



The South Africa I know, the home I understand



Statistical release

P0309.3

Mortality and causes of death in South Africa, 2012: Findings from death notification

**Embargoed until:
4 September 2014
10:00**

Enquiries:

User Information Services
012 310 8600

Forthcoming issue:

2013

Expected release date

November 2014

Mortality and causes of death in South Africa, 2012: Findings from death notification / Statistics South Africa

Published by Statistics South Africa, Private Bag X44, Pretoria 0001

© Statistics South Africa, 2014

Users may apply or process this data, provided Statistics South Africa (Stats SA) is acknowledged as the original source of the data; that it is specified that the application and/or analysis is the result of the user's independent processing of the data; and that neither the basic data nor any reprocessed version or application thereof may be sold or offered for sale in any form whatsoever without prior permission from Stats SA.

Stats SA Library Cataloguing-in-Publication (CIP) Data

Mortality and causes of death in South Africa, 2012: Findings from death notification / Statistics South Africa.
Pretoria: Statistics South Africa, 2014

123 pp

A complete set of Stats SA publications is available at Stats SA Library and the following libraries:

National Library of South Africa, Pretoria Division
National Library of South Africa, Cape Town Division
Library of Parliament, Cape Town
Bloemfontein Public Library
Natal Society Library, Pietermaritzburg
Johannesburg Public Library
Eastern Cape Library Services, King William's Town
Central Regional Library, Polokwane
Central Reference Library, Nelspruit
Central Reference Collection, Kimberley
Central Reference Library, Mmabatho

This report is available on the Stats SA website: www.statssa.gov.za

Copies are obtainable from: Printing and Distribution, Statistics South Africa

Tel: 012 310 8358
012 310 8093
Email: magdaj@statssa.gov.za
inadp@statssa.gov.za

Technical enquiries

Tel: 012 310 0250
Email: ntsikim@statssa.gov.za

Preface

This statistical release presents information on mortality and causes of death in South Africa for deaths that occurred in 2012. Deaths for the years 1997–2011 are also included to provide information on trends in mortality and causes of death, based on updated information that includes late registrations processed in the 2013/14 processing phase. The release is based on deaths collected through the South African civil registration system maintained by the Department of Home Affairs.



PJ Lehohla
Statistician-General

Contents

Preface	ii
List of tables.....	vi
List of figures	vii
1. Introduction.....	1
1.1 Background	1
1.2 Objectives of this statistical release	1
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
2.3 Data editing	4
2.4 Data analysis.....	5
2.5 Quality of data	5
2.5.1 Completeness of death registration	6
2.5.2 Timeliness of reporting	6
2.5.3 Timeliness of death registration	7
2.5.4 Quality of causes of death information.....	8
2.5.5 Assessment framework for death registration data.....	10
3. Registered deaths	13
3.1 Levels and trends of registered deaths	13
3.2 Age differentials.....	14
3.3 Sex differentials	16
3.4 Age and sex differentials	17
3.5 Population group differences in mortality	19
3.6 Marital status differences in mortality.....	20
3.7 Differences in mortality by smoking status.....	20
3.8 Differences in mortality by place or institution of death occurrence.....	21
3.9 Geographic variations in mortality	21
3.9.1 Differences by province, age and sex	21
3.9.2 Differences by district municipality, age and sex	22
4. Causes of death.....	24
4.1 Introduction.....	24
4.2 Reported causes of death	24
4.3 Method of ascertaining the cause of death	25
4.4 Main groups of the underlying causes of death	26
4.5 Natural and non-natural causes of death	28
4.6 Major causes of death	31
4.7 Underlying natural causes of death.....	34
4.8 Non-natural causes of death	46
4.9 Comparison between immediate, contributing and underlying causes of death.....	51
5. Summary and concluding remarks	54

References.....	56
Appendices.....	57
Appendix A: Definitions	57
Appendix B: Death notification form (BI-1663).....	58
Appendix B1: Death notification form (DHA-1663A)	60
Appendix B2: Death notification form (DHA-1663B)	63
Appendix C: Number of deaths by age, sex and year of death, 1997–1999	64
Appendix C1: Number of deaths by age, sex and year of death, 2000–2002	65
Appendix C2: Number of deaths by age, sex and year of death, 2003–2005	66
Appendix C3: Number of deaths by age, sex and year of death, 2006–2008	67
Appendix C4: Number of deaths by age, sex and year of death, 2009–2011	68
Appendix C5: Number of deaths by age, sex and year of death, 2012	69
Appendix D: Year-to-year annual percentage changes in number of deaths by sex, 1997–2012	70
Appendix E: Age specific death rates (ASDR) by year of death, 2008–2012.....	71
Appendix F: Sex ratios at death by year of death, 1997–2012.....	72
Appendix G: Number of deaths by province of death occurrence and province of usual residence of the deceased, 2012	73
Appendix G1: Percentage distribution of deaths by province of death occurrence and province of usual residence of the deceased, 2012	73
Appendix H: Number of deaths by age, province and district municipality of death occurrence, 2012	74
Appendix H1: Percentage distribution of deaths by age, province and district municipality of death occurrence, 2012	76
Appendix I: Number of deaths by sex, province and district municipality of death occurrence, 2012	78
Appendix J: Distribution of deaths by broad groups of all underlying causes of death, 2012	80
Appendix K: Detailed description of the broad groups of natural causes of death which were among the ten leading causes in 2012	84
Appendix L: The ten leading underlying natural causes of death by age and sex: South Africa, 2012	87
Appendix L1: The ten leading underlying natural causes of death by age and sex: Western Cape, 2012.....	88
Appendix L2: The ten leading underlying natural causes of death by age and sex: Eastern Cape, 2012	89
Appendix L3: The ten leading underlying natural causes of death by age and sex: Northern Cape, 2012	90
Appendix L4: The ten leading underlying natural causes of death by age and sex: Free State, 2012	91
Appendix L5: The ten leading underlying natural causes of death by age and sex: KwaZulu-Natal, 2012	92
Appendix L6: The ten leading underlying natural causes of death by age and sex: North West, 2012	93
Appendix L7: The ten leading underlying natural causes of death by age and sex: Gauteng, 2012	94
Appendix L8: The ten leading underlying natural causes of death by age and sex: Mpumalanga, 2012	95
Appendix L9: The ten leading underlying natural causes of death by age and sex: Limpopo, 2012	96
Appendix M: Number of deaths by main groups of causes of death and district municipality of death occurrence (Western Cape, Eastern Cape and Northern Cape), 2012	97
Appendix M1: Number of deaths by main groups of causes of death and district municipality of death occurrence (Free State, KwaZulu-Natal and North West), 2012.....	98
Appendix M2: Number of deaths by main groups of causes of death and district municipality of death occurrence (Gauteng, Mpumalanga and Limpopo), 2012	99
Appendix N: Percentage distribution of deaths by main groups of causes of death and district municipality of death occurrence (Western Cape, Eastern Cape and Northern Cape), 2012	100

Appendix N1:	Percentage distribution of deaths by main groups of causes of death and district municipality of death occurrence (Free State, KwaZulu-Natal and North West), 2012.....	101
Appendix N2:	Percentage distribution of deaths by main groups of causes of death and district municipality of death occurrence (Gauteng, Mpumalanga and Limpopo), 2012.....	102
Appendix O:	The ten leading underlying natural causes of death by district municipality of death occurrence, Western Cape, 2012.....	103
Appendix O1:	The ten leading underlying natural causes of death by district municipality of death occurrence, Eastern Cape, 2012.....	104
Appendix O2:	The ten leading underlying natural causes of death by district municipality of death occurrence, Northern Cape, 2012	106
Appendix O3:	The ten leading underlying natural causes of death by district municipality of death occurrence, Free State, 2012	107
Appendix O4:	The ten leading underlying natural causes of death by district municipality of death occurrence, KwaZulu-Natal, 2012	108
Appendix O5:	The ten leading underlying natural causes of death by district municipality of death occurrence, North West, 2012.....	110
Appendix O6:	The ten leading underlying natural causes of death by district municipality of death occurrence, Gauteng, 2012	111
Appendix O7:	The ten leading underlying natural causes of death by district municipality of death occurrence, Mpumalanga, 2012	112
Appendix O8:	The ten leading underlying natural causes of death by district municipality of death occurrence, Limpopo, 2012	113
Appendix P:	Population group differences	114
Appendix P1:	The ten leading underlying natural causes of death by population group, 2012.....	115

List of tables

Table 2.1:	Number of deaths published in March 2014 and late registrations processed during the 2013/14 processing phase by year of death, 1997–2011	7
Table 2.2:	Distribution of deaths by the number of days it took to register the death, 2012	8
Table 2.3:	Number and percentage distribution of ill-defined causes of death by sex of the deceased, 2012	9
Table 2.4:	Percentage of deaths classified as unknown/unspecified for selected variables, 2012	11
Table 2.5:	Assessment of the 2012 South African death statistics from civil registration system using the framework proposed by Mahapatra et al. (2007)	12
Table 3.1:	Number and percentage distribution of deaths by age, 2012	14
Table 3.2:	Number and percentage distribution of deaths by population group, 2012	19
Table 3.3:	Number and percentage distribution of deaths by marital status, 2012	20
Table 3.4:	Number and percentage distribution of deaths by smoking status among those aged 16 years and older, 2012	20
Table 3.5:	Number and percentage distribution of deaths by place or institution of death occurrence, 2012	21
Table 3.6:	Distribution of deaths by province of death occurrence and province of usual residence of the deceased, 2012	22
Table 4.1:	Distribution of death notification forms by the number of causes entered on the form, 2012	25
Table 4.2:	Number and percentage distribution of deaths by method used to ascertain the cause of death, 2012	26
Table 4.3:	Distribution of deaths by main groups of causes of death, 2012	27
Table 4.4:	Number of natural and non-natural deaths by year of death, 1997–2012	29
Table 4.5:	The ten leading underlying natural causes of death, 2010–2012	34
Table 4.6:	The ten leading underlying natural causes of death for males and females, 2012	35
Table 4.7:	The ten leading underlying natural causes of death for broad age groups, 2012	39
Table 4.8:	The ten leading underlying natural causes of death for infants and children aged below five years, 2012	41
Table 4.9:	The ten leading underlying natural causes of death for the population aged 15–24 years, 2012	42
Table 4.10:	The ten leading underlying natural causes of death in each province of death occurrence, 2012	44
Table 4.11:	Distribution of non-natural causes of death by broad groups, 2012	46
Table 4.12:	Distribution of deaths due to other external causes of accidental injury, 2012	47
Table 4.13:	Underlying non-natural causes of death by age group and sex, 2012	48
Table 4.14:	Underlying non-natural causes of death by province, 2012	50
Table 4.15:	Distribution of the 20 most commonly reported causes of death, 2012	52
Table 4.16:	Number and percentage of deaths selected as underlying or reported as immediate or contributing causes of death, 2012	53

List of figures

Figure 2.1:	Percentage distribution of deaths assigned to symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified by year of death, 1997–2012.....	10
Figure 3.1:	Number of registered deaths by source of data and year of death, 1997–2012.....	13
Figure 3.2:	Percentage distribution of deaths by age and year of death, 2008–2012.....	15
Figure 3.3:	Percentage distribution of deaths by sex and year of death, 1997–2012	16
Figure 3.4:	Percentage distribution of deaths by age and sex, 2012	17
Figure 3.5:	Median ages at death by sex and year of death, 1997–2012	18
Figure 3.6:	Sex ratio at death by age and year of death, 2008–2012	19
Figure 4.1:	Percentage distribution of deaths by selected main groups of causes of death, 2010–2012	28
Figure 4.2:	Percentage distribution of natural and non-natural causes of death by year of death, 1997–2012	30
Figure 4.3:	Percentage distribution of natural and non-natural causes of death by age, 2012	31
Figure 4.4:	Percentage distribution of deaths due to communicable diseases (Group 1), non-communicable diseases (Group 2) and injuries (Group 3) by year of death, 1997–2012.....	32
Figure 4.5:	Percentage distribution of deaths due to communicable diseases (Group 1), non-communicable diseases (Group 2) and injuries (Group 3) by sex and age group, 2012	33
Figure 4.6:	Percentage distribution of deaths for the leading causes of death by year of death and sex, 2010–2012	37

1. Introduction

1.1 Background

Statistics on mortality and causes of death are useful in assessing the overall health status of the population. Mortality statistics provide the foundation from which evidence-based decisions and policies can be formulated. The World Health Organization (WHO) states that when deaths are not counted and causes of death are not determined, governments cannot implement effective health policies or evaluate their impact (WHO, 2014a). It further states that counting everyone and tracking all births and deaths through the civil registration system is the only way to have well-functioning health systems and evidence-based public health policies (WHO, 2014a).

'*Health care for all by 2030*' is one of the key development objectives outlined in the National Development Plan (NDP) adopted by the South African government in 2012. The plan asserts that health care can be improved through decreasing mortality by combating infectious diseases such as tuberculosis and HIV/AIDS and the emerging tide of non-communicable diseases (National Planning Commission, 2011). The government objective, '*Health care for all by 2030*' has linkages with the Millennium Development Goals (MDGs) of reducing child and maternal mortality; and combating HIV/AIDS and other diseases by 2015.

The 2013 MDGs country report for South Africa states that the adoption of the NDP will ensure that unmet MDGs targets and emerging context specific goals will remain part of the country's future development agenda (Stats SA, 2013). Consequently, information on mortality and causes of death is invaluable in evaluating and tracking progress towards these national and international goals. Civil registration data on mortality and causes of death was used to track Goals 4 and 5 in the 2013 MDG country report (Stats SA, 2013). However, there were still concerns about completeness of death registrations and the quality of causes of death. The continuous availability and improvement of civil registration data not only facilitates expanded data availability, but also allows for improvements to be realised both in the data and in its usefulness for population health planning (United Nations, 2002).

The registration of deaths in South Africa falls under the mandate of the Department of Home Affairs (DHA) and is governed by the Births and Death Registration Act, 1992 (Act No. 51 of 1992) which was last amended in 2010 (Republic of South Africa, 1992; Republic of South Africa, 2010). After death registration is completed, a death certificate is issued to the informant. All death notification forms are then collected by Statistics South Africa (Stats SA) regularly for data processing, analysis, report writing and dissemination of statistical releases and data sets on mortality and causes of death.

Stats SA's continued partnership with the DHA and Department of Health has ensured annual data on mortality and causes of death from the civil registration system. The three government departments and other stakeholders have made concerted efforts to improve the quality of data from the civil registration system and together with other stakeholders are in the process of undertaking a comprehensive assessment of the national civil registration and vital statistics system (CRVS), including causes of death. The overall goal of the assessment is to provide the evidence required to prioritise interventions for strengthening the CRVS systems in the country.

1.2 Objectives of this statistical release

The statistical release is an annual publication by Stats SA on mortality and causes of death using data collected through the civil registration system. The objectives of this publication are as follows:

- To outline differentials in mortality by selected socio-demographic and geographic characteristics for deaths that occurred in 2012; and trends in mortality over a 16-year period (1997–2012).
- To provide information on the causes of death for deaths that occurred in 2012 based mainly on the underlying causes of death.

1.3 Scope of this statistical release

This statistical release covers all deaths based on notification forms from DHA for deaths that occurred in 2012 that reached Stats SA during the 2013/14 processing phase. Although the primary focus is on deaths that occurred in 2012, deaths that occurred between 1997 and 2011 (updated for late registrations in the 2013/14 processing phase) are also provided to show trends in mortality and causes of death. The number of deaths discussed in 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.

1.4 Organisation and presentation of this statistical release

This release is organised into five sections: introduction, data and methods, registered deaths, causes of death and summary and concluding remarks. The introductory section provides an overview of the background, objectives and scope of the release. Section two of the release presents a description of the data sources and methods used in processing and analysing data. It also has a subsection discussing data quality assessment methods.

The third section on registered deaths presents levels, trends and differentials in mortality by selected socio-demographic characteristics of the deceased. Additionally, this section contains spatial analysis of death occurrence and usual residence of the deceased.

Information on the underlying causes of death for all deaths registered in 2012 is presented in section four, including comparisons with data from 1997 to 2011. It also covers the analysis of the leading causes of death by sex, age and province of death occurrence. Further analysis presents differentials in causes of death by natural and non-natural causes, as well as comparisons between immediate, contributing and underlying causes of death.

The last section, section five, provides the summary of the findings and concluding remarks.

2. Data and methods

In this section, focus is placed on the sources of data, the processing methodology applied and data analysis. The results of the assessment of the quality of data measured using different assessment tools are also provided in this section.

2.1 Data source

This statistical release uses administrative records obtained from the Department of Home Affairs (DHA). Deaths are registered using death notification forms BI-1663 and DHA-1663, from which data are captured. In this release, deaths that occurred in 2012 are presented, as well as information pertaining to deaths that occurred between 1997 and 2011. These deaths are used to explain trends in mortality and causes of death.

The registration of deaths is governed by the Births and Deaths Registration Act, 1992 (Act No. 51 of 1992). This Act has been amended several times, with the last amendment made in 2010 [Birth and Death Registration Amendment Act, 2010 (Act No. 18 of 2010)]. Regulations for the Registration of Births and Deaths were revised in 2014, repealing the Regulations of Births and Deaths published in 1992. The 2014 Regulations prescribes that a notice of death or stillbirth for South Africans and non-South African citizens in the country must be given within 72 hours of the death by the informant (Republic of South Africa, 2014).

The Births and Deaths Registration Act No. 51 of 1992 states that a medical practitioner shall issue a prescribed certificate stating the cause of death if satisfied that the death was due to natural causes for any person who was attended before his death or for the death of a person he did not attend but examined the corpse. Medical practitioners are obliged to inform a police officer if the death was not due to natural causes. The police officer shall then act in terms of the provisions of the Inquests Act, 1959 (Act No. 58 of 1959). All deaths require that a medical practitioner certifies the death, irrespective of where the death occurred. It is only in remote areas where a chief or tribal leader completes a DHA-1680 form, which is then submitted to the nearest DHA office. For registration of death, the form is then checked by the official at DHA to ensure that a description of circumstances leading to death and the cause of death is provided.

Currently, there are two forms that are used to collect information on mortality and causes of death. These are the BI-1663 and the DHA-1663. This statistical release is based on a total of 480 476 deaths that occurred in 2012, and were registered at DHA and processed by Stats SA. The majority of these deaths (77,8%) were registered using the DHA-1663 form and 22,2% were registered using the BI-1663 form. The two forms differ mainly in the perinatal section, whereby the DHA-1663 has a dedicated section on perinatal deaths, which is not the case with the BI-1663.

2.2 Data processing

All the completed death notification forms at DHA are collected by Stats SA for data processing. The stages of data processing include sorting forms by year of death, pasting labels of unique identifiers on each form, coding socio-economic variables and the causes of death and capturing the data. Finally, the data are analysed and a report prepared and disseminated.

Classification of the causes of death

In this release the causes of death statistics were prepared using the tenth revision of the International Classification of Diseases (ICD-10) (WHO, 2009). The ICD-10 is published by the World Health Organization (WHO) and is revised from time to time. The International Classification of Diseases (ICD) is the standard diagnostic tool for epidemiology, health management and clinical purposes. All member states of the United Nations, including South Africa, agreed to use the ICD standard classification system.

International Classification of Diseases provides a standardised approach for reporting and monitoring diseases. This allows countries to compare and share data in a consistent and harmonious way. The National Health Information System of South Africa has also adopted it as a standard.

The ICD-10 provides for the coding and classification of diseases and injuries and a wide variety of signs, symptoms and other abnormal findings. It also provides a framework for certifying the cause of death and the collection of internationally standardised mortality statistics. There are approximately 8 000 categories of causes of death organised into chapters covering communicable diseases, other diseases that may affect the whole body, localised diseases by site, developmental diseases, injuries and external causes. The quality of the causes of death data depends heavily on the completeness and quality in which the notification form was completed and on the accuracy of coding. There are well-established rules for assigning the causes of death and for their coding.

Stats SA ICD-10 coders follow a 'what you see, is what you code' principle when coding information on causes of death. Stats SA has outlined specific guidelines for diseases that are not coded in the ICD-10 manuals. For example, in terms of the Stats SA coding procedures and guidelines, *immunosuppression* is coded as *immunodeficiency*, not as *human immunodeficiency virus (HIV) disease*. Certifying officials sometimes report the cause of death as *acquired immune suppression*. According to Stats SA coding procedures, this term was interpreted as *HIV disease* and given an HIV code (B20-B24). If HIV was written on the form, this was also coded in the HIV group, as required by the ICD-10. Codes U51 and U52 were assigned to *multidrug-resistant tuberculosis* (MDR-TB) and *extensively drug-resistant tuberculosis* (XDR-TB) respectively, and included in the *tuberculosis* (A15-A19) broad group of causes of death. Where sufficient details about causes of death were available, four-character coding was used. However, the analysis in this statistical release is based on three-character categories for underlying causes of death.

Automated generation of the underlying causes of death

Stats SA uses a software programme called Automated Classification of Medical Entities (ACME 2011) to automatically derive the underlying cause of death once all causes of death are coded for each death notification form. This software was developed by the United States National Center for Health Statistics (NCHS) and applies the World Health Organization (WHO) rules on the selection of the underlying cause of death. An additional software programme called IRIS, which can also be used to derive the underlying cause of death, was used during 2012 data processing for comparison of results with the anticipation that IRIS will be used in future for processing of causes of death data.

Both ACME and IRIS derived the same underlying cause for 96,8% of the death notification forms during the 2013/14 processing phase. The ACME programme automatically derived the underlying cause of death for 97,7% of all individual death records processed during the 2013/14 processing phase. Where ACME did not process records automatically, the results from IRIS were used. Where both systems failed to provide an underlying cause, experienced coders at Stats SA derived the underlying cause manually.

2.3 Data editing

Stats SA has developed a set of editing rules which were applied to the data when all the stages of data processing had been completed. The editing rules check the accuracy of data and flag cases that are not plausible for further investigation. In addition, version 2.0 of the "Analysing mortality levels and causes-of-death" (ANACoD) electronic tool by WHO (2014b) was applied to assess the quality of causes of death. The tool provides a comprehensive analysis of data on mortality levels and causes of death by automatically reviewing the data for errors. It assesses data consistency and plausibility. When analysing the causes of death data, ANACoD highlighted diseases that were unlikely to cause death generally or unlikely to cause death for specific ages and sexes. These were manually investigated (checked the original form) for verification and corrections were made where necessary.

CoDEdit version 1.0 electronic tool developed by WHO (2014c) was also used to enhance the quality of the 2012 mortality and causes of death data. Its primary purpose is to warn and flag basic gross errors, alert about possible misuse of codes and finally provide a summary of the dataset (WHO, 2014c). As is the case with ANACoD,

CoDEdit also assesses data consistency and plausibility. The difference between these two electronic tools is that CoDEdit provides ways of checking for the validity of each data record whilst ANACoD checks for validity at an aggregate level. The benefit of also using CoDEdit was that it provides unit record analysis, unlike ANACoD which executes analysis at an aggregate level.

CoDEdit provides two ways of handling and checking cause-of-death records. The first one is to use the data entry form and enter each record manually, and the second one is to handle a batch of records, which was the method used for this analysis (WHO, 2014c). CoDEdit checks for sex-specific causes, age-specific causes, notifiable diseases and several types of errors involving the use of the ICD-10 codes. For example, for causes that are specific to one sex, the tool will flag an error when the combination of sex and cause is wrong. Whether data was entered manually or uploaded, it goes through the same validation procedures. The results of the validation routines were printed. As was the case with ANACoD, records with errors were manually investigated.

2.4 Data analysis

The analyses undertaken in this release are twofold: descriptive statistics and demographic indicators. With regard to the descriptive analysis, three levels of analyses were undertaken: univariate analysis (frequency distributions) of deaths and ranking of the causes of death, bivariate analysis (cross-tabulations) of selected socio-demographic variables, and trends in median ages at death. The latter are used to determine how early or late mortality occurs in the population. Lower median ages at death are an indication that mortality occurs mostly at earlier ages of life, whereas higher median ages at death are an indication that mortality occurs mostly at later stages of life in a particular population. Median ages at death by sex and year of death were computed for 1997 to 2012. The overall number of deaths is also provided by year of death for the period 1997–2012, to show trends in the number of deaths.

The second part of the analysis relates to the demographic indicators, which include sex ratios at death and age-specific death rates. These indicators were computed for the years 2008 to 2012.

The leading causes of death were ranked into the top ten leading causes. The ranking of the underlying causes of death is useful for illustrating the relative burden of cause-specific deaths and is considered a primary and important indicator of health status or quality of life. The ranking simply denotes the frequency of causes of death among those causes eligible to be ranked and does not in any way reflect the causes of death in terms of their importance from a public health point of view.

Causes that had the highest number of deaths received the top rank and formed part of the leading causes of death. Causes 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 the top-ranked causes, they both received rank one, and the next cause received rank three.

Due to concerns about violence and deaths due to accidents in South Africa, natural and non-natural causes were separated and no ranking was done for non-natural causes of death. In ranking natural underlying causes of death, *symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified* (R00-R99) were excluded as the information cannot be used effectively for public health policy and planning purposes.

This release also presents tables on mortality and causes of death for district municipalities of death occurrence in the country, shown in the appendices. Information on local municipalities is not provided in this release but can be made available to users on request. The demarcation used for boundaries are the 2011 municipal boundaries.

2.5 Quality of data

Vital statistics from civil registration systems are the major source of data for continuous monitoring of deaths over time, and the usefulness of these statistics depends entirely on their quality. Timely and reliable data on causes of death generates information that accurately reflects the current and past epidemiologic circumstances of its population. An in-depth understanding of the quality of causes of death data is crucial for health policymakers and

researchers. Quality assessment frameworks thus become useful tools for measuring the quality of data from civil registration systems.

Quality of death registration data can be affected by the extent of late registrations, timeliness of death registration, completeness of information for selected variables, ill-defined causes of death, and misreporting of causes of death. To assess the quality of death registration, different tools and frameworks were used. For the purpose of this release the framework proposed by Mahapatra et al. (2007) was used to assess the quality of the 2012 deaths and cause-of-death statistics from the civil registration system.

2.5.1 Completeness of death registration

In the 2011 statistical release (Stats SA, 2014) an estimated 94% completeness of adult (15 years and older) death registrations was reported for the period 2007–2011. This had improved slightly from the 93% completeness for the 2001–2007 period. For 2012 adult death registrations, the same estimate of completeness is maintained. Revised estimates will be provided after the next South African population census. The methods used to derive the level of completeness of reported deaths for the period 2007–2011 were the Generalised Growth Balance (GGB) as proposed by Hill (1987), and the Synthetic Extinct Generation method (SEG) by Bennett and Horiuchi (1981, 1984). For the underlying assumptions and method followed on deriving completeness for the period 2007–2011, refer to Stats SA (2014).

2.5.2 Timeliness of reporting

Table 2.1 provides information on the number of deaths published in March 2014 for the years 1997–2011, with additional forms received during the current 2013/14 processing phase, and the overall number of deaths for each year as of May 2014.

A total of 8 631 additional forms were received in the 2013/14 processing phase for deaths which occurred between 1997 and 2011. The majority 6 507 (75,4%) of these additional forms were for deaths that occurred in 2011. The higher number of additional forms for 2011 in the 2013/14 processing phase may be explained by the shortened processing period. If the processing period is shorter, it impacts on the number of forms that will be processed since some of the forms will not make it in time for the processing phase cut-off. The distribution of deaths from 1997 to 2012 by age and sex is provided in Appendices C (1997–1999), C1 (2000–2002), C2 (2003–2005), C3 (2006–2008), C4 (2009–2011) and C5 (2012).

Table 2.1: Number of deaths published in March 2014 and late registrations processed during the 2013/14 processing phase by year of death, 1997–2011

Year of death	Number of deaths published in March 2014	Additional forms received in the 2013/14 processing phase	Total number of deaths (by May 2014)
1997	317 195	41	317 236
1998	365 909	32	365 941
1999	381 882	37	381 919
2000	416 442	41	416 483
2001	455 188	47	455 235
2002	502 370	54	502 424
2003	557 034	118	557 152
2004	577 084	55	577 139
2005	598 354	58	598 412
2006	613 128	70	613 198
2007	604 406	91	604 497
2008	595 681	106	595 787
2009	579 978	501	580 479
2010	547 724	873	548 597
2011	505 803	6 507	512 310
Total	7 618 178	8 631	7 626 809

2.5.3 Timeliness of death registration

Timeliness of death registration refers to the number of days it took to register a death after its occurrence for deaths that occurred in 2012 and were registered at DHA. The DHA regulations for births and deaths stipulate that a death must be registered within 72 hours (3 days) of occurrence (Republic of South Africa, 2014). Table 2.2 shows the number of days it took for deaths which occurred in 2012 to be registered at DHA.

Of the deaths that occurred in 2012 and were registered at DHA, 13,9% were registered within the day of death, whilst 28,5% were registered the first day after the death had occurred and 19,1% during the second day after death occurrence. These percentages translate to 61,5% of deaths were registered by the end of the second day of death. About 74,9% of the 2012 deaths were registered within 72 hours. This was a slight improvement in comparison to 2011 (72,8%) and 2010 (69,0%). By the first week after death, (90,7% of the deaths were registered at DHA, and by the end of a month, 97,5% deaths were registered. Over the years, registration of deaths has improved with more deaths being registered within a few days after occurrence.

Table 2.2: Distribution of deaths by the number of days it took to register the death, 2012

Number of days	Number of deaths	Percentage	Cumulative percentage
Within a day of death	66 808	13,9	13,9
1 day	136 943	28,5	42,4
2 days	91 552	19,1	61,5
3 days	64 476	13,4	74,9
4 days	39 253	8,2	83,0
5 days	22 877	4,8	87,8
6 days	13 712	2,9	90,7
7-13 days	25 025	5,2	95,9
14-20 days	4 586	1,0	96,8
21-30 days	3 110	0,6	97,5
31-364 days	11 504	2,4	99,9
1 year+	630	0,1	100,0
Total	480 476	100,0	

2.5.4 Quality of causes of death information

The quality of underlying causes is important for public health statistics and disease prevention. It thus becomes pivotal to evaluate the quality of causes-of-death data from the data processing through to the data analysis phase, in order to detect quality issues at an early stage and enhance its value in informing health policies and programmes.

Table 2.3 provides the assessment of the quality of causes of death data based on the number and percentage of deaths assigned to ill-defined causes of death. The ill-defined causes indicate diagnoses that are vague and therefore have insufficient details to be of value for public health purposes. For both sexes, more than 50% of all ill-defined causes of death were assigned to *symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified* (54,4% for males and 55,6% for females). The proportion of ill-defined causes due to *event of undetermined intent* was 5,8% for both sexes, with much higher proportions for males (9,2%) than for females (2,5%). For both sexes 10,8% of ill-defined causes were due to *heart failure*, 7,1% were assigned to *essential (primary) hypertension*, 3,5% were due to *unspecified renal failure* and 3,0% were assigned to *cardiac arrest*.

Table 2.3: Number and percentage distribution of ill-defined causes of death by sex of the deceased, 2012*

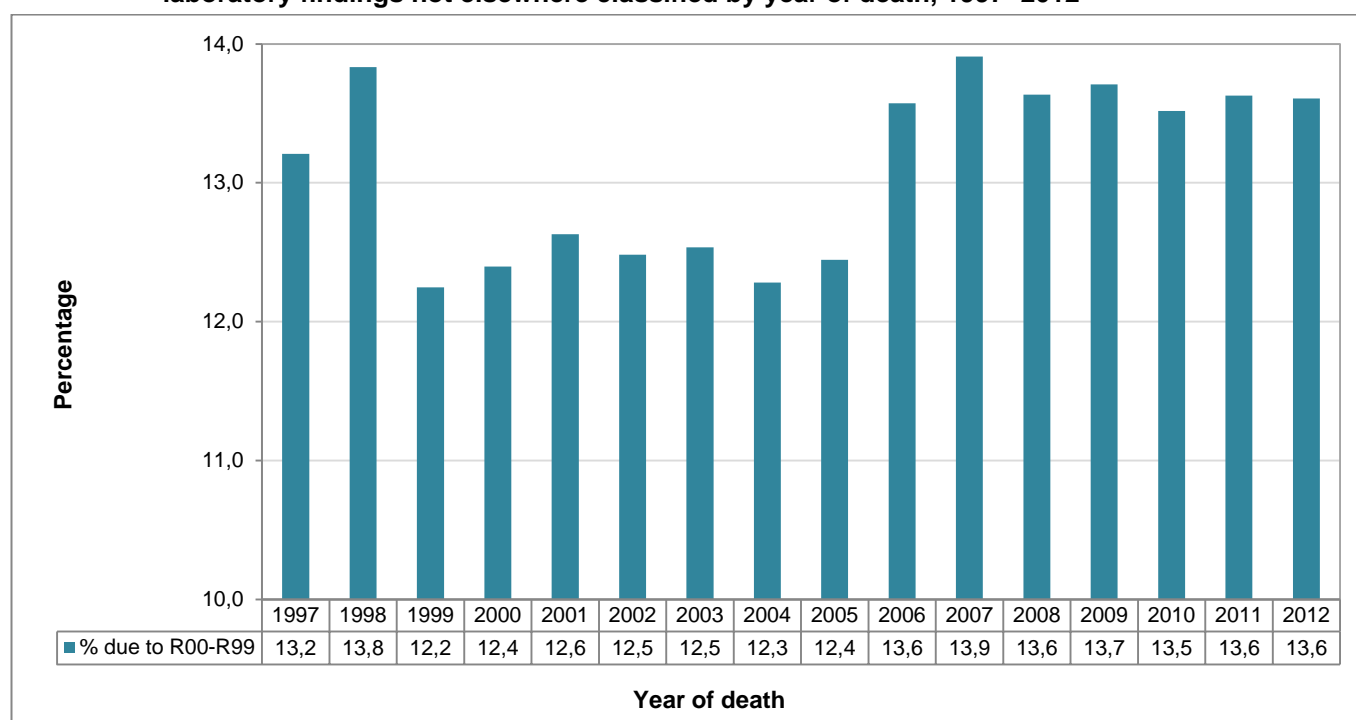
Underlying cause of death (based on ICD-10)	Number			Percentage		
	Male	Female	Both sexes	Male	Female	Both sexes
Streptococcal septicaemia (A40)	3	4	7	0,0	0,0	0,0
Other septicaemia (A41)	2 242	2 691	4 933	3,8	4,5	4,2
Malignant neoplasm of other and ill-defined sites (C76)	174	345	519	0,3	0,6	0,4
Malignant neoplasm without specification of site (C80)	1 470	1 418	2 888	2,5	2,4	2,4
Malignant neoplasm of independent (primary) multiple sites (C97)	278	240	518	0,5	0,4	0,4
Disseminated intravascular coagulation [defibrination syndrome] (D65)	39	52	91	0,1	0,1	0,1
Volume depletion (E86)	743	756	1 499	1,3	1,3	1,3
Essential (primary) hypertension (I10)	3 189	5 164	8 353	5,4	8,7	7,1
Cardiac arrest (I46)	1 759	1 820	3 579	3,0	3,1	3,0
Heart failure (I50)	5 596	7 135	12 731	9,5	12,0	10,8
Complications and ill-defined descriptions of heart disease (I51)	488	546	1 034	0,8	0,9	0,9
Other and unspecified disorders of circulatory system (I99)	18	18	36	0,0	0,0	0,0
Pulmonary oedema (J81)	237	289	526	0,4	0,5	0,4
Respiratory failure, not elsewhere classified (J96)	871	815	1 686	1,5	1,4	1,4
Hepatic failure, not elsewhere classified (K72)	786	617	1 403	1,3	1,0	1,2
Acute renal failure (N17)	498	379	877	0,8	0,6	0,7
Chronic renal failure (N18)	823	715	1 538	1,4	1,2	1,3
Unspecified renal failure (N19)	2 210	1 983	4 193	3,8	3,3	3,5
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (R00-R99)	31 913	33 120	65 033	54,4	55,6	55,0
Event of undetermined intent (Y10-Y34)	5 379	1 478	6 857	9,2	2,5	5,8
Total of ill-defined	58 716	59 585	118 301	100,0	100,0	100,0

*Excluding 2 080 deaths with unspecified sex.

Due to the high proportion of ill-defined causes of death attributed to *symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified*, it was therefore essential to further analyse this group for a better understanding of these causes and to review trends in reporting these causes. If there are more underlying causes of death assigned to this group each year, it means interventions must be put in place to improve reporting on information on causes of death. This can be achieved by interventions to improve certification practices, or coding practices, or both.

Figure 2.1 shows that the percentage of deaths due to *symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified* between 1997 and 2012 was from 12% and 14% and did not change much over these years. For 2012, the number of deaths due to *symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified* was 13,6%.

Figure 2.1: Percentage distribution of deaths assigned to symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified by year of death, 1997–2012*



* Data for 1997–2011 have been updated to include late registrations processed in 2013/14.

2.5.5 Assessment framework for death registration data

The assessment framework proposed by Mahapatra et al. (2007) is among other methods which can be used to assess the quality of death registration data received from civil registration systems. This release adopts this framework to assess the quality of the 2012 mortality and causes of death. Both categories measure the level of accuracy, relevance and comparability. Additional measures include timeliness and accessibility.

Table 2.4 and Table 2.5 show the results of the assessment framework for the 2012 mortality and causes of death data from the South African civil registration system. Table 2.4 shows the percentage of key variables with unknown or unspecified information and forms part of the accuracy criteria in the assessment framework. The unknown cases refer to cases where more than one option was selected on the form or where the information could not be classified according to specified categories. The unspecified cases refer to missing data for that variable.

In 2012, occupation (72,2%), industry (62,2%) and pregnancy status (77,0%) of the deceased remained the three variables with more than half of the information unknown or unspecified and no improvement in their reporting over time. A notable decrease in missing information was observed for province of usual residence, which decreased from 4,9% in 2011 to 2,7% in 2012, and population group from 17,9% in 2011 to 15,6% in 2012. Missing information for marital status was 16,4%.

Less than 1% of deaths had unknown or unspecified information for age of deceased (0,6%), province of death occurrence (0,5%) and sex of the deceased (0,4%). Generally, these three variables have been well reported over time. In line with previous releases, no analyses were undertaken for variables where more than half of the deaths had unknown or unspecified information. However, a dataset containing unit records of data on registered deaths for 2012, which include variables not covered in this release due to poor quality of reporting, is available on request from Stats SA.

Table 2.5 shows that the relevance and comparability of mortality statistics is regarded as complete. The tools used in coding causes of death for 2012 were similar to those used in previous years and the variables included in causes of death data for 2012 have been consistent over the years, thus ensuring that data are comparable over time.

Table 2.5 further shows that for cause-of-death statistics, 46,3% of the deaths occurred within a healthcare facility, which is the same proportion as that observed for 2011 deaths. Deaths occurring in a healthcare facility are more likely to have detailed cause of death. Mahapatra et al. (2007) propose that at most 10% of cause-of-death statistics should be assigned to *symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified* categories. The 2012 data show that 13,6% of all deaths were assigned to *symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified* categories. However, despite falling above the recommended threshold, cause-of-death statistics remain of good quality as it is relevant and comparable over time.

Based on routine tabulations by sex and 5-year age groups, as well as the fact that tabulation of cause-of-death information is provided for the nine provinces and 52 district municipalities in the country, cause-of-death statistics are regarded as completely relevant.

Processing 2012 data on causes of death took seven months and the mean time from end of reference period to publication was 20 months. Processing 2012 data took a shorter time than the previous years due to an increase in data processing personnel that Stats SA employed to expedite data processing.

The data published in this release are available in a wide range of formats and can be accessed through the Stats SA website and also by making use of Stats SA User Information Services.

Table 2.4: Percentage of deaths classified as unknown/unspecified for selected variables, 2012

Variables	Applicable group	Percentage unknown or unspecified
Sex	All	0,4
Age	All	0,6
Province of death occurrence	All	0,5
Province of usual residence of deceased	All	2,7
Province of birth	All	17,5
Population group	All	15,6
Place or institution of death occurrence	All	24,0
Method used to ascertain cause of death	All	27,8
Marital status	All	16,4
Smoking status	Aged 16 and older	38,7
Education	Aged 6 and older	49,6
Occupation	Aged 15 and older	72,2
Industry	Aged 15 and older (economically active)	62,2
Pregnancy status	Females aged 10–55	77,0

Table 2.5: Assessment of the 2012 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 for adults (2007–2011)	94%	Accuracy Proportion of deaths that occurred in healthcare facilities	46,3%
Missing data See Table 2.4		Proportion of deaths assigned to symptoms and signs of disease not elsewhere classified (R00-R99)	13,6%
Relevance Routine tabulations by sex and 5-year age groups	100%	Relevance Routine tabulation by sex and 5-year age groups	100%
Deaths in children under five years tabulated by 0 and 1–4-year age group	100%	Number of cause-of-death tabulation areas	9 provinces and 52 district/metropolitan municipalities
Comparability Stability of key definitions over time	100%	Comparability Consistency of cause-specific mortality proportions over consecutive years	100%
Uniformity of definitions across areas	100%	ICD coding for certification and coding of causes of deaths, revision used and code level to which tabulations are published	Coding causes of death using the tenth revision at 4/5-digit level
Timeliness Processing time	7 months		
Mean time from end of reference period to publication	20 months		
Accessibility Media - number of formats in which data are released	Two: website and compact discs		
Metadata	Published on the web and with compact disc, and available on request		
Availability of user service	Email: info@statssa.gov.za / Tel: 012 310 8600 / Fax 012 310 8500 and 012 310 8495		

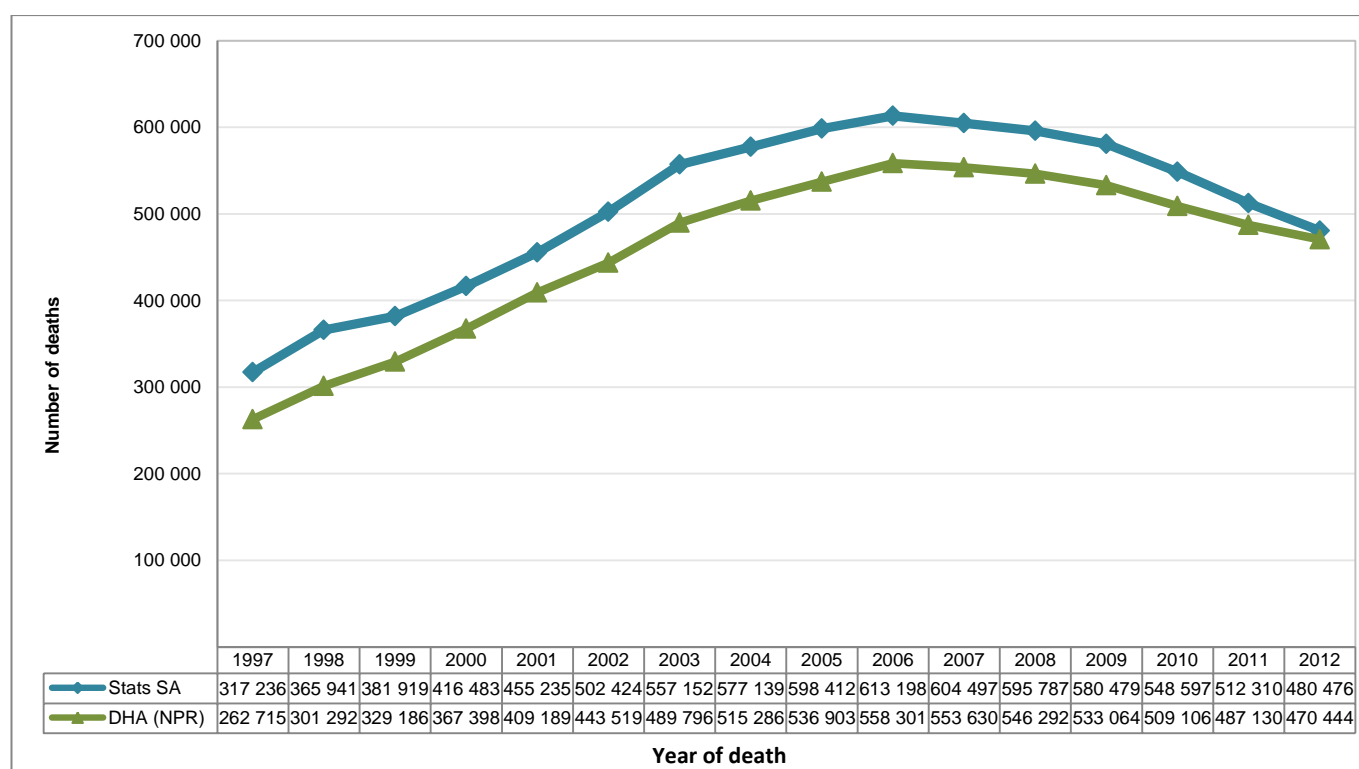
3. Registered deaths

This section presents analysis on the distribution of 2012 deaths by selected background characteristics of the deceased such as age, sex, population, place/institution of death and geographic information (province and district/metropolitan municipalities). Levels and trends of registered deaths from 1997 to 2012 are also provided in this section.

3.1 Levels and trends of registered deaths

The data on mortality processed by Statistics South Africa (Stats SA) indicated in Figure 3.1 shows that 480 476 deaths that occurred in South Africa in 2012 were registered at the Department of Home Affairs (DHA). This indicates a decrease of 6,2% from the 512 310 deaths that occurred in 2011. 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 to 613 198, and a decrease thereafter.

Figure 3.1: Number of registered deaths by source of data and year of death, 1997–2012*



*Data for 1997–2011 have been updated to include late registrations processed in 2013/14.

As shown previously in Table 2.1, the overall number of deaths per year increased, 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 may, therefore, be expected that additional 2012 forms in particular, and for the previous years will still be received for processing at Stats SA. Updated information will be provided in the next statistical release.

Figure 3.1 further shows the comparison of the number of deaths based on deaths processed by Stats SA and deaths recorded on the National Population Registers (NPR). While the two line graphs show similar trends, the difference in the numbers per year can be explained by the following:

- Stats SA deaths include all deaths registered at DHA and the forms transferred to Stats SA and processed during the 2013/14 processing phase. They exclude deaths that may have been registered at DHA but the forms had not reached Stats SA for processing.

- DHA (NPR) deaths include all deaths of South African citizens whose births were registered on the NPR by the time of their death. They exclude registered deaths for South African citizens whose births had not been registered on the NPR as well as deaths for non-South African citizens.

As such, it is expected that Stats SA deaths will be higher than the DHA (NPR) deaths every year. However, delayed transmission of forms to Stats SA may affect the magnitude of the difference between the two sources. For example, there were 505 803 Stats SA deaths and 487 046 DHA (NPR) deaths for 2011 that were published in March 2014 (Stats SA, 2014). With updated information in the current release, the 2011 Stats SA deaths increased to 512 310 while the DHA (NPR) deaths increased to 487 130 indicating an increase of 1,3% and 0,02%, respectively. That is, additional forms are much higher for Stats SA deaths than they are for DHA (NPR) deaths, which is an indication that the number of deaths published by Stats SA are largely affected by delays in transmitting the forms from DHA. It is therefore expected that additional deaths for Stats SA will be received by Stats SA following this publication and these will be updated accordingly in the next release.

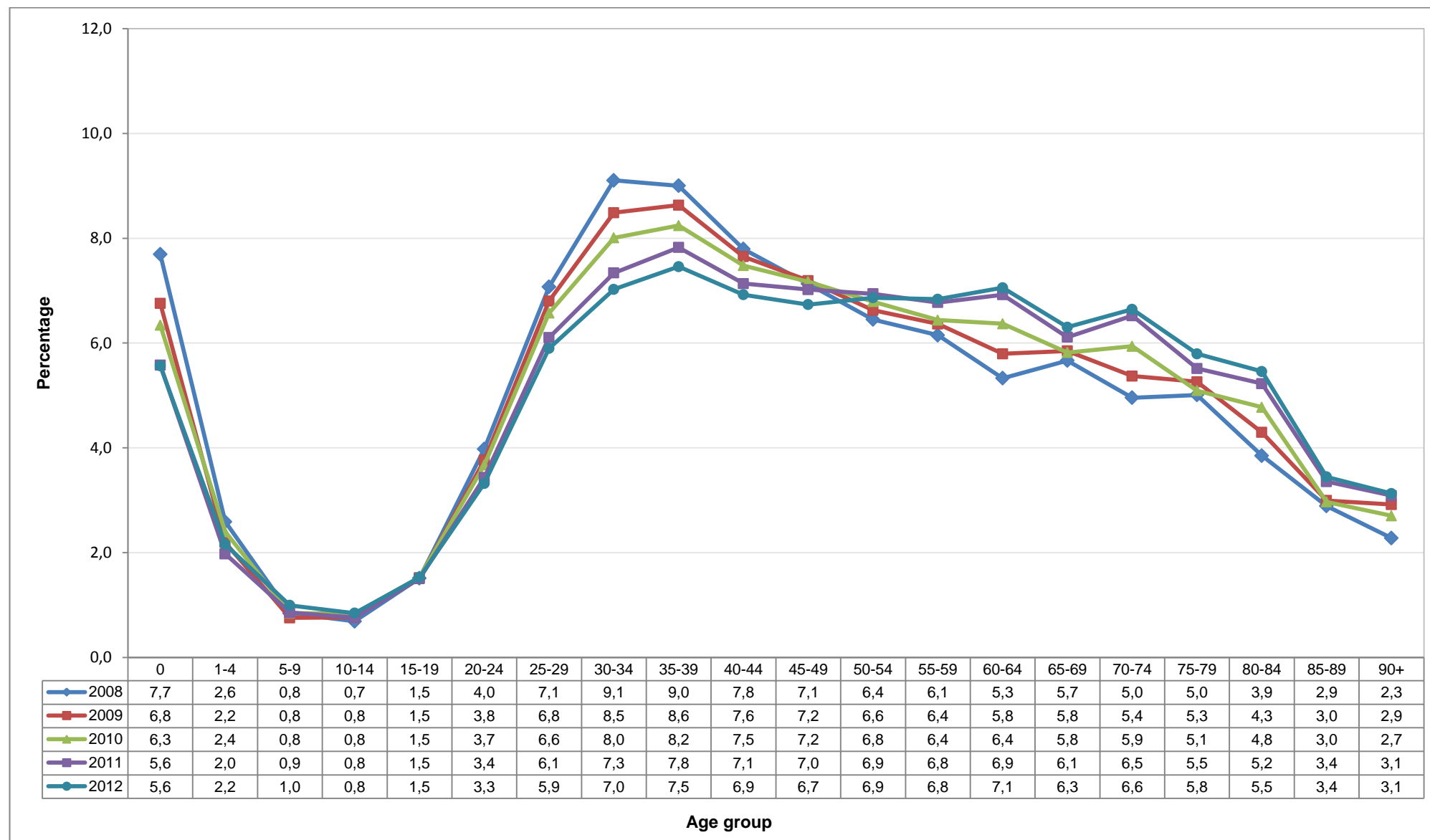
3.2 Age differentials

Table 3.1 shows the number and percentage distribution of deaths by age for 2012. The age group with the highest proportion of deaths in 2012 was age group 35–39 with 7,4%, followed by age groups 30–34 and 60–64 both at 7,0%. The lowest proportions of deaths were observed in age groups 5–9 years (1,0%) and 10–14 years (0,8%). Deaths that occurred amongst those aged 0 accounted for 5,5% of all registered deaths in 2012.

