leading causes of death, respectively. *Intestinal infectious diseases* was ranked ninth, and was responsible for 1,2% deaths in this age group.

Table 4.9: The ten leading underlying natural causes of death for the population aged 15–24 years, 2017

Causes of death (based on ICD-10)	15-24		
	Rank	Number	Percentage
Tuberculosis (A15-A19)	1	1 434	7,3
Human immunodeficiency virus [HIV] disease (B20-B24)	2	1 078	5,5
Other viral diseases (B25-B34)	3	699	3,6
Influenza and pneumonia (J09-J18)	4	575	2,9
Other forms of heart disease (I30-I52)	5	463	2,4
Certain disorders involving the immune mechanism (D80-D89)	6	363	1,8
Episodic and paroxysmal disorders (G40-G47)	7	284	1,4
Inflammatory diseases of the central nervous system (G00-G09)	8	244	1,2
Intestinal infectious diseases (A00-A09)	9	243	1,2
Malignant neoplasms, stated or presumed to be primary, of lymphoid, haematopoietic and related tissue (C81-C96)	10	176	0,9
Other natural causes		4 997	25,4
Non-natural causes		9 091	46,3
All causes		19 647	100

*Including deaths due to *MDR-TB* and *XDR-TB*. The percentages add to more than 100 due to rounding off

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

The top ten leading underlying natural causes of death by province of death occurrence are shown in Table 4.10. 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 six of the nine provinces. The exceptions were Western Cape, Gauteng and Limpopo. *Diabetes mellitus* was the leading cause of death (accounting for 7,5% deaths) in Western Cape; in Gauteng it was *other forms of heart diseases* (accounting for 5,6% deaths), while *influenza and pneumonia* was the leading cause of death in Limpopo (accounting for 7,0% deaths).

The highest proportion of deaths due to *tuberculosis* was recorded in Eastern Cape with 8,3% deaths in the province, followed by Mpumalanga with 8,1% deaths. *Tuberculosis* had the lowest rank (sixth) in the Western Cape than any other province in 2017, accounting for 4,8% deaths in the province. It ranked second in Gauteng and was responsible for 4,7% deaths; while in Limpopo, *tuberculosis* ranked fourth and accounted for 5,5% deaths in the province. For Northern Cape and Limpopo, the second leading underlying cause of death was *tuberculosis*, accounting for 7,4% deaths in each province.

Human immunodeficiency virus [HIV] disease was the second leading underlying cause of death in Northern Cape (6,0%) while it was the third leading underlying cause of death in Western Cape (5,7%); Eastern Cape (5,2%) and Free State (5,8%). Deaths due to the *human immunodeficiency virus [HIV] disease* were lowest in Gauteng province at 3,1%.

Western Cape was the only province where *malignant neoplasms of respiratory and intrathoracic organs* was in the top ten leading underlying causes of death and also the only province where *influenza and pneumonia* was not on the ten leading underlying causes of death. Only Limpopo and Mpumalanga had *intestinal infectious diseases* in the top ten leading underlying cause of death across all provinces and furthermore, Limpopo was the only province which had *renal failure* in the list of ten leading underlying causes of death.

There were six underlying causes of death that were common for all nine provinces. These were *diabetes mellitus*, *human immunodeficiency virus [HIV] disease*, *cerebrovascular diseases*, *tuberculosis*, *hypertensive disease*, and *other forms of heart disease*. However, the ranks of these causes differed widely across the provinces. For example, while *diabetes mellitus* was the leading cause of death in Western Cape (accounting for 7,5% of all deaths in this province), it was the second leading cause in Eastern Cape (contributing 5,4% to all deaths in the province) and the ninth leading cause of death in Mpumalanga (accounting for 3,1% of all deaths in the province).

According to the Global Burden of Disease, all of the nine provinces had at least five non-communicable diseases among the ten underlying causes of death in each province. The highest was the Western Cape where eight of the ten leading underlying causes of death were non-communicable. The only communicable diseases were *human immunodeficiency virus [HIV] disease* and *tuberculosis*. Limpopo had a 50% split where 5 of the ten leading underlying causes of death in the province were communicable diseases while the other five were non-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 99–117).

Table 4.10: The ten leading underlying natural causes of death in each province of death occurrence, 2017*

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	3 434	7,5	2	3 488	5,4	8	529	4,2	5	1 654	5,3	2	5 207	6,8	5	1 536	4,7	3	4 280	4,6	2	1 566	5,3	2	2 682	6,1	
Ischaemic heart diseases (I20-I25)	2	2 829	6,2	...	...	...	9	425	3,4	...	...	...	8	2 181	2,8	...	...	...	7	2 994	3,2	9	915	3,1	...	...	...
Human immunodeficiency virus [HIV] disease (B20-B24)	3	2 585	5,7	3	3 411	5,2	2	758	6,0	3	1 809	5,8	4	4 955	6,5	6	1 435	4,4	8	2 828	3,1	7	1 286	4,4	7	1 554	3,6	
Cerebrovascular diseases (I60-I69)	4	2 514	5,5	4	3 060	4,7	6	555	4,4	6	1 576	5,0	5	4 545	5,9	7	1 373	4,2	5	3 759	4,1	5	1 528	5,2	3	2 545	5,8	
Chronic lower respiratory diseases (J40-J47)	5	2 500	5,5	7	2 570	3,9	5	609	4,8	9	816	2,6	...	...	...	10	872	2,7	9	2 489	2,7	...	...	...	...	...	...
Tuberculosis (A15-A19)**	6	2 196	4,8	1	5 379	8,3	1	951	7,5	1	1 949	6,2	1	5 663	7,4	1	2 408	7,4	2	4 338	4,7	1	2 363	8,1	4	2 408	5,5	
Malignant neoplasms of digestive organs (C15-C26)	7	2 167	4,7	10	1 623	2,5	...	...	...	...	...	...	10	1 543	2,0	...	...	...	10	2 381	2,6	...	...	...	...	...	...
Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	8	2 038	4,5
Hypertensive diseases (I10-I15)	9	1 818	4,0	6	2 884	4,4	4	638	5,0	2	1 846	5,9	6	3 070	4,0	2	1 897	5,8	6	3 216	3,5	4	1 538	5,2	5	2 328	5,3	
Other forms of heart disease (I30-I52)	10	1 437	3,1	5	2 954	4,5	3	672	5,3	7	1 395	4,5	3	5 204	6,8	3	1 791	5,5	1	5 210	5,6	8	1 151	3,9	8	1 418	3,2	
Influenza and pneumonia (J09-J18)	...	...	...	8	1 969	3,0	7	532	4,2	4	1 725	5,5	7	2 540	3,3	4	1 647	5,1	4	4 161	4,5	3	1 545	5,3	1	3 067	7,0
Other viral diseases (B25-B34)	...	...	...	9	1 690	2,6	...	...	...	8	1 225	3,9	9	2 087	2,7	8	1 225	3,8	...	...	...	6	1 299	4,4	6	1 634	3,7
Certain disorders involving the immune mechanism (D80-D89)	...	...	...	...	...	...	10	397	3,1	10	719	2,3	...	...	...	9	916	2,8	...	...	...	...	...	...	...	...	...
Intestinal infectious diseases (A00-A09)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10	700	2,4	9	1 269	2,9
Renal failure (N17-N19)	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	10	1 016	2,3	...
Other Natural	...	16 307	35,7	...	28 388	43,6	...	5 233	41,4	...	13 297	42,6	...	29 939	39,1	...	14 514	44,7	...	45 973	49,7	...	12 023	41,0	...	19 721	45,1	
Non-natural	...	5 890	12,9	...	7 746	11,9	...	1 339	10,6	...	3 197	10,2	...	9 671	12,6	...	2 859	8,8	...	10 894	11,8	...	3 386	11,6	...	4 065	9,3	
All causes	...	45 715	100	...	65 162	100	...	12 638	100	...	31 208	100	...	76 605	100	...	32 473	100	...	92 523	100	...	29 300	100	...	43 707	100	

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

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

... Category not in top ten

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

4.7.7.1 Main group

The main groups of underlying natural causes of death by district/metropolitan municipalities are provided in Appendices N to O2 (see pages 119–124). The number of deaths by main groups of causes of death for each district/metropolitan municipality of death occurrence is provided in Appendices N to N2 (see pages 119–121), while Appendices O to O2 show the main groups of causes of death for each district/metropolitan municipality of death occurrence by their percentage distribution (refer to pages 122–124).

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

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

Appendices O to O2 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, Gauteng and KwaZulu-Natal. For Gauteng, neoplasms were the most common main group of causes of death responsible for 18,4% of deaths in the province and the most common main group of causes of death for Gauteng was diseases of the circulatory system which was responsible for 18,1% of deaths in the province while diseases of the circulatory system responsible for 20,5% of deaths. Amongst the seven provinces where *certain infectious and parasitic diseases* was the most common main group of causes of death, Mpumalanga ranked the highest with 21,1% of deaths in the province due to this main group. Western Cape and Gauteng had the lowest proportions of deaths due to *certain infectious and parasitic diseases* at 13,8% and 13,7% of deaths in each province, respectively.

The district municipalities worst affected by *certain infectious and parasitic diseases* were predominantly eHlanzeni (25,9%) in Mpumalanga, followed closely by those in the northern parts of KwaZulu-Natal, particularly uMkhanyakude (25,8%) and uThukela (24,5%). The other district with the highest proportion of deaths due to *certain infectious and parasitic diseases* was Waterberg (23,8%) in Limpopo and Dr Ruth Segomotsi Mompati (26,6%) in North West province. *Certain infectious and parasitic diseases* were the most common main group of underlying causes for all districts in Limpopo except for Greater Sekhukhune district where diseases of the circulatory system were the most common main group of underlying causes of death.

Diseases of the circulatory system, which was the second most common main group of underlying causes of death for all deaths in 2016, was also the second most common cause of death for all provinces except in Western Cape, KwaZulu-Natal and Gauteng. The second most common main group of underlying causes for Western Cape was *neoplasms* (18,4%) and *certain infectious and parasitic diseases* for both Gauteng (13,7%) and KwaZulu-Natal (20,1%).

4.7.7.2 Broad groups

Appendices P to P8 (see pages 125–135) 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 2017: *Tuberculosis* (24); *other forms of heart diseases* (7); *human immunodeficiency virus* (4); *diabetes mellitus* (4); *chronic lower respiratory diseases* (4); *hypertensive diseases* (3); *influenza and pneumonia* (3); *cerebrovascular diseases*(2); and *ischaemic heart diseases* (1).

Tuberculosis was the leading underlying cause of death in almost half (24) of the 52 districts in South Africa. It was also the leading underlying cause of death in at least one district for all the provinces except Western Cape. 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 as the leading underlying cause of death; and six 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). Three of the eight metros had communicable diseases as the leading underlying causes of death. *Tuberculosis* was the leading underlying cause of death for 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 both in Gauteng and eThekweni in KwaZulu-Natal.

HIV disease was among the ten leading underlying causes of death in at least one district municipality in all provinces. It was among the top ten leading underlying causes death for all districts within each province with the exception of only two provinces, namely North West and Northern Cape where *HIV disease* was not in the ten leading causes of death in Namakwa in Northern Cape and Ngaka Modiri Molema in North West. *HIV disease* was the leading cause of death for Mangaung in Free State; Francis Baard in Northern Cape, and uMkhanyakude and Harry Gwala both in Northern KwaZulu-Natal.

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 Q1 (see pages 136–137).

4.8 Non-natural causes of death

The focus of this subsection is on non-natural causes of death. Information on non-natural causes of death is important in South Africa, considering the high levels of violence experienced in the country. This section profiles non-natural causes of death based on all *external causes of morbidity and mortality (V01-Y98)* derived from the causes of death specified on the death notification forms.

On the death notification form, 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). This therefore contributes to the high percentage of unspecified causes of non-natural deaths. Results on non-natural causes of death should therefore be interpreted by taking into account the fact that nearly three-quarters of non-natural causes of death were not adequately classified. The unexpected lower number of deaths due to *transport accidents, assault, complications of medical and surgical care, intentional self-harm or sequelae of external causes of morbidity and mortality* may have been partly the result of causes classified as *other external causes of accidental injury or event of undetermined intent*.

A proportion of 11,5% (refer to Table 4.3) of all deaths that occurred in 2017 were due to *external causes of morbidity and mortality*. Table 4.11 shows the percentage distribution of broad groups of non-natural causes and the associated number of deaths. It is observed that the majority of non-natural causes of death resulted from *other external causes of accidental injury (67,1%)*. This group includes *discharge from other and unspecified firearms* as well as *other accidental hanging and strangulation*. In terms of all deaths, *other external causes of accidental injury* accounted for 7,7% of all deaths.

Assault was the second most common non-natural cause of death and accounted for 15,0% of non-natural causes. The third most common cause of non-natural deaths was *transport accidents (11,5%)*. Less than 1% of non-natural deaths were due to *intentional self-harm (0,7%)* and *sequelae of external causes of morbidity and mortality (0,2%)*.

Table 4.11: Distribution of non-natural causes of death by broad groups, 2017

Causes of death (based on ICD-10, 1992)	Number	Percentage of non-natural causes	Percentage of all causes (N = 446 544)
Other external causes of accidental injury (W00-X59)	34 325	67,1	7,7
Assault (X85-Y09)	7 688	15,0	1,7
Transport accidents (V01-V99)	5 890	11,5	1,3
Event of undetermined intent (Y10-Y34)	1 675	3,3	0,4
Complications of medical and surgical care (Y40-Y84)	1 126	2,2	0,3
Intentional self-harm (X60-X84)	363	0,7	0,1
Sequelae of external causes of morbidity and mortality (Y85-Y89)	97	0,2	0,0
All non-natural causes	51 164	100,0	

A breakdown of the 34 325 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*. The majority of deaths in this group were exposure to an unspecified factor. This was followed by deaths due to *exposure to inanimate mechanical forces* which were the second leading cause, responsible for 19,1% 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* (12,3%), which includes *accidental hanging and strangulation*. The fourth most commonly reported deaths due to *other external causes of accidental injury* was *exposure to smoke, fire and flames* (6,8%), followed by *accidental drowning and submersion* (4,2%).

Table 4.12: Distribution of deaths due to other external causes of accidental injury, 2017

Cause of death (based on ICD-10)	Number	Percentage
Accidental exposure to other and unspecified factors (X58-X59)	17 195	50,1
Exposure to inanimate mechanical forces (W20-W49)	6 595	19,2
Other accidental threats to breathing (W75-W84)	5 044	14,7
Exposure to smoke, fire and flames (X00 - X09)	2 358	6,9
Accidental drowning and submersion(W65-W74)	1 453	4,2
Accidental poisoning by and exposure to noxious substance(X40-X44)	720	2,1
Exposure to electric current, radiation and extreme ambient air	409	1,2
Exposure to forces of nature(X30 - X39)	258	0,8
Falls (W00-W19)	189	0,6
Exposure to animate mechanical forces (W50-W64)	48	0,1
Contact with venomous animals and plants(X20-X29)	36	0,1
Overexertion, travel and privation(X50-X59)	12	0,0
Contact with heat and hot substances(X10-X19)	8	0,0
Total	34 325	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 sub-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 2017. 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 most affected by non-natural causes of death was age group 15–29, where 42,0% 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 2,8% of deaths in this age group were due to non-natural causes. *Assault* was more common among those aged 15–29, accounting for 23,2% of non-natural deaths in this age group. *Complications of medical and surgical care* were highest amongst the elderly (9,2%).

Differentials by sex show higher proportions of non-natural deaths for males at 16,7% compared to 5,4% 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 18,2% 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 (7,6%) as those of their male counterparts (2,6%). The proportion of deaths due to *assault* were more than twice as high for males (15,1%) as compared to females.

The proportion of non-natural deaths due to *transport accidents* were higher amongst females (14,0%) as compared to males (10,9%). For each of the sexes, *intentional self-harm* and *sequelae of external causes of morbidity and mortality* were uncommon, each comprising less than 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, 2017

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)	26	486	1 782	1 975	1 240	335	5 844	3,9	14,8	10,5	12,4	13,6	7,4	11,6
Other external causes of accidental injury (W00-X59)	592	2 538	10 402	10 645	6 285	3 385	33 847	3,0	77,4	61,2	66,6	68,8	75,1	66,9
Intentional self-harm (X60-X84)		16	144	122	67	14	363	0,0	0,5	0,8	0,8	0,7	0,3	0,7
Assault (X85-Y09)	10	55	3 950	2 568	841	203	7 627	0,1	1,7	23,2	16,1	9,2	4,5	15,1
Event of undetermined intent (Y10-Y34)	20	152	582	458	326	125	1 663	0,1	4,6	3,4	2,9	3,6	2,8	3,3
Complications of medical and surgical care (Y40-Y84)	22	33	121	186	347	417	1 126	0,1	1,0	0,7	1,2	3,8	9,2	2,2
Sequelae of external causes of morbidity and mortality (Y85-Y89)		1	16	22	28	30	97	0,0	0,0	0,1	0,1	0,3	0,7	0,2
Subtotal	670	3 281	16 997	15 976	9 134	4 509	50 567	7	100	100	100	100	100	100
Non-natural causes	670	3 281	16 997	15 976	9 134	4 509	50 567	3,4	28,4	42,0	19,2	7,2	2,8	11,3
Natural causes	18 879	8 287	23 484	67 139	118 591	158 255	394 635	96,6	71,6	58,0	80,8	92,9	97,2	88,6
All causes	19 549	11 568	40 481	83 115	127 725	162 764	445 202	100,0	100,0	100,0	100,0	100,0	100,0	100,0
Males*														
Transport accidents (V01-V99)	13	292	1 341	1 531	874	204	4 255	3,6	14,3	9,5	11,5	12,7	8,4	10,9
Other external causes of accidental injury (W00-X59)	316	1 613	8 700	8 978	4 855	1 815	26 277	88,5	79,2	61,6	67,4	70,3	74,5	67,1
Intentional self-harm (X60-X84)		5	102	97	53	12	269	0,0	0,2	0,7	0,7	0,8	0,5	0,7
Assault (X85-Y09)	5	33	3 611	2 263	685	126	6 723	1,4	1,6	25,6	17,0	9,9	5,2	17,2
Event of undetermined intent (Y10-Y34)	12	76	295	335	238	67	1 023	3,4	3,7	2,1	2,5	3,4	2,8	2,6
Complications of medical and surgical care (Y40-Y84)	11	16	64	91	177	192	551	3,1	0,8	0,5	0,7	2,6	7,9	1,4
Sequelae of external causes of morbidity and mortality (Y85-Y89)		1	15	17	21	20	74	0,0	0,0	0,1	0,1	0,3	0,8	0,2
Subtotal	357	2 036	14 128	13 312	6 903	2 436	39 172	100,0	100,0	100,0	100,0	100,0	100,0	100,0
Non-natural causes	357	2 036	14 128	13 312	6 903	2 436	39 172	3,4	32,0	57,2	27,2	9,4	3,5	16,7
Natural causes	10 111	4 327	10 563	35 665	66 889	68 065	195 620	96,6	68,0	42,8	72,8	90,6	96,5	83,3
All causes	10 468	6 363	24 691	48 977	73 792	70 501	234 792	100,0	100,0	100,0	100,0	100,0	100,0	100,0
Females*														
Transport accidents (V01-V99)	13	194	441	444	366	131	1 589	4,2	15,6	15,4	16,7	16,4	0,1	14,0
Other external causes of accidental injury (W00-X59)	276	923	1 700	1 664	1 430	1 570	7 563	88,2	74,3	59,3	62,6	64,1	1,7	66,4
Intentional self-harm (X60-X84)		11	42	25	14	2	94	0,0	0,9	1,5	0,9	0,6	0,0	0,8
Assault (X85-Y09)	5	22	338	303	155	77	900	1,6	1,8	11,8	11,4	7,0	0,1	7,9
Event of undetermined intent (Y10-Y34)	8	76	287	123	88	58	640	2,6	6,1	10,0	4,6	3,9	0,1	5,6
Complications of medical and surgical care (Y40-Y84)	11	17	57	95	170	225	575	3,5	1,4	2,0	3,6	7,6	0,2	5,1
Sequelae of external causes of morbidity and mortality (Y85-Y89)			1	5	7	10	23	0,0	0,0	0,0	0,2	0,3	0,0	0,2
Subtotal	313	1 243	2 866	2 659	2 230	2 073	11 384	100,0	100,0	100,0	100,0	100,0	2,2	100,0
Non-natural causes	313	1 243	2 866	2 659	2 230	2 073	11 384	3,5	23,9	18,2	7,8	4,1	2,2	5,4
Natural causes	8 703	3 954	12 917	31 463	51 690	90 185	198 912	96,5	76,1	81,8	92,2	95,9	97,8	94,6
All causes	9 016	5 197	15 783	34 122	53 920	92 258	210 296	100,0	100,0	100,0	100,0	100,0	100,0	100,0

*Excluding cases with unspecified age and 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 2017 deaths. Western Cape (13,0%) and KwaZulu-Natal (12,5%) had the highest proportions of deaths due to non-natural causes. The lowest percentage of deaths due to non-natural causes were observed in North West (9,0%) and Limpopo (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 34,7%. Gauteng (79,1%) had the highest proportion of deaths due to *external and other causes of accidental injury*, followed by Mpumalanga (73,7%).

For all nine provinces, the second most common causes of non-natural deaths were either *transport accidents* or *assault*. *Transport accidents* were the second most common cause of non-natural deaths in Limpopo, Northern Cape, Mpumalanga and North West, with Limpopo having the highest number of deaths due to this cause responsible for 32,9% of deaths in Limpopo, and followed closely by Northern Cape at 32,1%. *Assault* was the second most common non-natural cause of death in Eastern Cape, Western Cape, Free State, KwaZulu-Natal and Gauteng with the highest being in Eastern Cape, responsible for 23,4% deaths in the province.

Intentional self-harm and *sequelae of external causes of morbidity and mortality* were least common, each accounting for about 5% or less of non-natural deaths in each province except for Northern Cape where 6,1% of non-natural deaths were due to *intentional self-harm*. *Complications of medical and surgical care* were least common, comprising less than 5% of non-natural deaths in each province.

Table 4.14: Underlying non-natural causes of death by province, 2017

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)	365	5,8	808	10,3	434	32,1	472	14,3	1 162	11,9	454	15,3	242	2,1	536	14,4	1 409	32,9
Other external causes of accidental injury (W00-X59)	4 292	67,8	4 786	60,8	468	34,7	2 038	61,9	6 637	67,8	1 892	63,9	9 042	79,1	2 749	73,7	2 323	54,3
Intentional self-harm (X60-X84)	15	0,2	18	0,2	82	6,1	12	0,4	175	1,8	9	0,3	17	0,1	020	0,5	15	0,4
Assault (X85-Y09)	1 426	22,5	1 844	23,4	284	21,0	541	16,4	1 312	13,4	423	14,3	1 186	10,4	287	7,7	372	8,7
Event of undetermined intent (Y10-Y34)	077	1,2	304	3,9	43	3,2	151	4,6	247	2,5	116	3,9	549	4,8	091	2,4	092	2,2
Complications of medical and surgical care (Y40-Y84)	135	2,1	105	1,3	035	2,6	078	2,4	230	2,4	062	2,1	372	3,3	043	1,2	064	1,5
Sequelae of external causes of morbidity and mortality (Y85-Y89)	19	0,3	12	0,2	4	0,3	3	0,1	19	0,2	7	0,2	28	0,2	3	0,1	2	0,0
Subtotal	6 329	100,0	7 877	100,0	1 350	100,0	3 295	100,0	9 782	100,0	2 963	100,0	11 436	100,0	3 729	100,0	4 277	100,0
Non-natural causes	6 329	13,0	7 877	11,9	1 350	10,5	3 295	10,3	9 782	12,5	2 963	9,0	11 436	11,7	3 729	11,6	4 277	9,3
Natural causes	42 198	87,0	58 485	88,1	11 481	89,5	28 725	89,7	68 213	87,5	30 062	91,0	85 950	88,3	28 313	88,4	41 516	90,7
Total	48 527	100,0	66 362	100,0	12 831	100,0	32 020	100,0	77 995	100,0	33 025	100,0	97 386	100,0	32 042	100,0	45 793	100,0

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

4.8.3 Non-natural causes of death by district municipality

The information provided in Appendices O to O2 also shows the proportion of deaths due to non-natural causes for each of the district municipalities. Non-natural causes of death are on the column labelled external causes of morbidity and mortality (V01-Y98).

The highest proportion of deaths due to non-natural causes was observed in the Central Karoo (15,3%) in Western Cape, followed by City of Johannesburg (14,6%) in Gauteng. The lowest percentages of deaths due to non-natural causes was observed in Dr Ruth Segomotsi Mompati (7,1%) and Ngaka Modiri Molema (7,0%) district municipalities (both in the North West province).

4.9 Comparison between immediate, contributing and underlying causes of death

One or more causes of death can be reported on Section G of the death notification form in both the old death notification form (BI-1663) and the new form (DHA-1663). The maximum number of causes recorded on the death notification form in 2017 was six causes. These causes are recorded as immediate, contributing or underlying causes of death. A proportion of 51,7% death notification forms had only one cause entered on the form in 2017 (refer to Table 4.1).

Table 4.15 shows the total number of times a specific cause of death was recorded on the 2017 death notification forms, be it an immediate, contributing or underlying cause for the 20 most commonly reported causes of death. The underlying causes of death were grouped according to the different broad groups. These 20 causes of death include natural and non-natural causes, as well as deaths due to *symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified*.

Other forms of heart disease was the most frequently recorded cause of death in 2017, as mentioned in a total of 61 602 death notification forms. In terms of percentage distribution, 13,8% of all death notification forms had *other forms of heart disease* recorded as either immediate, contributing or underlying cause of death. The second most mentioned causes of death were *hypertensive diseases* mentioned in 52 536 (11,8%) death notification forms. *Ill-defined and unknown causes of mortality* were the third frequently stated causes, cited in 11,0% of the death notification forms.

Other external causes of accidental injury were the seventh, stated in 8,0% of the forms and the only non-natural cause appearing among the 20 most commonly reported causes of death. *Human immunodeficiency virus [HIV] diseases* were ranked twelfth, appearing in 23 067 (5,2%) of the death notification forms processed for 2017 deaths.

Table 4.15: Distribution of the 20 most commonly reported causes of death, 2017

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)	61 602	13,8
2	Hypertensive diseases (I10-I15)	52 536	11,8
3	Ill-defined and unknown causes of mortality (R95-R99)	49 161	11,0
4	Tuberculosis (A15-A19)*	43 725	9,8
5	Influenza and pneumonia (J09-J18)	42 385	9,5
6	Other external causes of accidental injury (W00-X59)	35 608	8,0
7	Cerebrovascular diseases (I60-I69)	33 474	7,5
8	Renal failure (N17-N19)	33 266	7,4
9	Diabetes mellitus (E10-E14)	28 456	6,4
10	Other viral diseases (B25-B34)	26 266	5,9
11	Other bacterial diseases (A30-A49)	25 040	5,6
12	Human immunodeficiency virus [HIV] disease (B20-B24)	23 067	5,2
13	Ischaemic heart diseases (I20-I25)	19 023	4,3
14	Chronic lower respiratory diseases (J40-J47)	18 816	4,2
15	Other diseases of the respiratory system (J95-J99)	15 847	3,5
16	Metabolic disorders (E70-E90)	15 589	3,5
17	Malignant neoplasm of ill-defined, secondary and unspecified sites (C76-C80)	14 071	3,2
18	Intestinal infectious diseases (A00-A09)	13 535	3,0
19	Malignant neoplasm of digestive organs (C15-C26)	10 858	2,4
20	Other acute lower respiratory infections (J20-J22)	10 109	2,3

*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 2017 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, 28 678 deaths had *tuberculosis* as the underlying cause and another 15 047 deaths had it as an immediate or contributing cause. This gives a total of 43 725 death notification forms. Thus, proportionally *tuberculosis* contributed more as underlying cause than the immediate or contributing cause.

The percentage distributions show that *human immunodeficiency virus [HIV] disease* was selected in 92,9% 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 89,0% of the forms, while *chronic lower respiratory diseases* was selected as the underlying cause in 70,0% of the forms. The causes of death which, when mentioned, were least selected as the underlying causes were *hypertensive diseases* (37,9%) and *other forms of heart disease* (35,5%).

Table 4.16: Number and percentage of deaths selected as underlying or reported as immediate or contributing causes of death, 2017

Causes of death (ICD-10)	Under-lying rank	Number of deaths			Percentage of any mention		
		Underlying	Immediate or contributing	Total recorded	Underlying	Immediate or contributing	Total recorded
Tuberculosis (A15-A19)*	1	28 678	15 047	43 725	65,6	34,4	100,0
Diabetes mellitus (E10-E14)	2	25 336	3 120	28 456	89,0	11,0	100,0
Cerebrovascular diseases (I60-I69)	3	22 259	11 215	33 474	66,5	33,5	100,0
Other forms of heart disease (I30-I52)	4	22 098	39 504	61 602	35,9	64,1	100,0
Human immunodeficiency virus [HIV] disease (B20-B24)	5	21 439	1 628	23 067	92,9	7,1	100,0
Hypertensive diseases (I10-I15)	6	19 900	32 636	52 536	37,9	62,1	100,0
Influenza and pneumonia (J09-J18)	7	18 837	23 548	42 385	44,4	55,6	100,0
Chronic lower respiratory diseases (J40-J47)	8	13 167	5 649	18 816	70,0	30,0	100,0
Ischaemic heart diseases (I20-I25)	9	12 766	6 257	19 023	67,1	32,9	100,0
Other viral diseases (B25-B34)	10	12 622	13 644	26 266	48,1	51,9	100,0

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

5. Conclusion

This statistical release provides information on registered deaths for 2017 in South Africa based on data from the South African civil registration system maintained by the Department of Home Affairs (DHA). The report includes levels, trends and patterns in mortality and causes of deaths by demographic and geographic characteristics. The release further presents information on the leading underlying natural causes of death, patterns and trends in non-natural underlying causes of death. Deaths for the years 1997 to 2017 are also included to provide information on trends in the occurrence of deaths.

The results showed that the total number of deaths registered at the Department of Home Affairs and processed by Stats SA in 2017 were 446 554, which indicates a 5,1% decrease from the 470 396 deaths that occurred in 2016. Overall, mortality levels are declining in the country as observed from the 5,1% decrease in deaths between the years 2016 and 2017 and 3,0% decline between 2015 and 2016.

While the occurrence of deaths in the country continued to decline it differed by age and sex. The age groups 60–64 and 65–69 had the highest proportion of deaths in 2017 both at 8,1%, followed by age group 55–59 at 7,5%. On the opposite side of the age spectrum, the results showed the lowest proportions of deaths were observed in age groups 5–9 years and 10–14 years with each at 0,6 % of the 2017 deaths. Regarding the sex ratio, between 1997 and 2017, there were more male than female deaths from age 0 to age group 65–69; whereas female deaths consistently exceeded male deaths for ages 75 years and above. There were more female deaths for age group 70–74 years between 2012 and 2014. The results also indicate that in 2017, the highest sex ratio (167 male deaths per 100 female deaths) was observed in the age group 20–24 years. The pattern was observed for three consecutive years, between 2015 and 2017.

A sex ratio trend at death for age group 20–24 years showed an increase of 40,3% (48 years) between 2013 and 2017. This increased from 119 male deaths per 100 female deaths in 2013 to 167 male deaths per 100 female deaths in 2017. Other mortality differentials indicated that the distribution of deaths by province of death followed the population distribution patterns. The highest death occurrences was (20,7%) which was observed in Gauteng, followed by KwaZulu-Natal (17,2%) and then Eastern Cape (14,6%). While the lowest proportion of deaths occurred in Northern Cape (2,8%). Similarly, the district differentials in the 2017 registered deaths were dominated by more male deaths relative to female deaths. The district municipalities with the highest sex ratio was Overberg (136 male deaths per 100 female deaths), followed by West Coast (126 male deaths per 100 female deaths), both in Western Cape.

Notably, although the number of deaths due to non-natural causes declined to 51 164 (11,5%) in 2017, disaggregation of deaths by natural [(395 380 (88,5%)] and non-natural types showed a stable increase in the number of non-natural deaths from the year 2011 to 2016, with the highest number recorded in 2016 (53 518). Six of the top ten leading underlying natural causes of death were non-communicable diseases, while the remainder were communicable diseases. *Tuberculosis* was once again the leading underlying natural cause of death in 2017, accounting for 6,4% deaths, followed by *diabetes mellitus* with 5,7% deaths. Although *tuberculosis* has maintained its position as the number one leading underlying natural cause of death, the proportions have declined over time, whilst proportions for *diabetes mellitus*, *hypertensive diseases*, *other viral diseases* and *chronic lower respiratory diseases* have been increasing.

It is worth noting that 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 continued rise in deaths due to non-communicable diseases has been fuelled by males and females aged 65 and above. Females in this age group had nine out of ten non-communicable diseases in the leading causes, whilst men had eight out of ten as leading causes of natural deaths. Non-communicable diseases account for 62,5% in the top 10 leading causes of death among females aged 65 and above, whereas among males in the same age group these constituted 48,0%.

According to the global burden of diseases, three of the top five leading underlying causes of death for males were communicable diseases whilst among females, *tuberculosis* was the only communicable disease and the rest being non-communicable diseases. The results showed that nine of the ten leading causes of death were the same for both sexes, although with different rankings. *Tuberculosis* was the leading underlying cause of death for males, accounting for 7,6% of male deaths while the *diabetes mellitus* was the leading underlying cause of death amongst females accounting for 7,3% of female deaths. *Human immunodeficiency virus [HIV] disease* (4,7%) was the second leading cause of death for the males, followed by *other forms of heart disease* (4,4%). *Cerebrovascular diseases* (6,0%) was the second leading underlying cause of death for females. In 2017, the most significant decline amongst females were deaths due to *tuberculosis* which declined from 5,9% in 2015 to 5,1% in 2017. Even with males, there was a significant decline in *tuberculosis* deaths from 8,3% in 2015 to 7,6%.

Differentials by age in non-natural deaths type, (for both sexes), showed that the age group most affected by non-natural causes of death was the age group 15–29, where 42,0% of all deaths 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 2,8% of deaths in this age group were due to non-natural causes. *Assault* was more common among those aged 15–29, accounting for 23,2% of non-natural deaths in this age group. *Complications of medical and surgical care* were highest amongst the elderly (9,2%).

Differentials by sex also showed higher proportions of non-natural deaths for males at 16,7% compared to 5,4% of female non-natural deaths. Note well that 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 causes compared to 18,2% 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.

Statistics on mortality and causes of deaths are important for planning, monitoring and evaluation of interventions and programmes aimed at improving the health and survival of the population at large. Their usefulness may however, be undermined if data are not of high quality. As such, efforts need to be made to enhance the completeness and quality of information. Addressing gaps in deaths data will go a long way towards providing quality deaths statistics to inform intervention programmes and projects. The data on causes of death is still of high quality and invaluable for the country.

6. References

Bennett, N.G. and Horiuchi, S. (1981). Estimating the Completeness of Death Registration in a Closed Population. *Population Index*, 47(2): 207–21.

Bennett, N.G. and Horiuchi, S. (1984). Mortality estimation from registered deaths in less developed countries, *Demography*, 21(2): 217–234.

Hill, K. (1987). Estimating Census and Death Registration Completeness, *Asian and Pacific Population Forum*, 1(3): 8–13, 23–24.

Mahapatra, P., Shibuya, K., Lopez, A., Coullare, F., Notzon, F.C. and Szreter, S. On behalf of the Monitoring Vital Events (MoVE) writing group. (2007). Civil registration systems and vital statistics: successes and missed opportunities, *The Lancet*, 370 (10): 1653–1663.

NDoH (National Department of Health). (2015). Strategic plan 2015–2020. Pretoria: Government of South Africa.

NPC (National Planning Commission). (2011). National Development Plan. Pretoria: The Presidency.

Republic of South Africa. (1959). Inquest Act, 1992 (Act No. 58 of 1959). Pretoria: Government of South Africa.

Republic of South Africa. (1992). Births and Deaths Registration Act, 1992 (Act No. 51 of 1992). Pretoria: Government of South Africa.

Republic of South Africa. (1999). Statistics Act, 1999 (Act No. 6 of 1999). Pretoria: Government of South Africa.

Republic of South Africa. (2010). Births and Deaths Registration Amendment Act, 2010 (Act No. 18 of 2010). Pretoria: Government of South Africa.

Republic of South Africa. (2014). Regulations on the Registration of Births and Deaths (Government notice No. 37373). Pretoria: Government of South Africa.

Stats SA (Statistics South Africa). (2017). Mid-year population estimates, 2017 (P0302). Pretoria: Statistics South Africa.

Stats SA (Statistics South Africa). (2017). Mortality and causes of death in South Africa, 2015: findings from death notification form (P0309.3). Pretoria: Statistics South Africa.

Stats SA (Statistics South Africa). (2018). Mortality and causes of death in South Africa, 2015: findings from death notification form (P0309.3). Pretoria: Statistics South Africa.

UN (United Nations). (2014). Principles and recommendations for a vital statistics system, Third Revision. Department of economic and social affairs: United Nations publication.

WHO (World Health Organization). (2013). Strengthening civil registration and vital statistics for births, deaths and causes of death: resource kit. Geneva: World Health Organization.

WHO (World Health Organization). (2014a). Analysing mortality levels and causes-of-death (ANACoD) Electronic Tool, Version 2.0. Department of Health Statistics and Information Systems, Geneva: World Health Organization.

WHO (World Health Organization). (2014b). Performing routine basic checks on compiling cause-of-death data (CoDEdit) Electronic Tool, Version 1.0. Department of Health Statistics and Information Systems, Geneva: World Health Organization.

WHO (World Health Organization). (2016). International classification of diseases and related health problems. Tenth Revision. Volume 2: 2016 Edition. Geneva: World Health Organization.

Appendices

Appendix A: Glossary

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Appendix B: Death Notification form

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

Appendix C: Assessment of the quality of data

Reliable real-time information on the number of deaths and causes of mortality is important for the evaluation of population health status at national, district and local administrative levels. This section provides an assessment of the quality of registered deaths based on timeliness, completeness, accuracy of information and on the proportion of deaths assigned to ill-defined causes. The accuracy and completeness of civil registration mortality statistics depends on both coverage and the ability of medical practitioners to correctly identify and certify the cause of death (WHO, 2013). Data assessment is valuable for improvements to be realised in coverage, quality and consistency of cause-of-death statistics. Moreover, when the extent of quality of vital statistics data is known, even incomplete information can yield valuable insights into mortality patterns and the causes of death.

The data confrontation conducted in this section borders around the production of good quality mortality data and requires a system in which: all deaths are registered (this standard is assessed through level of completeness), all deaths are timely registered (this standard is assessed through the proportion of deaths registered within the 3-days' mandate in South Africa), all deaths are timely published (this standard is assessed through calculating the time lapse from end of the reference period to publication of statistics), all deaths are medically certified (this standard is assessed through proportion of deaths occurring in a health care facility and proportion ill-defined) and all deaths are generalizable (this standard is assessed through availability of mortality data at national and subnational levels).

Completeness of death registration

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

Timeliness of death registration

The Regulations for the Registration of Births and Deaths in South Africa mandates that deaths should be registered within 72-hours (three days) of occurrence (Republic of South Africa, 2014). Accordingly, timeliness of death registration in this publication is calculated as the number of days it took to register a death from the date of occurrence to the date of registration. Table C.1 shows the distribution of the 2016 death occurrences by the number of days it took to register the deaths.

The table shows that 78,5% of the deaths in 2017 were registered within the period stipulated in the regulations. In 2017, 16,1% of deaths were registered within a day of occurrence, increasing to 47,1% by the first day, 65,6% by the second day and 78,5% by the third day. A vast majority of deaths (92,9%) were registered within the first week in which they occurred and by the end of the first month 98,4% of the deaths were registered. While 21,5% of the deaths were registered later than the mandated time period, at least they were registered within a year of death occurrence and reached Stats SA in time for the production of the statistical release. Concerted efforts are needed for the improvement in the adherence to the legislative framework and for the reduction of deaths that do not reach Stats SA in time for the production of the statistical release.

Table C 1: Distribution of deaths by the number of days it took to register the death, 2017

Number of days	Number of deaths	Percentage	Cumulative percentage
Within a day of death	72 009	16,1	16,1
1 day	138 121	30,9	47,1
2 days	82 719	18,5	65,6
3 days	57 506	12,9	78,5
4 days	33 755	7,6	86,0
5 days	19 494	4,4	90,4
6 days	11 277	2,5	92,9
7 -13 days	19 580	4,4	97,3
14-20 days	2 874	0,6	97,9
21-30 days	1 874	0,4	98,4
31-364 days	7 023	1,6	99,9
1 year+	312	0,1	100,0
Total	446 544	100,0	

Timeliness of publication of statistics

Table C.2 presents information on the timeliness of published statistics, focussing on the number of deaths published in the 2016 statistical release and the additional delayed or late registrations received during the 2018/2019 processing phase for the years 1997 to 2016. According to the United Nations (UN) recommendation, for civil registration mortality statistics to be considered timely they ought to be published and disseminated before one-year from the end of the year of death occurrence (UN, 2014). This 2017 statistical release did not achieve this recommendation as it is published 36 months from the end of the reporting year.