Table 3.1: Number and percentage distribution of deaths by age, 2012

Age group	Number	Percentage
0	26 591	5,5
1-4	10 324	2,1
5-9	4 760	1,0
10-14	4 048	0,8
15-19	7 308	1,5
20-24	15 875	3,3
25-29	28 180	5,9
30-34	33 561	7,0
35-39	35 634	7,4
40-44	33 065	6,9
45-49	32 170	6,7
50-54	32 796	6,8
55-59	32 659	6,8
60-64	33 703	7,0
65-69	30 115	6,3
70-74	31 739	6,6
75-79	27 685	5,8
80-84	26 070	5,4
85-89	16 468	3,4
90+	14 953	3,1
Unspecified	2 772	0,6
Total	480 476	100,0

The percentage distribution of deaths by age and year of death for the past five years (2008 to 2012) 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 for age groups 20–24, 25–29, 30–34, 35–39 and 40–44, and consistent increases for age groups 60–64, 70–74 and 80–84. In 2011, the highest percentage of deaths was observed for age groups 35–39 (7,8%) followed by age group 30–34 (7,3%), whilst age group 60–64 was the sixth highest (6,9%). The highest proportions of deaths were amongst age group 35–39 for the period 2009 to 2012, with the age group 30–34 comprising the highest percentage in 2008. 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 of death, 2008–2012*

*(1) Excluding deaths with unspecified age.

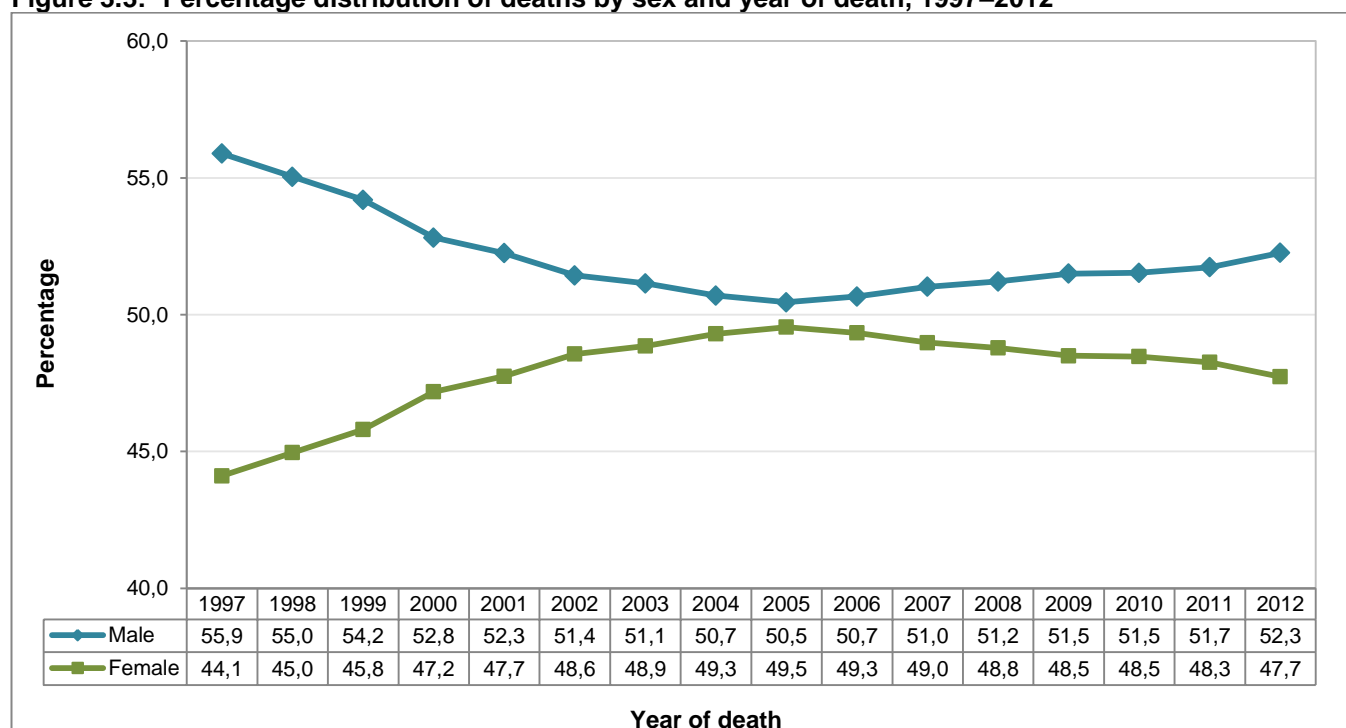
(2) Data for 2008–2011 have been updated to include late registrations processed in 2013/14.

3.3 Sex differentials

The distribution of deaths by sex and year of death from 1997–2012 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 16-year period (1997–2012). The percentage of male deaths was highest in 1997 (55,9%) and consistently declined over time, reaching 50,5% 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 49,5% in 2005.

The reverse in the proportions for both males and females was observed from 2006. Female deaths took a downward trend from 49,3% in 2006 and reached 47,7% in 2012, whilst the proportion of male deaths increased from 50,7% in 2006 to 52,3% in 2012. The gap between the proportion of male and female deaths widened between 2006 and 2012.

Figure 3.3: Percentage distribution of deaths by sex and year of death, 1997–2012*



*(1) Excluding deaths with unspecified sex.

*(2) Data for 1997–2011 have been updated to include late registrations processed in 2013/14.

Appendix D presents the annual percentage changes in the number of deaths from one year to the next from 1997–1998 to 2011–2012. 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 2012. Both males and females recorded highest increases in number of deaths between 1997 and 1998. Males recorded their highest declines in the number of deaths between 2010 and 2011, whereas females recorded their largest declines between 2011 and 2012.

Age-Specific Death Rates (ASDR) were calculated and are presented in Appendix E to show variations in mortality by age group from 2008 to 2012, taking into consideration population size of each age group. Overall, the age pattern of mortality was similar throughout the five-year period, characterised by rates higher at age 0 and from age group 65–69, and lower rates for age groups 5–9 and 10–14 and 15–19 in 2011 and 2012. This is reflective of the expected mortality patterns. However, for all years the death rates declined consistently for age 0 and age groups 30–34, 35–39, 40–44, 50–54, 65–69 and 75–79. In 2012, the death rates were higher at age 0, after which they were much lower from age 1–4 until 20–24, where they began to increase continuously, reaching their highest levels at ages 80 and older. It must be noted that the ASDR are based on observed number of deaths which have not been adjusted for incomplete registration which may differ by age. As such, the results must be interpreted with caution.

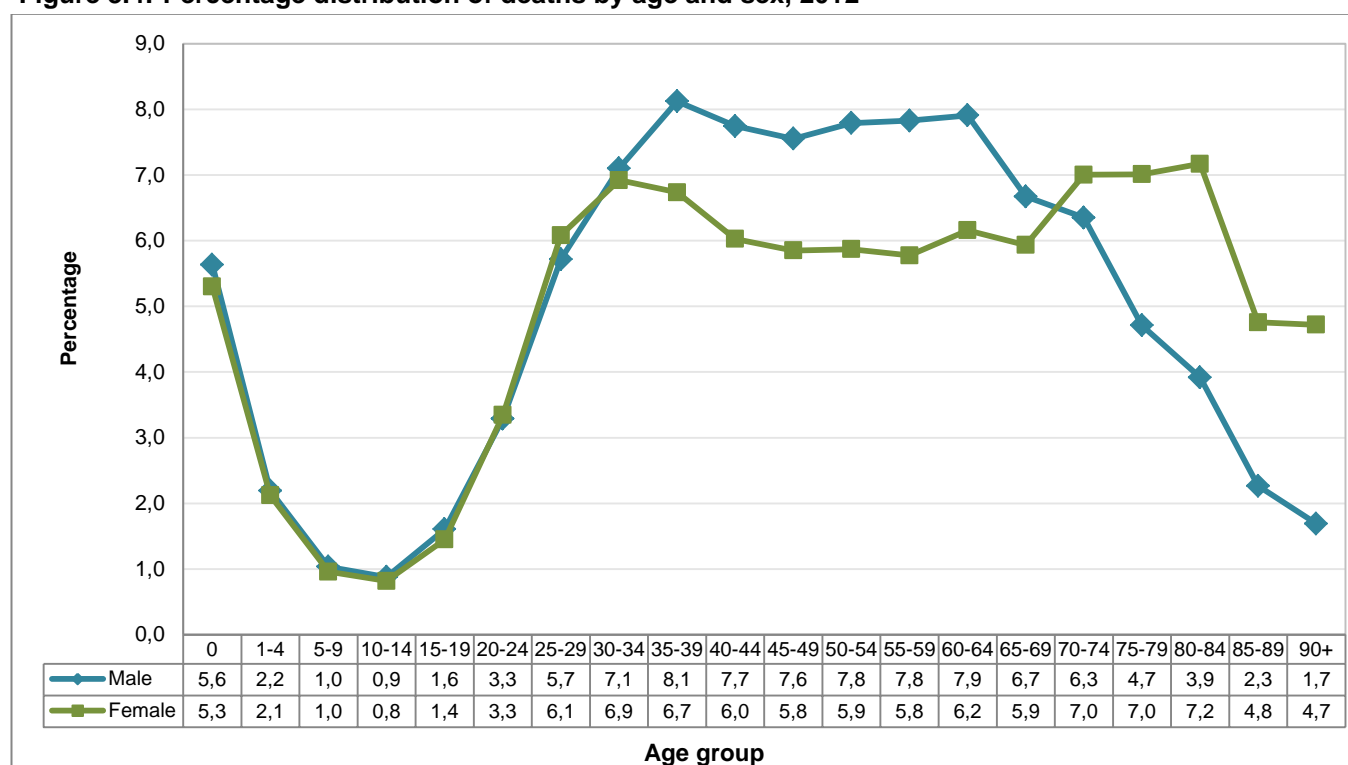
3.4 Age and sex differentials

Percentage distribution

Figure 3.4 shows the age and sex percentage distribution of deaths for 2012 (absolute numbers are presented in Appendix C5). 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. Minimal differences were observed between males and females at age groups below 35 years. The gap in the proportion for male and female deaths was highest between age groups 35–39 to 60–64 (proportions of male deaths higher) and at much older ages from 70 and above (proportions of female deaths higher).

In 2012, the highest percentage of female deaths occurred amongst those aged 80–84 (7,2%), closely followed by age groups 70–74 and 75–79, both at 7,0% each. This pattern differs from that observed in 2010 and 2011, where the highest percentages of female deaths were in the age groups 30–34 and 35–39 for both years. This gives an indication that in 2012 older ages contributed higher percentages to the total number of female deaths than the younger ages. Figure 3.4 also shows that male deaths peaked at age group 35–39 (8,1%), followed by age group 60–64 (7,9%) and then age groups 50–54 and 55–59, both at 7,8% each.

Figure 3.4: Percentage distribution of deaths by age and sex, 2012*



*Excluding deaths with unspecified age and unspecified sex.

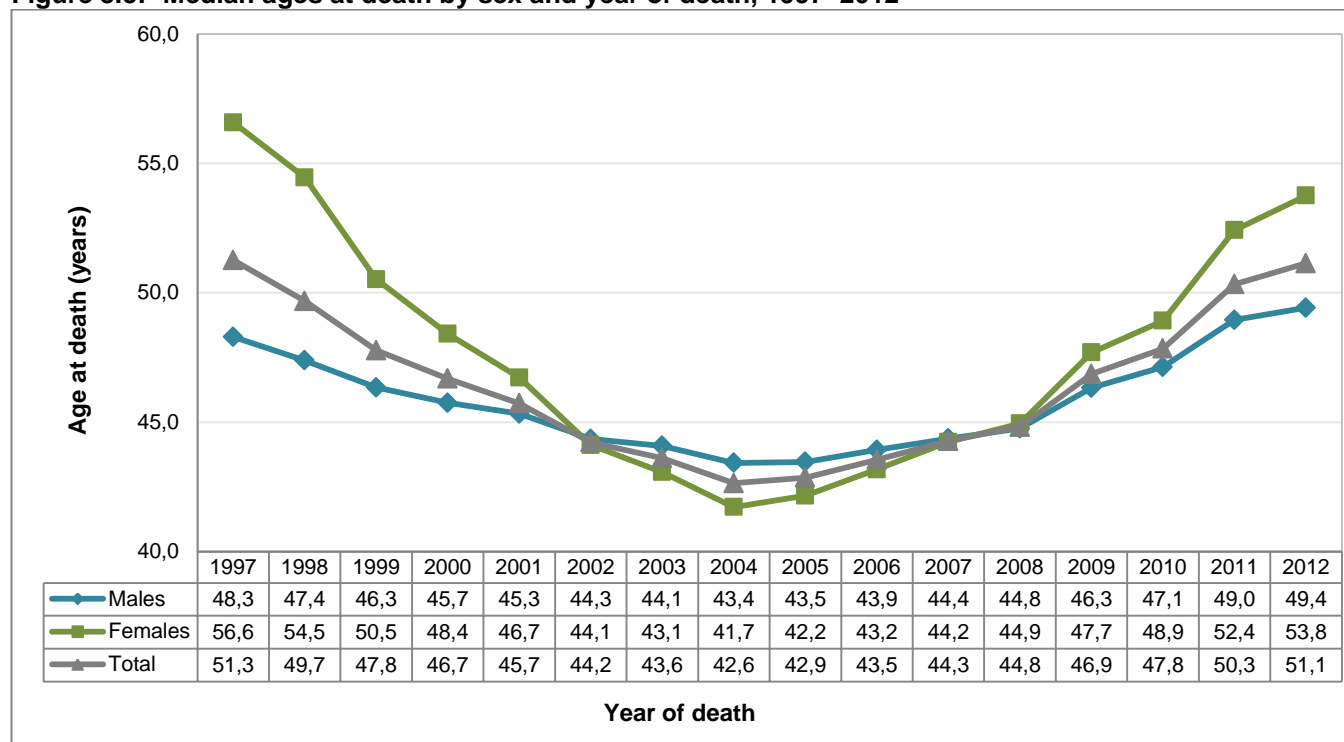
Median ages at death by sex

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

Figure 3.5 shows that the median ages at death for total deaths declined notably from 51,3 years in 1997 and reached their lowest level of 42,6 years in 2004. The decreases were more rapid for females as compared to males. The median age at death for females decreased by 14,9 years from 56,6 years in 1997 to 41,7 years in 2004, while the median age at death for males decreased by 4,9 years from 48,3 years in 1997 to 43,4 years in 2004. Since 2005, the median ages for total deaths and for males and females increased, reflecting improvement in mortality.

It is further observed that over the period 1997 to 2001, on average males died at an earlier age than females. The pattern reversed throughout 2003 to 2006, where on average the median age at death for males was higher than that of females. Both males and females had a median age at death of approximately 44 years and 45 years in 2007 and 2008, respectively. From 2009 to 2012, the median ages increased again for both sexes with female deaths occurring at a later age than males. In 2012, the median age at death for females was 53,8 years and 49,4 years for males.

Figure 3.5: Median ages at death by sex and year of death, 1997–2012*



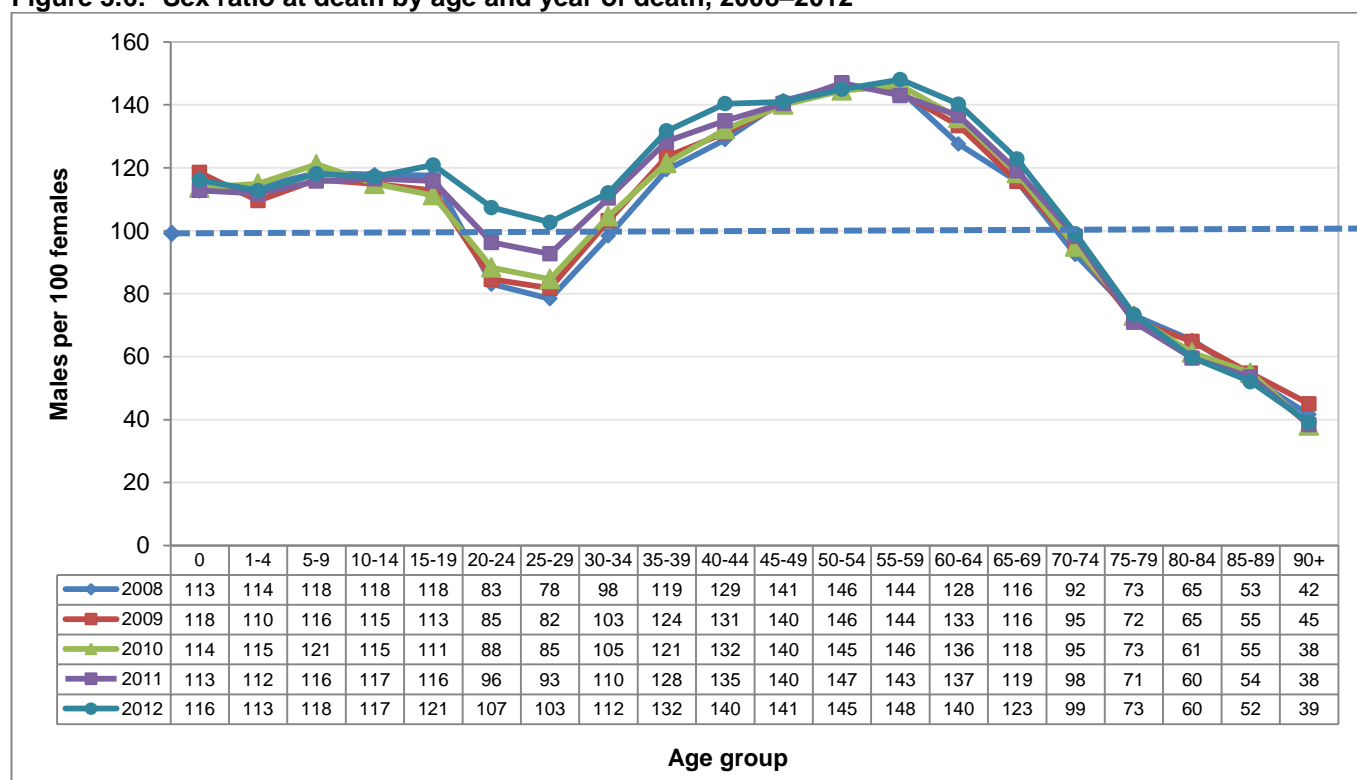
* Data for 1997–2011 have been updated to include late registrations processed in 2013/14.

Sex ratios by age

Figure 3.6 presents the sex ratio at death by age and year of death for the period 2008–2012. 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 results show that from 2008 to 2012, there were relatively more male deaths from age 0 up to age group 15–19 and also from age group 35–39 to age group 65–69. For the age groups 20–24 and 25–29, there were more female deaths over the years 2008 to 2011. This pattern reversed in 2012, where more male deaths were observed as compared to female deaths. Consistent increases in sex ratios were observed from age group 20–24 to age group 30–34. This indicates improvements in female mortality in these ages. Female deaths exceeded male deaths from 2008 to 2012 for age groups 70 and above.

The overall sex ratios for 1997 to 2012 are shown in Appendix F. Over this 16-year period, sex ratios at death were consistently higher for males (above 100) as compared to females. Over the same period sex ratios declined from 1997 to 2005 and increased between 2006 and 2012. In 2012, the sex ratio at death was 109 male deaths per 100 female deaths.

Figure 3.6: Sex ratio at death by age and year of death, 2008–2012*

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

(2) Data for 2008–2011 have been updated to include late registrations processed in 2013/14.

3.5 Population group differences in mortality

Table 3.2 shows the distribution of deaths by population group in 2012. Black Africans accounted for 68,9% of all deaths and the Indian/Asian population group accounted for 1,5% of the deaths. The table also indicates that 8,0% and 5,9% 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 15,6% 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 remain high and therefore, these results should be treated with caution.

Table 3.2: Number and percentage distribution of deaths by population group, 2012

Population group	Number	Percentage
Black African	330 937	68,9
Coloured	38 221	8,0
Indian/Asian	7 370	1,5
White	28 274	5,9
Other	1 032	0,2
Unknown or unspecified	74 642	15,6
Total	480 476	100,0

3.6 Marital status differences in mortality

Variation in the percentage distribution of deaths by marital status may be affected by differences in population size across these categories. Table 3.3 shows that 48,9% of the deaths that occurred in 2012 were among people who were never married and 23,4% of all deaths occurred among those married at the time of their death. Deaths among the widowed were 9,6% and those who were divorced constituted 1,8% of all registered deaths. The pattern observed in 2012 for the marital status variable is constant with that observed in 2011. The marital status of the deceased at the time of death was unknown or unspecified in 16,4% of the deaths, thus these results need to be interpreted with caution.

Table 3.3: Number and percentage distribution of deaths by marital status, 2012

Marital status	Number	Percentage
Never married	234 816	48,9
Married	112 495	23,4
Widowed	45 971	9,6
Divorced	8 607	1,8
Unknown or unspecified	78 587	16,4
Total	480 476	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 17,2% of the deaths occurred among people who were smoking, while the highest percentage of deaths were among people who were non-smokers (38,7%). The table also shows that 38,7% of registered deaths in 2012 had smoking status classified as unknown or unspecified. The high proportion of deaths with missing information on smoking status shows poor reporting of this information on the death notification forms. However, there has been an improvement in reporting this variable as compared to the observation made in 2010 and 2011 when 53,6% and 44,7%, respectively, had unknown or unspecified information on smoking status.

Table 3.4: Number and percentage distribution of deaths by smoking status among those aged 16 years and older, 2012

Smoking status	Number	Percentage
Yes	74 160	17,2
No	167 317	38,7
Do not know	23 735	5,5
Unknown or unspecified	167 172	38,7
Total	432 384	100,0

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 2012. The results indicate that 42,6% of the deaths took place in hospitals, 1,7% were emergency room or outpatient deaths and 2,0% died in nursing homes. These three places of death occurrence account for 46,3% of total deaths that occurred within a health care facility. As much as 24,9% of all deaths occurred at home in 2012, while 1,9% were amongst people who had already died by the time they reached the hospital. Caution should be exercised when interpreting the results as 24,1% of the death notification forms had unknown or unspecified information on place or institution of death of the deceased.

Table 3.5: Number and percentage distribution of deaths by place or institution of death occurrence, 2012

Place of death	Number	Percentage
Hospital	204 776	42,6
Emergency room/Outpatient	8 065	1,7
Dead on arrival	9 189	1,9
Nursing home	9 718	2,0
Home	119 596	24,9
Other	13 511	2,8
Unknown or unspecified	115 621	24,1
Total	480 476	100,0

3.9 Geographic variations in mortality

This section presents information on the distribution of registered deaths by provinces and districts where the death occurred. The districts and provinces of death occurrence information were derived based on the 2011 municipal boundaries. The distribution of deaths by province of usual residence of the deceased is also included in this section. The number and percentage distribution of deaths by province of death occurrence and province of usual residence of the deceased are provided in Appendix G and G1 (absolute numbers and percentages, respectively). Appendix H and H1 present the number and percentage distribution of deaths at provincial and district municipality levels by age, whereas the sex distribution is provided in Appendix I.

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 2012 is presented in Table 3.6. The distribution of deaths by province of death occurrence shows that the highest proportion of deaths (20,5%) occurred in Gauteng province, followed by KwaZulu-Natal (20,1%) and then Eastern Cape (13,6%). This pattern slightly changed from that observed for 2011 deaths where KwaZulu-Natal had the highest proportion of deaths (20,7%), followed by Gauteng (19,9%) and then Eastern Cape (14,4%). The lowest proportion of deaths were in Northern Cape (2,9%). These percentages may be reflective 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 2011. For province of usual residence, KwaZulu-Natal (19,9%) had the highest proportion of deaths, followed by Gauteng (19,6%) and then Eastern Cape (13,3%).

Further analysis on the province of death occurrence and province of usual residence of the deceased, shows that 2012 deaths were predominantly characterised by deaths that occurred within the province of usual residence (refer to appendices G and G1). Over 88% of deaths in 2012 occurred in the province of usual residence; North West had the lowest proportion of 88,2% and KwaZulu-Natal had the highest proportion

(95,0%). As was the case in 2011, the highest proportion of people who died outside South Africa resided in Gauteng (33,6%).

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, 2012

Province	Province of death occurrence		Province of usual residence of deceased	
	Number	Percentage	Number	Percentage
Western Cape	46 148	9,6	44 251	9,2
Eastern Cape	65 481	13,6	63 811	13,3
Northern Cape	13 971	2,9	13 820	2,9
Free State	35 054	7,3	34 538	7,2
KwaZulu-Natal	96 749	20,1	95 567	19,9
North West	35 824	7,5	35 308	7,3
Gauteng	98 549	20,5	94 098	19,6
Mpumalanga	36 299	7,6	37 483	7,8
Limpopo	49 121	10,2	47 532	9,9
Foreign	699	0,2	1 129	0,2
Unspecified	2 581	0,5	12 939	2,7
Total	480 476	100,0	480 476	100,0

The number and percentage distribution of deaths by age, province and district municipality of death occurrence for 2012 are presented in Appendix H and H1. It must be noted that the proportions provided may reflect under-reporting of deaths at specified ages as the numbers were not adjusted for incomplete reporting which may differ for different provinces and for specific ages.

North West and Limpopo had the highest proportion of deaths occurring to children aged below one year, constituting 7,1% and 6,6% of all deaths in the province, respectively (see Appendix H1). 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 15–49 (43,6%) and Western Cape had the highest proportion of deaths occurring at age groups 50–64 (23,6%), as well as for ages 65 and older (39,0%).

In terms of sex ratio at death (refer to Appendix I), Limpopo was the only province where the overall number of female deaths exceeded male deaths (99 male deaths per 100 female deaths). Western Cape had the highest sex ratio with 123 male deaths per 100 female deaths, followed by Gauteng and North West equally at 115 male deaths per 100 females. Other provinces ranged from a sex ratio of 103 male deaths per 100 female deaths (KwaZulu-Natal) to 114 male deaths per 100 female deaths (Northern Cape).

3.9.2 Differences by district municipality, age and sex

Appendix H1 also shows percentage variations in 2012 deaths 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 (10,1%), followed by Dr Ruth Segomotsi Mompati in North West (8,8%) and Zululand in KwaZulu-Natal and Gert Sibande in Mpumalanga both equally constituting 8,1%. The highest proportions of deaths occurring among children aged 1–4 years were noted in Mopani (4,7%) and Vhembe (4,4%), both in Limpopo. Umkhanyakude (4,1%) and Zululand (4,1%) both in KwaZulu-Natal had the highest proportion of deaths occurring among those aged 5–14 years.

At older ages, district municipalities in Western Cape had the highest proportion of deaths. West Coast (26,6%) and Cape Winelands (25,7%) had the highest proportion of deaths occurring in ages 50–64 years while Overberg (44,7%) and Eden (42,2%) 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 I. The district level analysis of deaths by sex shows that 2012 registered deaths were predominantly characterised by more male deaths relative to female deaths. Out of the 52 district municipalities, 44 districts had sex ratios over 100 (more male deaths), seven districts had sex ratios lower than 100 (more female deaths) and one district Capricorn in Limpopo had a sex ratio of 100 (equal male and female deaths). Three provinces had eight districts with more female deaths namely: KwaZulu-Natal (Sisonke, uMkhanyakude, uMzinyathi and uThukela), Limpopo (Greater Sekhukhune, Mopani and Vhembe) and Eastern Cape (Alfred Nzo).

The district with the lowest sex ratio was uMzinyathi in KwaZulu-Natal with 94 male deaths per 100 female deaths, followed by Vhembe in Limpopo (95 male deaths per 100 female deaths). The 44 districts with excess male deaths as compared to females ranged from a sex ratio of 101 male deaths per 100 females in OR Tambo in the Eastern Cape, to 131 male deaths per 100 female deaths in Overberg district municipality in Western Cape. In general, with the exception of Central Karoo (116 male deaths per 100 females), all district municipalities in Western Cape had sex ratios of above 120 male deaths per 100 female deaths. For deaths that occurred outside South Africa, the sex ratio was 189 male deaths per 100 female deaths.

4. Causes of death

4.1 Introduction

Information on causes of death for all deaths that occurred in 2012 and were registered between 2012 and 2014 at the Department of Home Affairs (DHA) and received and processed by Statistics South Africa (Stats SA) are presented in this section. In addition, comparisons are made with deaths that occurred between 1997 and 2011, updated for late registrations. The analysis undertaken focuses mainly on the underlying cause of death based on the World Health Organization's guidelines on the International Classification of Diseases, 10th revision (ICD-10).

Over the years, there has been great concern about the levels of violence and deaths due to accidents in South Africa. This has necessitated the separation of the analysis of natural and non-natural causes of death. All deaths that were not attributable, or may not have been attributable to natural causes are referred to as non-natural causes of death. Such deaths are subjected to medico-legal investigation as stipulated by the Inquest Act, 1959 (Act No. 58 of 1959). This requires that an autopsy must be undertaken to ascertain the cause of death. Once completed, the results of the inquest are then forwarded to the DHA, which issues the final death certificate.

Underlying causes of death in this section are classified by the main groups; natural and non-natural causes; communicable and non-communicable diseases and injuries; and broad groups. Deaths are further categorised by age, sex and province of death occurrence. Trend analysis covering the period 1997 to 2012 is undertaken using data that have been updated with late registrations that were processed during the processing of 2012 deaths, in order to establish prevailing patterns between the natural and non-natural causes of death. Information on district municipalities is also provided.

The last subsection provides a comparison between underlying, immediate and contributing causes of death. This analysis gives an overview of the recorded instances of multiple causes of death and utilises information on all causes of death recorded on each death notification form, as death notification forms make provision 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 2012.

A total of 2 366 (0,5%) 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 2 366 forms with missing information, 1 659 (71,4%) of these forms had a doctor's tick to show that it was a natural cause of death while for 707 (29,8%) 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 (56,9%) had only one cause recorded 25,9% had two causes recorded and 11,9% had three causes recorded. A total of 4,9% 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 the number of causes entered on the form, 2012

Number of reported causes of death	Number of death notification forms	Percentage
No cause	2 366	0,5
One cause	273 460	56,9
Two causes	124 319	25,9
Three causes	57 057	11,9
Four causes	18 159	3,8
Five causes	5 061	1,1
Six causes	54	0,0
Total	480 476	100,0

4.3 Method of ascertaining the cause of death

Both 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. The Births and Deaths Registration Act, 1992 (Act No. 51 of 1992) requires that all deaths be certified by a medical practitioner who must issue a prescribed certificate stating the cause of death.

The options provided for method used to ascertain the causes of death in BI-1663 and DHA-1663 are largely similar. The common options between the BI-1663 and DHA-1663 were autopsy, opinion of attending medical practitioner, opinion of medical practitioner attending duty, opinion of registered professional nurse and interview of family member. The DHA-1663 has one more option added which is 'post-mortem examination' which is not on the BI-1663. In the case of perinatal deaths, there are three options in the DHA-1663 form for method used to ascertain death (refer to Appendix B2 section G2). The BI-1663 does not have a specific section on perinatal deaths. The resulting categories after combining comparable information in form BI-1663 and DHA-1663 are provided in Table 4.2.

Causes of deaths ascertained by post-mortem accounted for 21,5% of 2012 deaths, followed by deaths ascertained by the opinion of attending medical practitioner (20,9%). Autopsy was performed on 8,7% of the deaths to ascertain the causes of death. The method used to ascertain the causes of death was unknown or unspecified in a total of 27,9% of the deaths.

Table 4.2: Number and percentage distribution of deaths by method used to ascertain the cause of death, 2012

Method of ascertaining the cause of death	Number	Percentage
Autopsy	41 767	8,7
Post-mortem examination	103 352	21,5
Opinion of attending medical practitioner	100 480	20,9
Opinion of attending medical practitioner on duty	21 434	4,5
Opinion of registered professional nurse	51 289	10,7
Interview of family member	19 838	4,1
Other	7 177	1,5
Autopsy results may be available later*	62	0,0
Autopsy not performed*	1 274	0,3
Unknown	4 073	0,9
Unspecified	129 730	27,0
Total	480 476	100,0

* For perinatal deaths only.

4.4 Main groups of the underlying causes of death

This subsection gives an overview of the underlying causes of death for main groups (chapters) of classification of causes of death. The ICD-10 classifies diseases and related health problems into 22 chapters, of which 19 are used in the reporting of information on underlying causes of death (see Table 4.3). The 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. *Certain infections and parasitic diseases* was the top ranking main group of causes of death in 2012, comprising 22,2% of all deaths. This group also includes 780 deaths due to *multidrug-resistant tuberculosis* (MDR-TB) and 123 deaths due to *extensively drug-resistant tuberculosis* (XDR-TB). Between 2011 and 2012, MDR-TB went up by 3,7% whereas XDR-TB went down by 5,5%.

Diseases of the circulatory system (16,4%) was the second most common main group of causes of death followed by *symptoms and signs not elsewhere classified* (13,6%), and *diseases of the respiratory system* (10,9%). About 9,8% of the deaths were due to *external causes of morbidity and mortality*. The main groups consisting of *diseases of the eye and adnexa* and *diseases of the ear and mastoid process* maintained their last positions (40 and 57 deaths, respectively) as the causes with the least number of deaths per year.

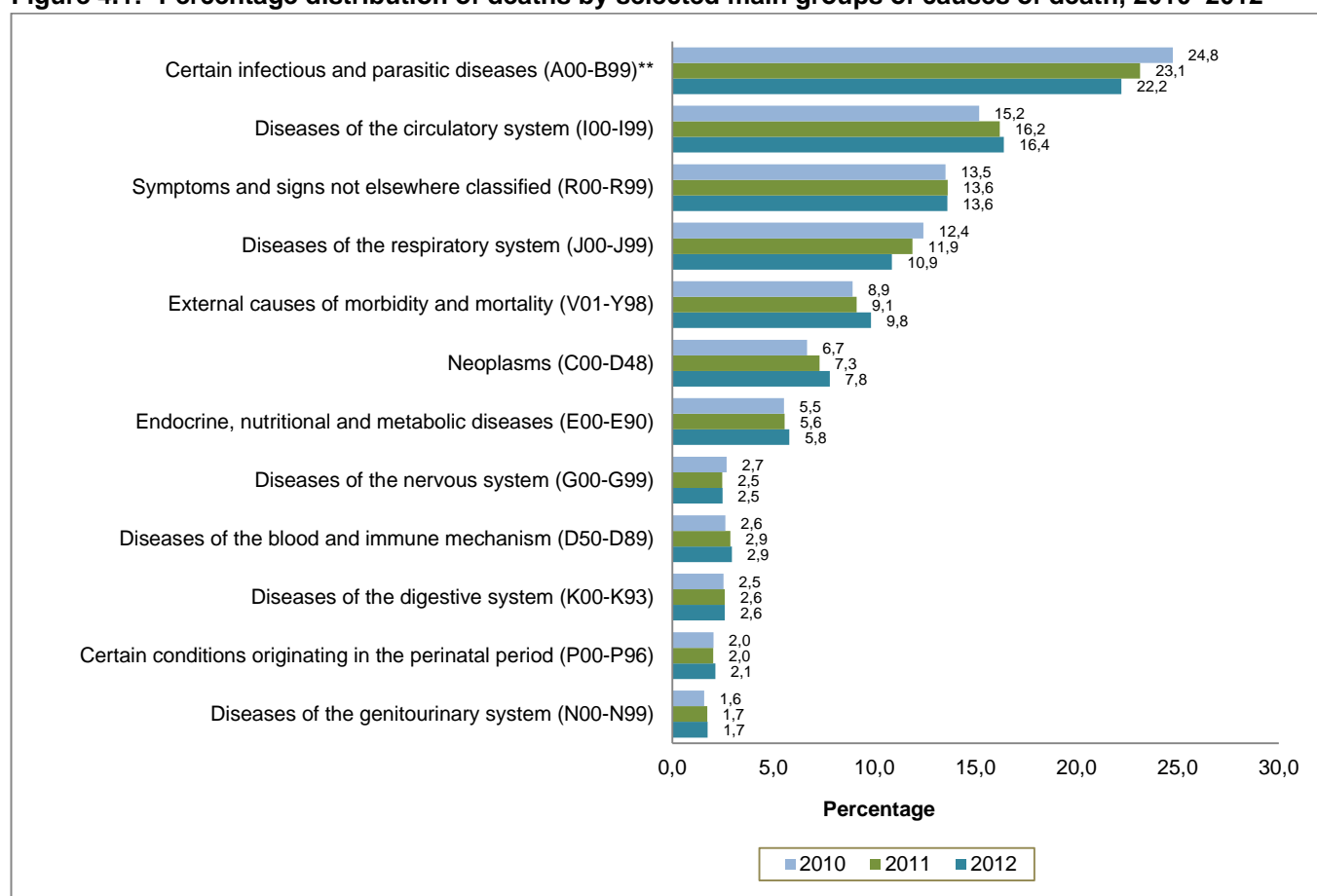
Table 4.3: Distribution of deaths by main groups of causes of death, 2012*

No.	Main groups of underlying causes of death (based on ICD-10)	Number	Percentage
1	Certain infectious and parasitic diseases (A00-B99)*	106 752	22,2
2	Neoplasms (C00-D48)	37 467	7,8
3	Diseases of the blood and immune mechanism (D50-D89)	14 140	2,9
4	Endocrine, nutritional and metabolic diseases (E00-E90)	27 834	5,8
5	Mental and behavioural disorders (F00-F99)	1 755	0,4
6	Diseases of the nervous system (G00-G99)	11 914	2,5
7	Diseases of the eye and adnexa (H00-H59)	40	0,0
8	Diseases of the ear and mastoid process (H60-H95)	57	0,0
9	Diseases of the circulatory system (I00-I99)	78 817	16,4
10	Diseases of the respiratory system (J00-J99)	52 203	10,9
11	Diseases of the digestive system (K00-K93)	12 478	2,6
12	Diseases of the skin and subcutaneous tissue (L00-L99)	1 160	0,2
13	Diseases of the musculoskeletal system etc. (M00-M99)	1 613	0,3
14	Diseases of the genitourinary system (N00-N99)	8 381	1,7
15	Pregnancy, childbirth and puerperium (O00-O99)	1 018	0,2
16	Certain conditions originating in the perinatal period (P00-P96)	10 213	2,1
17	Congenital malformations (Q00-Q99)	2 038	0,4
18	Symptoms and signs not elsewhere classified (R00-R99)	65 376	13,6
19	External causes of morbidity and mortality (V01-Y98)	47 220	9,8
Total		480 476	100,0

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

The proportions of deaths by selected main groups of causes of death for 2010–2012 are shown in Figure 4.1. It is observed that the pattern of deaths by main groups of causes of death has been consistent during this period. *Certain infectious and parasitic diseases* were the most common causes of death for the three years and accounted for more than 20% of deaths each year, although showing a declining trend. *Diseases of the circulatory system* were the second leading group and their proportion to the overall number of deaths increased from 15,2% in 2010 to 16,4% in 2012. The third leading group of *symptoms and signs not elsewhere classified* contributed approximately 14% of the deaths for each year, indicating that there has been no improvement in the classification of ill-defined causes.

It is observed that there was a notable decline in the proportions of deaths due to *diseases of the respiratory system* from 12,4% in 2010 to 10,9% in 2012. Conversely, the proportions of death due to *neoplasms; endocrine, nutritional and immune mechanism and external causes of morbidity and mortality* showed notable consistent increases in the proportions of deaths over the three-year period.

Figure 4.1: Percentage distribution of deaths by selected main groups of causes of death, 2010–2012*

*(1) Data for 2010 and 2011 have been updated to include late registrations processed in 2013/14.

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

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

4.5 Natural and non-natural causes of death

The high levels of violence and deaths attributed to accidents have made it necessary for the analysis on natural and non-natural underlying causes of death to be undertaken independently. Natural and non-natural causes of death information reported in this release were derived from the underlying causes of death based on specific causes of death recorded on the death notification form. All causes of death coded between V01 and Y98 (number 19 in Table 4.3) were classified as non-natural causes, whereas causes of death coded between A00 and R99 (numbers 1 to 18 in Table 4.3) were classified as natural causes of death.

Table 4.4 shows the number of deaths due to natural and non-natural causes from 1997 to 2012. The number of deaths due to natural causes increased consistently between 1997 and 2006. Since 2007, the numbers have declined gradually. For non-natural deaths, there has been an inconsistent pattern in the number of deaths over the 1997–2012 period, except between 2008 and 2011, where there was a consistent decline in the number of deaths due to non-natural causes.

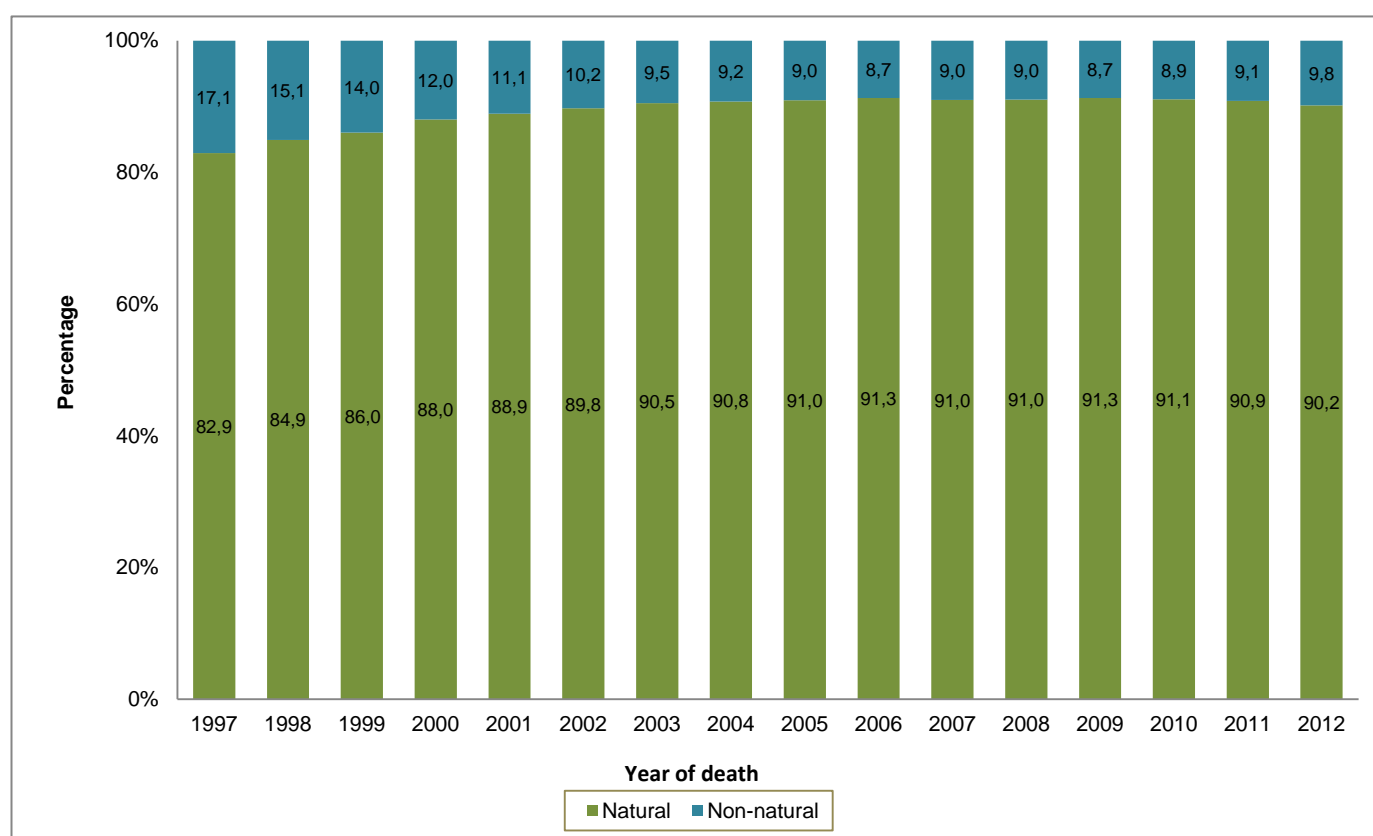
Table 4.4: Number of natural and non-natural deaths by year of death, 1997–2012*

Year of death	Number of natural deaths	Number of non-natural deaths	Total
1997	263 136	54 100	317 236
1998	310 829	55 112	365 941
1999	328 581	53 338	381 919
2000	366 692	49 791	416 483
2001	404 881	50 354	455 235
2002	450 937	51 487	502 424
2003	504 286	52 866	557 152
2004	523 767	53 372	577 139
2005	544 431	53 981	598 412
2006	559 960	53 238	613 198
2007	549 995	54 502	604 497
2008	542 420	53 367	595 787
2009	530 056	50 423	580 479
2010	499 662	48 935	548 597
2011	465 614	46 696	512 310
2012	433 256	47 220	480 476

*Data for 1997–2011 have been updated to include late registrations processed in 2013/14.

Figure 4.2 shows the percentage of deaths due to natural and non-natural causes between 1997 and 2012. The majority (over 80%) of deaths were due to natural causes throughout the 16-year period, albeit with declining proportions from 2010. Conversely, the proportion of deaths due to non-natural underlying causes of death has been on the increase since 2010 (from 9,1% in 2011 to 9,8% in 2012).

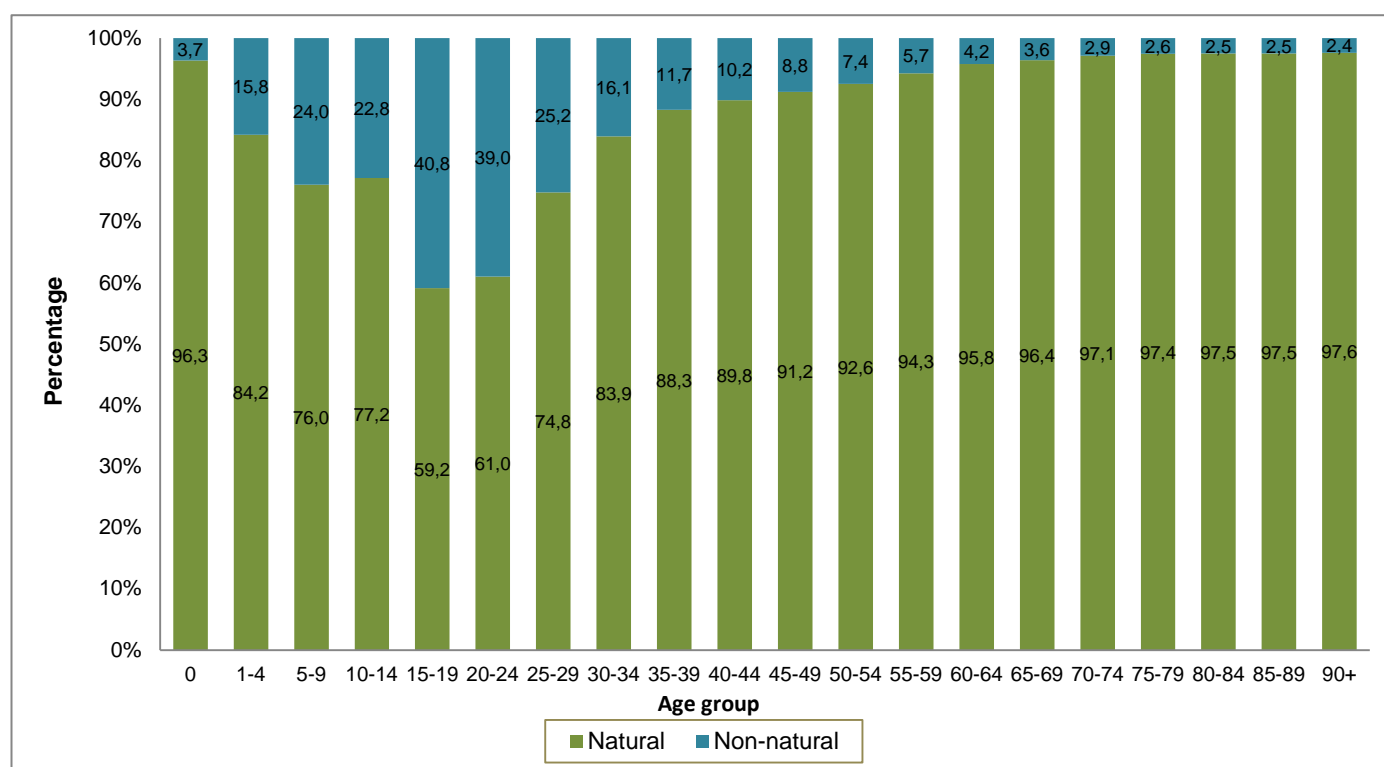
Figure 4.2: Percentage distribution of natural and non-natural causes of death by year of death, 1997–2012*



*Data for 1997–2011 have been updated to include late registrations processed in 2013/14.

Natural and non-natural causes of death by age

The percentage distribution of deaths due to natural and non-natural causes classified by age group for deaths that occurred in 2012 is provided in Figure 4.3. Overall, the proportion of deaths due to non-natural causes increased from age 0 (3,7%) to age group 15–19 (40,8%). Age group 15–19 had the highest proportion of non-natural deaths, followed by age group 20–24 (39,0%) and 25–29 (25,2%). The age groups with the lowest proportion of deaths due to non-natural deaths were infancy (age 0) and older ages (60 years and older), constituting less than 5% in each of these age groups.

Figure 4.3: Percentage distribution of natural and non-natural causes of death by age, 2012*

* Excluding deaths with unspecified age.