Table C.2 shows that deaths continue to be registered after the end of each year of reporting. These deaths give an indication of the extent to which the data from the previous years were registered late or delayed. In general, the year immediately preceding the year of reporting, in this case 2016 usually has the highest number of additional forms and over time this number continues to lessen – suggesting that the deaths get close to the true value over time. The table shows that a total of 18 742 deaths were registered later than the year in which they occurred and were processed during the 2018/2019 processing phase. Deaths from 2016 accounted for the highest number 13 783 (73,5%) of additional deaths. Appendices D (1997–1999), D1 (2000–2002), D2 (2003–2005), D3 (2006–2008), D4 (2009–2011), D5 (2012–2014) and D6 (2015–2017) [see pages 72–76] present the number distribution of the deaths by age, sex and year of death over a 20-year period (1997–2016) where years before 2016 have been updated with late or delayed registrations and processed during the 2018/2019 processing phase.

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

Year of death	Number of deaths published in December 2016	Additional forms received in the 2018/19 processing phase	Total number of deaths (December 2017)
1997	317 872	113	317 985
1998	366 621	90	366 711
1999	382 687	75	382 762
2000	417 259	152	417 411
2001	456 316	168	456 484
2002	503 409	183	503 592
2003	558 478	201	558 679
2004	578 448	198	578 646
2005	599 677	177	599 854
2006	614 248	164	614 412
2007	606 239	220	606 459
2008	598 289	201	598 490
2009	583 952	321	584 273
2010	551 574	246	551 820
2011	517 562	373	517 935
2012	495 260	276	495 536
2013	477 163	299	477 462
2014	476 891	593	477 484
2015	473 266	909	474 175
2016	456 612	13 783	470 395
Total	10 031 823	18 742	10 050 565

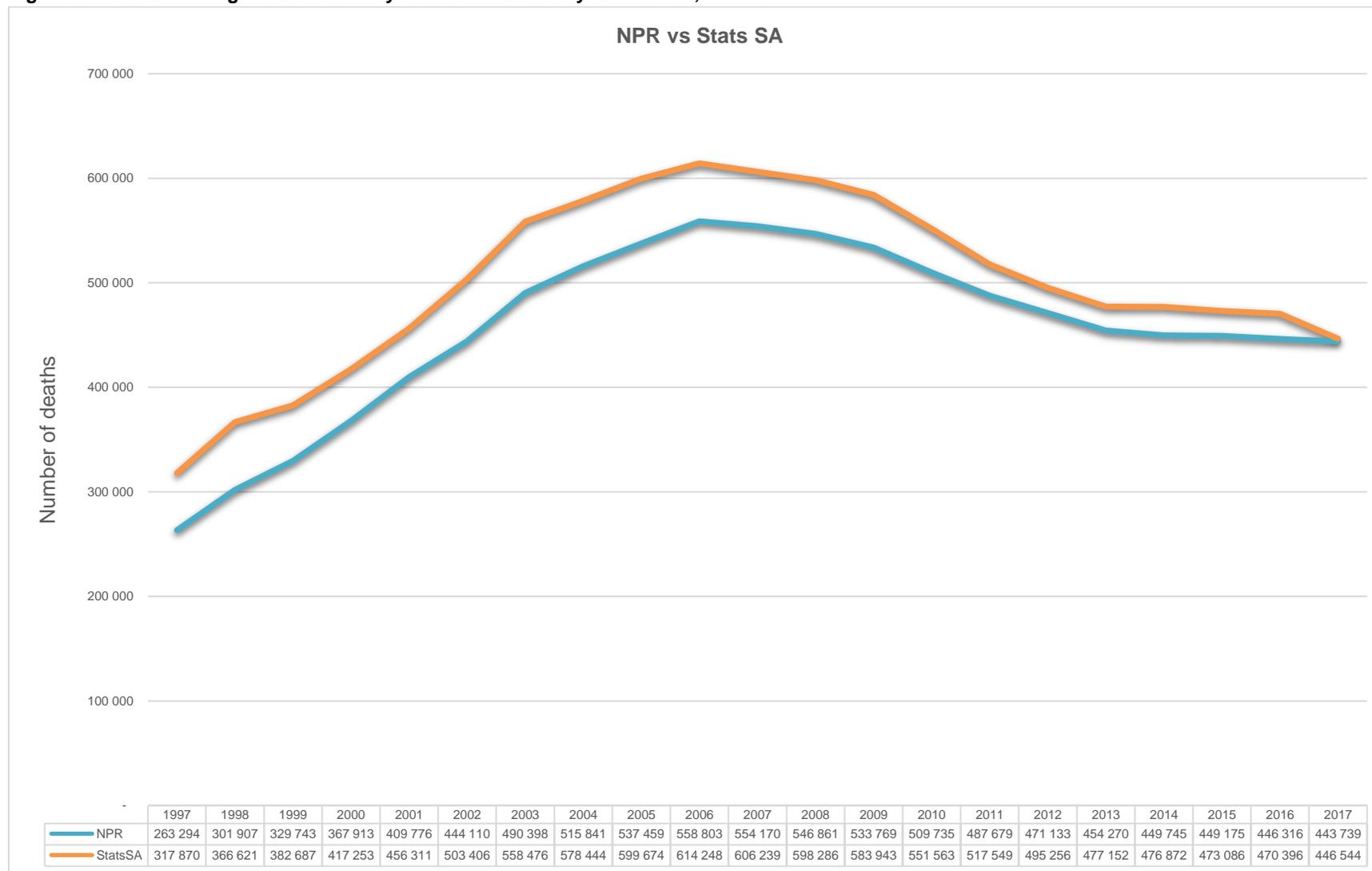
Data confrontation

The number of deaths recorded on the National Population Register (NPR) maintained by the DHA and those processed by Stats SA for the years 1997 to 2017 are depicted on Figure C1. The comparison of data from the two systems is one of the methods of evaluating civil registration data quality in terms of the completeness dimension. This method is used in order to check if the two systems follow the expected patterns based on known characteristics of the data from the two systems. The figure shows that over the 20-year period (1997–2017) the number of deaths for both systems increased consistently between 1997 and 2006, and thereafter decreased yearly between 2007 and 2016. However, logically, for all the years the number of deaths processed by Stats SA has always been higher than the number of deaths collated on the NPR. The logic is based on the deceased population covered in each of the systems:

The table shows that the number of deaths on the NPR increased from 263 294 in 1997 to 558 803 in 2006, while for Stats SA the number of deaths increased from 317 870 in 1997 to 614 248 in 2006. In 2017, there were 443 739 deaths on the NPR. For the deaths processed by Stats SA,

- For a death to be registered on the NPR the birth should be registered on the NPR and the deceased should be eligible for inclusion based on the citizenship status. The NPR consists of deaths to South African citizens and permanent residents whose birth records exist on the NPR.
- Similarly, the data processed by Stats SA, has deaths for the deceased eligible for inclusion in the NPR. However, Stats SA also has deaths for the deceased who were not eligible for inclusion in the NPR and those who were eligible but whose births were not registered on the NPR.
- Based on these differences, the number of deaths processed and published by Stats SA will always be expected to be higher than those recorded on the NPR. In 2017, Stats SA recorded 446 544 deaths in South Africa. Over the years, Stats SA and NPR deaths have become more comparable, implying that more South African citizens and permanent residents are being captured on the NPR. This is indicated by the magnitude of the difference between the two systems. In 1997, Stats SA deaths were higher than NPR deaths by 21%, decreasing to 10% in 2006, and further down to a 3% difference in 2017. However, the difference between the 2017 data is expected to increase as Stats SA will receive late registrations or delayed deaths for 2017 that did not make it in time for the 2018/2019 processing phase.

Figure C1: Number of registered deaths by source of data and year of death, 1997–2017*



*Deaths for 1997–2016 have been updated with deaths processed in 2018/2019 processing years

Quality of causes of death information

The evaluation of ill-defined and non-specific causes of death is one of the plausibility checks that has to be done on causes of death data. Ill-defined and non-specific causes of death are causes that are insufficiently detailed to be of value for public health purposes (WHO, 2013). The ill-defined causes are classified into categories, including symptoms and signs (e.g. chest pain, headache, senility, enlarged liver or fever), abnormal clinical and laboratory findings (e.g. *abnormal findings in urine or blood cells*) and non-specific causes that denote the mode of dying (e.g. *renal failure, brain failure, cardiac arrest, heart failure or shock*).

All the categories fail to precisely specify the underlying cause of death which is important for disease control and prevention purposes. In general, causes such as renal failure or brain failure should not be reported as the underlying causes of death because organ failure does not usually occur without a precipitating cause and also it can result from a range of underlying causes (WHO, 2013). For example, *renal failure* can be due to *diabetes mellitus, high blood pressure, suicide by poisoning and stab injury*.

Table C3 shows the number and percentage distribution of ill-defined causes of death by sex of the deceased. In total, for both sexes there were 109 428 deaths attributed to ill-defined causes in 2017. Females accounted for 57 180 (52,3%) of the ill-defined deaths compared to 52 248 (47,7%) amongst males. *Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (R00-R99)* comprised the highest percentage of ill-defined causes of death for both males and females (55,8% and 53,4%, respectively). *Heart failure (I50)* featured as the second highest ill-defined cause of death for males (9,0%) and the second highest ill-defined causes of death amongst females was *essential (primary) hypertension (I10)* at 11,3%.

Table C 3: Number of ill-defined causes of death by sex, 2017*

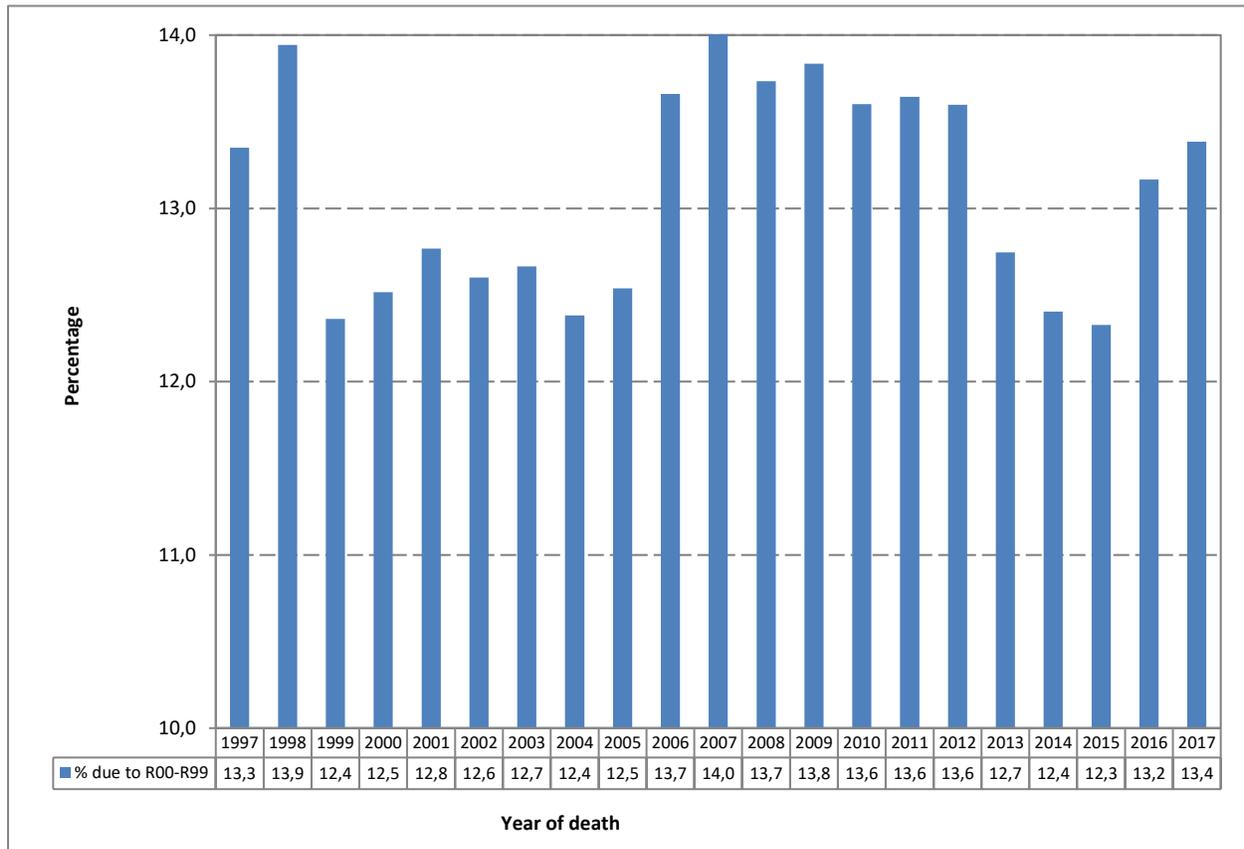
Underlying cause of death (based in ICD-10)	Number			Percentage		
	Male	Female	Both sexes	Male	Female	Both sexes
Streptococcal septicaemia (A40)	3	3	6	0,0	0,0	0,0
Other septicaemia (A41)	2 457	2 830	5 287	4,7	4,9	4,8
Malignant neoplasm of other and ill-defined sites (C76)	200	271	471	0,4	0,5	0,4
Malignant neoplasm without specification of site (C80)	1 767	1 668	3 435	3,4	2,9	3,1
Malignant neoplasm of independent (primary) multiple sites (C97)	0	2	2	0,0	0,0	0,0
Disseminated intravascular coagulation [defibrination syndrome] (D65)	51	61	112	0,1	0,1	0,1
Volume depletion (E86)	563	582	1 145	1,1	1,0	1,0
Essential (primary) hypertension (I10)	4 115	6 455	10 570	7,9	11,3	9,7
Cardiac arrest (I46)	2 847	3 002	5 849	5,4	5,3	5,3
Heart failure (I50)	4 690	5 798	10 488	9,0	10,1	9,6
Complications and ill-defined descriptions of heart disease (I51)	582	523	1 105	1,1	0,9	1,0
Other and unspecified disorders of circulatory system (I99)	24	30	54	0,0	0,1	0,0
Pulmonary oedema (J81)	136	178	314	0,3	0,3	0,3
Respiratory failure, not elsewhere classified (J96)	687	707	1 394	1,3	1,2	1,3
Acute renal failure (N17)	520	550	1 070	1,0	1,0	1,0
Chronic renal failure (N18)	1 193	1 074	2 267	2,3	1,9	2,1
Unspecified renal failure (N19)	2 211	2 277	4 488	4,2	4,0	4,1
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (R00-R99)	29 170	30 528	59 698	55,8	53,4	54,6
Event of undetermined intent (Y10-Y34)	1 032	641	1 673	2,0	1,1	1,5
Total of ill-defined causes	52 248	57 180	109 428	100,0	100,0	100,0

Table C3 above shows that 54,6% of ill-defined causes of death were attributed to *symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified*. It is therefore important to analyse trends in reporting this cause of death category for a better understanding of the category. Figure C2 below presents the percentage distribution of ill-defined causes of death for the years 1997–2017.

Overall, over the years 1997 to 2017 the results show that the percentage of deaths due to this category ranged between 12% and 14%. The lowest proportion of 12,3% was recorded in 2015 and the highest proportion of 14,0% was recorded in 2007. In 2008, 13,7% of the total deaths were assigned to ill-defined causes, increasing to 13,8% in 2009 before stabilising at 13,6% between 2010 and 2012. The proportion assigned to ill-defined causes went on a downward trend from 12,7% in 2013 to a low of 12,3% in 2015. In 2017, the proportions increased to 13,4%.

The 2017 proportion is indicative of regressing improvements in the reporting of causes of deaths. It is worth noting that while the observed deterioration may be real, there is also a growing issue of death notification forms that are sealed with glue such that when they are opened for capturing at Stats SA they have already been spoiled by the glue and the causes of death information is no longer legible.

Figure C2: Percentage distribution of deaths assigned to symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified and year of death, 1997–2017*



Assessment framework for death registration data

This publication adopted the framework proposed by Mahapatra et al. (2007) to assess the quality of the 2017 death registration data from the South African civil registration system. The framework recommends the assessment of the data based on five quality assurance indicators, namely: level of accuracy, relevance, comparability, timeliness and accessibility. The results of the framework for the 2017 mortality and causes of death data are shown in Table 2.4 and Table 2.5. The general vital statistics and causes of deaths columns both evaluate the quality of death registration data in terms of five quality indicators: level of accuracy, relevance, comparability, timeliness and accessibility.

Table C 4 shows information on the proportion of missing information as indicated by the unknown or unspecified information for selected socio-demographic variables. Overall, the table gives an indication of the level of accuracy. The unknown cases denote cases where either more than one option was selected on the death notification form or the information could not be classified according to specified categories. The unspecified cases refer to missing data for that variable. Of the total 2017 deaths, 1,2% had missing information on province of usual residence of the deceased (0,5%), age of the deceased (0,3%), sex of the deceased (0,1%) and province of death occurrence (3,9%). These four variables have generally been well reported over time. A notable increase in missing information was observed for province of death occurrence from 0,02% in 2016 to 3,9% in 2017 – this shows a significant regress in reporting province of death occurrence.

Table C 4 also shows that population group of the deceased had 12,3% missing information, marital status of the deceased had 18,7% and the province of birth variable was incomplete. Four variables, namely place or institution of death occurrence (24,4%), method used to ascertain cause of death (32,5%), smoking status (32,6%), and education (48,9%) had high missing information above 20% but below 50%. The 2017 results further indicate that occupation (74,1%), industry (84,3%) and pregnancy status (83,0%) remain the three variables with over half of the information classified as unknown or unspecified. In this publication, no analyses were undertaken on all variables with over half of the information classified as missing, including the education variable with 49,5% missing information. However, these variables are also published by Stats SA on the dataset containing unit records on mortality and causes of death.

In terms of the level of completeness dimension, Table C 5 shows that for the 2011–2016 intercensal/survey period, about 95% of the total adult deaths (15 years and above) were registered on the civil registration system with a 97% completeness level estimated for males and 95% estimated for females. The death data from the civil registration is regarded as complete in terms of the relevance and comparability of mortality and causes of death statistics indicators.

The data is relevant as it is routinely tabulated by sex and 5-year age groups and the information is provided for the nine provinces and 52 district municipalities in the country. The data also meets the comparability quality assurance dimension as the ICD-10 which is recommended for international comparability was used for coding causes of death, the tools used in coding causes of death for 2016 were similar to those used in previous years and the variables in the civil registration deaths for 2016 have been consistent over the years. Accordingly, the data are comparable within the country and at the international level.

For the accuracy dimension in the cause-of-deaths statistics category 47,5% of the deaths occurred within a health care facility in 2016. This percentage is a proxy for the percentage of deaths whose causes are more likely to be detailed enough for the underlying cause to be derived. While less than 50% of the deaths occurred in a health care facility, it is still good that all deaths in South Africa are mandated to be certified by medical practitioners. According to Mahapatra et al. (2007) no more than 10% of deaths should be assigned to *symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified* categories. The 2016 data shows that 13,4% of all deaths were assigned to ill-defined causes. This is a shortfall of 3,2% from the recommended threshold. Improvements are needed in the reduction of ill-defined causes of death.

The timeliness of the 2017 statistical release is not within the expected time frame of one-year lapse from end of the reference period. The time from end of the reference period to publication was 36 months. The capturing and coding of the data took 24 months while the processing of the 2017 data on causes of death took three months. Table C 5 further shows that there is wide accessibility to the statistical release and data sets on mortality and causes of death. The data published on this statistical release can be accessed in a wide range of formats from the Stats SA website and through the Stats SA User Information Services.

Table C 4: Percentage of deaths classified as unknown/unspecified for selected variables, 2017

Variables	Applicable group	Percentage unknown or unspecified
Sex	All	0,1
Age	All	0,3
Province of death occurrence	All	3,9
Province of usual residence of deceased	All	1,2
Province of birth	All	51,5
Population group	All	12,3
Place or institution of death occurrence	All	24,4
Method used to ascertain cause of death	All	32,5
Marital Status	All	18,7
Smoking status	Aged 16 and older	32,6
Education	Aged 6 and older	48,9
Occupation	Aged 15 and older	74,1
Industry	Aged 15 and older (economically active)	84,3
Pregnancy status	Females aged 10–55	83,0

Table C 5: Assessment of the 2017 South African death statistics from civil registration system using the framework proposed by Mahapatra et al. (2007)

General vital statistics		Cause-of-death statistics	
Criteria and indicators	Measure	Criteria and indicators	Measure
Accuracy Completeness of death registration Missing data See Table 2.5	94%	Accuracy Proportion of deaths that occurred in healthcare facilities Proportion of deaths assigned to symptoms and signs of disease not elsewhere classified	49,0% 13,4%
Relevance Routine tabulations by sex and 5-year age groups Deaths in children under five years tabulated by 0 and 1-4-year age group	100% 100%	Relevance Routine tabulation by sex and 5-year age groups Number of cause-of-death tabulation areas	100% 9 provinces and 52 district municipalities
Comparability Stability of key definitions over time Uniformity of definitions across areas	100% 100%	Comparability Consistency of cause specific mortality proportions over consecutive years ICD coding for certification and coding of causes of death, revision used and code level to which tabulations are published	100% Coding causes of death using the tenth revision at 4/5-digit level
Timeliness Processing time Mean time from end of reference period to publication	24 months 36 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	12 991	11 549	203	24 743	14 932	13 262	314	28 508	14 739	13 460	438	28 637
1–4	4 054	3 651	52	7 757	4 863	4 489	96	9 448	5 070	4 640	98	9 808
5–9	1 707	1 255	17	2 979	1 780	1 435	36	3 251	1 899	1 511	34	3 444
10–14	1 548	1 195	20	2 763	1 695	1 288	23	3 006	1 651	1 306	23	2 980
15–19	3 778	2 483	24	6 285	4 111	2 914	63	7 088	4 356	3 336	89	7 781
20–24	8 185	5 473	54	13 712	8 801	6 933	113	15 847	8 655	8 313	107	17 075
25–29	10 941	7 469	44	18 454	13 099	9 900	113	23 112	13 912	12 681	142	26 735
30–34	11 864	7 217	52	19 133	14 399	9 762	130	24 291	16 327	12 315	121	28 763
35–39	12 010	6 896	52	18 958	14 642	8 958	98	23 698	16 490	10 855	111	27 456
40–44	11 826	6 429	37	18 292	13 974	7 958	95	22 027	15 245	8 951	92	24 288
45–49	12 256	6 391	52	18 699	14 226	7 701	90	22 017	15 012	8 545	103	23 660
50–54	11 339	6 260	31	17 630	13 030	7 226	79	20 335	13 913	7 780	81	21 774
55–59	12 684	7 943	47	20 674	13 967	8 892	108	22 967	14 096	8 695	85	22 876
60–64	11 209	9 302	51	20 562	12 448	10 004	60	22 512	12 708	10 059	85	22 852
65–69	12 496	11 056	49	23 601	13 270	12 465	85	25 820	12 852	12 325	92	25 269
70–74	11 309	10 069	49	21 427	12 752	11 804	53	24 609	12 870	12 260	71	25 201
75–79	11 220	12 346	46	23 612	11 433	12 488	87	24 008	10 709	11 592	63	22 364
80–84	6 613	8 786	34	15 433	7 886	11 047	49	18 982	7 608	11 324	73	19 005
85–89	3 957	6 921	27	10 905	4 262	7 808	35	12 105	4 453	7 947	52	12 452
90+	2 032	4 733	13	6 778	2 364	5 567	29	7 960	2 211	5 384	30	7 625
Unspecified	3 116	2 366	106	5 588	2 822	2 102	196	5 120	1 492	1 112	113	2 717
Total	177 135	139 790	1 060	317 985	200 756	164 003	1 952	366 711	206 268	174 391	2 103	382 762

*Data for 1997–1999 have been updated with late registrations/delayed death notification forms processed in 2018/2019.

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	15 019	13 539	353	28 911	15 494	14 082	307	29 883	17 897	16 219	341	34 457
1–4	5 391	4 935	86	10 412	5 898	5 314	78	11 290	6 327	5 699	87	12 113
5–9	1 999	1 600	29	3 628	2 127	1 709	29	3 865	2 406	1 965	17	4 388
10–14	1 723	1 338	36	3 097	1 752	1 469	22	3 243	1 870	1 490	24	3 384
15–19	4 323	3 496	72	7 891	4 483	3 917	63	8 463	4 743	4 296	60	9 099
20–24	8 889	9 925	88	18 902	8 952	10 984	87	20 023	9 588	12 542	112	22 242
25–29	15 107	15 783	107	30 997	16 892	19 381	115	36 388	18 673	23 418	137	42 228
30–34	18 528	15 866	114	34 508	20 953	18 806	112	39 871	23 941	23 608	154	47 703
35–39	18 587	13 660	97	32 344	21 147	15 922	101	37 170	24 140	19 515	129	43 784
40–44	17 187	11 063	85	28 335	19 404	12 931	97	32 432	21 644	15 549	118	37 311
45–49	16 150	9 591	80	25 821	17 970	10 972	64	29 006	19 336	12 702	112	32 150
50–54	15 322	9 120	67	24 509	16 955	10 175	74	27 204	18 668	11 272	103	30 043
55–59	13 980	8 884	76	22 940	14 618	9 142	66	23 826	15 449	10 027	72	25 548
60–64	14 275	11 268	69	25 612	15 144	12 084	69	27 297	16 218	12 718	82	29 018
65–69	12 609	12 078	53	24 740	13 042	12 827	65	25 934	13 767	13 299	65	27 131
70–74	13 135	14 156	68	27 359	14 076	15 146	60	29 282	13 811	15 486	62	29 359
75–79	10 360	11 547	48	21 955	10 872	12 060	61	22 993	11 114	12 843	72	24 029
80–84	8 497	12 649	32	21 178	9 173	13 933	47	23 153	9 557	14 209	60	23 826
85–89	4 683	8 232	27	12 942	4 587	8 374	31	12 992	4 379	8 320	34	12 733
90+	2 532	6 533	31	9 096	3 027	7 168	28	10 223	3 296	7 670	33	10 999
Unspecified	1 192	896	146	2 234	1 054	791	101	1 946	1 139	791	117	2 047
Total	219 488	196 159	1 764	417 411	237 620	217 187	1 677	456 484	257 963	243 638	1 991	503 592

*Data for 2000–2002 have been updated with late registrations/delayed death notification forms processed in 2018/2019.

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	19 979	18 063	435	38 477	21 806	19 226	533	41 565	24 094	21 978	476	46 548
1–4	7 156	6 295	79	13 530	8 284	7 643	72	15 999	8 242	7 333	80	15 655
5–9	2 782	2 208	28	5 018	3 192	2 805	13	6 010	3 370	2 806	21	6 197
10–14	2 004	1 643	25	3 672	2 142	1 781	14	3 937	2 152	1 863	17	4 032
15–19	4 843	4 570	70	9 483	4 691	4 627	42	9 360	4 781	4 555	53	9 389
20–24	10 360	14 230	106	24 696	10 385	15 130	78	25 593	10 503	14 924	90	25 517
25–29	20 061	26 325	154	46 540	19 842	27 646	114	47 602	19 347	27 329	110	46 786
30–34	27 555	28 219	145	55 919	28 509	30 723	79	59 311	28 846	31 353	109	60 308
35–39	26 490	22 729	115	49 334	28 270	25 227	88	53 585	29 461	26 329	101	55 891
40–44	24 804	18 483	123	43 410	26 535	20 621	70	47 226	27 524	21 520	87	49 131
45–49	22 102	14 507	90	36 699	23 144	16 290	69	39 503	24 493	17 421	81	41 995
50–54	20 645	12 906	68	33 619	21 156	14 121	47	35 324	21 550	14 993	59	36 602
55–59	17 240	11 005	49	28 294	18 099	12 041	33	30 173	19 745	13 328	47	33 120
60–64	17 428	13 325	58	30 811	16 995	13 417	31	30 443	16 869	13 260	34	30 163
65–69	14 687	13 898	53	28 638	15 230	13 818	26	29 074	16 389	15 205	38	31 632
70–74	14 494	16 403	58	30 955	13 457	15 436	26	28 919	12 921	15 098	35	28 054
75–79	12 085	14 135	56	26 276	11 824	14 093	16	25 933	12 234	15 936	35	28 205
80–84	9 459	13 710	39	23 208	8 655	11 969	21	20 645	8 447	11 849	21	20 317
85–89	5 440	10 206	37	15 683	5 042	9 480	19	14 541	5 457	10 353	17	15 827
90+	3 382	8 160	18	11 560	3 292	7 483	14	10 789	3 292	7 889	15	11 196
Unspecified	1 682	960	215	2 857	1 937	931	246	3 114	1 979	1 084	226	3 289
Total	284 678	271 980	2 021	558 679	292 487	284 508	1 651	578 646	301 696	296 406	1 752	599 854

*Data for 2003–2005 have been updated with late registrations/delayed death notification forms processed in 2018/2019.

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	25 529	22 138	725	48 392	24 916	21 747	415	47 078	24 179	21 481	301	45 961
1–4	8 410	7 601	118	16 129	7 858	7 068	47	14 973	8 247	7 230	31	15 508
5–9	3 033	2 555	17	5 605	2 885	2 510	4	5 399	2 744	2 311	7	5 062
10–14	2 390	1 921	15	4 326	2 253	1 913	2	4 168	2 238	1 895	2	4 135
15–19	4 855	4 606	39	9 500	4 900	4 227	16	9 143	4 871	4 147	27	9 045
20–24	10 886	14 853	98	25 837	10 953	13 820	53	24 826	10 756	12 969	45	23 770
25–29	19 046	26 252	86	45 384	18 569	24 688	72	43 329	18 529	23 660	48	42 237
30–34	28 933	31 109	96	60 138	28 475	29 255	69	57 799	26 922	27 405	57	54 384
35–39	29 545	26 174	80	55 799	29 504	24 981	50	54 535	29 248	24 508	48	53 804
40–44	28 179	21 922	79	50 180	27 199	21 300	49	48 548	26 207	20 327	31	46 565
45–49	25 202	17 998	45	43 245	24 970	17 981	43	42 994	24 929	17 647	31	42 607
50–54	22 844	15 645	42	38 531	22 982	15 697	17	38 696	22 856	15 639	21	38 516
55–59	20 690	14 206	42	34 938	21 499	14 672	23	36 194	21 697	15 014	22	36 733
60–64	17 092	13 361	27	30 480	17 542	13 522	11	31 075	17 822	13 961	17	31 800
65–69	17 781	15 835	25	33 641	18 012	15 887	9	33 908	18 130	15 667	12	33 809
70–74	13 611	15 617	28	29 256	13 864	15 883	8	29 755	14 205	15 370	2	29 577
75–79	12 748	17 034	25	29 807	12 622	17 112	4	29 738	12 630	17 256	4	29 890
80–84	8 961	12 359	21	21 341	8 930	12 953	4	21 887	9 072	13 900	2	22 974
85–89	6 156	12 039	12	18 207	6 377	12 230	2	18 609	6 009	11 233	1	17 243
90+	3 568	8 723	9	12 300	3 689	8 802	12	12 503	4 003	9 582	27	13 612
Unspecified	871	358	147	1 376	839	350	113	1 302	814	279	165	1 258
Total	310 330	302 306	1 776	614 412	308 838	296 598	1 023	606 459	306 108	291 481	901	598 490

*Data for 2006–2008 have been updated with late registrations/delayed death notification forms processed in 2018/2019.

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	21 112	17 814	467	39 393	18 370	16 160	384	34 914	14 988	13 297	504	28 789
1–4	6 700	6 123	31	12 854	7 065	6 139	44	13 248	5 362	4 803	47	10 212
5–9	2 373	2 048	6	4 427	2 572	2 129	5	4 706	2 377	2 055	9	4 441
10–14	2 392	2 077	4	4 473	2 450	2 135	3	4 588	2 109	1 817	6	3 932
15–19	4 681	4 153	25	8 859	4 437	3 984	18	8 439	4 158	3 586	25	7 769
20–24	10 022	11 877	56	21 955	9 461	10 748	36	20 245	8 655	8 968	83	17 706
25–29	17 809	21 781	70	39 660	16 550	19 570	64	36 184	15 073	16 258	150	31 481
30–34	25 084	24 284	81	49 449	22 494	21 505	73	44 072	19 770	17 917	145	37 832
35–39	27 754	22 463	59	50 276	24 847	20 458	52	45 357	22 609	17 596	116	40 321
40–44	25 236	19 250	55	44 541	23 411	17 714	47	41 172	21 053	15 602	100	36 755
45–49	24 411	17 413	46	41 870	22 991	16 426	58	39 475	21 097	15 039	68	36 204
50–54	22 904	15 637	40	38 581	22 057	15 279	32	37 368	21 256	14 471	74	35 801
55–59	21 857	15 166	29	37 052	21 019	14 374	33	35 426	20 532	14 340	54	34 926
60–64	19 271	14 437	20	33 728	20 144	14 847	30	35 021	20 547	15 088	61	35 696
65–69	18 271	15 768	16	34 055	17 337	14 641	21	31 999	17 096	14 367	26	31 489
70–74	15 208	15 997	17	31 222	15 881	16 745	15	32 641	16 638	16 949	22	33 609
75–79	12 769	17 837	9	30 615	11 802	16 170	8	27 980	11 768	16 587	18	28 373
80–84	9 814	15 175	9	24 998	9 952	16 261	11	26 224	10 012	16 826	14	26 852
85–89	6 170	11 254	2	17 426	5 780	10 524	5	16 309	6 023	11 228	13	17 264
90+	5 258	11 690	1	16 949	4 094	10 749	10	14 853	4 402	11 455	7	15 864
Unspecified	1 284	393	213	1 890	1 008	264	327	1 599	1 376	645	598	2 619
Total	300 380	282 637	1 256	584 273	283 722	266 822	1 276	551 820	266 901	248 894	2 140	517 935

*Data for 2009–2011 have been updated with late registrations/delayed death notification forms processed in 2018/2019.

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	14 364	12 368	527	27 259	14 052	12 296	516	26 864	14 149	12 177	538	26 864
1–4	5 635	5 004	48	10 687	5 006	4 352	66	9 424	4 789	4 104	64	8 957
5–9	2 672	2 259	7	4 938	1 942	1 596	12	3 550	1 874	1 440	10	3 324
10–14	2 261	1 910	4	4 175	1 855	1 535	6	3 396	1 812	1 436	8	3 256
15–19	4 129	3 432	20	7 581	4 250	3 111	31	7 392	4 216	3 153	21	7 390
20–24	8 471	7 870	84	16 425	8 454	7 105	69	15 628	8 494	6 270	80	14 844
25–29	14 685	14 295	126	29 106	13 742	12 357	140	26 239	13 213	11 071	176	24 460
30–34	18 207	16 194	156	34 557	17 477	14 464	154	32 095	17 346	13 771	171	31 288
35–39	20 808	15 781	119	36 708	19 023	14 066	134	33 223	18 021	13 120	155	31 296
40–44	19 846	14 146	96	34 088	19 118	13 424	117	32 659	18 518	12 777	113	31 408
45–49	19 357	13 730	87	33 174	18 341	13 013	78	31 432	17 825	12 627	77	30 529
50–54	19 982	13 797	71	33 850	19 369	13 492	75	32 936	19 424	13 499	73	32 996
55–59	20 085	13 572	52	33 709	19 512	13 535	53	33 100	19 670	13 978	60	33 708
60–64	20 269	14 504	30	34 803	20 450	14 768	50	35 268	21 108	15 514	41	36 663
65–69	17 111	13 948	24	31 083	16 902	14 170	33	31 105	18 416	15 136	22	33 574
70–74	16 309	16 459	15	32 783	16 361	16 581	19	32 961	16 209	16 765	17	32 991
75–79	12 079	16 401	18	28 498	12 379	16 060	24	28 463	13 005	16 583	21	29 609
80–84	10 022	16 794	11	26 827	9 744	16 867	16	26 627	9 751	17 220	18	26 989
85–89	5 822	11 182	11	17 015	6 035	11 919	13	17 967	6 531	13 089	10	19 630
90+	4 317	11 057	8	15 382	4 162	11 031	11	15 204	4 331	11 891	4	16 226
Unspecified	1 494	737	657	2 888	1 021	427	481	1 929	795	237	450	1 482
Total	257 925	235 440	2 171	495 536	249 195	226 169	2 098	477 462	249 497	225 858	2 129	477 484

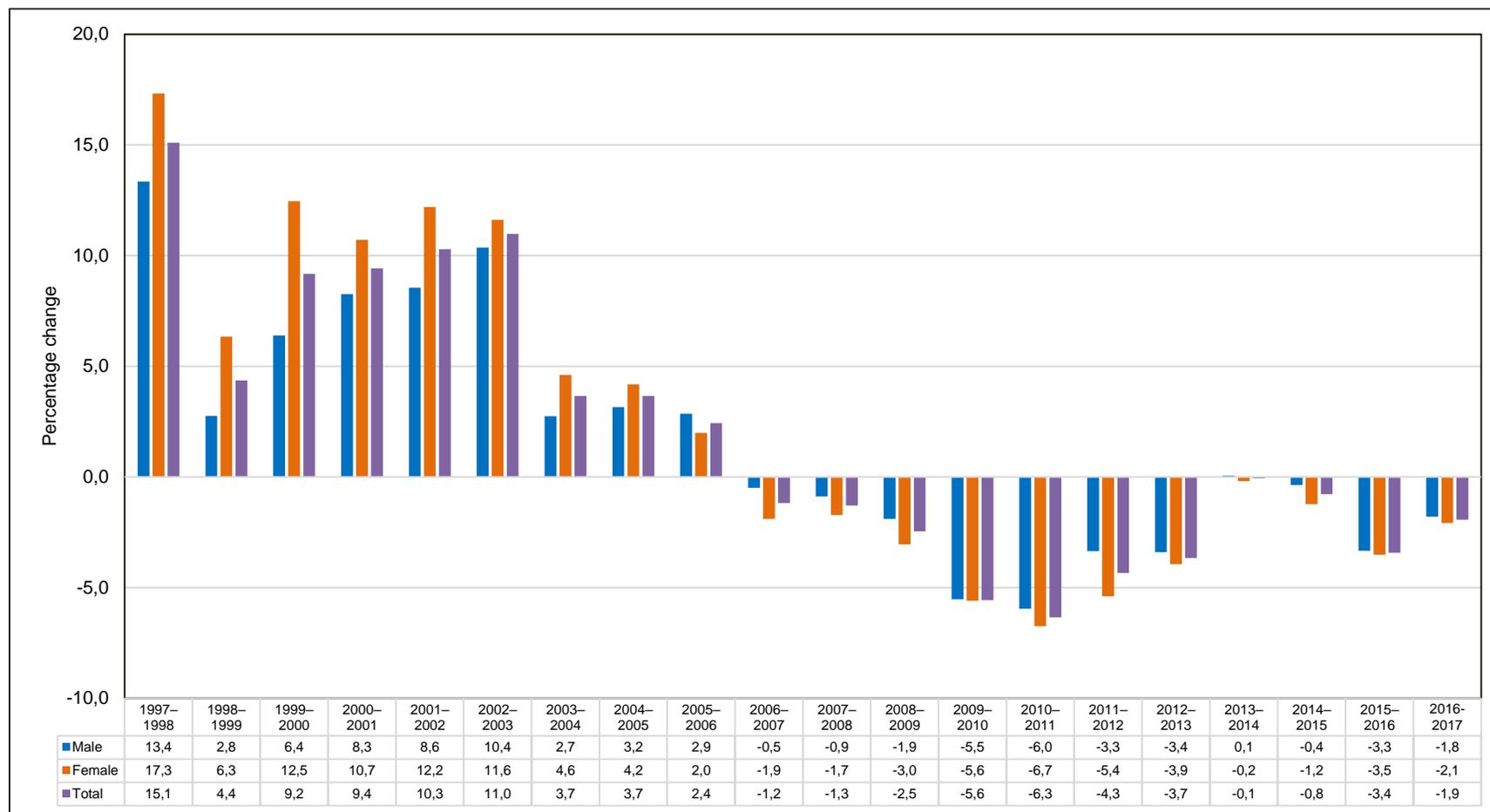
*Data for 2012–2014 have been updated with late registrations/delayed death notification forms processed in 2018/2019.

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

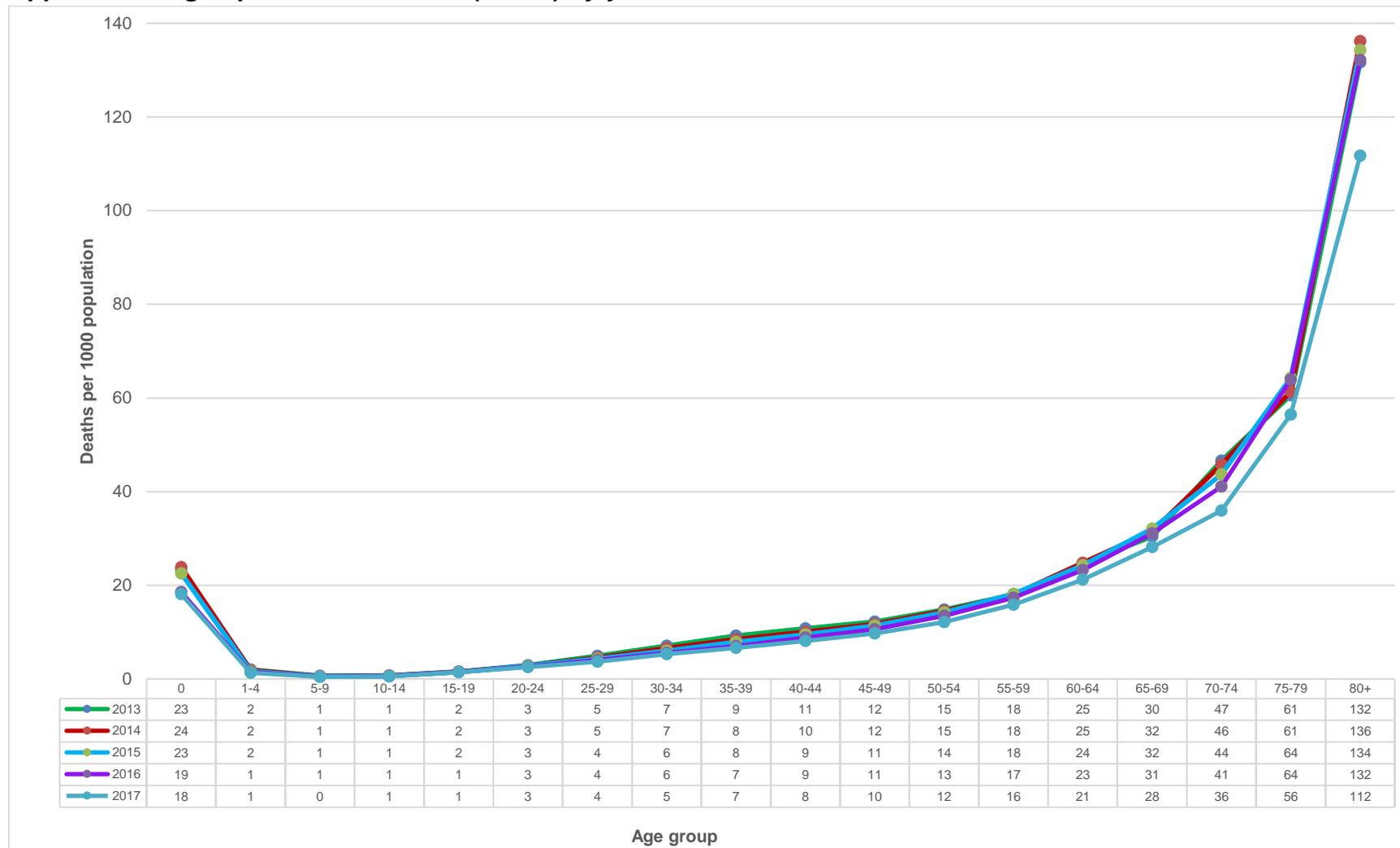
Age group	2015				2016				2017			
	Male	Female	Unsp.	Total	Male	Female	Unsp.	Total	Male	Female	Unsp.	Total
0	13 048	11 451	597	25 096	11 632	9 795	410	21 837	10 468	9 016	65	19 549
1–4	4 238	3 659	43	7 940	3 794	3 386	41	7 221	3 191	2 852	8	6 051
5–9	1 827	1 373	10	3 210	1 726	1 333	6	3 065	1 511	1 106	0	2 617
10–14	1 765	1 409	9	3 183	1 824	1 335	4	3 163	1 661	1 239	0	2 900
15–19	4 164	2 904	14	7 082	4 155	2 858	21	7 034	3 866	2 705	1	6 572
20–24	8 584	5 854	83	14 521	8 585	5 544	61	14 190	8 170	4 903	2	13 075
25–29	13 400	10 164	135	23 699	13 345	9 502	121	22 968	12 655	8 175	4	20 834
30–34	16 740	12 784	181	29 705	17 251	12 097	154	29 502	16 208	11 402	10	27 620
35–39	17 607	12 514	158	30 279	17 079	11 849	155	29 083	16 207	11 273	4	27 484
40–44	18 081	12 359	133	30 573	17 779	12 192	123	30 094	16 562	11 447	2	28 011
45–49	17 589	12 372	98	30 059	17 382	11 939	90	29 411	16 349	11 608	5	27 962
50–54	19 309	13 391	72	32 772	18 949	13 407	55	32 411	17 700	12 544	2	30 246
55–59	20 436	14 321	57	34 814	20 299	14 411	66	34 776	19 270	14 103	3	33 376
60–64	21 271	15 628	41	36 940	21 221	16 030	51	37 302	20 473	15 665	3	36 141
65–69	19 436	16 031	27	35 494	19 960	16 508	32	36 500	19 795	16 400	1	36 196
70–74	16 282	16 034	20	32 336	16 144	15 979	34	32 157	15 840	15 523	1	31 364
75–79	13 737	18 019	16	31 772	14 700	18 268	20	32 988	14 256	17 655	1	31 912
80–84	9 390	16 396	17	25 803	9 527	16 448	12	25 987	9 391	15 749	1	25 141
85–89	6 688	14 185	9	20 882	6 920	14 868	19	21 807	6 538	14 190	0	20 728
90+	4 368	12 091	13	16 472	4 636	12 767	15	17 418	4 681	12 741	1	17 423
Unspecified	845	235	463	1 543	913	248	321	1 482	905	211	226	1 342
Total	248 805	223 174	2 196	474 175	247 821	220 764	1 811	470 396	235 697	210 507	340	446 544

*Data for 2012–2014 have been updated with late registrations/delayed death notification forms processed in 2018/2019.

Appendix E: Year-to-year percentage changes in number of deaths by sex, 1997–2017*

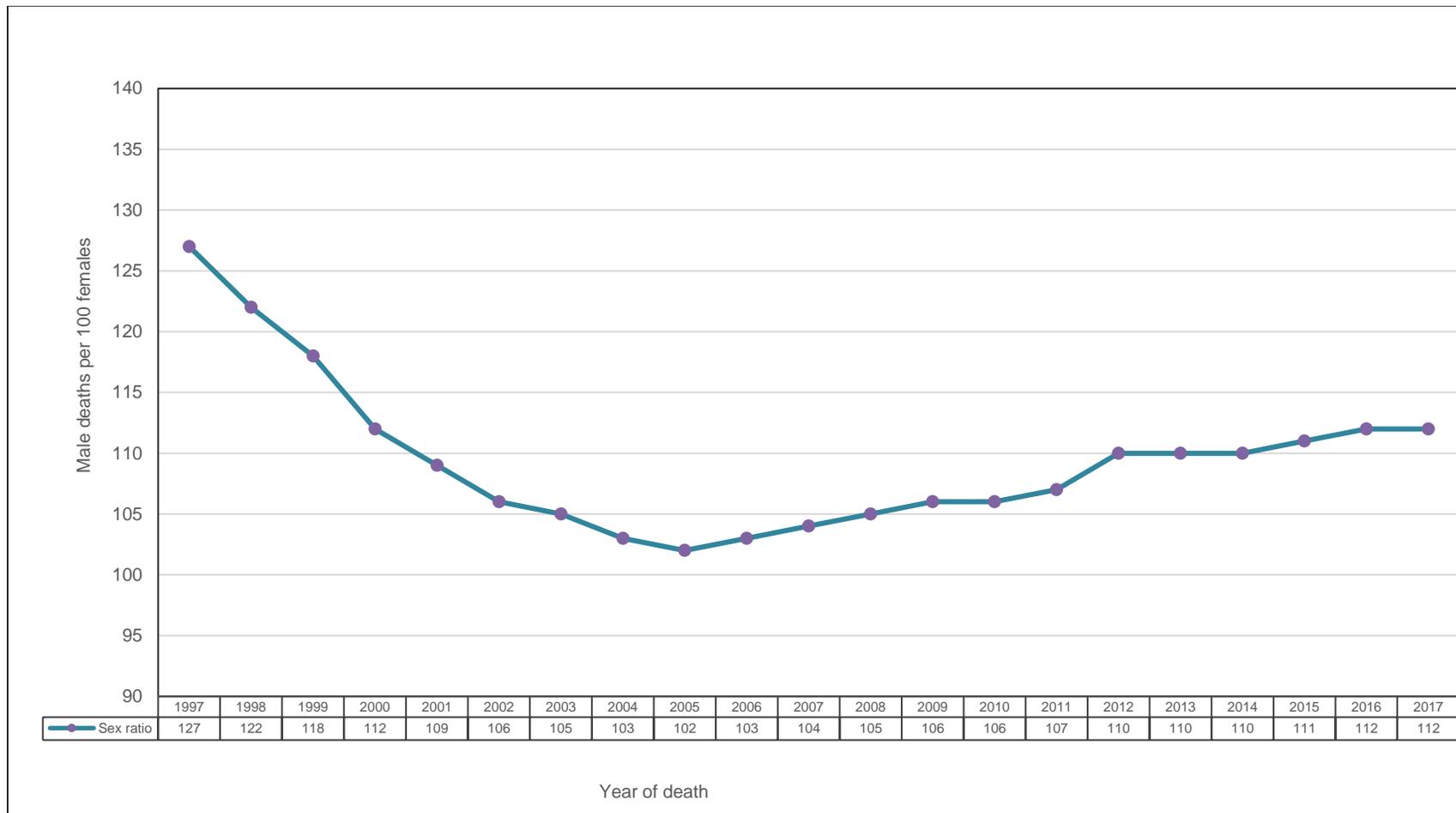


Appendix F: Age-specific death rates (ASDR) by year of death, 2013–2017*



*Data for 2013–2016 have been updated with late registrations/delayed death notification forms processed in 2018/2019.

Appendix G: Sex ratios at death by year of death, 1997–2017



Appendix H: Number of deaths by province of death occurrence and province usual residence of the deceased, 2017

Province of death occurrence	Province of usual residence of deceased											
	Western Cape	Eastern Cape	Northern Cape	Free State	Kwa-Zulu Natal	North West	Gauteng	Mpumalanga	Limpopo	Foreign	Unspecified	Total
Western Cape	43 539	720	131	73	270	57	229	54	121		521	45 715
Eastern Cape	596	61 971	300	170	872	82	494	269	97		311	65 162
Northern Cape	169	88	11 623	66	34	288	55	212	49		54	12 638
Free State	63	247	205	29 150	94	214	681	58	120		376	31 208
KwaZulu-Natal	206	1 302	69	137	72 745	108	728	415	129		766	76 605
North West	54	101	197	236	56	29 953	1 281	122	205		268	32 473
Gauteng	468	474	77	715	748	2 138	83 574	1 597	1 245		1 487	92 523
Mpumalanga	30	159	86	61	348	79	742	26 691	784		320	29 300
Limpopo	197	88	43	88	83	343	590	1 102	40 685		488	43 707
9996	2 673	1 387	217	861	1 433	646	4 634	2 685	2 124		553	17 213
Total	47 995	66 537	12 948	31 557	76 683	33 908	93 008	33 205	45 559		51 44	446 544

Appendix H1: Percentage distribution of deaths by province of death occurrence and province of usual residence of deceased, 2017

Province of death occurrence	Province of usual residence of deceased											
	Western Cape	Eastern Cape	Northern Cape	Free State	KwaZulu-Natal	North West	Gauteng	Mpumalanga	Limpopo	Foreign	Unspecified	Total
Western Cape	95,2	1,6	0,3	0,2	0,6	0,1	0,5	0,1	0,3		1,1	100
Eastern Cape	0,9	95,1	0,5	0,3	1,3	0,1	0,8	0,4	0,1		0,5	100
Northern Cape	1,3	0,7	92	0,5	0,3	2,3	0,4	1,7	0,4		0,4	100
Free State	0,2	0,8	0,7	93,4	0,3	0,7	2,2	0,2	0,4		1,2	100
KwaZulu-Natal	0,3	1,7	0,1	0,2	95	0,1	1	0,5	0,2		1	100
North West	0,2	0,3	0,6	0,7	0,2	92,2	3,9	0,4	0,6		0,8	100
Gauteng	0,5	0,5	0,1	0,8	0,8	2,3	90,3	1,7	1,3		1,6	100
Mpumalanga	0,1	0,5	0,3	0,2	1,2	0,3	2,5	91,1	2,7		1,1	100
Limpopo	0,5	0,2	0,1	0,2	0,2	0,8	1,3	2,5	93,1		1,1	100
Unspecified	15,5	8,1	1,3	5	8,3	3,8	26,9	15,6	12,3		3,2	100

Appendix I: Number of deaths by age, province and district municipality of death occurrence, 2017

Province of death occurrence	District municipality of death occurrence	Age						
		0	1–14	15–44	45–64	65+	Unsp.	Total
Western Cape	Cape Winelands	183	74	1 406	2 053	2 348	6	6 070
	Central Karoo	31	14	174	295	271	1	786
	City of Cape Town	1 016	424	7 074	8 136	11 734	68	28 452
	Eden	142	59	961	1 569	2 154	2	4 887
	Overberg	51	29	427	597	1 014	2	2 120
	West Coast	90	41	734	1 154	1 375	6	3 400
	Unspecified	145	49	758	773	1 083	4	2 812
	Total	1 658	690	11 534	14 577	19 979	89	48 527
Eastern Cape	Alfred Nzo	191	232	1 868	1 698	2 666	17	6 672
	Amathole	122	159	1 877	1 999	3 348	7	7 512
	Buffalo City	223	163	2 245	2 602	3 011	7	8 251
	Chris Hani	228	184	2 408	2 574	3 402	11	8 807
	Joe Gqabi	95	88	895	942	1 294	6	3 320
	Nelson Mandela Bay	251	191	3 388	3 964	4 657	16	12 467
	O.R.Tambo	297	543	4 602	3 427	4 793	8	13 670
	Sarah Baartman	110	62	1 073	1 479	1 736	3	4 463
	Unspecified	31	21	314	356	477	1	1 200
Total	1 548	1 643	18 670	19 041	25 384	76	66 362	
Northern Cape	Frances Baard	189	105	1 079	1 332	1 319	3	4 027
	John Taolo Gaetsewe	179	71	660	655	644	4	2 213
	Namakwa	52	19	300	468	594	2	1 435
	Pixley ka Seme	137	68	648	829	753	2	2 437
	Z F Mgcawu	137	51	762	806	768	2	2 526
	Unspecified	12	3	48	68	62	0	193
	Total	706	317	3 497	4 158	4 140	13	12 831
Free State	Fezile Dabi	231	114	1 286	1 555	1 857	10	5 053
	Lejweleputswa	428	187	1 993	2 175	2 127	32	6 942
	Mangaung	444	232	2 615	2 979	3 506	16	9 792
	Thabo Mofutsanyane	462	177	2 212	2 440	2 776	28	8 095
	Xhariep	43	26	367	458	432	0	1 326
	Unspecified	69	27	212	258	243	3	812
	Total	1 677	763	8 685	9 865	10 941	89	32 020
KwaZulu-Natal	Amajuba	211	105	1 251	1 139	1 396	2	4 104
	Harry Gwala	118	119	1 185	994	1 441	5	3 862
	Ugu	291	257	2 434	2 208	3 220	8	8 418
	Zululand	279	214	1 711	1 249	1 758	9	5 220
	eThekweni	782	405	6 062	5 563	7 019	79	19 910
	iLembe	156	117	1 308	1 023	1 338	13	3 955
	uMgungundlovu	328	236	2 928	2 757	3 710	7	9 966
	uMkhanyakude	125	115	1 007	802	1 145	1	3 195
	uMzinyathi	238	188	1 448	1 299	1 867	9	5 049
	uThukela	280	214	1 819	1 537	2 012	15	5 877
	uThungulu	196	223	2 196	1 916	2 496	22	7 049
	Unspecified	52	24	385	382	540	7	1 390
Total	3 056	2 217	23 734	20 869	27 942	177	77 995	

Appendix I: Number of deaths by age, province and district municipality of death occurrence, 2017* (concluded)

Province of death occurrence	District municipality of death occurrence	Age						Total
		0	1–14	15–44	45–64	65+	Unsp.	
North West	Bojanala	662	276	2 915	3 071	3 791	41	10 756
	Dr Kenneth Kaunda	378	159	2 111	2 466	2 647	3	7 764
	Dr Ruth Segomotsi Mompati	340	186	1 337	1 457	1 727	6	5 053
	Ngaka Modiri Molema	606	292	2 441	2 628	2 926	7	8 900
	Unspecified	29	18	170	150	180	5	552
	Total	2 015	931	8 974	9 772	11 271	62	33 025
Gauteng	City of Johannesburg	1 472	676	7 840	7 781	9 297	302	27 368
	City of Tshwane	1 210	648	6 177	7 264	9 991	54	25 344
	Ekurhuleni	1 263	506	6 337	6 370	7 284	107	21 867
	Sedibeng	462	230	2 964	3 441	4 244	54	11 395
	West Rand	325	140	1 953	1 991	2 096	44	6 549
	Unspecified	291	107	1 438	1 347	1 645	35	4 863
	Total	5 023	2 307	26 709	28 194	34 557	596	97 386
Mpumalanga	Ehlanzeni	428	435	3 928	3 269	3 796	49	11 905
	Gert Sibande	481	239	2 697	2 346	2 426	19	8 208
	Nkangala	406	256	2 651	2 719	3 135	20	9 187
	Unspecified	121	68	898	810	827	18	2 742
	Total	1 436	998	10 174	9 144	10 184	106	32 042
Limpopo	Capricorn	739	457	3 057	3 189	4 754	10	12 206
	Greater Sekhukhune	368	330	2 091	2 214	3 621	8	8 632
	Mopani	516	353	2 237	2 379	3 457	19	8 961
	Vhembe	391	293	1 835	1 994	3 405	13	7 931
	Waterberg	310	200	1 726	1 561	2 176	4	5 977
	Unspecified	99	65	545	611	759	7	2 086
	Total	2 423	1 698	11 491	11 948	18 172	61	45 793
Foreign	Foreign	0	0	0	0	0	0	0

Appendix I1: Percentage distribution of deaths by age, province and district municipality of death occurrence, 2017

Province of death occurrence	District municipality of death occurrence	Age						Total
		0	1–14	15–44	45–64	65+	Unsp.	
Western Cape	Cape Winelands	3,0	1,2	23,2	33,8	38,7	0,1	100,0
	Central Karoo	3,9	1,8	22,1	37,5	34,5	0,1	100,0
	City of Cape Town	3,6	1,5	24,9	28,6	41,2	0,2	100,0
	Eden	2,9	1,2	19,7	32,1	44,1	0,0	100,0
	Overberg	2,4	1,4	20,1	28,2	47,8	0,1	100,0
	West Coast	2,6	1,2	21,6	33,9	40,4	0,2	100,0
	Unspecified	5,2	1,7	27,0	27,5	38,5	0,1	100,0
	Total	3,4	1,4	23,8	30,0	41,2	0,2	100,0
Eastern Cape	Alfred Nzo	2,9	3,5	28,0	25,4	40,0	0,3	100,0
	Amathole	1,6	2,1	25,0	26,6	44,6	0,1	100,0
	Buffalo City	2,7	2,0	27,2	31,5	36,5	0,1	100,0
	Chris Hani	2,6	2,1	27,3	29,2	38,6	0,1	100,0
	Joe Gqabi	2,9	2,7	27,0	28,4	39,0	0,2	100,0
	Nelson Mandela Bay	2,0	1,5	27,2	31,8	37,4	0,1	100,0
	O.R.Tambo	2,2	4,0	33,7	25,1	35,1	0,1	100,0
	Sarah Baartman	2,5	1,4	24,0	33,1	38,9	0,1	100,0
	Unspecified	2,6	1,8	26,2	29,7	39,8	0,1	100,0
	Total	2,3	2,5	28,1	28,7	38,3	0,1	100,0
Northern Cape	Frances Baard	4,7	2,6	26,8	33,1	32,8	0,1	100,0
	John Taolo Gaetsewe	8,1	3,2	29,8	29,6	29,1	0,2	100,0
	Namakwa	3,6	1,3	20,9	32,6	41,4	0,1	100,0
	Pixley ka Seme	5,6	2,8	26,6	34,0	30,9	0,1	100,0
	Z F Mgcawu	5,4	2,0	30,2	31,9	30,4	0,1	100,0
	Unspecified	6,2	1,6	24,9	35,2	32,1	0,0	100,0
	Total	5,5	2,5	27,3	32,4	32,3	0,1	100,0
Free State	Fezile Dabi	4,6	2,3	25,5	30,8	36,8	0,2	100,0
	Lejweleputswa	6,2	2,7	28,7	31,3	30,6	0,5	100,0
	Mangaung	4,5	2,4	26,7	30,4	35,8	0,2	100,0
	Thabo Mofutsanyane	5,7	2,2	27,3	30,1	34,3	0,3	100,0
	Xhariep	3,2	2,0	27,7	34,5	32,6	.	100,0
	Unspecified	8,5	3,3	26,1	31,8	29,9	0,4	100,0
	Total	5,2	2,4	27,1	30,8	34,2	0,3	100,0
KwaZulu-Natal	Amajuba	5,1	2,6	30,5	27,8	34,0	0,0	100,0
	Harry Gwala	3,1	3,1	30,7	25,7	37,3	0,1	100,0
	Ugu	3,5	3,1	28,9	26,2	38,3	0,1	100,0
	Zululand	5,3	4,1	32,8	23,9	33,7	0,2	100,0
	eThekwini	3,9	2,0	30,4	27,9	35,3	0,4	100,0
	iLembe	3,9	3,0	33,1	25,9	33,8	0,3	100,0
	uMgungundlovu	3,3	2,4	29,4	27,7	37,2	0,1	100,0
	uMkhanyakude	3,9	3,6	31,5	25,1	35,8	0,0	100,0
	uMzinyathi	4,7	3,7	28,7	25,7	37,0	0,2	100,0
	uThukela	4,8	3,6	31,0	26,2	34,2	0,3	100,0
	uThungulu	2,8	3,2	31,2	27,2	35,4	0,3	100,0
	Unspecified	3,7	1,7	27,7	27,5	38,8	0,5	100,0
	Total	3,9	2,8	30,4	26,8	35,8	0,2	100,0

Appendix I1: Percentage distribution of deaths by age, province and district municipality of death occurrence, 2017* (concluded)

Province of death occurrence	District municipality of death occurrence	Age						Total
		0	1–14	15–44	45–64	65+	Unsp.	
North West	Bojanala	6,2	2,6	27,1	28,6	35,2	0,4	100,0
	Dr Kenneth Kaunda	4,9	2,0	27,2	31,8	34,1	0,0	100,0
	Dr Ruth Segomotsi Mompati	6,7	3,7	26,5	28,8	34,2	0,1	100,0
	Ngaka Modiri Molema	6,8	3,3	27,4	29,5	32,9	0,1	100,0
	Unspecified	5,3	3,3	30,8	27,2	32,6	0,9	100,0
	Total	6,1	2,8	27,2	29,6	34,1	0,2	100,0
Gauteng	City of Johannesburg	5,4	2,5	28,6	28,4	34,0	1,1	100,0
	City of Tshwane	4,8	2,6	24,4	28,7	39,4	0,2	100,0
	Ekurhuleni	5,8	2,3	29,0	29,1	33,3	0,5	100,0
	Sedibeng	4,1	2,0	26,0	30,2	37,2	0,5	100,0
	West Rand	5,0	2,1	29,8	30,4	32,0	0,7	100,0
	Unspecified	6,0	2,2	29,6	27,7	33,8	0,7	100,0
	Total	5,2	2,4	27,4	29,0	35,5	0,6	100,0
Mpumalanga	Ehlanzeni	3,6	3,7	33,0	27,5	31,9	0,4	100,0
	Gert Sibande	5,9	2,9	32,9	28,6	29,6	0,2	100,0
	Nkangala	4,4	2,8	28,9	29,6	34,1	0,2	100,0
	Unspecified	4,4	2,5	32,7	29,5	30,2	0,7	100,0
	Total	4,5	3,1	31,8	28,5	31,8	0,3	100,0
Limpopo	Capricorn	6,1	3,7	25,0	26,1	38,9	0,1	100,0
	Greater Sekhukhune	4,3	3,8	24,2	25,6	41,9	0,1	100,0
	Mopani	5,8	3,9	25,0	26,5	38,6	0,2	100,0
	Vhembe	4,9	3,7	23,1	25,1	42,9	0,2	100,0
	Waterberg	5,2	3,3	28,9	26,1	36,4	0,1	100,0
	Unspecified	4,7	3,1	26,1	29,3	36,4	0,3	100,0
	Total	5,3	3,7	25,1	26,1	39,7	0,1	100,0
Foreign	Foreign	0	0	0	0	0	0	

Appendix J: Number of deaths by sex, province and district municipality of death occurrence, 2017*

Province of death occurrence	District municipality of death occurrence	Sex of the deceased				Sex ratio at death**
		Male	Female	Unspecified	Total	
Western Cape	Cape Winelands	3 344	2 726	0	6 070	123
	Central Karoo	406	380	0	786	107
	City of Cape Town	15 594	12 854	4	28 452	121
	Eden	2 658	2 228	1	4 887	119
	Overberg	1 220	900	0	2 120	136
	West Coast	1 892	1 505	3	3 400	126
	Unspecified	1 470	1 341	1	2 812	110
	Total	26 584	21 934	9	48 527	121
Eastern Cape	Amathole	3 970	3 540	2	7 512	112
	Buffalo City	4 376	3 875	0	8 251	113
	Chris Hani	4 772	4 034	1	8 807	118
	Joe Gqabi	1 779	1 540	1	3 320	116
	Nelson Mandela Bay	6 491	5 969	7	12 467	109
	O.R.Tambo	7 200	6 467	3	13 670	111
	Sarah Baartman	2 407	2 054	2	4 463	117
	Unspecified	642	558	0	1 200	115
	Total	31 637	28 037	16	59 690	113
Northern Cape	Frances Baard	2 152	1 873	2	4 027	115
	John Taolo Gaetsewe	1 205	1 008	0	2 213	120
	Namakwa	774	661	0	1 435	117
	Pixley ka Seme	1 293	1 143	1	2 437	113
	Z F Mgcawu	1 391	1 135	0	2 526	123
	Unspecified	98	95	0	193	103
	Total	6 913	5 915	3	12 831	117
Free State	Fezile Dabi	2 669	2 382	2	5 053	112
	Lejweleputswa	3 867	3 071	4	6 942	126
	Mangaung	5 198	4 592	2	9 792	113
	Thabo Mofutsanyane	4 171	3 921	3	8 095	106
	Xhariep	665	659	2	1 326	101
	Unspecified	384	427	1	812	90
	Total	16 954	15 052	14	32 020	113
KwaZulu-Natal	Amajuba	2 090	2 012	2	4 104	104
	Harry Gwala	1 958	1 903	1	3 862	103
	Ugu	4 425	3 989	4	8 418	111
	Zululand	2 643	2 577	0	5 220	103
	eThekwini	10 540	9 367	3	19 910	113
	iLembe	2 098	1 857	0	3 955	113
	uMgungundlovu	5 125	4 838	3	9 966	106
	uMkhanyakude	1 557	1 638	0	3 195	95
	uMzinyathi	2 531	2 517	1	5 049	101
	uThukela	2 974	2 898	5	5 877	103
	uThungulu	3 592	3 456	1	7 049	104
	Unspecified	686	704	0	1 390	97
	Total	40 219	37 756	20	77 995	107

Appendix J: Number of deaths by sex, province and district municipality of death occurrence, 2017* (concluded)

Province of death occurrence	District municipality of death occurrence	Sex of the deceased				Sex ratio at death**
		Male	Female	Unspecified	Total	
North West	Bojanala	5 746	5 005	5	10 756	115
	Dr Kenneth Kaunda	4 217	3 547	0	7 764	119
	Dr Ruth Segomotsi Mompati	2 699	2 352	2	5 053	115
	Ngaka Modiri Molema	4 754	4 145	1	8 900	115
	Unspecified	296	254	2	552	117
	Total		17 712	15 303	10	33 025	116
Gauteng	City of Johannesburg	14 838	12 411	119	27 368	120
	City of Tshwane	13 412	11 920	12	25 344	113
	Ekurhuleni	11 713	10 113	41	21 867	116
	Sedibeng	6 151	5 234	10	11 395	118
	West Rand	3 624	2 920	5	6 549	124
	Unspecified	2 563	2 285	15	4 863	112
Total		52 301	44 883	202	97 386	117
Mpumalanga	Ehlanzeni	6 051	5 851	3	11 905	103
	Gert Sibande	4 386	3 822	0	8 208	115
	Nkangala	4 862	4 319	6	9 187	113
	Unspecified	1 446	1 295	1	2 742	112
	Total		16 745	15 287	10	32 042	110
Limpopo	Capricorn	6 200	6 000	6	12 206	103
	Greater Sekhukhune	4 195	4 433	4	8 632	95
	Mopani	4 449	4 507	5	8 961	99
	Vhembe	3 785	4 145	1	7 931	91
	Waterberg	3 152	2 821	4	5 977	112
	Unspecified	1 075	1 010	1	2 086	106
	Total		22 856	22 916	21	45 793	100
Unspecified	Unspecified	339	193	31	563	176

*Excluding deaths with unspecified province of death occurrence.

** Male deaths per 100 female deaths.

Appendix K: All underlying causes of death, 2017

Causes of death (based on the 10th revision, International Classification of Diseases, 1992)	Number	Percentage
All causes	446 544	100,0
Ill-defined and unknown causes of mortality (R95-R99)	53054	11,9
Other external causes of accidental injury (W00-X59)	34325	7,7
Tuberculosis (A15-A19)	28678	6,4
Diabetes mellitus (E10-E14)	25336	5,7
Cerebrovascular diseases (I60-I69)	22259	5,0
Other forms of heart disease (I30-I52)	22098	4,9
Human immunodeficiency virus [HIV] disease (B20-B24)	21439	4,8
Hypertensive diseases (I10-I15)	19900	4,5
Influenza and pneumonia (J09-J18)	18837	4,2
Chronic lower respiratory diseases (J40-J47)	13167	2,9
Ischaemic heart diseases (I20-I25)	12766	2,9
Other viral diseases (B25-B34)	12622	2,8
Malignant neoplasms of digestive organs (C15-C26)	10503	2,4
Renal failure (N17-N19)	7825	1,8
Assault (X85-Y09)	7688	1,7
Certain disorders involving the immune mechanism (D80-D89)	7429	1,7
Intestinal infectious diseases (A00-A09)	6659	1,5
Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	6389	1,4
Transport accidents (V01-V99)	5890	1,3
Malignant neoplasms of female genital organs (C51-C58)	5658	1,3
Other bacterial diseases (A30-A49)	5431	1,2
General symptoms and signs (R50-R69)	4529	1,0
Other acute lower respiratory infections (J20-J22)	4137	0,9
Malignant neoplasms of ill-defined, secondary and unspecified sites (C76-C80)	3921	0,9
Diseases of liver (K70-K77)	3853	0,9
Malignant neoplasms of breast (C50)	3612	0,8
Malignant neoplasms of male genital organs (C60-C63)	3498	0,8
Episodic and paroxysmal disorders (G40-G47)	3433	0,8
Malignant neoplasms, stated or presumed to be primary, of lymphoid, haematopoietic and related tissue (C81-C96)	3257	0,7
Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	3174	0,7
Metabolic disorders (E70-E90)	3126	0,7
Other diseases of the respiratory system (J95-J99)	2962	0,7
Pulmonary heart disease and diseases of pulmonary circulation (I26-I28)	2415	0,5
Aplastic and other anaemias (D60-D64)	2328	0,5
Inflammatory diseases of the central nervous system (G00-G09)	2289	0,5
Diseases of oesophagus, stomach and duodenum (K20-K31)	2083	0,5
Other diseases of intestines (K55-K64)	1687	0,4
Symptoms and signs involving the circulatory and respiratory systems (R00-R09)	1677	0,4
Event of undetermined intent (Y10-Y34)	1675	0,4
Organic, including symptomatic, mental disorders (F00-F09)	1596	0,4
Other respiratory diseases principally affecting the interstitium (J80-J84)	1543	0,3

Appendix K: All underlying causes of death, 2017 (continued)

Causes of death (based on the 10th revision, International Classification of Diseases, 1992)	Number	Percentage
All causes	446 544	100,0
Diseases of arteries, arterioles and capillaries (I70-I79)	1362	0,3
Protozoal diseases (B50-B64)	1337	0,3
Disorders related to length of gestation and fetal growth (P05-P08)	1280	0,3
Malignant neoplasms of lip, oral cavity and pharynx (C00-C14)	1167	0,3
Other disorders originating in the perinatal period (P90-P96)	1167	0,3
Other diseases of the digestive system (K90-K93)	1149	0,3
Malnutrition (E40-E46)	1145	0,3
Neoplasms of uncertain or unknown behaviour (D37-D48)	1138	0,3
Infections specific to the perinatal period (P35-P39)	1134	0,3
Complications of medical and surgical care (Y40-Y84)	1126	0,3
Disorders of gallbladder, biliary tract and pancreas (K80-K87)	1094	0,2
Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	1086	0,2
Malignant neoplasms of urinary tract (C64-C68)	1044	0,2
Noninfective enteritis and colitis (K50-K52)	1022	0,2
Sequelae of infectious and parasitic diseases (B90-B94)	1011	0,2
Malignant neoplasms of mesothelial and soft tissue (C45-C49)	985	0,2
Other disorders of the nervous system (G90-G99)	926	0,2
Other degenerative diseases of the nervous system (G30-G32)	920	0,2
Other disorders of the skin and subcutaneous tissue (L80-L99)	870	0,2
Cerebral palsy and other paralytic syndromes (G80-G83)	862	0,2
Other disorders of glucose regulation and pancreatic internal secretion (E15-E16)	851	0,2
Malignant neoplasms of skin (C43-C44)	796	0,2
Arthropathies (M00-M25)	761	0,2
Congenital malformations of the circulatory system (Q20-Q28)	751	0,2
Lung diseases due to external agents (J60-J70)	705	0,2
Diseases of veins, lymphatic vessels and lymph nodes, not elsewhere classified (I80-I89)	693	0,2
Mycoses (B35-B49)	634	0,1
Malignant neoplasms of eye, brain and other parts of central nervous system (C69-C72)	624	0,1
Mental and behavioural disorders due to psychoactive substance use (F10-F19)	623	0,1
Systemic connective tissue disorders (M30-M36)	529	0,1
Extrapyramidal and movement disorders (G20-G26)	466	0,1
Other congenital malformations (Q80-Q89)	464	0,1
Coagulation defects, purpura and other haemorrhagic conditions (D65-D69)	431	0,1
Symptoms and signs involving the digestive system and abdomen (R10-R19)	430	0,1
Viral hepatitis (B15-B19)	410	0,1
Other diseases of urinary system (N30-N39)	407	0,1
Chromosomal abnormalities, not elsewhere classified (Q90-Q99)	388	0,1
Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	372	0,1
Disorders of thyroid gland (E00-E07)	368	0,1
Obesity and other hyperalimentation (E65-E68)	367	0,1
Intentional self-harm (X60-X84)	363	0,1

Appendix K: All underlying causes of death, 2017 (continued)

Causes of death (based on the 10th revision, International Classification of Diseases, 1992)	Number	Percentage
All causes	446 544	100,0
Infections of the skin and subcutaneous tissue (L00-L08)	359	0,1
Other diseases of pleura (J90-J94)	354	0,1
Soft tissue disorders (M60-M79)	354	0,1
Chronic rheumatic heart diseases (I05-I09)	337	0,1
Diseases of male genital organs (N40-N51)	321	0,1
Hernia (K40-K46)	296	0,1
Renal tubulo-interstitial diseases (N10-N16)	274	0,1
Digestive system disorders of fetus and newborn (P75-P78)	264	0,1
Congenital malformations of the nervous system (Q00-Q07)	256	0,1
Other disorders of kidney and ureter (N25-N29)	253	0,1
Schizophrenia, schizotypal and delusional disorders (F20-F29)	245	0,1
Malignant neoplasms of thyroid and other endocrine glands (C73-C75)	227	0,1
Systemic atrophies primarily affecting the central nervous system (G10-G14)	219	0,0
Other congenital malformations of the digestive system (Q38-Q45)	208	0,0
Suppurative and necrotic conditions of lower respiratory tract (J85-J86)	207	0,0
Diseases of peritoneum (K65-K67)	195	0,0
Benign neoplasms (D10-D36)	192	0,0
Acute upper respiratory infections (J00-J06)	191	0,0
Glomerular diseases (N00-N08)	183	0,0
Oedema, proteinuria and hypertensive disorders in pregnancy, childbirth and the puerperium (O10-O16)	179	0,0
Other obstetric conditions, not elsewhere classified (O94-O99)	177	0,0
Other and unspecified disorders of the circulatory system (I95-I99)	155	0,0
Diseases of appendix (K35-K38)	155	0,0
Non-inflammatory disorders of female genital tract (N80-N98)	139	0,0
Congenital malformations and deformations of the musculoskeletal system (Q65-Q79)	139	0,0
Demyelinating diseases of the central nervous system (G35-G37)	107	0,0
Polyneuropathies and other disorders of the peripheral nervous system (G60-G64)	107	0,0
Disorders of other endocrine glands (E20-E35)	99	0,0
Other diseases of upper respiratory tract (J30-J39)	99	0,0
Sequelae of external causes of morbidity and mortality (Y85-Y89)	97	0,0
Pregnancy with abortive outcome (O00-O08)	96	0,0
Complications of labour and delivery (O60-O75)	95	0,0
Diseases of myoneural junction and muscle (G70-G73)	92	0,0
Conditions involving the integument and temperature regulation of fetus and newborn (P80-P83)	91	0,0
Malignant neoplasms of bone and articular cartilage (C40-C41)	90	0,0
Viral infections characterized by skin and mucous membrane lesions (B00-B09)	87	0,0
Viral infections of the central nervous system (A80-A89)	84	0,0
Osteopathies and chondropathies (M80-M94)	83	0,0
Congenital malformations of the urinary system (Q60-Q64)	79	0,0
Dorsopathies (M40-M54)	73	0,0
Congenital malformations of the respiratory system (Q30-Q34)	72	0,0

Appendix K: All underlying causes of death, 2017 (continued)

Causes of death (based on the 10th revision, International Classification of Diseases, 1992)	Number	Percentage
All causes	446 544	100,0
Other nutritional deficiencies (E50-E64)	70	0,0
Urticaria and erythema (L50-L54)	70	0,0
Complications predominantly related to the puerperium (O85-O92)	67	0,0
Nutritional anaemias (D50-D53)	65	0,0
Other diseases of blood and blood-forming organs (D70-D77)	64	0,0
Diseases of oral cavity, salivary glands and jaws (K00-K14)	64	0,0
Inflammatory diseases of female pelvic organs (N70-N77)	62	0,0
Helminthiases (B65-B83)	58	0,0
Haemolytic anaemias (D55-D59)	58	0,0
Diseases of middle ear and mastoid (H65-H75)	57	0,0
Infections with a predominantly sexual mode of transmission (A50-A64)	55	0,0
Other infectious diseases (B99)	45	0,0
Unspecified mental disorder (F99)	41	0,0
Transitory endocrine and metabolic disorders specific to fetus and newborn (P70-P74)	33	0,0
Maternal care related to the fetus and amniotic cavity and possible delivery problems (O30-O48)	31	0,0
Abnormal findings on examination of blood, without diagnosis (R70-R79)	27	0,0
Other maternal disorders predominantly related to pregnancy (O20-O29)	26	0,0
Dermatitis and eczema (L20-L30)	25	0,0
Symptoms and signs involving cognition, perception, emotional state and behaviour (R40-R46)	23	0,0
Urolithiasis (N20-N23)	22	0,0
Bullous disorders (L10-L14)	21	0,0
Disorders of breast (N60-N64)	20	0,0
Mood [affective] disorders (F30-F39)	18	0,0
Birth trauma (P10-P15)	18	0,0
In situ neoplasms (D00-D09)	17	0,0
Visual disturbances and blindness (H53-H54)	17	0,0
Nerve, nerve root and plexus disorders (G50-G59)	13	0,0
Neurotic, stress-related and somatoform disorders (F40-F48)	12	0,0
Abnormal findings on diagnostic imaging and in function studies, without diagnosis (R90-R94)	10	0,0
Disorders of vitreous body and globe (H43-H45)	7	0,0
Acute rheumatic fever (I00-I02)	7	0,0
Symptoms and signs involving the skin and subcutaneous tissue (R20-R23)	7	0,0
Symptoms and signs involving speech and voice (R47-R49)	7	0,0
Symptoms and signs involving the urinary system (R30-R39)	6	0,0
Disorders of psychological development (F80-F89)	5	0,0
Disorders of eyelid, lacrimal system and orbit (H00-H06)	5	0,0
Disorders of lens (H25-H28)	5	0,0
Disorders of choroid and retina (H30-H36)	5	0,0
Cleft lip and cleft palate (Q35-Q37)	5	0,0
Rickettsioses (A75-A79)	4	0,0
Disorders of conjunctiva (H10-H13)	4	0,0

Appendix K: All underlying causes of death, 2017 (concluded)

Causes of death (based on the 10th revision, International Classification of Diseases, 1992)	Number	Percentage
All causes	446 544	100,0
Other disorders of the musculoskeletal system and connective tissue (M95-M99)	4	0,0
Pediculosis, acariasis and other infestations (B85-B89)	3	0,0
Other disorders of ear (H90-H95)	3	0,0
Congenital malformations of eye, ear, face and neck (Q10-Q18)	3	0,0
Certain zoonotic bacterial diseases (A20-A28)	2	0,0
Arthropod-borne viral fevers and viral haemorrhagic fevers (A92-A99)	2	0,0
Malignant neoplasms of independent (primary) multiple sites (C97)	2	0,0
Mental retardation (F70-F79)	2	0,0
Disorders of sclera, cornea, iris and ciliary body (H15-H22)	2	0,0
Congenital malformations of genital organs (Q50-Q56)	2	0,0
Symptoms and signs involving the nervous and musculoskeletal systems (R25-R29)	2	0,0
Other diseases caused by chlamydiae (A70-A74)	1	0,0
Glaucoma (H40-H42)	1	0,0
Diseases of inner ear (H80-H83)	1	0,0
Papulosquamous disorders (L40-L45)	1	0,0
Abnormal findings on examination of other body fluids, substances and tissues, without diagnosis (R83-R89)	1	0,0