4.6 Major causes of death

Major causes of death can be classified into three groups as per the Global Burden of Disease cause list:

Group 1: Communicable diseases (e.g. TB, pneumonia, diarrhoea), maternal and perinatal causes (e.g. maternal haemorrhage and birth trauma) and nutritional conditions (e.g. protein-energy malnutrition)

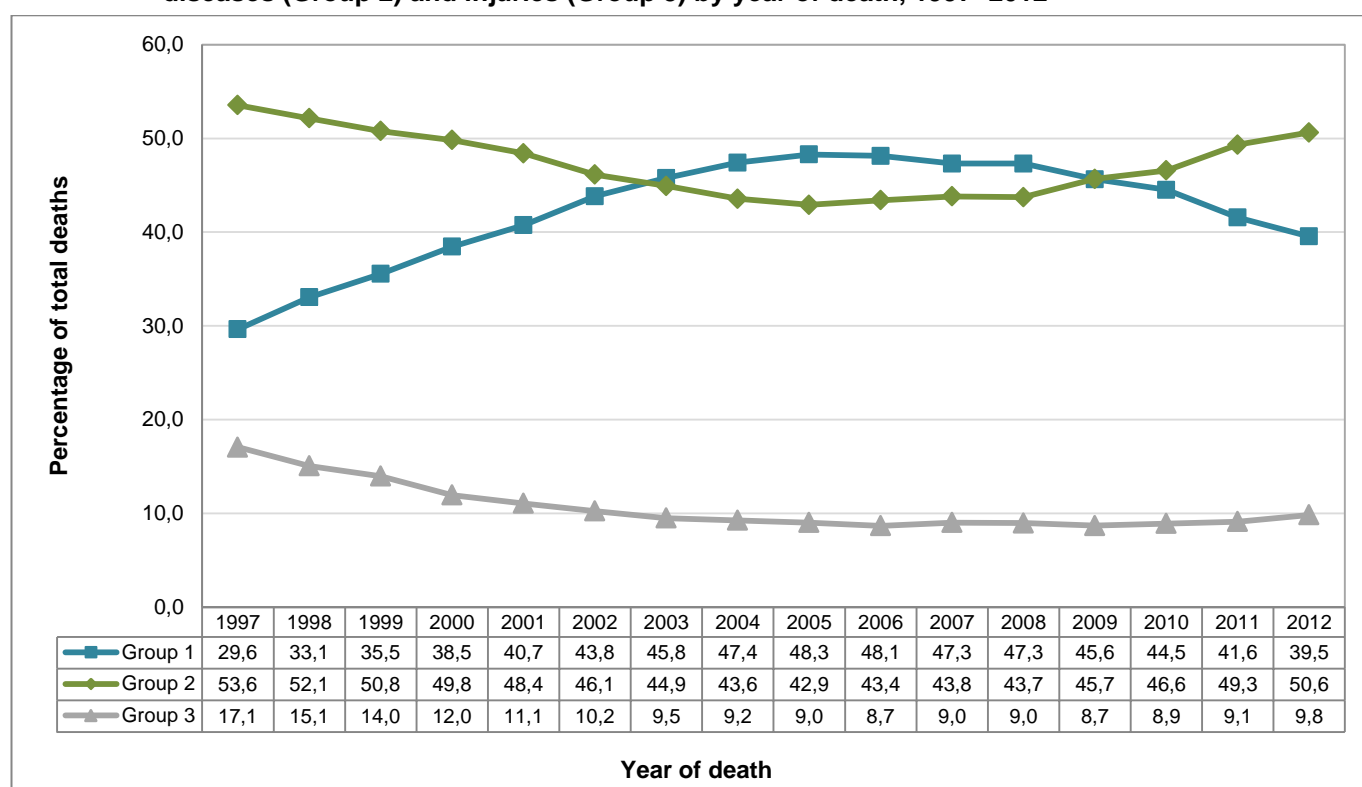
Group 2: Non-communicable diseases (e.g. cancer, diabetes, stroke)

Group 3: Injuries (e.g. accidents, assault and suicide)

Non-communicable diseases are defined as diseases that are non-infectious, are of long duration and generally slow progression and include amongst other *cerebrovascular diseases*, *diabetes mellitus* and *ischaemic heart diseases*. Communicable diseases are diseases that are infectious and include among other *tuberculosis*, *intestinal infectious diseases*, and *influenza and pneumonia*. Figure 4.4 shows the percentage distribution of deaths by group type and year of death. Three distinct patterns can be observed from Figure 4.4. Prior to 2004 the proportion of deaths due to non-communicable diseases continuously decreased, while that of communicable diseases increased. In 2003, there were almost equal proportions of non-communicable deaths and communicable deaths. The second pattern shows that from 2004 to 2009, the proportion of communicable deaths increased, while a downward trend was observed for non-communicable deaths. In 2009, there were almost as many communicable deaths as non-communicable deaths. However, the third pattern shows an upward trend in the proportion of deaths due to non-communicable diseases from 46,6% in 2010 to 50,6% in 2012. Conversely, during the same period the proportion of deaths due to communicable diseases narrowed from 44,5% in 2010 to 39,5% in 2012.

The figure further shows that between 1997 and 2012 the proportion of deaths due to injuries was consistently lower than the proportion of deaths due to communicable and non-communicable diseases. The proportion of deaths attributed to injuries declined yearly from a high of 17,1% in 1997 to a low of 8,7% in 2006, thereafter fluctuated between the years 2007 and 2009, and increased continuously from 8,9% in 2010 to 9,8% in 2012.

Figure 4.4: Percentage distribution of deaths due to communicable diseases (Group 1), non-communicable diseases (Group 2) and injuries (Group 3) by year of death, 1997–2012*



* (1) Data for 1997–2011 have been updated to include late registrations processed in 2013/14.

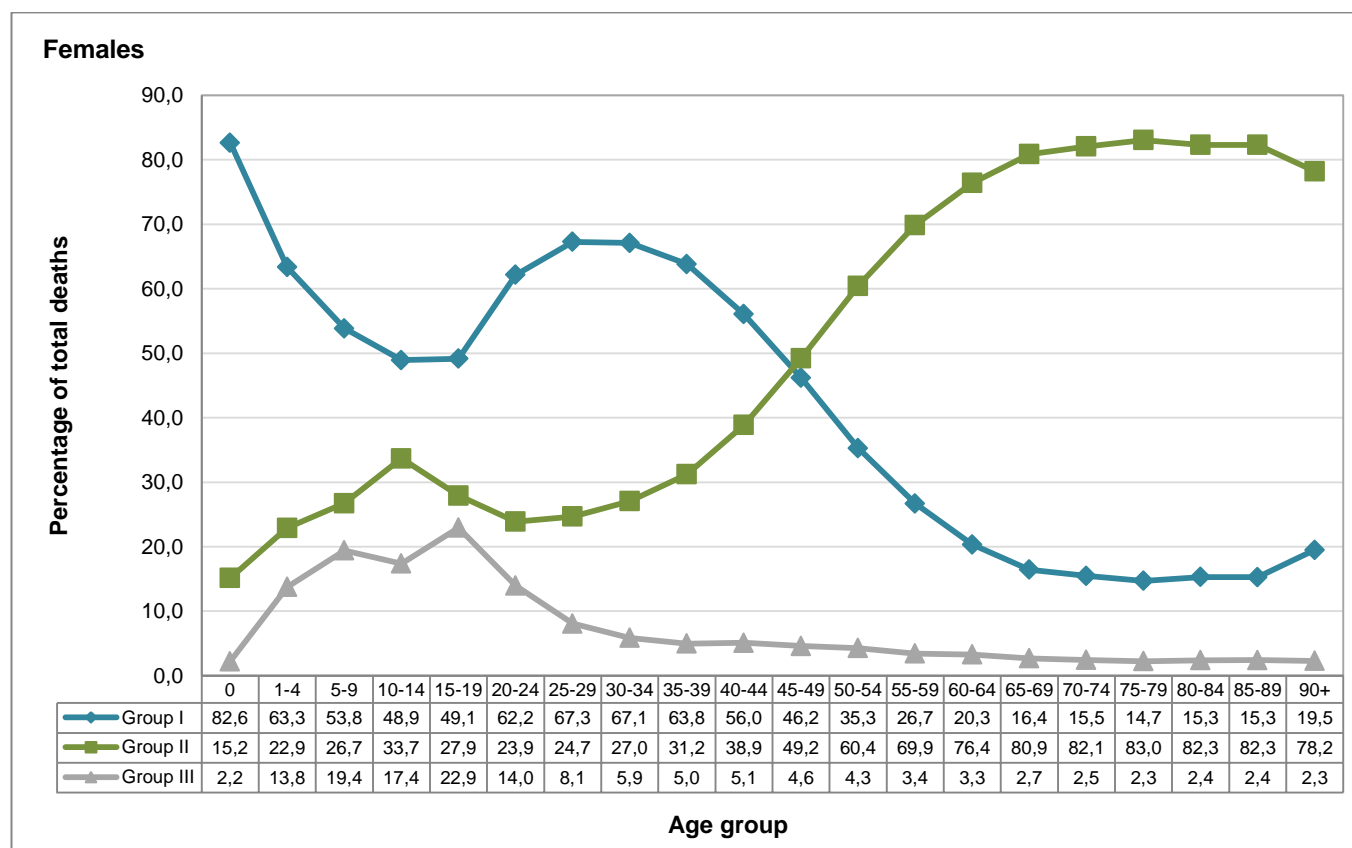
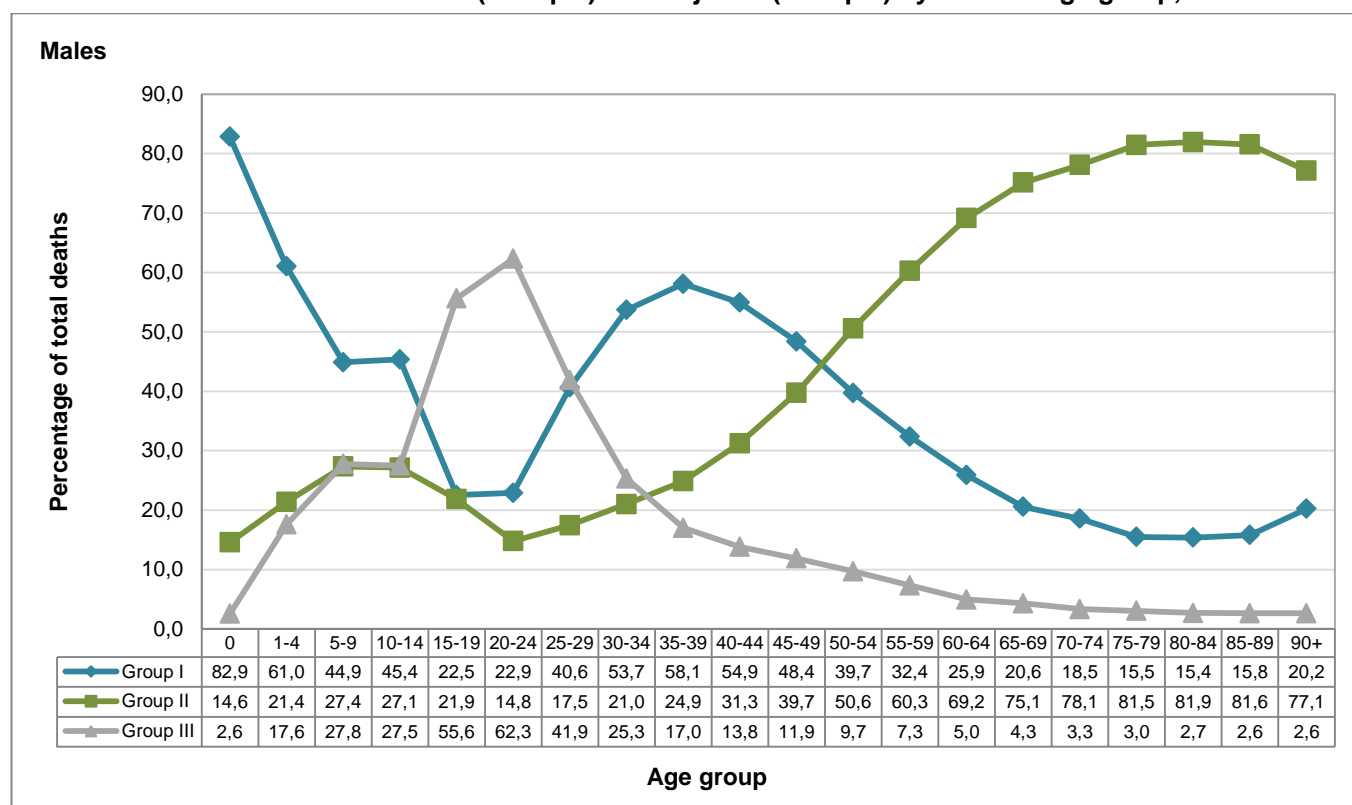
(2) Redistributed ill-defined diseases *R00-R99* proportionately to causes in Group 1 and Group 2.

(3) Redistributed unknown age proportionately to causes in Group 1, Group 2 and Group 3.

Figure 4.5 shows the percentage distribution of causes of death by sex, group type and age group. The highest percentage of male deaths due to communicable diseases occurred among those aged 0 (82,9%, followed by age group 1–4 (61,0%). Similarly, for female deaths, the highest percentage of deaths was among those aged 0 (82,6%). However, for females the second highest percentage was amongst those aged 30–34 (67,1%), while the third highest was amongst those aged 35–39 (67,1%), which is indicative of maternal causes. For both sexes the proportion of deaths due to Group 2 (non-communicable diseases) was highest at older ages (age group 80–84 for males (81,9%) and age groups 80–84 and 85–89 for females (82,3% each).

Furthermore, Figure 4.5 shows that the percentage of male deaths due to Group 3 (injuries) was highest for age group 20–24 (62,3%), followed by age groups 15–19 (55,6%) and 25–29 (41,9%). Although the pattern of injuries is especially notable among males, females also showed high proportions of deaths due to injuries at young ages. For females the highest proportion of deaths due to injuries were amongst those aged 15–19 (22,9%), while the second highest proportion was for females aged 5–9 (19,4%).

Figure 4.5: Percentage distribution of deaths due to communicable diseases (Group 1)*, non-communicable diseases (Group 2)* and injuries (Group 3) by sex and age group, 2012**



*Redistributed ill-defined diseases R00-R99 proportionately to causes in Group 1 and Group 2.

**Redistributed unknown age proportionately to causes in Group 1, Group 2 and Group 3.

4.7 Underlying natural causes of death

This subsection provides information on the ten leading underlying natural causes of death. The ten leading causes are identified by ranking the deaths by frequency among the causes that are eligible for ranking. The ranking of the leading natural underlying causes of death in this release is determined by the top-ranking causes, but excludes *symptoms, signs and abnormal findings, not elsewhere classified* as well as all non-natural deaths (*external causes of morbidity and mortality*).

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 2010–2012. The inclusion of information for 2010 and 2011 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 2012 are shown in Appendix J and also the breakdown of individual causes for the broad groups that were among the ten leading causes in 2012 is provided in Appendix K.

Table 4.5 shows that all ten leading causes of death between 2010 and 2012 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 *influenza and pneumonia* remained the second leading cause of death. Despite maintaining the same rank as the top two leading causes of death, there has been a decline in the proportion of deaths due to *tuberculosis* and *influenza and pneumonia*. The proportion of deaths due to *tuberculosis* was 11,6% in 2010 and declined to 10,7% in 2011 and further declined to 9,9% in 2012. Intestinal infectious diseases were the third leading cause in 2010, before declining to sixth place in 2011 and ninth place in 2012. The proportion of deaths due to *influenza and pneumonia* moved from 7,2% in 2010 to 6,6% in 2011 and down to 5,5% in 2012. Intestinal infectious diseases were 5,0% in 2010 and declined to 3,8% in 2011 and further declined to 3,1% in 2012. HIV disease was ranked seventh in 2010 and 2011, accounting for 3,4% of deaths each year. It moved to the sixth position in 2012, responsible for 3,9% of the deaths this year.

Table 4.5: The ten leading underlying natural causes of death, 2010–2012*

Causes of death (based on ICD-10)	2010			2011			2012		
	Rank	Number	%	Rank	Number	%	Rank	Number	%
Tuberculosis (A15-A19)**	1	63 375	11,6	1	54 827	10,7	1	47 472	9,9
Influenza and pneumonia (J09-J18)	2	39 275	7,2	2	33 742	6,6	2	26 385	5,5
Cerebrovascular diseases (I60-I69)	5	24 841	4,5	3	26 019	5,1	3	23 994	5,0
Other forms of heart disease (I30-I52)	4	26 003	4,7	4	23 822	4,6	4	21 612	4,5
Diabetes mellitus (E10-E14)	6	21 637	3,9	5	21 062	4,1	5	21 230	4,4
Human immunodeficiency virus [HIV] disease (B20-B24)	7	18 501	3,4	7	17 274	3,4	6	18 663	3,9
Hypertensive diseases (I10-I15)	8	14 981	2,7	8	15 726	3,1	7	16 195	3,4
Other viral diseases (B25-B34)	10	12 472	2,3	9	14 749	2,9	8	15 057	3,1
Intestinal infectious diseases (A00-A09)	3	27 576	5,0	6	19 582	3,8	9	14 948	3,1
Chronic lower respiratory diseases (J40-J47)	9	13 194	2,4	10	13 223	2,6	10	12 228	2,5
Other natural causes		237 807	43,3		225 588	44,0		215 472	44,8
Non-natural causes		48 935	8,9		46 696	9,1		47 220	9,8
All causes		548 597	100,0		512 310	100,0		480 476	100,0

*Data for 2010–2011 have been updated to include late registrations processed in 2013/14.

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

Leading underlying natural causes of death by sex

The distribution of the ten leading underlying natural causes of death in 2012 by sex is shown in Table 4.6. Overall, eight of the ten leading causes were the same for both sexes, although with different rankings. *Tuberculosis* was the leading underlying cause of death for both males and females and accounted for 11,0% of male deaths and 8,7% of female deaths. *Influenza and pneumonia* (5,3%) was the second leading cause of death for the males, followed by *cerebrovascular diseases* (4,0%). The positions of these two causes were reversed for females. Only three of the ten leading causes of death (*tuberculosis*, *other viral diseases* and *intestinal infectious diseases*) were similar in ranks for both sexes. While the ranks may be the same, the contribution of each cause differed for each sex. Males had higher proportion of deaths due to *tuberculosis* compared to females. Conversely, females had a higher proportion of deaths due to *other viral diseases* as well as *intestinal infectious diseases* compared to males.

Other forms of heart diseases occupied fourth place among males, responsible for 4,0% of deaths, and was the fifth leading underlying cause of death among females contributing 5,1%. *Diabetes mellitus* was ranked fourth among females, accounting for 5,6% of female deaths, while it was ranked sixth amongst males, accounting for 3,4% of male deaths. *Human immunodeficiency virus (HIV) disease* was the fifth leading cause of death for males (accounting for 3,8% of male deaths), but was the seventh leading cause of death among females (accounting for 3,9% of female deaths). The ten leading causes of death contributed 42,7% of the total deaths amongst males and 48,9% among females.

The four diseases that were not common among the two sexes were *chronic lower respiratory diseases* and *ischaemic heart diseases* which were among the ten leading cause of death for males but not for females; *hypertensive diseases* and *certain disorders involving the immune mechanism* were in the top ten underlying causes of death for females but not for males.

Table 4.6: The ten leading underlying natural causes of death for males and females, 2012*

Causes of death (based on ICD-10)	Male			Female		
	Rank	Number	%	Rank	Number	%
Tuberculosis (A15-A19)**	1	27 410	11,0	1	19 876	8,7
Influenza and pneumonia (J09-J18)	2	13 311	5,3	3	12 954	5,7
Cerebrovascular diseases (I60-I69)	3	10 066	4,0	2	13 890	6,1
Other forms of heart disease (I30-I52)	4	9 906	4,0	5	11 663	5,1
Human immunodeficiency virus [HIV] disease (B20-B24)	5	9 610	3,8	7	8 980	3,9
Diabetes mellitus (E10-E14)	6	8 439	3,4	4	12 766	5,6
Chronic lower respiratory diseases (J40-J47)	7	7 268	2,9	...	...	...
Other viral diseases (B25-B34)	8	7 055	2,8	8	7 952	3,5
Intestinal infectious diseases (A00-A09)	9	7 052	2,8	9	7 822	3,4
Ischaemic heart diseases (I20-I25)	10	6 799	2,7	...	...	...
Hypertensive diseases (I10-I15)	...	...	...	6	9 970	4,4
Certain disorders involving the immune mechanism (D80-D89)	...	...	...	10	5 712	2,5
Other natural causes		107 588	43,0		105 474	46,2
Non-natural causes		35 526	14,2		11 307	5,0
All causes		250 030	100,0		228 366	100,0

*Excluding deaths with unspecified sex.

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

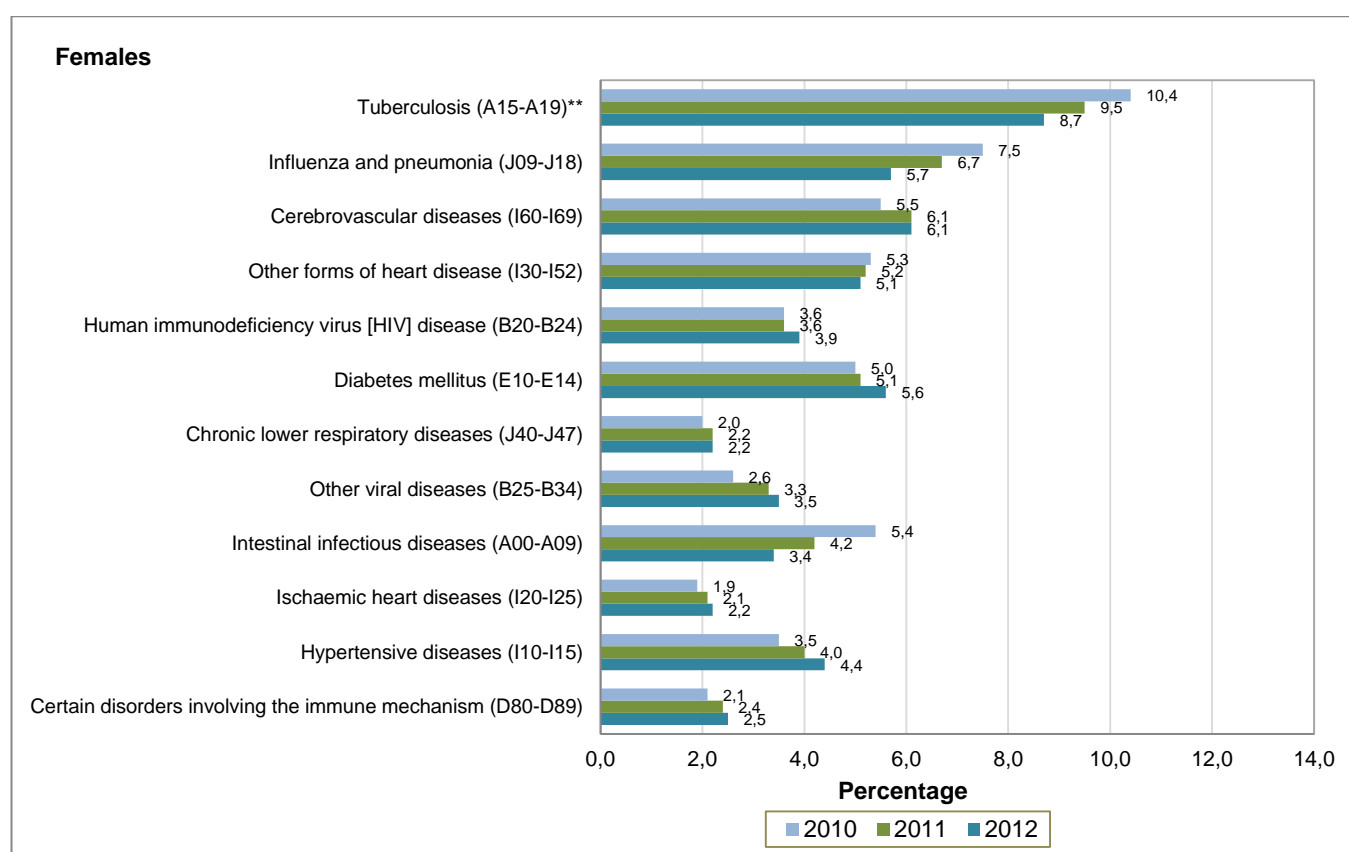
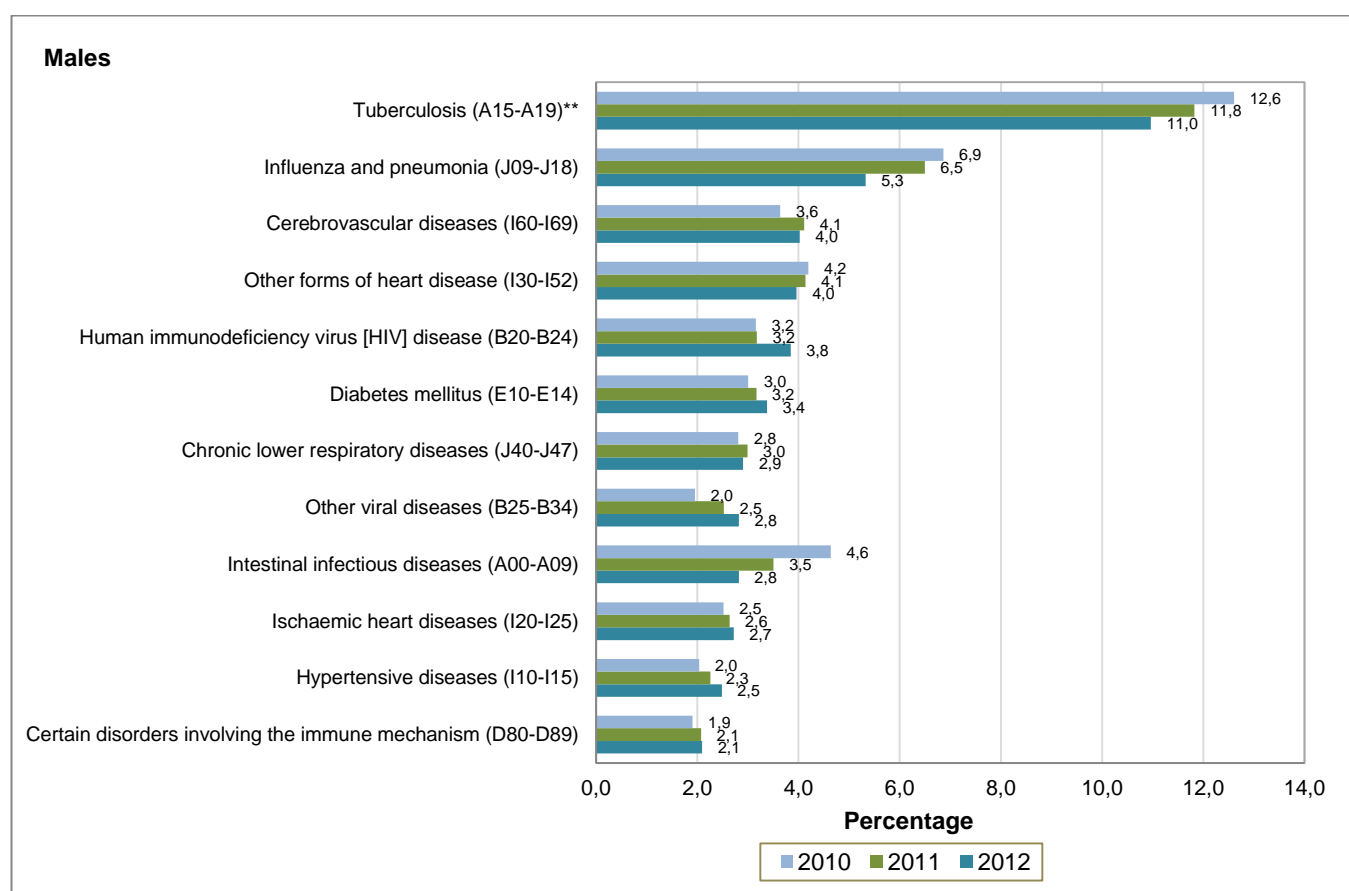
...Category not in top ten.

The percentage distributions of the ten leading causes of death classified by sex for the period 2010 to 2012 are depicted in Figure 4.6. Over the three-year period, *tuberculosis* was the leading cause of death for both males and females, although declining over time. Males had higher proportions of deaths due to *tuberculosis* in all three years, compared to females. Whilst *influenza and pneumonia* remained the second ranked cause of death for males in the three years, this has not been the case among females. *Influenza and pneumonia*, which was the second leading cause of death among females in 2010 and 2011 was replaced by *cerebrovascular diseases* in 2012.

In general, there was a reduction in the proportion of male deaths due to *tuberculosis, influenza and pneumonia, other forms of heart disease* and *intestinal infectious diseases* between 2010 and 2012. Deaths due to *tuberculosis* for males reduced from 12,6% in 2010 to 11,0% in 2012 while *influenza and pneumonia* reduced from 6,9% in 2010 to 5,3% in 2012, and *intestinal infectious diseases* reduced from 4,6% in 2010 to 4,0% in 2012. Similarly, patterns as those observed amongst males were also observed amongst females, whereby there was a notable reduction in the proportion of deaths due to *tuberculosis, influenza and pneumonia, other forms of heart disease* and *intestinal infectious diseases* from 2010 to 2012.

For both sexes, increases were observed in the proportion of deaths due to *human immunodeficiency virus (HIV) disease, hypertensive diseases, ischaemic heart diseases* and *other viral diseases* between 2010 and 2012.

Figure 4.6: Percentage distribution of deaths for the leading causes of death by year of death and sex, 2010–2012*



*Data for 2010 and 2011 have been updated to include late registrations processed in 2013/14.

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

Leading underlying natural causes of death by broad age groups

The ten leading natural causes of death classified by broad age groups (0–14, 15–49, 50–64, and 65 years and older) for 2012 are presented in Table 4.7. Two underlying natural causes of death (*influenza and pneumonia* and *tuberculosis*) were common for all the broad age groups. However, the ranks of these causes and their individual contributions to the proportions of death differed widely by age. For example, *tuberculosis* was the leading underlying natural cause of death for those aged 15–49 and 50–64 (contributing 16,9% and 10,2% of deaths in each of these age groups respectively) but was the eighth leading cause of death for those aged 0–14 and 65 years and older (contributing 2,5% and 3,1% respectively).

The leading underlying cause of death for those aged 0–14 years was *intestinal infectious diseases* responsible for 11,2% of deaths in this age group, followed by *respiratory and cardiovascular disorders specific to the perinatal period* responsible for 8,9% deaths. *Influenza and pneumonia* were third place accounting for 8,7% of the deaths. *Other disorders originating from the perinatal period* was ranked fourth contributing 3,4% of all deaths and *malnutrition* was ranked fifth accounting for 3,3% deaths.

The leading cause of death for those aged 15–49 was *tuberculosis* responsible for 16,9% deaths in this age group, followed by *human immunodeficiency virus [HIV] disease* responsible for 7,8% deaths. *Other viral diseases*, *influenza and pneumonia* and *certain disorders involving the immune mechanism* were ranked third, fourth and fifth respectively. *Tuberculosis*, *human immunodeficiency virus [HIV] disease* and *other viral diseases* combined accounted for 30,8% deaths in this age group. This was the only age group where *certain disorders involving the immune mechanism* was amongst the top ten leading causes of death and was responsible for 4,4% of deaths.

Tuberculosis was also the first leading cause of death amongst those aged 50–64, accounting for 10,2% of all deaths in this age group. *Diabetes mellitus* was the second leading cause of death responsible for 7,0% deaths followed by *cerebrovascular diseases*, which were responsible for 6,0% deaths. *Other forms of heart disease* and *influenza and pneumonia* were ranked in fourth and fifth place, contributing 5,1% and 4,6% respectively. *Human immunodeficiency virus [HIV] disease* was ranked tenth accounting for 2,8% deaths. *Intestinal infectious diseases* were amongst the top ten leading causes of death for all broad age groups, except for those aged 50–64.

Cerebrovascular diseases were the first leading cause of death for those aged 65 years and older, accounting for 10,0% deaths in this age group, followed by *diabetes mellitus* responsible for 8,0% deaths. *Other forms of heart diseases* was ranked third responsible for 7,9% deaths, whilst *hypertensive diseases* occupied fourth place (7,1%) and *ischaemic diseases* were in fifth position (4,8%).

For broad age groups 50–64 and those aged 65 years and older, nine of the ten leading underlying causes of death were the same with the differences only in the rankings. *Diabetes mellitus*, *chronic lower respiratory diseases* and *malignant neoplasm of digestive organs*, which had the same rankings for both age groups. *Cerebrovascular diseases*, *diabetes mellitus*, *hypertensive diseases*, *chronic lower respiratory diseases*, *ischaemic heart diseases* and *malignant neoplasm of digestive organs* were amongst the ten leading underlying causes of death for only age groups 50–64 and 65 years and older. The only difference between these two broad age groups was *human immunodeficiency virus [HIV] diseases*, which was not in the top ten leading causes of death for those aged 65 years and older but was in the top ten for those aged 50–64 years, whilst *intestinal infectious diseases* were amongst the top ten leading causes of death for those aged 65 years and older, but not for those aged 50–64.

Table 4.7: The ten leading underlying natural causes of death for broad age groups, 2012

Causes of death (based on ICD-10)	0-14			15-49			50-64			65+		
	Rank	Number	%	Rank	Number	%	Rank	Number	%	Rank	Number	%
Intestinal infectious diseases (A00-A09)	1	5 130	11,2	6	4 854	2,6	...	...	...	10	2 898	2,0
Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	2	4 079	8,9	...	...	...	...	...	...	...	...	...
Influenza and pneumonia (J09-J18)	3	3 979	8,7	4	10 835	5,8	5	4 543	4,6	6	6 871	4,7
Other disorders originating in the perinatal period (P90-P96)	4	1 574	3,4	...	...	...	...	...	...	...	...	...
Malnutrition (E40-E46)	5	1 518	3,3	...	...	...	...	...	...	...	...	...
Disorders related to length of gestation and fetal growth (P05-P08)	6	1 370	3,0	...	...	...	...	...	...	...	...	...
Infections specific to the perinatal period (P35-P39)	7	1 172	2,6	...	...	...	...	...	...	...	...	...
Tuberculosis (A15-A19)*	8	1 157	2,5	1	31 341	16,9	1	10 089	10,2	8	4 631	3,1
Other viral diseases (B25-B34)	9	891	1,9	3	11 331	6,1	...	...	...	...	...	...
Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	10	850	1,9	...	...	...	...	...	...	...	...	...
Human immunodeficiency virus [HIV] disease (B20-B24)	...	...	...	2	14 555	7,8	10	2 821	2,8	...	...	...
Certain disorders involving the immune mechanism (D80-D89)	...	...	...	5	8 126	4,4	...	...	...	...	...	...
Other forms of heart disease (I30-I52)	...	...	...	7	4 342	2,3	4	5 057	5,1	3	11 613	7,9
Inflammatory diseases of the central nervous system (G00-G09)	...	...	...	8	3 473	1,9	...	...	...	...	...	...
Cerebrovascular diseases (I60-I69)	...	...	...	9	3 144	1,7	3	5 948	6,0	1	14 745	10,0
Other acute lower respiratory infections (J20-J22)	...	...	...	10	2 635	1,4	...	...	...	...	...	...
Diabetes mellitus (E10-E14)	...	...	...	...	...	...	2	6 966	7,0	2	11 712	8,0
Hypertensive diseases (I10-I15)	...	...	...	...	...	...	6	4 152	4,2	4	10 436	7,1
Chronic lower respiratory diseases (J40-J47)	...	...	...	...	...	...	7	3 761	3,8	7	6 481	4,4
Ischaemic heart diseases (I20-I25)	...	...	...	...	...	...	8	3 277	3,3	5	7 013	4,8
Malignant neoplasm of digestive organs (C15-C26)	...	...	...	...	...	...	9	3 273	3,3	9	4 617	3,1
Other natural causes		19 335	42,3		59 139	31,8		43 528	43,9		61 889	42,1
Non-natural causes		4 668	10,2		32 018	17,2		5 743	5,8		4 114	2,8
All causes		45 723	100,0		185 793	100		99 158	100,0		147 030	100,0

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

...Category not in top ten.

Leading underlying natural causes of death for children aged below five years by age groups, 2012

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) and deaths among those aged 1–4 years and among children 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 2012 was *respiratory and cardiovascular disorders specific to the perinatal period*, accounting for 35,7% of all neonatal deaths. This was followed by *other disorders originating in the perinatal period* (13,4%). Third placed were *disorders related to length of gestation and fetal growth* (11,1%) and *infections specific to the perinatal period* (10,1%) were ranked fourth. All these causes contributed 70,3% of deaths in this period.

For the post-neonatal period, the first two leading causes of death accounted for 34,0% of all causes (*intestinal infectious diseases* contributed 18,6% and *influenza and pneumonia* contributed 15,4%). 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 4,9% of deaths. *HIV disease* was the tenth leading cause of death, accounting for 1,5% of deaths occurring within the neonatal period,

For overall infant deaths, the leading cause of death was *respiratory and cardiovascular disorders specific to the perinatal period* (15,3%), followed by *intestinal infectious diseases* (11,5%), and then *influenza and pneumonia* (8,9%). These three causes accounted for 35,7% of all infant deaths.

Among age group 1–4, the three leading causes of death were *intestinal infectious diseases* (14,6%), *influenza and pneumonia* (9,9%) and *malnutrition* (6,7%). *Tuberculosis* (3,4%) was ranked fourth and *HIV disease* ranked ninth (1,4%).

For the overall number of deaths occurring to children below five years, the first leading cause of death was *intestinal infectious diseases* (12,3%), followed by *respiratory and cardiovascular disorders specific to the perinatal period* (11,0%). *Influenza and pneumonia* (9,2%) was ranked third and *other disorders originating in the perinatal period* (4,3%) was ranked fourth. *Malnutrition* ranked fifth 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, 2012

Causes of death (based on ICD-10)	Neonatal (0-28 days)			Post-neonatal (29 days to 11 months)			Infant (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	4 023	35,7	...	...	...	1	4 078	15,3	...	...	...	2	4 079	11,0
Other disorders originating in the perinatal period (P90-P96)	2	1 509	13,4	...	...	...	4	1 574	5,9	...	...	...	4	1 574	4,3
Disorders related to length of gestation and fetal growth (P05-P08)	3	1 245	11,1	...	...	...	5	1 363	5,1	...	...	...	6	1 370	3,7
Infections specific to the perinatal period (P35-P39)	4	1 137	10,1	...	...	...	6	1 172	4,4	...	...	...	7	1 172	3,2
Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	5	833	7,4	...	...	...	7	847	3,2	...	...	...	8	850	2,3
Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	6	429	3,8	...	...	...	...	...	...	...	...	...	...	...	...
Digestive system disorders of fetus and newborn (P75-P78)	7	277	2,5	...	...	...	...	...	...	...	...	...	...	...	...
Other congenital malformations (Q80-Q89)	8	259	2,3	...	...	...	...	...	...	...	...	...	...	...	...
Congenital malformations of the circulatory system (Q20-Q28)	9	193	1,7	...	...	...	...	...	...	...	...	...	...	...	...
Intestinal infectious diseases (A00-A09)	10	188	1,7	1	2 856	18,6	2	3 044	11,5	1	1 506	14,6	1	4 550	12,3
Influenza and pneumonia (J09-J18)	...	...	...	2	2 362	15,4	3	2 362	8,9	2	1 021	9,9	3	3 383	9,2
Malnutrition (E40-E46)	...	...	...	3	757	4,9	8	757	2,9	3	692	6,7	5	1 449	3,9
Other acute lower respiratory infections (J20-J22)	...	...	...	4	529	3,4	9	542	2,0	6	195	1,9	9	737	2,0
Other bacterial diseases (A30-A49)	...	...	...	5	421	2,7	...	...	...	10	139	1,4	...	...	...
Other diseases of the respiratory system (J95-J99)	...	...	...	6	379	2,5	...	...	...	...	...	...	...	...	...
Other viral diseases (B25-B34)	...	...	...	7	374	2,4	10	512	1,9	7	184	1,8	10	696	1,9
Metabolic disorders (E70-E90)	...	...	...	8	232	1,5	...	...	...	...	...	...	...	...	...
Tuberculosis (A15-A19)*	...	...	...	9	231	1,5	...	...	...	4	349	3,4	...	...	...
Human immunodeficiency virus [HIV] disease (B20-B24)	...	...	...	10	224	1,5	...	...	...	9	142	1,4	...	...	...
Other forms of heart disease (I30-I52)	...	...	...	...	...	...	...	...	...	5	204	2,0	...	...	...
Inflammatory diseases of the central nervous system (G00-G09)	...	...	...	...	...	...	...	...	...	8	158	1,5	...	...	...
Other natural causes	...	999	8,9	...	6 160	40,2	...	9 366	35,2	...	4 105	39,8	...	14 452	39,1
Non-natural causes	...	164	1,5	...	810	5,3	...	974	3,7	...	1 629	15,8	...	2 603	7,1
All causes		11 256	100,0		15 335	100,0		26 591	100,0		10 324	100,0		36 915	100,0

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

... Category not in top ten.

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

One of the recommendations suggested by the World Health Organization in the ICD-10 is that the 15–24 age group must also be included in the analysis for international comparison (WHO, 1992). Table 4.9 shows the ten leading causes of death for this age group. *Tuberculosis* was the leading cause of death accounting for 11,7% of deaths in this age group, followed by *human immunodeficiency virus [HIV] disease* (4,7%) and then *influenza and pneumonia* (4,1%). *Other viral diseases*, *certain disorders involving the immune mechanism*, and *intestinal infectious diseases* were the fourth, fifth and sixth leading causes of death, respectively.

Table 4.9: The ten leading underlying natural causes of death for the population aged 15–24 years, 2012

Causes of death (based on ICD-10)	15–24		
	Rank	Number	Percentage
Tuberculosis (A15-A19)*	1	2 711	11,7
Human immunodeficiency virus [HIV] disease (B20-B24)	2	1 092	4,7
Influenza and pneumonia (J09-J18)	3	956	4,1
Other viral diseases (B25-B34)	4	866	3,7
Certain disorders involving the immune mechanism (D80-D89)	5	651	2,8
Intestinal infectious diseases (A00-A09)	6	511	2,2
Inflammatory diseases of the central nervous system (G00-G09)	7	442	1,9
Other forms of heart disease (I30-I52)	8	412	1,8
Episodic and paroxysmal disorders (G40-G47)	9	301	1,3
Other acute lower respiratory infections (J20-J22)	10	239	1,0
Other natural causes		5 831	25,2
Non-natural causes		9 171	39,6
All causes		23 183	100,0

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

Leading underlying natural causes of death by province of death occurrence

Table 4.10 shows the provincial differentials in the ranking of the ten leading underlying causes of death for 2012. *Tuberculosis* was the leading cause of death in all provinces except Western Cape and Limpopo. *Diabetes mellitus* was the leading cause of death accounting for 6,7% deaths in Western Cape while *influenza and pneumonia* was the leading cause of death in Limpopo accounting for 9,7% deaths. Between 1997 and 2011, *tuberculosis* was the leading cause of death in Western Cape and in 2012 the leading cause of death was *diabetes mellitus*. Similarly, Free State has until 2012 had *influenza and pneumonia* as the leading causes of death, but in 2012 *tuberculosis* was the leading cause of death in the province. The changes in the leading causes of death for Western Cape and Free State need to be monitored over time for concrete conclusions to be made about changes in mortality patterns.

The highest number of deaths due to *tuberculosis* were recorded in KwaZulu-Natal with 12 826 deaths, followed by Gauteng with 7 637 deaths. However, with regard to proportions, KwaZulu-Natal (13,3%) had the highest, followed by Mpumalanga (12,0%). Western Cape (6,4%) had the lowest proportion of deaths due to *tuberculosis*.

The causes of death that were common for all nine provinces were *diabetes mellitus*, *tuberculosis*, *cerebrovascular diseases*, *human immunodeficiency virus [HIV] disease*, *hypertensive disease* and *other forms of heart disease*. However, the ranks of these causes differed widely between provinces. For example, while *human immunodeficiency virus [HIV] disease* was the second leading cause of death in Northern Cape (contributing 6,8% of all deaths in this province), it was the fifth leading cause in Western Cape (contributing 5,7% of all deaths in the province) and was the tenth leading cause of death in Limpopo (contributing 2,1% of all deaths in the province).

Malignant neoplasms of digestive organs and *malignant neoplasms of respiratory and intrathoracic organs* were among the ten leading causes of death only in Western Cape, together accounting for 8,3% deaths. Western Cape was also the only province where *influenza and pneumonia* was not part of the ten leading causes of death.

Ischaemic diseases featured in four provinces namely Western Cape, Northern Cape, KwaZulu-Natal and Gauteng. *Chronic lower respiratory diseases* were in the top ten only in three provinces (Western Cape, Eastern Cape and Northern Cape) while *intestinal infectious diseases* were in the leading causes of death only in Free State, KwaZulu-Natal, North West, Mpumalanga and Limpopo.

Detailed information on the distribution of the ten leading underlying causes by provinces, sex and age is provided in Appendices L to L9.

Table 4.10: The ten leading underlying natural causes of death in each province of death occurrence, 2012*

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	3 114	6,7	4	2 431	3,7	7	478	3,4	6	1 236	3,5	3	5 049	5,2	7	1 253	3,5	5	3 766	3,8	5	1 577	4,3	4	2 229	4,5
Tuberculosis (A15-A19)*	2	2 952	6,4	1	7 072	10,8	1	1 233	8,8	1	3 264	9,3	1	12 826	13,3	1	3 722	10,4	1	7 637	7,7	1	4 369	12,0	2	4 175	8,5
Ischaemic heart diseases (I20-I25)	3	2 845	6,2	...	...	...	9	366	2,6	...	...	...	10	2 173	2,2	...	...	...	8	2 907	2,9	...	...	...	...	...	...
Cerebrovascular diseases (I60-I69)	4	2 793	6,1	2	2 930	4,5	3	657	4,7	4	1 837	5,2	2	5 383	5,6	5	1 717	4,8	4	4 285	4,3	3	2 086	5,7	5	2 149	4,4
Human immunodeficiency virus [HIV] disease (B20-B24)	5	2 647	5,7	7	2 293	3,5	2	945	6,8	8	1 188	3,4	4	4 817	5,0	9	1 092	3,0	6	3 244	3,3	9	1 343	3,7	10	1 033	2,1
Chronic lower respiratory diseases (J40-J47)	6	2 208	4,8	5	2 400	3,7	5	533	3,8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Malignant neoplasms of digestive organs (C15-C26)	7	1 924	4,2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	8	1 888	4,1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hypertensive diseases (I10-I15)	9	1 752	3,8	9	2 032	3,1	6	510	3,7	5	1 318	3,8	9	2 964	3,1	4	1 743	4,9	7	2 986	3,0	8	1 371	3,8	8	1 414	2,9
Other forms of heart disease (I30-I52)	10	1 447	3,1	3	2 881	4,4	8	448	3,2	3	1 868	5,3	5	4 486	4,6	3	2 057	5,7	3	5 147	5,2	6	1 505	4,1	7	1 636	3,3
Other viral diseases (B25-B34)	...	...	...	6	2 311	3,5	...	...	...	10	862	2,5	7	3 791	3,9	6	1 456	4,1	9	2 660	2,7	7	1 411	3,9	6	1 701	3,5
Influenza and pneumonia (J09-J18)	...	...	...	8	2 096	3,2	4	554	4,0	2	2 850	8,1	6	4 012	4,1	2	2 596	7,2	2	5 916	6,0	2	2 409	6,6	1	4 747	9,7
Certain disorders involving the immune mechanism (D80-D89)	...	...	...	10	1 501	2,3	10	310	2,2	9	1 155	3,3	...	...	...	10	1 077	3,0	10	2 354	2,4	10	1 155	3,2	9	1 189	2,4
Intestinal infectious diseases (A00-A09)	...	...	...	...	...	...	...	...	...	7	1 227	3,5	8	3 429	3,5	8	1 167	3,3	...	...	...	4	1 838	5,1	3	3 091	6,3
Other natural causes	...	17 070	37,0	...	30 991	47,3	...	6 406	45,9	...	15 047	42,9	...	38 378	39,7	...	14 964	41,8	...	47 575	48,3	...	13 694	37,7	...	21 824	44,4
Non-natural causes	...	5 508	11,9	...	6 543	10,0	...	1 531	11,0	...	3 202	9,1	...	9 441	9,8	...	2 980	8,3	...	10 072	10,2	...	3 541	9,8	...	3 933	8,0
All causes		46 148	100,0		65 481	100,0		13 971	100,0		35 054	100,0		96 749	100,0		35 824	100,0		98 549	100,0		36 299	100,0		49 121	100,0

*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.

Underlying causes of death by district municipality of death occurrence

Main group

Appendices M to M2 provide the number of deaths by main groups of underlying causes of death by district municipalities for 2012, and Appendices N to N2 provide their percentage distributions. The main groups have been re-grouped into 11 groups to facilitate analysis at this level of geography. Similar information is available at local municipality level and may be requested from Statistics South Africa.

With the exception of Western Cape, *certain infectious and parasitic diseases* were the most common main group of causes of death in all provinces. Deaths due to this main group were highest in KwaZulu-Natal (27,8%) and Mpumalanga (27,4%), and lowest in Western Cape (16,1%). Districts with the highest proportion of deaths due to *certain infectious and parasitic diseases* were uMkhanyakude (36,3%), uThungulu (33,0%) and iLembe (32,9%).

Diseases of the circulatory system were more prevalent in Western Cape and contributed the highest proportion of deaths in this province (20,7%). They were the second most common underlying main group of causes in all other provinces, with the exception of Limpopo where *diseases of the respiratory system* were second. The third in all provinces, with the exception of Western Cape and Limpopo, were *diseases of the respiratory system*. Districts with the highest proportion of deaths due to *diseases of the circulatory system* were Central Karoo (23,9%) and Eden (23,4%), followed by City of Tshwane, Overberg and West Coast (all at 22,4%).

Neoplasms were the second most common underlying main group of causes in Western Cape, accounting for 17,4% deaths in that province. Mpumalanga and Limpopo had the lowest proportion of deaths due to *neoplasms*, both at 4,9%. Districts with the highest proportions of deaths due to *neoplasms* were Overberg (19,4%) and City of Cape Town (18,0%).

Broad groups

The ten leading natural causes of death by district municipality are shown in Appendices O to O8. For four provinces (Eastern Cape, KwaZulu-Natal, North West and Mpumalanga), *tuberculosis* was the leading cause of deaths for all districts. However, whereas it was the leading cause of death in three out of six districts in Western Cape, three out of five in Limpopo and four out of five in Northern Cape, Free State and Gauteng. With the exception of Cape Winelands, City of Cape Town, Overberg (all in Western Cape) and Namakwa in Northern Cape, the leading cause of death was either *tuberculosis* or *influenza and pneumonia* in all districts.

For the districts in Western Cape where *tuberculosis* was not the leading cause of death, *cerebrovascular diseases* were the leading cause in Cape Winelands, *diabetes mellitus* in City of Cape Town and *ischaemic heart diseases* in Overberg. In Northern Cape, the only district where *tuberculosis* was not the leading cause of death was Namakwa, with *chronic lower respiratory diseases* as the leading cause of death. *Influenza and pneumonia* was the leading cause of death for districts in Free State, Gauteng and Limpopo where *tuberculosis* was not the leading cause.

HIV disease was among the ten leading underlying causes of death in at least one district municipality in all provinces, however, it was not a leading cause of death in any of the districts. It was among the ten leading causes of death in all district municipalities in Western Cape, North West and Gauteng. *HIV disease* was the second leading cause of death in all districts in Northern Cape except Namakwa, where *ischaemic heart disease* was the second leading cause of death. Districts with the highest proportion of deaths due to *HIV disease* were uMkhanyakude (13,3%), uMgungundlovu (8,4%) and uThungulu (6,2%) all in KwaZulu-Natal; Frances Baard (8,5%) and Siyanda (6,3) both in Northern Cape; Central Karoo in Western Cape (6,3%); OR Tambo in Eastern Cape (6,2%); and Thabo Mofutsanyane in Free State (6,1%);

Underlying natural causes of death by population group

Due to the large proportion of unknown or unspecified cases, the ten leading underlying natural causes of death by population group are provided in Appendix P and discussed in Appendix P1.

4.8 Non-natural causes of death

Information on specific causes of death provided on the form, and the resulting ICD-10 code, can be used to determine whether the death was due to natural or non-natural causes. This subsection discusses non-natural causes of death based on all *external causes of morbidity and mortality* derived from the causes of death specified on the death notification forms. All *external causes of morbidity and mortality* (codes V01 up to Y98) are treated as non-natural causes of death.