Appendix L: Detailed description of the broad-based groups of natural causes of death which were among the ten leading causes, 2017

Causes of death (based on ICD-10 Version: 2010)		Number	Percentage
	Tuberculosis (A15-A19)		
A15	Respiratory tuberculosis, bacteriologically and histologically confirmed	4	0,0
A16	Respiratory tuberculosis, not confirmed bacteriologically or histologically (A16)	21 833	76,1
A17	Tuberculosis of nervous system (A17)	1 650	5,8
A18	Tuberculosis of other organs (A18)	1 076	3,8
A19	Miliary tuberculosis (A19)	3 098	10,8
	Drug-resistant tuberculosis		
U51	Multi-drug resistant tuberculosis (U51)	881	3,1
U52	Extensively drug-resistant tuberculosis (U52)	136	0,5
	Total	28 678	100,0
	Human immunodeficiency virus [HIV] disease (B20-B24)		
B20	Human immunodeficiency virus [HIV] disease resulting in infectious and parasitic diseases (B20)	13 746	64,1
B21	Human immunodeficiency virus [HIV] disease resulting in malignant neoplasms (B21)	707	3,3
B22	Human immunodeficiency virus [HIV] disease resulting in other specified diseases (B22)	1 155	5,4
B23	Human immunodeficiency virus [HIV] disease resulting in other conditions (B23)	3 215	15,0
B24	Unspecified human immunodeficiency virus [HIV] disease (B24)	2 616	12,2
	Total	21 439	100,0
	Other viral diseases (B25-B34)		
B25	Cytomegaloviral disease (B25)	18	0,1
B26	Mumps (B26)	2	0,0
B27	Infectious mononucleosis (B27)	2	0,0
B33	Other viral diseases, not elsewhere classified (B33)	12 523	99,2
B34	Viral infection of unspecified site (B34)	77	0,6
	Total	12 622	100,0
	Diabetes mellitus (E10-E14)		
E10	Insulin-dependent diabetes mellitus (E10)	230	0,9
E11	Non-insulin-dependent diabetes mellitus (E11)	2 085	8,2
E13	Other specified diabetes mellitus (E13)	2	0,0
E14	Unspecified diabetes mellitus (E14)	23 019	90,9
	Total	25 336	100,0

Appendix L: Detailed description of the broad-based groups of natural causes of death which were among the ten leading causes, 2017 (continued)

Causes of death (based on ICD-10: Version 2010)		Number	Percentage
	Hypertensive disease (I10-I15)		
I10	Essential (primary) hypertension (I10)	10 570	53,1
I11	Hypertensive heart disease (I11)	6 820	34,3
I12	Hypertensive renal disease (I12)	2 007	10,1
I13	Hypertensive heart and renal disease (I13)	503	2,5
	Total	19 900	100,0
	Ischaemic heart diseases (I20-I25)		
I20	Angina pectoris (I20)	99	0,8
I21	Acute myocardial infarction (I21)	9 698	76,0
I24	Other acute ischaemic heart diseases (I24)	67	0,5
I25	Chronic ischaemic heart disease (I25)	2 902	22,7
	Total	12 766	100,0
	Other forms of heart disease (I30-I52)		
I30	Acute pericarditis (I30)	5	0,0
I31	Other diseases of pericardium (I31)	113	0,5
I33	Acute and subacute endocarditis (I33)	93	0,4
I34	Non-rheumatic mitral valve disorders (I34)	83	0,4
I35	Non-rheumatic aortic valve disorders (I35)	253	1,1
I36	Non-rheumatic tricuspid valve disorders (I36)	1	0,0
I38	Endocarditis, valve unspecified (I38)	238	1,1
I40	Acute myocarditis (I40)	20	0,1
I42	Cardiomyopathy (I42)	2 914	13,2
I44	Atrioventricular and left bundle-branch block (I44)	36	0,2
I45	Other conduction disorders (I45)	36	0,2
I46	Cardiac arrest (I46)	5 850	26,5
I47	Paroxysmal tachycardia (I47)	26	0,1
I48	Atrial fibrillation and flutter (I48)	584	2,6
I49	Other cardiac arrhythmias (I49)	249	1,1
I50	Heart failure (I50)	10 491	47,5
I51	Complications and ill-defined descriptions of heart disease (I51)	1 106	5,0
	Total	22 098	100,0
	Cerebrovascular disease (I60-I69)		
I60	Subarachnoid haemorrhage (I60)	480	2,2
I61	Intracerebral haemorrhage (I61)	1 680	7,5
I62	Other non-traumatic intracranial haemorrhage (I62)	980	4,4
I63	Cerebral infarction (I63)	582	2,6
I64	Stroke, not specified as haemorrhage or infection (I64)	17 544	78,8
I67	Other cerebrovascular diseases (I67)	620	2,8
I69	Sequelae of cerebrovascular disease (I69)	373	1,7
	Total	22 259	100,0

Appendix L: Detailed description of the broad-based groups of natural causes of death which were among the ten leading causes, 2017 (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)	279	2,1
J42	Unspecified chronic bronchitis (J42)	232	1,8
J43	Emphysema (J43)	793	6,0
J44	Other chronic obstructive pulmonary disease (J44)	8 174	62,1
J45	Asthma (J45)	2 815	21,4
J46	Status asthmaticus (J46)	681	5,2
J47	Bronchiectasis (J47)	193	1,5
	Total	13 167	100,0
	Influenza and pneumonia (J09-J18)		
J09	Influenza due to certain identified influenza virus (J09)	1	0,0
J10	Influenza due to other identified influenza virus (J10)	3	0,0
J11	Influenza, virus not identified (J11)	341	1,8
J12	Viral pneumonia, not elsewhere classified (J12)	16	0,1
J13	Pneumonia due to Streptococcus pneumoniae (J13)	6	0,0
J15	Bacterial pneumonia, not elsewhere classified (J15)	112	0,6
J18	Pneumonia, organism unspecified (J18)	18 358	97,5
	Total	18 837	100,0

Appendix M: The ten leading underlying natural causes of death by age and sex: South Africa, 2017

South Africa, all ages			South Africa, males, all ages			South Africa, females, all ages					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	28678	6,4	1	Tuberculosis (A15-A19)	17840	7,6	1	Diabetes mellitus (E10-E14)	15343	7,3
2	Diabetes mellitus (E10-E14)	25336	5,7	2	Human immunodeficiency virus [HIV] disease (B20-B24)	11044	4,7	2	Cerebrovascular diseases (I60-I69)	12614	6,0
3	Cerebrovascular diseases (I60-I69)	22259	5,0	3	Other forms of heart disease (I30-I52)	10422	4,4	3	Hypertensive diseases (I10-I15)	12175	5,8
4	Other forms of heart disease (I30-I52)	22098	4,9	4	Diabetes mellitus (E10-E14)	9993	4,2	4	Other forms of heart disease (I30-I52)	11671	5,5
5	Human immunodeficiency virus [HIV] disease (B20-B24)	21439	4,8	5	Influenza and pneumonia (J09-J18)	9746	4,1	5	Tuberculosis (A15-A19)	10820	5,1
6	Hypertensive diseases (I10-I15)	19900	4,5	6	Cerebrovascular diseases (I60-I69)	9643	4,1	6	Human immunodeficiency virus [HIV] disease (B20-B24)	10392	4,9
7	Influenza and pneumonia (J09-J18)	18837	4,2	7	Chronic lower respiratory diseases (J40-J47)	7991	3,4	7	Influenza and pneumonia (J09-J18)	9072	4,3
8	Chronic lower respiratory diseases (J40-J47)	13167	2,9	8	Hypertensive diseases (I10-I15)	7725	3,3	8	Other viral diseases (B25-B34)	6462	3,1
9	Ischaemic heart diseases (I20-I25)	12766	2,9	9	Ischaemic heart diseases (I20-I25)	7182	3,0	9	Malignant neoplasms of female genital organs (C51-C58)	5653	2,7
10	Other viral diseases (B25-B34)	12622	2,8	10	Other viral diseases (B25-B34)	6156	2,6	10	Ischaemic heart diseases (I20-I25)	5579	2,7
	Other Natural	198278	44,4		Other Natural	98362	41,7		Other Natural	99296	47,2
	Non-natural	51164	11,5		Non-natural	39593	16,8		Non-natural	11430	5,4
	All causes	446544	100,0		All causes	235697	100,0		All causes	210507	100,0
South Africa, 0			South Africa, males, 0			South Africa, females, 0					
	No.	%		No.	%		No.	%			
1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	3165	16,2	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	1740	16,6	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	1417	15,7
2	Influenza and pneumonia (J09-J18)	1518	7,8	2	Influenza and pneumonia (J09-J18)	788	7,5	2	Influenza and pneumonia (J09-J18)	726	8,1
3	Disorders related to length of gestation and fetal growth (P05-P08)	1270	6,5	3	Disorders related to length of gestation and fetal growth (P05-P08)	674	6,4	3	Disorders related to length of gestation and fetal growth (P05-P08)	590	6,5
4	Intestinal infectious diseases (A00-A09)	1186	6,1	4	Other disorders originating in the perinatal period (P90-P96)	658	6,3	4	Intestinal infectious diseases (A00-A09)	557	6,2
5	Other disorders originating in the perinatal period (P90-P96)	1156	5,9	5	Infections specific to the perinatal period (P35-P39)	642	6,1	5	Other disorders originating in the perinatal period (P90-P96)	490	5,4
6	Infections specific to the perinatal period (P35-P39)	1133	5,8	6	Intestinal infectious diseases (A00-A09)	629	6,0	6	Infections specific to the perinatal period (P35-P39)	487	5,4
7	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	1079	5,5	7	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	600	5,7	7	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	473	5,2
8	Congenital malformations of the circulatory system (Q20-Q28)	515	2,6	8	Congenital malformations of the circulatory system (Q20-Q28)	282	2,7	8	Congenital malformations of the circulatory system (Q20-Q28)	232	2,6
9	Malnutrition (E40-E46)	462	2,4	9	Malnutrition (E40-E46)	243	2,3	9	Malnutrition (E40-E46)	218	2,4
10	Other congenital malformations (Q80-Q89)	410	2,1	10	Other congenital malformations (Q80-Q89)	220	2,1	10	Other congenital malformations (Q80-Q89)	184	2,0
	Other Natural	6985	35,7		Other Natural	3635	34,7		Other Natural	3329	36,9
	Non-natural	670	3,4		Non-natural	357	3,4		Non-natural	313	3,5
	All causes	19549	100,0		All causes	10468	100,0		All causes	9016	100,0
South Africa, 1-14			South Africa, males, 1-14			South Africa, females, 1-14					
	No.	%		No.	%		No.	%			
1	Influenza and pneumonia (J09-J18)	817	7,1	1	Influenza and pneumonia (J09-J18)	406	6,4	1	Influenza and pneumonia (J09-J18)	410	7,9
2	Intestinal infectious diseases (A00-A09)	722	6,2	2	Intestinal infectious diseases (A00-A09)	357	5,6	2	Intestinal infectious diseases (A00-A09)	365	7,0
3	Tuberculosis (A15-A19)	446	3,9	3	Tuberculosis (A15-A19)	242	3,8	3	Tuberculosis (A15-A19)	204	3,9
4	Malnutrition (E40-E46)	400	3,5	4	Malnutrition (E40-E46)	206	3,2	4	Malnutrition (E40-E46)	194	3,7
5	Cerebral palsy and other paralytic syndromes (G80-G83)	280	2,4	5	Cerebral palsy and other paralytic syndromes (G80-G83)	162	2,5	5	Other forms of heart disease (I30-I52)	132	2,5
6	Human immunodeficiency virus [HIV] disease (B20-B24)	279	2,4	6	Human immunodeficiency virus [HIV] disease (B20-B24)	153	2,4	6	Human immunodeficiency virus [HIV] disease (B20-B24)	126	2,4
7	Other forms of heart disease (I30-I52)	262	2,3	7	Other forms of heart disease (I30-I52)	130	2,0	7	Cerebral palsy and other paralytic syndromes (G80-G83)	118	2,3
8	Other viral diseases (B25-B34)	229	2,0	8	Other viral diseases (B25-B34)	125	2,0	8	Other viral diseases (B25-B34)	104	2,0
9	Inflammatory diseases of the central nervous system (G00-G09)	185	1,6	9	Inflammatory diseases of the central nervous system (G00-G09)	98	1,5	9	Inflammatory diseases of the central nervous system (G00-G09)	87	1,7
10	Episodic and paroxysmal disorders (G40-G47)	175	1,5	10	Episodic and paroxysmal disorders (G40-G47)	96	1,5	10	Episodic and paroxysmal disorders (G40-G47)	79	1,5
	Other Natural	4492	38,8		Other Natural	2352	37,0		Other Natural	2135	41,1
	Non-natural	3281	28,4		Non-natural	2036	32,0		Non-natural	1243	23,9
	All causes	11568	100,0		All causes	6363	100,0		All causes	5197	100,0

Appendix M: The ten leading underlying natural causes of death by age and sex: South Africa, 2017 (concluded)

South Africa, 15–44			South Africa, males, 15–44			South Africa, females, 15–44					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	13957	11,3	1	Tuberculosis (A15-A19)	8061	10,9	1	Human immunodeficiency virus [HIV] disease (B20-B24)	6653	13,3
2	Human immunodeficiency virus [HIV] disease (B20-B24)	13081	10,6	2	Human immunodeficiency virus [HIV] disease (B20-B24)	6427	8,7	2	Tuberculosis (A15-A19)	5892	11,8
3	Other viral diseases (B25-B34)	7253	5,9	3	Other viral diseases (B25-B34)	3282	4,5	3	Other viral diseases (B25-B34)	3970	8,0
4	Influenza and pneumonia (J09-J18)	4645	3,8	4	Influenza and pneumonia (J09-J18)	2404	3,3	4	Influenza and pneumonia (J09-J18)	2241	4,5
5	Certain disorders involving the immune mechanism (D80-D89)	4227	3,4	5	Certain disorders involving the immune mechanism (D80-D89)	2007	2,7	5	Certain disorders involving the immune mechanism (D80-D89)	2220	4,4
6	Other forms of heart disease (I30-I52)	3392	2,7	6	Other forms of heart disease (I30-I52)	1817	2,5	6	Other forms of heart disease (I30-I52)	1573	3,2
7	Cerebrovascular diseases (I60-I69)	1788	1,4	7	Cerebrovascular diseases (I60-I69)	968	1,3	7	Malignant neoplasms of female genital organs (C51-C58)	1273	2,6
8	Renal failure (N17-N19)	1629	1,3	8	Renal failure (N17-N19)	869	1,2	8	Cerebrovascular diseases (I60-I69)	820	1,6
9	Intestinal infectious diseases (A00-A09)	1494	1,2	9	Episodic and paroxysmal disorders (G40-G47)	854	1,2	9	Diabetes mellitus (E10-E14)	761	1,5
10	Diabetes mellitus (E10-E14)	1474	1,2	10	Intestinal infectious diseases (A00-A09)	737	1,0	10	Renal failure (N17-N19)	760	1,5
	Other Natural	37683	30,5		Non-natural	27440	37,2		Other Natural	18217	36,5
	Non-natural	32973	26,7		Other Natural	18802	25,5		Non-natural	5525	11,1
	All causes	123596	100,0		All causes	73668	100,0		All causes	49905	100,0
South Africa, 45–64			South Africa, males, 45–64			South Africa, females, 45–64					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	10083	7,9	1	Tuberculosis (A15-A19)	6936	9,4	1	Diabetes mellitus (E10-E14)	5172	9,6
2	Diabetes mellitus (E10-E14)	9207	7,2	2	Diabetes mellitus (E10-E14)	4035	5,5	2	Tuberculosis (A15-A19)	3144	5,8
3	Human immunodeficiency virus [HIV] disease (B20-B24)	6889	5,4	3	Human immunodeficiency virus [HIV] disease (B20-B24)	3840	5,2	3	Human immunodeficiency virus [HIV] disease (B20-B24)	3048	5,7
4	Cerebrovascular diseases (I60-I69)	6447	5,0	4	Other forms of heart disease (I30-I52)	3623	4,9	4	Cerebrovascular diseases (I60-I69)	2933	5,4
5	Other forms of heart disease (I30-I52)	6337	5,0	5	Cerebrovascular diseases (I60-I69)	3514	4,8	5	Other forms of heart disease (I30-I52)	2714	5,0
6	Hypertensive diseases (I10-I15)	5212	4,1	6	Chronic lower respiratory diseases (J40-J47)	3149	4,3	6	Hypertensive diseases (I10-I15)	2681	5,0
7	Influenza and pneumonia (J09-J18)	4893	3,8	7	Influenza and pneumonia (J09-J18)	3022	4,1	7	Malignant neoplasms of female genital organs (C51-C58)	2435	4,5
8	Chronic lower respiratory diseases (J40-J47)	4619	3,6	8	Ischaemic heart diseases (I20-I25)	2659	3,6	8	Other viral diseases (B25-B34)	1927	3,6
9	Malignant neoplasms of digestive organs (C15-C26)	4380	3,4	9	Malignant neoplasms of digestive organs (C15-C26)	2618	3,5	9	Influenza and pneumonia (J09-J18)	1871	3,5
10	Other viral diseases (B25-B34)	4183	3,3	10	Hypertensive diseases (I10-I15)	2531	3,4	10	Malignant neoplasms of digestive organs (C15-C26)	1762	3,3
	Other Natural	56341	44,1		Other Natural	30962	42,0		Other Natural	24003	44,5
	Non-natural	9134	7,2		Non-natural	6903	9,4		Non-natural	2230	4,1
	All causes	127725	100,0		All causes	73792	100,0		All causes	53920	100,0
South Africa, 65+			South Africa, males, 65+			South Africa, females, 65+					
	No.	%		No.	%		No.	%			
1	Diabetes mellitus (E10-E14)	14605	9,0	1	Diabetes mellitus (E10-E14)	5231	7,4	1	Diabetes mellitus (E10-E14)	9374	10,2
2	Cerebrovascular diseases (I60-I69)	13893	8,5	2	Cerebrovascular diseases (I60-I69)	5087	7,2	2	Hypertensive diseases (I10-I15)	8946	9,7
3	Hypertensive diseases (I10-I15)	13622	8,4	3	Other forms of heart disease (I30-I52)	4712	6,7	3	Cerebrovascular diseases (I60-I69)	8806	9,5
4	Other forms of heart disease (I30-I52)	11841	7,3	4	Hypertensive diseases (I10-I15)	4676	6,6	4	Other forms of heart disease (I30-I52)	7128	7,7
5	Ischaemic heart diseases (I20-I25)	7763	4,8	5	Chronic lower respiratory diseases (J40-J47)	4205	6,0	5	Ischaemic heart diseases (I20-I25)	3883	4,2
6	Chronic lower respiratory diseases (J40-J47)	7453	4,6	6	Ischaemic heart diseases (I20-I25)	3880	5,5	6	Influenza and pneumonia (J09-J18)	3813	4,1
7	Influenza and pneumonia (J09-J18)	6894	4,2	7	Influenza and pneumonia (J09-J18)	3081	4,4	7	Chronic lower respiratory diseases (J40-J47)	3248	3,5
8	Malignant neoplasms of digestive organs (C15-C26)	5118	3,1	8	Malignant neoplasms of male genital organs (C60-C63)	2787	4,0	8	Malignant neoplasms of digestive organs (C15-C26)	2465	2,7
9	Tuberculosis (A15-A19)	3997	2,5	9	Malignant neoplasms of digestive organs (C15-C26)	2653	3,8	9	Malignant neoplasms of female genital organs (C51-C58)	1942	2,1
10	Renal failure (N17-N19)	3530	2,2	10	Tuberculosis (A15-A19)	2482	3,5	10	Renal failure (N17-N19)	1906	2,1
	Other Natural	69539	42,7		Other Natural	29271	41,5		Other Natural	38674	41,9
	Non-natural	4509	2,8		Non-natural	2436	3,5		Non-natural	2073	2,2
	All causes	162764	100,0		All causes	70501	100,0		All causes	92258	100,0

Appendix M1: The ten leading underlying natural causes of death by age and sex: Western Cape, 2017

Western Cape, all ages			Western Cape, Males, all ages			Western Cape, females, all ages					
	No.	%		No.	%		No.	%			
1	Diabetes mellitus (E10-E14)	3434	7,5	1	Ischaemic heart diseases (I20-I25)	1557	6,2	1	Diabetes mellitus (E10-E14)	2047	9,9
2	Ischaemic heart diseases (I20-I25)	2829	6,2	2	Chronic lower respiratory diseases (J40-J47)	1485	5,9	2	Cerebrovascular diseases (I60-I69)	1340	6,5
3	Human immunodeficiency virus [HIV] disease (B20-B24)	2585	5,7	3	Tuberculosis (A15-A19)	1404	5,6	3	Human immunodeficiency virus [HIV] disease (B20-B24)	1279	6,2
4	Cerebrovascular diseases (I60-I69)	2514	5,5	4	Diabetes mellitus (E10-E14)	1387	5,5	4	Ischaemic heart diseases (I20-I25)	1272	6,2
5	Chronic lower respiratory diseases (J40-J47)	2500	5,5	5	Human immunodeficiency virus [HIV] disease (B20-B24)	1305	5,2	5	Hypertensive diseases (I10-I15)	1100	5,3
6	Tuberculosis (A15-A19)	2196	4,8	6	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	1287	5,1	6	Chronic lower respiratory diseases (J40-J47)	1015	4,9
7	Malignant neoplasms of digestive organs (C15-C26)	2167	4,7	7	Malignant neoplasms of digestive organs (C15-C26)	1188	4,7	7	Malignant neoplasms of digestive organs (C15-C26)	979	4,8
8	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	2038	4,5	8	Cerebrovascular diseases (I60-I69)	1174	4,7	8	Tuberculosis (A15-A19)	792	3,8
9	Hypertensive diseases (I10-I15)	1818	4,0	9	Hypertensive diseases (I10-I15)	718	2,9	9	Other forms of heart disease (I30-I52)	753	3,7
10	Other forms of heart disease (I30-I52)	1437	3,1	10	Other forms of heart disease (I30-I52)	684	2,7	10	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	751	3,6
	Other Natural	16307	35,7		Other Natural	8086	32,2		Other Natural	8215	39,9
	Non-natural	5890	12,9		Non-natural	4839	19,3		Non-natural	1050	5,1
	All causes	45715	100,0		All causes	25114	100,0		All causes	20593	100,0
Western Cape, 0			Western Cape, Males, 0			Western Cape, females, 0					
	No.	%		No.	%		No.	%			
1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	191	12,6	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	104	13	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	86	12,2
2	Disorders related to length of gestation and fetal growth (P05-P08)	148	9,8	2	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	77	9,6	2	Disorders related to length of gestation and fetal growth (P05-P08)	75	10,6
3	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	137	9,1	3	Disorders related to length of gestation and fetal growth (P05-P08)	73	9,1	3	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	60	8,5
4	Other disorders originating in the perinatal period (P90-P96)	99	6,5	4	Other disorders originating in the perinatal period (P90-P96)	53	6,6	4	Other disorders originating in the perinatal period (P90-P96)	46	6,5
5	Influenza and pneumonia (J09-J18)	95	6,3	5	Influenza and pneumonia (J09-J18)	50	6,2	5	Influenza and pneumonia (J09-J18)	45	6,4
6	Congenital malformations of the circulatory system (Q20-Q28)	65	4,3	6	Infections specific to the perinatal period (P35-P39)	40	5,0	6	Congenital malformations of the circulatory system (Q20-Q28)	26	3,7
7	Infections specific to the perinatal period (P35-P39)	63	4,2	7	Congenital malformations of the circulatory system (Q20-Q28)	39	4,8	7	Intestinal infectious diseases (A00-A09)	26	3,7
8	Intestinal infectious diseases (A00-A09)	60	4,0	8	Intestinal infectious diseases (A00-A09)	34	4,2	8	Infections specific to the perinatal period (P35-P39)	23	3,3
9	Other acute lower respiratory infections (J20-J22)	40	2,6	9	Other acute lower respiratory infections (J20-J22)	19	2,4	9	Other acute lower respiratory infections (J20-J22)	21	3,0
10	Chromosomal abnormalities, not elsewhere classified (Q90-Q99)	32	2,1	10	Other congenital malformations (Q80-Q89)	18	2,2	10	Chromosomal abnormalities, not elsewhere classified (Q90-Q99)	16	2,3
	Other Natural	559	36,9		Other Natural	288	35,8		Other Natural	268	38,0
	Non-natural	24	1,6		Non-natural	10	1,2		Non-natural	14	2,0
	All causes	1513	100,0		All causes	805	100,0		All causes	706	100,0
Western Cape, 1-14			Western Cape, Males, 1-14			Western Cape, females, 1-14					
	No.	%		No.	%		No.	%			
1	Cerebral palsy and other paralytic syndromes (G80-G83)	39	6,1	1	Cerebral palsy and other paralytic syndromes (G80-G83)	21	5,7	1	Cerebral palsy and other paralytic syndromes (G80-G83)	18	6,6
2	Malignant neoplasms, stated or presumed to be primary, of lymphoid, haematopoietic and related tissue (C81-C96)	22	3,4	2	Malignant neoplasms, stated or presumed to be primary, of lymphoid, haematopoietic and related tissue (C81-C96)	11	3,0	2	Malignant neoplasms, stated or presumed to be primary, of lymphoid, haematopoietic and related tissue (C81-C96)	11	4,0
3	Congenital malformations of the circulatory system (Q20-Q28)	16	2,5	3	Congenital malformations of the circulatory system (Q20-Q28)	9	2,5	3	Influenza and pneumonia (J09-J18)	10	3,6
4	Influenza and pneumonia (J09-J18)	16	2,5	4	Tuberculosis (A15-A19)	7	1,9	4	Other bacterial diseases (A30-A49)	7	2,6
5	Tuberculosis (A15-A19)	14	2,2	5	Human immunodeficiency virus [HIV] disease (B20-B24)	7	1,9	5	Congenital malformations of the circulatory system (Q20-Q28)	7	2,6
6	Human immunodeficiency virus [HIV] disease (B20-B24)	13	2,0	6	Intestinal infectious diseases (A00-A09)	6	1,6	6	Tuberculosis (A15-A19)	7	2,6
7	Other forms of heart disease (I30-I52)	12	1,9	7	Influenza and pneumonia (J09-J18)	6	1,6	7	Other forms of heart disease (I30-I52)	7	2,6
8	Intestinal infectious diseases (A00-A09)	11	1,7	8	Malnutrition (E40-E46)	5	1,4	8	Inflammatory diseases of the central nervous system (G00-G09)	6	2,2
9	Malnutrition (E40-E46)	10	1,6	9	Other forms of heart disease (I30-I52)	5	1,4	9	Malignant neoplasms of thyroid and other endocrine glands (C73-C75)	6	2,2
10	Other bacterial diseases (A30-A49)	10	1,6	10	Malignant neoplasms of mesothelial and soft tissue (C45-C49)	4	1,1	10	Human immunodeficiency virus [HIV] disease (B20-B24)	6	2,2
	Other Natural	223	34,8		Other Natural	117	31,9		Other Natural	103	37,6
	Non-natural	255	39,8		Non-natural	169	46,0		Non-natural	86	31,4
	All causes	641	100,0		All causes	367	100,0		All causes	274	100,0

Appendix M1: The ten leading underlying natural causes of death by age and sex: Western Cape, 2017 (concluded)

Western Cape, 15–44			Western Cape, Males, 15–44			Western Cape, females, 15–44					
	No.	%		No.	%		No.	%			
1	Human immunodeficiency virus [HIV] disease (B20-B24)	1691	15,7	1	Human immunodeficiency virus [HIV] disease (B20-B24)	814	11,3	1	Human immunodeficiency virus [HIV] disease (B20-B24)	877	24,7
2	Tuberculosis (A15-A19)	1044	9,7	2	Tuberculosis (A15-A19)	628	8,7	2	Tuberculosis (A15-A19)	416	11,7
3	Other viral diseases (B25-B34)	237	2,2	3	Cerebrovascular diseases (I60-I69)	115	1,6	3	Other viral diseases (B25-B34)	132	3,7
4	Other forms of heart disease (I30-I52)	184	1,7	4	Other forms of heart disease (I30-I52)	115	1,6	4	Malignant neoplasms of breast (C50)	104	2,9
5	Cerebrovascular diseases (I60-I69)	178	1,7	5	Ischaemic heart diseases (I20-I25)	107	1,5	5	Malignant neoplasms of female genital organs (C51-C58)	85	2,4
6	Ischaemic heart diseases (I20-I25)	162	1,5	6	Other viral diseases (B25-B34)	105	1,5	6	Certain disorders involving the immune mechanism (D80-D89)	84	2,4
7	Malignant neoplasms of digestive organs (C15-C26)	156	1,4	7	Malignant neoplasms of digestive organs (C15-C26)	91	1,3	7	Diabetes mellitus (E10-E14)	79	2,2
8	Diabetes mellitus (E10-E14)	155	1,4	8	Chronic lower respiratory diseases (J40-J47)	81	1,1	8	Other forms of heart disease (I30-I52)	69	1,9
9	Certain disorders involving the immune mechanism (D80-D89)	153	1,4	9	Diabetes mellitus (E10-E14)	76	1,1	9	Influenza and pneumonia (J09-J18)	66	1,9
10	Influenza and pneumonia (J09-J18)	136	1,3	10	Influenza and pneumonia (J09-J18)	70	1,0	10	Malignant neoplasms of digestive organs (C15-C26)	65	1,8
	Other Natural causes	2544	23,6		Other Natural	1411	19,5		Other Natural	1050	29,6
	Non-natural causes	4136	38,4		Non-natural	3617	50,0		Non-natural	519	14,6
	All causes	10776	100,0		All causes	7230	100,0		All causes	3546	100,0
Western Cape, 45–64			Western Cape, Males, 45–64			Western Cape, females, 45–64					
	No.	%		No.	%		No.	%			
1	Diabetes mellitus (E10-E14)	1226	8,9	1	Chronic lower respiratory diseases (J40-J47)	655	8,1	1	Diabetes mellitus (E10-E14)	676	11,8
2	Chronic lower respiratory diseases (J40-J47)	1037	7,5	2	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	649	8,1	2	Chronic lower respiratory diseases (J40-J47)	382	6,6
3	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	966	7,0	3	Tuberculosis (A15-A19)	591	7,3	3	Malignant neoplasms of digestive organs (C15-C26)	367	6,4
4	Malignant neoplasms of digestive organs (C15-C26)	918	6,7	4	Ischaemic heart diseases (I20-I25)	575	7,1	4	Human immunodeficiency virus [HIV] disease (B20-B24)	352	6,1
5	Ischaemic heart diseases (I20-I25)	850	6,2	5	Malignant neoplasms of digestive organs (C15-C26)	551	6,8	5	Cerebrovascular diseases (I60-I69)	335	5,8
6	Tuberculosis (A15-A19)	842	6,1	6	Diabetes mellitus (E10-E14)	550	6,8	6	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	317	5,5
7	Human immunodeficiency virus [HIV] disease (B20-B24)	787	5,7	7	Human immunodeficiency virus [HIV] disease (B20-B24)	435	5,4	7	Malignant neoplasms of breast (C50)	300	5,2
8	Cerebrovascular diseases (I60-I69)	758	5,5	8	Cerebrovascular diseases (I60-I69)	423	5,3	8	Ischaemic heart diseases (I20-I25)	275	4,8
9	Hypertensive diseases (I10-I15)	488	3,5	9	Hypertensive diseases (I10-I15)	248	3,1	9	Tuberculosis (A15-A19)	251	4,4
10	Other forms of heart disease (I30-I52)	327	2,4	10	Other forms of heart disease (I30-I52)	195	2,4	10	Hypertensive diseases (I10-I15)	240	4,2
	Other Natural causes	4621	33,5		Other Natural	2425	30,1		Other Natural	2028	35,3
	Non-natural causes	984	7,1		Non-natural	758	9,4		Non-natural	226	3,9
	All causes	13804	100,0		All causes	8055	100,0		All causes	5749	100,0
Western Cape, 65+			Western Cape, males, 65+			Western Cape, females, 65+					
	No.	%		No.	%		No.	%			
1	Diabetes mellitus (E10-E14)	2050	10,8	1	Ischaemic heart diseases (I20-I25)	874	10,2	1	Diabetes mellitus (E10-E14)	1291	12,5
2	Ischaemic heart diseases (I20-I25)	1815	9,6	2	Diabetes mellitus (E10-E14)	759	8,8	2	Ischaemic heart diseases (I20-I25)	941	9,1
3	Cerebrovascular diseases (I60-I69)	1569	8,3	3	Chronic lower respiratory diseases (J40-J47)	747	8,7	3	Cerebrovascular diseases (I60-I69)	937	9,1
4	Chronic lower respiratory diseases (J40-J47)	1347	7,1	4	Cerebrovascular diseases (I60-I69)	632	7,3	4	Hypertensive diseases (I10-I15)	821	8,0
5	Hypertensive diseases (I10-I15)	1241	6,6	5	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	584	6,8	5	Chronic lower respiratory diseases (J40-J47)	600	5,8
6	Malignant neoplasms of digestive organs (C15-C26)	1090	5,8	6	Malignant neoplasms of digestive organs (C15-C26)	543	6,3	6	Malignant neoplasms of digestive organs (C15-C26)	547	5,3
7	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	998	5,3	7	Malignant neoplasms of male genital organs (C60-C63)	478	5,6	7	Other forms of heart disease (I30-I52)	535	5,2
8	Other forms of heart disease (I30-I52)	899	4,8	8	Hypertensive diseases (I10-I15)	420	4,9	8	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	414	4,0
9	Influenza and pneumonia (J09-J18)	522	2,8	9	Other forms of heart disease (I30-I52)	364	4,2	9	Malignant neoplasms of breast (C50)	318	3,1
10	Malignant neoplasms of male genital organs (C60-C63)	478	2,5	10	Influenza and pneumonia (J09-J18)	230	2,7	10	Influenza and pneumonia (J09-J18)	292	2,8
	Other Natural causes	6421	34,0		Other Natural	2705	31,5		Other Natural	3398	33,0
	Non-natural causes	466	2,5		Non-natural	263	3,1		Non-natural	203	2,0
	All causes	18896	100,0		All causes	8599	100,0		All causes	10297	100,0

Appendix M2: The ten leading underlying natural causes of death by age and sex: Eastern Cape, 2017

Eastern Cape, all ages			Eastern Cape, Males, all ages			Eastern Cape, females, all ages						
	No.	%		No.	%		No.	%				
1	Tuberculosis (A15-A19)	5379	8,3	1	Tuberculosis (A15-A19)	337	1	9,8	1	Diabetes mellitus (E10-E14)	2198	7,2
2	Diabetes mellitus (E10-E14)	3488	5,4	2	Human immunodeficiency virus [HIV] disease (B20-B24)	170	8	5,0	2	Tuberculosis (A15-A19)	2006	6,5
3	Human immunodeficiency virus [HIV] disease (B20-B24)	3411	5,2	3	Chronic lower respiratory diseases (J40-J47)	145	7	4,2	3	Hypertensive diseases (I10-I15)	1769	5,8
4	Cerebrovascular diseases (I60-I69)	3060	4,7	4	Other forms of heart disease (I30-I52)	136	1	4,0	4	Cerebrovascular diseases (I60-I69)	1749	5,7
5	Other forms of heart disease (I30-I52)	2954	4,5	5	Cerebrovascular diseases (I60-I69)	131	1	3,8	5	Human immunodeficiency virus [HIV] disease (B20-B24)	1702	5,5
6	Hypertensive diseases (I10-I15)	2884	4,4	6	Diabetes mellitus (E10-E14)	129	0	3,7	6	Other forms of heart disease (I30-I52)	1592	5,2
7	Chronic lower respiratory diseases (J40-J47)	2570	3,9	7	Hypertensive diseases (I10-I15)	111	5	3,2	7	Chronic lower respiratory diseases (J40-J47)	1113	3,6
8	Influenza and pneumonia (J09-J18)	1969	3,0	8	Influenza and pneumonia (J09-J18)	104	3	3,0	8	Influenza and pneumonia (J09-J18)	926	3,0
9	Other viral diseases (B25-B34)	1690	2,6	9	Malignant neoplasms of digestive organs (C15-C26)	855	769	2,5	9	Other viral diseases (B25-B34)	920	3,0
10	Malignant neoplasms of digestive organs (C15-C26)	1623	2,5	10	Other viral diseases (B25-B34)	141	2	2,2	10	Malignant neoplasms of digestive organs (C15-C26)	768	2,5
	Other Natural causes	28388	43,6		Other Natural	14	14	41,0		Other Natural	14268	46,5
	Non-natural causes	7746	11,9		Non-natural	603	8	17,5		Non-natural	1699	5,5
	All causes	65162	100,0		All causes	344	32	100,0		All causes	30710	100,0
Eastern Cape, 0			Eastern Cape, Males, 0			Eastern Cape, females, 0						
	No.	%		No.	%		No.	%				
1	Influenza and pneumonia (J09-J18)	146	9,6	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	81	10,1	1	Influenza and pneumonia (J09-J18)	72	10,1	
2	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	145	9,6	2	Influenza and pneumonia (J09-J18)	74	9,2	2	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	64	9,0	
3	Intestinal infectious diseases (A00-A09)	89	5,9	3	Intestinal infectious diseases (A00-A09)	56	7,0	3	Other disorders originating in the perinatal period (P90-P96)	37	5,2	
4	Other disorders originating in the perinatal period (P90-P96)	86	5,7	4	Other disorders originating in the perinatal period (P90-P96)	48	6,0	4	Intestinal infectious diseases (A00-A09)	33	4,6	
5	Malnutrition (E40-E46)	55	3,6	5	Malnutrition (E40-E46)	35	4,4	5	Infections specific to the perinatal period (P35-P39)	24	3,4	
6	Infections specific to the perinatal period (P35-P39)	51	3,4	6	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	30	3,7	6	Disorders related to length of gestation and fetal growth (P05-P08)	21	2,9	
7	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	48	3,2	7	Congenital malformations of the circulatory system (Q20-Q28)	28	3,5	7	Malnutrition (E40-E46)	20	2,8	
8	Congenital malformations of the circulatory system (Q20-Q28)	48	3,2	8	Infections specific to the perinatal period (P35-P39)	27	3,4	8	Congenital malformations of the circulatory system (Q20-Q28)	20	2,8	
9	Disorders related to length of gestation and fetal growth (P05-P08)	44	2,9	9	Disorders related to length of gestation and fetal growth (P05-P08)	23	2,9	9	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	17	2,4	
10	Other forms of heart disease (I30-I52)	29	1,9	10	Other congenital malformations (Q80-Q89)	13	1,6	10	Other forms of heart disease (I30-I52)	16	2,2	
	Other Natural	663	43,7		Other Natural	322	40,2		Other Natural	340	47,7	
	Non-natural	113	7,4		Non-natural	64	8,0		Non-natural	49	6,9	
	All causes	1517	100,0		All causes	801	100,0		All causes	713	100,0	
Eastern Cape, 1-14			Eastern Cape, Males, 1-14			Eastern Cape, females, 1-14						
	No.	%		No.	%		No.	%				
1	Intestinal infectious diseases (A00-A09)	79	4,9	1	Tuberculosis (A15-A19)	43	4,7	1	Intestinal infectious diseases (A00-A09)	39	5,5	
2	Influenza and pneumonia (J09-J18)	74	4,6	2	Influenza and pneumonia (J09-J18)	41	4,5	2	Influenza and pneumonia (J09-J18)	33	4,7	
3	Tuberculosis (A15-A19)	72	4,4	3	Intestinal infectious diseases (A00-A09)	40	4,4	3	Tuberculosis (A15-A19)	29	4,1	
4	Malnutrition (E40-E46)	39	2,4	4	Human immunodeficiency virus [HIV] disease (B20-B24)	22	2,4	4	Malnutrition (E40-E46)	21	3,0	
5	Episodic and paroxysmal disorders (G40-G47)	35	2,2	5	Cerebral palsy and other paralytic syndromes (G80-G83)	20	2,2	5	Episodic and paroxysmal disorders (G40-G47)	17	2,4	
6	Human immunodeficiency virus [HIV] disease (B20-B24)	33	2,0	6	Malnutrition (E40-E46)	18	2,0	6	Other forms of heart disease (I30-I52)	14	2,0	
7	Other forms of heart disease (I30-I52)	31	1,9	7	Episodic and paroxysmal disorders (G40-G47)	18	2,0	7	Other viral diseases (B25-B34)	11	1,6	
8	Cerebral palsy and other paralytic syndromes (G80-G83)	31	1,9	8	Other forms of heart disease (I30-I52)	17	1,9	8	Human immunodeficiency virus [HIV] disease (B20-B24)	11	1,6	
9	Inflammatory diseases of the central nervous system (G00-G09)	25	1,5	9	Inflammatory diseases of the central nervous system (G00-G09)	16	1,7	9	Cerebral palsy and other paralytic syndromes (G80-G83)	11	1,6	
10	Other viral diseases (B25-B34)	25	1,5	10	Other viral diseases (B25-B34)	14	1,5	10	Inflammatory diseases of the central nervous system (G00-G09)	9	1,3	
	Other Natural	658	40,6		Other Natural	333	36,4		Other Natural	325	46,0	
	Non-natural	520	32,1		Non-natural	333	36,4		Non-natural	187	26,4	
	All causes	1622	100,0		All causes	915	100,1		All causes	707	100,0	