A proportion of 9,8% of all deaths that occurred in 2012 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. The majority of non-natural causes of death resulted from *other external causes of accidental injury* (60,1%). In terms of all deaths, *other external causes of accidental injury* accounted for 5,9% of all deaths.

Event of undetermined intent was the second most common non-natural cause of death and accounted for 14,7% of non-natural causes. The third most common cause of non-natural deaths was *transport accidents* (11,2%), followed by *assault* (10,2%) and *complications of medical and surgical care* (2,7%). About 1% of non-natural deaths were due to *intentional self-harm* (1,0%) and *sequelae of external causes of morbidity and mortality* (0,1%). In 2012, there was one registered death due to *legal intervention and operations of war*.

Table 4.11: Distribution of non-natural causes of death by broad groups, 2012

Causes of death (based on ICD-10, 1992)	Number	Percentage of non-natural causes	Percentage of all causes (N = 480 476)
Other external causes of accidental injury (W00-X59)	28 391	60,1	5,9
Event of undetermined intent (Y10-Y34)	6 936	14,7	1,4
Transport accidents (V01-V99)	5 284	11,2	1,1
Assault (X85-Y09)	4 816	10,2	1,0
Complications of medical and surgical care (Y40-Y84)	1 270	2,7	0,3
Intentional self-harm (X60-X84)	484	1,0	0,1
Sequelae of external causes of morbidity and mortality (Y85-Y89)	38	0,1	0,0
Legal intervention and operations of war (Y35-Y36)	1	0,0	0,0
Total	47 220	100,0	

A breakdown of deaths due to *other external causes of accidental injury* is shown in Table 4.12 to provide information that can be used to better understand deaths due to this cause, which comprised about 60% of all non-natural deaths. The table shows that almost half of these deaths were due to *accidental exposure to other and unspecified factors* (48,6%). This includes *accidents not elsewhere classified and exposure to unspecified factor causing other and unspecified injury*. The next common cause was *other accidental threats to breathing* (17,2%) which comprises *accidental hanging and strangulation*. Deaths due to *exposure to inanimate mechanical forces* came third and nearly all (98,4%) of these were *due to discharge from other and unspecified firearms*. *Exposure to smoke, fire and flames* (7,9%) was the fourth most common *external cause of accidental injury* followed by *accidental drowning and submersion* (5,7%).

Table 4.12: Distribution of deaths due to other external causes of accidental injury, 2012

Cause of death (based on ICD-10)	Number	Percentage
Accidental exposure to other and unspecified factors (X58-X59)	13 786	48,6
Other accidental threats to breathing (W75-W84)	4 877	17,2
Exposure to inanimate mechanical forces (W20-W49)	4 080	14,4
Exposure to smoke, fire and flames (X00-X09)	2 247	7,9
Accidental drowning and submersion (W65-W74)	1 615	5,7
Accidental poisoning by and exposure to noxious substances (X40-X49)	900	3,2
Exposure to forces of nature (X30-X39)	337	1,2
Exposure to electric current, radiation and extreme ambient air temperature and pressure (W85-W99)	303	1,1
Falls (W00-W19)	136	0,5
Contact with venomous animals and plants (X20-X29)	59	0,2
Exposure to animate mechanical forces (W50-W64)	28	0,1
Overexertion, travel and privation (X50-X57)	17	0,1
Contact with heat and hot substances (X10-X19)	6	0,0
Total	28 391	100,0

Non-natural causes of death by age and sex

Table 4.13 shows the distribution of non-natural causes of death by sex and broad age groups (0–14, 15–19, 50–64, and 65 and older) for deaths that occurred in 2012. For both sexes, the age group mostly affected by non-natural causes of death was the age group 15–49, where deaths due to non-natural causes accounted for 17,2% of all deaths. The second most affected age group by non-natural causes of death was 0–14 accounting for 10,2% deaths, and the least affected were those aged 65 years and older with less than 3% of deaths occurring in this age group.

Compared to other age groups, those aged 0–14 had higher proportions of *transport accidents* and *other external causes of accidental injury*, whilst *other external causes* and *event of undetermined intent* were more common among those aged 15–49. *Complications of medical and surgical care* were higher among those aged 65 and above (10,8%). *Other external causes of accidental injury* were highest in all age groups, followed by *transport accidents* in 0–14, *events of undetermined intent* among 15–49 and 50–64. *Complications of medical and surgical care* were highest amongst those aged 65 and older.

The comparison between males and females indicates that males had a higher percentage of deaths due to non-natural causes. The percentage of deaths linked to non-natural causes for males was 14,1%, almost three times the percentage of female deaths due to non-natural causes (4,9%). The proportions of deaths due to non-natural causes were generally higher among males, as compared to females, at all ages and the notable difference in proportion of deaths due to non-natural deaths between the two sexes was higher at age group 15–49 (25,4% for males and 7,2% for females).

Excluding deaths due to *other external causes of accidental injury* and *event of undetermined intent*, female deaths were mostly linked to *transport accidents* and *complications of medical and surgical care*. These causes accounted for 12,2% and 5,8% respectively. For males, the most common non-natural cause of death was *assault* (11,8%) followed by *transport accidents* (10,9%). For each of the sexes, *intentional self-harm* and *sequelae of external causes of morbidity and mortality* were very rare.

Table 4.13: Underlying non-natural causes of death by age group and sex, 2012

Causes of death based on ICD-10	Number					Percentage				
	0-14	15-49	50-64	65+	Total	0-14	15-49	50-64	65+	Total
Both sexes*										
Transport accidents (V01-V99)	577	3 670	707	275	5 229	12,4	11,5	12,3	6,7	11,2
Other external causes of accidental injury (W00-X59)	3 463	18 134	3 524	2 856	27 977	74,2	56,6	61,4	69,4	60,1
Intentional self-harm (X60-X84)	15	389	48	28	480	0,3	1,2	0,8	0,7	1,0
Assault (X85-Y09)	75	4 242	317	129	4 763	1,6	13,2	5,5	3,1	10,2
Event of undetermined intent (Y10-Y34)	453	5 129	840	369	6 791	9,7	16,0	14,6	9,0	14,6
Legal intervention and operations of war (Y35-Y36)	0	0	1	0	1	0,0	0,0	0,0	0,0	0,0
Complications of medical and surgical care (Y40-Y84)	84	443	293	444	1 264	1,8	1,4	5,1	10,8	2,7
Sequelae of external causes of morbidity and mortality (Y85-Y89)	1	11	13	13	38	0,0	0,0	0,2	0,3	0,1
Subtotal	4 668	32 018	5 743	4 114	46 543	100,0	100,0	100,0	100,0	100,0
Non-natural causes	4 668	32 018	5 743	4 114	46 543	10,2	17,2	5,8	2,8	9,7
Natural causes	41 055	153 775	93 415	142 916	431 161	89,8	82,8	94,2	97,2	90,3
All causes	45 723	185 793	99 158	147 030	477 704	100,0	100,0	100,0	100,0	100,0
Males**										
Transport accidents (V01-V99)	326	2 839	518	162	3 845	11,6	10,9	12,2	7,7	10,9
Other external causes of accidental injury (W00-X59)	2 112	14 706	2 615	1 417	20 850	75,0	56,7	61,5	67,3	59,4
Intentional self-harm (X60-X84)	8	302	37	22	369	0,3	1,2	0,9	1,0	1,1
Assault (X85-Y09)	48	3 741	266	78	4 133	1,7	14,4	6,3	3,7	11,8
Event of undetermined intent (Y10-Y34)	278	4 132	652	227	5 289	9,9	15,9	15,3	10,8	15,1
Legal intervention and operations of war (Y35-Y36)	0	0	1	0	1	0,0	0,0	0,0	0,0	0,0
Complications of medical and surgical care (Y40-Y84)	42	223	154	189	608	1,5	0,9	3,6	9,0	1,7
Sequelae of external causes of morbidity and mortality (Y85-Y89)	1	7	9	11	28	0,0	0,0	0,2	0,5	0,1
Subtotal	2 815	25 950	4 252	2 106	35 123	100,0	100,0	100,0	100,0	100,0
Non-natural causes	2 815	25 950	4 252	2 106	35 123	11,6	25,4	7,3	3,3	14,1
Natural causes	21 397	76 305	54 231	61 546	213 479	88,4	74,6	92,7	96,7	85,9
All causes	24 212	102 255	58 483	63 652	248 602	100,0	100,0	100,0	100,0	100,0
Females***										
Transport accidents (V01-V99)	251	819	188	112	1 370	13,8	13,8	12,7	5,6	12,2
Other external causes of accidental injury (W00-X59)	1 325	3 363	900	1 439	7 027	72,7	56,6	60,9	71,7	62,5
Intentional self-harm (X60-X84)	7	87	11	6	111	0,4	1,5	0,7	0,3	1,0
Assault (X85-Y09)	27	477	51	51	606	1,5	8,0	3,5	2,5	5,4
Event of undetermined intent (Y10-Y34)	172	971	185	142	1 470	9,4	16,3	12,5	7,1	13,1
Complications of medical and surgical care (Y40-Y84)	41	219	139	255	654	2,2	3,7	9,4	12,7	5,8
Sequelae of external causes of morbidity and mortality (Y85-Y89)	0	4	4	1	9	0,0	0,1	0,3	0,0	0,1
Subtotal	1 823	5 940	1 478	2 006	11 247	100,0	100,0	100,0	100,0	100,0
Non-natural causes	1 823	5 940	1 478	2 006	11 247	8,7	7,2	3,6	2,4	4,9
Natural causes	19 122	76 942	39 051	81 290	216 405	91,3	92,8	96,4	97,6	95,1
All causes	20 945	82 882	40 529	83 296	227 652	100,0	100,0	100,0	100,0	100,0

*Excluding 2 772 cases with unspecified age; **Excluding 1 428 cases with unspecified age; *** Excluding 714 cases with unspecified age.

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 2012. Western Cape (11,9%) and Northern Cape (11,0%) had the highest proportion of deaths due to non-natural causes. The lowest percentage of deaths due to non-natural causes were observed in Limpopo (8,0%) and North West (8,3%).

Transport accidents were highest in Limpopo, responsible for 32,7% of deaths. *Assault* was highest in Western Cape (19,1%) and *event of undetermined intent* was highest in Gauteng (21,3%). *Intentional self-harm*, *complications of medical and surgical care*, and *sequelae of external causes of morbidity and mortality* were least common, each affecting less than 10% of non-natural deaths in each province. The highest proportion of deaths due to *intentional self-harm* was in Northern Cape (5,1%).

In all provinces, *other external causes of accidental* were the leading non-natural cause of deaths. However, for all the provinces, with the exception of Limpopo, 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 Limpopo, deaths due to *other external causes of accidental injury* were 47,0%.

The second leading non-natural causes of deaths differed by province. *Event of undetermined intent* was the second leading non-natural cause of death in KwaZulu-Natal, North West and Gauteng. *Assault* was the second leading non-natural cause of death in Western Cape, Eastern Cape and Northern Cape. *Transport accidents* were the second leading cause of non-natural causes in Free State, Mpumalanga and Limpopo.

Non-natural causes of death by district municipalities

The information provided in Appendices N to N2 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 were observed in Overberg in Western Cape (13,8%) and Siyanda in Northern Cape (13,5%). The lowest percentage of deaths due to non-natural causes was observed in Dr Ruth Segomotsi Mompati in North West (5,6%) and Mopani in Limpopo (6,5%). Non-natural causes of death were less than 10% in all districts for only Limpopo and North West.

Table 4.14: Underlying non-natural causes of death by province, 2012

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)	503	9,1	654	10,0	213	13,9	556	17,4	985	10,4	346	11,6	325	3,2	341	9,6	1 285	32,7
Other external causes of accidental injury (W00-X59)	2 993	54,3	3 730	57,0	874	57,1	1 794	56,0	5 799	61,4	1 667	55,9	6 658	66,1	2 722	76,9	1 847	47,0
Intentional self-harm (X60-X84)	101	1,8	24	0,4	78	5,1	28	0,9	133	1,4	36	1,2	18	0,2	25	0,7	30	0,8
Assault (X85-Y09)	1 054	19,1	1002	15,3	264	17,2	472	14,7	899	9,5	282	9,5	536	5,3	106	3,0	173	4,4
Event of undetermined intent (Y10-Y34)	647	11,7	999	15,3	59	3,9	254	7,9	1 374	14,6	583	19,6	2 147	21,3	283	8,0	547	13,9
Legal intervention and operations of war (Y35-Y36)	0	0,0	0	0,0	0	0,0	0	0,0	0	0,0	0	0,0	0	0,0	0	0,0	0	0,0
Complications of medical and surgical care (Y40-Y84)	198	3,6	132	2,0	42	2,7	096	3,0	245	2,6	65	2,2	376	3,7	62	1,8	51	1,3
Sequelae of external causes of morbidity and mortality (Y85-Y89)	12	0,2	2	0,0	1	0,1	2	0,1	6	0,1	1	0,0	12	0,1	2	0,1		0,0
Sub-total	5 508	100,0	6 543	100,0	1 531	100,0	3 202	100,0	9 441	100,0	2 980	100,0	10 072	100,0	3 541	100,0	3 933	100,0
Non-natural causes	5 508	11,9	6 543	10,0	1 531	11,0	3 202	9,1	9 441	9,8	2 980	8,3	10 072	10,2	3 541	9,8	3 933	8,0
Natural causes	40 640	88,1	58 938	90,0	12 440	89,0	31 852	90,9	87 308	90,2	32 844	91,7	88 477	89,8	32 758	90,2	45 188	92,0
All causes	46 148	100,0	65 481	100,0	13 971	100,0	35 054	100,0	96 749	100,0	35 824	100,0	98 549	100,0	36 299	100,0	49 121	100,0

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 2012 was six causes. These causes are recorded as immediate, contributing or underlying causes of death. As shown in Table 4.1 proportion of 56,9% death notification forms had only one cause entered on the form in 2012.

Table 4.15 shows the total number of times a specific cause of death was recorded on the 2012 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*.

Tuberculosis was the most frequently recorded cause of death in 2012, mentioned in a total of 64 238 death notification forms. In terms of percentage distribution, 13,4% of all death notification forms had *tuberculosis* recorded as either immediate, contributing or underlying cause of death. The second mostly mentioned causes of death were *ill-defined and unknown causes of mortality* mentioned in 60 378 (12,6%) death notification forms. *Other forms of heart diseases* were third frequently stated causes, cited in 11,0% of the death notification forms.

Other external causes of accidental injury were the seventh, stated in 6,1% of the forms and the only non-natural cause appearing among the 20 most commonly reported causes of death. *Human immunodeficiency virus [HIV] disease* was ranked thirteenth, appearing in 19 454 (4,0%) of the death notification forms.

The most frequently stated main groups of underlying causes of death in the death notification forms for 2012 was *certain infectious and parasitic diseases* which appeared in more than 30,1% of the death notification forms. The second main groups of underlying causes of death mentioned the most was *diseases of the circulatory system*, mentioned in 30,2% forms. *Diseases of the respiratory system* were mentioned in at least 20,6% of the death notification forms.

Table 4.15: Distribution of the 20 most commonly reported causes of death, 2012

Rank	Causes of death (based on ICD-10)	Number of deaths in which the causes was reported	Percentage of all deaths
1	Tuberculosis (A15-A19)*	64 238	13,4
2	Ill-defined and unknown causes of mortality (R95-R99)	60 378	12,6
3	Other forms of heart disease (I30-I52)	52 792	11,0
4	Influenza and pneumonia (J09-J18)	50 253	10,5
5	Hypertensive diseases (I10-I15)	41 569	8,7
6	Cerebrovascular diseases (I60-I69)	33 010	6,9
7	Other external causes of accidental injury (W00-X59)	29 417	6,1
8	Other viral diseases (B25-B34)	26 167	5,4
9	Diabetes mellitus (E10-E14)	25 039	5,2
10	Intestinal infectious diseases (A00-A09)	22 841	4,8
11	Renal failure (N17-N19)	22 726	4,7
12	Other bacterial diseases (A30-A49)	21 744	4,5
13	Human immunodeficiency virus [HIV] disease (B20-B24)	19 454	4,0
14	Certain disorders involving the immune mechanism (D80-D89)	19 373	4,0
15	Other diseases of the respiratory system (J95-J99)	17 876	3,7
16	Ischaemic heart diseases (I20-I25)	17 829	3,7
17	Chronic lower respiratory diseases (J40-J47)	17 724	3,7
18	Metabolic disorders (E70-E90)	17 198	3,6
19	Other acute lower respiratory infections (J20-J22)	13 119	2,7
20	Malignant neoplasm of ill-defined, secondary and unspecified sites (C76-C80)	11 470	2,4

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

Table 4.16 provides 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, *excluding the main group of symptoms and signs not elsewhere classified (R00-R99)*. 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, 47 471 deaths had *tuberculosis* as the underlying cause and another 16 767 deaths had it as an immediate or contributing cause. This gives a total of 64 238 death notification forms that had *tuberculosis* mentioned on them.

The percentage column shows the percentage distribution of whether a specific cause was stated as an underlying, immediate or contributing cause. Where *human immunodeficiency virus [HIV] disease* was reported on the form, it was selected as underlying in 95,9% of the forms; *diabetes mellitus* was selected as underlying cause in 84,8% of the forms. *Tuberculosis* was attributed as an underlying cause to 73,9% of forms and 72,7% to *cerebrovascular diseases* as an underlying cause. The causes of death which, when mentioned, were least selected as the underlying causes were *other forms of heart diseases* (40,9%) and *hypertensive diseases* (39,0%).

Table 4.16: Number and percentage of deaths selected as underlying or reported as immediate or contributing causes of death, 2012

Causes of death (ICD-10)	Underlying rank	Number of deaths			Percentage of any mention		
		Underlying	Immediate or contributing	Total recorded	Underlying	Immediate or contributing	Total recorded
Tuberculosis (A15-A19)*	1	47 471	16 767	64 238	73,9	26,1	100,0
Influenza and pneumonia (J09-J18)	2	26 385	23 868	50 253	52,5	47,5	100,0
Cerebrovascular diseases (I60-I69)	3	23 994	9 016	33 010	72,7	27,3	100,0
Other forms of heart disease (I30-I52)	4	21 612	31 180	52 792	40,9	59,1	100,0
Diabetes mellitus (E10-E14)	5	21 229	3 810	25 039	84,8	15,2	100,0
Human immunodeficiency virus [HIV] disease (B20-B24)	6	18 663	791	19 454	95,9	4,1	100,0
Hypertensive diseases (I10-I15)	7	16 195	25 374	41 569	39,0	61,0	100,0
Other viral diseases (B25-B34)	8	15 057	11 110	26 167	57,5	42,5	100,0
Intestinal infectious diseases (A00-A09)	9	14 948	7 893	22 841	65,4	34,6	100,0
Chronic lower respiratory diseases (J40-J47)	10	12 228	5 496	17 724	69,0	31,0	100,0

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

5. Summary and concluding remarks

The South African government has identified the need to transform the health care system so as to step up the fight against HIV/AIDS, tuberculosis, non-communicable diseases and other causes of mortality such as accidents and injuries. The statistics on mortality and causes of death provide the information needed for evidence-based decision-making.

The results generally showed that the number of deaths in the country continues to decline. The total number of deaths that occurred in 2012 and were registered at DHA was 480 476, which was a decline of 6,2% from the 512 310 deaths that occurred in 2011. Timely registration of deaths continues to increase, with 74,9% of deaths registered within three days, up from 72,8% in 2011. It is expected that this figure will increase with the new regulations requiring that notice of death should be given within 72 hours, therefore there needs to be awareness campaigns so that deaths are registered in the required time-frame.

Differentials in mortality by age and sex from 2008 to 2011 showed that there were more male deaths than female deaths for all age groups, except for age groups 20–24, 25–29 and ages 70 and older. In 2012, it was the first time in six years that the sex ratio at death for age group 20–29 was higher among males compared to females. This is indicative of the improving levels of mortality patterns among females. Further analysis of deaths by sex shows that female deaths peaked at ages 70–84, whereas in 2011 female deaths peaked at ages 30–39. This conforms to expected demographic patterns, where deaths should be in infancy and older ages. As such, the pattern is reflective of a society where mortality patterns are starting to normalise.

In general, the first top five causes of death maintained their positions in 2012. *Tuberculosis* retained its position as the leading cause of death in 2012, albeit with declining proportions. Similarly *influenza and pneumonia*, *cerebrovascular diseases*, *other forms of heart disease* and *diabetes mellitus* occupied previous positions observed in 2011 as the second, third, fourth and fifth ranked causes, respectively.

Human immunodeficiency virus [HIV] disease, *hypertensive diseases* and *other viral diseases* increased one level up from 2011. The most notable change in the top leading causes of death in 2012 was the plummeting of *intestinal infectious diseases*, which moved to the ninth position, dropping down three levels in 2011 and six rankings from 2010. This dramatic decline in *intestinal infectious diseases* is reflected further among males and females, where it moved from fifth place among males and sixth place among females to ninth place for both sexes. Notwithstanding these changes, *intestinal infectious diseases* were still the leading causes of death for children aged below five years.

Another change observed was the replacement of *influenza and pneumonia* as the second leading cause of death among females. *Cerebrovascular diseases* became the second leading cause of death among females. Similarly, *diabetes mellitus* replaced *tuberculosis* as the leading cause of death in Western Cape. The rise of *diabetes mellitus* has been observed in all provinces but Gauteng, where it continued to be in position five. Other notable changes in the ranking of *diabetes mellitus* were in Eastern Cape, Northern Cape and KwaZulu-Natal. Another change which occurred in 2012 was *tuberculosis* becoming the leading cause of death in Free State, where *influenza and pneumonia* was the leading cause of death from time immemorial.

This downward trend is reflective of the continuous decline in the proportion of communicable diseases whilst non-communicable diseases are on an incline. For example, *certain infectious and parasitic diseases* declined from 24,8% in 2010 to 22,2% in 2012. Similarly, *diseases of the respiratory system* declined from 12,4% in 2010 to 10,9% in 2012. Non-communicable diseases increased from 2010 to 2012 with gradual increases observed among *diseases of the circulatory system*, *neoplasms*, *endocrine and metabolic diseases*.

The addition of causes of death among children under five did not show differences between infants and children under five, however, slight differences were observed for children 1–4 and children under five, with the former having *malnutrition*, *other acute lower respiratory infections* and *other viral diseases* ranked higher than in children under five. Additionally, *tuberculosis*, *human immunodeficiency virus [HIV] disease*, *other forms of heart diseases* and *inflammatory diseases of the central nervous system* were not in the top leading causes of death among children aged below five years, whilst *respiratory and cardiovascular disorders specific to the perinatal period*, *other*

disorders originating in the perinatal period, disorders related to length of gestation and fetal growth, and fetus and newborn affected by maternal factors and complications of pregnancy, labour and delivery were underlying causes of death for children below five years and not those aged 1–4.

The proportion of deaths due to non-natural deaths continued to increase in 2012. All provinces had *other external causes of accidental injury* as the leading causes. Proportions of non-natural deaths were highest in Western Cape and lowest in Limpopo. Similar patterns as those observed in 2011 also manifested in 2012, whereby Limpopo had the highest proportion of non-natural deaths owing to *transport accidents* and Western Cape had the highest proportion of non-natural deaths owing to *assault*. The number and proportion of deaths due to non-natural deaths remains higher among males compared to females and is mostly concentrated between ages 15–49 years.

The evaluation of the mortality and causes of death data is important in order to detect quality issues and enhance its value in informing health policies and programmes. Over the years, timeliness in death registration has improved, with approximately 91,0% of deaths being registered within a week of death occurrence. Death registration coverage in South Africa has improved and, in the case of adults, has been estimated at 94,0% for the period 2007 to 2011.

Improvements have been noted in the reporting of age, sex, and province of usual residence of the deceased. However, the information on population group, province of birth, marital status, industry and occupation remain poorly reported. In addition, there is a high percentage of deaths (13,6%) classified to *symptoms, signs and abnormal clinical findings*.

Notwithstanding some quality issues highlighted in this statistical release, the data on mortality and causes of death are an invaluable source of information on the population health status, making it important both for advocacy and action. It is anticipated that the impact of the training of medical practitioners in completing death notification forms that was initiated by Stats SA in partnership with the DHA and the Department of Health (DoH) during 2012–2013 will be observed in the near future. Further integrated and inclusive efforts involving departments responsible for the registration of deaths and the civil society are required in order for improvements in the quality of mortality and causes of death to be fully realised.

References

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

Bennett, N.G. & 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. & 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.

National Planning Commission, 2011. National Development Plan. Pretoria: The Presidency.

Republic of South Africa, 1959. Inquests Act, 1959 (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, 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), 2013. *Millennium Development Goals Country Report*. Pretoria: Statistics South Africa.

Stats SA (Statistics South Africa), 2014. *Mortality and causes of death in South Africa, 2011: findings from death notification form*. Pretoria: Statistics South Africa.

United Nations, 2002. *Principles and recommendations for a vital statistics system, Second Revision*. Department of economic and social affairs: United Nations publication.

WHO (World Health Organization) 1992. *International classification of diseases and related health problems, Tenth Revision*. Geneva: World Health Organization.

WHO (World Health Organization), 2009. *International classification of diseases and related health problems, Tenth Revision*. Volume 1, 2008 Edition. Geneva: World Health Organization.

WHO (World Health Organization), 2014a “*Civil registration: why counting births and deaths is important*”, Fact sheet Number 324, May 2014, available at <http://www.who.int/mediacentre/factsheets/fs324/en/> Accessed on 25 June 2014.

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

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

Appendices

Appendix A: Definitions

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

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

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

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

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

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

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

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

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

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

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

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

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


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

Appendix B: Reverse side of the BI-1663 death notification form

NOTIFICATION / REGISTER OF DEATH / STILL BIRTH		BI - 1663 Page 2															
INFORMATION FOR MEDICAL AND HEALTH USE ONLY (After completion seal to ensure confidentiality)		Space for Bar Code															
SERIAL No: A 01857265																	
FILE No:	DATE:																
F DEMOGRAPHIC DETAILS																	
Initials and Surname of deceased <input type="text"/>																	
Identity Number <input type="text"/>																	
Place of death 1. Hospital: (Inpatient <input type="checkbox"/> ER/ Outpatient <input type="checkbox"/> DOA <input type="checkbox"/>) 2. Nursing Home <input type="checkbox"/> 3. Home <input type="checkbox"/> 4. Other (Specify) <input type="checkbox"/>																	
FACILITY NAME (If not institution, give street and number)																	
Usual residential address of deceased # Suburb <input type="text"/>																	
Town / Village <input type="text"/>																	
Name of Plot, Farm, etc. Census Enumerator Area <input type="text"/>																	
Street name and number																	
Deceased's Education (Specify <input checked="" type="checkbox"/> only highest class completed/achieved)																	
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>None</td><td>Gr1</td><td>Gr2</td><td>Gr3</td><td>Gr4</td><td>Gr5</td><td>Gr6</td><td>Gr7</td><td>Gr8 Form 1</td><td>Gr9 Form 2</td><td>Gr10 Form 3 NTC1</td><td>Gr11 Form 4 NTC2</td><td>Gr12 Form 5 NTC3</td><td>Univ Tech</td><td>CODE</td> </tr> </table>			None	Gr1	Gr2	Gr3	Gr4	Gr5	Gr6	Gr7	Gr8 Form 1	Gr9 Form 2	Gr10 Form 3 NTC1	Gr11 Form 4 NTC2	Gr12 Form 5 NTC3	Univ Tech	CODE
None	Gr1	Gr2	Gr3	Gr4	Gr5	Gr6	Gr7	Gr8 Form 1	Gr9 Form 2	Gr10 Form 3 NTC1	Gr11 Form 4 NTC2	Gr12 Form 5 NTC3	Univ Tech	CODE			
Postal Code <input type="text"/>																	
Province <input type="text"/>																	
Country <input type="text"/>																	
USUAL OCCUPATION OF DECEASED (give type of work done during most of working life. Do not use retired)																	
TYPE OF BUSINESS/INDUSTRY (e.g. Mining, Farming) refer to instructions																	
Was the deceased a smoker* five years ago? (<input checked="" type="checkbox"/>) : Yes <input type="checkbox"/> Do not know <input type="checkbox"/> Not applicable (minor) <input type="checkbox"/>																	
G MEDICAL CERTIFICATE OF CAUSE OF DEATH																	
PART 1. Enter the disease, injuries or complications that caused the death. Do not enter the mode of dying, such as cardiac or respiratory arrest, shock, or heart failure. List only one cause on each line.																	
IMMEDIATE CAUSE (Final disease or condition resulting in death) a. _____ Due to (or as a consequence of) _____																	
Sequentially list conditions, if any, leading to immediate cause. Enter UNDERLYING CAUSE last (Disease or injury that initiated events resulting in death) b. _____ Due to (or as a consequence of) _____																	
c. _____ Due to (or as a consequence of) _____																	
d. _____ Due to (or as a consequence of) _____																	
PART 2. Other significant conditions contributing to death but not resulting in the underlying cause given in Part 1. _____																	
If a female, was she pregnant 42 days prior to death? (<input checked="" type="checkbox"/>) : Yes <input type="checkbox"/> No <input type="checkbox"/>																	
If stillborn, please write mass in grams <input type="text"/>																	
Do you consider the deceased to be: African <input type="checkbox"/> White <input type="checkbox"/> Indian <input type="checkbox"/> Coloured <input type="checkbox"/> Other <input type="checkbox"/> (Specify) _____																	
Method of ascertainment of cause of death:																	
1. Autopsy <input type="checkbox"/> 2. Opinion of attending medical practitioner <input type="checkbox"/> 3. Opinion of attending medical practitioner on duty <input type="checkbox"/>																	
4. Opinion of registered professional nurse <input type="checkbox"/> 5. Interview of family member <input type="checkbox"/>																	
6. Other <input type="checkbox"/> (Specify) _____																	
<div style="display: flex; justify-content: space-between;"> # Where someone lived on most days * Someone who smokes tobacco on most days </div>																	

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

G.P.-S. 09/09



REPUBLIC OF SOUTH AFRICA
DEPARTMENT OF HOME AFFAIRS

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

DHA-1663 A
Page 1 of 3

BARCODE

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

Serial number

A. PARTICULARS OF THE DECEASED

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

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

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

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

☐ 2.2 Still born child

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

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

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

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

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

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

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

4.2 Province of Death/still birth

5. Place of Registration of Death / still birth

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

7. Home telephone no.

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

9. Age at last birthday if DOB is unknown

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

11. Gender: ☐ 11.1 Male ☐ 11.2 Female ☐ 11.3 Indeterminable

12. Surname

13. Previous / Maiden Surname

14. Forenames

15. Usual* Residential Address: Street

Town

Province

Postal code

16. Citizenship

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

16.2 Province of Birth

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

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

Non e	Gr R	Gr 1	Gr 2	Gr 3	Gr 4	Gr 5	Gr 6	Gr 7	Gr 8 Form 1	Gr 9 Form 2	Gr 10 Form 3 NTC 1	Gr 11 Form 4 NTC 2	Gr 12 Form 5 NTC 3	Univ Tech	Unk now n
-------	------	------	------	------	------	------	------	------	-------------	-------------	--------------------	--------------------	--------------------	-----------	-----------

(mark with a ☒)

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

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

1. Agriculture, hunting, forestry and fishing	2. Mining and quarrying	3. Manufacturing	4. Electricity, gas and water supply	5. Construction	6. Wholesale and retail trade; repair of motor vehicles, motor cycles and personal and household goods; hotels and restaurants	7. Transport, storage and communication	8. Financial intermediation, insurance, real estate and business services	9. Community, social and personal services	10. Private households, extraterritorial organisations, representatives of foreign governments & other activities not adequately defined
---	-------------------------	------------------	--------------------------------------	-----------------	--	---	---	--	--


21. Was the deceased a regular** smoker five years ago? (mark with a ☒)

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

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

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

G.P.-S. 09/09



REPUBLIC OF SOUTH AFRICA
DEPARTMENT OF HOME AFFAIRS

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

DHA-1663 A
Page 2 of 3

Barcode

Serial number

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

B. CERTIFICATE BY ATTENDING MEDICAL PRACTITIONER / PROFESSIONAL NURSE

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

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

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

Particulars of the Medical Practitioner / Professional Nurse who filled out the form:

23. HPCSA Registration No.

24. Surname

25. Forenames

26. Name of Health Facility / Practice

27. Facility / Practice No.

28. Business Address: Street

Town

Province

Telephone No. (Office)

Postal Code

Office stamp of health facility or practice

I, the undersigned, hereby certify that I examined the body of the deceased named in section A and declare that the deceased, to the best of my knowledge and belief, died solely and exclusively due to natural or unnatural causes as indicated on paragraph 22 and in case this is not true, I shall be guilty of an offence and on conviction liable to a fine or to imprisonment for a period not exceeding five years or to both such fine and such imprisonment (Section 31(1)(b) of the Act 51 of 1992.)

Place signed

Date signed Signature

C. CERTIFICATE BY MEDICAL PRACTITIONER/ FORENSIC PATHOLOGIST

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

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

☐ 30.1 Natural ☐ 30.2 Unnatural ☐ 30.3 Under investigation

31. Date of Post-mortem

32. Name of Medico-legal Mortuary / Mortuary

33. Mortuary No.

34. Mortuary Reference Number of Deceased

35. SAPS Case No.

36. Name of Police Station

Particulars of the Medical Practitioner / Forensic Pathologist who filled out the form:

HPCSA Registration No.

37. Surname

38. Forenames

39. Business Address: Street

Town

Province

Postal Code

Telephone No. (Office)

Office stamp of mortuary

I, the undersigned, hereby certify that I examined the body of the deceased named in section A and the deceased, to the best of my knowledge and belief, died solely and exclusively due to natural or unnatural causes as indicated on paragraph 29 and in case this is not true, I shall be guilty of an offence and on conviction liable to a fine or to imprisonment for a period not exceeding five years or to both such fine and such imprisonment (Section 31(1)(b) of the Act 51 of 1992.)

Place signed

Date signed Signature

D. PARTICULARS OF INFORMANT

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

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

41. Date of Birth

42. Citizenship

43. Surname

44. Forenames

45. Residential Address: Street

Town

Province

Postal Code

Telephone No. (Home)

Cellphone No.

46. The Deceased is my: ☐ 46.1 Parent ☐ 46.2 Spouse ☐ 46.3 Child ☐ 46.4 Other, Specify

I, the undersigned, hereby certify that the identity of the deceased mentioned in section A is to the best of my knowledge and belief true and correct in case it is not true, I shall be guilty of an offence and on conviction liable to a fine or to imprisonment for a period not exceeding five years or to both such fine and such imprisonment (Section 31(1)(b) of the Act 51 of 1992.)

Signature


Date signed

Place signed

Left thumb print of informant

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

G.P.-S. 09/09



REPUBLIC OF SOUTH AFRICA
DEPARTMENT OF HOME AFFAIRS

NOTICE OF DEATH / STILL BIRTH

[Births and Deaths Registration Act 51 of 1992]
[Regulations 11 and 14]

DHA-1663 A
Page 3 of 3

BARCODE

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

Serial number

E. PARTICULARS OF FUNERAL UNDERTAKER

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

47. Name of Funeral Parlour

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

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

Details of Funeral Undertaker or Authorised Representative

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

52. Surname

53. Forenames

54. Business Address

Street

Town

Province Postal Code

Telephone No. (Office) Cellphone No.

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

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

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

Name of person who collected the deceased:

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

61. Surname

62. Forenames

Place signed

Date signed Y Y Y Y M M D D Signature

F. FOR OFFICIAL USE ONLY

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

63. Identity No.

64. Surname

65. Forenames

66. Persal No.

Documents included with this notice: ☐ Copy of the deceased's ID ☐ Copy of ID document of the informant

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

DHA-1663 was submitted by: ☐ Informant ☐ Funeral Undertaker

Left thumbprint of funeral undertaker

Office stamp of funeral undertaker

Office stamp of DHA

Appendix B2: Death notification form (DHA-1663B)

NOTICE OF DEATH / STILL BIRTH		DHA-1663 B								
Confirmation for Medical and Health use Only (After completion seal to ensure confidentiality)		Page 1 of 1								
<p>To be completed in full and submitted at the Department of Home Affairs' office by the informant or authorised party. The form to be completed in black ink with BLOCK LETTERS. Please mark with <input checked="" type="checkbox"/> the CORRECT box, where required. All fields are COMPULSORY. Incomplete applications and applications that are not legible may be considered invalid.</p>										
<p>File no _____ Date _____</p>										
G. MEDICAL CERTIFICATE OF CAUSE OF DEATH										
<p>Instructions: Section G is to be filled out by Medical Practitioner / Professional Nurse / Forensic Pathologist, who has determined the cause of death</p>										
PARTICULARS OF DECEASED										
67. Identity No. (Passport No. if foreigner) <table border="1" style="display: inline-table; width: 150px; height: 15px;"></table>										
68. Gender <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 68.1 Male <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 68.2 Female <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 68.3 Indeterminable										
69. Surname <table border="1" style="display: inline-table; width: 150px; height: 15px;"></table>										
70. Forenames <table border="1" style="display: inline-table; width: 150px; height: 15px;"></table>										
71. Population Group <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 71.1 African <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 71.2 White <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 71.3 Indian/Asian <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 71.4 Coloured <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 71.5 Other (specify) _____										
72. Place of Death <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 72.1 Hospital/Inpatient <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 72.2 ER/Outpatient <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 72.3 DOA <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 72.4 Nursing Home <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 72.5 At Home <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 72.6 Other (specify) _____										
73. Name of Health Facility/Practice <table border="1" style="display: inline-table; width: 150px; height: 15px;"></table>										
74. Facility Contact Telephone No. incl. Area Code <table border="1" style="display: inline-table; width: 100px; height: 15px;"></table>										
75. Patient File No. <table border="1" style="display: inline-table; width: 150px; height: 15px;"></table>										
76. Contact Person at Facility: Surname <table border="1" style="display: inline-table; width: 150px; height: 15px;"></table>										
Forenames <table border="1" style="display: inline-table; width: 150px; height: 15px;"></table>										
Role/Rank <table border="1" style="display: inline-table; width: 150px; height: 15px;"></table>										
G.1 FOR DEATHS OCCURRING AFTER ONE WEEK OF BIRTH										
<p>Instructions: Section G.1 is to be completed for all deaths that occurred after one week of birth</p>										
77. CAUSES OF DEATH		For office use only								
<p>Part 1 Enter the disease, injuries or complications that caused the death. Do not enter the mode of dying, such as cardiac or respiratory arrest, shock or heart failure. List only one cause on each line</p> <p>IMMEDIATE CAUSE (final disease or condition resulting in death) a) _____ Due to (or as a consequence of) _____</p> <p>Sequentially list conditions, if any, leading to immediate cause. b) _____ Due to (or as a consequence of) _____</p> <p>Enter UNDERLYING CAUSE last (Disease or injury that initiated events resulting in death) c) _____ Due to (or as a consequence of) _____</p> <p>d) _____</p> <p>Part 2 Other significant conditions contributing to death but not resulting in underlying cause given in Part 1 _____</p>		<p>Approximate interval between onset and death (Days / Months / Years) _____</p> <p>ICD-10 <table border="1" style="display: inline-table; width: 100px; height: 100px;"></table></p>								
78. If a female, was she pregnant at the time of death or up to 42 days prior to death? (<input checked="" type="checkbox"/>) <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 82.1 Yes <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 82.2 No										
79. Method used to ascertain the cause of death (tick all that apply):										
<table border="0" style="width: 100%;"> <tr> <td><input type="checkbox"/> 79.1 Autopsy</td> <td><input type="checkbox"/> 79.2 Post mortem examination</td> <td><input type="checkbox"/> 79.3 Opinion of attending medical practitioner</td> <td><input type="checkbox"/> 79.4 Opinion of attending medical practitioner on duty</td> </tr> <tr> <td><input type="checkbox"/> 79.5 Opinion of registered professional nurse</td> <td><input type="checkbox"/> 79.6 Interview of family member</td> <td><input type="checkbox"/> 79.7 Other (specify) _____</td> <td></td> </tr> </table>			<input type="checkbox"/> 79.1 Autopsy	<input type="checkbox"/> 79.2 Post mortem examination	<input type="checkbox"/> 79.3 Opinion of attending medical practitioner	<input type="checkbox"/> 79.4 Opinion of attending medical practitioner on duty	<input type="checkbox"/> 79.5 Opinion of registered professional nurse	<input type="checkbox"/> 79.6 Interview of family member	<input type="checkbox"/> 79.7 Other (specify) _____	
<input type="checkbox"/> 79.1 Autopsy	<input type="checkbox"/> 79.2 Post mortem examination	<input type="checkbox"/> 79.3 Opinion of attending medical practitioner	<input type="checkbox"/> 79.4 Opinion of attending medical practitioner on duty							
<input type="checkbox"/> 79.5 Opinion of registered professional nurse	<input type="checkbox"/> 79.6 Interview of family member	<input type="checkbox"/> 79.7 Other (specify) _____								
G.2 FOR STILL BIRTHS AND DEATHS OCCURRING WITHIN ONE WEEK OF BIRTH (PERINATAL DEATHS)										
<p>Instructions: Section G.2 is to be completed for all still births and deaths that occurred within one week of birth (perinatal deaths)</p>										
Mother	Child									
80. Identity Number <table border="1" style="display: inline-table; width: 100px; height: 15px;"></table>	80. Type of death: <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 80.1 Still birth <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 80.2 Live birth									
81. Date Of Birth <table border="1" style="display: inline-table; width: 100px; height: 15px;"></table>	90. Birth weight (in grams) <table border="1" style="display: inline-table; width: 100px; height: 15px;"></table>									
82. Age of last birthday/ DoB unknown <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table>	91. This birth was: <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 91.1 Single birth <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 91.2 First twin <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 91.3 Second twin <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 91.4 Other multiple									
83. Number of previous pregnancies resulting in: <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 83.1 Live births <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 83.2 Still births <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 83.3 Abortions	92. If still born, heartbeat ceased: <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 92.1 Before labour <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 92.2 During labour but before delivery <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 92.3 Before delivery but not known whether before or during labour									
84. Outcome of last previous pregnancy (tick one): <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 84.1 Live birth <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 84.2 Still birth <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 84.3 Abortion	93. If death occurred within 24 hours after birth, number of hours alive <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table>									
85. Date of last previous delivery <table border="1" style="display: inline-table; width: 100px; height: 15px;"></table>	94. Attendant at birth: <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 94.1 Physician <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 94.2 Trained midwife <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 94.3 Other trained person (specify) _____ <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 94.4 Other (specify) _____									
86. First day of last menstrual period <table border="1" style="display: inline-table; width: 100px; height: 15px;"></table>										
Or, if unknown, estimated duration of pregnancy (in completed weeks) <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table>										
87. Method of delivery: <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 87.1 Spontaneous <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 87.2 Forceps delivery <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 87.3 Forceps and rotation <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 87.4 Vacuum extractor <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 87.5 Caesarean section <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 87.6 Other (specify) _____										
88. Antenatal care two or more visits: <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 88.1 Yes <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 88.2 No <table border="1" style="display: inline-table; width: 50px; height: 15px;"></table> 88.3 Unknown										
95. CAUSES OF DEATH										
a. Main disease or conditions in foetus or infant _____										
b. Other diseases or conditions in foetus or infant _____										
c. Main maternal disease or condition affecting foetus or infant _____										
d. Other maternal diseases or conditions affecting foetus or infant _____										
e. Other relevant circumstances _____										
96. Autopsy information (<input checked="" type="checkbox"/>)										
<table border="0" style="width: 100%;"> <tr> <td><input type="checkbox"/> 96.1 Certified causes of death has been confirmed by autopsy</td> <td><input type="checkbox"/> 96.2 Autopsy information may be available later</td> <td><input type="checkbox"/> 96.3 Autopsy not performed</td> </tr> </table>			<input type="checkbox"/> 96.1 Certified causes of death has been confirmed by autopsy	<input type="checkbox"/> 96.2 Autopsy information may be available later	<input type="checkbox"/> 96.3 Autopsy not performed					
<input type="checkbox"/> 96.1 Certified causes of death has been confirmed by autopsy	<input type="checkbox"/> 96.2 Autopsy information may be available later	<input type="checkbox"/> 96.3 Autopsy not performed								

Appendix C: 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	12 987	11 546	203	24 736	14 927	13 254	314	28 495	14 731	13 455	438	28 624
1-4	4 050	3 650	52	7 752	4 860	4 485	96	9 441	5 068	4 637	98	9 803
5-9	1 706	1 254	17	2 977	1 779	1 435	36	3 250	1 894	1 506	34	3 434
10-14	1 547	1 191	20	2 758	1 694	1 288	23	3 005	1 649	1 305	23	2 977
15-19	3 777	2 475	23	6 275	4 106	2 904	62	7 072	4 353	3 328	89	7 770
20-24	8 177	5 450	50	13 677	8 791	6 906	109	15 806	8 640	8 291	105	17 036
25-29	10 923	7 434	43	18 400	13 077	9 857	110	23 044	13 886	12 610	141	26 637
30-34	11 831	7 191	49	19 071	14 364	9 709	128	24 201	16 290	12 260	119	28 669
35-39	11 969	6 859	51	18 879	14 606	8 926	97	23 629	16 447	10 805	111	27 363
40-44	11 783	6 401	36	18 220	13 921	7 922	94	21 937	15 205	8 910	90	24 205
45-49	12 221	6 362	52	18 635	14 185	7 673	88	21 946	14 972	8 516	100	23 588
50-54	11 294	6 239	29	17 562	12 998	7 205	79	20 282	13 868	7 752	79	21 699
55-59	12 645	7 926	46	20 617	13 921	8 873	107	22 901	14 059	8 675	84	22 818
60-64	11 184	9 288	50	20 522	12 419	9 995	60	22 474	12 678	10 038	83	22 799
65-69	12 464	11 039	45	23 548	13 239	12 454	83	25 776	12 822	12 313	91	25 226
70-74	11 285	10 059	48	21 392	12 735	11 790	53	24 578	12 852	12 247	70	25 169
75-79	11 186	12 333	44	23 563	11 415	12 480	87	23 982	10 693	11 583	63	22 339
80-84	6 600	8 777	32	15 409	7 875	11 043	48	18 966	7 600	11 317	73	18 990
85-89	3 951	6 917	25	10 893	4 257	7 805	34	12 096	4 450	7 943	51	12 444
90+	2 028	4 730	13	6 771	2 363	5 560	29	7 952	2 210	5 380	30	7 620
Unspecified	3 110	2 363	106	5 579	2 821	2 092	195	5 108	1 491	1 109	109	2 709
Total	176 718	139 484	1 034	317 236	200 353	163 656	1 932	365 941	205 858	173 980	2 081	381 919

*Data for 1997–1999 have been updated with late registrations processed in 2013/14.

Appendix C1: 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	15 001	13 523	351	28 875	15 466	14 072	307	29 845	17 870	16 190	338	34 398
1-4	5 381	4 918	86	10 385	5 878	5 301	78	11 257	6 321	5 678	87	12 086
5-9	1 998	1 595	29	3 622	2 122	1 707	28	3 857	2 400	1 962	17	4 379
10-14	1 722	1 337	36	3 095	1 748	1 467	22	3 237	1 867	1 485	24	3 376
15-19	4 320	3 484	72	7 876	4 477	3 913	62	8 452	4 735	4 287	58	9 080
20-24	8 877	9 876	84	18 837	8 939	10 929	85	19 953	9 572	12 487	110	22 169
25-29	15 077	15 725	105	30 907	16 845	19 291	108	36 244	18 637	23 314	134	42 085
30-34	18 483	15 804	108	34 395	20 912	18 728	109	39 749	23 897	23 529	147	47 573
35-39	18 551	13 601	96	32 248	21 087	15 866	101	37 054	24 081	19 442	125	43 648
40-44	17 128	11 014	78	28 220	19 340	12 857	94	32 291	21 589	15 498	113	37 200
45-49	16 121	9 563	79	25 763	17 899	10 943	62	28 904	19 296	12 656	111	32 063
50-54	15 288	9 096	65	24 449	16 894	10 143	74	27 111	18 610	11 250	102	29 962
55-59	13 933	8 873	74	22 880	14 561	9 127	66	23 754	15 403	10 009	71	25 483
60-64	14 236	11 256	67	25 559	15 109	12 069	66	27 244	16 171	12 704	82	28 957
65-69	12 588	12 067	53	24 708	13 018	12 800	64	25 882	13 744	13 282	64	27 090
70-74	13 119	14 139	67	27 325	14 043	15 123	60	29 226	13 791	15 471	62	29 324
75-79	10 351	11 536	48	21 935	10 849	12 038	61	22 948	11 096	12 836	70	24 002
80-84	8 485	12 639	32	21 156	9 163	13 910	47	23 120	9 540	14 194	60	23 794
85-89	4 681	8 229	27	12 937	4 580	8 360	31	12 971	4 375	8 317	34	12 726
90+	2 530	6 526	31	9 087	3 023	7 158	28	10 209	3 294	7 665	33	10 992
Unspecified	1 187	893	144	2 224	1 047	782	98	1 927	1 137	788	112	2 037
Total	219 057	195 694	1 732	416 483	237 000	216 584	1 651	455 235	257 426	243 044	1 954	502 424

*Data for 2000–2002 have been updated with late registrations processed in 2013/14.

Appendix C2: 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	19 952	18 036	435	38 423	21 737	19 171	530	41 438	24 044	21 924	474	46 442
1-4	7 131	6 279	78	13 488	8 253	7 626	71	15 950	8 212	7 311	80	15 603
5-9	2 777	2 197	28	5 002	3 185	2 800	13	5 998	3 358	2 800	21	6 178
10-14	2 001	1 641	25	3 667	2 139	1 776	12	3 927	2 145	1 856	17	4 018
15-19	4 837	4 553	70	9 460	4 681	4 614	41	9 336	4 770	4 541	52	9 363
20-24	10 330	14 174	104	24 608	10 363	15 058	77	25 498	10 488	14 857	89	25 434
25-29	20 011	26 208	149	46 368	19 802	27 535	111	47 448	19 311	27 244	105	46 660
30-34	27 480	28 114	143	55 737	28 431	30 624	79	59 134	28 791	31 240	105	60 136
35-39	26 423	22 637	112	49 172	28 212	25 139	87	53 438	29 404	26 232	100	55 736
40-44	24 723	18 419	118	43 260	26 458	20 547	67	47 072	27 458	21 470	84	49 012
45-49	22 023	14 470	86	36 579	23 076	16 236	64	39 376	24 425	17 363	77	41 865
50-54	20 570	12 876	68	33 514	21 099	14 089	46	35 234	21 503	14 948	57	36 508
55-59	17 191	10 976	49	28 216	18 053	12 014	33	30 100	19 692	13 304	47	33 043
60-64	17 372	13 291	56	30 719	16 961	13 388	28	30 377	16 837	13 243	34	30 114
65-69	14 654	13 884	53	28 591	15 203	13 794	26	29 023	16 365	15 174	37	31 576
70-74	14 462	16 369	55	30 886	13 434	15 421	26	28 881	12 906	15 079	33	28 018
75-79	12 061	14 110	56	26 227	11 801	14 072	15	25 888	12 211	15 910	35	28 156
80-84	9 443	13 696	39	23 178	8 640	11 952	21	20 613	8 433	11 833	21	20 287
85-89	5 435	10 193	36	15 664	5 037	9 473	19	14 529	5 447	10 336	17	15 800
90+	3 380	8 147	18	11 545	3 287	7 478	14	10 779	3 287	7 883	15	11 185
Unspecified	1 677	956	215	2 848	1 928	928	244	3 100	1 975	1 079	223	3 277
Total	283 933	271 226	1 993	557 152	291 780	283 735	1 624	577 139	301 062	295 627	1 723	598 412

*Data for 2003–2005 have been updated with late registrations processed in 2013/14.