Appendix M2: The ten leading underlying natural causes of death by age and sex: Eastern Cape, 2017 (concluded)

Eastern Cape, 15–44			Eastern Cape, Males, 15–44			Eastern Cape, females, 15–44					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	2313	12,6	1	Tuberculosis (A15-A19)	1326	12,0	1	Human immunodeficiency virus [HIV] disease (B20-B24)	1161	15,9
2	Human immunodeficiency virus [HIV] disease (B20-B24)	2173	11,8	2	Human immunodeficiency virus [HIV] disease (B20-B24)	1011	9,1	2	Tuberculosis (A15-A19)	986	13,5
3	Other viral diseases (B25-B34)	1038	5,7	3	Other viral diseases (B25-B34)	436	3,9	3	Other viral diseases (B25-B34)	601	8,3
4	Certain disorders involving the immune mechanism (D80-D89)	646	3,5	4	Certain disorders involving the immune mechanism (D80-D89)	340	3,1	4	Certain disorders involving the immune mechanism (D80-D89)	306	4,2
5	Other forms of heart disease (I30-I52)	415	2,3	5	Other forms of heart disease (I30-I52)	213	1,9	5	Other forms of heart disease (I30-I52)	202	2,8
6	Influenza and pneumonia (J09-J18)	365	2,0	6	Influenza and pneumonia (J09-J18)	194	1,8	6	Influenza and pneumonia (J09-J18)	171	2,3
7	Episodic and paroxysmal disorders (G40-G47)	280	1,5	7	Episodic and paroxysmal disorders (G40-G47)	190	1,7	7	Malignant neoplasms of female genital organs (C51-C58)	113	1,6
8	Cerebrovascular diseases (I60-I69)	234	1,3	8	Cerebrovascular diseases (I60-I69)	128	1,2	8	Cerebrovascular diseases (I60-I69)	106	1,5
9	Chronic lower respiratory diseases (J40-J47)	203	1,1	9	Chronic lower respiratory diseases (J40-J47)	122	1,1	9	Diabetes mellitus (E10-E14)	105	1,4
10	Intestinal infectious diseases (A00-A09)	183	1,0	10	Inflammatory diseases of the central nervous system (G00-G09)	90	0,8	10	Intestinal infectious diseases (A00-A09)	100	1,4
	Other Natural	5509	30,0		Other Natural	2782	25,1		Other Natural	2673	36,7
	Non-natural	4997	27,2		Non-natural	4238	38,3		Non-natural	759	10,4
	All causes	18356	100,0		All causes	11070	100,0		All causes	7283	100,0
Eastern Cape, 45–64			Eastern Cape, Males, 45–64			Eastern Cape, females, 45–64					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	1857	9,9	1	Tuberculosis (A15-A19)	1325	12,2	1	Diabetes mellitus (E10-E14)	772	9,9
2	Diabetes mellitus (E10-E14)	1298	6,9	2	Human immunodeficiency virus [HIV] disease (B20-B24)	570	5,2	2	Tuberculosis (A15-A19)	531	6,8
3	Human immunodeficiency virus [HIV] disease (B20-B24)	1022	5,5	3	Chronic lower respiratory diseases (J40-J47)	560	5,2	3	Human immunodeficiency virus [HIV] disease (B20-B24)	452	5,8
4	Cerebrovascular diseases (I60-I69)	905	4,8	4	Diabetes mellitus (E10-E14)	526	4,8	4	Hypertensive diseases (I10-I15)	426	5,5
5	Chronic lower respiratory diseases (J40-J47)	843	4,5	5	Other forms of heart disease (I30-I52)	492	4,5	5	Cerebrovascular diseases (I60-I69)	423	5,4
6	Other forms of heart disease (I30-I52)	843	4,5	6	Cerebrovascular diseases (I60-I69)	482	4,4	6	Other forms of heart disease (I30-I52)	351	4,5
7	Hypertensive diseases (I10-I15)	783	4,2	7	Malignant neoplasms of digestive organs (C15-C26)	361	3,3	7	Malignant neoplasms of digestive organs (C15-C26)	303	3,9
8	Malignant neoplasms of digestive organs (C15-C26)	664	3,6	8	Hypertensive diseases (I10-I15)	357	3,3	8	Chronic lower respiratory diseases (J40-J47)	283	3,6
9	Other viral diseases (B25-B34)	534	2,9	9	Influenza and pneumonia (J09-J18)	326	3,0	9	Other viral diseases (B25-B34)	264	3,4
10	Influenza and pneumonia (J09-J18)	521	2,8	10	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	305	2,8	10	Malignant neoplasms of female genital organs (C51-C58)	237	3,0
	Other Natural	8018	42,9		Other Natural	4541	41,8		Other Natural	3399	43,5
	Non-natural	1397	7,5		Non-natural	1026	9,4		Non-natural	371	4,7
	All causes	18685	100,0		All causes	10871	100,0		All causes	7812	100,0
Eastern Cape, 65+			Eastern Cape, Males, 65+			Eastern Cape, females, 65+					
	No.	%		No.	%		No.	%			
1	Diabetes mellitus (E10-E14)	2013	8,1	1	Chronic lower respiratory diseases (J40-J47)	760	7,1	1	Diabetes mellitus (E10-E14)	1319	9,3
2	Hypertensive diseases (I10-I15)	1963	7,9	2	Diabetes mellitus (E10-E14)	694	6,5	2	Hypertensive diseases (I10-I15)	1270	9,0
3	Cerebrovascular diseases (I60-I69)	1910	7,7	3	Cerebrovascular diseases (I60-I69)	693	6,5	3	Cerebrovascular diseases (I60-I69)	1217	8,6
4	Other forms of heart disease (I30-I52)	1631	6,5	4	Hypertensive diseases (I10-I15)	693	6,5	4	Other forms of heart disease (I30-I52)	1008	7,1
5	Chronic lower respiratory diseases (J40-J47)	1492	6,0	5	Tuberculosis (A15-A19)	659	6,1	5	Chronic lower respiratory diseases (J40-J47)	732	5,2
6	Tuberculosis (A15-A19)	1116	4,5	6	Other forms of heart disease (I30-I52)	623	5,8	6	Tuberculosis (A15-A19)	457	3,2
7	Influenza and pneumonia (J09-J18)	862	3,5	7	Malignant neoplasms of digestive organs (C15-C26)	408	3,8	7	Influenza and pneumonia (J09-J18)	455	3,2
8	Malignant neoplasms of digestive organs (C15-C26)	821	3,3	8	Influenza and pneumonia (J09-J18)	407	3,8	8	Malignant neoplasms of digestive organs (C15-C26)	413	2,9
9	Ischaemic heart diseases (I20-I25)	702	2,8	9	Malignant neoplasms of male genital organs (C60-C63)	375	3,5	9	Ischaemic heart diseases (I20-I25)	348	2,5
10	Malignant neoplasms of male genital organs (C60-C63)	375	1,5	10	Ischaemic heart diseases (I20-I25)	354	3,3	10	Malignant neoplasms of female genital organs (C51-C58)	239	1,7
	Other Natural	11333	45,5		Other Natural	4702	43,8		Other Natural	6391	45,1
	Non-natural	689	2,8		Non-natural	358	3,3		Non-natural	331	2,3
	All causes	24907	100,0		All causes	10726	100,0		All causes	14180	100,0

Appendix M3: The ten leading underlying natural causes of death by age and sex: Northern Cape, 2017

Northern Cape, all ages			Northern Cape, Males, all ages			Northern Cape, females, all ages					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	951	7,5	1	Tuberculosis (A15-A19)	602	8,8	1	Hypertensive diseases (I10-I15)	402	6,9
2	Human immunodeficiency virus [HIV] disease (B20-B24)	758	6,0	2	Human immunodeficiency virus [HIV] disease (B20-B24)	396	5,8	2	Human immunodeficiency virus [HIV] disease (B20-B24)	362	6,2
3	Other forms of heart disease (I30-I52)	672	5,3	3	Chronic lower respiratory diseases (J40-J47)	358	5,3	3	Tuberculosis (A15-A19)	349	6,0
4	Hypertensive diseases (I10-I15)	638	5,0	4	Other forms of heart disease (I30-I52)	323	4,7	4	Other forms of heart disease (I30-I52)	349	6,0
5	Chronic lower respiratory diseases (J40-J47)	609	4,8	5	Influenza and pneumonia (J09-J18)	291	4,3	5	Diabetes mellitus (E10-E14)	310	5,3
6	Cerebrovascular diseases (I60-I69)	555	4,4	6	Cerebrovascular diseases (I60-I69)	247	3,6	6	Cerebrovascular diseases (I60-I69)	308	5,3
7	Influenza and pneumonia (J09-J18)	532	4,2	7	Hypertensive diseases (I10-I15)	236	3,5	7	Chronic lower respiratory diseases (J40-J47)	250	4,3
8	Diabetes mellitus (E10-E14)	529	4,2	8	Ischaemic heart diseases (I20-I25)	235	3,4	8	Influenza and pneumonia (J09-J18)	241	4,1
9	Ischaemic heart diseases (I20-I25)	425	3,4	9	Diabetes mellitus (E10-E14)	219	3,2	9	Certain disorders involving the immune mechanism (D80-D89)	192	3,3
10	Certain disorders involving the immune mechanism (D80-D89)	397	3,1	10	Certain disorders involving the immune mechanism (D80-D89)	205	3,0	10	Other viral diseases (B25-B34)	191	3,3
	Other Natural	5233	41,4		Other Natural	2708	39,7		Other Natural	2523	43,4
	Non-natural	1339	10,6		Non-natural	995	14,6		Non-natural	343	5,9
	All causes	12638	100,0		All causes	6815	100,0		All causes	5820	100,0
Northern Cape, 0			Northern Cape, Males, 0			Northern Cape, females, 0					
	No.	%		No.	%		No.	%			
1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	130	18,7	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	72	19,5	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	57	17,6
2	Disorders related to length of gestation and fetal growth (P05-P08)	58	8,4	2	Influenza and pneumonia (J09-J18)	29	7,8	2	Disorders related to length of gestation and fetal growth (P05-P08)	31	9,6
3	Influenza and pneumonia (J09-J18)	51	7,3	3	Disorders related to length of gestation and fetal growth (P05-P08)	27	7,3	3	Influenza and pneumonia (J09-J18)	22	6,8
4	Intestinal infectious diseases (A00-A09)	47	6,8	4	Intestinal infectious diseases (A00-A09)	25	6,8	4	Intestinal infectious diseases (A00-A09)	22	6,8
5	Other disorders originating in the perinatal period (P90-P96)	33	4,8	5	Other disorders originating in the perinatal period (P90-P96)	21	5,7	5	Infections specific to the perinatal period (P35-P39)	17	5,3
6	Infections specific to the perinatal period (P35-P39)	31	4,5	6	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	15	4,1	6	Malnutrition (E40-E46)	13	4,0
7	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	27	3,9	7	Infections specific to the perinatal period (P35-P39)	14	3,8	7	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	12	3,7
8	Malnutrition (E40-E46)	25	3,6	8	Malnutrition (E40-E46)	12	3,2	8	Other disorders originating in the perinatal period (P90-P96)	12	3,7
9	Congenital malformations of the circulatory system (Q20-Q28)	20	2,9	9	Congenital malformations of the circulatory system (Q20-Q28)	10	2,7	9	Other forms of heart disease (I30-I52)	12	3,7
10	Other forms of heart disease (I30-I52)	16	2,3	10	Human immunodeficiency virus [HIV] disease (B20-B24)	5	1,4	10	Congenital malformations of the circulatory system (Q20-Q28)	10	3,1
	Other Natural	227	32,7		Other Natural	126	34,1		Other Natural	100	31,0
	Non-natural	29	4,2		Non-natural	14	3,8		Non-natural	15	4,6
	All causes	694	100,1		All causes	370	100,0		All causes	323	100,0
Northern Cape, 1-14			Northern Cape, Males, 1-14			Northern Cape, females, 1-14					
	No.	%		No.	%		No.	%			
1	Intestinal infectious diseases (A00-A09)	36	11,5	1	Intestinal infectious diseases (A00-A09)	19	11,3	1	Malnutrition (E40-E46)	20	13,8
2	Malnutrition (E40-E46)	25	8,0	2	Influenza and pneumonia (J09-J18)	11	6,5	2	Intestinal infectious diseases (A00-A09)	17	11,7
3	Influenza and pneumonia (J09-J18)	16	5,1	3	Tuberculosis (A15-A19)	9	5,4	3	Tuberculosis (A15-A19)	6	4,1
4	Tuberculosis (A15-A19)	15	4,8	4	Human immunodeficiency virus [HIV] disease (B20-B24)	7	4,2	4	Human immunodeficiency virus [HIV] disease (B20-B24)	6	4,1
5	Human immunodeficiency virus [HIV] disease (B20-B24)	13	4,1	5	Malnutrition (E40-E46)	5	3,0	5	Influenza and pneumonia (J09-J18)	5	3,4
6	Cerebral palsy and other paralytic syndromes (G80-G83)	7	2,2	6	Other forms of heart disease (I30-I52)	4	2,4	6	Other bacterial diseases (A30-A49)	4	2,8
7	Other bacterial diseases (A30-A49)	7	2,2	7	Cerebral palsy and other paralytic syndromes (G80-G83)	4	2,4	7	Metabolic disorders (E70-E90)	4	2,8
8	Metabolic disorders (E70-E90)	7	2,2	8	Inflammatory diseases of the central nervous system (G00-G09)	4	2,4	8	Certain disorders involving the immune mechanism (D80-D89)	3	2,1
9	Certain disorders involving the immune mechanism (D80-D89)	6	1,9	9	Other viral diseases (B25-B34)	3	1,8	9	Other viral diseases (B25-B34)	3	2,1
10	Other viral diseases (B25-B34)	6	1,9	10	Other bacterial diseases (A30-A49)	3	1,8	10	Cerebral palsy and other paralytic syndromes (G80-G83)	3	2,1
	Other Natural	82	26,1		Other Natural	39	23,2		Other Natural	41	28,3
	Non-natural	94	29,9		Non-natural	60	35,7		Non-natural	33	22,8
	All causes	314	100,0		All causes	168	100		All causes	145	100

Appendix M3: The ten leading underlying natural causes of death by age and sex: Northern Cape, 2017 (concluded)

Northern Cape, 15–44			Northern Cape, Males, 15–44			Northern Cape, females, 15–44					
	No.	%		No.	%		No.	%			
1	Human immunodeficiency virus [HIV] disease (B20-B24)	462	13,4	1	Tuberculosis (A15-A19)	262	13,0	1	Human immunodeficiency virus [HIV] disease (B20-B24)	221	15,4
2	Tuberculosis (A15-A19)	437	12,7	2	Human immunodeficiency virus [HIV] disease (B20-B24)	241	12,0	2	Tuberculosis (A15-A19)	175	12,2
3	Certain disorders involving the immune mechanism (D80-D89)	229	6,6	3	Certain disorders involving the immune mechanism (D80-D89)	108	5,4	3	Certain disorders involving the immune mechanism (D80-D89)	121	8,4
4	Other viral diseases (B25-B34)	206	6,0	4	Other viral diseases (B25-B34)	89	4,4	4	Other viral diseases (B25-B34)	117	8,2
5	Influenza and pneumonia (J09-J18)	129	3,7	5	Influenza and pneumonia (J09-J18)	66	3,3	5	Other forms of heart disease (I30-I52)	68	4,7
6	Other forms of heart disease (I30-I52)	129	3,7	6	Other forms of heart disease (I30-I52)	61	3,0	6	Influenza and pneumonia (J09-J18)	63	4,4
7	Episodic and paroxysmal disorders (G40-G47)	49	1,4	7	Episodic and paroxysmal disorders (G40-G47)	38	1,9	7	Malignant neoplasms of female genital organs (C51-C58)	27	1,9
8	Diabetes mellitus (E10-E14)	39	1,1	8	Intestinal infectious diseases (A00-A09)	26	1,3	8	Diseases of liver (K70-K77)	21	1,5
9	Intestinal infectious diseases (A00-A09)	37	1,1	9	Ischaemic heart diseases (I20-I25)	24	1,2	9	Diabetes mellitus (E10-E14)	20	1,4
10	Ischaemic heart diseases (I20-I25)	37	1,1	10	Cerebrovascular diseases (I60-I69)	21	1,0	10	Renal failure (N17-N19)	18	1,3
	Other Natural	854	24,8		Other Natural	415	20,6		Other Natural	406	28,3
	Non-natural	841	24,4		Non-natural	663	32,9		Non-natural	178	12,4
	All causes	3449	100,0		All causes	2014	100,0		All causes	1435	100,0
Northern Cape, 45–64			Northern Cape, Males, 45–64			Northern Cape, females, 45–64					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	385	9,4	1	Tuberculosis (A15-A19)	260	10,9	1	Tuberculosis (A15-A19)	125	7,4
2	Chronic lower respiratory diseases (J40-J47)	261	6,4	2	Chronic lower respiratory diseases (J40-J47)	171	7,1	2	Human immunodeficiency virus [HIV] disease (B20-B24)	120	7,1
3	Human immunodeficiency virus [HIV] disease (B20-B24)	253	6,2	3	Human immunodeficiency virus [HIV] disease (B20-B24)	133	5,6	3	Diabetes mellitus (E10-E14)	118	7,0
4	Diabetes mellitus (E10-E14)	208	5,1	4	Cerebrovascular diseases (I60-I69)	111	4,6	4	Hypertensive diseases (I10-I15)	92	5,4
5	Cerebrovascular diseases (I60-I69)	199	4,9	5	Ischaemic heart diseases (I20-I25)	105	4,4	5	Chronic lower respiratory diseases (J40-J47)	89	5,3
6	Other forms of heart disease (I30-I52)	191	4,7	6	Influenza and pneumonia (J09-J18)	105	4,4	6	Other forms of heart disease (I30-I52)	89	5,3
7	Hypertensive diseases (I10-I15)	174	4,3	7	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	102	4,3	7	Cerebrovascular diseases (I60-I69)	88	5,2
8	Influenza and pneumonia (J09-J18)	169	4,1	8	Other forms of heart disease (I30-I52)	102	4,3	8	Malignant neoplasms of female genital organs (C51-C58)	74	4,4
9	Ischaemic heart diseases (I20-I25)	163	4,0	9	Diabetes mellitus (E10-E14)	90	3,8	9	Influenza and pneumonia (J09-J18)	64	3,8
10	Certain disorders involving the immune mechanism (D80-D89)	143	3,5	10	Certain disorders involving the immune mechanism (D80-D89)	82	3,4	10	Certain disorders involving the immune mechanism (D80-D89)	61	3,6
	Other Natural	1687	41,2		Other Natural	934	39,0		Other Natural	717	42,3
	Non-natural	257	6,3		Non-natural	199	8,3		Non-natural	58	3,4
	All causes	4090	100,0		All causes	2394	100,0		All causes	1695	100,0
Northern Cape, 65+			Northern Cape, Males, 65+			Northern Cape, females, 65+					
	No.	%		No.	%		No.	%			
1	Hypertensive diseases (I10-I15)	435	10,7	1	Chronic lower respiratory diseases (J40-J47)	172	9,3	1	Hypertensive diseases (I10-I15)	293	13,2
2	Other forms of heart disease (I30-I52)	331	8,1	2	Other forms of heart disease (I30-I52)	152	8,2	2	Cerebrovascular diseases (I60-I69)	205	9,2
3	Cerebrovascular diseases (I60-I69)	320	7,8	3	Hypertensive diseases (I10-I15)	142	7,6	3	Other forms of heart disease (I30-I52)	179	8,1
4	Chronic lower respiratory diseases (J40-J47)	315	7,7	4	Cerebrovascular diseases (I60-I69)	115	6,2	4	Diabetes mellitus (E10-E14)	172	7,8
5	Diabetes mellitus (E10-E14)	282	6,9	5	Malignant neoplasms of male genital organs (C60-C63)	111	6,0	5	Chronic lower respiratory diseases (J40-J47)	143	6,4
6	Ischaemic heart diseases (I20-I25)	225	5,5	6	Diabetes mellitus (E10-E14)	110	5,9	6	Ischaemic heart diseases (I20-I25)	119	5,4
7	Influenza and pneumonia (J09-J18)	167	4,1	7	Ischaemic heart diseases (I20-I25)	106	5,7	7	Influenza and pneumonia (J09-J18)	87	3,9
8	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	124	3,0	8	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	81	4,4	8	Malignant neoplasms of breast (C50)	58	2,6
9	Malignant neoplasms of male genital organs (C60-C63)	111	2,7	9	Influenza and pneumonia (J09-J18)	80	4,3	9	Malignant neoplasms of digestive organs (C15-C26)	52	2,3
10	Tuberculosis (A15-A19)	109	2,7	10	Tuberculosis (A15-A19)	70	3,8	10	Malignant neoplasms of female genital organs (C51-C58)	48	2,2
	Other Natural	1545	37,9		Other Natural	665	35,8		Other Natural	804	36,2
	Non-natural	114	2,8		Non-natural	55	3,0		Non-natural	59	2,7
	All causes	4078	100,0		All causes	1859	100,0		All causes	2219	100,0

Appendix M4: The ten leading underlying natural causes of death by age and sex: Free State, 2017

Free State, both sexes, all ages			Free State, Males, all ages			Free State, females, all ages					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	1949	6.2	1	Tuberculosis (A15-A19)	1206	7.3	1	Hypertensive diseases (I10-I15)	1106	7.6
2	Hypertensive diseases (I10-I15)	1846	5.9	2	Human immunodeficiency virus [HIV] disease (B20-B24)	967	5.8	2	Diabetes mellitus (E10-E14)	1017	7.0
3	Human immunodeficiency virus [HIV] disease (B20-B24)	1809	5.8	3	Influenza and pneumonia (J09-J18)	904	5.5	3	Cerebrovascular diseases (I60-I69)	889	6.1
4	Influenza and pneumonia (J09-J18)	1725	5.5	4	Hypertensive diseases (I10-I15)	740	4.5	4	Human immunodeficiency virus [HIV] disease (B20-B24)	842	5.8
5	Diabetes mellitus (E10-E14)	1654	5.3	5	Cerebrovascular diseases (I60-I69)	687	4.1	5	Influenza and pneumonia (J09-J18)	821	5.6
6	Cerebrovascular diseases (I60-I69)	1576	5.0	6	Other viral diseases (B25-B34)	647	3.9	6	Other forms of heart disease (I30-I52)	756	5.2
7	Other forms of heart disease (I30-I52)	1395	4.5	7	Other forms of heart disease (I30-I52)	639	3.9	7	Tuberculosis (A15-A19)	743	5.1
8	Other viral diseases (B25-B34)	1225	3.9	8	Diabetes mellitus (E10-E14)	637	3.8	8	Other viral diseases (B25-B34)	576	3.9
9	Chronic lower respiratory diseases (J40-J47)	816	2.6	9	Chronic lower respiratory diseases (J40-J47)	525	3.2	9	Malignant neoplasms of female genital organs (C51-C58)	427	2.9
10	Certain disorders involving the immune mechanism (D80-D89)	719	2.3	10	Ischaemic heart diseases (I20-I25)	396	2.4	10	Certain disorders involving the immune mechanism (D80-D89)	352	2.4
	Other Natural	13297	42.6		Other Natural	6822	41.2		Other Natural	6303	43.1
	Non-natural	3197	10.2		Non-natural	2400	14.5		Non-natural	793	5.4
	All causes	31208	100.0		All causes	16570	100.0		All causes	14625	100.0
Free State, both sexes, 0			Free State, Males, 0			Free State, females, 0					
	No.	%		No.	%		No.	%			
1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	295	18.3	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	164	18.8	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	130	17.7
2	Influenza and pneumonia (J09-J18)	126	7.8	2	Influenza and pneumonia (J09-J18)	64	7.3	2	Influenza and pneumonia (J09-J18)	62	8.5
3	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	102	6.3	3	Intestinal infectious diseases (A00-A09)	56	6.4	3	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	57	7.8
4	Intestinal infectious diseases (A00-A09)	91	5.7	4	Disorders related to length of gestation and fetal growth (P05-P08)	47	5.4	4	Disorders related to length of gestation and fetal growth (P05-P08)	40	5.5
5	Disorders related to length of gestation and fetal growth (P05-P08)	87	5.4	5	Infections specific to the perinatal period (P35-P39)	47	5.4	5	Infections specific to the perinatal period (P35-P39)	40	5.5
6	Infections specific to the perinatal period (P35-P39)	87	5.4	6	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	44	5.0	6	Other disorders originating in the perinatal period (P90-P96)	39	5.3
7	Other disorders originating in the perinatal period (P90-P96)	79	4.9	7	Other disorders originating in the perinatal period (P90-P96)	40	4.6	7	Malnutrition (E40-E46)	38	5.2
8	Malnutrition (E40-E46)	78	4.9	8	Malnutrition (E40-E46)	39	4.5	8	Intestinal infectious diseases (A00-A09)	35	4.8
9	Congenital malformations of the circulatory system (Q20-Q28)	47	2.9	9	Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	28	3.2	9	Congenital malformations of the circulatory system (Q20-Q28)	23	3.1
10	Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	43	2.7	10	Congenital malformations of the circulatory system (Q20-Q28)	24	2.8	10	Chromosomal abnormalities, not elsewhere classified (Q90-Q99)	19	2.6
	Other Natural	524	32.6		Other Natural	290	33.3		Other Natural	230	31.4
	Non-natural	49	3.0		Non-natural	29	3.3		Non-natural	20	2.7
	All causes	1608	100.0		All causes	872	100.0		All causes	733	100.0
Free State, both sexes, 1-14			Free State, Males, 1-14			Free State, females, 1-14					
	No.	%		No.	%		No.	%			
1	Influenza and pneumonia (J09-J18)	55	7.5	1	Influenza and pneumonia (J09-J18)	28	7.0	1	Influenza and pneumonia (J09-J18)	27	8.0
2	Intestinal infectious diseases (A00-A09)	46	6.3	2	Intestinal infectious diseases (A00-A09)	26	6.5	2	Intestinal infectious diseases (A00-A09)	20	5.9
3	Malnutrition (E40-E46)	41	5.6	3	Malnutrition (E40-E46)	24	6.0	3	Malnutrition (E40-E46)	17	5.0
4	Human immunodeficiency virus [HIV] disease (B20-B24)	32	4.3	4	Tuberculosis (A15-A19)	17	4.3	4	Human immunodeficiency virus [HIV] disease (B20-B24)	16	4.7
5	Tuberculosis (A15-A19)	30	4.1	5	Human immunodeficiency virus [HIV] disease (B20-B24)	16	4.0	5	Tuberculosis (A15-A19)	13	3.9
6	Cerebral palsy and other paralytic syndromes (G80-G83)	22	3.0	6	Cerebral palsy and other paralytic syndromes (G80-G83)	14	3.5	6	Cerebral palsy and other paralytic syndromes (G80-G83)	8	2.4
7	Other viral diseases (B25-B34)	19	2.6	7	Other viral diseases (B25-B34)	13	3.3	7	Other acute lower respiratory infections (J20-J22)	7	2.1
8	Chronic lower respiratory diseases (J40-J47)	13	1.8	8	Chronic lower respiratory diseases (J40-J47)	8	2.0	8	Other forms of heart disease (I30-I52)	7	2.1
9	Other acute lower respiratory infections (J20-J22)	13	1.8	9	Other disorders of the nervous system (G90-G99)	7	1.8	9	Other viral diseases (B25-B34)	6	1.8
10	Episodic and paroxysmal disorders (G40-G47)	10	1.4	10	Malignant neoplasms, stated or presumed to be primary, of lymphoid, haematopoietic and related tissue (C81-C96)	6	1.5	10	Other bacterial diseases (A30-A49)	6	1.8
	Other Natural	249	33.8		Other Natural	119	29.9		Other Natural	124	36.8
	Non-natural	206	28.0		Non-natural	120	30.2		Non-natural	86	25.5
	All causes	726	100.0		All causes	398	100.0		All causes	337	100.0

Appendix M4: The ten leading underlying natural causes of death by age and sex: Free State, 2017 (concluded)

Free State, both sexes, 15–44			Free State, Males, 15–44			Free State, females, 15–44					
	No.	%		No.	%		No.	%			
1	Human immunodeficiency virus [HIV] disease (B20-B24)	1029	12,1	1	Human immunodeficiency virus [HIV] disease (B20-B24)	545	10,9	1	Human immunodeficiency virus [HIV] disease (B20-B24)	484	13,9
2	Tuberculosis (A15-A19)	910	10,7	2	Tuberculosis (A15-A19)	529	10,6	2	Tuberculosis (A15-A19)	381	10,9
3	Other viral diseases (B25-B34)	677	8,0	3	Other viral diseases (B25-B34)	339	6,8	3	Other viral diseases (B25-B34)	338	9,7
4	Certain disorders involving the immune mechanism (D80-D89)	386	4,6	4	Influenza and pneumonia (J09-J18)	189	3,8	4	Certain disorders involving the immune mechanism (D80-D89)	203	5,8
5	Influenza and pneumonia (J09-J18)	381	4,5	5	Certain disorders involving the immune mechanism (D80-D89)	183	3,7	5	Influenza and pneumonia (J09-J18)	192	5,5
6	Other forms of heart disease (I30-I52)	168	2,0	6	Other forms of heart disease (I30-I52)	94	1,9	6	Malignant neoplasms of female genital organs (C51-C58)	75	2,2
7	Renal failure (N17-N19)	121	1,4	7	Cerebrovascular diseases (I60-I69)	71	1,4	7	Other forms of heart disease (I30-I52)	74	2,1
8	Cerebrovascular diseases (I60-I69)	119	1,4	8	Renal failure (N17-N19)	69	1,4	8	Diabetes mellitus (E10-E14)	59	1,7
9	Diabetes mellitus (E10-E14)	117	1,4	9	Episodic and paroxysmal disorders (G40-G47)	67	1,3	9	Hypertensive diseases (I10-I15)	58	1,7
10	Hypertensive diseases (I10-I15)	111	1,3	10	Diabetes mellitus (E10-E14)	58	1,2	10	Renal failure (N17-N19)	52	1,5
	Other Natural	2425	28,6		Other Natural	1236	24,8		Other Natural	1147	33,0
	Non-natural	2029	23,9		Non-natural	1610	32,3		Non-natural	418	12,0
	All causes	8473	100,0		All causes	4990	100,0		All causes	3481	100,0
Free State, both sexes, 45–64			Free State, Males, 45–64			Free State, females, 45–64					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	746	7,8	1	Tuberculosis (A15-A19)	509	9,2	1	Diabetes mellitus (E10-E14)	362	8,9
2	Diabetes mellitus (E10-E14)	630	6,6	2	Human immunodeficiency virus [HIV] disease (B20-B24)	345	6,2	2	Human immunodeficiency virus [HIV] disease (B20-B24)	284	7,0
3	Human immunodeficiency virus [HIV] disease (B20-B24)	629	6,5	3	Influenza and pneumonia (J09-J18)	337	6,1	3	Hypertensive diseases (I10-I15)	264	6,5
4	Influenza and pneumonia (J09-J18)	531	5,5	4	Cerebrovascular diseases (I60-I69)	285	5,1	4	Tuberculosis (A15-A19)	237	5,9
5	Cerebrovascular diseases (I60-I69)	510	5,3	5	Diabetes mellitus (E10-E14)	268	4,8	5	Cerebrovascular diseases (I60-I69)	225	5,6
6	Hypertensive diseases (I10-I15)	509	5,3	6	Hypertensive diseases (I10-I15)	245	4,4	6	Other forms of heart disease (I30-I52)	214	5,3
7	Other forms of heart disease (I30-I52)	443	4,6	7	Other viral diseases (B25-B34)	239	4,3	7	Malignant neoplasms of female genital organs (C51-C58)	204	5,0
8	Other viral diseases (B25-B34)	430	4,5	8	Other forms of heart disease (I30-I52)	229	4,1	8	Influenza and pneumonia (J09-J18)	194	4,8
9	Chronic lower respiratory diseases (J40-J47)	306	3,2	9	Chronic lower respiratory diseases (J40-J47)	204	3,7	9	Other viral diseases (B25-B34)	189	4,7
10	Certain disorders involving the immune mechanism (D80-D89)	259	2,7	10	Malignant neoplasms of digestive organs (C15-C26)	153	2,8	10	Certain disorders involving the immune mechanism (D80-D89)	115	2,8
	Other Natural	3991	41,5		Other Natural	2270	40,8		Other Natural	1610	39,8
	Non-natural	623	6,5		Non-natural	474	8,5		Non-natural	149	3,7
	All causes	9607	100,0		All causes	5558	100,0		All causes	4047	100,0
Free State, both sexes, 65+			Free State, Males, 65+			Free State, females, 65+					
	No.	%		No.	%		No.	%			
1	Hypertensive diseases (I10-I15)	1224	11,4	1	Hypertensive diseases (I10-I15)	442	9,4	1	Hypertensive diseases (I10-I15)	782	13,0
2	Cerebrovascular diseases (I60-I69)	935	8,7	2	Cerebrovascular diseases (I60-I69)	324	6,9	2	Cerebrovascular diseases (I60-I69)	611	10,2
3	Diabetes mellitus (E10-E14)	903	8,4	3	Diabetes mellitus (E10-E14)	309	6,6	3	Diabetes mellitus (E10-E14)	594	9,9
4	Other forms of heart disease (I30-I52)	756	7,1	4	Other forms of heart disease (I30-I52)	302	6,4	4	Other forms of heart disease (I30-I52)	454	7,6
5	Influenza and pneumonia (J09-J18)	626	5,9	5	Influenza and pneumonia (J09-J18)	282	6,0	5	Influenza and pneumonia (J09-J18)	344	5,7
6	Chronic lower respiratory diseases (J40-J47)	453	4,2	6	Chronic lower respiratory diseases (J40-J47)	282	6,0	6	Ischaemic heart diseases (I20-I25)	179	3,0
7	Ischaemic heart diseases (I20-I25)	416	3,9	7	Ischaemic heart diseases (I20-I25)	237	5,1	7	Chronic lower respiratory diseases (J40-J47)	171	2,8
8	Malignant neoplasms of digestive organs (C15-C26)	256	2,4	8	Malignant neoplasms of male genital organs (C60-C63)	178	3,8	8	Malignant neoplasms of female genital organs (C51-C58)	148	2,5
9	Tuberculosis (A15-A19)	254	2,4	9	Tuberculosis (A15-A19)	148	3,2	9	Renal failure (N17-N19)	146	2,4
10	Renal failure (N17-N19)	249	2,3	10	Malignant neoplasms of digestive organs (C15-C26)	144	3,1	10	Malignant neoplasms of digestive organs (C15-C26)	112	1,9
	Other Natural	4367	40,8		Other Natural	1900	40,5		Other Natural	2349	39,1
	Non-natural	259	2,4		Non-natural	140	3,0		Non-natural	119	2,0
	All causes	10698	100,0		All causes	4688	100,0		All causes	6009	100,0

Appendix M5: The ten leading underlying natural causes of death by age and sex: KwaZulu-Natal, 2017

KwaZulu-Natal, all ages			KwaZulu-Natal, Males, all ages			KwaZulu-Natal, females, all ages					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	5663	7,4	1	Tuberculosis (A15-A19)	3487	8,8	1	Diabetes mellitus (E10-E14)	3332	9,0
2	Diabetes mellitus (E10-E14)	5207	6,8	2	Human immunodeficiency virus [HIV] disease (B20-B24)	2689	6,8	2	Cerebrovascular diseases (I60-I69)	2864	7,7
3	Other forms of heart disease (I30-I52)	5204	6,8	3	Other forms of heart disease (I30-I52)	2464	6,2	3	Other forms of heart disease (I30-I52)	2740	7,4
4	Human immunodeficiency virus [HIV] disease (B20-B24)	4955	6,5	4	Diabetes mellitus (E10-E14)	1875	4,7	4	Human immunodeficiency virus [HIV] disease (B20-B24)	2265	6,1
5	Cerebrovascular diseases (I60-I69)	4545	5,9	5	Cerebrovascular diseases (I60-I69)	1681	4,3	5	Tuberculosis (A15-A19)	2176	5,9
6	Hypertensive diseases (I10-I15)	3070	4,0	6	Influenza and pneumonia (J09-J18)	1279	3,2	6	Hypertensive diseases (I10-I15)	1989	5,4
7	Influenza and pneumonia (J09-J18)	2540	3,3	7	Ischaemic heart diseases (I20-I25)	1201	3,0	7	Influenza and pneumonia (J09-J18)	1261	3,4
8	Ischaemic heart diseases (I20-I25)	2181	2,8	8	Hypertensive diseases (I10-I15)	1081	2,7	8	Malignant neoplasms of female genital organs (C51-C58)	1097	3,0
9	Other viral diseases (B25-B34)	2087	2,7	9	Other viral diseases (B25-B34)	1025	2,6	9	Other viral diseases (B25-B34)	1062	2,9
10	Malignant neoplasms of digestive organs (C15-C26)	1543	2,0	10	Chronic lower respiratory diseases (J40-J47)	1000	2,5	10	Ischaemic heart diseases (I20-I25)	980	2,6
	Other Natural	29939	39,1		Other Natural	14356	36,3		Other Natural	15016	40,5
	Non-natural	9671	12,6		Non-natural	7395	18,7		Non-natural	2270	6,1
	All causes	76605	100,0		All causes	39533	100,0		All causes	37052	100,0
KwaZulu-Natal, 0			KwaZulu-Natal, Males, 0			KwaZulu-Natal, females, 0					
	No.	%		No.	%		No.	%			
1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	483	16,1	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	258	16,1	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	225	16,1
2	Disorders related to length of gestation and fetal growth (P05-P08)	299	10,0	2	Disorders related to length of gestation and fetal growth (P05-P08)	166	10,4	2	Disorders related to length of gestation and fetal growth (P05-P08)	133	9,5
3	Influenza and pneumonia (J09-J18)	223	7,4	3	Infections specific to the perinatal period (P35-P39)	119	7,4	3	Influenza and pneumonia (J09-J18)	119	8,5
4	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	195	6,5	4	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	112	7,0	4	Intestinal infectious diseases (A00-A09)	100	7,2
5	Intestinal infectious diseases (A00-A09)	190	6,3	5	Influenza and pneumonia (J09-J18)	104	6,5	5	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	80	5,7
6	Infections specific to the perinatal period (P35-P39)	176	5,9	6	Other disorders originating in the perinatal period (P90-P96)	98	6,1	6	Other disorders originating in the perinatal period (P90-P96)	60	4,3
7	Other disorders originating in the perinatal period (P90-P96)	159	5,3	7	Intestinal infectious diseases (A00-A09)	90	5,6	7	Infections specific to the perinatal period (P35-P39)	57	4,1
8	Other congenital malformations (Q80-Q89)	84	2,8	8	Other congenital malformations (Q80-Q89)	38	2,4	8	Other congenital malformations (Q80-Q89)	44	3,2
9	Malnutrition (E40-E46)	74	2,5	9	Malnutrition (E40-E46)	36	2,2	9	Malnutrition (E40-E46)	38	2,7
10	Congenital malformations of the circulatory system (Q20-Q28)	70	2,3	10	Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	35	2,2	10	Congenital malformations of the circulatory system (Q20-Q28)	37	2,7
	Other Natural	941	31,3		Other Natural	491	30,7		Other Natural	447	32,0
	Non-natural	110	3,7		Non-natural	54	3,4		Non-natural	56	4,0
	All causes	3004	100,0		All causes	1601	100,0		All causes	1396	100,0
KwaZulu-Natal, 1-14			KwaZulu-Natal, Males, 1-14			KwaZulu-Natal, females, 1-14					
	No.	%		No.	%		No.	%			
1	Influenza and pneumonia (J09-J18)	146	6,7	1	Influenza and pneumonia (J09-J18)	76	6,2	1	Influenza and pneumonia (J09-J18)	70	7,3
2	Intestinal infectious diseases (A00-A09)	117	5,3	2	Tuberculosis (A15-A19)	52	4,2	2	Intestinal infectious diseases (A00-A09)	65	6,7
3	Tuberculosis (A15-A19)	96	4,4	3	Intestinal infectious diseases (A00-A09)	52	4,2	3	Tuberculosis (A15-A19)	44	4,6
4	Other forms of heart disease (I30-I52)	82	3,7	4	Other forms of heart disease (I30-I52)	45	3,7	4	Other forms of heart disease (I30-I52)	37	3,8
5	Cerebral palsy and other paralytic syndromes (G80-G83)	72	3,3	5	Human immunodeficiency virus [HIV] disease (B20-B24)	42	3,4	5	Cerebral palsy and other paralytic syndromes (G80-G83)	32	3,3
6	Human immunodeficiency virus [HIV] disease (B20-B24)	70	3,2	6	Cerebral palsy and other paralytic syndromes (G80-G83)	40	3,3	6	Human immunodeficiency virus [HIV] disease (B20-B24)	28	2,9
7	Malnutrition (E40-E46)	50	2,3	7	Malnutrition (E40-E46)	27	2,2	7	Malnutrition (E40-E46)	23	2,4
8	Other viral diseases (B25-B34)	35	1,6	8	Episodic and paroxysmal disorders (G40-G47)	22	1,8	8	Other viral diseases (B25-B34)	17	1,8
9	Episodic and paroxysmal disorders (G40-G47)	35	1,6	9	Other viral diseases (B25-B34)	18	1,5	9	Other acute lower respiratory infections (J20-J22)	16	1,7
10	Inflammatory diseases of the central nervous system (G00-G09)	29	1,3	10	Other bacterial diseases (A30-A49)	18	1,5	10	Episodic and paroxysmal disorders (G40-G47)	13	1,3
	Other Natural	757	34,5		Other Natural	387	31,5		Other Natural	365	37,9
	Non-natural	704	32,1		Non-natural	450	36,6		Non-natural	254	26,3
	All causes	2193	100,0		All causes	1229	100,0		All causes	964	100,0