Appendix C3: 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	25 488	22 083	725	48 296	24 821	21 660	414	46 895	24 081	21 377	296	45 754
1-4	8 387	7 569	117	16 073	7 810	7 018	47	14 875	8 192	7 192	31	15 415
5-9	3 026	2 549	17	5 592	2 867	2 499	4	5 370	2 723	2 300	6	5 029
10-14	2 386	1 915	14	4 315	2 245	1 902	2	4 149	2 226	1 889	2	4 117
15-19	4 846	4 598	38	9 482	4 883	4 204	15	9 102	4 850	4 126	26	9 002
20-24	10 866	14 811	97	25 774	10 924	13 751	51	24 726	10 718	12 903	42	23 663
25-29	19 011	26 155	84	45 250	18 510	24 596	67	43 173	18 463	23 548	43	42 054
30-34	28 886	31 021	93	60 000	28 395	29 132	68	57 595	26 824	27 267	55	54 146
35-39	29 491	26 100	78	55 669	29 428	24 898	48	54 374	29 108	24 378	47	53 533
40-44	28 116	21 857	73	50 046	27 117	21 219	47	48 383	26 091	20 231	29	46 351
45-49	25 151	17 960	45	43 156	24 887	17 903	43	42 833	24 812	17 555	31	42 398
50-54	22 801	15 615	41	38 457	22 913	15 659	17	38 589	22 757	15 577	21	38 355
55-59	20 650	14 189	42	34 881	21 443	14 625	23	36 091	21 603	14 952	20	36 575
60-64	17 069	13 348	25	30 442	17 502	13 485	11	30 998	17 758	13 920	16	31 694
65-69	17 758	15 817	25	33 600	17 960	15 847	9	33 816	18 069	15 620	10	33 699
70-74	13 595	15 610	26	29 231	13 833	15 841	8	29 682	14 163	15 320	2	29 485
75-79	12 727	17 022	24	29 773	12 596	17 086	4	29 686	12 582	17 212	4	29 798
80-84	8 951	12 347	20	21 318	8 913	12 931	3	21 847	9 035	13 866	1	22 902
85-89	6 147	12 031	11	18 189	6 362	12 214	2	18 578	5 987	11 206	1	17 194
90+	3 566	8 715	9	12 290	3 684	8 793	12	12 489	3 977	9 554	27	13 558
Unspecified	864	356	144	1 364	804	336	106	1 246	679	248	138	1 065
Total	309 782	301 668	1 748	613 198	307 897	295 599	1 001	604 497	304 698	290 241	848	595 787

*Data for 2006–2008 have been updated with late registrations processed in 2013/14.

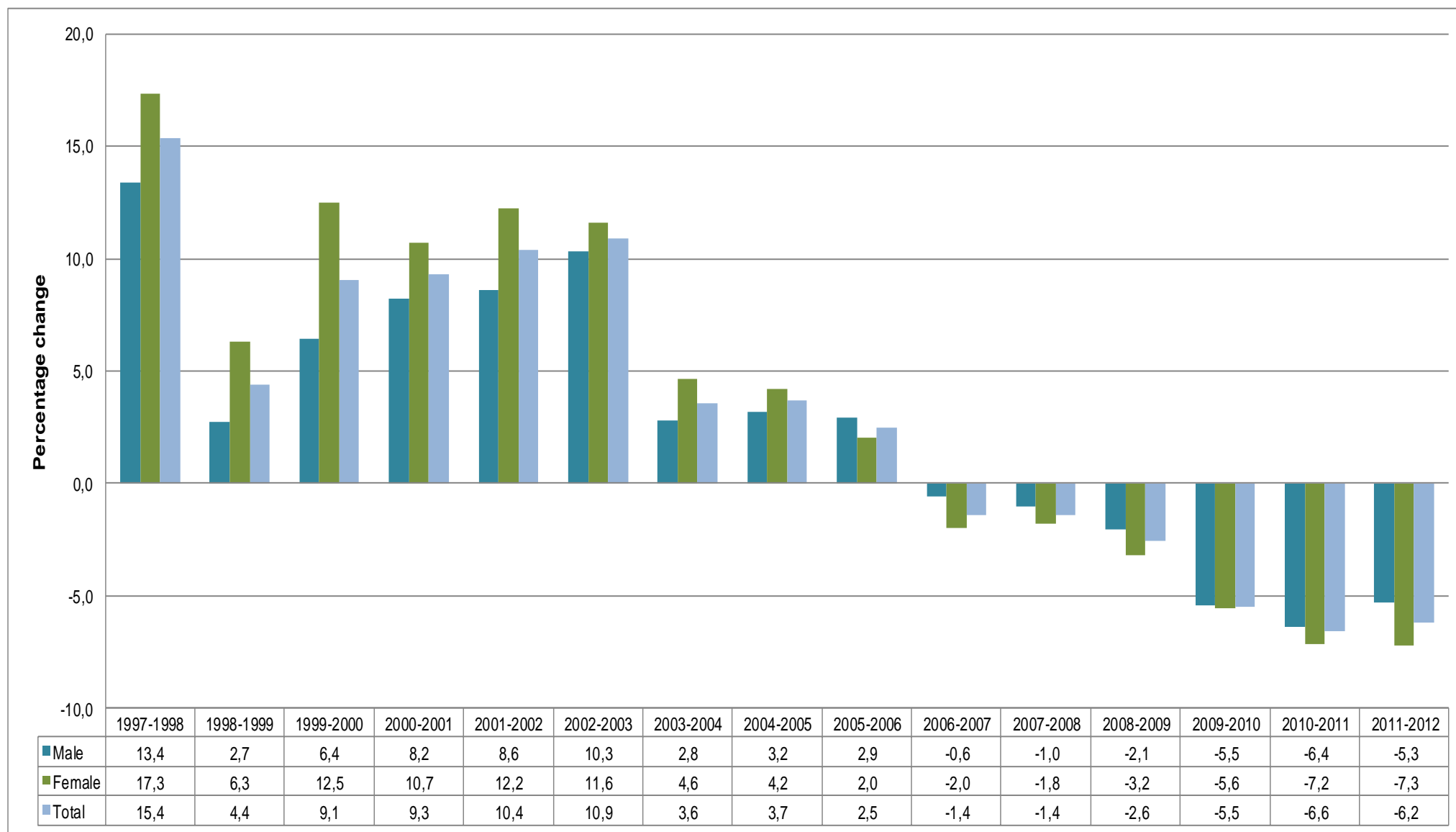
Appendix C4: Number of deaths by age, sex and year of death, 2009–2011*

Age group	2009				2010				2011			
	Male	Female	Unsp.	Total	Male	Female	Unsp.	Total	Male	Female	Unsp.	Total
0	20 963	17 691	455	39 109	18 264	16 066	377	34 707	14 817	13 136	498	28 451
1-4	6 624	6 048	31	12 703	6 995	6 086	43	13 124	5 298	4 738	46	10 082
5-9	2 353	2 025	6	4 384	2 543	2 100	5	4 648	2 341	2 022	9	4 372
10-14	2 372	2 064	4	4 440	2 430	2 115	3	4 548	2 087	1 791	5	3 883
15-19	4 661	4 133	25	8 819	4 404	3 958	18	8 380	4 106	3 546	25	7 677
20-24	9 957	11 774	52	21 783	9 411	10 661	33	20 105	8 543	8 874	83	17 500
25-29	17 684	21 631	68	39 383	16 457	19 440	62	35 959	14 894	16 071	145	31 110
30-34	24 912	24 141	77	49 130	22 369	21 382	70	43 821	19 558	17 710	140	37 408
35-39	27 589	22 330	54	49 973	24 713	20 342	47	45 102	22 359	17 410	113	39 882
40-44	25 086	19 137	52	44 275	23 272	17 601	44	40 917	20 827	15 439	98	36 364
45-49	24 286	17 299	43	41 628	22 864	16 322	56	39 242	20 869	14 864	62	35 795
50-54	22 770	15 551	38	38 359	21 949	15 185	30	37 164	21 011	14 295	72	35 378
55-59	21 716	15 101	28	36 845	20 902	14 300	33	35 235	20 287	14 189	54	34 530
60-64	19 162	14 367	20	33 549	20 056	14 770	26	34 852	20 341	14 892	58	35 291
65-69	18 156	15 694	14	33 864	17 248	14 578	21	31 847	16 922	14 214	26	31 162
70-74	15 145	15 925	16	31 086	15 826	16 665	14	32 505	16 458	16 766	21	33 245
75-79	12 706	17 750	8	30 464	11 752	16 108	8	27 868	11 660	16 436	18	28 114
80-84	9 776	15 088	9	24 873	9 920	16 202	11	26 133	9 933	16 690	14	26 637
85-89	6 136	11 208	2	17 346	5 759	10 494	5	16 258	5 965	11 140	13	17 118
90+	5 245	11 654	1	16 900	4 082	10 718	8	14 808	4 370	11 382	7	15 759
Unspecified	1 050	341	175	1 566	864	235	275	1 374	1 335	639	578	2 552
Total	298 349	280 952	1 178	580 479	282 080	265 328	1 189	548 597	263 981	246 244	2 085	512 310

*Data for 2009–2011 have been updated with late registrations processed in 2013/14.

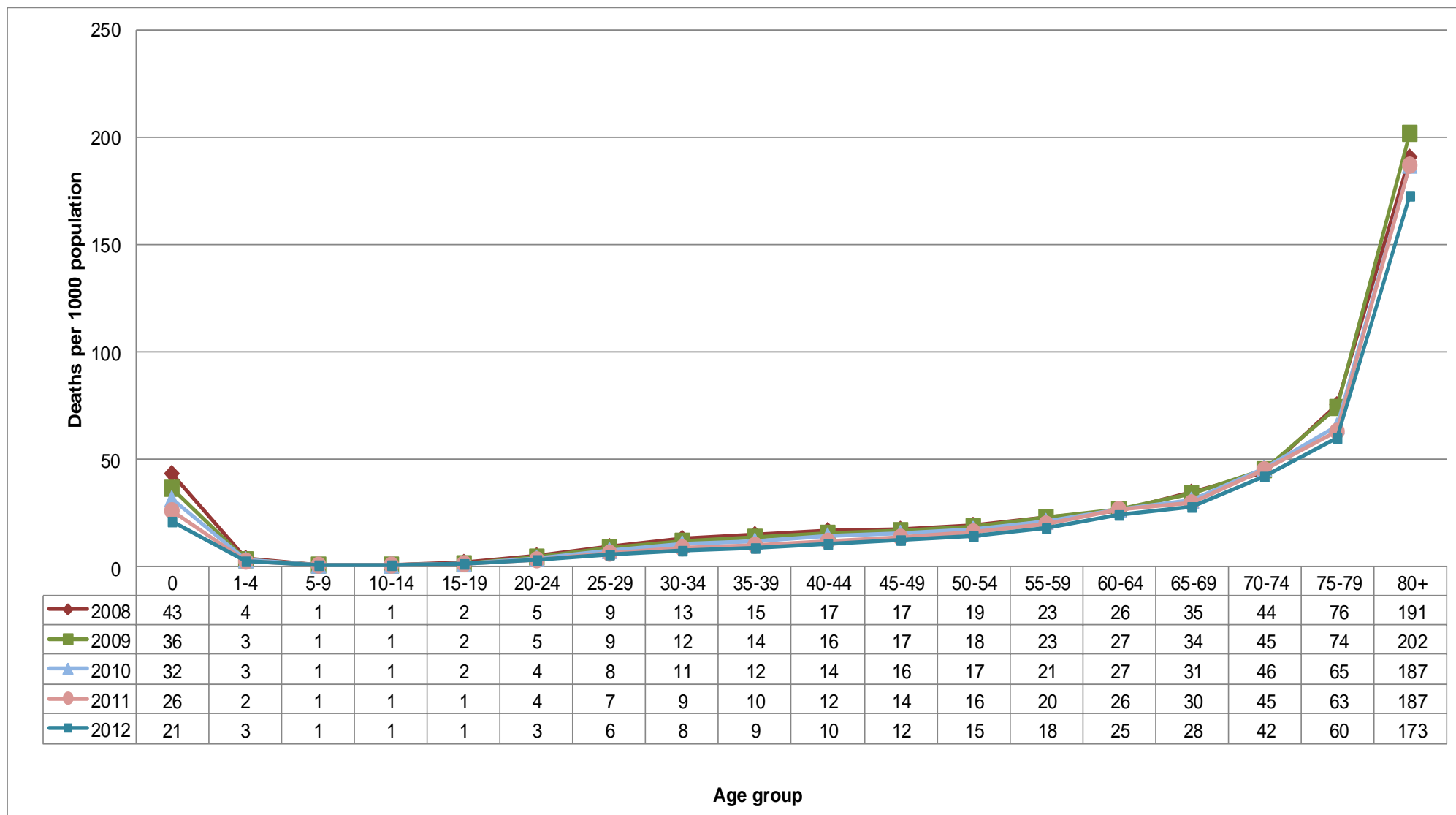
Appendix C5: Number of deaths by age, sex and year of death, 2012

Age group	2012			
	Male	Female	Unsp.	Total
0	14 007	12 070	514	26 591
1-4	5 448	4 832	44	10 324
5-9	2 575	2 181	4	4 760
10-14	2 182	1 862	4	4 048
15-19	3 989	3 300	19	7 308
20-24	8 178	7 616	81	15 875
25-29	14 213	13 845	122	28 180
30-34	17 655	15 756	150	33 561
35-39	20 193	15 331	110	35 634
40-44	19 254	13 718	93	33 065
45-49	18 773	13 316	81	32 170
50-54	19 367	13 363	66	32 796
55-59	19 461	13 147	51	32 659
60-64	19 655	14 019	29	33 703
65-69	16 585	13 507	23	30 115
70-74	15 784	15 941	14	31 739
75-79	11 709	15 958	18	27 685
80-84	9 740	16 319	11	26 070
85-89	5 632	10 826	10	16 468
90+	4 202	10 745	6	14 953
Unspecified	1 428	714	630	2 772
Total	250 030	228 366	2 080	480 476

Appendix D: Year-to-year annual percentage changes in number of deaths by sex, 1997–2012*

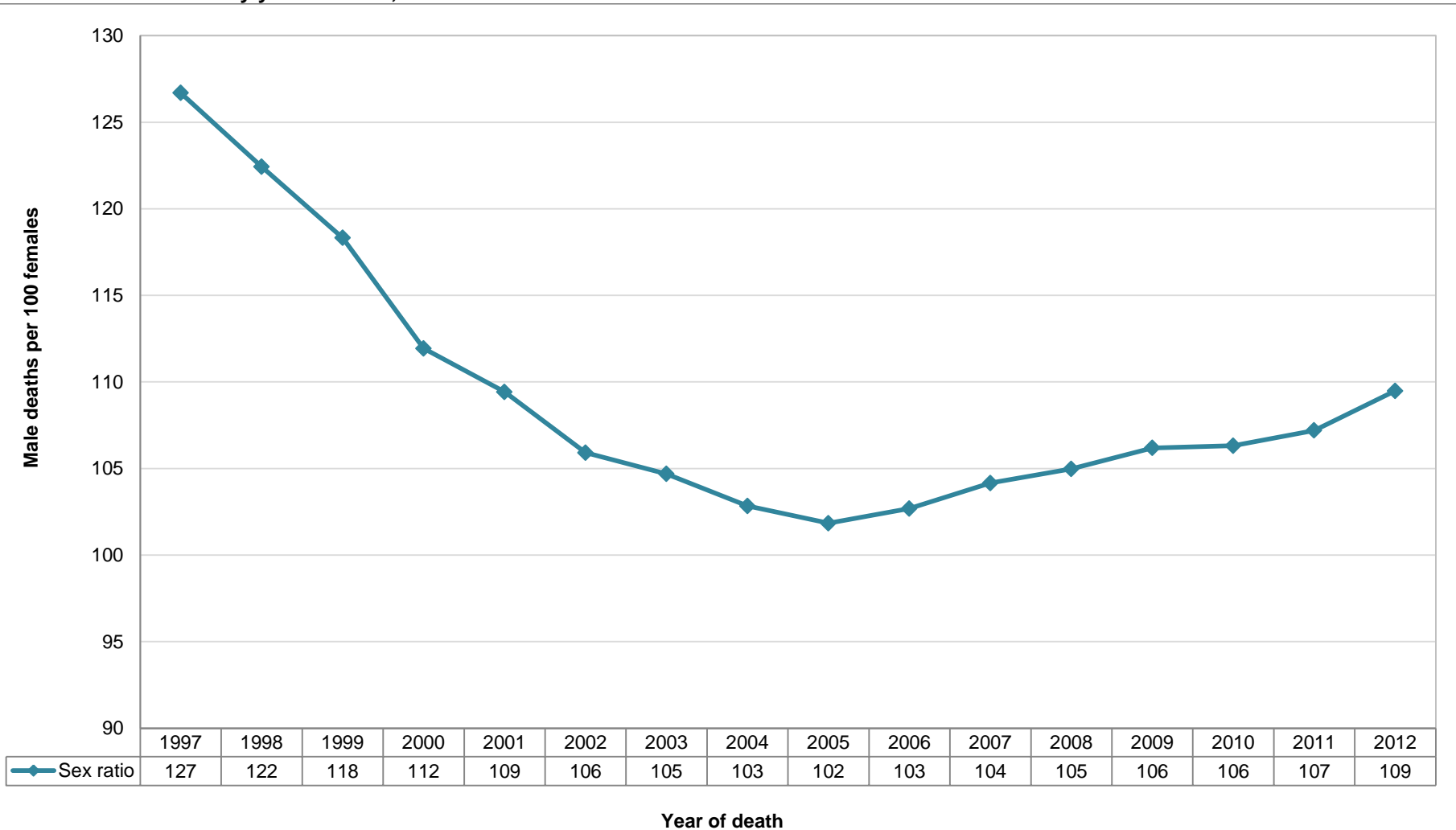
*(1) Data for 1997–2011 have been updated to include late registrations processed in 2013/14.

(2) Excluding deaths with unspecified sex.

Appendix E: Age specific death rates (ASDR) by year of death, 2008–2012*

*(1) Data for 2008–2011 have been updated to include late registrations processed in 2013/14.

(2) Excluding deaths with unspecified sex.

Appendix F: Sex ratios at death by year of death, 1997–2012*

*(1) Data for 1997–2010 have been updated to include late registrations processed in 2013/14.

(2) Excluding deaths with unspecified sex.

Appendix G: Number of deaths by province of death occurrence and province of usual residence of the deceased, 2012

Province of death occurrence	Province of usual residence of deceased											
	Western Cape	Eastern Cape	Northern Cape	Free State	KwaZulu-Natal	North West	Gauteng	Mpu-malanga	Limpopo	Foreign	Unspecified	Total
Western Cape	42 906	402	116	79	549	103	321	80	148	32	1 412	46 148
Eastern Cape	280	60 520	74	98	1 249	97	755	249	105	45	2 009	65 481
Northern Cape	117	71	12 940	148	29	277	76	19	41	21	232	13 971
Free State	86	243	237	32 763	109	397	538	69	77	199	336	35 054
KwaZulu-Natal	261	1 601	35	109	91 883	74	450	450	105	65	1 716	96 749
North West	68	119	220	294	53	31 605	1 245	71	264	82	1 803	35 824
Gauteng	212	455	73	711	714	2 041	89 120	1 611	1 216	198	2 198	98 549
Mpumalanga	29	155	16	99	352	68	640	33 585	681	139	535	36 299
Limpopo	48	100	63	56	187	325	465	918	44 568	236	2 155	49 121
Foreign	33	15	7	65	44	15	235	33	19	95	138	699
Unspecified	211	130	39	116	398	306	253	398	308	17	405	2 581
Total	44 251	63 811	13 820	34 538	95 567	35 308	94 098	37 483	47 532	1 129	12 939	480 476

Appendix G1: Percentage distribution of deaths by province of death occurrence and province of usual residence of the deceased, 2012

Province of death occurrence	Province of usual residence of deceased											
	Western Cape	Eastern Cape	Northern Cape	Free State	KwaZulu-Natal	North West	Gauteng	Mpu-malanga	Limpopo	Foreign	Unspecified	Total
Western Cape	93,0	0,9	0,3	0,2	1,2	0,2	0,7	0,2	0,3	0,1	3,1	100,0
Eastern Cape	0,4	92,4	0,1	0,2	1,9	0,2	1,2	0,4	0,2	0,1	3,1	100,0
Northern Cape	0,8	0,5	92,6	1,1	0,2	2,0	0,5	0,1	0,3	0,2	1,7	100,0
Free State	0,3	0,7	0,7	93,5	0,3	1,1	1,5	0,2	0,2	0,6	1,0	100,0
KwaZulu-Natal	0,3	1,7	0,0	0,1	95,0	0,1	0,5	0,5	0,1	0,1	1,8	100,0
North West	0,2	0,3	0,6	0,8	0,2	88,2	3,5	0,2	0,7	0,2	5,0	100,0
Gauteng	0,2	0,5	0,1	0,7	0,7	2,1	90,4	1,6	1,2	0,2	2,2	100,0
Mpumalanga	0,1	0,4	0,0	0,3	1,0	0,2	1,8	92,5	1,9	0,4	1,5	100,0
Limpopo	0,1	0,2	0,1	0,1	0,4	0,7	1,0	1,9	90,7	0,5	4,4	100,0
Foreign	4,7	2,2	1,0	9,3	6,3	2,2	33,6	4,7	2,7	13,6	19,7	100,0
Unspecified	8,2	5,0	1,5	4,5	15,4	11,9	9,8	15,4	11,9	0,7	15,7	100,0

Appendix H: Number of deaths by age, province and district municipality of death occurrence, 2012*

Province of death occurrence	District municipality of death occurrence	Age							
		0	1-4	5-14	15-49	50-64	65+	Unsp.	Total
Western Cape	Cape Winelands	251	58	55	1 943	1 704	2 595	27	6 633
	Central Karoo	37	4	13	245	181	267	1	748
	City of Cape Town	1 322	267	216	8 806	6 361	10 645	211	27 828
	Eden	184	48	40	1 486	1 239	2 192	2	5 191
	Overberg	86	19	8	580	471	945	6	2 115
	West Coast	109	29	28	946	815	1 121	16	3 064
	Unspecified	21	2	4	193	125	222	2	569
	Total	2 010	427	364	14 199	10 896	17 987	265	46 148
Eastern Cape	Alfred Nzo	263	180	190	2 209	1 099	1 878	16	5 835
	Amathole	345	240	259	4 697	2 610	5 048	45	13 244
	Buffalo City	236	94	99	2 851	1 799	2 602	8	7 689
	Cacadu	133	46	40	1 310	925	1 402	17	3 873
	Chris Hani	308	157	131	3 276	1 835	3 091	21	8 819
	Joe Gqabi	163	93	55	1 646	937	1 598	14	4 506
	Nelson Mandela Bay	309	48	61	2 102	1 497	2 244	33	6 294
	O.R.Tambo	404	397	482	6 298	2 417	4 142	31	14 171
	Unspecified	33	21	19	351	204	420	2	1 050
	Total	2 194	1 276	1 336	24 740	13 323	22 425	187	65 481
Northern Cape	Frances Baard	191	74	42	1 429	928	1 198	6	3 868
	John Taolo Gaetsewe	258	83	31	1 019	510	653	5	2 559
	Namakwa	42	13	6	308	281	445	4	1 099
	Pixley ka Seme	174	41	29	1 263	815	982	11	3 315
	Siyanda	161	50	42	1 134	676	779	7	2 849
	Unspecified	22	3	4	100	57	93	2	281
	Total	848	264	154	5 253	3 267	4 150	35	13 971
Free State	Fezile Dabi	336	104	50	1 851	1 203	1 520	15	5 079
	Lejweleputswa	546	178	94	3 236	1 873	2 029	42	7 998
	Mangaung	573	150	111	3 757	2 194	2 914	15	9 714
	Thabo Mofutsanyane	671	198	137	3 838	2 009	2 623	31	9 507
	Xhariep	103	35	25	885	528	719	2	2 297
	Unspecified	28	6	7	218	87	110	3	459
	Total	2 257	671	424	13 785	7 894	9 915	108	35 054
KwaZulu-Natal	Amajuba	275	112	136	2 195	1 055	1 284	21	5 078
	eThekweni	854	348	419	9 378	4 782	6 807	134	22 722
	iLembe	297	140	219	2 411	1 052	1 497	52	5 668
	Sisonke	267	160	240	2 652	1 085	1 553	23	5 980
	Ugu	392	242	373	3 884	1 777	2 835	15	9 518
	uMgungundlovu	403	152	199	4 584	2 357	3 356	40	11 091
	uMkhanyakude	304	157	192	1 966	686	1 336	25	4 666
	uMzinyathi	369	199	201	2 091	930	1 496	31	5 317
	uThukela	486	196	238	2 904	1 295	1 824	29	6 972
	uThungulu	616	205	298	3 786	1 470	2 024	62	8 461
	Zululand	587	277	300	3 130	1 202	1 738	25	7 259
	Unspecified	158	137	196	1 523	747	1 241	15	4 017
	Total	5 008	2 325	3 011	40 504	18 438	26 991	472	96 749

*Excluding 2 581 deaths with unspecified province of death occurrence

**Appendix H: Number of deaths by age, province and district municipality of death occurrence, 2012*
(concluded)**

Province of death occurrence	District municipality of death occurrence	Age							
		0	1-4	5-14	15-49	50-64	65+	Unsp.	Total
North West	Bojanala	851	247	172	5 028	2 660	3 724	97	12 779
	Dr Kenneth Kaunda	484	124	79	3 014	1 794	2 206	48	7 749
	Dr Ruth Segomotsi Mompoti	470	166	57	2 017	1 054	1 585	5	5 354
	Ngaka Modiri Molema	696	243	133	3 572	1 729	2 556	37	8 966
	Unspecified	60	35	12	371	206	276	16	976
	Total	2 561	815	453	14 002	7 443	10 347	203	35 824
Gauteng	City of Johannesburg	1 981	433	322	11 059	6 141	9 035	577	29 548
	City of Tshwane	1 076	372	259	7 514	4 512	7 156	55	20 944
	Ekurhuleni	1 873	452	303	10 815	5 694	6 823	174	26 134
	Sedibeng	584	144	120	4 004	2 458	2 990	41	10 341
	West Rand	596	162	103	3 638	1 978	2 435	120	9 032
	Unspecified	164	63	44	1 121	516	590	52	2 550
	Total	6 274	1 626	1 151	38 151	21 299	29 029	1 019	98 549
Mpu-malanga	Ehlanzeni	681	516	393	6 341	2 664	3 728	99	14 422
	Gert Sibande	825	221	199	4 551	2 045	2 318	65	10 224
	Nkangala	513	193	163	4 224	2 105	2 650	73	9 921
	Unspecified	75	72	60	711	303	499	12	1 732
	Total	2 094	1 002	815	15 827	7 117	9 195	249	36 299
Limpopo	Capricorn	803	366	262	4 503	2 281	3 974	31	12 220
	Greater Sekhukhune	440	281	166	3 523	1 676	3 182	18	9 286
	Mopani	736	437	228	3 524	1 642	2 754	42	9 363
	Vhembe	680	425	202	3 161	1 689	3 403	63	9 623
	Waterberg	365	151	79	2 187	975	1 580	16	5 353
	Unspecified	197	161	83	1 197	545	1 085	8	3 276
	Total	3 221	1 821	1 020	18 095	8 808	15 978	178	49 121
Foreijan	Total	6	14	11	293	170	203	2	699

*Excluding 2 581 deaths with unspecified province of death occurrence.

Appendix H1: Percentage distribution of deaths by age, province and district municipality of death occurrence, 2012*

Province of death occurrence	District municipality of death occurrence	Age							
		0	1-4	5-14	15-49	50-64	65+	Unsp.	Total
Western Cape	Cape Winelands	3,8	0,9	0,8	29,3	25,7	39,1	0,4	100,0
	Central Karoo	4,9	0,5	1,7	32,8	24,2	35,7	0,1	100,0
	City of Cape Town	4,8	1,0	0,8	31,6	22,9	38,3	0,8	100,0
	Eden	3,5	0,9	0,8	28,6	23,9	42,2	0,0	100,0
	Overberg	4,1	0,9	0,4	27,4	22,3	44,7	0,3	100,0
	West Coast	3,6	0,9	0,9	30,9	26,6	36,6	0,5	100,0
	Unspecified	3,7	0,4	0,7	33,9	22,0	39,0	0,4	100,0
	Total	4,4	0,9	0,8	30,8	23,6	39,0	0,6	100,0
Eastern Cape	Alfred Nzo	4,5	3,1	3,3	37,9	18,8	32,2	0,3	100,0
	Amathole	2,6	1,8	2,0	35,5	19,7	38,1	0,3	100,0
	Buffalo City	3,1	1,2	1,3	37,1	23,4	33,8	0,1	100,0
	Cacadu	3,4	1,2	1,0	33,8	23,9	36,2	0,4	100,0
	Chris Hani	3,5	1,8	1,5	37,1	20,8	35,0	0,2	100,0
	Joe Gqabi	3,6	2,1	1,2	36,5	20,8	35,5	0,3	100,0
	Nelson Mandela Bay	4,9	0,8	1,0	33,4	23,8	35,7	0,5	100,0
	O.R.Tambo	2,9	2,8	3,4	44,4	17,1	29,2	0,2	100,0
	Unspecified	3,1	2,0	1,8	33,4	19,4	40,0	0,2	100,0
	Total	3,4	1,9	2,0	37,8	20,3	34,2	0,3	100,0
Northern Cape	Frances Baard	4,9	1,9	1,1	36,9	24,0	31,0	0,2	100,0
	John Taolo Gaetsewe	10,1	3,2	1,2	39,8	19,9	25,5	0,2	100,0
	Namakwa	3,8	1,2	0,5	28,0	25,6	40,5	0,4	100,0
	Pixley ka Seme	5,2	1,2	0,9	38,1	24,6	29,6	0,3	100,0
	Siyanda	5,7	1,8	1,5	39,8	23,7	27,3	0,2	100,0
	Unspecified	7,8	1,1	1,4	35,6	20,3	33,1	0,7	100,0
	Total	6,1	1,9	1,1	37,6	23,4	29,7	0,3	100,0
Free State	Fezile Dabi	6,6	2,0	1,0	36,4	23,7	29,9	0,3	100,0
	Lejweleputswa	6,8	2,2	1,2	40,5	23,4	25,4	0,5	100,0
	Mangaung	5,9	1,5	1,1	38,7	22,6	30,0	0,2	100,0
	Thabo Mofutsanyane	7,1	2,1	1,4	40,4	21,1	27,6	0,3	100,0
	Xhariep	4,5	1,5	1,1	38,5	23,0	31,3	0,1	100,0
	Unspecified	6,1	1,3	1,5	47,5	19,0	24,0	0,7	100,0
	Total	6,4	1,9	1,2	39,3	22,5	28,3	0,3	100,0
KwaZulu-Natal	Amajuba	5,4	2,2	2,7	43,2	20,8	25,3	0,4	100,0
	eThekweni	3,8	1,5	1,8	41,3	21,0	30,0	0,6	100,0
	iLembe	5,2	2,5	3,9	42,5	18,6	26,4	0,9	100,0
	Sisonke	4,5	2,7	4,0	44,3	18,1	26,0	0,4	100,0
	Ugu	4,1	2,5	3,9	40,8	18,7	29,8	0,2	100,0
	uMgungundlovu	3,6	1,4	1,8	41,3	21,3	30,3	0,4	100,0
	uMkhanyakude	6,5	3,4	4,1	42,1	14,7	28,6	0,5	100,0
	uMzinyathi	6,9	3,7	3,8	39,3	17,5	28,1	0,6	100,0
	uThukela	7,0	2,8	3,4	41,7	18,6	26,2	0,4	100,0
	uThungulu	7,3	2,4	3,5	44,7	17,4	23,9	0,7	100,0
	Zululand	8,1	3,8	4,1	43,1	16,6	23,9	0,3	100,0
	Unspecified	3,9	3,4	4,9	37,9	18,6	30,9	0,4	100,0
	Total	5,2	2,4	3,1	41,9	19,1	27,9	0,5	100,0

*Excluding 2 581 deaths with unspecified province of death occurrence.

Appendix H1: Percentage distribution of deaths by age, province and district municipality of death occurrence, 2012* (concluded)

Province of death occurrence	District municipality of death occurrence	Age							
		0	1-4	5-14	15-49	50-64	65+	Unsp.	Total
North West	Bojanala	6,7	1,9	1,3	39,3	20,8	29,1	0,8	100,0
	Dr Kenneth Kaunda	6,2	1,6	1,0	38,9	23,2	28,5	0,6	100,0
	Dr Ruth Segomotsi Mompati	8,8	3,1	1,1	37,7	19,7	29,6	0,1	100,0
	Ngaka Modiri Molema	7,8	2,7	1,5	39,8	19,3	28,5	0,4	100,0
	Unspecified	6,1	3,6	1,2	38,0	21,1	28,3	1,6	100,0
	Total	7,1	2,3	1,3	39,1	20,8	28,9	0,6	100,0
Gauteng	City of Johannesburg	6,7	1,5	1,1	37,4	20,8	30,6	2,0	100,0
	City of Tshwane	5,1	1,8	1,2	35,9	21,5	34,2	0,3	100,0
	Ekurhuleni	7,2	1,7	1,2	41,4	21,8	26,1	0,7	100,0
	Sedibeng	5,6	1,4	1,2	38,7	23,8	28,9	0,4	100,0
	West Rand	6,6	1,8	1,1	40,3	21,9	27,0	1,3	100,0
	Unspecified	6,4	2,5	1,7	44,0	20,2	23,1	2,0	100,0
	Total	6,4	1,6	1,2	38,7	21,6	29,5	1,0	100,0
Mpumalanga	Ehlanzeni	4,7	3,6	2,7	44,0	18,5	25,8	0,7	100,0
	Gert Sibande	8,1	2,2	1,9	44,5	20,0	22,7	0,6	100,0
	Nkangala	5,2	1,9	1,6	42,6	21,2	26,7	0,7	100,0
	Unspecified	4,3	4,2	3,5	41,1	17,5	28,8	0,7	100,0
	Total	5,8	2,8	2,2	43,6	19,6	25,3	0,7	100,0
Limpopo	Capricorn	6,6	3,0	2,1	36,8	18,7	32,5	0,3	100,0
	Greater Sekhukhune	4,7	3,0	1,8	37,9	18,0	34,3	0,2	100,0
	Mopani	7,9	4,7	2,4	37,6	17,5	29,4	0,4	100,0
	Vhembe	7,1	4,4	2,1	32,8	17,6	35,4	0,7	100,0
	Waterberg	6,8	2,8	1,5	40,9	18,2	29,5	0,3	100,0
	Unspecified	6,0	4,9	2,5	36,5	16,6	33,1	0,2	100,0
	Total	6,6	3,7	2,1	36,8	17,9	32,5	0,4	100,0
Foreign	Total	0,9	2,0	1,6	41,9	24,3	29,0	0,3	100,0

*Excluding 2 581 deaths with unspecified province of death occurrence.

Appendix I: Number of deaths by sex, province and district municipality of death occurrence, 2012*

Province of death occurrence	District municipality of death occurrence	Sex				Sex ratio at death**
		Male	Female	Unspecified	Total	
Western Cape	Cape Winelands	3 656	2 963	14	6 633	123
	Central Karoo	400	346	2	748	116
	City of Cape Town	15 249	12 461	118	27 828	122
	Eden	2 871	2 314	6	5 191	124
	Overberg	1 198	914	3	2 115	131
	West Coast	1 695	1 364	5	3 064	124
	Unspecified	337	231	1	569	146
	Total	25 406	20 593	149	46 148	123
Eastern Cape	Alfred Nzo	2 846	2 969	20	5 835	96
	Amathole	6 807	6 403	34	13 244	106
	Buffalo City	3 925	3 738	26	7 689	105
	Cacadu	1 998	1 862	13	3 873	107
	Chris Hani	4 561	4 242	16	8 819	108
	Joe Gqabi	2 366	2 123	17	4 506	111
	Nelson Mandela Bay	3 289	2 998	7	6 294	110
	O.R.Tambo	7 094	7 000	77	14 171	101
	Unspecified	528	520	2	1 050	102
	Total	33 414	31 855	212	65 481	105
Northern Cape	Frances Baard	1 993	1 853	22	3 868	108
	John Taolo Gaetsewe	1 398	1 156	5	2 559	121
	Namakwa	608	491		1 099	124
	Pixley ka Seme	1 702	1 600	13	3 315	106
	Siyanda	1 562	1 278	9	2 849	122
	Unspecified	167	113	1	281	148
	Total	7 430	6 491	50	13 971	114
Free State	Fezile Dabi	2 708	2 363	8	5 079	115
	Lejweleputswa	4 319	3 656	23	7 998	118
	Mangaung	5 053	4 619	42	9 714	109
	Thabo Mofutsanyane	4 868	4 621	18	9 507	105
	Xhariep	1 237	1 054	6	2 297	117
	Unspecified	252	204	3	459	124
	Total	18 437	16 517	100	35 054	112
KwaZulu-Natal	Amajuba	2 558	2 505	15	5 078	102
	eThekweni	11 830	10 834	58	22 722	109
	iLembe	2 849	2 784	35	5 668	102
	Sisonke	2 966	2 997	17	5 980	99
	Ugu	4 880	4 625	13	9 518	106
	uMgungundlovu	5 605	5 453	33	11 091	103
	uMkhanyakude	2 299	2 320	47	4 666	99
	uMzinyathi	2 570	2 736	11	5 317	94
	uThukela	3 460	3 494	18	6 972	99
	uThungulu	4 272	4 156	33	8 461	103
	Zululand	3 655	3 578	26	7 259	102
	Unspecified	2 073	1 936	8	4 017	107
	Total	49 017	47 418	314	96 749	103

*Excluding 2 581 deaths with unspecified province of death occurrence. ** Male deaths per 100 female deaths.

**Appendix I: Number of deaths by sex, province and district municipality of death occurrence, 2012*
(concluded)**

Province of death occurrence	District municipality of death occurrence	Sex				Sex ratio at death**
		Male	Female	Unspecified	Total	
North West	Bojanala	6 783	5 921	75	12 779	115
	Dr Kenneth Kaunda	4 182	3 537	30	7 749	118
	Dr Ruth Segomotsi Mompati	2 818	2 525	11	5 354	112
	Ngaka Modiri Molema	4 684	4 229	53	8 966	111
	Unspecified	573	397	6	976	144
	Total	19 040	16 609	175	35 824	115
Gauteng	City of Johannesburg	15 472	13 743	333	29 548	113
	City of Tshwane	11 016	9 873	55	20 944	112
	Ekurhuleni	13 787	12 171	176	26 134	113
	Sedibeng	5 586	4 720	35	10 341	118
	West Rand	4 963	3 933	136	9 032	126
	Unspecified	1 382	1 131	37	2 550	122
	Total	52 206	45 571	772	98 549	115
Mpumalanga	Ehlanzeni	7 418	6 943	61	14 422	107
	Gert Sibande	5 225	4 956	43	10 224	105
	Nkangala	5 248	4 645	28	9 921	113
	Unspecified	927	796	9	1 732	116
	Total	18 818	17 340	141	36 299	109
Limpopo	Capricorn	6 115	6 092	13	12 220	100
	Greater Sekhukhune	4 542	4 722	22	9 286	96
	Mopani	4 618	4 716	29	9 363	98
	Vhembe	4 666	4 928	29	9 623	95
	Waterberg	2 784	2 557	12	5 353	109
	Unspecified	1 690	1 572	14	3 276	108
	Total	24 415	24 587	119	49 121	99
Foreign	Unspecified	455	241	3	699	189

*Excluding 2 581 deaths with unspecified province of death occurrence. ** Male deaths per 100 female deaths.

Appendix J: Distribution of deaths by broad groups of all underlying causes of death, 2012

Causes of death (based on the 10th revision, International Classification of Disease, 1992)	Number	Percentage
All causes	480 476	100,0
Ill-defined and unknown causes of mortality (R95-R99)	62 623	13,0
Tuberculosis (A15-A19)	47 472	9,9
Other external causes of accidental injury (W00-X59)	28 391	5,9
Influenza and pneumonia (J09-J18)	26 385	5,5
Cerebrovascular diseases (I60-I69)	23 994	5,0
Other forms of heart disease (I30-I52)	21 612	4,5
Diabetes mellitus (E10-E14)	21 230	4,4
Human immunodeficiency virus [HIV] disease (B20-B24)	18 663	3,9
Hypertensive diseases (I10-I15)	16 195	3,4
Other viral diseases (B25-B34)	15 057	3,1
Intestinal infectious diseases (A00-A09)	14 948	3,1
Chronic lower respiratory diseases (J40-J47)	12 228	2,5
Ischaemic heart diseases (I20-I25)	11 734	2,4
Certain disorders involving the immune mechanism (D80-D89)	10 990	2,3
Malignant neoplasms of digestive organs (C15-C26)	9 390	2,0
Event of undetermined intent (Y10-Y34)	6 936	1,4
Renal failure (N17-N19)	6 629	1,4
Other acute lower respiratory infections (J20-J22)	6 434	1,3
Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	5 522	1,2
Inflammatory diseases of the central nervous system (G00-G09)	5 362	1,1
Transport accidents (V01-V99)	5 284	1,1
Other bacterial diseases (A30-A49)	5 088	1,1
Assault (X85-Y09)	4 816	1,0
Diseases of liver (K70-K77)	4 475	0,9
Malignant neoplasms of female genital organs (C51-C58)	4 295	0,9
Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	4 213	0,9
Other diseases of the respiratory system (J95-J99)	3 873	0,8
Malignant neoplasms of ill-defined, secondary and unspecified sites (C76-C80)	3 481	0,7
Episodic and paroxysmal disorders (G40-G47)	3 212	0,7
Malignant neoplasms of breast (C50)	3 005	0,6
Metabolic disorders (E70-E90)	2 870	0,6
Protozoal diseases (B50-B64)	2 856	0,6
General symptoms and signs (R50-R69)	2 631	0,6
Malignant neoplasms, stated or presumed to be primary, of lymphoid, haematopoietic and related tissue (C81-C96)	2 627	0,6
Pulmonary heart disease and diseases of pulmonary circulation (I26-I28)	2 617	0,5
Aplastic and other anaemias (D60-D64)	2 592	0,5
Malignant neoplasms of male genital organs (C60-C63)	2 539	0,5
Diseases of oesophagus, stomach and duodenum (K20-K31)	2 185	0,5
Malnutrition (E40-E46)	1 845	0,4
Noninfective enteritis and colitis (K50-K52)	1 721	0,4
Other respiratory diseases principally affecting the interstitium (J80-J84)	1 675	0,4
Other disorders originating in the perinatal period (P90-P96)	1 585	0,3
Other diseases of intestines (K55-K63)	1 490	0,3
Diseases of arteries, arterioles and capillaries (I70-I79)	1 443	0,3
Disorders related to length of gestation and fetal growth (P05-P08)	1 421	0,3

Appendix J: Distribution of deaths by broad groups of all underlying causes of death, 2012 (continued)

Causes of death (based on the 10th revision, International Classification of Disease, 1992)	Number	Percentage
All causes	480 476	100,0
Malignant neoplasms of mesothelial and soft tissue (C45-C49)	1 295	0,3
Complications of medical and surgical care (Y40-Y84)	1 270	0,3
Infections specific to the perinatal period (P35-P39)	1 191	0,3
Other disorders of glucose regulation and pancreatic internal secretion (E15-E16)	1 189	0,3
Neoplasms of uncertain or unknown behaviour (D37-D48)	1 124	0,2
Organic, including symptomatic, mental disorders (F00-F09)	1 118	0,2
Malignant neoplasms of lip, oral cavity and pharynx (C00-C14)	1 068	0,2
Other diseases of the digestive system (K90-K93)	1 040	0,2
Other disorders of the nervous system (G90-G99)	991	0,2
Mycoses (B35-B49)	975	0,2
Disorders of gallbladder, biliary tract and pancreas (K80-K87)	923	0,2
Malignant neoplasms of urinary tract (C64-C68)	901	0,2
Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	899	0,2
Cerebral palsy and other paralytic syndromes (G80-G83)	791	0,2
Other degenerative diseases of the nervous system (G30-G32)	746	0,2
Arthropathies (M00-M25)	728	0,2
Diseases of veins, lymphatic vessels and lymph nodes, not elsewhere classified (I80-I89)	681	0,1
Sequelae of infectious and parasitic diseases (B90-B94)	650	0,1
Other disorders of the skin and subcutaneous tissue (L80-L99)	632	0,1
Lung diseases due to external agents (J60-J70)	617	0,1
Congenital malformations of the circulatory system (Q20-Q28)	591	0,1
Malignant neoplasms of eye, brain and other parts of central nervous system (C69-C72)	573	0,1
Malignant neoplasms of skin (C43-C44)	549	0,1
Malignant neoplasms of independent (primary) multiple sites (C97)	518	0,1
Intentional self-harm (X60-X84)	484	0,1
Other diseases of pleura (J90-J94)	481	0,1
Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	446	0,1
Other congenital malformations (Q80-Q89)	389	0,1
Coagulation defects, purpura and other haemorrhagic conditions (D65-D69)	383	0,1
Mental and behavioural disorders due to psychoactive substance use (F10-F19)	372	0,1
Chronic rheumatic heart diseases (I05-I09)	365	0,1
Systemic connective tissue disorders (M30-M36)	360	0,1
Infections of the skin and subcutaneous tissue (L00-L08)	350	0,1
Other diseases of urinary system (N30-N39)	341	0,1
Soft tissue disorders (M60-M79)	337	0,1
Digestive system disorders of fetus and newborn (P75-P78)	336	0,1
Other disorders of kidney and ureter (N25-N29)	319	0,1
Other obstetric conditions, not elsewhere classified (O95-O99)	318	0,1
Obesity and other hyperalimentation (E65-E68)	317,0	0,1
Renal tubulo-interstitial diseases (N10-N16)	294	0,1
Extrapyramidal and movement disorders (G20-G26)	288	0,1
Chromosomal abnormalities, not elsewhere classified (Q90-Q99)	284	0,1
Viral hepatitis (B15-B19)	283	0,1
Congenital malformations of the nervous system (Q00-Q07)	264	0,1
Glomerular diseases (N00-N08)	263	0,1

Appendix J: Distribution of deaths by broad groups of all underlying causes of death, 2012 (continued)

Causes of death (based on the 10th revision, International Classification of Disease, 1992)	Number	Percentage
All causes	480 476	100,0
Diseases of male genital organs (N40-N51)	255	0,1
Disorders of thyroid gland (E00-E07)	254	0,1
Viral infections characterized by skin and mucous membrane lesions (B00-B09)	252	0,1
Benign neoplasms (D10-D36)	250	0,1
Suppurative and necrotic conditions of lower respiratory tract (J85-J86)	232	0,1
Other congenital malformations of the digestive system (Q38-Q45)	231	0,1
Hernia (K40-K46)	227	0,1
Oedema, proteinuria and hypertensive disorders in pregnancy, childbirth and the puerperium (O10-O16)	220	0,1
Diseases of peritoneum (K65-K67)	208	0,0
Schizophrenia, schizotypal and delusional disorders (F20-F29)	202	0,0
Systemic atrophies primarily affecting the central nervous system (G10-G13)	181	0,0
Viral infections of the central nervous system (A80-A89)	174	0,0
Malignant neoplasms of thyroid and other endocrine glands (C73-C75)	174	0,0
Polyneuropathies and other disorders of the peripheral nervous system (G60-G64)	171	0,0
Acute upper respiratory infections (J00-J06)	167	0,0
Other and unspecified disorders of the circulatory system (I95-I99)	147	0,0
Complications of labour and delivery (O60-O75)	144	0,0
Diseases of appendix (K35-K38)	140	0,0
Malignant neoplasms of bone and articular cartilage (C40-C41)	127	0,0
Noninflammatory disorders of female genital tract (N80-N98)	125	0,0
Inflammatory diseases of female pelvic organs (N70-N77)	122	0,0
Osteopathies and chondropathies (M8-M94)	121	0,0
Complications predominantly related to the puerperium (O85-O92)	121	0,0
Congenital malformations and deformations of the musculoskeletal system (Q65-Q79)	118	0,0
Other diseases of upper respiratory tract (J30-J39)	111	0,0
Urticaria and erythema (L50-L54)	107	0,0
Helminthiases (B65-B83)	99	0,0
Pregnancy with abortive outcome (O00-O08)	94	0,0
Conditions involving the integument and temperature regulation of fetus and newborn (P80-P83)	94	0,0
Infections with a predominantly sexual mode of transmission (A50-A64)	85	0,0
Diseases of myoneural junction and muscle (G70-G73)	82	0,0
Disorders of other endocrine glands (E20-E35)	80	0,0
Other infectious diseases (B99)	77	0,0
Other maternal disorders predominantly related to pregnancy (O20-O29)	72	0,0
Diseases of oral cavity, salivary glands and jaws (K00-K14)	69	0,0
Congenital malformations of the respiratory system (Q30-Q34)	69	0,0
Dorsopathies (M40-M54)	67	0,0
Nutritional anaemias (D50-D53)	65	0,0
Demyelinating diseases of the central nervous system (G35-G37)	65	0,0
Other diseases of blood and blood-forming organs (D70-D77)	62	0,0
Congenital malformations of the urinary system (Q60-Q64)	62	0,0
Diseases of middle ear and mastoid (H65-H75)	54	0,0
Other nutritional deficiencies (E50-E64)	49	0,0
Maternal care related to the fetus and amniotic cavity and possible delivery problems (O30-O48)	49	0,0
Haemolytic anaemias (D55-D59)	48	0,0
Symptoms and signs involving the circulatory and respiratory systems (R00-R09)	48	0,0
Sequelae of external causes of morbidity and mortality (Y85-Y89)	38	0,0
Arthropod-borne viral fevers and viral haemorrhagic fevers (A90-A99)	35	0,0
Dermatitis and eczema (L20-L30)	34	0,0

Appendix J: Distribution of deaths by broad groups of all underlying causes of death, 2012 (concluded)