Appendix M5: The ten leading underlying natural causes of death by age and sex: KwaZulu-Natal, 2017 (concluded)

KwaZulu-Natal, 15–44			KwaZulu-Natal, Males, 15–44			KwaZulu-Natal, females, 15–44					
	No.	%		No.	%		No.	%			
1	Human immunodeficiency virus [HIV] disease (B20-B24)	3143	13,5	1	Tuberculosis (A15-A19)	1777	12,6	1	Human immunodeficiency virus [HIV] disease (B20-B24)	1504	16,3
2	Tuberculosis (A15-A19)	3031	13,0	2	Human immunodeficiency virus [HIV] disease (B20-B24)	1639	11,6	2	Tuberculosis (A15-A19)	1254	13,6
3	Other viral diseases (B25-B34)	1285	5,5	3	Other viral diseases (B25-B34)	597	4,2	3	Other viral diseases (B25-B34)	688	7,4
4	Other forms of heart disease (I30-I52)	836	3,6	4	Other forms of heart disease (I30-I52)	478	3,4	4	Other forms of heart disease (I30-I52)	358	3,9
5	Influenza and pneumonia (J09-J18)	662	2,8	5	Influenza and pneumonia (J09-J18)	369	2,6	5	Malignant neoplasms of female genital organs (C51-C58)	324	3,5
6	Certain disorders involving the immune mechanism (D80-D89)	524	2,2	6	Certain disorders involving the immune mechanism (D80-D89)	244	1,7	6	Influenza and pneumonia (J09-J18)	293	3,2
7	Cerebrovascular diseases (I60-I69)	337	1,4	7	Cerebrovascular diseases (I60-I69)	175	1,2	7	Certain disorders involving the immune mechanism (D80-D89)	280	3,0
8	Malignant neoplasms of female genital organs (C51-C58)	324	1,4	8	Episodic and paroxysmal disorders (G40-G47)	164	1,2	8	Cerebrovascular diseases (I60-I69)	162	1,8
9	Intestinal infectious diseases (A00-A09)	297	1,3	9	Intestinal infectious diseases (A00-A09)	151	1,1	9	Diseases of liver (K70-K77)	150	1,6
10	Renal failure (N17-N19)	290	1,2	10	Renal failure (N17-N19)	149	1,1	10	Intestinal infectious diseases (A00-A09)	146	1,6
	Non-natural	6384	27,3		Other Natural	3090	21,9		Other Natural	2971	32,2
	Other Natural	6236	26,7		Non-natural	5273	37,4		Non-natural	1111	12,0
	All causes	23349	100,0		All causes	14106	100,0		All causes	9241	100,0
KwaZulu-Natal, 45–64			KwaZulu-Natal, Males, 45–64			KwaZulu-Natal, females, 45–64					
	No.	%		No.	%		No.	%			
1	Diabetes mellitus (E10-E14)	1819	8,9	1	Tuberculosis (A15-A19)	1190	10,2	1	Diabetes mellitus (E10-E14)	1078	12,2
2	Tuberculosis (A15-A19)	1757	8,6	2	Other forms of heart disease (I30-I52)	878	7,5	2	Other forms of heart disease (I30-I52)	641	7,3
3	Other forms of heart disease (I30-I52)	1519	7,4	3	Human immunodeficiency virus [HIV] disease (B20-B24)	853	7,3	3	Cerebrovascular diseases (I60-I69)	589	6,7
4	Human immunodeficiency virus [HIV] disease (B20-B24)	1434	7,0	4	Diabetes mellitus (E10-E14)	741	6,4	4	Human immunodeficiency virus [HIV] disease (B20-B24)	580	6,6
5	Cerebrovascular diseases (I60-I69)	1202	5,9	5	Cerebrovascular diseases (I60-I69)	613	5,3	5	Tuberculosis (A15-A19)	567	6,4
6	Hypertensive diseases (I10-I15)	767	3,7	6	Ischaemic heart diseases (I20-I25)	455	3,9	6	Malignant neoplasms of female genital organs (C51-C58)	447	5,1
7	Ischaemic heart diseases (I20-I25)	689	3,4	7	Chronic lower respiratory diseases (J40-J47)	406	3,5	7	Hypertensive diseases (I10-I15)	410	4,6
8	Malignant neoplasms of digestive organs (C15-C26)	603	2,9	8	Malignant neoplasms of digestive organs (C15-C26)	366	3,1	8	Other viral diseases (B25-B34)	274	3,1
9	Other viral diseases (B25-B34)	599	2,9	9	Influenza and pneumonia (J09-J18)	361	3,1	9	Renal failure (N17-N19)	257	2,9
10	Influenza and pneumonia (J09-J18)	585	2,9	10	Hypertensive diseases (I10-I15)	357	3,1	10	Malignant neoplasms of digestive organs (C15-C26)	237	2,7
	Other Natural	7950	38,8		Other Natural	4281	36,7		Other Natural	3342	37,8
	Non-natural	1563	7,6		Non-natural	1153	9,9		Non-natural	410	4,6
	All causes	20487	100,0		All causes	11654	100,0		All causes	8832	100,0
KwaZulu-Natal, 65+			KwaZulu-Natal, Males, 65+			KwaZulu-Natal, females, 65+					
	No.	%		No.	%		No.	%			
1	Diabetes mellitus (E10-E14)	3154	11,5	1	Other forms of heart disease (I30-I52)	1031	9,5	1	Diabetes mellitus (E10-E14)	2137	12,9
2	Cerebrovascular diseases (I60-I69)	2980	10,9	2	Diabetes mellitus (E10-E14)	1017	9,4	2	Cerebrovascular diseases (I60-I69)	2102	12,7
3	Other forms of heart disease (I30-I52)	2709	9,9	3	Cerebrovascular diseases (I60-I69)	878	8,1	3	Other forms of heart disease (I30-I52)	1678	10,1
4	Hypertensive diseases (I10-I15)	2167	7,9	4	Hypertensive diseases (I10-I15)	655	6,1	4	Hypertensive diseases (I10-I15)	1512	9,1
5	Ischaemic heart diseases (I20-I25)	1332	4,9	5	Ischaemic heart diseases (I20-I25)	635	5,9	5	Ischaemic heart diseases (I20-I25)	697	4,2
6	Influenza and pneumonia (J09-J18)	915	3,3	6	Chronic lower respiratory diseases (J40-J47)	493	4,6	6	Influenza and pneumonia (J09-J18)	554	3,3
7	Chronic lower respiratory diseases (J40-J47)	798	2,9	7	Tuberculosis (A15-A19)	439	4,1	7	Renal failure (N17-N19)	397	2,4
8	Tuberculosis (A15-A19)	740	2,7	8	Malignant neoplasms of digestive organs (C15-C26)	381	3,5	8	Malignant neoplasms of digestive organs (C15-C26)	358	2,2
9	Malignant neoplasms of digestive organs (C15-C26)	739	2,7	9	Malignant neoplasms of male genital organs (C60-C63)	375	3,5	9	Malignant neoplasms of female genital organs (C51-C58)	324	2,0
10	Renal failure (N17-N19)	673	2,5	10	Influenza and pneumonia (J09-J18)	361	3,3	10	Chronic lower respiratory diseases (J40-J47)	305	1,8
	Other Natural	10328	37,7		Other Natural	4126	38,1		Other Natural	6080	36,7
	Non-natural	867	3,2		Non-natural	434	4,0		Non-natural	433	2,6
	All causes	27402	100,0		All causes	10825	100,0		All causes	16577	100,0

Appendix M6: The ten leading underlying natural causes of death by age and sex: North West, 2017

North West, all ages			North West, Males, all ages			North West, females, all ages					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	2408	7,4	1	Tuberculosis (A15-A19)	1 511	8,7	1	Hypertensive diseases (I10-I15)	1156	7,7
2	Hypertensive diseases (I10-I15)	1897	5,8	2	Influenza and pneumonia (J09-J18)	933	5,4	2	Diabetes mellitus (E10-E14)	940	6,2
3	Other forms of heart disease (I30-I52)	1791	5,5	3	Other forms of heart disease (I30-I52)	865	5,0	3	Other forms of heart disease (I30-I52)	926	6,2
4	Influenza and pneumonia (J09-J18)	1647	5,1	4	Human immunodeficiency virus [HIV] disease (B20-B24)	760	4,4	4	Tuberculosis (A15-A19)	897	6,0
5	Diabetes mellitus (E10-E14)	1536	4,7	5	Hypertensive diseases (I10-I15)	741	4,3	5	Influenza and pneumonia (J09-J18)	714	4,7
6	Human immunodeficiency virus [HIV] disease (B20-B24)	1435	4,4	6	Cerebrovascular diseases (I60-I69)	669	3,8	6	Cerebrovascular diseases (I60-I69)	704	4,7
7	Cerebrovascular diseases (I60-I69)	1373	4,2	7	Other viral diseases (B25-B34)	603	3,5	7	Human immunodeficiency virus [HIV] disease (B20-B24)	675	4,5
8	Other viral diseases (B25-B34)	1225	3,8	8	Diabetes mellitus (E10-E14)	596	3,4	8	Other viral diseases (B25-B34)	622	4,1
9	Certain disorders involving the immune mechanism (D80-D89)	916	2,8	9	Chronic lower respiratory diseases (J40-J47)	573	3,3	9	Certain disorders involving the immune mechanism (D80-D89)	459	3,1
10	Chronic lower respiratory diseases (J40-J47)	872	2,7	10	Certain disorders involving the immune mechanism (D80-D89)	457	2,6	10	Malignant neoplasms of female genital organs (C51-C58)	340	2,3
	Other Natural	14514	44,7		Other Natural	7 529	43,2		Other Natural	6938	46,1
	Non-natural	2859	8,8		Non-natural	2 179	12,5		Non-natural	678	4,5
	All causes	32473	100,0		All causes	17 416	100,0		All causes	15049	100
North West, 0			North West, Males, 0			North West, females, 0					
	No.	%		No.	%		No.	%			
1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	340	17,1	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	179	16,9	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	159	17,3
2	Intestinal infectious diseases (A00-A09)	180	9,1	2	Intestinal infectious diseases (A00-A09)	92	8,7	2	Intestinal infectious diseases (A00-A09)	88	9,6
3	Influenza and pneumonia (J09-J18)	153	7,7	3	Influenza and pneumonia (J09-J18)	85	8,0	3	Influenza and pneumonia (J09-J18)	68	7,4
4	Other disorders originating in the perinatal period (P90-P96)	123	6,2	4	Other disorders originating in the perinatal period (P90-P96)	77	7,3	4	Disorders related to length of gestation and fetal growth (P05-P08)	55	6,0
5	Infections specific to the perinatal period (P35-P39)	123	6,2	5	Infections specific to the perinatal period (P35-P39)	70	6,6	5	Infections specific to the perinatal period (P35-P39)	53	5,8
6	Disorders related to length of gestation and fetal growth (P05-P08)	119	6,0	6	Disorders related to length of gestation and fetal growth (P05-P08)	63	5,9	6	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	50	5,4
7	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	102	5,1	7	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	52	4,9	7	Other disorders originating in the perinatal period (P90-P96)	46	5,0
8	Malnutrition (E40-E46)	84	4,2	8	Malnutrition (E40-E46)	41	3,9	8	Malnutrition (E40-E46)	43	4,7
9	Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	40	2,0	9	Other congenital malformations (Q80-Q89)	20	1,9	9	Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	23	2,5
10	Other bacterial diseases (A30-A49)	32	1,6	10	Digestive system disorders of fetus and newborn (P75-P78)	20	1,9	10	Other bacterial diseases (A30-A49)	15	1,6
	Other Natural	645	32,5		Other Natural	337	31,8		Other Natural	299	32,5
	Non-natural	45	2,3		Non-natural	25	2,4		Non-natural	20	2,2
	All causes	1986	100,0		All causes	1061	100,0		All causes	919	100
North West, 1-14			North West, Males, 1-14			North West, females, 1-14					
	No.	%		No.	%		No.	%			
1	Intestinal infectious diseases (A00-A09)	83	9,1	1	Intestinal infectious diseases (A00-A09)	41	8,2	1	Intestinal infectious diseases (A00-A09)	42	10,1
2	Malnutrition (E40-E46)	77	8,4	2	Malnutrition (E40-E46)	39	7,8	2	Malnutrition (E40-E46)	38	9,1
3	Influenza and pneumonia (J09-J18)	68	7,4	3	Tuberculosis (A15-A19)	32	6,4	3	Influenza and pneumonia (J09-J18)	36	8,7
4	Tuberculosis (A15-A19)	56	6,1	4	Influenza and pneumonia (J09-J18)	32	6,4	4	Tuberculosis (A15-A19)	24	5,8
5	Other viral diseases (B25-B34)	29	3,2	5	Other viral diseases (B25-B34)	16	3,2	5	Other viral diseases (B25-B34)	13	3,1
6	Human immunodeficiency virus [HIV] disease (B20-B24)	23	2,5	6	Human immunodeficiency virus [HIV] disease (B20-B24)	12	2,4	6	Human immunodeficiency virus [HIV] disease (B20-B24)	11	2,6
7	Episodic and paroxysmal disorders (G40-G47)	17	1,9	7	Certain disorders involving the immune mechanism (D80-D89)	9	1,8	7	Episodic and paroxysmal disorders (G40-G47)	11	2,6
8	Other diseases of the respiratory system (J95-J99)	15	1,6	8	Other diseases of the respiratory system (J95-J99)	9	1,8	8	Other forms of heart disease (I30-I52)	7	1,7
9	Certain disorders involving the immune mechanism (D80-D89)	14	1,5	9	Other bacterial diseases (A30-A49)	8	1,6	9	Other diseases of the respiratory system (J95-J99)	6	1,4
10	Other bacterial diseases (A30-A49)	14	1,5	10	Episodic and paroxysmal disorders (G40-G47)	6	1,2	10	Other bacterial diseases (A30-A49)	6	1,4
	Other Natural	300	32,9		Other Natural	159	32,0		Other Natural	139	33,4
	Non-natural	217	23,8		Non-natural	134	27,0		Non-natural	83	20,0
	All causes	913	100,0		All causes	497	100,0		All causes	416	100

Appendix M6: The ten leading underlying natural causes of death by age and sex: North West, 2017 (concluded)

North West, 15–44			North West, Males, 15–44			North West, females, 15–44					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	1149	13,1	1	Tuberculosis (A15-A19)	658	13,3	1	Tuberculosis (A15-A19)	491	12,7
2	Human immunodeficiency virus [HIV] disease (B20-B24)	822	9,3	2	Human immunodeficiency virus [HIV] disease (B20-B24)	417	8,4	2	Human immunodeficiency virus [HIV] disease (B20-B24)	405	10,5
3	Other viral diseases (B25-B34)	678	7,7	3	Other viral diseases (B25-B34)	313	6,3	3	Other viral diseases (B25-B34)	365	9,4
4	Influenza and pneumonia (J09-J18)	539	6,1	4	Influenza and pneumonia (J09-J18)	287	5,8	4	Certain disorders involving the immune mechanism (D80-D89)	273	7,1
5	Certain disorders involving the immune mechanism (D80-D89)	515	5,8	5	Certain disorders involving the immune mechanism (D80-D89)	242	4,9	5	Influenza and pneumonia (J09-J18)	252	6,5
6	Other forms of heart disease (I30-I52)	245	2,8	6	Other forms of heart disease (I30-I52)	127	2,6	6	Other forms of heart disease (I30-I52)	118	3,1
7	Intestinal infectious diseases (A00-A09)	115	1,3	7	Episodic and paroxysmal disorders (G40-G47)	73	1,5	7	Malignant neoplasms of female genital organs (C51-C58)	74	1,9
8	Aplastic and other anaemias (D60-D64)	114	1,3	8	Cerebrovascular diseases (I60-I69)	63	1,3	8	Aplastic and other anaemias (D60-D64)	67	1,7
9	Cerebrovascular diseases (I60-I69)	113	1,3	9	Intestinal infectious diseases (A00-A09)	63	1,3	9	Diabetes mellitus (E10-E14)	66	1,7
10	Other bacterial diseases (A30-A49)	112	1,3	10	Other bacterial diseases (A30-A49)	53	1,1	10	Other bacterial diseases (A30-A49)	59	1,5
	Other Natural	2680	30,4		Other Natural	1264	25,6		Other Natural	1352	35,0
	Non-natural	1722	19,6		Non-natural	1379	27,9		Non-natural	342	8,9
	All causes	8804	100,0		All causes	4939	100,0		All causes	3864	100,0
North West, 45–64			North West, Males, 45–64			North West, females, 45–64					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	878	9,1	1	Tuberculosis (A15-A19)	606	10,7	1	Diabetes mellitus (E10-E14)	313	8,0
2	Diabetes mellitus (E10-E14)	564	5,9	2	Influenza and pneumonia (J09-J18)	321	5,6	2	Tuberculosis (A15-A19)	272	6,9
3	Other forms of heart disease (I30-I52)	532	5,5	3	Other forms of heart disease (I30-I52)	300	5,3	3	Hypertensive diseases (I10-I15)	267	6,8
4	Human immunodeficiency virus [HIV] disease (B20-B24)	498	5,2	4	Human immunodeficiency virus [HIV] disease (B20-B24)	279	4,9	4	Other forms of heart disease (I30-I52)	232	5,9
5	Hypertensive diseases (I10-I15)	494	5,1	5	Diabetes mellitus (E10-E14)	251	4,4	5	Human immunodeficiency virus [HIV] disease (B20-B24)	219	5,6
6	Influenza and pneumonia (J09-J18)	479	5,0	6	Chronic lower respiratory diseases (J40-J47)	231	4,1	6	Other viral diseases (B25-B34)	196	5,0
7	Other viral diseases (B25-B34)	420	4,4	7	Hypertensive diseases (I10-I15)	227	4,0	7	Cerebrovascular diseases (I60-I69)	184	4,7
8	Cerebrovascular diseases (I60-I69)	407	4,2	8	Other viral diseases (B25-B34)	224	3,9	8	Influenza and pneumonia (J09-J18)	158	4,0
9	Chronic lower respiratory diseases (J40-J47)	321	3,3	9	Cerebrovascular diseases (I60-I69)	223	3,9	9	Malignant neoplasms of female genital organs (C51-C58)	148	3,8
10	Certain disorders involving the immune mechanism (D80-D89)	320	3,3	10	Certain disorders involving the immune mechanism (D80-D89)	173	3,0	10	Certain disorders involving the immune mechanism (D80-D89)	147	3,7
	Other Natural	4122	42,8		Other Natural	2392	42,1		Other Natural	1672	42,5
	Non-natural	587	6,1		Non-natural	458	8,1		Non-natural	128	3,3
	All causes	9622	100,0		All causes	5685	100,0		All causes	3936	100,0
North West, 65+			North West, Males, 65+			North West, females, 65+					
	No.	%		No.	%		No.	%			
1	Hypertensive diseases (I10-I15)	1300	11,7	1	Hypertensive diseases (I10-I15)	465	9,0	1	Hypertensive diseases (I10-I15)	835	14,1
2	Other forms of heart disease (I30-I52)	981	8,8	2	Other forms of heart disease (I30-I52)	421	8,1	2	Other forms of heart disease (I30-I52)	560	9,5
3	Diabetes mellitus (E10-E14)	856	7,7	3	Cerebrovascular diseases (I60-I69)	378	7,3	3	Diabetes mellitus (E10-E14)	557	9,4
4	Cerebrovascular diseases (I60-I69)	847	7,6	4	Diabetes mellitus (E10-E14)	299	5,8	4	Cerebrovascular diseases (I60-I69)	469	7,9
5	Chronic lower respiratory diseases (J40-J47)	457	4,1	5	Chronic lower respiratory diseases (J40-J47)	291	5,6	5	Influenza and pneumonia (J09-J18)	199	3,4
6	Influenza and pneumonia (J09-J18)	402	3,6	6	Malignant neoplasms of male genital organs (C60-C63)	212	4,1	6	Chronic lower respiratory diseases (J40-J47)	166	2,8
7	Tuberculosis (A15-A19)	306	2,8	7	Tuberculosis (A15-A19)	205	4,0	7	Malignant neoplasms of female genital organs (C51-C58)	118	2,0
8	Ischaemic heart diseases (I20-I25)	269	2,4	8	Influenza and pneumonia (J09-J18)	203	3,9	8	Malignant neoplasms of digestive organs (C15-C26)	115	1,9
9	Malignant neoplasms of digestive organs (C15-C26)	268	2,4	9	Ischaemic heart diseases (I20-I25)	161	3,1	9	Ischaemic heart diseases (I20-I25)	108	1,8
10	Malignant neoplasms of male genital organs (C60-C63)	212	1,9	10	Malignant neoplasms of digestive organs (C15-C26)	153	2,9	10	Tuberculosis (A15-A19)	101	1,7
	Other Natural	4928	44,4		Other Natural	2237	43,1		Other Natural	2573	43,6
	Non-natural	265	2,4		Non-natural	162	3,1		Non-natural	103	1,7
	All causes	11091	100,0		All causes	5187	100,0		All causes	5904	100,0

Appendix M7: The ten leading underlying natural causes of death by age and sex: Gauteng, 2017

Gauteng, all ages			Gauteng, Males, all ages			Gauteng, females, all ages					
	No.	%		No.	%		No.	%			
1	Other forms of heart disease (I30-I52)	5210	5,6	1	Tuberculosis (A15-A19)	2714	5,5	1	Other forms of heart disease (I30-I52)	2684	6,3
2	Tuberculosis (A15-A19)	4338	4,7	2	Other forms of heart disease (I30-I52)	2524	5,1	2	Diabetes mellitus (E10-E14)	2377	5,6
3	Diabetes mellitus (E10-E14)	4280	4,6	3	Influenza and pneumonia (J09-J18)	2158	4,3	3	Influenza and pneumonia (J09-J18)	1989	4,7
4	Influenza and pneumonia (J09-J18)	4161	4,5	4	Diabetes mellitus (E10-E14)	1903	3,8	4	Hypertensive diseases (I10-I15)	1923	4,5
5	Cerebrovascular diseases (I60-I69)	3759	4,1	5	Cerebrovascular diseases (I60-I69)	1840	3,7	5	Cerebrovascular diseases (I60-I69)	1918	4,5
6	Hypertensive diseases (I10-I15)	3216	3,5	6	Ischaemic heart diseases (I20-I25)	1767	3,6	6	Tuberculosis (A15-A19)	1610	3,8
7	Ischaemic heart diseases (I20-I25)	2994	3,2	7	Human immunodeficiency virus [HIV] disease (B20-B24)	1458	2,9	7	Human immunodeficiency virus [HIV] disease (B20-B24)	1370	3,2
8	Human immunodeficiency virus [HIV] disease (B20-B24)	2828	3,1	8	Chronic lower respiratory diseases (J40-J47)	1423	2,9	8	Malignant neoplasms of female genital organs (C51-C58)	1223	2,9
9	Chronic lower respiratory diseases (J40-J47)	2489	2,7	9	Malignant neoplasms of digestive organs (C15-C26)	1338	2,7	9	Ischaemic heart diseases (I20-I25)	1223	2,9
10	Malignant neoplasms of digestive organs (C15-C26)	2381	2,6	10	Hypertensive diseases (I10-I15)	1293	2,6	10	Other viral diseases (B25-B34)	1091	2,6
	Other Natural	45973	49,7		Other Natural	22808	45,9		Other Natural	22889	53,7
	Non-natural	10894	11,8		Non-natural	8512	17,1		Non-natural	2301	5,4
	All causes	92523	100,0		All causes	49738	100		All causes	42598	100,0
Gauteng, 0			Gauteng, Males, 0			Gauteng, females, 0					
	No.	%		No.	%		No.	%			
1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	791	16,7	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	440	17,1	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	351	16,4
2	Infections specific to the perinatal period (P35-P39)	420	8,9	2	Infections specific to the perinatal period (P35-P39)	221	8,6	2	Infections specific to the perinatal period (P35-P39)	197	9,2
3	Other disorders originating in the perinatal period (P90-P96)	316	6,7	3	Other disorders originating in the perinatal period (P90-P96)	180	7,0	3	Influenza and pneumonia (J09-J18)	145	6,8
4	Influenza and pneumonia (J09-J18)	303	6,4	4	Influenza and pneumonia (J09-J18)	156	6,1	4	Other disorders originating in the perinatal period (P90-P96)	132	6,2
5	Disorders related to length of gestation and fetal growth (P05-P08)	252	5,3	5	Disorders related to length of gestation and fetal growth (P05-P08)	132	5,1	5	Disorders related to length of gestation and fetal growth (P05-P08)	119	5,6
6	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	210	4,4	6	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	130	5,1	6	Intestinal infectious diseases (A00-A09)	85	4,0
7	Intestinal infectious diseases (A00-A09)	185	3,9	7	Intestinal infectious diseases (A00-A09)	100	3,9	7	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	80	3,7
8	Congenital malformations of the circulatory system (Q20-Q28)	161	3,4	8	Congenital malformations of the circulatory system (Q20-Q28)	91	3,5	8	Congenital malformations of the circulatory system (Q20-Q28)	69	3,2
9	Other congenital malformations (Q80-Q89)	116	2,5	9	Other congenital malformations (Q80-Q89)	62	2,4	9	Chromosomal abnormalities, not elsewhere classified (Q90-Q99)	54	2,5
10	Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	107	2,3	10	Other bacterial diseases (A30-A49)	61	2,4	10	Other congenital malformations (Q80-Q89)	51	2,4
	Other Natural	1720	36,3		Other Natural	910	35,5		Other Natural	792	37,0
	Non-natural	151	3,2		Non-natural	83	3,2		Non-natural	68	3,2
	All causes	4732	100,0		All causes	2566	100		All causes	2143	100,0
Gauteng, 1-14			Gauteng, Males, 1-14			Gauteng, females, 1-14					
	No.	%		No.	%		No.	%			
1	Influenza and pneumonia (J09-J18)	147	6,7	1	Influenza and pneumonia (J09-J18)	74	6,2	1	Influenza and pneumonia (J09-J18)	73	7,3
2	Intestinal infectious diseases (A00-A09)	95	4,3	2	Intestinal infectious diseases (A00-A09)	40	3,4	2	Intestinal infectious diseases (A00-A09)	55	5,5
3	Other forms of heart disease (I30-I52)	68	3,1	3	Cerebral palsy and other paralytic syndromes (G80-G83)	34	2,9	3	Tuberculosis (A15-A19)	35	3,5
4	Cerebral palsy and other paralytic syndromes (G80-G83)	54	2,5	4	Other forms of heart disease (I30-I52)	34	2,9	4	Other forms of heart disease (I30-I52)	34	3,4
5	Tuberculosis (A15-A19)	54	2,5	5	Malignant neoplasms, stated or presumed to be primary, of lymphoid, haematopoietic and related tissue (C81-C96)	26	2,2	5	Inflammatory diseases of the central nervous system (G00-G09)	24	2,4
6	Other diseases of the respiratory system (J95-J99)	42	1,9	6	Malnutrition (E40-E46)	21	1,8	6	Other diseases of the respiratory system (J95-J99)	24	2,4
7	Congenital malformations of the circulatory system (Q20-Q28)	39	1,8	7	Tuberculosis (A15-A19)	19	1,6	7	Congenital malformations of the circulatory system (Q20-Q28)	23	2,3
8	Malignant neoplasms, stated or presumed to be primary, of lymphoid, haematopoietic and related tissue (C81-C96)	39	1,8	8	Metabolic disorders (E70-E90)	19	1,6	8	Other bacterial diseases (A30-A49)	21	2,1
9	Inflammatory diseases of the central nervous system (G00-G09)	38	1,7	9	Other disorders of the nervous system (G90-G99)	19	1,6	9	Cerebral palsy and other paralytic syndromes (G80-G83)	20	2,0
10	Malnutrition (E40-E46)	36	1,6	10	Other diseases of the respiratory system (J95-J99)	18	1,5	10	Malnutrition (E40-E46)	15	1,5
	Other Natural	989	45,0		Other Natural	527	44,2		Other Natural	442	44,0
	Non-natural	599	27,2		Non-natural	361	30,3		Non-natural	238	23,7
	All causes	2200	100,0		All causes	1192	0		All causes	1004	100,0

Appendix M7: The ten leading underlying natural causes of death by age and sex: Gauteng, 2017 (concluded)

Gauteng, 15–44			Gauteng, Males, 15–44			Gauteng, females, 15–44					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	2261	8,9	1	Tuberculosis (A15-A19)	1342	8,7	1	Tuberculosis (A15-A19)	916	9,3
2	Human immunodeficiency virus [HIV] disease (B20-B24)	1601	6,3	2	Human immunodeficiency virus [HIV] disease (B20-B24)	790	5,1	2	Human immunodeficiency virus [HIV] disease (B20-B24)	811	8,2
3	Other viral diseases (B25-B34)	1253	5,0	3	Influenza and pneumonia (J09-J18)	601	3,9	3	Other viral diseases (B25-B34)	652	6,6
4	Influenza and pneumonia (J09-J18)	1065	4,2	4	Other viral diseases (B25-B34)	601	3,9	4	Certain disorders involving the immune mechanism (D80-D89)	504	5,1
5	Certain disorders involving the immune mechanism (D80-D89)	953	3,8	5	Other forms of heart disease (I30-I52)	475	3,1	5	Influenza and pneumonia (J09-J18)	464	4,7
6	Other forms of heart disease (I30-I52)	879	3,5	6	Certain disorders involving the immune mechanism (D80-D89)	449	2,9	6	Other forms of heart disease (I30-I52)	402	4,1
7	Renal failure (N17-N19)	416	1,6	7	Renal failure (N17-N19)	253	1,6	7	Malignant neoplasms of female genital organs (C51-C58)	284	2,9
8	Cerebrovascular diseases (I60-I69)	394	1,6	8	Cerebrovascular diseases (I60-I69)	211	1,4	8	Other bacterial diseases (A30-A49)	189	1,9
9	Other bacterial diseases (A30-A49)	359	1,4	9	Other bacterial diseases (A30-A49)	170	1,1	9	Cerebrovascular diseases (I60-I69)	183	1,9
10	Malignant neoplasms, stated or presumed to be primary, of lymphoid, haematopoietic and related tissue (C81-C96)	301	1,2	10	Inflammatory diseases of the central nervous system (G00-G09)	168	1,1	10	Renal failure (N17-N19)	163	1,7
	Other Natural	8845	35,0		Other Natural	4519	29,3		Other Natural	4172	42,4
	Non-natural	6944	27,5		Non-natural	5840	37,9		Non-natural	1100	11,2
	All causes	25271	100,0		All causes	15419	100,0		All causes	9840	100,0
Gauteng, 45–64			Gauteng, Males, 45–64			Gauteng, females, 45–64					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	1567	5,8	1	Tuberculosis (A15-A19)	1065	6,9	1	Diabetes mellitus (E10-E14)	792	7,0
2	Diabetes mellitus (E10-E14)	1566	5,8	2	Other forms of heart disease (I30-I52)	923	6,0	2	Other forms of heart disease (I30-I52)	642	5,7
3	Other forms of heart disease (I30-I52)	1565	5,8	3	Diabetes mellitus (E10-E14)	774	5,0	3	Malignant neoplasms of female genital organs (C51-C58)	577	5,1
4	Cerebrovascular diseases (I60-I69)	1246	4,6	4	Cerebrovascular diseases (I60-I69)	705	4,5	4	Cerebrovascular diseases (I60-I69)	541	4,8
5	Influenza and pneumonia (J09-J18)	1082	4,0	5	Ischaemic heart diseases (I20-I25)	638	4,1	5	Tuberculosis (A15-A19)	500	4,4
6	Human immunodeficiency virus [HIV] disease (B20-B24)	1046	3,9	6	Influenza and pneumonia (J09-J18)	631	4,1	6	Human immunodeficiency virus [HIV] disease (B20-B24)	474	4,2
7	Malignant neoplasms of digestive organs (C15-C26)	971	3,6	7	Malignant neoplasms of digestive organs (C15-C26)	589	3,8	7	Influenza and pneumonia (J09-J18)	451	4,0
8	Ischaemic heart diseases (I20-I25)	944	3,5	8	Human immunodeficiency virus [HIV] disease (B20-B24)	572	3,7	8	Hypertensive diseases (I10-I15)	450	4,0
9	Hypertensive diseases (I10-I15)	909	3,4	9	Chronic lower respiratory diseases (J40-J47)	496	3,2	9	Malignant neoplasms of breast (C50)	399	3,5
10	Other viral diseases (B25-B34)	802	3,0	10	Hypertensive diseases (I10-I15)	459	3,0	10	Malignant neoplasms of digestive organs (C15-C26)	382	3,4
	Other Natural	13207	49,2		Other Natural	7148	46,1		Other Natural	5692	50,2
	Non-natural	1942	7,2		Non-natural	1505	9,7		Non-natural	437	3,9
	All causes	26847	100,0		All causes	15505	100,0		All causes	11337	100,0
Gauteng, 65+			Gauteng, Males, 65+			Gauteng, females, 65+					
	No.	%		No.	%		No.	%			
1	Other forms of heart disease (I30-I52)	2633	8,0	1	Other forms of heart disease (I30-I52)	1052	7,2	1	Other forms of heart disease (I30-I52)	1581	8,7
2	Diabetes mellitus (E10-E14)	2419	7,3	2	Ischaemic heart diseases (I20-I25)	972	6,6	2	Diabetes mellitus (E10-E14)	1452	8,0
3	Hypertensive diseases (I10-I15)	2098	6,4	3	Diabetes mellitus (E10-E14)	967	6,6	3	Hypertensive diseases (I10-I15)	1372	7,5
4	Cerebrovascular diseases (I60-I69)	2079	6,3	4	Cerebrovascular diseases (I60-I69)	902	6,1	4	Cerebrovascular diseases (I60-I69)	1177	6,5
5	Ischaemic heart diseases (I20-I25)	1816	5,5	5	Chronic lower respiratory diseases (J40-J47)	838	5,7	5	Influenza and pneumonia (J09-J18)	852	4,7
6	Chronic lower respiratory diseases (J40-J47)	1597	4,9	6	Hypertensive diseases (I10-I15)	726	4,9	6	Ischaemic heart diseases (I20-I25)	844	4,6
7	Influenza and pneumonia (J09-J18)	1530	4,6	7	Influenza and pneumonia (J09-J18)	678	4,6	7	Chronic lower respiratory diseases (J40-J47)	759	4,2
8	Malignant neoplasms of digestive organs (C15-C26)	1191	3,6	8	Malignant neoplasms of digestive organs (C15-C26)	622	4,2	8	Malignant neoplasms of digestive organs (C15-C26)	569	3,1
9	Renal failure (N17-N19)	871	2,6	9	Malignant neoplasms of male genital organs (C60-C63)	599	4,1	9	Renal failure (N17-N19)	458	2,5
10	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	692	2,1	10	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	431	2,9	10	Other bacterial diseases (A30-A49)	382	2,1
	Other Natural	15007	45,6		Other Natural	6370	43,3		Other Natural	8328	45,7
	Non-natural	979	3,0		Non-natural	543	3,7		Non-natural	436	2,4
	All causes	32912	100,0		All causes	14700	100,0		All causes	18210	100,0

Appendix M8: The ten leading underlying natural causes of death by age and sex: Mpumalanga, 2017

Mpumalanga, all ages			Mpumalanga, Males, all ages			Mpumalanga, females, all ages					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	2363	8,1	1	Tuberculosis (A15-A19)	1466	9,6	1	Diabetes mellitus (E10-E14)	969	6,9
2	Diabetes mellitus (E10-E14)	1566	5,3	2	Influenza and pneumonia (J09-J18)	798	5,2	2	Hypertensive diseases (I10-I15)	908	6,5
3	Influenza and pneumonia (J09-J18)	1545	5,3	3	Cerebrovascular diseases (I60-I69)	661	4,3	3	Tuberculosis (A15-A19)	897	6,4
4	Hypertensive diseases (I10-I15)	1538	5,2	4	Human immunodeficiency virus [HIV] disease (B20-B24)	632	4,1	4	Cerebrovascular diseases (I60-I69)	867	6,2
5	Cerebrovascular diseases (I60-I69)	1528	5,2	5	Hypertensive diseases (I10-I15)	630	4,1	5	Influenza and pneumonia (J09-J18)	746	5,3
6	Other viral diseases (B25-B34)	1299	4,4	6	Diabetes mellitus (E10-E14)	597	3,9	6	Other viral diseases (B25-B34)	710	5,1
7	Human immunodeficiency virus [HIV] disease (B20-B24)	1286	4,4	7	Other viral diseases (B25-B34)	589	3,8	7	Human immunodeficiency virus [HIV] disease (B20-B24)	654	4,7
8	Other forms of heart disease (I30-I52)	1151	3,9	8	Other forms of heart disease (I30-I52)	516	3,4	8	Other forms of heart disease (I30-I52)	634	4,5
9	Ischaemic heart diseases (I20-I25)	915	3,1	9	Ischaemic heart diseases (I20-I25)	466	3,0	9	Ischaemic heart diseases (I20-I25)	449	3,2
10	Intestinal infectious diseases (A00-A09)	700	2,4	10	Chronic lower respiratory diseases (J40-J47)	346	2,3	10	Malignant neoplasms of female genital organs (C51-C58)	402	2,9
	Other Natural	12023	41,0		Other Natural	5986	39,1		Other Natural	5983	42,8
	Non-natural	3386	11,6		Non-natural	2612	17,1		Non-natural	773	5,5
	All causes	29300	100,0		All causes	15299	100,0		All causes	13992	100,0
Mpumalanga, 0			Mpumalanga, Males, 0			Mpumalanga, females, 0					
	No.	%		No.	%		No.	%			
1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	260	19,8	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	137	20,2	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	122	19,3
2	Intestinal infectious diseases (A00-A09)	129	9,8	2	Intestinal infectious diseases (A00-A09)	71	10,5	2	Intestinal infectious diseases (A00-A09)	58	9,2
3	Influenza and pneumonia (J09-J18)	96	7,3	3	Influenza and pneumonia (J09-J18)	46	6,8	3	Influenza and pneumonia (J09-J18)	49	7,8
4	Other disorders originating in the perinatal period (P90-P96)	80	6,1	4	Other disorders originating in the perinatal period (P90-P96)	44	6,5	4	Disorders related to length of gestation and fetal growth (P05-P08)	37	5,9
5	Disorders related to length of gestation and fetal growth (P05-P08)	77	5,9	5	Disorders related to length of gestation and fetal growth (P05-P08)	39	5,8	5	Other disorders originating in the perinatal period (P90-P96)	35	5,5
6	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	58	4,4	6	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	30	4,4	6	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	28	4,4
7	Infections specific to the perinatal period (P35-P39)	45	3,4	7	Infections specific to the perinatal period (P35-P39)	22	3,2	7	Infections specific to the perinatal period (P35-P39)	22	3,5
8	Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	34	2,6	8	Malnutrition (E40-E46)	16	2,4	8	Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	18	2,8
9	Other acute lower respiratory infections (J20-J22)	30	2,3	9	Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	16	2,4	9	Other acute lower respiratory infections (J20-J22)	17	2,7
10	Other congenital malformations (Q80-Q89)	28	2,1	10	Other congenital malformations (Q80-Q89)	14	2,1	10	Other congenital malformations (Q80-Q89)	14	2,2
	Other Natural	420	31,9		Other Natural	218	32,2		Other Natural	199	31,5
	Non-natural	58	4,4		Non-natural	25	3,7		Non-natural	33	5,2
	All causes	1315	100,0		All causes	678	100,0		All causes	632	100,0
Mpumalanga, 1-14			Mpumalanga, Males, 1-14			Mpumalanga, females, 1-14					
	No.	%		No.	%		No.	%			
1	Intestinal infectious diseases (A00-A09)	77	8,3	1	Influenza and pneumonia (J09-J18)	39	7,6	1	Intestinal infectious diseases (A00-A09)	39	9,4
2	Influenza and pneumonia (J09-J18)	71	7,6	2	Intestinal infectious diseases (A00-A09)	38	7,4	2	Influenza and pneumonia (J09-J18)	32	7,7
3	Tuberculosis (A15-A19)	38	4,1	3	Tuberculosis (A15-A19)	21	4,1	3	Tuberculosis (A15-A19)	17	4,1
4	Other viral diseases (B25-B34)	37	4,0	4	Other viral diseases (B25-B34)	21	4,1	4	Malnutrition (E40-E46)	17	4,1
5	Malnutrition (E40-E46)	37	4,0	5	Malnutrition (E40-E46)	20	3,9	5	Other viral diseases (B25-B34)	16	3,8
6	Other acute lower respiratory infections (J20-J22)	32	3,4	6	Other acute lower respiratory infections (J20-J22)	17	3,3	6	Other acute lower respiratory infections (J20-J22)	15	3,6
7	Human immunodeficiency virus [HIV] disease (B20-B24)	23	2,5	7	Inflammatory diseases of the central nervous system (G00-G09)	14	2,7	7	Human immunodeficiency virus [HIV] disease (B20-B24)	12	2,9
8	Inflammatory diseases of the central nervous system (G00-G09)	19	2,0	8	Human immunodeficiency virus [HIV] disease (B20-B24)	11	2,1	8	Other forms of heart disease (I30-I52)	11	2,6
9	Other bacterial diseases (A30-A49)	16	1,7	9	Chronic lower respiratory diseases (J40-J47)	9	1,8	9	Other bacterial diseases (A30-A49)	10	2,4
10	Certain disorders involving the immune mechanism (D80-D89)	15	1,6	10	Episodic and paroxysmal disorders (G40-G47)	9	1,8	10	Certain disorders involving the immune mechanism (D80-D89)	7	1,7
	Other Natural	308	33,1		Other Natural	156	30,4		Other Natural	142	34,1
	Non-natural	257	27,6		Non-natural	159	30,9		Non-natural	98	23,6
	All causes	930	100,0		All causes	514	100,0		All causes	416	100,0