Causes of death (based on the 10th revision, International Classification of Disease, 1992)	Number	Percentage
Total	480 476	100,0
In situ neoplasms (D00-D09)	29	0,0
Acute rheumatic fever (I00-I02)	29	0,0
Nerve, nerve root and plexus disorders (G50-G59)	25	0,0
Behavioural syndromes associated with physiological disturbances and physical factors (F50-F59)	22	0,0
Abnormal findings on examination of other body fluids, substances and tissues, without diagnosis (R83-R89)	22	0,0
Bullous disorders (L10-L14)	19	0,0
Disorders of breast (N60-N64)	18	0,0
Birth trauma (P10-P15)	17	0,0
Other spirochaetal diseases (A65-A69)	16	0,0
Disorders of sclera, cornea, iris and ciliary body (H15-H22)	16	0,0
Cleft lip and cleft palate (Q35-Q37)	16	0,0
Symptoms and signs involving the digestive system and abdomen (R10-R19)	16	0,0
Urolithiasis (N20-N23)	15	0,0
Unspecified mental disorder (F99)	14	0,0
Certain zoonotic bacterial diseases (A20-A28)	13	0,0
Neurotic, stress-related and somatoform disorders (F40-F48)	13	0,0
Papulosquamous disorders (L40-L45)	13	0,0
Congenital malformations of eye, ear, face and neck (Q10-Q18)	12	0,0
Transitory endocrine and metabolic disorders specific to fetus and newborn (P70-P74)	11	0,0
Mood [affective] disorders (F30-F39)	8	0,0
Abnormal findings on examination of blood, without diagnosis (R70-R79)	8	0,0
Visual disturbances and blindness (H53-H54)	7	0,0
Symptoms and signs involving the urinary system (R30-R39)	7	0,0
Symptoms and signs involving cognition, perception, emotional state and behaviour (R40-R46)	7	0,0
Symptoms and signs involving the nervous and musculoskeletal systems (R25-R29)	6	0,0
Other diseases caused by chlamydiae (A70-A74)	5	0,0
Disorders of adult personality and behaviour (F60-F69)	4	0,0
Disorders of conjunctiva (H10-H13)	4	0,0
Disorders of skin appendages (L60-L75)	4	0,0
Rickettsioses (A75-A79)	3	0,0
Glaucoma (H40-H42)	3	0,0
Disorders of vitreous body and globe (H43-H45)	3	0,0
Symptoms and signs involving speech and voice (R47-R49)	3	0,0
Abnormal findings on diagnostic imaging and in function studies, without diagnosis (R90-R94)	3	0,0
Disorders of choroid and retina (H30-H36)	2	0,0
Disorders of optic nerve and visual pathways (H46-H48)	2	0,0
Disorders of ocular muscles, binocular movement, accommodation and refraction (H49-H52)	2	0,0
Diseases of inner ear (H80-H83)	2	0,0
Congenital malformations of genital organs (Q50-Q56)	2	0,0
Pediculosis, acariasis and other infestations (B85-B89)	1	0,0
Disorders of psychological development (F80-F89)	1	0,0
Behavioural and emotional disorders with onset usually occurring in childhood and adolescence (F90-F98)	1	0,0
Disorders of eyelid, lacrimal system and orbit (H00-H06)	1	0,0
Other disorders of ear (H90-H95)	1	0,0
Radiation-related disorders of the skin and subcutaneous tissue (L55-L59)	1	0,0
Symptoms and signs involving the skin and subcutaneous tissue (R20-R23)	1	0,0
Abnormal findings on examination of urine, without diagnosis (R80-R82)	1	0,0
Legal intervention and operations of war (Y35-Y36)	1	0,0

Appendix K: Detailed description of the broad groups of natural causes of death which were among the ten leading causes in 2012

Causes of death (based on ICD-10)		Number	Percentage
Intestinal infectious diseases (A00-A09)			
A00	Cholera (A00)	1	0,0
A01	Typhoid and paratyphoid fevers (A01)	6	0,0
A02	Other salmonella infections(A02)	12	0,1
A03	Shigellosis (A03)	10	0,1
A04	Other bacterial intestinal infections (A04)	9	0,1
A05	Other bacterial foodborne intoxications (A05)	1	0,0
A06	Amoebiasis (A06)	17	0,1
A07	Other protozoal intestinal diseases (A07)	8	0,1
A08	Viral and other specified intestinal infections (A08)	24	0,2
A09	Diarrhoea and gastroenteritis of presumed infectious origin (A09)	14 860	99,2
Total		14 948	100,0
Tuberculosis (A15-A19)			
A16	Respiratory tuberculosis, not confirmed bacteriologically or histologically (A16)	37 415	78,8
A17	Tuberculosis of nervous system (A17)	2 670	5,6
A18	Tuberculosis of other organs (A18)	1 657	3,5
A19	Miliary tuberculosis (A19)	4 827	10,2
Drug-resistant tuberculosis			
U51	Multidrug-resistant tuberculosis (U51)	780	1,6
U52	Extensively drug-resistant tuberculosis (U52)	123	0,3
Total		47 472	100,0
Human immunodeficiency virus [HIV] disease (B20-B24)			
B20	Human immunodeficiency virus (HIV) disease resulting in infectious and parasitic diseases (B20)	11 722	62,8
B21	Human immunodeficiency virus (HIV) disease resulting in malignant neoplasms (B21)	525	2,8
B22	Human immunodeficiency virus (HIV) disease resulting in other specified diseases (B22)	2 380	12,8
B23	Human immunodeficiency virus (HIV) disease resulting in other conditions (B23)	2 118	11,4
B24	Unspecified human immunodeficiency virus (HIV) disease (B24)	1 918	10,3
Total		18 663	100,0
Other viral diseases (B25-B34)			
B25	Cytomegaloviral disease (B25)	49	0,3
B26	Mumps (B26)	1	0,0
B27	Infectious mononucleosis (B27)	2	0,0
B33	Other viral diseases, not elsewhere classified (B33)	14 866	98,7
B34	Viral infection of unspecified site (B34)	139	0,9
Total		15 057	100,0
Diabetes mellitus (E10-E14)			
E10	Insulin-dependent diabetes mellitus (E10)	247	1,2
E11	Non-insulin-dependent diabetes mellitus (E11)	1 237	5,8
E12	Malnutrition-related diabetes mellitus (E12)	8	0,0
E13	Other specified diabetes mellitus (E13)	3	0,0
E14	Unspecified diabetes mellitus (E14)	19 735	93,0
Total		21 230	100,0

Appendix K: Detailed description of the broad groups of natural causes of death which were among the ten leading causes in 2012 (continued)

Causes of death (based on ICD-10)		Number	Percentage
Hypertensive diseases (I10-I15)			
I10	Essential (primary) hypertension (I10)	8 361	51,6
I11	Hypertensive heart disease (I11)	6 186	38,2
I12	Hypertensive renal disease (I12)	1 318	8,1
I13	Hypertensive heart and renal disease (I13)	330	2,0
Total		16 195	100,0
Other forms of heart disease (I30-I52)			
I30	Acute pericarditis (I30)	11	0,1
I31	Other diseases of pericardium (I31)	132	0,6
I33	Acute and subacute endocarditis (I33)	53	0,3
I34	Nonrheumatic mitral valve disorders (I34)	79	0,4
I35	Nonrheumatic aortic valve disorders (I35)	196	0,9
I36	Nonrheumatic tricuspid valve disorders (I36)	3	0,0
I37	Pulmonary valve disorders (I37)	2	0,0
I38	Endocarditis, valve unspecified (I38)	150	0,7
I40	Acute myocarditis (I40)	26	0,1
I42	Cardiomyopathy (I42)	2 690	12,5
I44	Atrioventricular and left bundle-branch block (I44)	22	0,1
I45	Other conduction disorders (I45)	70	0,3
I46	Cardiac arrest (I46)	3 587	16,6
I47	Paroxysmal tachycardia (I47)	21	0,1
I48	Atrial fibrillation and flutter (I48)	484	2,2
I49	Other cardiac arrhythmias (I49)	288	1,3
I50	Heart failure (I50)	12 763	59,1
I51	Complications and ill-defined descriptions of heart disease (I51)	1 035	4,8
Total		21 612	100,0
Cerebrovascular diseases (I60-I69)			
I60	Subarachnoid haemorrhage (I60)	422	1,8
I61	Intracerebral haemorrhage (I61)	1 449	6,0
I62	Other nontraumatic intracranial haemorrhage (I62)	724	3,0
I63	Cerebral infarction (I63)	539	2,3
I64	Stroke, not specified as haemorrhage or infarction (I64)	19 980	83,3
I67	Other cerebrovascular diseases (I67)	581	2,4
I69	Sequelae of cerebrovascular disease (I69)	299	1,3
Total		23 994	100,0
Influenza and pneumonia (J09-J18)			
J10	Influenza due to identified influenza virus (J10)	559	2,1
J11	Influenza, virus not identified (J11)	28	0,1
J12	Viral pneumonia, not elsewhere classified (J12)	3	0,0
J13	Pneumonia due to Streptococcus pneumoniae (J13)	1	0,0
J14	Pneumonia due to Haemophilus influenzae (J14)	80	0,3
J15	Bacterial pneumonia, not elsewhere classified (J15)	1	0,0
J16	Pneumonia due to other infectious organisms, not elsewhere classified (J16)	25 669	97,3
J18	Pneumonia, organism unspecified (J18)	44	0,2
Total		26 385	100,0

Appendix K: Detailed description of the broad groups of natural causes of death which were among the ten leading causes in 2012 (concluded)

Causes of death (based on ICD-10)		Number	Percentage
	Chronic lower respiratory diseases (J40-J47)		
J40	Bronchitis, not specified as acute or chronic (J40)	510	4,2
J41	Simple and mucopurulent chronic bronchitis (J41)	2	0,0
J42	Unspecified chronic bronchitis (J42)	330	2,7
J43	Emphysema (J43)	736	6,0
J44	Other chronic obstructive pulmonary disease (J44)	6 322	51,7
J45	Asthma (J45)	3 476	28,4
J46	Status asthmaticus (J46)	663	5,4
J47	Bronchiectasis (J47)	189	1,6
Total		12 228	100,0

Appendix L: The ten leading underlying natural causes of death by age and sex: South Africa, 2012

All provinces, both sexes, all ages			All provinces, males, all ages			All provinces, females, all ages		
	No.	%		No.	%		No.	%
1 Tuberculosis (A15-A19)*	47 472	9.9	1 Tuberculosis (A15-A19)*	27 410	11.0	1 Tuberculosis (A15-A19)*	19 876	8.7
2 Influenza and pneumonia (J09-J18)	26 385	5.5	2 Influenza and pneumonia (J09-J18)	13 311	5.3	2 Cerebrovascular diseases (I60-I69)	13 890	6.1
3 Cerebrovascular diseases (I60-I69)	23 994	5.0	3 Cerebrovascular diseases (I60-I69)	10 066	4.0	3 Influenza and pneumonia (J09-J18)	12 954	5.7
4 Other forms of heart disease (I30-I52)	21 612	4.5	4 Other forms of heart disease (I30-I52)	9 906	4.0	4 Diabetes mellitus (E10-E14)	12 766	5.6
5 Diabetes mellitus (E10-E14)	21 230	4.4	5 Human immunodeficiency virus [HIV] disease (B20-B24)	9 610	3.8	5 Other forms of heart disease (I30-I52)	11 663	5.1
6 Human immunodeficiency virus [HIV] disease (B20-B24)	18 663	3.9	6 Diabetes mellitus (E10-E14)	8 439	3.4	6 Hypertensive diseases (I10-I15)	9 970	4.4
7 Hypertensive diseases (I10-I15)	16 195	3.4	7 Chronic lower respiratory diseases (J40-J47)	7 268	2.9	7 Human immunodeficiency virus [HIV] disease (B20-B24)	8 980	3.9
8 Other viral diseases (B25-B34)	15 057	3.1	8 Other viral diseases (B25-B34)	7 055	2.8	8 Other viral diseases (B25-B34)	7 952	3.5
9 Intestinal infectious diseases (A00-A09)	14 948	3.1	9 Intestinal infectious diseases (A00-A09)	7 052	2.8	9 Intestinal infectious diseases (A00-A09)	7 822	3.4
10 Chronic lower respiratory diseases (J40-J47)	12 228	2.5	10 Ischaemic heart diseases (I20-I25)	6 799	2.7	10 Certain disorders involving the immune mechanism (D80-D89)	5 712	2.5
Other natural causes	215 472	44.8	Other natural causes	107 588	43.0	Other natural causes	105 474	46.2
Non-natural causes	47 220	9.8	Non-natural causes	35 526	14.2	Non-natural causes	11 307	5.0
All causes	480 476	100.0	All causes	250 030	100.0	All causes	228 366	100.0
All provinces, both sexes, 0-14			All provinces, males, 0-14			All provinces, females, 0-14		
	No.	%		No.	%		No.	%
1 Intestinal infectious diseases (A00-A09)	5 130	11.2	1 Intestinal infectious diseases (A00-A09)	2 653	11.0	1 Intestinal infectious diseases (A00-A09)	2 446	11.7
2 Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	4 079	8.9	2 Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	2 275	9.4	2 Influenza and pneumonia (J09-J18)	1 950	9.3
3 Influenza and pneumonia (J09-J18)	3 979	8.7	3 Influenza and pneumonia (J09-J18)	1 991	8.2	3 Respiratory and cardiovascular disorders specific to the perinatal	1 689	8.1
4 Other disorders originating in the perinatal period (P90-P96)	1 574	3.4	4 Other disorders originating in the perinatal period (P90-P96)	827	3.4	4 Malnutrition (E40-E46)	753	3.6
5 Malnutrition (E40-E46)	1 518	3.3	5 Malnutrition (E40-E46)	756	3.1	5 Other disorders originating in the perinatal period (P90-P96)	685	3.3
6 Disorders related to length of gestation and fetal growth (P05-P08)	1 370	3.0	6 Disorders related to length of gestation and fetal growth (P05-P08)	734	3.0	6 Disorders related to length of gestation and fetal growth (P05-P08)	599	2.9
7 Infections specific to the perinatal period (P35-P39)	1 172	2.6	7 Infections specific to the perinatal period (P35-P39)	627	2.6	7 Tuberculosis (A15-A19)*	574	2.7
8 Tuberculosis (A15-A19)*	1 157	2.5	8 Tuberculosis (A15-A19)*	580	2.4	8 Infections specific to the perinatal period (P35-P39)	514	2.5
9 Other viral diseases (B25-B34)	891	1.9	9 Other viral diseases (B25-B34)	472	1.9	9 Other acute lower respiratory infections (J20-J22)	415	2.0
10 Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	850	1.9	10 Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	460	1.9	10 Other viral diseases (B25-B34)	412	2.0
Other natural causes	19 335	42.3	Other natural causes	10 022	41.4	Other natural causes	9 085	43.4
Non-natural causes	4 668	10.2	Non-natural causes	2 815	11.6	Non-natural causes	1 823	8.7
All causes	45 723	100.0	All causes	24 212	100.0	All causes	20 945	100.0
All provinces, both sexes, 15-49			All provinces, males, 15-49			All provinces, females, 15-49		
	No.	%		No.	%		No.	%
1 Tuberculosis (A15-A19)*	31 341	16.9	1 Tuberculosis (A15-A19)*	16 942	16.6	1 Tuberculosis (A15-A19)*	14 279	17.2
2 Human immunodeficiency virus [HIV] disease (B20-B24)	14 555	7.8	2 Human immunodeficiency virus [HIV] disease (B20-B24)	7 260	7.1	2 Human immunodeficiency virus [HIV] disease (B20-B24)	7 250	8.7
3 Other viral diseases (B25-B34)	11 331	6.1	3 Influenza and pneumonia (J09-J18)	5 214	5.1	3 Other viral diseases (B25-B34)	6 190	7.5
4 Influenza and pneumonia (J09-J18)	10 835	5.8	4 Other viral diseases (B25-B34)	5 114	5.0	4 Influenza and pneumonia (J09-J18)	5 590	6.7
5 Certain disorders involving the immune mechanism (D80-D89)	8 126	4.4	5 Certain disorders involving the immune mechanism (D80-D89)	3 655	3.6	5 Certain disorders involving the immune mechanism (D80-D89)	4 445	5.4
6 Intestinal infectious diseases (A00-A09)	4 854	2.6	6 Intestinal infectious diseases (A00-A09)	2 200	2.2	6 Intestinal infectious diseases (A00-A09)	2 631	3.2
7 Other forms of heart disease (I30-I52)	4 342	2.3	7 Other forms of heart disease (I30-I52)	2 146	2.1	7 Other forms of heart disease (I30-I52)	2 177	2.6
8 Inflammatory diseases of the central nervous system (G00-G09)	3 473	1.9	8 Inflammatory diseases of the central nervous system (G00-G09)	1 713	1.7	8 Inflammatory diseases of the central nervous system (G00-G09)	1 753	2.1
9 Cerebrovascular diseases (I60-I69)	3 144	1.7	9 Cerebrovascular diseases (I60-I69)	1 583	1.5	9 Cerebrovascular diseases (I60-I69)	1 552	1.9
10 Other acute lower respiratory infections (J20-J22)	2 635	1.4	10 Other acute lower respiratory infections (J20-J22)	1 322	1.3	10 Malignant neoplasms of female genital organs (C51-C58)	1 410	1.7
Other natural causes	59 139	31.8	Other natural causes	29 156	28.5	Other natural causes	29 665	35.8
Non-natural causes	32 018	17.2	Non-natural causes	25 950	25.4	Non-natural causes	5 940	7.2
All causes	185 793	100.0	All causes	102 255	100.0	All causes	82 882	100.0
All provinces, both sexes, 50-64			All provinces, males, 50-64			All provinces, females, 50-64		
	No.	%		No.	%		No.	%
1 Tuberculosis (A15-A19)*	10 089	10.2	1 Tuberculosis (A15-A19)*	6 986	11.9	1 Diabetes mellitus (E10-E14)	3 861	9.5
2 Diabetes mellitus (E10-E14)	6 966	7.0	2 Diabetes mellitus (E10-E14)	3 100	5.3	2 Tuberculosis (A15-A19)*	3 084	7.6
3 Cerebrovascular diseases (I60-I69)	5 948	6.0	3 Cerebrovascular diseases (I60-I69)	3 088	5.3	3 Cerebrovascular diseases (I60-I69)	2 848	7.0
4 Other forms of heart disease (I30-I52)	5 057	5.1	4 Other forms of heart disease (I30-I52)	2 910	5.0	4 Hypertensive diseases (I10-I15)	2 141	5.3
5 Influenza and pneumonia (J09-J18)	4 543	4.6	5 Influenza and pneumonia (J09-J18)	2 901	5.0	5 Other forms of heart disease (I30-I52)	2 139	5.3
6 Hypertensive diseases (I10-I15)	4 152	4.2	6 Chronic lower respiratory diseases (J40-J47)	2 500	4.3	6 Influenza and pneumonia (J09-J18)	1 630	4.0
7 Chronic lower respiratory diseases (J40-J47)	3 761	3.8	7 Ischaemic heart diseases (I20-I25)	2 268	3.9	7 Malignant neoplasms of female genital organs (C51-C58)	1 425	3.5
8 Ischaemic heart diseases (I20-I25)	3 277	3.3	8 Malignant neoplasms of digestive organs (C15-C26)	2 073	3.5	8 Chronic lower respiratory diseases (J40-J47)	1 260	3.1
9 Malignant neoplasms of digestive organs (C15-C26)	3 273	3.3	9 Hypertensive diseases (I10-I15)	2 003	3.4	9 Malignant neoplasms of digestive organs (C15-C26)	1 196	3.0
10 Human immunodeficiency virus [HIV] disease (B20-B24)	2 821	2.8	10 Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	1 724	2.9	10 Human immunodeficiency virus [HIV] disease (B20-B24)	1 171	2.9
Other natural causes	43 528	43.9	Other natural causes	24 678	42.2	Other natural causes	18 296	45.1
Non-natural causes	5 743	5.8	Non-natural causes	4 252	7.3	Non-natural causes	1 478	3.6
All causes	99 158	100.0	All causes	58 483	100.0	All causes	40 529	100.0
All provinces, both sexes, 65+			All provinces, males, 65+			All provinces, females, 65+		
	No.	%		No.	%		No.	%
1 Cerebrovascular diseases (I60-I69)	14 745	10.0	1 Cerebrovascular diseases (I60-I69)	5 320	8.4	1 Cerebrovascular diseases (I60-I69)	9 422	11.3
2 Diabetes mellitus (E10-E14)	11 712	8.0	2 Other forms of heart disease (I30-I52)	4 558	7.2	2 Diabetes mellitus (E10-E14)	7 552	9.1
3 Other forms of heart disease (I30-I52)	11 613	7.9	3 Diabetes mellitus (E10-E14)	4 152	6.5	3 Other forms of heart disease (I30-I52)	7 047	8.5
4 Hypertensive diseases (I10-I15)	10 436	7.1	4 Chronic lower respiratory diseases (J40-J47)	3 691	5.8	4 Hypertensive diseases (I10-I15)	6 959	8.4
5 Ischaemic heart diseases (I20-I25)	7 013	4.8	5 Ischaemic heart diseases (I20-I25)	3 526	5.5	5 Influenza and pneumonia (J09-J18)	3 749	4.5
6 Influenza and pneumonia (J09-J18)	6 871	4.7	6 Hypertensive diseases (I10-I15)	3 474	5.5	6 Ischaemic heart diseases (I20-I25)	3 485	4.2
7 Chronic lower respiratory diseases (J40-J47)	6 481	4.4	7 Influenza and pneumonia (J09-J18)	3 118	4.9	7 Chronic lower respiratory diseases (J40-J47)	2 786	3.3
8 Tuberculosis (A15-A19)*	4 631	3.1	8 Tuberculosis (A15-A19)*	2 765	4.3	8 Malignant neoplasms of digestive organs (C15-C26)	2 111	2.5
9 Malignant neoplasms of digestive organs (C15-C26)	4 617	3.1	9 Malignant neoplasms of digestive organs (C15-C26)	2 504	3.9	9 Tuberculosis (A15-A19)*	1 861	2.2
10 Intestinal infectious diseases (A00-A09)	2 898	2.0	10 Malignant neoplasms of male genital organs (C60-C63)	1 983	3.1	10 Intestinal infectious diseases (A00-A09)	1 812	2.2
Other natural causes	61 899	42.1	Other natural causes	26 455	41.6	Other natural causes	34 506	41.4
Non-natural causes	4 114	2.8	Non-natural causes	2 106	3.3	Non-natural causes	2 006	2.4
All causes	147 030	100.0	All causes	63 652	100.0	All causes	83 296	100.0

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

Appendix L1: The ten leading underlying natural causes of death by age and sex: Western Cape, 2012

Western Cape, both sexes, all ages			Western Cape, males, all ages			Western Cape, females, all ages		
	No.	%		No.	%		No.	%
1 Diabetes mellitus (E10-E14)	3 114	6,7	1 Tuberculosis (A15-A19)*	1 872	7,4	1 Diabetes mellitus (E10-E14)	1 816	8,8
2 Tuberculosis (A15-A19)*	2 952	6,4	2 Ischaemic heart diseases (I20-I25)	1 631	6,4	2 Cerebrovascular diseases (I60-I69)	1 546	7,5
3 Ischaemic heart diseases (I20-I25)	2 845	6,2	3 Human immunodeficiency virus [HIV] disease (B20-B24)	1 336	5,3	3 Human immunodeficiency virus [HIV] disease (B20-B24)	1 301	6,3
4 Cerebrovascular diseases (I60-I69)	2 793	6,1	4 Chronic lower respiratory diseases (J40-J47)	1 309	5,2	4 Ischaemic heart diseases (I20-I25)	1 211	5,9
5 Human immunodeficiency virus [HIV] disease (B20-B24)	2 647	5,7	5 Diabetes mellitus (E10-E14)	1 292	5,1	5 Tuberculosis (A15-A19)*	1 065	5,2
6 Chronic lower respiratory diseases (J40-J47)	2 208	4,8	6 Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	1 289	5,1	6 Hypertensive diseases (I10-I15)	1 048	5,1
7 Malignant neoplasms of digestive organs (C15-C26)	1 924	4,2	7 Cerebrovascular diseases (I60-I69)	1 244	4,9	7 Chronic lower respiratory diseases (J40-J47)	897	4,4
8 Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	1 888	4,1	8 Malignant neoplasms of digestive organs (C15-C26)	1 105	4,3	8 Malignant neoplasms of digestive organs (C15-C26)	819	4,0
9 Hypertensive diseases (I10-I15)	1 752	3,8	9 Hypertensive diseases (I10-I15)	701	2,8	9 Other forms of heart disease (I30-I52)	770	3,7
10 Other forms of heart disease (I30-I52)	1 447	3,1	10 Other forms of heart disease (I30-I52)	677	2,7	10 Malignant neoplasms of breast (C50)	718	3,5
Other natural causes	17 070	37,0	Other natural causes	8 630	34,0	Other natural causes	8 247	40,0
Non-natural causes	5 508	11,9	Non-natural causes	4 320	17,0	Non-natural causes	1 155	5,6
All causes	46 148	100,0	All causes	25 406	100,0	All causes	20 593	100,0
Western Cape, both sexes, 0-14			Western Cape, males, 0-14			Western Cape, females, 0-14		
	No.	%		No.	%		No.	%
1 Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	260	9,3	1 Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	145	9,5	1 Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	112	9,0
2 Disorders related to length of gestation and fetal growth (P05-P08)	175	6,2	2 Disorders related to length of gestation and fetal growth (P05-P08)	93	6,1	2 Disorders related to length of gestation and fetal growth (P05-P08)	79	6,4
3 Other disorders originating in the perinatal period (P90-P96)	154	5,5	3 Intestinal infectious diseases (A00-A09)	81	5,3	3 Other disorders originating in the perinatal period (P90-P96)	73	5,9
4 Intestinal infectious diseases (A00-A09)	153	5,5	4 Other disorders originating in the perinatal period (P90-P96)	76	5,0	4 Intestinal infectious diseases (A00-A09)	71	5,7
5 Influenza and pneumonia (J09-J18)	132	4,7	5 Influenza and pneumonia (J09-J18)	64	4,2	5 Influenza and pneumonia (J09-J18)	68	5,5
6 Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	99	3,5	6 Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	62	4,1	6 Congenital malformations of the circulatory system (Q20-Q28)	49	4,0
7 Infections specific to the perinatal period (P35-P39)	97	3,5	7 Infections specific to the perinatal period (P35-P39)	52	3,4	7 Infections specific to the perinatal period (P35-P39)	43	3,5
8 Congenital malformations of the circulatory system (Q20-Q28)	96	3,4	8 Other diseases of the respiratory system (J95-J99)	48	3,1	8 Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	37	3,0
9 Other diseases of the respiratory system (J95-J99)	82	2,9	9 Congenital malformations of the circulatory system (Q20-Q28)	46	3,0	9 Other diseases of the respiratory system (J95-J99)	34	2,7
10 Other acute lower respiratory infections (J20-J22)	62	2,2	10 Other acute lower respiratory infections (J20-J22)	41	2,7	10 Human immunodeficiency virus [HIV] disease (B20-B24)	31	2,5
Other natural causes	1 154	41,2	Other natural causes	598	39,2	Other natural causes	525	42,4
Non-natural causes	337	12,0	Non-natural causes	218	14,3	Non-natural causes	116	9,4
All causes	2 801	100,0	All causes	1 524	100,0	All causes	1 238	100,0
Western Cape, both sexes, 15-49			Western Cape, males, 15-49			Western Cape, females, 15-49		
	No.	%		No.	%		No.	%
1 Human immunodeficiency virus [HIV] disease (B20-B24)	2 113	14,9	1 Tuberculosis (A15-A19)*	1 077	12,2	1 Human immunodeficiency virus [HIV] disease (B20-B24)	1 079	20,4
2 Tuberculosis (A15-A19)*	1 788	12,6	2 Human immunodeficiency virus [HIV] disease (B20-B24)	1 027	11,6	2 Tuberculosis (A15-A19)*	702	13,2
3 Other viral diseases (B25-B34)	414	2,9	3 Ischaemic heart diseases (I20-I25)	211	2,4	3 Other viral diseases (B25-B34)	227	4,3
4 Cerebrovascular diseases (I60-I69)	322	2,3	4 Other viral diseases (B25-B34)	186	2,1	4 Malignant neoplasms of breast (C50)	169	3,2
5 Diabetes mellitus (E10-E14)	286	2,1	5 Cerebrovascular diseases (I60-I69)	176	2,0	5 Cerebrovascular diseases (I60-I69)	145	2,7
6 Ischaemic heart diseases (I20-I25)	282	2,0	6 Malignant neoplasms of digestive organs (C15-C26)	172	1,9	6 Diabetes mellitus (E10-E14)	140	2,6
7 Malignant neoplasms of digestive organs (C15-C26)	271	1,9	7 Chronic lower respiratory diseases (J40-J47)	163	1,8	7 Malignant neoplasms of female genital organs (C51-C58)	138	2,6
8 Chronic lower respiratory diseases (J40-J47)	267	1,9	8 Diabetes mellitus (E10-E14)	145	1,6	8 Certain disorders involving the immune mechanism (D80-D89)	110	2,1
9 Influenza and pneumonia (J09-J18)	221	1,6	9 Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	129	1,5	9 Chronic lower respiratory diseases (J40-J47)	103	1,9
10 Certain disorders involving the immune mechanism (D80-D89)	220	1,5	10 Influenza and pneumonia (J09-J18)	129	1,5	10 Malignant neoplasms of digestive organs (C15-C26)	99	1,9
Other natural causes	4 009	28,2	Other natural causes	2 067	23,3	Other natural causes	1 771	33,4
Non-natural causes	4 006	28,2	Non-natural causes	3 373	38,1	Non-natural causes	619	11,7
All causes	14 199	100,0	All causes	8 855	100,0	All causes	5 302	100,0
Western Cape, both sexes, 50-64			Western Cape, males, 50-64			Western Cape, females, 50-64		
	No.	%		No.	%		No.	%
1 Diabetes mellitus (E10-E14)	995	9,1	1 Tuberculosis (A15-A19)*	573	8,9	1 Diabetes mellitus (E10-E14)	560	12,7
2 Tuberculosis (A15-A19)*	807	7,4	2 Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	561	8,7	2 Cerebrovascular diseases (I60-I69)	345	7,8
3 Chronic lower respiratory diseases (J40-J47)	803	7,4	3 Chronic lower respiratory diseases (J40-J47)	516	8,0	3 Chronic lower respiratory diseases (J40-J47)	287	6,5
4 Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	781	7,2	4 Ischaemic heart diseases (I20-I25)	504	7,8	4 Malignant neoplasms of digestive organs (C15-C26)	264	6,0
5 Ischaemic heart diseases (I20-I25)	730	6,7	5 Diabetes mellitus (E10-E14)	435	6,7	5 Tuberculosis (A15-A19)*	231	5,2
6 Cerebrovascular diseases (I60-I69)	697	6,4	6 Malignant neoplasms of digestive organs (C15-C26)	413	6,4	6 Malignant neoplasms of breast (C50)	230	5,2
7 Malignant neoplasms of digestive organs (C15-C26)	677	6,2	7 Cerebrovascular diseases (I60-I69)	350	5,4	7 Ischaemic heart diseases (I20-I25)	225	5,1
8 Hypertensive diseases (I10-I15)	441	4,0	8 Hypertensive diseases (I10-I15)	229	3,5	8 Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	220	5,0
9 Human immunodeficiency virus [HIV] disease (B20-B24)	391	3,6	9 Human immunodeficiency virus [HIV] disease (B20-B24)	226	3,5	9 Hypertensive diseases (I10-I15)	211	4,8
Other forms of heart disease (I30-I52)	294	2,7	10 Other forms of heart disease (I30-I52)	182	2,8	10 Malignant neoplasms of female genital organs (C51-C58)	170	3,9
Other natural causes	3 664	33,6	Other natural causes	2 051	31,7	Other natural causes	1 485	33,7
Non-natural causes	616	5,7	Non-natural causes	433	6,7	Non-natural causes	181	4,1
All causes	10 896	100,0	All causes	6 473	100,0	All causes	4 409	100,0
Western Cape, both sexes, 65+			Western Cape, males, 65+			Western Cape, females, 65+		
	No.	%		No.	%		No.	%
1 Ischaemic heart diseases (I20-I25)	1 829	10,2	1 Ischaemic heart diseases (I20-I25)	915	10,9	1 Diabetes mellitus (E10-E14)	1 113	11,6
2 Diabetes mellitus (E10-E14)	1 828	10,2	2 Cerebrovascular diseases (I60-I69)	714	8,5	2 Cerebrovascular diseases (I60-I69)	1 054	11,0
3 Cerebrovascular diseases (I60-I69)	1 768	9,8	3 Diabetes mellitus (E10-E14)	710	8,5	3 Ischaemic heart diseases (I20-I25)	914	9,5
4 Hypertensive diseases (I10-I15)	1 156	6,4	4 Chronic lower respiratory diseases (J40-J47)	623	7,4	4 Hypertensive diseases (I10-I15)	764	8,0
5 Chronic lower respiratory diseases (J40-J47)	1 127	6,3	5 Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	595	7,1	5 Other forms of heart disease (I30-I52)	548	5,7
6 Malignant neoplasms of digestive organs (C15-C26)	971	5,4	6 Malignant neoplasms of digestive organs (C15-C26)	519	6,2	6 Chronic lower respiratory diseases (J40-J47)	504	5,3
7 Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	929	5,2	7 Malignant neoplasms of male genital organs (C60-C63)	451	5,4	7 Malignant neoplasms of digestive organs (C15-C26)	452	4,7
8 Other forms of heart disease (I30-I52)	908	5,0	8 Hypertensive diseases (I10-I15)	391	4,7	8 Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	334	3,5
9 Influenza and pneumonia (J09-J18)	517	2,9	9 Other forms of heart disease (I30-I52)	360	4,3	9 Malignant neoplasms of breast (C50)	315	3,3
Malignant neoplasms of male genital organs (C60-C63)	451	2,5	10 Influenza and pneumonia (J09-J18)	226	2,7	10 Influenza and pneumonia (J09-J18)	291	3,0
Other natural causes	6 039	33,6	Other natural causes	2 649	31,6	Other natural causes	3 068	32,0
Non-natural causes	464	2,6	Non-natural causes	229	2,7	Non-natural causes	233	2,4
All causes	17 987	100,0	All causes	8 382	100,0	All causes	9 590	100,0

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

Appendix L2: The ten leading underlying natural causes of death by age and sex: Eastern Cape, 2012

Eastern Cape, both sexes, all ages			Eastern Cape, males, all ages			Eastern Cape, females, all ages		
	No.	%		No.	%		No.	%
1 Tuberculosis (A15-A19)*	7 072	10.8	1 Tuberculosis (A15-A19)*	3 977	11.9	1 Tuberculosis (A15-A19)*	3 072	9.6
2 Cerebrovascular diseases (I60-I69)	2 930	4.5	2 Chronic lower respiratory diseases (J40-J47)	1 370	4.1	2 Cerebrovascular diseases (I60-I69)	1 775	5.6
3 Other forms of heart disease (I30-I52)	2 881	4.4	3 Other forms of heart disease (I30-I52)	1 253	3.7	3 Other forms of heart disease (I30-I52)	1 619	5.1
4 Diabetes mellitus (E10-E14)	2 431	3.7	4 Human immunodeficiency virus [HIV] disease (B20-B24)	1 181	3.5	4 Diabetes mellitus (E10-E14)	1 523	4.8
5 Chronic lower respiratory diseases (J40-J47)	2 400	3.7	5 Cerebrovascular diseases (I60-I69)	1 151	3.4	5 Other viral diseases (B25-B34)	1 366	4.3
6 Other viral diseases (B25-B34)	2 311	3.5	6 Influenza and pneumonia (J09-J18)	1 047	3.1	6 Hypertensive diseases (I10-I15)	1 307	4.1
7 Human immunodeficiency virus [HIV] disease (B20-B24)	2 293	3.5	7 Other viral diseases (B25-B34)	942	2.8	7 Human immunodeficiency virus [HIV] disease (B20-B24)	1 107	3.5
8 Influenza and pneumonia (J09-J18)	2 096	3.2	8 Diabetes mellitus (E10-E14)	907	2.7	8 Influenza and pneumonia (J09-J18)	1 042	3.3
9 Hypertensive diseases (I10-I15)	2 032	3.1	9 Malignant neoplasms of digestive organs (C15-C26)	795	2.4	9 Chronic lower respiratory diseases (J40-J47)	1 028	3.2
10 Certain disorders involving the immune mechanism (D80-D89)	1 501	2.3	10 Hypertensive diseases (I10-I15)	722	2.2	10 Certain disorders involving the immune mechanism (D80-D89)	840	2.6
Other natural causes	30 991	47.3	Other natural causes	15 081	45.1	Other natural causes	15 653	49.1
Non-natural causes	6 543	10.0	Non-natural causes	4 988	14.9	Non-natural causes	1 523	4.8
All causes	65 481	100.0	All causes	33 414	100.0	All causes	31 855	100.0
Eastern Cape, both sexes, 0-14			Eastern Cape, males, 0-14			Eastern Cape, females, 0-14		
	No.	%		No.	%		No.	%
1 Intestinal infectious diseases (A00-A09)	433	9.0	1 Intestinal infectious diseases (A00-A09)	233	8.9	1 Intestinal infectious diseases (A00-A09)	198	9.3
2 Influenza and pneumonia (J09-J18)	290	6.0	2 Influenza and pneumonia (J09-J18)	137	5.2	2 Influenza and pneumonia (J09-J18)	148	7.0
3 Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	209	4.3	3 Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	110	4.2	3 Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	93	4.4
4 Other disorders originating in the perinatal period (P90-P96)	186	3.9	4 Other disorders originating in the perinatal period (P90-P96)	90	3.4	4 Other disorders originating in the perinatal period (P90-P96)	87	4.1
5 Malnutrition (E40-E46)	155	3.2	5 Malnutrition (E40-E46)	89	3.4	5 Malnutrition (E40-E46)	65	3.1
6 Tuberculosis (A15-A19)*	132	2.7	6 Tuberculosis (A15-A19)*	73	2.8	6 Tuberculosis (A15-A19)*	58	2.7
7 Other acute lower respiratory infections (J20-J22)	92	1.9	7 Other viral diseases (B25-B34)	52	2.0	7 Other acute lower respiratory infections (J20-J22)	40	1.9
8 Other viral diseases (B25-B34)	82	1.7	8 Other acute lower respiratory infections (J20-J22)	52	2.0	8 Infections specific to the perinatal period (P35-P39)	36	1.7
9 Infections specific to the perinatal period (P35-P39)	74	1.5	9 Infections specific to the perinatal period (P35-P39)	38	1.4	9 Other forms of heart disease (I30-I52)	31	1.5
10 Other forms of heart disease (I30-I52)	65	1.4	10 Episodic and paroxysmal disorders (G40-G47)	35	1.3	10 Other viral diseases (B25-B34)	30	1.4
Other natural causes	2 383	49.6	Other natural causes	1 270	48.3	Other natural causes	1 087	51.1
Non-natural causes	705	14.7	Non-natural causes	451	17.1	Non-natural causes	254	11.9
All causes	4 806	100.0	All causes	2 630	100.0	All causes	2 127	100.0
Eastern Cape, both sexes, 15-49			Eastern Cape, males, 15-49			Eastern Cape, females, 15-49		
	No.	%		No.	%		No.	%
1 Tuberculosis (A15-A19)*	4 134	16.7	1 Tuberculosis (A15-A19)*	2 097	15.7	1 Tuberculosis (A15-A19)*	2 022	17.9
2 Human immunodeficiency virus [HIV] disease (B20-B24)	1 848	7.5	2 Human immunodeficiency virus [HIV] disease (B20-B24)	919	6.9	2 Other viral diseases (B25-B34)	1 129	10.0
3 Other viral diseases (B25-B34)	1 847	7.5	3 Other viral diseases (B25-B34)	717	5.4	3 Human immunodeficiency virus [HIV] disease (B20-B24)	925	8.2
4 Certain disorders involving the immune mechanism (D80-D89)	1 147	4.6	4 Certain disorders involving the immune mechanism (D80-D89)	456	3.4	4 Certain disorders involving the immune mechanism (D80-D89)	688	6.1
5 Influenza and pneumonia (J09-J18)	700	2.8	5 Influenza and pneumonia (J09-J18)	309	2.3	5 Influenza and pneumonia (J09-J18)	389	3.4
6 Other forms of heart disease (I30-I52)	507	2.0	6 Episodic and paroxysmal disorders (G40-G47)	250	1.9	6 Other forms of heart disease (I30-I52)	257	2.3
7 Intestinal infectious diseases (A00-A09)	461	1.9	7 Other forms of heart disease (I30-I52)	247	1.8	7 Intestinal infectious diseases (A00-A09)	254	2.2
8 Episodic and paroxysmal disorders (G40-G47)	370	1.5	8 Intestinal infectious diseases (A00-A09)	205	1.5	8 Cerebrovascular diseases (I60-I69)	166	1.5
9 Inflammatory diseases of the central nervous system (G00-G09)	346	1.4	9 Inflammatory diseases of the central nervous system (G00-G09)	180	1.3	9 Inflammatory diseases of the central nervous system (G00-G09)	165	1.5
10 Cerebrovascular diseases (I60-I69)	328	1.3	10 Chronic lower respiratory diseases (J40-J47)	166	1.2	10 Diabetes mellitus (E10-E14)	138	1.2
Other natural causes	8 618	34.8	Other natural causes	4 154	31.1	Other natural causes	4 399	39.0
Non-natural causes	4 434	17.9	Non-natural causes	3 660	27.4	Non-natural causes	759	6.7
All causes	24 740	100.0	All causes	13 360	100.0	All causes	11 291	100.0
Eastern Cape, both sexes, 50-64			Eastern Cape, males, 50-64			Eastern Cape, females, 50-64		
	No.	%		No.	%		No.	%
1 Tuberculosis (A15-A19)*	1 597	12.0	1 Tuberculosis (A15-A19)*	1 131	14.4	1 Diabetes mellitus (E10-E14)	475	8.7
2 Diabetes mellitus (E10-E14)	812	6.1	2 Chronic lower respiratory diseases (J40-J47)	429	5.5	2 Tuberculosis (A15-A19)*	463	8.5
3 Cerebrovascular diseases (I60-I69)	699	5.2	3 Cerebrovascular diseases (I60-I69)	350	4.5	3 Cerebrovascular diseases (I60-I69)	349	6.4
4 Chronic lower respiratory diseases (J40-J47)	642	4.8	4 Diabetes mellitus (E10-E14)	337	4.3	4 Hypertensive diseases (I10-I15)	279	5.1
5 Other forms of heart disease (I30-I52)	589	4.4	5 Other forms of heart disease (I30-I52)	334	4.3	5 Other forms of heart disease (I30-I52)	252	4.6
6 Hypertensive diseases (I10-I15)	498	3.7	6 Malignant neoplasms of digestive organs (C15-C26)	276	3.5	6 Chronic lower respiratory diseases (J40-J47)	213	3.9
7 Malignant neoplasms of digestive organs (C15-C26)	475	3.6	7 Influenza and pneumonia (J09-J18)	244	3.1	7 Malignant neoplasms of digestive organs (C15-C26)	199	3.6
8 Influenza and pneumonia (J09-J18)	379	2.8	8 Hypertensive diseases (I10-I15)	218	2.8	8 Other viral diseases (B25-B34)	169	3.1
9 Other viral diseases (B25-B34)	318	2.4	9 Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	205	2.6	9 Malignant neoplasms of female genital organs (C51-C58)	139	2.5
10 Human immunodeficiency virus [HIV] disease (B20-B24)	311	2.3	10 Human immunodeficiency virus [HIV] disease (B20-B24)	184	2.4	10 Influenza and pneumonia (J09-J18)	135	2.5
Other natural causes	6 244	46.9	Other natural causes	3 577	45.7	Other natural causes	2 589	47.3
Non-natural causes	759	5.7	Non-natural causes	544	6.9	Non-natural causes	212	3.9
All causes	13 323	100.0	All causes	7 829	100.0	All causes	5 474	100.0
Eastern Cape, both sexes, 65+			Eastern Cape, males, 65+			Eastern Cape, females, 65+		
	No.	%		No.	%		No.	%
1 Cerebrovascular diseases (I60-I69)	1 882	8.4	1 Chronic lower respiratory diseases (J40-J47)	752	7.9	1 Cerebrovascular diseases (I60-I69)	1 248	9.7
2 Other forms of heart disease (I30-I52)	1 712	7.6	2 Tuberculosis (A15-A19)*	662	7.0	2 Other forms of heart disease (I30-I52)	1 078	8.4
3 Chronic lower respiratory diseases (J40-J47)	1 431	6.4	3 Cerebrovascular diseases (I60-I69)	634	6.7	3 Hypertensive diseases (I10-I15)	916	7.1
4 Diabetes mellitus (E10-E14)	1 363	6.1	4 Other forms of heart disease (I30-I52)	633	6.7	4 Diabetes mellitus (E10-E14)	902	7.0
5 Hypertensive diseases (I10-I15)	1 337	6.0	5 Diabetes mellitus (E10-E14)	461	4.9	5 Chronic lower respiratory diseases (J40-J47)	677	5.2
6 Tuberculosis (A15-A19)*	1 184	5.3	6 Hypertensive diseases (I10-I15)	421	4.4	6 Tuberculosis (A15-A19)*	522	4.0
7 Malignant neoplasms of digestive organs (C15-C26)	801	3.6	7 Malignant neoplasms of digestive organs (C15-C26)	408	4.3	7 Malignant neoplasms of digestive organs (C15-C26)	392	3.0
8 Influenza and pneumonia (J09-J18)	720	3.2	8 Influenza and pneumonia (J09-J18)	355	3.7	8 Influenza and pneumonia (J09-J18)	365	2.8
9 Ischaemic heart diseases (I20-I25)	525	2.3	9 Ischaemic heart diseases (I20-I25)	253	2.7	9 Ischaemic heart diseases (I20-I25)	272	2.1
10 Other diseases of the respiratory system (J95-J99)	350	1.6	10 Malignant neoplasms of male genital organs (C60-C63)	206	2.2	10 Other diseases of the respiratory system (J95-J99)	188	1.5
Other natural causes	10 517	46.9	Other natural causes	4 410	46.4	Other natural causes	6 055	45.9
Non-natural causes	603	2.7	Non-natural causes	308	3.2	Non-natural causes	295	2.3
All causes	22 425	100.0	All causes	9 503	100.0	All causes	12 910	100.0

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

Appendix L3: The ten leading underlying natural causes of death by age and sex: Northern Cape, 2012

Northern Cape, both sexes, all ages			Northern Cape, males, all ages			Northern Cape, females, all ages		
	No.	%		No.	%		No.	%
1 Tuberculosis (A15-A19)*	1 233	8.8	1 Tuberculosis (A15-A19)*	714	9.6	1 Tuberculosis (A15-A19)*	512	7.9
2 Human immunodeficiency virus [HIV] disease (B20-B24)	945	6.8	2 Human immunodeficiency virus [HIV] disease (B20-B24)	438	5.9	2 Human immunodeficiency virus [HIV] disease (B20-B24)	505	7.8
3 Cerebrovascular diseases (I60-I69)	657	4.7	3 Chronic lower respiratory diseases (J40-J47)	329	4.4	3 Cerebrovascular diseases (I60-I69)	373	5.7
4 Influenza and pneumonia (J09-J18)	554	4.0	4 Influenza and pneumonia (J09-J18)	293	3.9	4 Hypertensive diseases (I10-I15)	322	5.0
5 Chronic lower respiratory diseases (J40-J47)	533	3.8	5 Cerebrovascular diseases (I60-I69)	281	3.8	5 Diabetes mellitus (E10-E14)	300	4.6
6 Hypertensive diseases (I10-I15)	510	3.7	6 Other forms of heart disease (I30-I52)	199	2.7	6 Influenza and pneumonia (J09-J18)	259	4.0
7 Diabetes mellitus (E10-E14)	478	3.4	7 Hypertensive diseases (I10-I15)	187	2.5	7 Other forms of heart disease (I30-I52)	248	3.8
8 Other forms of heart disease (I30-I52)	448	3.2	8 Ischaemic heart diseases (I20-I25)	186	2.5	8 Chronic lower respiratory diseases (J40-J47)	204	3.1
9 Ischaemic heart diseases (I20-I25)	366	2.6	9 Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	181	2.4	9 Ischaemic heart diseases (I20-I25)	179	2.8
10 Certain disorders involving the immune mechanism (D80-D89)	310	2.2	10 Diabetes mellitus (E10-E14)	177	2.4	10 Certain disorders involving the immune mechanism (D80-D89)	148	2.3
Other natural causes	6 406	45.9	Other natural causes	3 328	44.8	Other natural causes	3 039	46.8
Non-natural causes	1 531	11.0	Non-natural causes	1 117	15.0	Non-natural causes	402	6.2
All causes	13 971	100.0	All causes	7 430	100.0	All causes	6 491	100.0
Northern Cape, both sexes, 0–14			Northern Cape, males, 0–14			Northern Cape, females, 0–14		
	No.	%		No.	%		No.	%
1 Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	123	9.7	1 Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	67	10.2	1 Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	54	9.1
2 Intestinal infectious diseases (A00-A09)	102	8.1	2 Disorders related to length of gestation and fetal growth (P05-P08)	55	8.3	2 Intestinal infectious diseases (A00-A09)	51	8.6
3 Disorders related to length of gestation and fetal growth (P05-P08)	89	7.0	3 Intestinal infectious diseases (A00-A09)	50	7.6	3 Influenza and pneumonia (J09-J18)	37	6.2
4 Influenza and pneumonia (J09-J18)	69	5.5	4 Malnutrition (E40-E46)	32	4.8	4 Disorders related to length of gestation and fetal growth (P05-P08)	32	5.4
5 Other disorders originating in the perinatal period (P90-P96)	65	5.1	4 Influenza and pneumonia (J09-J18)	32	4.8	4 Other disorders originating in the perinatal period (P90-P96)	32	5.4
6 Malnutrition (E40-E46)	60	4.7	4 Other disorders originating in the perinatal period (P90-P96)	32	4.8	6 Malnutrition (E40-E46)	28	4.7
7 Human immunodeficiency virus [HIV] disease (B20-B24)	49	3.9	7 Human immunodeficiency virus [HIV] disease (B20-B24)	24	3.6	7 Human immunodeficiency virus [HIV] disease (B20-B24)	24	4.0
Tuberculosis (A15-A19)*	32	2.5	8 Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	14	2.1	8 Tuberculosis (A15-A19)*	21	3.5
9 Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	23	1.8	9 Infections specific to the perinatal period (P35-P39)	13	2.0	9 Inflammatory diseases of the central nervous system (G00-G09)	10	1.7
10 Infections specific to the perinatal period (P35-P39)	22	1.7	10 Tuberculosis (A15-A19)*	11	1.7	10 Other acute lower respiratory infections (J20-J22)	9	1.5
Other natural causes	485	38.3	Other natural causes	235	35.6	Other natural causes	243	41.0
Non-natural causes	147	11.6	Non-natural causes	95	14.4	Non-natural causes	52	8.8
All causes	1 266	100.0	All causes	660	100.0	All causes	593	100.0
Northern Cape, both sexes, 15–49			Northern Cape, males, 15–49			Northern Cape, females, 15–49		
	No.	%		No.	%		No.	%
1 Tuberculosis (A15-A19)*	776	14.8	1 Tuberculosis (A15-A19)*	430	14.7	1 Human immunodeficiency virus [HIV] disease (B20-B24)	400	17.4
2 Human immunodeficiency virus [HIV] disease (B20-B24)	744	14.2	2 Human immunodeficiency virus [HIV] disease (B20-B24)	343	11.7	2 Tuberculosis (A15-A19)*	339	14.7
3 Certain disorders involving the immune mechanism (D80-D89)	231	4.4	3 Other viral diseases (B25-B34)	123	4.2	3 Certain disorders involving the immune mechanism (D80-D89)	115	5.0
4 Other viral diseases (B25-B34)	211	4.0	4 Certain disorders involving the immune mechanism (D80-D89)	116	4.0	4 Influenza and pneumonia (J09-J18)	99	4.3
5 Influenza and pneumonia (J09-J18)	202	3.8	5 Influenza and pneumonia (J09-J18)	103	3.5	5 Other viral diseases (B25-B34)	88	3.8
6 Other acute lower respiratory infections (J20-J22)	101	1.9	6 Other acute lower respiratory infections (J20-J22)	55	1.9	6 Malignant neoplasms of female genital organs (C51-C58)	47	2.0
7 Other forms of heart disease (I30-I52)	88	1.7	7 Other forms of heart disease (I30-I52)	45	1.5	6 Cerebrovascular diseases (I60-I69)	47	2.0
8 Cerebrovascular diseases (I60-I69)	85	1.6	8 Chronic lower respiratory diseases (J40-J47)	43	1.5	8 Other acute lower respiratory infections (J20-J22)	46	2.0
9 Chronic lower respiratory diseases (J40-J47)	78	1.5	9 Cerebrovascular diseases (I60-I69)	38	1.3	9 Other forms of heart disease (I30-I52)	43	1.9
10 Diseases of liver (K70-K77)	75	1.4	9 Diseases of liver (K70-K77)	38	1.3	10 Diabetes mellitus (E10-E14)	37	1.6
Other natural causes	1 609	30.6	Other natural causes	792	27.0	Other natural causes	798	34.7
Non-natural causes	1 053	20.0	Non-natural causes	805	27.5	Non-natural causes	240	10.4
All causes	5 253	100.0	All causes	2 931	100.0	All causes	2 299	100.0
Northern Cape, both sexes, 50–64			Northern Cape, males, 50–64			Northern Cape, females, 50–64		
	No.	%		No.	%		No.	%
1 Tuberculosis (A15-A19)*	314	9.6	1 Tuberculosis (A15-A19)*	196	10.5	1 Tuberculosis (A15-A19)*	118	8.5
2 Chronic lower respiratory diseases (J40-J47)	202	6.2	2 Chronic lower respiratory diseases (J40-J47)	126	6.7	2 Cerebrovascular diseases (I60-I69)	98	7.0
3 Cerebrovascular diseases (I60-I69)	184	5.6	3 Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	95	5.1	3 Diabetes mellitus (E10-E14)	90	6.5
4 Diabetes mellitus (E10-E14)	147	4.5	4 Cerebrovascular diseases (I60-I69)	85	4.5	4 Hypertensive diseases (I10-I15)	76	5.5
5 Human immunodeficiency virus [HIV] disease (B20-B24)	134	4.1	5 Influenza and pneumonia (J09-J18)	76	4.1	4 Chronic lower respiratory diseases (J40-J47)	76	5.5
5 Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	134	4.1	6 Other forms of heart disease (I30-I52)	62	3.3	5 Human immunodeficiency virus [HIV] disease (B20-B24)	73	5.2
7 Hypertensive diseases (I10-I15)	133	4.1	7 Human immunodeficiency virus [HIV] disease (B20-B24)	61	3.3	7 Other forms of heart disease (I30-I52)	56	4.0
8 Influenza and pneumonia (J09-J18)	123	3.8	7 Malignant neoplasms of digestive organs (C15-C26)	61	3.3	8 Malignant neoplasms of female genital organs (C51-C58)	51	3.7
9 Other forms of heart disease (I30-I52)	118	3.6	9 Diabetes mellitus (E10-E14)	57	3.0	9 Malignant neoplasms of digestive organs (C15-C26)	47	3.4
10 Malignant neoplasms of digestive organs (C15-C26)	108	3.3	10 Hypertensive diseases (I10-I15)	56	3.0	10 Ischaemic heart diseases (I20-I25)	46	3.3
Other natural causes	1 460	44.7	Other natural causes	845	45.2	Other natural causes	602	43.2
Non-natural causes	210	6.4	Non-natural causes	150	8.0	Non-natural causes	59	4.2
All causes	3 267	100.0	All causes	1 870	100.0	All causes	1 392	100.0
Northern Cape, both sexes, 65+			Northern Cape, males, 65+			Northern Cape, females, 65+		
	No.	%		No.	%		No.	%
1 Cerebrovascular diseases (I60-I69)	385	9.3	1 Chronic lower respiratory diseases (J40-J47)	160	8.2	1 Cerebrovascular diseases (I60-I69)	226	10.3
2 Hypertensive diseases (I10-I15)	337	8.1	2 Cerebrovascular diseases (I60-I69)	157	8.1	2 Hypertensive diseases (I10-I15)	224	10.2
3 Diabetes mellitus (E10-E14)	263	6.3	3 Hypertensive diseases (I10-I15)	113	5.8	3 Diabetes mellitus (E10-E14)	172	7.8
4 Chronic lower respiratory diseases (J40-J47)	252	6.1	4 Ischaemic heart diseases (I20-I25)	110	5.6	4 Other forms of heart disease (I30-I52)	143	6.5
5 Other forms of heart disease (I30-I52)	235	5.7	5 Diabetes mellitus (E10-E14)	91	4.7	5 Ischaemic heart diseases (I20-I25)	119	5.4
6 Ischaemic heart diseases (I20-I25)	229	5.5	5 Other forms of heart disease (I30-I52)	91	4.7	6 Chronic lower respiratory diseases (J40-J47)	92	4.2
7 Influenza and pneumonia (J09-J18)	158	3.8	7 Malignant neoplasms of male genital organs (C60-C63)	84	4.3	7 Influenza and pneumonia (J09-J18)	78	3.5
8 Malignant neoplasms of digestive organs (C15-C26)	145	3.5	8 Influenza and pneumonia (J09-J18)	80	4.1	8 Malignant neoplasms of digestive organs (C15-C26)	66	3.0
9 Tuberculosis (A15-A19)*	110	2.7	9 Malignant neoplasms of digestive organs (C15-C26)	79	4.1	9 Intestinal infectious diseases (A00-A09)	39	1.8
10 Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	102	2.5	10 Tuberculosis (A15-A19)*	76	3.9	10 Malignant neoplasms of breast (C50)	36	1.6
Other natural causes	1 823	43.9	Other natural causes	845	43.4	Other natural causes	953	43.4
Non-natural causes	111	2.7	Non-natural causes	61	3.1	Non-natural causes	50	2.3
All causes	4 150	100.0	All causes	1 947	100.0	All causes	2 198	100.0

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

Appendix L4: The ten leading underlying natural causes of death by age and sex: Free State, 2012

Free State, both sexes, all ages			Free State, males, all ages			Free State, females, all ages		
	No.	%		No.	%		No.	%
1 Tuberculosis (A15-A19)*	3 264	9,3	1 Tuberculosis (A15-A19)*	1 990	10,8	1 Influenza and pneumonia (J09-J18)	1 351	8,2
2 Influenza and pneumonia (J09-J18)	2 850	8,1	2 Influenza and pneumonia (J09-J18)	1 491	8,1	2 Tuberculosis (A15-A19)*	1 270	7,7
3 Other forms of heart disease (I30-I52)	1 868	5,3	3 Other forms of heart disease (I30-I52)	839	4,6	3 Cerebrovascular diseases (I60-I69)	1 049	6,4
4 Cerebrovascular diseases (I60-I69)	1 837	5,2	4 Cerebrovascular diseases (I60-I69)	785	4,3	4 Other forms of heart disease (I30-I52)	1 025	6,2
5 Hypertensive diseases (I10-I15)	1 318	3,8	5 Human immunodeficiency virus [HIV] disease (B20-B24)	628	3,4	5 Diabetes mellitus (E10-E14)	788	4,8
6 Diabetes mellitus (E10-E14)	1 236	3,5	6 Certain disorders involving the immune mechanism (D80-D89)	580	3,1	6 Hypertensive diseases (I10-I15)	779	4,7
7 Intestinal infectious diseases (A00-A09)	1 227	3,5	7 Intestinal infectious diseases (A00-A09)	569	3,1	7 Intestinal infectious diseases (A00-A09)	653	4,0
8 Human immunodeficiency virus [HIV] disease (B20-B24)	1 188	3,4	8 Hypertensive diseases (I10-I15)	537	2,9	8 Certain disorders involving the immune mechanism (D80-D89)	571	3,5
9 Certain disorders involving the immune mechanism (D80-D89)	1 155	3,3	9 Ischaemic heart diseases (I20-I25)	453	2,5	9 Human immunodeficiency virus [HIV] disease (B20-B24)	558	3,4
10 Other viral diseases (B25-B34)	862	2,5	10 Diabetes mellitus (E10-E14)	448	2,4	10 Other viral diseases (B25-B34)	458	2,8
Other natural causes	6 406	18,3	Other natural causes	3 328	18,1	Other natural causes	3 039	18,4
Non-natural causes	3 202	9,1	Non-natural causes	2 421	13,1	Non-natural causes	773	4,7
All causes	35 054	100,0	All causes	18 437	100,0	All causes	16 517	100,0
Free State, both sexes, 0-14			Free State, males, 0-14			Free State, females, 0-14		
	No.	%		No.	%		No.	%
1 Intestinal infectious diseases (A00-A09)	406	12,1	1 Intestinal infectious diseases (A00-A09)	207	11,6	1 Influenza and pneumonia (J09-J18)	206	13,4
2 Influenza and pneumonia (J09-J18)	395	11,8	2 Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	204	11,4	2 Intestinal infectious diseases (A00-A09)	198	12,9
3 Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	363	10,8	3 Influenza and pneumonia (J09-J18)	184	10,3	3 Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	153	10,0
4 Malnutrition (E40-E46)	219	6,5	4 Malnutrition (E40-E46)	123	6,9	4 Malnutrition (E40-E46)	95	6,2
5 Other disorders originating in the perinatal period (P90-P96)	125	3,7	5 Other disorders originating in the perinatal period (P90-P96)	78	4,4	5 Disorders related to length of gestation and fetal growth (P05-P08)	46	3,0
6 Disorders related to length of gestation and fetal growth (P05-P08)	108	3,2	6 Disorders related to length of gestation and fetal growth (P05-P08)	60	3,4	5 Other disorders originating in the perinatal period (P90-P96)	46	3,0
7 Infections specific to the perinatal period (P35-P39)	92	2,7	7 Infections specific to the perinatal period (P35-P39)	51	2,9	7 Infections specific to the perinatal period (P35-P39)	39	2,5
8 Tuberculosis (A15-A19)*	75	2,2	8 Tuberculosis (A15-A19)*	40	2,2	8 Other acute lower respiratory infections (J20-J22)	38	2,5
9 Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	71	2,1	9 Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	38	2,1	9 Tuberculosis (A15-A19)*	35	2,3
10 Other acute lower respiratory infections (J20-J22)	69	2,1	10 Other acute lower respiratory infections (J20-J22)	31	1,7	10 Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	33	2,1
Other natural causes	485	14,5	Other natural causes	235	13,1	Other natural causes	243	15,8
Non-natural causes	293	8,7	Non-natural causes	165	9,2	Non-natural causes	128	8,3
All causes	3 352	100,0	All causes	1 789	100,0	All causes	1 535	100,0
Free State, both sexes, 15-49			Free State, males, 15-49			Free State, females, 15-49		
	No.	%		No.	%		No.	%
1 Tuberculosis (A15-A19)*	2 175	15,8	1 Tuberculosis (A15-A19)*	1 241	16,4	1 Tuberculosis (A15-A19)*	931	15,1
2 Influenza and pneumonia (J09-J18)	1 237	9,0	2 Influenza and pneumonia (J09-J18)	614	8,1	2 Influenza and pneumonia (J09-J18)	620	10,1
3 Human immunodeficiency virus [HIV] disease (B20-B24)	886	6,4	3 Human immunodeficiency virus [HIV] disease (B20-B24)	460	6,1	3 Human immunodeficiency virus [HIV] disease (B20-B24)	424	6,9
4 Certain disorders involving the immune mechanism (D80-D89)	820	5,9	4 Certain disorders involving the immune mechanism (D80-D89)	399	5,3	4 Certain disorders involving the immune mechanism (D80-D89)	419	6,8
5 Other viral diseases (B25-B34)	635	4,6	5 Other viral diseases (B25-B34)	290	3,8	5 Other viral diseases (B25-B34)	344	5,6
6 Intestinal infectious diseases (A00-A09)	406	2,9	6 Intestinal infectious diseases (A00-A09)	183	2,4	6 Intestinal infectious diseases (A00-A09)	221	3,6
7 Other forms of heart disease (I30-I52)	362	2,6	7 Other forms of heart disease (I30-I52)	161	2,1	7 Other forms of heart disease (I30-I52)	199	3,2
8 Cerebrovascular diseases (I60-I69)	280	2,0	8 Cerebrovascular diseases (I60-I69)	149	2,0	8 Cerebrovascular diseases (I60-I69)	130	2,1
9 Other acute lower respiratory infections (J20-J22)	244	1,8	9 Other acute lower respiratory infections (J20-J22)	115	1,5	9 Other acute lower respiratory infections (J20-J22)	129	2,1
10 Inflammatory diseases of the central nervous system (G00-G09)	221	1,6	10 Inflammatory diseases of the central nervous system (G00-G09)	105	1,4	10 Inflammatory diseases of the central nervous system (G00-G09)	116	1,9
Other natural causes	1 609	11,7	Other natural causes	792	10,4	Other natural causes	798	12,9
Non-natural causes	2 186	15,9	Non-natural causes	1 758	23,2	Non-natural causes	424	6,9
All causes	13 785	100,0	All causes	7 581	100,0	All causes	6 164	100,0
Free State, both sexes, 50-64			Free State, males, 50-64			Free State, females, 50-64		
	No.	%		No.	%		No.	%
1 Tuberculosis (A15-A19)*	767	9,7	1 Tuberculosis (A15-A19)*	554	11,9	1 Diabetes mellitus (E10-E14)	254	7,9
2 Influenza and pneumonia (J09-J18)	555	7,0	2 Influenza and pneumonia (J09-J18)	354	7,6	2 Cerebrovascular diseases (I60-I69)	240	7,5
3 Cerebrovascular diseases (I60-I69)	516	6,5	3 Cerebrovascular diseases (I60-I69)	274	5,9	3 Other forms of heart disease (I30-I52)	213	6,6
4 Other forms of heart disease (I30-I52)	479	6,1	4 Other forms of heart disease (I30-I52)	265	5,7	4 Tuberculosis (A15-A19)*	212	6,6
5 Diabetes mellitus (E10-E14)	428	5,4	5 Hypertensive diseases (I10-I15)	186	4,0	5 Influenza and pneumonia (J09-J18)	201	6,2
6 Hypertensive diseases (I10-I15)	373	4,7	6 Diabetes mellitus (E10-E14)	174	3,7	6 Hypertensive diseases (I10-I15)	185	5,7
7 Chronic lower respiratory diseases (J40-J47)	255	3,2	7 Chronic lower respiratory diseases (J40-J47)	160	3,4	7 Certain disorders involving the immune mechanism (D80-D89)	111	3,4
8 Certain disorders involving the immune mechanism (D80-D89)	244	3,1	8 Ischaemic heart diseases (I20-I25)	157	3,4	8 Malignant neoplasms of female genital organs (C51-C58)	106	3,3
9 Malignant neoplasms of digestive organs (C15-C26)	233	3,0	9 Malignant neoplasms of digestive organs (C15-C26)	154	3,3	9 Human immunodeficiency virus [HIV] disease (B20-B24)	95	3,0
10 Ischaemic heart diseases (I20-I25)	229	2,9	10 Certain disorders involving the immune mechanism (D80-D89)	132	2,8	9 Chronic lower respiratory diseases (J40-J47)	95	3,0
Other natural causes	1 460	18,5	Other natural causes	845	18,1	Other natural causes	602	18,7
Non-natural causes	423	5,4	Non-natural causes	317	6,8	Non-natural causes	106	3,3
All causes	7 894	100,0	All causes	4 661	100,0	All causes	3 219	100,0
Free State, both sexes, 65+			Free State, males, 65+			Free State, males, 65+		
	No.	%		No.	%		No.	%
1 Cerebrovascular diseases (I60-I69)	1 033	10,4	1 Other forms of heart disease (I30-I52)	394	9,1	1 Cerebrovascular diseases (I60-I69)	674	12,1
2 Other forms of heart disease (I30-I52)	984	9,9	2 Cerebrovascular diseases (I60-I69)	359	8,3	2 Other forms of heart disease (I30-I52)	589	10,6
3 Hypertensive diseases (I10-I15)	785	7,9	3 Influenza and pneumonia (J09-J18)	335	7,7	3 Hypertensive diseases (I10-I15)	509	9,1
4 Influenza and pneumonia (J09-J18)	654	6,6	4 Hypertensive diseases (I10-I15)	276	6,4	4 Diabetes mellitus (E10-E14)	435	7,8
5 Diabetes mellitus (E10-E14)	640	6,5	5 Ischaemic heart diseases (I20-I25)	229	5,3	5 Influenza and pneumonia (J09-J18)	319	5,7
6 Ischaemic heart diseases (I20-I25)	484	4,9	6 Chronic lower respiratory diseases (J40-J47)	210	4,8	6 Ischaemic heart diseases (I20-I25)	255	4,6
7 Chronic lower respiratory diseases (J40-J47)	357	3,6	7 Diabetes mellitus (E10-E14)	205	4,7	7 Chronic lower respiratory diseases (J40-J47)	147	2,6
8 Malignant neoplasms of digestive organs (C15-C26)	253	2,6	8 Tuberculosis (A15-A19)*	148	3,4	8 Intestinal infectious diseases (A00-A09)	146	2,6
9 Tuberculosis (A15-A19)*	237	2,4	9 Malignant neoplasms of digestive organs (C15-C26)	148	3,4	9 Malignant neoplasms of digestive organs (C15-C26)	104	1,9
10 Intestinal infectious diseases (A00-A09)	233	2,3	10 Malignant neoplasms of male genital organs (C60-C63)	122	2,8	10 Renal failure (N17-N19)	103	1,8
Other natural causes	1 823	18,4	Other natural causes	845	19,5	Other natural causes	953	17,1
Non-natural causes	281	2,8	Non-natural causes	168	3,9	Non-natural causes	113	2,0
All causes	9 915	100,0	All causes	4 338	100,0	All causes	5 569	100,0

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

Appendix L5: The ten leading underlying natural causes of death by age and sex: KwaZulu-Natal, 2012

KwaZulu-Natal, both sexes, all ages			KwaZulu-Natal, males, all ages			KwaZulu-Natal, females, all ages		
	No.	%		No.	%		No.	%
1 Tuberculosis (A15-A19)*	12 826	13.3	1 Tuberculosis (A15-A19)*	7 160	14.6	1 Tuberculosis (A15-A19)*	5 623	11.9
2 Cerebrovascular diseases (I60-I69)	5 383	5.6	2 Human immunodeficiency virus [HIV] disease (B20-B24)	2 485	5.1	2 Cerebrovascular diseases (I60-I69)	3 347	7.1
3 Diabetes mellitus (E10-E14)	5 049	5.2	3 Cerebrovascular diseases (I60-I69)	2 027	4.1	3 Diabetes mellitus (E10-E14)	3 184	6.7
4 Human immunodeficiency virus [HIV] disease (B20-B24)	4 817	5.0	4 Influenza and pneumonia (J09-J18)	1 987	4.1	4 Other forms of heart disease (I30-I52)	2 540	5.4
5 Other forms of heart disease (I30-I52)	4 486	4.6	5 Other forms of heart disease (I30-I52)	1 942	4.0	5 Human immunodeficiency virus [HIV] disease (B20-B24)	2 318	4.9
6 Influenza and pneumonia (J09-J18)	4 012	4.1	6 Diabetes mellitus (E10-E14)	1 861	3.8	6 Influenza and pneumonia (J09-J18)	2 016	4.3
7 Other viral diseases (B25-B34)	3 791	3.9	7 Other viral diseases (B25-B34)	1 786	3.6	7 Other viral diseases (B25-B34)	1 992	4.2
8 Intestinal infectious diseases (A00-A09)	3 429	3.5	8 Intestinal infectious diseases (A00-A09)	1 650	3.4	8 Hypertensive diseases (I10-I15)	1 918	4.0
9 Hypertensive diseases (I10-I15)	2 964	3.1	9 Ischaemic heart diseases (I20-I25)	1 230	2.5	9 Intestinal infectious diseases (A00-A09)	1 764	3.7
10 Ischaemic heart diseases (I20-I25)	2 173	2.2	10 Hypertensive diseases (I10-I15)	1 045	2.1	10 Certain disorders involving the immune mechanism (D80-D89)	989	2.1
Other natural causes	6 406	6.6	Other natural causes	3 328	6.8	Other natural causes	3 039	6.4
Non-natural causes	9 441	9.8	Non-natural causes	7 041	14.4	Non-natural causes	2 359	5.0
All causes	96 749	100.0	All causes	49 017	100.0	All causes	47 418	100.0
KwaZulu Natal, both sexes, 0–14			KwaZulu Natal, males, 0–14			KwaZulu Natal, females, 0–14		
	No.	%		No.	%		No.	%
1 Intestinal infectious diseases (A00-A09)	1 179	11.4	1 Intestinal infectious diseases (A00-A09)	609	11.2	1 Intestinal infectious diseases (A00-A09)	564	11.7
2 Influenza and pneumonia (J09-J18)	786	7.6	2 Respiratory and cardiovascular disorders specific to the perinatal period (P20-P24)	425	7.8	2 Influenza and pneumonia (J09-J18)	393	8.2
3 Respiratory and cardiovascular disorders specific to the perinatal period (P20-P24)	759	7.3	3 Influenza and pneumonia (J09-J18)	389	7.2	3 Respiratory and cardiovascular disorders specific to the perinatal period (P20-P24)	311	6.5
4 Tuberculosis (A15-A19)*	371	3.6	4 Disorders related to length of gestation and fetal growth (P05-P08)	183	3.4	4 Tuberculosis (A15-A19)*	199	4.1
5 Disorders related to length of gestation and fetal growth (P05-P08)	347	3.4	5 Tuberculosis (A15-A19)*	171	3.2	5 Disorders related to length of gestation and fetal growth (P05-P08)	149	3.1
6 Malnutrition (E40-E46)	280	2.7	6 Other disorders originating in the perinatal period (P90-P96)	151	2.8	6 Malnutrition (E40-E46)	145	3.0
7 Other disorders originating in the perinatal period (P90-P96)	273	2.6	7 Malnutrition (E40-E46)	134	2.5	7 Other disorders originating in the perinatal period (P90-P96)	114	2.4
8 Other viral diseases (B25-B34)	227	2.2	8 Infections specific to the perinatal period (P35-P39)	130	2.4	8 Other viral diseases (B25-B34)	96	2.0
9 Infections specific to the perinatal period (P35-P39)	226	2.2	9 Other viral diseases (B25-B34)	128	2.4	9 Infections specific to the perinatal period (P35-P39)	91	1.9
10 Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	194	1.9	10 Human immunodeficiency virus [HIV] disease (B20-B24)	100	1.8	10 Human immunodeficiency virus [HIV] disease (B20-B24)	87	1.8
Other natural causes	485	4.7	Other natural causes	235	4.3	Other natural causes	243	5.0
Non-natural causes	1 076	10.4	Non-natural causes	656	12.1	Non-natural causes	414	8.6
All causes	10 344	100.0	All causes	5 419	100.0	All causes	4 812	100.0
KwaZulu Natal, both sexes, 15–49			KwaZulu Natal, males, 15–49			KwaZulu Natal, females, 15–49		
	No.	%		No.	%		No.	%
1 Tuberculosis (A15-A19)*	8 959	22.1	1 Tuberculosis (A15-A19)*	4 777	21.5	1 Tuberculosis (A15-A19)*	4 155	22.8
2 Human immunodeficiency virus [HIV] disease (B20-B24)	3 829	9.5	2 Human immunodeficiency virus [HIV] disease (B20-B24)	1 913	8.6	2 Human immunodeficiency virus [HIV] disease (B20-B24)	1 907	10.5
3 Other viral diseases (B25-B34)	2 947	7.3	3 Other viral diseases (B25-B34)	1 341	6.0	3 Other viral diseases (B25-B34)	1 600	8.8
4 Influenza and pneumonia (J09-J18)	1 575	3.9	4 Influenza and pneumonia (J09-J18)	780	3.5	4 Certain disorders involving the immune mechanism (D80-D89)	814	4.5
5 Certain disorders involving the immune mechanism (D80-D89)	1 500	3.7	5 Certain disorders involving the immune mechanism (D80-D89)	679	3.1	5 Influenza and pneumonia (J09-J18)	794	4.4
6 Intestinal infectious diseases (A00-A09)	1 173	2.9	6 Intestinal infectious diseases (A00-A09)	569	2.6	6 Intestinal infectious diseases (A00-A09)	600	3.3
7 Inflammatory diseases of the central nervous system (G00-G09)	851	2.1	7 Inflammatory diseases of the central nervous system (G00-G09)	402	1.8	7 Inflammatory diseases of the central nervous system (G00-G09)	448	2.5
8 Other forms of heart disease (I30-I52)	803	2.0	8 Other forms of heart disease (I30-I52)	392	1.8	8 Other forms of heart disease (I30-I52)	408	2.2
9 Cerebrovascular diseases (I60-I69)	642	1.6	9 Other acute lower respiratory infections (J20-J22)	342	1.5	9 Protozoal diseases (B50-B64)	340	1.9
10 Other acute lower respiratory infections (J20-J22)	626	1.5	10 Cerebrovascular diseases (I60-I69)	320	1.4	10 Malignant neoplasms of female genital organs (C51-C58)	324	1.8
Other natural causes	1 609	4.0	Other natural causes	792	3.6	Other natural causes	798	4.4
Non-natural causes	6 386	15.8	Non-natural causes	5 187	23.4	Non-natural causes	1 180	6.5
All causes	40 504	100.0	All causes	22 208	100.0	All causes	18 197	100.0
KwaZulu Natal, both sexes, 50–64			KwaZulu Natal, males, 50–64			KwaZulu Natal, females, 50–64		
	No.	%		No.	%		No.	%
1 Tuberculosis (A15-A19)*	2 304	12.5	1 Tuberculosis (A15-A19)*	1 565	14.7	1 Diabetes mellitus (E10-E14)	997	12.8
2 Diabetes mellitus (E10-E14)	1 746	9.5	2 Diabetes mellitus (E10-E14)	748	7.0	2 Tuberculosis (A15-A19)*	735	9.5
3 Cerebrovascular diseases (I60-I69)	1 273	6.9	3 Cerebrovascular diseases (I60-I69)	632	5.9	3 Cerebrovascular diseases (I60-I69)	637	8.2
4 Other forms of heart disease (I30-I52)	1 075	5.8	4 Other forms of heart disease (I30-I52)	591	5.6	4 Other forms of heart disease (I30-I52)	484	6.2
5 Hypertensive diseases (I10-I15)	784	4.3	5 Ischaemic heart diseases (I20-I25)	438	4.1	5 Hypertensive diseases (I10-I15)	431	5.5
6 Human immunodeficiency virus [HIV] disease (B20-B24)	644	3.5	6 Influenza and pneumonia (J09-J18)	393	3.7	6 Malignant neoplasms of female genital organs (C51-C58)	278	3.6
7 Ischaemic heart diseases (I20-I25)	643	3.5	7 Human immunodeficiency virus [HIV] disease (B20-B24)	381	3.6	7 Human immunodeficiency virus [HIV] disease (B20-B24)	260	3.3
8 Influenza and pneumonia (J09-J18)	625	3.4	8 Hypertensive diseases (I10-I15)	353	3.3	8 Other viral diseases (B25-B34)	244	3.1
9 Malignant neoplasms of digestive organs (C15-C26)	545	3.0	9 Chronic lower respiratory diseases (J40-J47)	350	3.3	9 Influenza and pneumonia (J09-J18)	231	3.0
10 Other viral diseases (B25-B34)	512	2.8	10 Malignant neoplasms of digestive organs (C15-C26)	346	3.3	10 Ischaemic heart diseases (I20-I25)	205	2.6
Other natural causes	1 460	7.9	Other natural causes	845	7.9	Other natural causes	602	7.7
Non-natural causes	1 062	5.8	Non-natural causes	768	7.2	Non-natural causes	293	3.8
All causes	18 438	100.0	All causes	10 643	100.0	All causes	7 770	100.0
KwaZulu Natal, both sexes, 65+			KwaZulu Natal, males, 65+			KwaZulu Natal, females, 65+		
	No.	%		No.	%		No.	%
1 Cerebrovascular diseases (I60-I69)	3 430	12.7	1 Cerebrovascular diseases (I60-I69)	1 059	10.1	1 Cerebrovascular diseases (I60-I69)	2 371	14.4
2 Diabetes mellitus (E10-E14)	2 778	10.3	2 Other forms of heart disease (I30-I52)	878	8.4	2 Diabetes mellitus (E10-E14)	1 908	11.6
3 Other forms of heart disease (I30-I52)	2 443	9.1	3 Diabetes mellitus (E10-E14)	869	8.3	3 Other forms of heart disease (I30-I52)	1 565	9.5
4 Hypertensive diseases (I10-I15)	1 917	7.1	4 Ischaemic heart diseases (I20-I25)	622	5.9	4 Hypertensive diseases (I10-I15)	1 333	8.1
5 Ischaemic heart diseases (I20-I25)	1 287	4.8	5 Tuberculosis (A15-A19)*	608	5.8	5 Ischaemic heart diseases (I20-I25)	665	4.0
6 Tuberculosis (A15-A19)*	1 115	4.1	6 Hypertensive diseases (I10-I15)	583	5.6	6 Influenza and pneumonia (J09-J18)	595	3.6
7 Influenza and pneumonia (J09-J18)	1 009	3.7	7 Chronic lower respiratory diseases (J40-J47)	464	4.4	7 Tuberculosis (A15-A19)*	506	3.1
8 Chronic lower respiratory diseases (J40-J47)	820	3.0	8 Influenza and pneumonia (J09-J18)	413	3.9	8 Intestinal infectious diseases (A00-A09)	397	2.4
9 Malignant neoplasms of digestive organs (C15-C26)	688	2.5	9 Malignant neoplasms of digestive organs (C15-C26)	346	3.3	9 Chronic lower respiratory diseases (J40-J47)	356	2.2
10 Intestinal infectious diseases (A00-A09)	600	2.2	10 Malignant neoplasms of male genital organs (C60-C63)	264	2.5	10 Malignant neoplasms of digestive organs (C15-C26)	342	2.1
Other natural causes	1 823	6.8	Other natural causes	845	8.1	Other natural causes	953	5.8
Non-natural causes	844	3.1	Non-natural causes	376	3.6	Non-natural causes	468	2.8
All causes	26 991	100.0	All causes	10 490	100.0	All causes	16 493	100.0

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

Appendix L6: The ten leading underlying natural causes of death by age and sex: North West, 2012

North West, both sexes, all ages			North West, males, all ages			North West, females, all ages		
	No.	%		No.	%		No.	%
1 Tuberculosis (A15-A19)*	3 722	10.4	1 Tuberculosis (A15-A19)*	2 185	11.5	1 Tuberculosis (A15-A19)*	1 521	9.2
2 Influenza and pneumonia (J09-J18)	2 596	7.2	2 Influenza and pneumonia (J09-J18)	1 340	7.0	2 Influenza and pneumonia (J09-J18)	1 239	7.5
3 Other forms of heart disease (I30-I52)	2 057	5.7	3 Other forms of heart disease (I30-I52)	1 008	5.3	3 Hypertensive diseases (I10-I15)	1 079	6.5
4 Hypertensive diseases (I10-I15)	1 743	4.9	4 Cerebrovascular diseases (I60-I69)	795	4.2	4 Other forms of heart disease (I30-I52)	1 044	6.3
5 Cerebrovascular diseases (I60-I69)	1 717	4.8	5 Other viral diseases (B25-B34)	750	3.9	5 Cerebrovascular diseases (I60-I69)	919	5.5
6 Other viral diseases (B25-B34)	1 456	4.1	6 Hypertensive diseases (I10-I15)	663	3.5	6 Diabetes mellitus (E10-E14)	733	4.4
7 Diabetes mellitus (E10-E14)	1 253	3.5	7 Intestinal infectious diseases (A00-A09)	591	3.1	7 Other viral diseases (B25-B34)	702	4.2
8 Intestinal infectious diseases (A00-A09)	1 167	3.3	8 Human immunodeficiency virus [HIV] disease (B20-B24)	566	3.0	8 Intestinal infectious diseases (A00-A09)	567	3.4
9 Human immunodeficiency virus [HIV] disease (B20-B24)	1 092	3.0	9 Diabetes mellitus (E10-E14)	520	2.7	9 Certain disorders involving the immune mechanism (D80-D89)	561	3.4
10 Certain disorders involving the immune mechanism (D80-D89)	1 077	3.0	10 Certain disorders involving the immune mechanism (D80-D89)	514	2.7	10 Human immunodeficiency virus [HIV] disease (B20-B24)	520	3.1
Other natural causes	6 406	17.9	Other natural causes	3 328	17.5	Other natural causes	3 039	18.3
Non-natural causes	2 980	8.3	Non-natural causes	2 252	11.8	Non-natural causes	703	4.2
All causes	35 824	100.0	All causes	19 040	100.0	All causes	16 609	100.0
North West, both sexes, 0–14			North West, males, 0–14			North West, females, 0–14		
	No.	%		No.	%		No.	%
1 Intestinal infectious diseases (A00-A09)	539	14.1	1 Intestinal infectious diseases (A00-A09)	265	13.3	1 Intestinal infectious diseases (A00-A09)	269	15.1
2 Respiratory and cardiovascular disorders specific to the perinatal period (P20-P39)	406	10.6	2 Respiratory and cardiovascular disorders specific to the perinatal period (P20-P39)	229	11.5	2 Influenza and pneumonia (J09-J18)	171	9.6
3 Influenza and pneumonia (J09-J18)	380	9.9	3 Influenza and pneumonia (J09-J18)	199	10.0	3 Respiratory and cardiovascular disorders specific to the perinatal period (P20-P39)	161	9.1
4 Malnutrition (E40-E46)	174	4.5	4 Disorders related to length of gestation and fetal growth (P05-P08)	77	3.9	4 Malnutrition (E40-E46)	97	5.5
5 Other disorders originating in the perinatal period (P90-P96)	140	3.7	5 Malnutrition (E40-E46)	76	3.8	5 Other disorders originating in the perinatal period (P90-P96)	66	3.7
6 Infections specific to the perinatal period (P35-P39)	136	3.6	6 Infections specific to the perinatal period (P35-P39)	71	3.6	6 Infections specific to the perinatal period (P35-P39)	61	3.4
7 Disorders related to length of gestation and fetal growth (P05-P08)	131	3.4	6 Other disorders originating in the perinatal period (P90-P96)	71	3.6	7 Disorders related to length of gestation and fetal growth (P05-P08)	53	3.0
8 Tuberculosis (A15-A19)*	101	2.6	8 Tuberculosis (A15-A19)*	52	2.6	8 Tuberculosis (A15-A19)*	48	2.7
9 Other viral diseases (B25-B34)	98	2.6	9 Other viral diseases (B25-B34)	49	2.5	9 Other viral diseases (B25-B34)	48	2.7
10 Other acute lower respiratory infections (J20-J22)	81	2.1	10 Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	41	2.1	10 Other acute lower respiratory infections (J20-J22)	43	2.4
Other natural causes	485	12.7	Other natural causes	235	11.8	Other natural causes	243	13.7
Non-natural causes	298	7.8	Non-natural causes	183	9.2	Non-natural causes	112	6.3
All causes	3 829	100.0	All causes	1 991	100.0	All causes	1 779	100.0
North West, both sexes, 15–49			North West, males, 15–49			North West, females, 15–49		
	No.	%		No.	%		No.	%
1 Tuberculosis (A15-A19)*	2 478	17.7	1 Tuberculosis (A15-A19)*	1 379	17.9	1 Tuberculosis (A15-A19)*	1 086	17.4
2 Influenza and pneumonia (J09-J18)	1 279	9.1	2 Influenza and pneumonia (J09-J18)	605	7.9	2 Influenza and pneumonia (J09-J18)	672	10.7
3 Other viral diseases (B25-B34)	1 045	7.5	3 Other viral diseases (B25-B34)	528	6.9	3 Other viral diseases (B25-B34)	515	8.2
4 Human immunodeficiency virus [HIV] disease (B20-B24)	798	5.7	4 Human immunodeficiency virus [HIV] disease (B20-B24)	406	5.3	4 Certain disorders involving the immune mechanism (D80-D89)	428	6.8
5 Certain disorders involving the immune mechanism (D80-D89)	772	5.5	5 Certain disorders involving the immune mechanism (D80-D89)	343	4.5	5 Human immunodeficiency virus [HIV] disease (B20-B24)	389	6.2
6 Other forms of heart disease (I30-I52)	409	2.9	6 Other forms of heart disease (I30-I52)	204	2.6	6 Other forms of heart disease (I30-I52)	205	3.3
7 Intestinal infectious diseases (A00-A09)	308	2.2	7 Intestinal infectious diseases (A00-A09)	158	2.1	7 Intestinal infectious diseases (A00-A09)	147	2.4
8 Cerebrovascular diseases (I60-I69)	234	1.7	8 Cerebrovascular diseases (I60-I69)	115	1.5	8 Cerebrovascular diseases (I60-I69)	119	1.9
9 Inflammatory diseases of the central nervous system (G00-G09)	173	1.2	9 Inflammatory diseases of the central nervous system (G00-G09)	99	1.3	9 Malignant neoplasms of female genital organs (C51-C58)	107	1.7
10 Other bacterial diseases (A30-A49)	171	1.2	10 Renal failure (N17-N19)	93	1.2	10 Aplastic and other anaemias (D60-D64)	93	1.5
Other natural causes	1 609	11.5	Other natural causes	792	10.3	Other natural causes	798	12.8
Non-natural causes	2 053	14.7	Non-natural causes	1 637	21.3	Non-natural causes	410	6.6
All causes	14 002	100.0	All causes	7 700	100.0	All causes	6 254	100.0
North West, both sexes, 50–64			North West, males, 50–64			North West, females, 50–64		
	No.	%		No.	%		No.	%
1 Tuberculosis (A15-A19)*	842	11.3	1 Tuberculosis (A15-A19)*	568	12.8	1 Tuberculosis (A15-A19)*	274	9.1
2 Other forms of heart disease (I30-I52)	519	7.0	2 Other forms of heart disease (I30-I52)	311	7.0	2 Diabetes mellitus (E10-E14)	217	7.2
3 Influenza and pneumonia (J09-J18)	460	6.2	3 Influenza and pneumonia (J09-J18)	304	6.9	3 Hypertensive diseases (I10-I15)	206	6.8
4 Cerebrovascular diseases (I60-I69)	426	5.7	4 Cerebrovascular diseases (I60-I69)	222	5.0	4 Other forms of heart disease (I30-I52)	206	6.8
5 Hypertensive diseases (I10-I15)	414	5.6	5 Hypertensive diseases (I10-I15)	208	4.7	5 Cerebrovascular diseases (I60-I69)	202	6.7
6 Diabetes mellitus (E10-E14)	396	5.3	6 Diabetes mellitus (E10-E14)	179	4.0	6 Influenza and pneumonia (J09-J18)	154	5.1
7 Chronic lower respiratory diseases (J40-J47)	285	3.8	7 Chronic lower respiratory diseases (J40-J47)	177	4.0	7 Other viral diseases (B25-B34)	120	4.0
8 Other viral diseases (B25-B34)	261	3.5	8 Other viral diseases (B25-B34)	141	3.2	8 Malignant neoplasms of female genital organs (C51-C58)	118	3.9
9 Certain disorders involving the immune mechanism (D80-D89)	204	2.7	9 Malignant neoplasms of digestive organs (C15-C26)	139	3.1	9 Chronic lower respiratory diseases (J40-J47)	107	3.6
10 Human immunodeficiency virus [HIV] disease (B20-B24)	196	2.6	10 Certain disorders involving the immune mechanism (D80-D89)	114	2.6	10 Certain disorders involving the immune mechanism (D80-D89)	90	3.0
Other natural causes	1 460	19.6	Other natural causes	845	19.1	Other natural causes	602	20.0
Non-natural causes	343	4.6	Non-natural causes	265	6.0	Non-natural causes	77	2.6
All causes	7 443	100.0	All causes	4 421	100.0	All causes	3 010	100.0
North West, both sexes, 65+			North West, males, 65+			North West, females, 65+		
	No.	%		No.	%		No.	%
1 Hypertensive diseases (I10-I15)	1 156	11.2	1 Other forms of heart disease (I30-I52)	474	9.8	1 Hypertensive diseases (I10-I15)	776	14.1
2 Other forms of heart disease (I30-I52)	1 086	10.5	2 Cerebrovascular diseases (I60-I69)	451	9.3	2 Other forms of heart disease (I30-I52)	610	11.1
3 Cerebrovascular diseases (I60-I69)	1 044	10.1	3 Hypertensive diseases (I10-I15)	380	7.9	3 Cerebrovascular diseases (I60-I69)	593	10.8
4 Diabetes mellitus (E10-E14)	707	6.8	4 Diabetes mellitus (E10-E14)	266	5.5	4 Diabetes mellitus (E10-E14)	441	8.0
5 Influenza and pneumonia (J09-J18)	468	4.5	5 Chronic lower respiratory diseases (J40-J47)	245	5.1	5 Influenza and pneumonia (J09-J18)	239	4.3
6 Chronic lower respiratory diseases (J40-J47)	406	3.9	6 Influenza and pneumonia (J09-J18)	228	4.7	6 Chronic lower respiratory diseases (J40-J47)	161	2.9
7 Ischaemic heart diseases (I20-I25)	306	3.0	7 Tuberculosis (A15-A19)*	180	3.7	7 Ischaemic heart diseases (I20-I25)	149	2.7
8 Tuberculosis (A15-A19)*	291	2.8	8 Ischaemic heart diseases (I20-I25)	157	3.3	8 Tuberculosis (A15-A19)*	110	2.0
9 Malignant neoplasms of digestive organs (C15-C26)	233	2.3	9 Malignant neoplasms of digestive organs (C15-C26)	152	3.1	9 Intestinal infectious diseases (A00-A09)	89	1.6
10 Intestinal infectious diseases (A00-A09)	185	1.8	10 Malignant neoplasms of male genital organs (C60-C63)	107	2.2	10 Malignant neoplasms of female genital organs (C51-C58)	88	1.6
Other natural causes	1 823	17.6	Other natural causes	845	17.5	Other natural causes	953	17.3
Non-natural causes	218	2.1	Non-natural causes	126	2.6	Non-natural causes	92	1.7
All causes	10 347	100.0	All causes	4 828	100.0	All causes	5 514	100.0

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

Appendix L7: The ten leading underlying natural causes of death by age and sex: Gauteng, 2012

Gauteng, both sexes, all ages			Gauteng, males, all ages			Gauteng, females, all ages		
	No.	%		No.	%		No.	%
1 Tuberculosis (A15-A19)*	7 637	7.7	1 Tuberculosis (A15-A19)*	4 426	8.5	1 Tuberculosis (A15-A19)*	3 157	6.9
2 Influenza and pneumonia (J09-J18)	5 916	6.0	2 Influenza and pneumonia (J09-J18)	2 996	5.7	2 Influenza and pneumonia (J09-J18)	2 868	6.3
3 Other forms of heart disease (I30-I52)	5 147	5.2	3 Other forms of heart disease (I30-I52)	2 445	4.7	3 Other forms of heart disease (I30-I52)	2 688	5.9
4 Cerebrovascular diseases (I60-I69)	4 285	4.3	4 Cerebrovascular diseases (I60-I69)	1 997	3.8	4 Cerebrovascular diseases (I60-I69)	2 279	5.0
5 Diabetes mellitus (E10-E14)	3 766	3.8	5 Ischaemic heart diseases (I20-I25)	1 782	3.4	5 Diabetes mellitus (E10-E14)	2 101	4.6
6 Human immunodeficiency virus [HIV] disease (B20-B24)	3 244	3.3	6 Human immunodeficiency virus [HIV] disease (B20-B24)	1 735	3.3	6 Hypertensive diseases (I10-I15)	1 842	4.0
7 Hypertensive diseases (I10-I15)	2 986	3.0	7 Diabetes mellitus (E10-E14)	1 657	3.2	7 Human immunodeficiency virus [HIV] disease (B20-B24)	1 488	3.3
8 Ischaemic heart diseases (I20-I25)	2 907	2.9	8 Other viral diseases (B25-B34)	1 361	2.6	8 Other viral diseases (B25-B34)	1 288	2.8
9 Other viral diseases (B25-B34)	2 660	2.7	9 Chronic lower respiratory diseases (J40-J47)	1 343	2.6	9 Certain disorders involving the immune mechanism (D80-D89)	1 190	2.6
10 Certain disorders involving the immune mechanism (D80-D89)	2 354	2.4	10 Malignant neoplasms of digestive organs (C15-C26)	1 263	2.4	10 Intestinal infectious diseases (A00-A09)	1 140	2.5
Other natural causes	6 406	6.5	Other natural causes	3 328	6.4	Other natural causes	3 039	6.7
Non-natural causes	10 072	10.2	Non-natural causes	7 522	14.4	Non-natural causes	2 357	5.2
All causes	98 549	100.0	All causes	52 206	100.0	All causes	45 571	100.0
Gauteng, both sexes, 0-14			Gauteng, males, 0-14			Gauteng, females, 0-14		
	No.	%		No.	%		No.	%
1 Respiratory and cardiovascular disorders specific to the perinatal period (P20-2)	1 193	13.2	1 Respiratory and cardiovascular disorders specific to the perinatal period (P20-2)	648	13.5	1 Respiratory and cardiovascular disorders specific to the perinatal period (P20-2)	500	12.2
2 Influenza and pneumonia (J09-J18)	731	8.1	2 Influenza and pneumonia (J09-J18)	388	8.1	2 Influenza and pneumonia (J09-J18)	337	8.2
3 Intestinal infectious diseases (A00-A09)	694	7.7	3 Intestinal infectious diseases (A00-A09)	358	7.5	3 Intestinal infectious diseases (A00-A09)	329	8.0
4 Other disorders originating in the perinatal period (P90-P96)	396	4.4	4 Other disorders originating in the perinatal period (P90-P96)	207	4.3	4 Infections specific to the perinatal period (P35-P39)	173	4.2
5 Infections specific to the perinatal period (P35-P39)	378	4.2	5 Infections specific to the perinatal period (P35-P39)	191	4.0	5 Other disorders originating in the perinatal period (P90-P96)	172	4.2
6 Disorders related to length of gestation and fetal growth (P05-P08)	221	2.4	6 Disorders related to length of gestation and fetal growth (P05-P08)	108	2.3	6 Disorders related to length of gestation and fetal growth (P05-P08)	109	2.7
7 Other viral diseases (B25-B34)	189	2.1	7 Other viral diseases (B25-B34)	101	2.1	7 Malnutrition (E40-E46)	97	2.4
8 Malnutrition (E40-E46)	174	1.9	8 Other bacterial diseases (A30-A49)	89	1.9	8 Other viral diseases (B25-B34)	87	2.1
9 Other acute lower respiratory infections (J20-J22)	169	1.9	9 Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	87	1.8	9 Other acute lower respiratory infections (J20-J22)	86	2.1
10 Other bacterial diseases (A30-A49)	166	1.8	10 Congenital malformations of the circulatory system (Q20-Q28)	85	1.8	10 Congenital malformations of the circulatory system (Q20-Q28)	77	1.9
Other natural causes	485	5.4	Other natural causes	235	4.9	Other natural causes	243	5.9
Non-natural causes	862	9.5	Non-natural causes	508	10.6	Non-natural causes	343	8.4
All causes	9 051	100.0	All causes	4 787	100.0	All causes	4 097	100.0
Gauteng, both sexes, 15-49			Gauteng, males, 15-49			Gauteng, females, 15-49		
	No.	%		No.	%		No.	%
1 Tuberculosis (A15-A19)*	5 278	13.8	1 Tuberculosis (A15-A19)*	2 896	13.5	1 Tuberculosis (A15-A19)*	2 349	14.3
2 Influenza and pneumonia (J09-J18)	2 709	7.1	2 Influenza and pneumonia (J09-J18)	1 338	6.2	2 Influenza and pneumonia (J09-J18)	1 358	8.3
3 Human immunodeficiency virus [HIV] disease (B20-B24)	2 477	6.5	3 Human immunodeficiency virus [HIV] disease (B20-B24)	1 298	6.0	3 Human immunodeficiency virus [HIV] disease (B20-B24)	1 168	7.1
4 Other viral diseases (B25-B34)	1 913	5.0	4 Other viral diseases (B25-B34)	978	4.5	4 Other viral diseases (B25-B34)	929	5.7
5 Certain disorders involving the immune mechanism (D80-D89)	1 755	4.6	5 Certain disorders involving the immune mechanism (D80-D89)	831	3.9	5 Certain disorders involving the immune mechanism (D80-D89)	914	5.6
6 Other forms of heart disease (I30-I52)	1 242	3.3	6 Other forms of heart disease (I30-I52)	638	3.0	6 Other forms of heart disease (I30-I52)	597	3.6
7 Inflammatory diseases of the central nervous system (G00-G09)	876	2.3	7 Inflammatory diseases of the central nervous system (G00-G09)	445	2.1	7 Inflammatory diseases of the central nervous system (G00-G09)	428	2.6
8 Cerebrovascular diseases (I60-I69)	744	2.0	8 Cerebrovascular diseases (I60-I69)	391	1.8	8 Intestinal infectious diseases (A00-A09)	391	2.4
9 Intestinal infectious diseases (A00-A09)	719	1.9	9 Renal failure (N17-N19)	342	1.6	9 Cerebrovascular diseases (I60-I69)	348	2.1
10 Renal failure (N17-N19)	618	1.6	10 Intestinal infectious diseases (A00-A09)	322	1.5	10 Protozoal diseases (B50-B64)	310	1.9
Other natural causes	1 609	4.2	Other natural causes	792	3.7	Other natural causes	798	4.9
Non-natural causes	6 691	17.5	Non-natural causes	5 426	25.2	Non-natural causes	1 224	7.4
All causes	38 151	100.0	All causes	21 507	100.0	All causes	16 441	100.0
Gauteng, both sexes, 50-64			Gauteng, males, 50-64			Gauteng, females, 50-64		
	No.	%		No.	%		No.	%
1 Tuberculosis (A15-A19)*	1 642	7.7	1 Tuberculosis (A15-A19)*	1 105	8.8	1 Diabetes mellitus (E10-E14)	638	7.4
2 Other forms of heart disease (I30-I52)	1 290	6.1	2 Other forms of heart disease (I30-I52)	747	5.9	2 Other forms of heart disease (I30-I52)	541	6.3
3 Diabetes mellitus (E10-E14)	1 267	5.9	3 Cerebrovascular diseases (I60-I69)	675	5.4	3 Tuberculosis (A15-A19)*	532	6.2
4 Cerebrovascular diseases (I60-I69)	1 176	5.5	4 Influenza and pneumonia (J09-J18)	653	5.2	4 Cerebrovascular diseases (I60-I69)	501	5.8
5 Influenza and pneumonia (J09-J18)	1 046	4.9	5 Diabetes mellitus (E10-E14)	626	5.0	5 Hypertensive diseases (I10-I15)	407	4.7
6 Hypertensive diseases (I10-I15)	814	3.8	6 Ischaemic heart diseases (I20-I25)	579	4.6	6 Influenza and pneumonia (J09-J18)	388	4.5
7 Ischaemic heart diseases (I20-I25)	785	3.7	7 Malignant neoplasms of digestive organs (C15-C26)	474	3.8	7 Malignant neoplasms of female genital organs (C51-C58)	288	3.3
8 Malignant neoplasms of digestive organs (C15-C26)	715	3.4	8 Chronic lower respiratory diseases (J40-J47)	427	3.4	8 Malignant neoplasms of breast (C50)	246	2.8
9 Chronic lower respiratory diseases (J40-J47)	640	3.0	9 Hypertensive diseases (I10-I15)	405	3.2	9 Malignant neoplasms of digestive organs (C15-C26)	240	2.8
10 Human immunodeficiency virus [HIV] disease (B20-B24)	541	2.5	10 Human immunodeficiency virus [HIV] disease (B20-B24)	321	2.5	10 Other viral diseases (B25-B34)	225	2.6
Other natural causes	1 460	6.9	Other natural causes	845	6.7	Other natural causes	602	7.0
Non-natural causes	1 332	6.3	Non-natural causes	1 008	8.0	Non-natural causes	319	3.7
All causes	21 299	100.0	All causes	12 614	100.0	All causes	8 641	100.0
Gauteng, both sexes, 65+			Gauteng, males, 65+			Gauteng, both sexes, 65+		
	No.	%		No.	%		No.	%
1 Other forms of heart disease (I30-I52)	2 461	8.5	1 Other forms of heart disease (I30-I52)	979	7.6	1 Other forms of heart disease (I30-I52)	1 481	9.2
2 Cerebrovascular diseases (I60-I69)	2 331	8.0	2 Ischaemic heart diseases (I20-I25)	950	7.4	2 Cerebrovascular diseases (I60-I69)	1 419	8.8
3 Diabetes mellitus (E10-E14)	1 976	6.8	3 Cerebrovascular diseases (I60-I69)	911	7.1	3 Hypertensive diseases (I10-I15)	1 260	7.8
4 Hypertensive diseases (I10-I15)	1 821	6.3	4 Diabetes mellitus (E10-E14)	780	6.1	4 Diabetes mellitus (E10-E14)	1 194	7.4
5 Ischaemic heart diseases (I20-I25)	1 770	6.1	5 Chronic lower respiratory diseases (J40-J47)	752	5.8	5 Ischaemic heart diseases (I20-I25)	818	5.1
6 Influenza and pneumonia (J09-J18)	1 353	4.7	6 Malignant neoplasms of digestive organs (C15-C26)	584	4.5	6 Influenza and pneumonia (J09-J18)	773	4.8
7 Chronic lower respiratory diseases (J40-J47)	1 312	4.5	7 Influenza and pneumonia (J09-J18)	579	4.5	7 Chronic lower respiratory diseases (J40-J47)	559	3.5
8 Malignant neoplasms of digestive organs (C15-C26)	1 089	3.8	8 Hypertensive diseases (I10-I15)	561	4.4	8 Malignant neoplasms of digestive organs (C15-C26)	505	3.1
9 Renal failure (N17-N19)	718	2.5	9 Malignant neoplasms of male genital organs (C60-C63)	495	3.8	9 Renal failure (N17-N19)	342	2.1
10 Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	584	2.0	10 Renal failure (N17-N19)	376	2.9	10 Other bacterial diseases (A30-A49)	315	1.9
Other natural causes	1 823	6.3	Other natural causes	845	6.6	Other natural causes	953	5.9
Non-natural causes	936	3.2	Non-natural causes	477	3.7	Non-natural causes	459	2.8
All causes	29 029	100.0	All causes	12 859	100.0	All causes	16 155	100.0