Appendix M8: The ten leading underlying natural causes of death by age and sex: Mpumalanga, 2017 (concluded)

Mpumalanga, 15–44			Mpumalanga, Males, 15–44			Mpumalanga, females, 15–44					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	1183	12,8	1	Tuberculosis (A15-A19)	657	12,5	1	Tuberculosis (A15-A19)	526	13,1
2	Human immunodeficiency virus [HIV] disease (B20-B24)	766	8,3	2	Human immunodeficiency virus [HIV] disease (B20-B24)	375	7,1	2	Other viral diseases (B25-B34)	422	10,5
3	Other viral diseases (B25-B34)	730	7,9	3	Other viral diseases (B25-B34)	308	5,9	3	Human immunodeficiency virus [HIV] disease (B20-B24)	391	9,7
4	Influenza and pneumonia (J09-J18)	415	4,5	4	Influenza and pneumonia (J09-J18)	221	4,2	4	Influenza and pneumonia (J09-J18)	194	4,8
5	Certain disorders involving the immune mechanism (D80-D89)	318	3,4	5	Certain disorders involving the immune mechanism (D80-D89)	165	3,1	5	Certain disorders involving the immune mechanism (D80-D89)	153	3,8
6	Other acute lower respiratory infections (J20-J22)	287	3,1	6	Other acute lower respiratory infections (J20-J22)	140	2,7	6	Other acute lower respiratory infections (J20-J22)	147	3,7
7	Other forms of heart disease (I30-I52)	181	2,0	7	Other forms of heart disease (I30-I52)	90	1,7	7	Malignant neoplasms of female genital organs (C51-C58)	119	3,0
8	Intestinal infectious diseases (A00-A09)	157	1,7	8	Intestinal infectious diseases (A00-A09)	68	1,3	8	Other forms of heart disease (I30-I52)	91	2,3
9	Cerebrovascular diseases (I60-I69)	132	1,4	9	Cerebrovascular diseases (I60-I69)	63	1,2	9	Intestinal infectious diseases (A00-A09)	89	2,2
10	Diabetes mellitus (E10-E14)	123	1,3	10	Episodic and paroxysmal disorders (G40-G47)	61	1,2	10	Cerebrovascular diseases (I60-I69)	69	1,7
	Other Natural	2762	29,8		Other Natural	1295	24,6		Other Natural	1410	35,1
	Non-natural	2222	24,0		Non-natural	1816	34,5		Non-natural	406	10,1
	All causes	9276	100,0		All causes	5259	100,0		All causes	4017	100,0
Mpumalanga, 45–64			Mpumalanga, Males, 45–64			Mpumalanga, females, 45–64					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	804	9,6	1	Tuberculosis (A15-A19)	561	11,9	1	Diabetes mellitus (E10-E14)	343	9,5
2	Diabetes mellitus (E10-E14)	600	7,2	2	Diabetes mellitus (E10-E14)	257	5,4	2	Tuberculosis (A15-A19)	243	6,7
3	Cerebrovascular diseases (I60-I69)	434	5,2	3	Influenza and pneumonia (J09-J18)	251	5,3	3	Other viral diseases (B25-B34)	221	6,1
4	Human immunodeficiency virus [HIV] disease (B20-B24)	429	5,1	4	Cerebrovascular diseases (I60-I69)	237	5,0	4	Human immunodeficiency virus [HIV] disease (B20-B24)	206	5,7
5	Other viral diseases (B25-B34)	429	5,1	5	Human immunodeficiency virus [HIV] disease (B20-B24)	223	4,7	5	Hypertensive diseases (I10-I15)	201	5,6
6	Influenza and pneumonia (J09-J18)	416	5,0	6	Other viral diseases (B25-B34)	208	4,4	6	Cerebrovascular diseases (I60-I69)	197	5,5
7	Hypertensive diseases (I10-I15)	392	4,7	7	Hypertensive diseases (I10-I15)	191	4,0	7	Malignant neoplasms of female genital organs (C51-C58)	181	5,0
8	Ischaemic heart diseases (I20-I25)	279	3,3	8	Ischaemic heart diseases (I20-I25)	173	3,7	8	Influenza and pneumonia (J09-J18)	165	4,6
9	Other forms of heart disease (I30-I52)	278	3,3	9	Other forms of heart disease (I30-I52)	156	3,3	9	Other forms of heart disease (I30-I52)	122	3,4
10	Certain disorders involving the immune mechanism (D80-D89)	218	2,6	10	Chronic lower respiratory diseases (J40-J47)	140	3,0	10	Ischaemic heart diseases (I20-I25)	106	2,9
	Other Natural	3479	41,7		Other Natural	1899	40,2		Other Natural	1477	40,9
	Non-natural	576	6,9		Non-natural	431	9,1		Non-natural	145	4,0
	All causes	8334	100,0		All causes	4727	100,0		All causes	3607	100,0
Mpumalanga, 65+			Mpumalanga, Males, 65+			Mpumalanga, females, 65+					
	No.	%		No.	%		No.	%			
1	Hypertensive diseases (I10-I15)	1055	11,3	1	Hypertensive diseases (I10-I15)	402	9,9	1	Hypertensive diseases (I10-I15)	653	12,3
2	Cerebrovascular diseases (I60-I69)	953	10,2	2	Cerebrovascular diseases (I60-I69)	357	8,8	2	Cerebrovascular diseases (I60-I69)	596	11,2
3	Diabetes mellitus (E10-E14)	838	9,0	3	Diabetes mellitus (E10-E14)	282	7,0	3	Diabetes mellitus (E10-E14)	556	10,5
4	Other forms of heart disease (I30-I52)	665	7,1	4	Other forms of heart disease (I30-I52)	261	6,4	4	Other forms of heart disease (I30-I52)	404	7,6
5	Ischaemic heart diseases (I20-I25)	575	6,1	5	Ischaemic heart diseases (I20-I25)	250	6,2	5	Ischaemic heart diseases (I20-I25)	325	6,1
6	Influenza and pneumonia (J09-J18)	546	5,8	6	Influenza and pneumonia (J09-J18)	240	5,9	6	Influenza and pneumonia (J09-J18)	306	5,8
7	Tuberculosis (A15-A19)	325	3,5	7	Tuberculosis (A15-A19)	219	5,4	7	Renal failure (N17-N19)	126	2,4
8	Chronic lower respiratory diseases (J40-J47)	273	2,9	8	Chronic lower respiratory diseases (J40-J47)	163	4,0	8	Intestinal infectious diseases (A00-A09)	113	2,1
9	Renal failure (N17-N19)	229	2,4	9	Malignant neoplasms of male genital organs (C60-C63)	153	3,8	9	Chronic lower respiratory diseases (J40-J47)	110	2,1
10	Intestinal infectious diseases (A00-A09)	190	2,0	10	Renal failure (N17-N19)	103	2,5	10	Tuberculosis (A15-A19)	106	2,0
	Other Natural	3481	37,2		Other Natural	1482	36,6		Other Natural	1923	36,2
	Non-natural	227	2,4		Non-natural	140	3,5		Non-natural	87	1,6
	All causes	9357	100,0		All causes	4052	100,0		All causes	5305	100,0

Appendix M9: The ten leading underlying natural causes of death by age and sex: Limpopo, 2017

Limpopo, all ages			Limpopo, Males, all ages			Limpopo, females, all ages					
	No.	%		No.	%		No.	%			
1	Influenza and pneumonia (J09-J18)	3067	7.0	1	Influenza and pneumonia (J09-J18)	1473	6.8	1	Influenza and pneumonia (J09-J18)	1593	7.3
2	Diabetes mellitus (E10-E14)	2682	6.1	2	Tuberculosis (A15-A19)	1461	6.7	2	Diabetes mellitus (E10-E14)	1569	7.2
3	Cerebrovascular diseases (I60-I69)	2545	5.8	3	Diabetes mellitus (E10-E14)	1113	5.1	3	Cerebrovascular diseases (I60-I69)	1531	7.0
4	Tuberculosis (A15-A19)	2408	5.5	4	Cerebrovascular diseases (I60-I69)	1014	4.7	4	Hypertensive diseases (I10-I15)	1395	6.4
5	Hypertensive diseases (I10-I15)	2328	5.3	5	Hypertensive diseases (I10-I15)	933	4.3	5	Tuberculosis (A15-A19)	947	4.3
6	Other viral diseases (B25-B34)	1634	3.7	6	Other viral diseases (B25-B34)	793	3.6	6	Other viral diseases (B25-B34)	840	3.8
7	Human immunodeficiency virus [HIV] disease (B20-B24)	1554	3.6	7	Human immunodeficiency virus [HIV] disease (B20-B24)	730	3.4	7	Human immunodeficiency virus [HIV] disease (B20-B24)	824	3.8
8	Other forms of heart disease (I30-I52)	1418	3.2	8	Other forms of heart disease (I30-I52)	639	2.9	8	Other forms of heart disease (I30-I52)	778	3.6
9	Intestinal infectious diseases (A00-A09)	1269	2.9	9	Intestinal infectious diseases (A00-A09)	613	2.8	9	Intestinal infectious diseases (A00-A09)	655	3.0
10	Renal failure (N17-N19)	1016	2.3	10	Chronic lower respiratory diseases (J40-J47)	544	2.5	10	Malignant neoplasms of female genital organs (C51-C58)	588	2.7
	Other Natural	19721	45.1		Other Natural	9442	43.3		Other Natural	10153	46.3
	Non-natural	4065	9.3		Non-natural	3026	13.9		Non-natural	1033	4.7
	All causes	43707	100		All causes	21781	100.0		All causes	21906	100
Limpopo, 0			Limpopo, Males, 0			Limpopo, females, 0					
	No.	%		No.	%		No.	%			
1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	388	16.7	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	223	17.7	1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	165	15.6
2	Influenza and pneumonia (J09-J18)	280	12.0	2	Influenza and pneumonia (J09-J18)	158	12.5	2	Influenza and pneumonia (J09-J18)	122	11.6
3	Intestinal infectious diseases (A00-A09)	177	7.6	3	Intestinal infectious diseases (A00-A09)	91	7.2	3	Intestinal infectious diseases (A00-A09)	86	8.2
4	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	141	6.1	4	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	80	6.3	4	Disorders related to length of gestation and fetal growth (P05-P08)	61	5.8
5	Disorders related to length of gestation and fetal growth (P05-P08)	131	5.6	5	Disorders related to length of gestation and fetal growth (P05-P08)	68	5.4	5	Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	60	5.7
6	Other disorders originating in the perinatal period (P90-P96)	126	5.4	6	Other disorders originating in the perinatal period (P90-P96)	66	5.2	6	Other disorders originating in the perinatal period (P90-P96)	59	5.6
7	Infections specific to the perinatal period (P35-P39)	70	3.0	7	Infections specific to the perinatal period (P35-P39)	46	3.7	7	Other bacterial diseases (A30-A49)	27	2.6
8	Other bacterial diseases (A30-A49)	50	2.2	8	Other congenital malformations (Q80-Q89)	25	2.0	8	Infections specific to the perinatal period (P35-P39)	24	2.3
9	Malnutrition (E40-E46)	48	2.1	9	Malnutrition (E40-E46)	24	1.9	9	Malnutrition (E40-E46)	24	2.3
10	Other congenital malformations (Q80-Q89)	42	1.8	10	Other bacterial diseases (A30-A49)	23	1.8	10	Inflammatory diseases of the central nervous system (G00-G09)	19	1.8
	Other Natural	807	34.7		Other Natural	418	33.2		Other Natural	382	36.2
	Non-natural	64	2.8		Non-natural	38	3.0		Non-natural	26	2.5
	All causes	2324	100		All causes	1260	100.0		All causes	1055	100
Limpopo, 1-14			Limpopo, Males, 1-14			Limpopo, females, 1-14					
	No.	%		No.	%		No.	%			
1	Influenza and pneumonia (J09-J18)	197	12.1	1	Influenza and pneumonia (J09-J18)	85	9.6	1	Influenza and pneumonia (J09-J18)	111	14.9
2	Intestinal infectious diseases (A00-A09)	162	9.9	2	Intestinal infectious diseases (A00-A09)	83	9.4	2	Intestinal infectious diseases (A00-A09)	79	10.6
3	Malnutrition (E40-E46)	75	4.6	3	Malnutrition (E40-E46)	44	5.0	3	Malnutrition (E40-E46)	31	4.1
4	Tuberculosis (A15-A19)	54	3.3	4	Tuberculosis (A15-A19)	32	3.6	4	Tuberculosis (A15-A19)	22	2.9
5	Other viral diseases (B25-B34)	35	2.1	5	Other bacterial diseases (A30-A49)	22	2.5	5	Other viral diseases (B25-B34)	16	2.1
6	Inflammatory diseases of the central nervous system (G00-G09)	34	2.1	6	Other viral diseases (B25-B34)	19	2.1	6	Inflammatory diseases of the central nervous system (G00-G09)	15	2.0
7	Human immunodeficiency virus [HIV] disease (B20-B24)	30	1.8	7	Inflammatory diseases of the central nervous system (G00-G09)	19	2.1	7	Human immunodeficiency virus [HIV] disease (B20-B24)	14	1.9
8	Other bacterial diseases (A30-A49)	29	1.8	8	Human immunodeficiency virus [HIV] disease (B20-B24)	16	1.8	8	Certain disorders involving the immune mechanism (D80-D89)	11	1.5
9	Cerebral palsy and other paralytic syndromes (G80-G83)	27	1.7	9	Cerebral palsy and other paralytic syndromes (G80-G83)	16	1.8	9	Cerebral palsy and other paralytic syndromes (G80-G83)	11	1.5
10	Other disorders of the nervous system (G90-G99)	23	1.4	10	Other disorders of the nervous system (G90-G99)	14	1.6	10	Other disorders of the nervous system (G90-G99)	9	1.2
	Other Natural	657	40.2		Other Natural	349	39.4		Other Natural	304	40.7
	Non-natural	310	19.0		Non-natural	186	21.0		Non-natural	124	16.6
	All causes	1633	100		All causes	885	100.0		All causes	747	100

Appendix M9: The ten leading underlying natural causes of death by age and sex: Limpopo, 2017 (concluded)

Limpopo, 15–44			Limpopo, Males, 15–44			Limpopo, females, 15–44					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	1103	10,1	1	Tuberculosis (A15-A19)	580	10,1	1	Human immunodeficiency virus [HIV] disease (B20-B24)	523	10,0
2	Human immunodeficiency virus [HIV] disease (B20-B24)	885	8,1	2	Other viral diseases (B25-B34)	369	6,4	2	Tuberculosis (A15-A19)	523	10,0
3	Other viral diseases (B25-B34)	879	8,0	3	Human immunodeficiency virus [HIV] disease (B20-B24)	362	6,3	3	Other viral diseases (B25-B34)	510	9,8
4	Influenza and pneumonia (J09-J18)	776	7,1	4	Influenza and pneumonia (J09-J18)	295	5,1	4	Influenza and pneumonia (J09-J18)	481	9,2
5	Certain disorders involving the immune mechanism (D80-D89)	367	3,4	5	Certain disorders involving the immune mechanism (D80-D89)	147	2,6	5	Certain disorders involving the immune mechanism (D80-D89)	220	4,2
6	Intestinal infectious diseases (A00-A09)	289	2,6	6	Intestinal infectious diseases (A00-A09)	133	2,3	6	Intestinal infectious diseases (A00-A09)	156	3,0
7	Renal failure (N17-N19)	208	1,9	7	Renal failure (N17-N19)	105	1,8	7	Malignant neoplasms of female genital organs (C51-C58)	114	2,2
8	Other forms of heart disease (I30-I52)	191	1,7	8	Diabetes mellitus (E10-E14)	89	1,6	8	Other forms of heart disease (I30-I52)	112	2,1
9	Diabetes mellitus (E10-E14)	186	1,7	9	Protozoal diseases (B50-B64)	86	1,5	9	Renal failure (N17-N19)	103	2,0
10	Cerebrovascular diseases (I60-I69)	158	1,4	10	Other forms of heart disease (I30-I52)	79	1,4	10	Diabetes mellitus (E10-E14)	97	1,9
	Other Natural	3520	32,2		Other Natural	1572	27,4		Other Natural	1906	36,6
	Non-natural	2384	21,8		Non-natural	1917	33,4		Non-natural	467	9,0
	All causes	10946	100,0		All causes	5734	100,0		All causes	5212	100,0
Limpopo, 45–64			Limpopo, Males, 45–64			Limpopo, females, 45–64					
	No.	%		No.	%		No.	%			
1	Tuberculosis (A15-A19)	910	8,0	1	Tuberculosis (A15-A19)	616	9,4	1	Diabetes mellitus (E10-E14)	499	10,5
2	Diabetes mellitus (E10-E14)	901	7,9	2	Influenza and pneumonia (J09-J18)	449	6,8	2	Tuberculosis (A15-A19)	294	6,2
3	Influenza and pneumonia (J09-J18)	732	6,5	3	Diabetes mellitus (E10-E14)	402	6,1	3	Influenza and pneumonia (J09-J18)	283	6,0
4	Other viral diseases (B25-B34)	569	5,0	4	Other viral diseases (B25-B34)	327	5,0	4	Hypertensive diseases (I10-I15)	248	5,2
5	Cerebrovascular diseases (I60-I69)	551	4,9	5	Cerebrovascular diseases (I60-I69)	309	4,7	5	Cerebrovascular diseases (I60-I69)	242	5,1
6	Hypertensive diseases (I10-I15)	530	4,7	6	Human immunodeficiency virus [HIV] disease (B20-B24)	291	4,4	6	Other viral diseases (B25-B34)	242	5,1
7	Human immunodeficiency virus [HIV] disease (B20-B24)	529	4,7	7	Hypertensive diseases (I10-I15)	282	4,3	7	Human immunodeficiency virus [HIV] disease (B20-B24)	238	5,0
8	Other forms of heart disease (I30-I52)	371	3,3	8	Chronic lower respiratory diseases (J40-J47)	195	3,0	8	Malignant neoplasms of female genital organs (C51-C58)	232	4,9
9	Renal failure (N17-N19)	301	2,7	9	Other forms of heart disease (I30-I52)	192	2,9	9	Other forms of heart disease (I30-I52)	179	3,8
10	Intestinal infectious diseases (A00-A09)	263	2,3	10	Renal failure (N17-N19)	175	2,7	10	Renal failure (N17-N19)	126	2,7
	Other Natural	4863	42,9		Other Natural	2736	41,5		Other Natural	1962	41,3
	Non-natural	817	7,2		Non-natural	612	9,3		Non-natural	205	4,3
	All causes	11337	100,0		All causes	6586	100,0		All causes	4750	100,0
Limpopo, 65+			Limpopo, Males, 65+			Limpopo, females, 65+					
	No.	%		No.	%		No.	%			
1	Cerebrovascular diseases (I60-I69)	1828	10,5	1	Cerebrovascular diseases (I60-I69)	629	8,6	1	Cerebrovascular diseases (I60-I69)	1199	11,8
2	Hypertensive diseases (I10-I15)	1685	9,7	2	Diabetes mellitus (E10-E14)	619	8,5	2	Hypertensive diseases (I10-I15)	1084	10,7
3	Diabetes mellitus (E10-E14)	1582	9,1	3	Hypertensive diseases (I10-I15)	601	8,3	3	Diabetes mellitus (E10-E14)	963	9,5
4	Influenza and pneumonia (J09-J18)	1080	6,2	4	Influenza and pneumonia (J09-J18)	485	6,7	4	Influenza and pneumonia (J09-J18)	595	5,9
5	Other forms of heart disease (I30-I52)	823	4,7	5	Other forms of heart disease (I30-I52)	349	4,8	5	Other forms of heart disease (I30-I52)	473	4,7
6	Renal failure (N17-N19)	485	2,8	6	Chronic lower respiratory diseases (J40-J47)	295	4,1	6	Renal failure (N17-N19)	266	2,6
7	Chronic lower respiratory diseases (J40-J47)	436	2,5	7	Tuberculosis (A15-A19)	223	3,1	7	Malignant neoplasms of female genital organs (C51-C58)	242	2,4
8	Intestinal infectious diseases (A00-A09)	377	2,2	8	Renal failure (N17-N19)	219	3,0	8	Intestinal infectious diseases (A00-A09)	221	2,2
9	Tuberculosis (A15-A19)	323	1,9	9	Malignant neoplasms of male genital organs (C60-C63)	199	2,7	9	Chronic lower respiratory diseases (J40-J47)	141	1,4
10	Ischaemic heart diseases (I20-I25)	260	1,5	10	Intestinal infectious diseases (A00-A09)	156	2,1	10	Ischaemic heart diseases (I20-I25)	139	1,4
	Other Natural	8071	46,4		Other Natural	3250	44,7		Other Natural	4601	45,4
	Non-natural	463	2,7		Non-natural	252	3,5		Non-natural	211	2,1
	All causes	17413	100,0		All causes	7277	100,0		All causes	10135	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), 2017

Province of death	District municipality of death	Certain infectious and parasitic diseases (A00-B99)*	Neoplasms (C00-D48)	Diseases of the blood and immune mechanism (D50-D89)	Endocrine, nutritional and metabolic diseases (E00-E90)	Diseases of the nervous system (G00-G99)	Diseases of the circulatory system (I00-I99)	Diseases of the respiratory system (J00-J99)	Diseases of the digestive system (K00-K93)	Certain conditions originating in the perinatal period (P00-P96)	other natural causes	External causes of morbidity and mortality (V01-Y98)	Total
Western Cape	Cape Winelands	1 015	1 093	38	512	83	143	2	0	1 125	630	131	6 070
	Central Karoo	110	110	20	52	11	18	0	0	162	105	15	786
	City of Cape Town	3 619	5 296	212	2 580	403	704	2	4	5 692	2 244	692	28 452
	Eden	808	930	63	365	51	120	1	3	1 090	503	161	4 887
	Overberg	240	427	14	184	36	58	0	0	483	192	39	2 120
	West Coast	533	574	44	304	40	73	0	1	675	388	68	3 400
	Unspecified	374	515	22	259	30	59	0	0	545	213	57	2 812
Total	6 699	8 945	413	4 256	654	1 175	5	8	9 772	4 275	1 163	48 527	
Eastern Cape	Alfred Nzo	804	182	33	177	13	108	0	0	529	376	95	6 672
	Amathole	1 387	526	188	552	60	211	2	1	1 508	1 024	147	7 512
	Buffalo City	1 526	1 147	166	598	66	196	0	2	1 652	888	202	8 251
	Chris Hani	1 777	635	288	577	63	239	3	2	1 502	1 034	180	8 807
	Joe Gqabi	554	147	129	152	10	77	0	0	486	323	64	3 320
	Nelson Mandela Bay	2 463	1 665	262	1 189	147	346	2	1	2 671	1 088	353	12 467
	OR Tambo	2 722	665	240	546	13	306	2	6	1 462	882	271	13 670
	Sarah Baartman	905	433	100	355	39	117	1	1	954	519	92	4 463
	Unspecified	218	122	18	86	7	28	0	2	226	127	25	1 200
Total	12 356	5 522	1 424	4 232	418	1 628	10	15	10 990	6 261	1 429	66 362	
Northern Cape	Frances Baard	823	491	204	260	31	92	0	0	707	332	143	4 027
	John Taolo Gaetsewe	501	127	18	97	4	35	1	0	480	274	28	2 213
	Namakwa	152	230	20	119	10	23	0	0	308	216	41	1 435
	Pixley ka Seme	485	206	76	141	10	55	0	0	520	299	56	2 437
	Z F Mgcawu	491	249	146	151	2	65	0	2	427	356	49	2 526
	Unspecified	42	18	18	11	0	2	0	0	34	19	3	193
Total	2 494	1 321	482	779	57	272	1	2	2 476	1 496	320	12 831	

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), 2017

Province of death	District municipality of death	Certain infectious and parasitic diseases (A00-B99)*	Neoplasms (C00-D48)	Diseases of the blood and immune mechanism (D50-D89)	Endocrine, nutritional and metabolic diseases (E00-E90)	Diseases of the nervous system (G00-G99)	Diseases of the circulatory system (I00-I99)	Diseases of the respiratory system (J00-J99)	Diseases of the digestive system (K00-K93)	Certain conditions originating in the perinatal period (P00-P96)	other natural causes	External causes of morbidity and mortality (V01-Y98)	Total
Free State	Fezile Dabi	1 093	374	119	391	22	101	1	1	1 117	579	120	5 053
	Lejweleputswa	1 232	373	319	449	12	124	1	0	1 150	994	159	6 942
	Mangaung	1 595	1 122	283	605	49	167	0	0	1 536	722	277	9 792
	Thabo Mofutsanyane	1 884	577	228	671	42	169	2	1	1 707	911	257	8 095
	Xhariep	278	86	33	93	6	25	1	0	307	131	20	1 326
	Unspecified	173	37	22	78	3	13	0	0	162	92	24	812
	Total	6 255	2 569	1 004	2 287	134	599	5	2	5 979	3 429	857	32 020
KwaZulu-Natal	Amajuba	820	330	49	308	10	91	0	1	860	409	134	4 104
	Harry Gwala	857	235	85	317	8	92	1	0	652	403	92	3 862
	Ugu	1 770	626	148	705	46	170	1	0	1 491	607	210	8 418
	Zululand	1 179	287	162	351	15	102	0	1	814	378	115	5 220
	eThekwini	3 246	1 972	262	1 553	65	339	0	3	4 926	1 227	558	19 910
	iLembe	898	310	75	311	11	87	0	0	748	311	100	3 955
	uMgungundlovu	1 798	1 101	141	1 026	58	234	2	3	2 067	724	330	9 966
	uMkhanyakude	825	266	39	155	27	53	0	0	496	168	78	3 195
	uMzinyathi	1 081	288	121	361	19	102	1	0	1 227	398	107	5 049
	uThukela	1 442	329	121	434	20	149	0	1	1 273	491	202	5 877
	uThungulu	1 496	604	148	558	22	120	3	0	1 112	369	200	7 049
	Unspecified	275	109	27	112	6	32	0	0	288	112	33	1 390
Total	15 687	6 457	1 378	6 191	307	1 571	8	9	15 954	5 597	2 159	77 995	
North West	Bojanala	2 003	707	379	783	39	180	3	2	2 056	1 015	284	10 756
	Dr Kenneth Kaunda	1 738	933	239	468	44	152	0	1	1 261	673	237	7 764
	Dr Ruth Segomotsi Mompati	1 190	317	175	305	17	99	2	0	980	549	83	5 053
	Ngaka Modiri Molema	1 352	392	452	513	19	145	0	0	1 589	979	195	8 900
	Unspecified	79	22	15	30	1	8	0	0	99	49	10	552
	Total	6 362	2 371	1 260	2 099	120	584	5	3	5 985	3 265	809	33 025

Appendix N2: Number of deaths by main groups of causes of death and district municipality of death occurrence (Gauteng, Mpumalanga and Limpopo), 2017

Province of death	District municipality of death	Certain infectious and parasitic diseases (A00-B99)*	Neoplasms (C00-D48)	Diseases of the blood and immune mechanism (D50-D89)	Endocrine, nutritional and metabolic diseases (E00-E90)	Diseases of the nervous system (G00-G99)	Diseases of the circulatory system (I00-I99)	Diseases of the respiratory system (J00-J99)	Diseases of the digestive system (K00-K93)	Certain conditions originating in the perinatal period (P00-P96)	other natural causes	External causes of morbidity and mortality (V01-Y98)	Total
Gauteng	City of Johannesburg	3 152	3 112	564	1 222	188	552	1	7	4 083	2 155	686	27 368
	City of Tshwane	3 534	3 516	545	1 934	174	657	2	2	5 317	2 419	745	25 344
	Ekurhuleni	3 191	1 877	596	1 275	104	498	0	2	3 765	2 323	592	21 867
	Sedibeng	1 750	1 157	292	741	76	243	1	2	2 475	1 415	380	11 395
	West Rand	975	554	282	370	39	143	0	0	1 057	668	170	6 549
	Unspecified	761	734	94	255	47	143	0	0	887	400	141	4 863
	Total		13 363	10 950	2 373	5 797	628	2 236	4	13	17 584	9 380	2 714	97 386
Mpumalanga	Ehlanzeni	3 081	881	317	831	38	277	1	0	2 324	1 328	392	11 905
	Gert Sibande	1 792	509	354	558	17	142	1	2	1 243	704	232	8 208
	Nkangala	1 503	460	215	651	27	124	0	1	1 757	1 129	200	9 187
	Unspecified	614	288	46	161	12	44	1	0	502	282	88	2 742
	Total		6 990	2 138	932	2 201	94	587	3	3	5 826	3 443	912	32 042
Limpopo	Capricorn	2 116	972	224	963	34	186	1	3	1 982	1 266	354	12 206
	Greater Sekhukhune	1 567	359	199	622	16	133	0	2	2 037	1 357	174	8 632
	Mopani	1 679	495	232	698	34	175	0	1	1 177	1 029	257	8 961
	Vhembe	1 109	443	215	578	11	111	1	0	741	473	235	7 931
	Waterberg	1 425	396	163	453	21	137	2	0	1 094	669	139	5 977
	Unspecified	421	141	72	183	5	32	1	0	298	223	66	2 086
	Total		8 317	2 806	1 105	3 497	121	774	5	6	7 329	5 017	1 225	45 793

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), 2017

Province of death	District municipality of death	Certain infectious and parasitic diseases (A00-B99)*	Neoplasms (C00-D48)	Diseases of the blood and immune mechanism (D50-D89)	Endocrine, nutritional and metabolic diseases (E00-E90)	Diseases of the nervous system (G00-G99)	Diseases of the circulatory system (I00-I99)	Diseases of the respiratory system (J00-J99)	Diseases of the digestive system (K00-K93)	Certain conditions originating in the perinatal period (P00-P96)	Other natural causes	External causes of morbidity and mortality (V01-Y98)	Total
Western Cape	Cape Winelands	16,7	18,0	0,6	8,4	2,4	18,5	10,4	2,2	1,1	10,2	11,5	100,0
	Central Karoo	14,0	14,0	2,5	6,6	2,3	20,6	13,4	1,9	2,4	7,0	15,3	100,0
	City of Cape Town	12,7	18,6	0,8	9,1	2,5	20,0	7,9	2,4	1,7	10,4	14,0	100,0
	Eden	16,5	19,0	1,3	7,5	2,5	22,3	10,3	3,3	1,3	7,1	9,0	100,0
	Overberg	11,3	20,1	0,7	8,7	2,7	22,8	9,1	1,8	1,0	9,5	12,2	100,0
	West Coast	15,7	16,9	1,3	8,9	2,2	19,9	11,4	2,0	1,2	9,0	11,6	100,0
	Unspecified	13,3	18,3	0,8	9,2	2,1	19,4	7,6	2,0	2,3	9,4	15,6	100,0
	Total (ALL)	13,8	18,4	0,9	8,8	2,4	20,1	8,8	2,4	1,6	9,8	13,0	100,0
Eastern Cape	Alfred Nzo	12,1	2,7	0,5	2,7	1,6	7,9	5,6	1,4	0,8	53,7	10,9	100,0
	Amathole	18,5	7,0	2,5	7,4	2,8	20,1	13,6	2,0	0,4	14,3	11,5	100,0
	Buffalo City	18,5	13,9	2,0	7,3	2,4	20,0	10,8	2,5	0,9	8,8	13,0	100,0
	Chris Hani	20,2	7,2	3,3	6,6	2,7	17,1	11,7	2,0	0,9	16,6	11,8	100,0
	Joe Gqabi	16,7	4,4	3,9	4,6	2,3	14,6	9,7	1,9	0,6	30,4	10,8	100,0
	Nelson Mandela Bay	19,8	13,4	2,1	9,5	2,8	21,4	8,7	2,8	0,6	8,3	10,6	100,0
	O.R. Tambo	19,9	4,9	1,8	4,0	2,2	10,7	6,5	2,0	0,3	33,8	14,0	100,0
	Sarah Baartman	20,3	9,7	2,2	8,0	2,6	21,4	11,6	2,1	0,8	11,1	10,2	100,0
	Unspecified	18,2	10,2	1,5	7,2	2,3	18,8	10,6	2,1	1,1	17,2	10,9	100,0
Total (ALL)	18,6	8,3	2,2	6,4	2,5	16,6	9,4	2,2	0,6	21,4	11,9	100,0	
Northern Cape	Frances Baard	20,4	12,2	5,1	6,5	2,3	17,6	8,2	3,6	2,0	13,4	8,8	100,0
	John Taolo Gaetsewe	22,6	5,7	0,8	4,4	1,6	21,7	12,4	1,3	3,7	15,2	10,6	100,0
	Namakwa	10,6	16,0	1,4	8,3	1,6	21,5	15,1	2,9	2,4	9,8	10,5	100,0
	Pixley ka Seme	19,9	8,5	3,1	5,8	2,3	21,3	12,3	2,3	2,3	10,4	11,9	100,0
	Z F Mgcawu	19,4	9,9	5,8	6,0	2,6	16,9	14,1	1,9	2,0	9,2	12,2	100,0
	Unspecified	21,8	9,3	9,3	5,7	1,0	17,6	9,8	1,6	4,2	14,0	5,7	100,0
	Total (ALL)	19,4	10,3	3,8	6,1	2,1	19,3	11,7	2,5	2,4	11,9	10,5	100,0

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), 2017

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

Appendix O2: Percentage of deaths by main groups of causes of death and district municipality of death occurrence (Gauteng, Mpumalanga and Limpopo), 2017

Province of death	District municipality of death	Certain infectious and parasitic diseases (A00-B99)*	Neoplasms (C00-D48)	Diseases of the blood and immune mechanism (D50-D89)	Endocrine, nutritional and metabolic diseases (E00-E90)	Diseases of the nervous system (G00-G99)	Diseases of the circulatory system (I00-I99)	Diseases of the respiratory system (J00-J99)	Diseases of the digestive system (K00-K93)	Certain conditions originating in the perinatal period (P00-P96)	other natural causes	External causes of morbidity and mortality (V01-Y98)	Total
Gauteng	City of Johannesburg	11,5	11,4	2,1	4,5	2,0	14,9	7,9	2,5	2,5	26,2	14,6	100,0
	City of Tshwane	13,9	13,9	2,2	7,6	2,6	21,0	9,5	2,9	2,1	16,4	7,9	100,0
	Ekurhuleni	14,6	8,6	2,7	5,8	2,3	17,2	10,6	2,7	2,8	20,7	11,9	100,0
	Sedibeng	15,4	10,2	2,6	6,5	2,1	21,7	12,4	3,3	2,0	11,8	12,0	100,0
	West Rand	14,9	8,5	4,3	5,7	2,2	16,1	10,2	2,6	2,6	19,0	14,1	100,0
	Unspecified	15,7	15,1	1,9	5,2	2,9	18,2	8,2	2,9	2,9	15,8	11,2	100,0
	Total		13,7	11,2	2,4	6,0	2,3	18,1	9,6	2,8	2,4	19,7	11,7	100,0
Mpumalanga	Ehlanzeni	25,9	7,4	2,7	7,0	2,3	19,5	11,2	3,3	1,6	9,2	10,1	100,0
	Gert Sibande	21,8	6,2	4,3	6,8	1,7	15,1	8,6	2,8	2,9	16,5	13,2	100,0
	Nkangala	16,4	5,0	2,3	7,1	1,4	19,1	12,3	2,2	1,8	20,4	12,0	100,0
	Unspecified	22,4	10,5	1,7	5,9	1,6	18,3	10,3	3,2	2,3	11,4	12,5	100,0
	Total		21,8	6,7	2,9	6,9	1,8	18,2	10,8	2,9	2,0	14,5	11,6	100,0
Limpopo	Capricorn	17,3	8,0	1,8	7,9	1,5	16,2	10,4	2,9	2,6	21,2	10,2	100,0
	Mopani	18,2	4,2	2,3	7,2	1,5	23,6	15,7	2,0	1,3	15,2	8,9	100,0
	Sekhukhune	18,7	5,5	2,6	7,8	2,0	13,1	11,5	2,9	2,4	25,1	8,4	100,0
	Vhembe	14,0	5,6	2,7	7,3	1,4	9,3	6,0	3,0	1,9	40,1	8,8	100,0
	Waterberg	23,8	6,6	2,7	7,6	2,3	18,3	11,2	2,3	2,2	12,8	10,2	100,0
	Unspecified	20,2	6,8	3,5	8,8	1,5	14,3	10,7	3,2	2,3	18,7	10,2	100,0
	Total		18,2	6,1	2,4	7,6	1,7	16,0	11,0	2,7	2,1	22,9	9,3	100,0

Appendix P: The ten leading underlying natural causes of death by district municipality of death occurrence, Western Cape 2017*

Cape Winelands		No.	%	Central Karoo		No.	%	City of Cape Town		No.	%
Chronic lower respiratory diseases (J40-J47)	1	450	7,4	Chronic lower respiratory diseases (J40-J47)	1	84	10,7	Diabetes mellitus (E10-E14)	1	2 223	7,8
Diabetes mellitus (E10-E14)	2	447	7,4	Hypertensive diseases (I10-I15)	2	59	7,5	Ischaemic heart diseases (I20-I25)	2	1 805	6,3
Cerebrovascular diseases (I60-I69)	3	406	6,7	Tuberculosis (A15-A19)	3	46	5,9	Human immunodeficiency virus [HIV] disease (B20-B24)	3	1 593	5,6
Human immunodeficiency virus [HIV] disease (B20-B24)	4	394	6,5	Diabetes mellitus (E10-E14)	4	40	5,1	Cerebrovascular diseases (I60-I69)	4	1 414	5,0
Tuberculosis (A15-A19)	5	393	6,5	Ischaemic heart diseases (I20-I25)	5	36	4,6	Malignant neoplasms of digestive organs (C15-C26)	5	1 361	4,8
Malignant neoplasms of digestive organs (C15-C26)	6	307	5,1	Cerebrovascular diseases (I60-I69)	6	34	4,3	Chronic lower respiratory diseases (J40-J47)	6	1 258	4,4
Ischaemic heart diseases (I20-I25)	7	299	4,9	Human immunodeficiency virus [HIV] disease (B20-B24)	7	29	3,7	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	7	1 221	4,3
Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	8	271	4,5	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	8	28	3,6	Tuberculosis (A15-A19)	8	1 140	4,0
Hypertensive diseases (I10-I15)	9	186	3,1	Other forms of heart disease (I30-I52)	9	24	3,1	Hypertensive diseases (I10-I15)	9	1 139	4,0
Other forms of heart disease (I30-I52)	10	156	2,6	Malignant neoplasms of digestive organs (C15-C26)	10	21	2,7	Other forms of heart disease (I30-I52)	10	937	3,3
Other Natural		2 066	34	Other Natural		265	33,7	Other Natural		10 377	36,5
Non-natural		695	11,4	Non-natural		120	15,3	Non-natural		3 984	14,0
All causes		6 070	100,0	All causes		786	100,0	All causes		28 452	100,0
Eden		No.	%	Overberg		No.	%	West Coast		No.	%
Cerebrovascular diseases (I60-I69)	1	340	7,0	Ischaemic heart diseases (I20-I25)	1	156	7,4	Chronic lower respiratory diseases (J40-J47)	1	291	8,6
Diabetes mellitus (E10-E14)	2	316	6,5	Diabetes mellitus (E10-E14)	2	153	7,2	Diabetes mellitus (E10-E14)	2	255	7,5
Human immunodeficiency virus [HIV] disease (B20-B24)	3	316	6,5	Cerebrovascular diseases (I60-I69)	3	135	6,4	Tuberculosis (A15-A19)	3	250	7,4
Ischaemic heart diseases (I20-I25)	4	313	6,4	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	4	129	6,1	Ischaemic heart diseases (I20-I25)	4	220	6,5
Chronic lower respiratory diseases (J40-J47)	5	302	6,2	Chronic lower respiratory diseases (J40-J47)	5	115	5,4	Cerebrovascular diseases (I60-I69)	5	185	5,4
Tuberculosis (A15-A19)	6	292	6,0	Hypertensive diseases (I10-I15)	6	114	5,4	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	6	170	5,0
Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	7	219	4,5	Malignant neoplasms of digestive organs (C15-C26)	7	110	5,2	Human immunodeficiency virus [HIV] disease (B20-B24)	7	167	4,9
Malignant neoplasms of digestive organs (C15-C26)	8	219	4,5	Human immunodeficiency virus [HIV] disease (B20-B24)	8	86	4,1	Malignant neoplasms of digestive organs (C15-C26)	8	149	4,4
Hypertensive diseases (I10-I15)	9	185	3,8	Tuberculosis (A15-A19)	9	75	3,5	Hypertensive diseases (I10-I15)	9	135	4,0
Other forms of heart disease (I30-I52)	10	174	3,6	Influenza and pneumonia (J09-J18)	10	64	3,0	Other forms of heart disease (I30-I52)	10	97	2,9
Other Natural		1773	36,3	Other Natural		724	34,2	Other Natural		1087	32,0
Non-natural		438	9,0	Non-natural		259	12,2	Non-natural		394	11,6
All causes		4887	100,0	All causes		2120	100,0	All causes		3400	100,0

Appendix P1: The ten leading underlying natural causes of death by district municipality of death occurrence, Eastern Cape, 2017*

Alfred Nzo		No.	%	Amathole		No.	%	Buffalo City		No.	%
Tuberculosis (A15-A19)	1	327	4,9	Tuberculosis (A15-A19)	1	622	8,3	Tuberculosis (A15-A19)	1	653	7,9
Other forms of heart disease (I30-I52)	2	202	3,0	Hypertensive diseases (I10-I15)	2	574	7,6	Diabetes mellitus (E10-E14)	2	518	6,3
Human immunodeficiency virus [HIV] disease (B20-B24)	3	181	2,7	Diabetes mellitus (E10-E14)	3	443	5,9	Human immunodeficiency virus [HIV] disease (B20-B24)	3	498	6,0
Cerebrovascular diseases (I60-I69)	4	164	2,5	Chronic lower respiratory diseases (J40-J47)	4	427	5,7	Other forms of heart disease (I30-I52)	4	489	5,9
Other viral diseases (B25-B34)	5	139	2,1	Cerebrovascular diseases (I60-I69)	5	405	5,4	Cerebrovascular diseases (I60-I69)	5	458	5,6
Diabetes mellitus (E10-E14)	6	137	2,1	Other forms of heart disease (I30-I52)	6	376	5,0	Hypertensive diseases (I10-I15)	6	388	4,7
Influenza and pneumonia (J09-J18)	7	131	2,0	Human immunodeficiency virus [HIV] disease (B20-B24)	7	354	4,7	Chronic lower respiratory diseases (J40-J47)	7	349	4,2
Intestinal infectious diseases (A00-A09)	8	106	1,6	Influenza and pneumonia (J09-J18)	8	290	3,9	Malignant neoplasms of digestive organs (C15-C26)	8	341	4,1
Hypertensive diseases (I10-I15)	9	98	1,5	Malignant neoplasms of digestive organs (C15-C26)	9	218	2,9	Influenza and pneumonia (J09-J18)	9	224	2,7
Chronic lower respiratory diseases (J40-J47)	10	98	1,5	Other viral diseases (B25-B34)	10	194	2,6	Other diseases of the respiratory system (J95-J99)	10	213	2,6
Other Natural		4363	65,4	Other Natural		2745	36,5	Other Natural		3048	36,9
Non-natural		726	10,9	Non-natural		864	11,5	Non-natural		1072	13,0
All causes		6672	100,0	All causes		7512	100,0	All causes		8251	100,0
Chris Hani		No.	%	Joe Gqabi		No.	%	Nelson Mandela Bay		No.	%
Tuberculosis (A15-A19)	1	917	10,4	Tuberculosis (A15-A19)	1	255	7,7	Diabetes mellitus (E10-E14)	1	1067	8,6
Diabetes mellitus (E10-E14)	2	483	5,5	Influenza and pneumonia (J09-J18)	2	170	5,1	Tuberculosis (A15-A19)	2	1064	8,5
Chronic lower respiratory diseases (J40-J47)	3	476	5,4	Other forms of heart disease (I30-I52)	3	149	4,5	Human immunodeficiency virus [HIV] disease (B20-B24)	3	841	6,7
Cerebrovascular diseases (I60-I69)	4	454	5,2	Cerebrovascular diseases (I60-I69)	4	142	4,3	Hypertensive diseases (I10-I15)	4	754	6,0
Hypertensive diseases (I10-I15)	5	408	4,6	Human immunodeficiency virus [HIV] disease (B20-B24)	5	126	3,8	Cerebrovascular diseases (I60-I69)	5	726	5,8
Other forms of heart disease (I30-I52)	6	393	4,5	Diabetes mellitus (E10-E14)	6	111	3,3	Other forms of heart disease (I30-I52)	6	626	5,0
Human immunodeficiency virus [HIV] disease (B20-B24)	7	305	3,5	Certain disorders involving the immune mechanism (D80-D89)	7	111	3,3	Chronic lower respiratory diseases (J40-J47)	7	580	4,7
Influenza and pneumonia (J09-J18)	8	302	3,4	Hypertensive diseases (I10-I15)	8	99	3,0	Ischaemic heart diseases (I20-I25)	8	454	3,6
Other viral diseases (B25-B34)	9	300	3,4	Other viral diseases (B25-B34)	9	96	2,9	Malignant neoplasms of digestive organs (C15-C26)	9	393	3,2
Certain disorders involving the immune mechanism (D80-D89)	10	241	2,7	Chronic lower respiratory diseases (J40-J47)	10	91	2,7	Influenza and pneumonia (J09-J18)	10	325	2,6
Other Natural		3491	39,6	Other Natural		1610	48,5	Other Natural		4321	34,7
Non-natural		1037	11,8	Non-natural		360	10,8	Non-natural		1316	10,6
All causes		8807	100,0	All causes		3320	100,0	All causes		12467	100,0

Appendix P1: The ten leading underlying natural causes of death by district municipality of death occurrence, Eastern Cape, 2017* (concluded)

O.R. Tambo		No.	%	Sarah Baartman		No.	%
Tuberculosis (A15-A19)	1	1146	8,4	Tuberculosis (A15-A19)	1	395	8,9
Human immunodeficiency virus [HIV] disease (B20-B24)	2	782	5,7	Human immunodeficiency virus [HIV] disease (B20-B24)	2	324	7,3
Other forms of heart disease (I30-I52)	3	546	4,0	Diabetes mellitus (E10-E14)	3	298	6,7
Cerebrovascular diseases (I60-I69)	4	470	3,4	Hypertensive diseases (I10-I15)	4	284	6,4
Other viral diseases (B25-B34)	5	434	3,2	Chronic lower respiratory diseases (J40-J47)	5	262	5,9
Diabetes mellitus (E10-E14)	6	431	3,2	Cerebrovascular diseases (I60-I69)	6	241	5,4
Influenza and pneumonia (J09-J18)	7	345	2,5	Ischaemic heart diseases (I20-I25)	7	193	4,3
Chronic lower respiratory diseases (J40-J47)	8	287	2,1	Influenza and pneumonia (J09-J18)	8	182	4,1
Hypertensive diseases (I10-I15)	9	279	2,0	Other forms of heart disease (I30-I52)	9	173	3,9
Malignant neoplasms of digestive organs (C15-C26)	10	268	2,0	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	10	99	2,2
Other Natural		6768	49,5	Other Natural		1555	34,8
Non-natural		1914	14,0	Non-natural		457	10,2
All causes		13670	100,0	All causes		4463	100,0

Appendix P2: The ten leading underlying natural causes of death by district municipality of death occurrence, Northern Cape, 2017*

Frances Baard		no.	%	John Taolo Gaetsewe		No.	%	Namakwa		No.	%
Human immunodeficiency virus [HIV] disease (B20-B24)	1	333	8,3	Other forms of heart disease (I30-I52)	1	309	14	Chronic lower respiratory diseases (J40-J47)	1	121	8,4
Tuberculosis (A15-A19)	2	296	7,4	Influenza and pneumonia (J09-J18)	2	162	7,3	Ischaemic heart diseases (I20-I25)	2	95	6,6
Hypertensive diseases (I10-I15)	3	230	5,7	Tuberculosis (A15-A19)	3	144	6,5	Diabetes mellitus (E10-E14)	3	91	6,3
Cerebrovascular diseases (I60-I69)	4	188	4,7	Human immunodeficiency virus [HIV] disease (B20-B24)	4	126	5,7	Hypertensive diseases (I10-I15)	4	77	5,4
Diabetes mellitus (E10-E14)	5	186	4,6	Other viral diseases (B25-B34)	5	118	5,3	Cerebrovascular diseases (I60-I69)	5	67	4,7
Certain disorders involving the immune mechanism (D80-D89)	6	174	4,3	Intestinal infectious diseases (A00-A09)	6	89	4	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	6	66	4,6
Chronic lower respiratory diseases (J40-J47)	7	144	3,6	Hypertensive diseases (I10-I15)	7	75	3,4	Tuberculosis (A15-A19)	7	62	4,3
Other forms of heart disease (I30-I52)	8	136	3,4	Cerebrovascular diseases (I60-I69)	8	64	2,9	Influenza and pneumonia (J09-J18)	8	47	3,3
Influenza and pneumonia (J09-J18)	9	123	3,1	Diabetes mellitus (E10-E14)	9	48	2,2	Other forms of heart disease (I30-I52)	9	44	3,1
Ischaemic heart diseases (I20-I25)	10	103	2,6	Other acute lower respiratory infections (J20-J22)	10	43	1,9	Malignant neoplasms of digestive organs (C15-C26)	10	42	2,9
Other Natural		1758	43,7	Other Natural		801	36,2	Other Natural		572	39,9
Non-natural		356	8,8	Non-natural		234	10,6	Non-natural		151	10,5
All causes		4027	100,0	All causes		2213	100,0	All causes		1435	100,0
Pixley ka Seme		No.	%	Z.F. Mgcawu		No.	%				
Tuberculosis (A15-A19)	1	228	9,4	Tuberculosis (A15-A19)	1	221	8,7				
Chronic lower respiratory diseases (J40-J47)	2	146	6	Chronic lower respiratory diseases (J40-J47)	2	170	6,7				
Human immunodeficiency virus [HIV] disease (B20-B24)	3	140	5,7	Human immunodeficiency virus [HIV] disease (B20-B24)	3	139	5,5				
Cerebrovascular diseases (I60-I69)	4	127	5,2	Certain disorders involving the immune mechanism (D80-D89)	4	136	5,4				
Hypertensive diseases (I10-I15)	5	122	5	Hypertensive diseases (I10-I15)	5	134	5,3				
Ischaemic heart diseases (I20-I25)	6	117	4,8	Diabetes mellitus (E10-E14)	6	112	4,4				
Other forms of heart disease (I30-I52)	7	111	4,6	Cerebrovascular diseases (I60-I69)	7	109	4,3				
Influenza and pneumonia (J09-J18)	8	105	4,3	Influenza and pneumonia (J09-J18)	8	95	3,8				
Diabetes mellitus (E10-E14)	9	92	3,8	Ischaemic heart diseases (I20-I25)	9	83	3,3				
Certain disorders involving the immune mechanism (D80-D89)	10	67	2,7	Other forms of heart disease (I30-I52)	10	72	2,9				
Other Natural		893	36,6	Other Natural		946	37,5				
Non-natural		289	11,9	Non-natural		309	12,2				
All causes		2437	100,0	All causes		2526	100,0				

Appendix P3: The ten leading underlying natural causes of death by district municipality of death occurrence, Free State, 2017*

Fezile Dabi		No.	%	Lejweleputswa		No.	%	Mangaung			
Tuberculosis (A15-A19)	1	409	8,1	Influenza and pneumonia (J09-J18)	1	672	9,7	Human immunodeficiency virus [HIV] disease (B20-B24)	1	825	8,4
Hypertensive diseases (I10-I15)	2	373	7,4	Tuberculosis (A15-A19)	2	452	6,5	Hypertensive diseases (I10-I15)	2	468	4,8
Other forms of heart disease (I30-I52)	3	308	6,1	Hypertensive diseases (I10-I15)	3	343	4,9	Diabetes mellitus (E10-E14)	3	460	4,7
Diabetes mellitus (E10-E14)	4	284	5,6	Cerebrovascular diseases (I60-I69)	4	330	4,8	Cerebrovascular diseases (I60-I69)	4	425	4,3
Other viral diseases (B25-B34)	5	262	5,2	Other viral diseases (B25-B34)	5	318	4,6	Tuberculosis (A15-A19)	5	376	3,8
Human immunodeficiency virus [HIV] disease (B20-B24)	6	251	5	Diabetes mellitus (E10-E14)	6	311	4,5	Other forms of heart disease (I30-I52)	6	319	3,3
Cerebrovascular diseases (I60-I69)	7	250	4,9	Other forms of heart disease (I30-I52)	7	262	3,8	Influenza and pneumonia (J09-J18)	7	290	3
Influenza and pneumonia (J09-J18)	8	247	4,9	Certain disorders involving the immune mechanism (D80-D89)	8	245	3,5	Malignant neoplasms of digestive organs (C15-C26)	8	269	2,7
Other acute lower respiratory infections (J20-J22)	9	154	3	Chronic lower respiratory diseases (J40-J47)	9	193	2,8	Chronic lower respiratory diseases (J40-J47)	9	258	2,6
Chronic lower respiratory diseases (J40-J47)	10	132	2,6	Human immunodeficiency virus [HIV] disease (B20-B24)	10	180	2,6	Certain disorders involving the immune mechanism (D80-D89)	10	226	2,3
Other Natural		1874	37,1	Other Natural		2883	41,5	Other Natural		4853	49,6
Non-natural		509	10,1	Non-natural		753	10,8	Non-natural		1023	10,4
All causes		5053	100,0	All causes		6942	100,0	All causes	1	825	8,4
Thabo Mofutsanyane		No.	%	Xhariep		No.	%				
Tuberculosis (A15-A19)	1	602	7,4	Hypertensive diseases (I10-I15)	1	110	8,3				
Hypertensive diseases (I10-I15)	2	552	6,8	Tuberculosis (A15-A19)	2	110	8,3				
Diabetes mellitus (E10-E14)	3	524	6,5	Other viral diseases (B25-B34)	3	89	6,7				
Human immunodeficiency virus [HIV] disease (B20-B24)	4	500	6,2	Cerebrovascular diseases (I60-I69)	4	81	6,1				
Cerebrovascular diseases (I60-I69)	5	490	6,1	Diabetes mellitus (E10-E14)	5	75	5,7				
Influenza and pneumonia (J09-J18)	6	455	5,6	Other forms of heart disease (I30-I52)	6	68	5,1				
Other forms of heart disease (I30-I52)	7	438	5,4	Influenza and pneumonia (J09-J18)	7	61	4,6				
Other viral diseases (B25-B34)	8	388	4,8	Human immunodeficiency virus [HIV] disease (B20-B24)	8	53	4,0				
Intestinal infectious diseases (A00-A09)	9	213	2,6	Chronic lower respiratory diseases (J40-J47)	9	51	3,8				
Chronic lower respiratory diseases (J40-J47)	10	182	2,2	Ischaemic heart diseases (I20-I25)	10	40	3,0				
Other Natural		2992	37,0	Other Natural		435	32,8				
Non-natural		759	9,4	Non-natural		153	11,5				
All causes		8095	100,0	All causes		1326	100,0				

Appendix P4: The ten leading underlying natural causes of death by district municipality of death occurrence, KwaZulu-Natal, 2017*

Amajuba		No.	%	Harry Gwala		No.	%	Ugu		No.	%
Tuberculosis (A15-A19)	1	380	9,3	Human immunodeficiency virus [HIV] disease (B20-B24)	1	356	9,2	Tuberculosis (A15-A19)	1	742	8,8
Other forms of heart disease (I30-I52)	2	288	7,0	Tuberculosis (A15-A19)	2	316	8,2	Diabetes mellitus (E10-E14)	2	623	7,4
Diabetes mellitus (E10-E14)	3	273	6,7	Diabetes mellitus (E10-E14)	3	267	6,9	Cerebrovascular diseases (I60-I69)	3	525	6,2
Cerebrovascular diseases (I60-I69)	4	252	6,1	Cerebrovascular diseases (I60-I69)	4	230	6,0	Human immunodeficiency virus [HIV] disease (B20-B24)	4	471	5,6
Influenza and pneumonia (J09-J18)	5	239	5,8	Influenza and pneumonia (J09-J18)	5	206	5,3	Hypertensive diseases (I10-I15)	5	393	4,7
Hypertensive diseases (I10-I15)	6	200	4,9	Hypertensive diseases (I10-I15)	6	181	4,7	Other forms of heart disease (I30-I52)	6	319	3,8
Human immunodeficiency virus [HIV] disease (B20-B24)	7	165	4,0	Other forms of heart disease (I30-I52)	7	169	4,4	Other viral diseases (B25-B34)	7	294	3,5
Other viral diseases (B25-B34)	8	131	3,2	Chronic lower respiratory diseases (J40-J47)	8	140	3,6	Influenza and pneumonia (J09-J18)	8	248	2,9
Renal failure (N17-N19)	9	124	3,0	Intestinal infectious diseases (A00-A09)	9	84	2,2	Ischaemic heart diseases (I20-I25)	9	188	2,2
Ischaemic heart diseases (I20-I25)	10	81	2,0	Malignant neoplasms of digestive organs (C15-C26)	10	73	1,9	Chronic lower respiratory diseases (J40-J47)	10	186	2,2
Other Natural		1502	36,6	Other Natural		1350	35,0	Other Natural		3426	40,7
Non-natural		469	11,4	Non-natural		490	12,7	Non-natural		1003	11,9
All causes		4104	100,0	All causes		3862	100,0	All causes		8418	100,0
uMgungundlovu		No.	%	uMkhanyakude		No.	%	uMzinyathi		No.	%
Diabetes mellitus (E10-E14)	1	897	9,0	Human immunodeficiency virus [HIV] disease (B20-B24)	1	440	13,8	Other forms of heart disease (I30-I52)	1	482	9,5
Human immunodeficiency virus [HIV] disease (B20-B24)	2	701	7,0	Tuberculosis (A15-A19)	2	199	6,2	Cerebrovascular diseases (I60-I69)	2	403	8
Hypertensive diseases (I10-I15)	3	586	5,9	Cerebrovascular diseases (I60-I69)	3	178	5,6	Tuberculosis (A15-A19)	3	350	6,9
Cerebrovascular diseases (I60-I69)	4	580	5,8	Hypertensive diseases (I10-I15)	4	138	4,3	Human immunodeficiency virus [HIV] disease (B20-B24)	4	323	6,4
Tuberculosis (A15-A19)	5	563	5,6	Diabetes mellitus (E10-E14)	5	125	3,9	Diabetes mellitus (E10-E14)	5	292	5,8
Other forms of heart disease (I30-I52)	6	484	4,9	Other forms of heart disease (I30-I52)	6	124	3,9	Hypertensive diseases (I10-I15)	6	231	4,6
Ischaemic heart diseases (I20-I25)	7	326	3,3	Influenza and pneumonia (J09-J18)	7	78	2,4	Other viral diseases (B25-B34)	7	227	4,5
Influenza and pneumonia (J09-J18)	8	297	3,0	Malignant neoplasms of female genital organs (C51-C58)	8	66	2,1	Influenza and pneumonia (J09-J18)	8	161	3,2
Malignant neoplasms of digestive organs (C15-C26)	9	257	2,6	Other viral diseases (B25-B34)	9	58	1,8	Chronic lower respiratory diseases (J40-J47)	9	112	2,2
Chronic lower respiratory diseases (J40-J47)	10	239	2,4	Renal failure (N17-N19)	10	54	1,7	Renal failure (N17-N19)	10	102	2
Other Natural		3806	38,2	Other Natural		1336	41,8	Other Natural		1752	34,7
Non-natural		1230	12,3	Non-natural		399	12,5	Non-natural		614	12,2
All causes		9966	100,0	All causes		3195	100,0	All causes		5049	100,0

Appendix P4: The ten leading underlying natural causes of death by district municipality of death occurrence, KwaZulu-Natal, 2017* (concluded)

uThukela		No.	%	uThungulu		No.	%	Zululand		No.	%
Tuberculosis (A15-A19)	1	523	8,9	Tuberculosis (A15-A19)	1	516	7,3	Tuberculosis (A15-A19)	1	428	8,2
Human immunodeficiency virus [HIV] disease (B20-B24)	2	465	7,9	Human immunodeficiency virus [HIV] disease (B20-B24)	2	481	6,8	Human immunodeficiency virus [HIV] disease (B20-B24)	2	424	8,1
Cerebrovascular diseases (I60-I69)	3	421	7,2	Diabetes mellitus (E10-E14)	3	474	6,7	Diabetes mellitus (E10-E14)	3	286	5,5
Diabetes mellitus (E10-E14)	4	357	6,1	Cerebrovascular diseases (I60-I69)	4	419	5,9	Cerebrovascular diseases (I60-I69)	4	284	5,4
Other forms of heart disease (I30-I52)	5	302	5,1	Hypertensive diseases (I10-I15)	5	305	4,3	Other forms of heart disease (I30-I52)	5	240	4,6
Influenza and pneumonia (J09-J18)	6	273	4,6	Other viral diseases (B25-B34)	6	266	3,8	Influenza and pneumonia (J09-J18)	6	211	4,0
Hypertensive diseases (I10-I15)	7	239	4,1	Other forms of heart disease (I30-I52)	7	238	3,4	Hypertensive diseases (I10-I15)	7	185	3,5
Ischaemic heart diseases (I20-I25)	8	219	3,7	Influenza and pneumonia (J09-J18)	8	147	2,1	Other viral diseases (B25-B34)	8	132	2,5
Intestinal infectious diseases (A00-A09)	9	204	3,5	Malignant neoplasms of digestive organs (C15-C26)	9	146	2,1	Intestinal infectious diseases (A00-A09)	9	113	2,2
Renal failure (N17-N19)	10	150	2,6	Renal failure (N17-N19)	10	129	1,8	Certain disorders involving the immune mechanism (D80-D89)	10	109	2,1
Other Natural		1986	33,8	Other Natural		3001	42,6	Other Natural		2156	41,3
Non-natural		738	12,6	Non-natural		927	13,2	Non-natural		652	12,5
All causes		5877	100,0	All causes		7049	100,0	All causes		5220	100,0
eThekweni		No.	%	iLembe		No.	%				
Other forms of heart disease (I30-I52)	1	2441	12,3	Tuberculosis (A15-A19)	1	454	11,5				
Diabetes mellitus (E10-E14)	2	1350	6,8	Cerebrovascular diseases (I60-I69)	2	274	6,9				
Tuberculosis (A15-A19)	3	1192	6,0	Diabetes mellitus (E10-E14)	3	263	6,6				
Human immunodeficiency virus [HIV] disease (B20-B24)	4	1033	5,2	Ischaemic heart diseases (I20-I25)	4	223	5,6				
Cerebrovascular diseases (I60-I69)	5	979	4,9	Other viral diseases (B25-B34)	5	176	4,5				
Ischaemic heart diseases (I20-I25)	6	835	4,2	Influenza and pneumonia (J09-J18)	6	141	3,6				
Influenza and pneumonia (J09-J18)	7	539	2,7	Other forms of heart disease (I30-I52)	7	117	3,0				
Hypertensive diseases (I10-I15)	8	507	2,5	Hypertensive diseases (I10-I15)	8	105	2,7				
Malignant neoplasms of digestive organs (C15-C26)	9	495	2,5	Renal failure (N17-N19)	9	104	2,6				
Renal failure (N17-N19)	10	408	2,0	Human immunodeficiency virus [HIV] disease (B20-B24)	10	96	2,4				
Other Natural		7499	37,7	Other Natural	11	1485	37,5				
Non-natural		2632	13,2	Non-natural	12	517	13,1				
All causes		19910	100,0	All causes		3955	100,0				

Appendix P5: The ten leading underlying natural causes of death by district municipality of death occurrence, North West, 2017*

Bojanala				Dr Kenneth Kaunda				Dr Ruth Segomotsi Mompoti			
	No.	%		No.	%	No.	%	No.	%		
Tuberculosis (A15-A19)	1	764	7,1	Tuberculosis (A15-A19)	1	653	8,4	Tuberculosis (A15-A19)	1	390	7,7
Hypertensive diseases (I10-I15)	2	682	6,3	Human immunodeficiency virus [HIV] disease (B20-B24)	2	602	7,8	Hypertensive diseases (I10-I15)	2	381	7,5
Diabetes mellitus (E10-E14)	3	636	5,9	Hypertensive diseases (I10-I15)	3	404	5,2	Human immunodeficiency virus [HIV] disease (B20-B24)	3	353	7
Other forms of heart disease (I30-I52)	4	595	5,5	Diabetes mellitus (E10-E14)	4	342	4,4	Influenza and pneumonia (J09-J18)	4	326	6,5
Cerebrovascular diseases (I60-I69)	5	533	5,0	Cerebrovascular diseases (I60-I69)	5	301	3,9	Other forms of heart disease (I30-I52)	5	305	6
Influenza and pneumonia (J09-J18)	6	473	4,4	Chronic lower respiratory diseases (J40-J47)	6	267	3,4	Other viral diseases (B25-B34)	6	275	5,4
Other viral diseases (B25-B34)	7	434	4,0	Influenza and pneumonia (J09-J18)	7	264	3,4	Cerebrovascular diseases (I60-I69)	7	193	3,8
Human immunodeficiency virus [HIV] disease (B20-B24)	8	309	2,9	Other forms of heart disease (I30-I52)	8	251	3,2	Diabetes mellitus (E10-E14)	8	187	3,7
Chronic lower respiratory diseases (J40-J47)	9	292	2,7	Other viral diseases (B25-B34)	9	238	3,1	Intestinal infectious diseases (A00-A09)	9	111	2,2
Certain disorders involving the immune mechanism (D80-D89)	10	282	2,6	Malignant neoplasms of digestive organs (C15-C26)	10	223	2,9	Certain disorders involving the immune mechanism (D80-D89)	10	105	2,1
Other Natural		4641	43,1	Other Natural		3459	44,6	Other Natural		2070	41,0
Non-natural		1115	10,4	Non-natural		760	9,8	Non-natural		357	7,1
All causes		10756	100,0	All causes		7764	100,0	All causes		5053	100,0
Ngaka Modiri Molema				No.	%						
Other forms of heart disease (I30-I52)	1	640	7,2								
Tuberculosis (A15-A19)	2	601	6,8								
Influenza and pneumonia (J09-J18)	3	584	6,6								
Hypertensive diseases (I10-I15)	4	430	4,8								
Diabetes mellitus (E10-E14)	5	371	4,2								
Certain disorders involving the immune mechanism (D80-D89)	6	354	4,0								
Cerebrovascular diseases (I60-I69)	7	346	3,9								
Other viral diseases (B25-B34)	8	278	3,1								
Chronic lower respiratory diseases (J40-J47)	9	220	2,5								
Intestinal infectious diseases (A00-A09)	10	184	2,1								
Other Natural		4265	47,9								
Non-natural		627	7								
All causes		8900	100,0								

Appendix P6: The ten leading underlying natural causes of death by district municipality of death occurrence, Gauteng, 2017*

City of Johannesburg		No.	%	City of Tshwane		No.	%	Ekurhuleni		No.	%
Other forms of heart disease (I30-I52)	1	1274	4,7	Other forms of heart disease (I30-I52)	1	1757	6,9	Tuberculosis (A15-A19)	1	1181	5,4
Influenza and pneumonia (J09-J18)	2	1032	3,8	Diabetes mellitus (E10-E14)	2	1530	6,0	Other forms of heart disease (I30-I52)	2	1070	4,9
Cerebrovascular diseases (I60-I69)	3	982	3,6	Tuberculosis (A15-A19)	3	1226	4,8	Influenza and pneumonia (J09-J18)	3	1032	4,7
Diabetes mellitus (E10-E14)	4	935	3,4	Hypertensive diseases (I10-I15)	4	1085	4,3	Cerebrovascular diseases (I60-I69)	4	981	4,5
Human immunodeficiency virus [HIV] disease (B20-B24)	5	927	3,4	Cerebrovascular diseases (I60-I69)	5	1073	4,2	Diabetes mellitus (E10-E14)	5	962	4,4
Tuberculosis (A15-A19)	6	897	3,3	Ischaemic heart diseases (I20-I25)	6	963	3,8	Hypertensive diseases (I10-I15)	6	703	3,2
Ischaemic heart diseases (I20-I25)	7	782	2,9	Influenza and pneumonia (J09-J18)	7	945	3,7	Ischaemic heart diseases (I20-I25)	7	685	3,1
Chronic lower respiratory diseases (J40-J47)	8	696	2,5	Malignant neoplasms of digestive organs (C15-C26)	8	815	3,2	Other viral diseases (B25-B34)	8	669	3,1
Malignant neoplasms of digestive organs (C15-C26)	9	692	2,5	Human immunodeficiency virus [HIV] disease (B20-B24)	9	800	3,2	Human immunodeficiency virus [HIV] disease (B20-B24)	9	574	2,6
Hypertensive diseases (I10-I15)	10	592	2,2	Chronic lower respiratory diseases (J40-J47)	10	712	2,8	Chronic lower respiratory diseases (J40-J47)	10	539	2,5
Other Natural		14556	53,2	Other Natural		12433	49,1	Other Natural		10869	49,7
Non-natural		4003	14,6	Non-natural		2005	7,9	Non-natural		2602	11,9
All causes		27368	100,0	All causes		25344	100,0	All causes		21867	100,0
Sedibeng		No.	%	West Rand		No.	%				
Influenza and pneumonia (J09-J18)	1	810	7,1	Other forms of heart disease (I30-I52)	1	363	5,5				
Other forms of heart disease (I30-I52)	2	746	6,5	Influenza and pneumonia (J09-J18)	2	342	5,2				
Tuberculosis (A15-A19)	3	718	6,3	Tuberculosis (A15-A19)	3	316	4,8				
Hypertensive diseases (I10-I15)	4	642	5,6	Diabetes mellitus (E10-E14)	4	295	4,5				
Diabetes mellitus (E10-E14)	5	558	4,9	Certain disorders involving the immune mechanism (D80-D89)	5	239	3,6				
Cerebrovascular diseases (I60-I69)	6	493	4,3	Cerebrovascular diseases (I60-I69)	6	230	3,5				
Ischaemic heart diseases (I20-I25)	7	380	3,3	Human immunodeficiency virus [HIV] disease (B20-B24)	7	214	3,3				
Chronic lower respiratory diseases (J40-J47)	8	351	3,1	Hypertensive diseases (I10-I15)	8	194	3				
Human immunodeficiency virus [HIV] disease (B20-B24)	9	313	2,7	Chronic lower respiratory diseases (J40-J47)	9	191	2,9				
Other viral diseases (B25-B34)	10	281	2,5	Other viral diseases (B25-B34)	10	186	2,8				
Other Natural		4739	41,6	Other Natural		3059	46,7				
Non-natural		1364	12	Non-natural		920	14				
All causes		11395	100,0	All causes		6549	100,0				

Appendix P7: The ten leading underlying natural causes of death by district municipality of death occurrence, Mpumalanga 2017*

Ehlanzeni		No.	%	Gert Sibande		No.	%	Nkangala		No.	%
Tuberculosis (A15-A19)	1	1220	10,2	Tuberculosis (A15-A19)	1	597	7,3	Hypertensive diseases (I10-I15)	1	616	6,7
Cerebrovascular diseases (I60-I69)	2	695	5,8	Human immunodeficiency virus [HIV] disease (B20-B24)	2	509	6,2	Tuberculosis (A15-A19)	2	546	5,9
Influenza and pneumonia (J09-J18)	3	654	5,5	Diabetes mellitus (E10-E14)	3	425	5,2	Influenza and pneumonia (J09-J18)	3	545	5,9
Diabetes mellitus (E10-E14)	4	636	5,3	Cerebrovascular diseases (I60-I69)	4	380	4,6	Diabetes mellitus (E10-E14)	4	505	5,5
Other viral diseases (B25-B34)	5	557	4,7	Hypertensive diseases (I10-I15)	5	366	4,5	Cerebrovascular diseases (I60-I69)	5	453	4,9
Hypertensive diseases (I10-I15)	6	556	4,7	Influenza and pneumonia (J09-J18)	6	346	4,2	Other viral diseases (B25-B34)	6	409	4,5
Human immunodeficiency virus [HIV] disease (B20-B24)	7	555	4,7	Other viral diseases (B25-B34)	7	333	4,1	Other forms of heart disease (I30-I52)	7	372	4,0
Other forms of heart disease (I30-I52)	8	524	4,4	Certain disorders involving the immune mechanism (D80-D89)	8	274	3,3	Ischaemic heart diseases (I20-I25)	8	245	2,7
Ischaemic heart diseases (I20-I25)	9	486	4,1	Other forms of heart disease (I30-I52)	9,0	255	3,1	Chronic lower respiratory diseases (J40-J47)	9	228	2,5
Intestinal infectious diseases (A00-A09)	10	356	3,0	Intestinal infectious diseases (A00-A09)	10	201	2,4	Other acute lower respiratory infections (J20-J22)	10	223	2,4
Other Natural		4467	37,5	Other Natural		3436	41,9	Other Natural		3944	42,9
Non-natural		1199	10,1	Non-natural		1086	13,2	Non-natural		1101	12,0
All causes		11905	100,0	All causes		8208	100,0	All causes		9187	100,0

Appendix P8: The ten leading underlying natural causes of death by district municipality of death occurrence, Limpopo 2017*

Capricorn		No.	%	Mopani		No.	%	Sekhukhune		No.	%
Hypertensive diseases (I10-I15)	1	823	6,7	Influenza and pneumonia (J09-J18)	1	615	6,9	Cerebrovascular diseases (I60-I69)	1	1008	11,7
Influenza and pneumonia (J09-J18)	2	811	6,6	Diabetes mellitus (E10-E14)	2	577	6,4	Influenza and pneumonia (J09-J18)	2	1003	11,6
Diabetes mellitus (E10-E14)	3	784	6,4	Tuberculosis (A15-A19)	3	507	5,7	Hypertensive diseases (I10-I15)	3	642	7,4
Human immunodeficiency virus [HIV] disease (B20-B24)	4	647	5,3	Cerebrovascular diseases (I60-I69)	4	424	4,7	Other viral diseases (B25-B34)	4	503	5,8
Tuberculosis (A15-A19)	5	580	4,8	Other viral diseases (B25-B34)	5	364	4,1	Diabetes mellitus (E10-E14)	5	499	5,8
Cerebrovascular diseases (I60-I69)	6	513	4,2	Hypertensive diseases (I10-I15)	6	324	3,6	Tuberculosis (A15-A19)	6	438	5,1
Other forms of heart disease (I30-I52)	7	393	3,2	Other forms of heart disease (I30-I52)	7	288	3,2	Intestinal infectious diseases (A00-A09)	7	304	3,5
Intestinal infectious diseases (A00-A09)	8	373	3,1	Human immunodeficiency virus [HIV] disease (B20-B24)	8	253	2,8	Other forms of heart disease (I30-I52)	8	295	3,4
Other viral diseases (B25-B34)	9	312	2,6	Intestinal infectious diseases (A00-A09)	9	240	2,7	Chronic lower respiratory diseases (J40-J47)	9	161	1,9
Chronic lower respiratory diseases (J40-J47)	10	268	2,2	Renal failure (N17-N19)	10	225	2,5	Human immunodeficiency virus [HIV] disease (B20-B24)	10	151	1,7
Other Natural		5462	44,7	Other Natural		4391	49	Other Natural		2864	33,2
Non-natural		1240	10,2	Non-natural		753	8,4	Non-natural		764	8,9
All causes		12206	100,0	All causes		8961	100,0	All causes		8632	100,0
Vhembe		No.	%	Waterberg		No.	%				
Diabetes mellitus (E10-E14)	1	443	5,6	Tuberculosis (A15-A19)	1	520	8,7				
Tuberculosis (A15-A19)	2	363	4,6	Hypertensive diseases (I10-I15)	2	392	6,6				
Cerebrovascular diseases (I60-I69)	3	314	4	Influenza and pneumonia (J09-J18)	3	388	6,5				
Renal failure (N17-N19)	4	264	3,3	Diabetes mellitus (E10-E14)	4	379	6,3				
Influenza and pneumonia (J09-J18)	5	250	3,2	Human immunodeficiency virus [HIV] disease (B20-B24)	5	352	5,9				
Other viral diseases (B25-B34)	6	219	2,8	Cerebrovascular diseases (I60-I69)	6	286	4,8				
Other forms of heart disease (I30-I52)	7	181	2,3	Other forms of heart disease (I30-I52)	7	261	4,4				
Human immunodeficiency virus [HIV] disease (B20-B24)	8	151	1,9	Other viral diseases (B25-B34)	8	236	3,9				
Certain disorders involving the immune mechanism (D80-D89)	9	150	1,9	Intestinal infectious diseases (A00-A09)	9	209	3,5				
Hypertensive diseases (I10-I15)	10	147	1,9	Renal failure (N17-N19)	10	149	2,5				
Other Natural		4750	59,9	Other Natural		2196	36,7				
Non-natural		699	8,8	Non-natural		609	10,2				
All causes		7931	100,0	All causes		5977	100,0				

Appendix Q: Population group differences

Due to the high proportion of deaths with unknown or unspecified population group (12,3%), the analysis of causes of death by population group was moved to the appendices. Appendix Q1 (see page 136) shows the ten leading natural causes of death by population group for 2017. The proportions of deaths due to non-natural causes are also presented in the same appendix although not in greater detail.

The first leading underlying cause of death amongst black Africans was *tuberculosis* (responsible for 7,9% of deaths in the black African population group), followed by *HIV disease* (responsible for 6,1% deaths). For the white population group, *ischaemic heart diseases* were the leading cause of death, accounting for 10,7% deaths in this population group, followed by *other forms of heart diseases*, accounting for 7,1% deaths. For both the coloured and the Indian/Asian population groups, *diabetes mellitus* was the first leading cause of death (responsible for 14,0% deaths amongst the Indian/Asian population group and 8,3% amongst the coloured population group). The second leading cause of death amongst the coloured population was *chronic lower respiratory diseases* (responsible for 6,8% deaths), while for the Indian/Asian population group, *ischaemic heart diseases* was the second leading cause of death, accounting for 13,4% of the deaths.

Certain disorders involving the immune mechanism and *other viral diseases* were the leading causes of death only for the black African population. *Tuberculosis* and *HIV disease* were in the top ten leading underlying causes of death for only the coloured and the black African population group, while *renal failure* was the leading causes of death only for the Indian/Asian population groups. The only population group where *influenza and pneumonia* was not part of the ten leading causes of death was the coloured population and also *malignant neoplasm of breast* was on the top ten leading underlying causes of death only for the White population group.

Diseases which were common amongst all population groups was *cerebrovascular diseases*, *diabetes mellitus*, *other forms of heart disease*, *chronic lower respiratory diseases* and *hypertensive diseases*, but their contribution in causing deaths differed greatly by population group. Though these diseases were common in the mentioned population groups, their ranking differed greatly by population group. For example, *other forms of heart diseases* were the second leading cause of death amongst the white population group (7,1%), it was the tenth leading cause of death amongst the coloured population group (2,9%).

The proportions of deaths due to non-natural causes of death were slightly higher in both the black African and the coloured population groups as compared to the other population groups. A proportion of 12,2% deaths were due to non-natural causes for the black African population group followed closely by the coloured population group at 11,4%.

Appendix Q1: The ten leading underlying natural causes of death by population group, 2017

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	24 039	7,9	...	...	...	...	...	...	3	2 194	6,4	1	2 065	3,7
Human immunodeficiency virus [HIV] disease (B20-B24)	2	18 639	6,1	...	...	...	...	...	...	9	1 385	4,1	9	1 245	2,2
Diabetes mellitus (E10-E14)	3	17 453	5,7	6	1 936	4,6	1	1 145	14	1	2 846	8,3	2	1 956	3,5
Cerebrovascular diseases (I60-I69)	4	15 752	5,1	5	2 239	5,3	4	426	5,2	4	1 963	5,7	3	1 879	3,4
Other forms of heart disease (I30-I52)	5	15 579	5,1	2	3 025	7,1	3	612	7,5	10	1 006	2,9	4	1 876	3,4
Hypertensive diseases (I10-I15)	6	15 154	5	9	1 327	3,1	7	262	3,2	6	1 630	4,8	7	1 527	2,7
Influenza and pneumonia (J09-J18)	7	14 445	4,7	7	1 720	4	9	195	2,4	...	...	...	5	1 672	3
Other viral diseases (B25-B34)	8	11 638	3,8	...	...	...	...	...	...	...	...	...	...	...	...
Certain disorders involving the immune mechanism (D80-D89)	9	6 505	2,1	...	...	...	...	...	...	...	...	...	...	...	...
Chronic lower respiratory diseases (J40-J47)	10	6 376	2,1	3	2 593	6,1	5	330	4	2	2 314	6,8	6	1 554	2,8
Ischaemic heart diseases (I20-I25)	...	...	...	1	4 556	10,7	2	1 096	13,4	5	1 854	5,4	8	1 362	2,4
Malignant neoplasms of digestive organs (C15-C26)	...	...	...	4	2 375	5,6	6	303	3,7	8	1 388	4,1	10	893	1,6
Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	...	...	...	8	1 492	3,5	10	166	2	7	1 540	4,5	...	...	...
Malignant neoplasms of breast (C50)	...	...	...	10	875	2,1	...	...	...	...	...	...	...	...	...
Renal failure (N17-N19)	...	...	...	...	...	...	8	253	3,1	...	...	...	...	...	...
Other Natural		123 059	40,2		17 298	40,7		2 713	33,3		12 181	35,6		33 474	60,1
Non-natural		37 299	12,2		3 112	7,3		649	8		3 881	11,4		6 223	11,2
All causes		305 938	100		42 548	100		8 150	100		34 182	100		55 726	100