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

Appendix L8: The ten leading underlying natural causes of death by age and sex: Mpumalanga, 2012

Mpumalanga, both sexes, all ages			Mpumalanga, males, all ages			Mpumalanga, females, all ages		
	No.	%		No.	%		No.	%
1 Tuberculosis (A15-A19)*	4 369	12.0	1 Tuberculosis (A15-A19)*	2 522	13.4	1 Tuberculosis (A15-A19)*	1 832	10.6
2 Influenza and pneumonia (J09-J18)	2 409	6.6	2 Influenza and pneumonia (J09-J18)	1 245	6.6	2 Cerebrovascular diseases (I60-I69)	1 204	6.9
3 Cerebrovascular diseases (I60-I69)	2 086	5.7	3 Cerebrovascular diseases (I60-I69)	879	4.7	3 Influenza and pneumonia (J09-J18)	1 157	6.7
4 Intestinal infectious diseases (A00-A09)	1 838	5.1	4 Intestinal infectious diseases (A00-A09)	858	4.6	4 Intestinal infectious diseases (A00-A09)	972	5.6
5 Diabetes mellitus (E10-E14)	1 577	4.3	5 Human immunodeficiency virus [HIV] disease (B20-B24)	711	3.8	5 Diabetes mellitus (E10-E14)	950	5.5
6 Other forms of heart disease (I30-I52)	1 505	4.1	6 Other viral diseases (B25-B34)	680	3.6	6 Other forms of heart disease (I30-I52)	846	4.9
7 Other viral diseases (B25-B34)	1 411	3.9	7 Other forms of heart disease (I30-I52)	657	3.5	7 Hypertensive diseases (I10-I15)	785	4.5
8 Hypertensive diseases (I10-I15)	1 371	3.8	8 Diabetes mellitus (E10-E14)	625	3.3	8 Other viral diseases (B25-B34)	719	4.1
9 Human immunodeficiency virus [HIV] disease (B20-B24)	1 343	3.7	9 Hypertensive diseases (I10-I15)	584	3.1	9 Certain disorders involving the immune mechanism (D80-D89)	625	3.6
10 Certain disorders involving the immune mechanism (D80-D89)	1 155	3.2	10 Certain disorders involving the immune mechanism (D80-D89)	527	2.8	10 Human immunodeficiency virus [HIV] disease (B20-B24)	622	3.6
Other natural causes	6 406	17.6	Other natural causes	3 328	17.7	Other natural causes	3 039	17.5
Non-natural causes	3 541	9.8	Non-natural causes	2 660	14.1	Non-natural causes	866	5.0
All causes	36 299	100.0	All causes	18	100.0	All causes	17 340	100.0
Mpumalanga, both sexes, 0-14			Mpumalanga, males, 0-14			Mpumalanga, females, 0-14		
	No.	%		No.	%		No.	%
1 Intestinal infectious diseases (A00-A09)	694	17.7	1 Intestinal infectious diseases (A00-A09)	372	17.9	1 Intestinal infectious diseases (A00-A09)	320	17.9
2 Influenza and pneumonia (J09-J18)	406	10.4	2 Influenza and pneumonia (J09-J18)	207	10.0	2 Influenza and pneumonia (J09-J18)	197	11.0
3 Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	338	8.6	3 Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	199	9.6	3 Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	134	7.5
4 Malnutrition (E40-E46)	153	3.9	4 Malnutrition (E40-E46)	72	3.5	4 Malnutrition (E40-E46)	78	4.4
5 Tuberculosis (A15-A19)*	135	3.5	5 Disorders related to length of gestation and fetal growth (P05-P08)	63	3.0	5 Tuberculosis (A15-A19)*	73	4.1
6 Disorders related to length of gestation and fetal growth (P05-P08)	110	2.8	6 Tuberculosis (A15-A19)*	62	3.0	6 Other acute lower respiratory infections (J20-J22)	53	3.0
7 Other acute lower respiratory infections (J20-J22)	99	2.5	7 Other disorders originating in the perinatal period (P90-P96)	50	2.4	7 Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	43	2.4
8 Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	88	2.3	8 Other acute lower respiratory infections (J20-J22)	45	2.2	8 Disorders related to length of gestation and fetal growth (P05-P08)	42	2.3
9 Other disorders originating in the perinatal period (P90-P96)	88	2.3	9 Other viral diseases (B25-B34)	43	2.1	9 Other viral diseases (B25-B34)	38	2.1
10 Other viral diseases (B25-B34)	82	2.1	9 Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	43	2.1	10 Infections specific to the perinatal period (P35-P39)	34	1.9
Other natural causes	485	12.4	Other natural causes	235	11.3	Other natural causes	243	13.6
Non-natural causes	394	10.1	Non-natural causes	229	11.0	Non-natural causes	161	9.0
All causes	3 911	100.0	All causes	2 080	100.0	All causes	1 792	100.0
Mpumalanga, both sexes, 15-49			Mpumalanga, males, 15-49			Mpumalanga, females, 15-49		
	No.	%		No.	%		No.	%
1 Tuberculosis (A15-A19)*	2 928	18.5	1 Tuberculosis (A15-A19)*	1 579	19.0	1 Tuberculosis (A15-A19)*	1 341	18.0
2 Influenza and pneumonia (J09-J18)	1 131	7.1	2 Influenza and pneumonia (J09-J18)	552	6.6	2 Other viral diseases (B25-B34)	577	7.7
3 Other viral diseases (B25-B34)	1 061	6.7	3 Human immunodeficiency virus [HIV] disease (B20-B24)	499	6.0	3 Influenza and pneumonia (J09-J18)	575	7.7
4 Human immunodeficiency virus [HIV] disease (B20-B24)	1 002	6.3	4 Other viral diseases (B25-B34)	476	5.7	4 Human immunodeficiency virus [HIV] disease (B20-B24)	496	6.7
5 Certain disorders involving the immune mechanism (D80-D89)	810	5.1	5 Certain disorders involving the immune mechanism (D80-D89)	338	4.1	5 Certain disorders involving the immune mechanism (D80-D89)	470	6.3
6 Intestinal infectious diseases (A00-A09)	606	3.8	6 Intestinal infectious diseases (A00-A09)	264	3.2	6 Intestinal infectious diseases (A00-A09)	338	4.5
7 Other acute lower respiratory infections (J20-J22)	504	3.2	7 Other acute lower respiratory infections (J20-J22)	231	2.8	7 Other acute lower respiratory infections (J20-J22)	270	3.6
8 Inflammatory diseases of the central nervous system (G00-G09)	432	2.7	8 Inflammatory diseases of the central nervous system (G00-G09)	201	2.4	8 Inflammatory diseases of the central nervous system (G00-G09)	230	3.1
9 Other forms of heart disease (I30-I52)	323	2.0	9 Other forms of heart disease (I30-I52)	146	1.8	9 Other forms of heart disease (I30-I52)	175	2.3
10 Cerebrovascular diseases (I60-I69)	279	1.8	10 Cerebrovascular diseases (I60-I69)	125	1.5	10 Cerebrovascular diseases (I60-I69)	154	2.1
Other natural causes	1 609	10.2	Other natural causes	792	9.5	Other natural causes	798	10.7
Non-natural causes	2 377	15.0	Non-natural causes	1 887	22.7	Non-natural causes	481	6.5
All causes	15 827	100.0	All causes	8 308	100.0	All causes	7 454	100.0
Mpumalanga, both sexes, 50-64			Mpumalanga, males, 50-64			Mpumalanga, females, 50-64		
	No.	%		No.	%		No.	%
1 Tuberculosis (A15-A19)*	882	12.4	1 Tuberculosis (A15-A19)*	619	14.7	1 Tuberculosis (A15-A19)*	260	9.0
2 Cerebrovascular diseases (I60-I69)	502	7.1	2 Cerebrovascular diseases (I60-I69)	251	5.9	2 Diabetes mellitus (E10-E14)	259	9.0
3 Diabetes mellitus (E10-E14)	495	7.0	3 Influenza and pneumonia (J09-J18)	243	5.8	3 Cerebrovascular diseases (I60-I69)	251	8.7
4 Influenza and pneumonia (J09-J18)	387	5.4	4 Diabetes mellitus (E10-E14)	236	5.6	4 Hypertensive diseases (I10-I15)	169	5.9
5 Hypertensive diseases (I10-I15)	350	4.9	5 Other forms of heart disease (I30-I52)	192	4.5	5 Other forms of heart disease (I30-I52)	152	5.3
6 Other forms of heart disease (I30-I52)	344	4.8	6 Hypertensive diseases (I10-I15)	180	4.3	6 Influenza and pneumonia (J09-J18)	143	5.0
7 Human immunodeficiency virus [HIV] disease (B20-B24)	231	3.2	7 Ischaemic heart diseases (I20-I25)	149	3.5	7 Malignant neoplasms of female genital organs (C51-C58)	120	4.2
8 Other viral diseases (B25-B34)	231	3.2	8 Human immunodeficiency virus [HIV] disease (B20-B24)	147	3.5	8 Intestinal infectious diseases (A00-A09)	112	3.9
9 Ischaemic heart diseases (I20-I25)	231	3.2	9 Chronic lower respiratory diseases (J40-J47)	141	3.3	9 Certain disorders involving the immune mechanism (D80-D89)	95	3.3
10 Intestinal infectious diseases (A00-A09)	227	3.2	10 Other viral diseases (B25-B34)	139	3.3	10 Other viral diseases (B25-B34)	92	3.2
Other natural causes	1 460	20.5	Other natural causes	845	20.0	Other natural causes	602	20.9
Non-natural causes	451	6.3	Non-natural causes	345	8.2	Non-natural causes	106	3.7
All causes	7 117	100.0	All causes	4 225	100.0	All causes	2 884	100.0
Mpumalanga, both sexes, 65+			Mpumalanga, males, 65+			Mpumalanga, females, 65+		
	No.	%		No.	%		No.	%
1 Cerebrovascular diseases (I60-I69)	1 276	13.9	1 Cerebrovascular diseases (I60-I69)	488	12.0	1 Cerebrovascular diseases (I60-I69)	788	15.3
2 Hypertensive diseases (I10-I15)	898	9.8	2 Hypertensive diseases (I10-I15)	348	8.6	2 Diabetes mellitus (E10-E14)	556	10.8
3 Diabetes mellitus (E10-E14)	850	9.2	3 Other forms of heart disease (I30-I52)	305	7.5	3 Hypertensive diseases (I10-I15)	549	10.7
4 Other forms of heart disease (I30-I52)	796	8.7	4 Diabetes mellitus (E10-E14)	294	7.3	4 Other forms of heart disease (I30-I52)	491	9.6
5 Influenza and pneumonia (J09-J18)	473	5.1	5 Tuberculosis (A15-A19)*	254	6.3	5 Influenza and pneumonia (J09-J18)	239	4.7
6 Tuberculosis (A15-A19)*	410	4.5	6 Influenza and pneumonia (J09-J18)	234	5.8	6 Intestinal infectious diseases (A00-A09)	199	3.9
7 Chronic lower respiratory diseases (J40-J47)	301	3.3	7 Chronic lower respiratory diseases (J40-J47)	178	4.4	7 Ischaemic heart diseases (I20-I25)	158	3.1
8 Intestinal infectious diseases (A00-A09)	300	3.3	8 Ischaemic heart diseases (I20-I25)	142	3.5	8 Tuberculosis (A15-A19)*	154	3.0
9 Ischaemic heart diseases (I20-I25)	300	3.3	9 Malignant neoplasms of digestive organs (C15-C26)	104	2.6	9 Other acute lower respiratory infections (J20-J22)	122	2.4
10 Other acute lower respiratory infections (J20-J22)	222	2.4	10 Intestinal infectious diseases (A00-A09)	101	2.5	10 Chronic lower respiratory diseases (J40-J47)	122	2.4
Other natural causes	1 823	19.8	Other natural causes	845	20.8	Other natural causes	953	18.6
Non-natural causes	253	2.8	Non-natural causes	146	3.6	Non-natural causes	107	2.1
All causes	9 195	100.0	All causes	4 055	100.0	All causes	5 134	100.0

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

Appendix L9: The ten leading underlying natural causes of death by age and sex: Limpopo, 2012

Limpopo, both sexes, all ages			Limpopo, males, all ages			Limpopo, females, all ages		
	No.	%		No.	%		No.	%
1 Influenza and pneumonia (J09-J18)	4 747	9,7	1 Tuberculosis (A15-A19)*	2 422	9,9	1 Influenza and pneumonia (J09-J18)	2 442	9,9
2 Tuberculosis (A15-A19)*	4 175	8,5	2 Influenza and pneumonia (J09-J18)	2 291	9,4	2 Tuberculosis (A15-A19)*	1 745	7,1
3 Intestinal infectious diseases (A00-A09)	3 091	6,3	3 Intestinal infectious diseases (A00-A09)	1 422	5,8	3 Intestinal infectious diseases (A00-A09)	1 660	6,8
4 Diabetes mellitus (E10-E14)	2 229	4,5	4 Diabetes mellitus (E10-E14)	908	3,7	4 Diabetes mellitus (E10-E14)	1 319	5,4
5 Cerebrovascular diseases (I60-I69)	2 149	4,4	5 Cerebrovascular diseases (I60-I69)	841	3,4	5 Cerebrovascular diseases (I60-I69)	1 307	5,3
6 Other viral diseases (B25-B34)	1 701	3,5	6 Other forms of heart disease (I30-I52)	816	3,3	6 Other viral diseases (B25-B34)	1 003	4,1
7 Other forms of heart disease (I30-I52)	1 636	3,3	7 Other viral diseases (B25-B34)	694	2,8	7 Hypertensive diseases (I10-I15)	820	3,3
8 Hypertensive diseases (I10-I15)	1 414	2,9	8 Hypertensive diseases (I10-I15)	594	2,4	8 Other forms of heart disease (I30-I52)	816	3,3
9 Certain disorders involving the immune mechanism (D80-D89)	1 189	2,4	9 Certain disorders involving the immune mechanism (D80-D89)	563	2,3	9 Certain disorders involving the immune mechanism (D80-D89)	625	2,5
10 Human immunodeficiency virus [HIV] disease (B20-B24)	1 033	2,1	10 Chronic lower respiratory diseases (J40-J47)	525	2,2	10 Human immunodeficiency virus [HIV] disease (B20-B24)	535	2,2
Other natural causes	6 406	13,0	Other natural causes	3 328	13,6	Other natural causes	3 039	12,4
Non-natural causes	3 933	8,0	Non-natural causes	2 848	11,7	Non-natural causes	1 070	4,4
All causes	49 121	100,0	All causes	24 415	100,0	All causes	24 587	100,0
Limpopo, both sexes, 0-14			Limpopo, males, 0-14			Limpopo, females, 0-14		
	No.	%		No.	%		No.	%
1 Intestinal infectious diseases (A00-A09)	888	14,6	1 Intestinal infectious diseases (A00-A09)	460	14,5	1 Intestinal infectious diseases (A00-A09)	424	14,9
2 Influenza and pneumonia (J09-J18)	757	12,5	2 Influenza and pneumonia (J09-J18)	376	11,8	2 Influenza and pneumonia (J09-J18)	376	13,2
3 Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	408	6,7	3 Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	234	7,4	3 Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	166	5,8
4 Malnutrition (E40-E46)	263	4,3	4 Malnutrition (E40-E46)	138	4,3	4 Malnutrition (E40-E46)	125	4,4
5 Inflammatory diseases of the central nervous system (G00-G09)	177	2,9	5 Inflammatory diseases of the central nervous system (G00-G09)	87	2,7	5 Inflammatory diseases of the central nervous system (G00-G09)	88	3,1
6 Other disorders originating in the perinatal period (P90-P96)	134	2,2	6 Tuberculosis (A15-A19)*	74	2,3	6 Other viral diseases (B25-B34)	68	2,4
7 Tuberculosis (A15-A19)*	132	2,2	7 Other disorders originating in the perinatal period (P90-P96)	66	2,1	7 Disorders related to length of gestation and fetal growth (P05-P08)	65	2,3
8 Disorders related to length of gestation and fetal growth (P05-P08)	127	2,1	8 Disorders related to length of gestation and fetal growth (P05-P08)	60	1,9	8 Other disorders originating in the perinatal period (P90-P96)	60	2,1
9 Other viral diseases (B25-B34)	126	2,1	9 Other viral diseases (B25-B34)	57	1,8	9 Tuberculosis (A15-A19)*	58	2,0
10 Other bacterial diseases (A30-A49)	90	1,5	10 Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	52	1,6	10 Other acute lower respiratory infections (J20-J22)	42	1,5
Other natural causes	485	8,0	Other natural causes	235	7,4	Other natural causes	243	8,5
Non-natural causes	508	8,4	Non-natural causes	287	9,0	Non-natural causes	220	7,7
All causes	6 062	100,0	All causes	3 174	100,0	All causes	2 845	100,0
Limpopo, both sexes, 15-49			Limpopo, males, 15-49			Limpopo, females, 15-49		
	No.	%		No.	%		No.	%
1 Tuberculosis (A15-A19)*	2 678	14,8	1 Tuberculosis (A15-A19)*	1 381	15,3	1 Tuberculosis (A15-A19)*	1 292	14,3
2 Influenza and pneumonia (J09-J18)	1 723	9,5	2 Influenza and pneumonia (J09-J18)	751	8,3	2 Influenza and pneumonia (J09-J18)	966	10,7
3 Other viral diseases (B25-B34)	1 224	6,8	3 Other viral diseases (B25-B34)	460	5,1	3 Other viral diseases (B25-B34)	762	8,4
4 Intestinal infectious diseases (A00-A09)	1 044	5,8	4 Intestinal infectious diseases (A00-A09)	432	4,8	4 Intestinal infectious diseases (A00-A09)	610	6,8
5 Certain disorders involving the immune mechanism (D80-D89)	846	4,7	5 Human immunodeficiency virus [HIV] disease (B20-B24)	371	4,1	5 Certain disorders involving the immune mechanism (D80-D89)	479	5,3
6 Human immunodeficiency virus [HIV] disease (B20-B24)	814	4,5	6 Certain disorders involving the immune mechanism (D80-D89)	366	4,1	6 Human immunodeficiency virus [HIV] disease (B20-B24)	443	4,9
7 Inflammatory diseases of the central nervous system (G00-G09)	469	2,6	7 Inflammatory diseases of the central nervous system (G00-G09)	231	2,6	7 Inflammatory diseases of the central nervous system (G00-G09)	238	2,6
8 Other forms of heart disease (I30-I52)	363	2,0	8 Other forms of heart disease (I30-I52)	178	2,0	8 Other forms of heart disease (I30-I52)	183	2,0
9 Diabetes mellitus (E10-E14)	311	1,7	9 Diabetes mellitus (E10-E14)	158	1,7	9 Diabetes mellitus (E10-E14)	152	1,7
10 Protozoal diseases (B50-B64)	227	1,3	10 Other acute lower respiratory infections (J20-J22)	99	1,1	10 Protozoal diseases (B50-B64)	138	1,5
Other natural causes	1 609	8,9	Other natural causes	792	8,8	Other natural causes	798	8,8
Non-natural causes	2 519	13,9	Non-natural causes	1 959	21,7	Non-natural causes	550	6,1
All causes	18 095	100,0	All causes	9 036	100,0	All causes	9 018	100,0
Limpopo, both sexes, 50-64			Limpopo, males, 50-64			Limpopo, females, 50-64		
	No.	%		No.	%		No.	%
1 Tuberculosis (A15-A19)*	896	10,2	1 Tuberculosis (A15-A19)*	649	12,2	1 Diabetes mellitus (E10-E14)	356	10,2
2 Influenza and pneumonia (J09-J18)	763	8,7	2 Influenza and pneumonia (J09-J18)	497	9,4	2 Influenza and pneumonia (J09-J18)	265	7,6
3 Diabetes mellitus (E10-E14)	654	7,4	3 Diabetes mellitus (E10-E14)	298	5,6	3 Tuberculosis (A15-A19)*	247	7,1
4 Cerebrovascular diseases (I60-I69)	435	4,9	4 Intestinal infectious diseases (A00-A09)	246	4,6	4 Cerebrovascular diseases (I60-I69)	210	6,0
5 Intestinal infectious diseases (A00-A09)	434	4,9	5 Cerebrovascular diseases (I60-I69)	224	4,2	5 Intestinal infectious diseases (A00-A09)	188	5,4
6 Hypertensive diseases (I10-I15)	327	3,7	6 Other forms of heart disease (I30-I52)	199	3,8	6 Hypertensive diseases (I10-I15)	163	4,7
7 Other forms of heart disease (I30-I52)	312	3,5	7 Hypertensive diseases (I10-I15)	164	3,1	7 Malignant neoplasms of female genital organs (C51-C58)	152	4,3
8 Other viral diseases (B25-B34)	281	3,2	8 Chronic lower respiratory diseases (J40-J47)	161	3,0	8 Other viral diseases (B25-B34)	139	4,0
9 Certain disorders involving the immune mechanism (D80-D89)	221	2,5	9 Other viral diseases (B25-B34)	142	2,7	9 Other forms of heart disease (I30-I52)	113	3,2
10 Chronic lower respiratory diseases (J40-J47)	213	2,4	10 Certain disorders involving the immune mechanism (D80-D89)	124	2,3	10 Certain disorders involving the immune mechanism (D80-D89)	97	2,8
Other natural causes	1 460	16,6	Other natural causes	845	15,9	Other natural causes	602	17,2
Non-natural causes	493	5,6	Non-natural causes	374	7,0	Non-natural causes	119	3,4
All causes	8 808	100,0	All causes	5 306	100,0	All causes	3 499	100,0
Limpopo, both sexes, 65+			Limpopo, males, 65+			Limpopo, females, 65+		
	No.	%		No.	%		No.	%
1 Cerebrovascular diseases (I60-I69)	1 502	9,4	1 Influenza and pneumonia (J09-J18)	654	9,6	1 Cerebrovascular diseases (I60-I69)	983	10,7
2 Influenza and pneumonia (J09-J18)	1 488	9,3	2 Cerebrovascular diseases (I60-I69)	519	7,6	2 Influenza and pneumonia (J09-J18)	833	9,1
3 Diabetes mellitus (E10-E14)	1 250	7,8	3 Diabetes mellitus (E10-E14)	448	6,6	3 Diabetes mellitus (E10-E14)	802	8,7
4 Hypertensive diseases (I10-I15)	950	5,9	4 Other forms of heart disease (I30-I52)	417	6,1	4 Hypertensive diseases (I10-I15)	579	6,3
5 Other forms of heart disease (I30-I52)	921	5,8	5 Hypertensive diseases (I10-I15)	371	5,5	5 Other forms of heart disease (I30-I52)	502	5,5
6 Intestinal infectious diseases (A00-A09)	717	4,5	6 Tuberculosis (A15-A19)*	309	4,5	6 Intestinal infectious diseases (A00-A09)	437	4,8
7 Tuberculosis (A15-A19)*	452	2,8	7 Chronic lower respiratory diseases (J40-J47)	280	4,1	7 Malignant neoplasms of female genital organs (C51-C58)	167	1,8
8 Chronic lower respiratory diseases (J40-J47)	428	2,7	8 Intestinal infectious diseases (A00-A09)	279	4,1	8 Chronic lower respiratory diseases (J40-J47)	148	1,6
9 Renal failure (N17-N19)	260	1,6	9 Malignant neoplasms of male genital organs (C60-C63)	153	2,3	9 Tuberculosis (A15-A19)*	142	1,5
10 Malignant neoplasms of digestive organs (C15-C26)	253	1,6	10 Malignant neoplasms of digestive organs (C15-C26)	150	2,2	10 Renal failure (N17-N19)	119	1,3
Other natural causes	1 823	11,4	Other natural causes	845	12,4	Other natural causes	953	10,4
Non-natural causes	374	2,3	Non-natural causes	198	2,9	Non-natural causes	176	1,9
All causes	15 978	100,0	All causes	6 793	100,0	All causes	9 177	100,0

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

Appendix M: Number of deaths by main groups of causes of death and district municipality of death occurrence (Western Cape, Eastern Cape and Northern Cape), 2012

Province of death	District municipality of death occurrence	Certain infectious and parasitic diseases	Neoplasms	Diseases of the blood and immune mechanism	Endocrine, nutritional and metabolic diseases	Diseases of the nervous system	Diseases of the circulatory system	Diseases of the respiratory system	Diseases of the digestive system	Perinatal conditions	Other natural causes	External causes of morbidity and mortality	Total
		A00-B99*	C00-D48	D50-D89	E00-E90	G00-G99	I00-I99	J00-J99	K00-K93	P00-P96	Other	V01-Y98	
Western Cape	Cape Winelands	1 171	1 028	53	461	120	1 370	654	171	117	745	743	6 633
	Central Karoo	139	118	4	43	11	179	80	11	13	62	88	748
	City of Cape Town	4 266	5 006	227	2 333	637	5 525	2 224	676	586	2 869	3 479	27 828
	Eden	906	882	93	350	112	1 217	545	152	83	372	479	5 191
	Overberg	260	411	25	139	44	474	190	61	38	182	291	2 115
	West Coast	616	461	51	219	65	685	304	60	45	242	316	3 064
	Unspecified	68	105	5	37	8	105	35	10	2	82	112	569
	Total	7 426	8 011	458	3 582	997	9 555	4 032	1 141	884	4 554	5 508	46 148
Eastern Cape	Alfred Nzo	940	115	117	119	75	323	351	70	91	3 235	399	5 835
	Amathole	2 952	694	381	676	415	2 163	1 875	262	84	2 376	1 366	13 244
	Buffalo City	1 808	998	166	471	219	1 407	748	225	61	792	794	7 689
	Cacadu	811	353	96	217	70	759	384	106	54	598	425	3 873
	Chris Hani	1 883	524	371	523	266	1 479	1 233	208	72	1 396	864	8 819
	Joe Gqabi	759	198	239	207	94	657	453	72	50	1 391	386	4 506
	Nelson Mandela Bay	1 351	799	122	478	188	1 279	474	202	176	647	578	6 294
	O R Tambo	3 351	554	291	414	312	1 306	961	322	53	4 977	1 630	14 171
	Unspecified	122	42	19	32	25	149	117	24	3	416	101	1 050
	Total	13 977	4 277	1 802	3 137	1 664	9 522	6 596	1 491	644	15 828	6 543	65 481
Northern Cape	Frances Baard	898	406	138	199	84	570	374	132	65	617	385	3 868
	John Taolo Gaetsewe	505	102	38	68	40	259	295	32	113	867	240	2 559
	Namakwa	113	177	16	60	31	239	149	23	24	136	131	1 099
	Pixley ka Seme	727	335	88	211	64	591	377	137	70	385	330	3 315
	Siyanda	690	238	89	166	57	496	341	64	77	246	385	2 849
	Unspecified	42	17	3	10	7	54	25	6	6	51	60	281
	Total	2 975	1 275	372	714	283	2 209	1 561	394	355	2 302	1 531	13 971

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

Appendix M1: Number of deaths by main groups of causes of death and district municipality of death occurrence (Free State, KwaZulu-Natal and North West), 2012

Province of death	District municipality of death occurrence	Certain infectious and parasitic diseases	Neoplasms	Diseases of the blood and immune mechanism	Endocrine, nutritional and metabolic diseases	Diseases of the nervous system	Diseases of the circulatory system	Diseases of the respiratory system	Diseases of the digestive system	Perinatal conditions	Other natural causes	External causes of morbidity and mortality	Total
		A00-B99*	C00-D48	D50-D89	E00-E90	G00-G99	I00-I99	J00-J99	K00-K93	P00-P96	Other	V01-Y98	
Free State	Fezile Dabi	1 101	306	162	367	136	1 101	744	142	149	358	513	5 079
	Lejweleputswa	1 667	356	301	497	177	1 331	1 237	215	189	1 293	735	7 998
	Mangaung	1 803	861	385	467	183	1 454	1 046	271	216	2 158	870	9 714
	Thabo Mofutsanyane	2 264	459	536	595	265	1 838	1 372	264	255	860	799	9 507
	Xhariep	412	184	120	87	28	413	201	66	32	518	236	2 297
	Unspecified	105	17	20	21	18	93	70	14	11	41	49	459
	Total	7 352	2 183	1 524	2 034	807	6 230	4 670	972	852	5 228	3 202	35 054
KwaZulu-Natal	Amajuba	1 292	246	137	337	147	971	814	172	121	405	436	5 078
	eThekweni	5 239	1 977	424	1 586	541	4 183	1 743	585	362	3 543	2 539	22 722
	iLembe	1 862	328	136	351	163	906	405	157	139	731	490	5 668
	Sisonke	1 690	323	212	383	142	794	560	148	120	1 142	466	5 980
	Ugu	2 902	570	239	627	235	1 547	950	223	141	1 245	839	9 518
	uMgungundlovu	2 722	1 008	236	909	227	1 791	778	301	167	1 807	1 145	11 091
	uMkhanyakude	1 694	295	81	239	92	665	238	110	102	766	384	4 666
	uMzinyathi	1 646	212	132	300	110	807	517	120	161	842	470	5 317
	uThukela	1 977	350	334	387	208	1 261	673	178	166	871	567	6 972
	uThungulu	2 794	480	186	548	215	1 147	582	204	314	1 165	826	8 461
	Zululand	2 237	267	335	344	235	880	638	186	205	1 269	663	7 259
	Unspecified	882	117	47	224	109	756	367	65	29	805	616	4 017
	Total	26 937	6 173	2 499	6 235	2 424	15 708	8 265	2 449	2 027	14 591	9 441	96 749
North West	Bojanala	2 675	694	422	690	260	2 297	1 525	292	289	2 422	1 213	12 779
	Dr Kenneth Kaunda	2 045	813	265	394	160	1 358	725	223	193	885	688	7 749
	Dr Ruth Segomotsi Mompati	1 406	229	349	259	84	938	730	96	171	790	302	5 354
	Ngaka Modiri Molema	1 988	371	320	467	183	1 613	1 426	196	316	1 460	626	8 966
	Unspecified	161	37	20	44	12	187	139	12	16	197	151	976
	Total	8 275	2 144	1 376	1 854	699	6 393	4 545	819	985	5 754	2 980	35 824

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

Appendix M2: Number of deaths by main groups of causes of death and district municipality of death occurrence (Gauteng, Mpumalanga and Limpopo), 2012

Province of death	District municipality of death occurrence	Certain infectious and parasitic diseases	Neoplasms	Diseases of the blood and immune mechanism	Endocrine, nutritional and metabolic diseases	Diseases of the nervous system	Diseases of the circulatory system	Diseases of the respiratory system	Diseases of the digestive system	Perinatal conditions	Other natural causes	External causes of morbidity and mortality	Total
		A00-B99*	C00-D48	D50-D89	E00-E90	G00-G99	I00-I99	J00-J99	K00-K93	P00-P96	Other	V01-Y98	
Gauteng	City of Johannesburg	4 902	3 257	757	1 159	664	4 237	2 634	756	948	7 261	2 973	29 548
	City of Tshwane	4 000	2 402	698	1 475	526	4 693	2 290	635	388	1 898	1 939	20 944
	Ekurhuleni	5 236	1 827	937	1 297	748	4 119	2 988	705	830	5 020	2 427	26 134
	Sedibeng	2 114	722	292	597	327	2 084	1 591	313	267	1 034	1 000	10 341
	West Rand	1 718	674	303	406	259	1 373	1 067	236	229	1 632	1 135	9 032
	Unspecified	387	142	66	102	41	369	236	54	57	498	598	2 550
	Total	18 357	9 024	3 053	5 036	2 565	16 875	10 806	2 699	2 719	17 343	10 072	98 549
Mpu-malanga	Ehlanzeni	4 673	875	545	823	479	2 314	1 427	524	261	1 396	1 105	14 422
	Gert Sibande	2 686	451	572	624	277	1 404	1 385	295	315	1 195	1 020	10 224
	Nkangala	2 207	401	342	593	219	1 863	1 554	259	200	1 131	1 152	9 921
	Unspecified	365	50	28	81	49	311	260	49	10	265	264	1 732
	Total	9 931	1 777	1 487	2 121	1 024	5 892	4 626	1 127	786	3 987	3 541	36 299
Limpopo	Capricorn	2 888	902	298	776	272	1 579	1 662	382	237	2 239	985	12 220
	Greater Sekhukhune	2 640	371	259	571	208	1 477	1 961	225	94	752	728	9 286
	Mopani	2 189	334	348	546	505	970	1 316	243	206	2 101	605	9 363
	Vhembe	1 704	453	352	680	192	812	738	308	226	3 499	659	9 623
	Waterberg	1 115	284	193	303	106	652	550	105	108	1 443	494	5 353
	Unspecified	519	80	62	120	102	409	544	71	40	867	462	3 276
	Total	11 055	2 424	1 512	2 996	1 385	5 899	6 771	1 334	911	10 901	3 933	49 121

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

Appendix N: Percentage distribution of deaths by main groups of causes of death and district municipality of death occurrence (Western Cape, Eastern Cape and Northern Cape), 2012

Province of death	District municipality of death occurrence	Certain infectious and parasitic diseases	Neoplasms	Diseases of the blood and immune mechanism	Endocrine, nutritional and metabolic diseases	Diseases of the nervous system	Diseases of the circulatory system	Diseases of the respiratory system	Diseases of the digestive system	Perinatal conditions	Other natural causes	External causes of morbidity and mortality	Total
		A00-B99*	C00-D48	D50-D89	E00-E90	G00-G99	I00-I99	J00-J99	K00-K93	P00-P96	Other	V01-Y98	
Western Cape	Cape Winelands	17,7	15,5	0,8	7,0	1,8	20,7	9,9	2,6	1,8	11,2	11,2	100,0
	Central Karoo	18,6	15,8	0,5	5,7	1,5	23,9	10,7	1,5	1,7	8,3	11,8	100,0
	City of Cape Town	15,3	18,0	0,8	8,4	2,3	19,9	8,0	2,4	2,1	10,3	12,5	100,0
	Eden	17,5	17,0	1,8	6,7	2,2	23,4	10,5	2,9	1,6	7,2	9,2	100,0
	Overberg	12,3	19,4	1,2	6,6	2,1	22,4	9,0	2,9	1,8	8,6	13,8	100,0
	West Coast	20,1	15,0	1,7	7,1	2,1	22,4	9,9	2,0	1,5	7,9	10,3	100,0
	Unspecified	12,0	18,5	0,9	6,5	1,4	18,5	6,2	1,8	0,4	14,4	19,7	100,0
	Total	16,1	17,4	1,0	7,8	2,2	20,7	8,7	2,5	1,9	9,9	11,9	100,0
Eastern Cape	Alfred Nzo	16,1	2,0	2,0	2,0	1,3	5,5	6,0	1,2	1,6	55,4	6,8	100,0
	Amathole	22,3	5,2	2,9	5,1	3,1	16,3	14,2	2,0	0,6	17,9	10,3	100,0
	Buffalo City	23,5	13,0	2,2	6,1	2,8	18,3	9,7	2,9	0,8	10,3	10,3	100,0
	Cacadu	20,9	9,1	2,5	5,6	1,8	19,6	9,9	2,7	1,4	15,4	11,0	100,0
	Chris Hani	21,4	5,9	4,2	5,9	3,0	16,8	14,0	2,4	0,8	15,8	9,8	100,0
	Joe Gqabi	16,8	4,4	5,3	4,6	2,1	14,6	10,1	1,6	1,1	30,9	8,6	100,0
	Nelson Mandela Bay	21,5	12,7	1,9	7,6	3,0	20,3	7,5	3,2	2,8	10,3	9,2	100,0
	O R Tambo	23,6	3,9	2,1	2,9	2,2	9,2	6,8	2,3	0,4	35,1	11,5	100,0
	Unspecified	11,6	4,0	1,8	3,0	2,4	14,2	11,1	2,3	0,3	39,6	9,6	100,0
	Total	21,3	6,5	2,8	4,8	2,5	14,5	10,1	2,3	1,0	24,2	10,0	100,0
Northern Cape	Frances Baard	23,2	10,5	3,6	5,1	2,2	14,7	9,7	3,4	1,7	16,0	10,0	100,0
	John Taolo Gaetsewe	19,7	4,0	1,5	2,7	1,6	10,1	11,5	1,3	4,4	33,9	9,4	100,0
	Namakwa	10,3	16,1	1,5	5,5	2,8	21,7	13,6	2,1	2,2	12,4	11,9	100,0
	Pixley ka Seme	21,9	10,1	2,7	6,4	1,9	17,8	11,4	4,1	2,1	11,6	10,0	100,0
	Siyanda	24,2	8,4	3,1	5,8	2,0	17,4	12,0	2,2	2,7	8,6	13,5	100,0
	Unspecified	14,9	6,0	1,1	3,6	2,5	19,2	8,9	2,1	2,1	18,1	21,4	100,0
	Total	21,3	9,1	2,7	5,1	2,0	15,8	11,2	2,8	2,5	16,5	11,0	100,0

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

Appendix N1: Percentage distribution of deaths by main groups of causes of death and district municipality of death occurrence (Free State, KwaZulu-Natal and North West), 2012

Province of death	District municipality of death occurrence	Certain infectious and parasitic diseases	Neoplasms	Diseases of the blood and immune mechanism	Endocrine, nutritional and metabolic diseases	Diseases of the nervous system	Diseases of the circulatory system	Diseases of the respiratory system	Diseases of the digestive system	Perinatal conditions	Other natural causes	External causes of morbidity and mortality	Total
		A00-B99*	C00-D48	D50-D89	E00-E90	G00-G99	I00-I99	J00-J99	K00-K93	P00-P96	Other	V01-Y98	
Free State	Fezile Dabi	21,7	6,0	3,2	7,2	2,7	21,7	14,6	2,8	2,9	7,0	10,1	100,0
	Lejweleputswa	20,8	4,5	3,8	6,2	2,2	16,6	15,5	2,7	2,4	16,2	9,2	100,0
	Mangaung	18,6	8,9	4,0	4,8	1,9	15,0	10,8	2,8	2,2	22,2	9,0	100,0
	Thabo Mofutsanyane	23,8	4,8	5,6	6,3	2,8	19,3	14,4	2,8	2,7	9,0	8,4	100,0
	Xhariep	17,9	8,0	5,2	3,8	1,2	18,0	8,8	2,9	1,4	22,6	10,3	100,0
	Unspecified	22,9	3,7	4,4	4,6	3,9	20,3	15,3	3,1	2,4	8,9	10,7	100,0
	Total	21,0	6,2	4,3	5,8	2,3	17,8	13,3	2,8	2,4	14,9	9,1	100,0
KwaZulu-Natal	Amajuba	25,4	4,8	2,7	6,6	2,9	19,1	16,0	3,4	2,4	8,0	8,6	100,0
	eThekwini	23,1	8,7	1,9	7,0	2,4	18,4	7,7	2,6	1,6	15,6	11,2	100,0
	iLembe	32,9	5,8	2,4	6,2	2,9	16,0	7,1	2,8	2,5	12,9	8,6	100,0
	Sisonke	28,3	5,4	3,5	6,4	2,4	13,3	9,4	2,5	2,0	19,1	7,8	100,0
	Ugu	30,5	6,0	2,5	6,6	2,5	16,3	10,0	2,3	1,5	13,1	8,8	100,0
	uMgungundlovu	24,5	9,1	2,1	8,2	2,0	16,1	7,0	2,7	1,5	16,3	10,3	100,0
	uMkhanyakude	36,3	6,3	1,7	5,1	2,0	14,3	5,1	2,4	2,2	16,4	8,2	100,0
	uMzinyathi	31,0	4,0	2,5	5,6	2,1	15,2	9,7	2,3	3,0	15,8	8,8	100,0
	uThukela	28,4	5,0	4,8	5,6	3,0	18,1	9,7	2,6	2,4	12,5	8,1	100,0
	uThungulu	33,0	5,7	2,2	6,5	2,5	13,6	6,9	2,4	3,7	13,8	9,8	100,0
	Zululand	30,8	3,7	4,6	4,7	3,2	12,1	8,8	2,6	2,8	17,5	9,1	100,0
	Unspecified	22,0	2,9	1,2	5,6	2,7	18,8	9,1	1,6	0,7	20,0	15,3	100,0
	Total	27,8	6,4	2,6	6,4	2,5	16,2	8,5	2,5	2,1	15,1	9,8	100,0
North West	Bojanala	20,9	5,4	3,3	5,4	2,0	18,0	11,9	2,3	2,3	19,0	9,5	100,0
	Dr Kenneth Kaunda	26,4	10,5	3,4	5,1	2,1	17,5	9,4	2,9	2,5	11,4	8,9	100,0
	Dr Ruth Segomotsi Mompati	26,3	4,3	6,5	4,8	1,6	17,5	13,6	1,8	3,2	14,8	5,6	100,0
	Ngaka Modiri Molema	22,2	4,1	3,6	5,2	2,0	18,0	15,9	2,2	3,5	16,3	7,0	100,0
	Unspecified	16,5	3,8	2,0	4,5	1,2	19,2	14,2	1,2	1,6	20,2	15,5	100,0
	Total	23,1	6,0	3,8	5,2	2,0	17,8	12,7	2,3	2,7	16,1	8,3	100,0

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

Appendix N2: Percentage distribution of deaths by main groups of causes of death and district municipality of death occurrence (Gauteng, Mpumalanga and Limpopo), 2012

Province of death	District municipality of death occurrence	Certain infectious and parasitic diseases	Neoplasms	Diseases of the blood and immune mechanism	Endocrine, nutritional and metabolic diseases	Diseases of the nervous system	Diseases of the circulatory system	Diseases of the respiratory system	Diseases of the digestive system	Perinatal conditions	Other natural causes	External causes of morbidity and mortality	Total
		A00-B99*	C00-D48	D50-D89	E00-E90	G00-G99	I00-I99	J00-J99	K00-K93	P00-P96	Other	V01-Y98	
Gauteng	City of Johannesburg	16,6	11,0	2,6	3,9	2,2	14,3	8,9	2,6	3,2	24,6	10,1	100,0
	City of Tshwane	19,1	11,5	3,3	7,0	2,5	22,4	10,9	3,0	1,9	9,1	9,3	100,0
	Ekurhuleni	20,0	7,0	3,6	5,0	2,9	15,8	11,4	2,7	3,2	19,2	9,3	100,0
	Sedibeng	20,4	7,0	2,8	5,8	3,2	20,2	15,4	3,0	2,6	10,0	9,7	100,0
	West Rand	19,0	7,5	3,4	4,5	2,9	15,2	11,8	2,6	2,5	18,1	12,6	100,0
	Unspecified	15,2	5,6	2,6	4,0	1,6	14,5	9,3	2,1	2,2	19,5	23,5	100,0
	Total	18,6	9,2	3,1	5,1	2,6	17,1	11,0	2,7	2,8	17,6	10,2	100,0
Mpu-malanga	Ehlanzeni	32,4	6,1	3,8	5,7	3,3	16,0	9,9	3,6	1,8	9,7	7,7	100,0
	Gert Sibande	26,3	4,4	5,6	6,1	2,7	13,7	13,5	2,9	3,1	11,7	10,0	100,0
	Nkangala	22,2	4,0	3,4	6,0	2,2	18,8	15,7	2,6	2,0	11,4	11,6	100,0
	Unspecified	21,1	2,9	1,6	4,7	2,8	18,0	15,0	2,8	0,6	15,3	15,2	100,0
	Total	27,4	4,9	4,1	5,8	2,8	16,2	12,7	3,1	2,2	11,0	9,8	100,0
Limpopo	Capricorn	23,6	7,4	2,4	6,4	2,2	12,9	13,6	3,1	1,9	18,3	8,1	100,0
	Greater Sekhukhune	28,4	4,0	2,8	6,1	2,2	15,9	21,1	2,4	1,0	8,1	7,8	100,0
	Mopani	23,4	3,6	3,7	5,8	5,4	10,4	14,1	2,6	2,2	22,4	6,5	100,0
	Vhembe	17,7	4,7	3,7	7,1	2,0	8,4	7,7	3,2	2,3	36,4	6,8	100,0
	Waterberg	20,8	5,3	3,6	5,7	2,0	12,2	10,3	2,0	2,0	27,0	9,2	100,0
	Unspecified	15,8	2,4	1,9	3,7	3,1	12,5	16,6	2,2	1,2	26,5	14,1	100,0
	Total	22,5	4,9	3,1	6,1	2,8	12,0	13,8	2,7	1,9	22,2	8,0	100,0

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

Appendix O: The ten leading underlying natural causes of death by district municipality of death occurrence, Western Cape, 2012*

Cape Winelands		No.	%	Central Karoo		No.	%	City of Cape Town		No.	%
1	Cerebrovascular diseases (I60-I69)	463	7,0	1	Tuberculosis (A15-A19)**	63	8,4	1	Diabetes mellitus (E10-E14)	2 021	7,3
2	Tuberculosis (A15-A19)	457	6,9	2	Cerebrovascular diseases (I60-I69)	59	7,9	2	Ischaemic heart diseases (I20-I25)	1 682	6,0
3	Human immunodeficiency virus [HIV] disease (B20-B24)	442	6,7	3	Chronic lower respiratory diseases (J40-J47)	50	6,7	3	Human immunodeficiency virus [HIV] disease (B20-B24)	1 660	6,0
4	Chronic lower respiratory diseases (J40-J47)	418	6,3	4	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	48	6,4	4	Cerebrovascular diseases (I60-I69)	1 548	5,6
5	Diabetes mellitus (E10-E14)	407	6,1	5	Human immunodeficiency virus [HIV] disease (B20-B24)	47	6,3	5	Tuberculosis (A15-A19)	1 530	5,5
6	Ischaemic heart diseases (I20-I25)	405	6,1	6	Hypertensive diseases (I10-I15)	39	5,2	6	Malignant neoplasms of digestive organs (C15-C26)	1 221	4,4
7	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	253	3,8	7	Diabetes mellitus (E10-E14)	33	4,4	7	Chronic lower respiratory diseases (J40-J47)	1 142	4,1
8	Malignant neoplasms of digestive organs (C15-C26)	243	3,7	8	Ischaemic heart diseases (I20-I25)	31	4,1	8	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	1 128	4,1
9	Hypertensive diseases (I10-I15)	214	3,2	8	Other forms of heart disease (I30-I52)	31	4,1	9	Hypertensive diseases (I10-I15)	1 088	3,9
10	Other forms of heart disease (I30-I52)	169	2,5	10	Malignant neoplasms of digestive organs (C15-C26)	23	3,1	10	Other forms of heart disease (I30-I52)	829	3,0
	Other natural causes	2 419	36,5		Other natural causes	236	31,6		Other natural causes	10 500	37,7
	Non natural causes	743	11,2		Non natural causes	88	11,8		Non natural causes	3 479	12,5
	All causes	6 633	100,0		All causes	748	100,0		All causes	27 828	100,0
Eden		No.	%	Overberg		No.	%	West Coast		No.	%
1	Tuberculosis (A15-A19)**	396	7,6	1	Ischaemic heart diseases (I20-I25)	160	7,6	1	Tuberculosis (A15-A19)**	357	11,7
2	Cerebrovascular diseases (I60-I69)	343	6,6	2	Cerebrovascular diseases (I60-I69)	139	6,6	2	Ischaemic heart diseases (I20-I25)	214	7,0
2	Ischaemic heart diseases (I20-I25)	321	6,2	3	Diabetes mellitus (E10-E14)	123	5,8	3	Cerebrovascular diseases (I60-I69)	208	6,8
4	Diabetes mellitus (E10-E14)	304	5,9	4	Tuberculosis (A15-A19)**	121	5,7	4	Diabetes mellitus (E10-E14)	195	6,4
5	Chronic lower respiratory diseases (J40-J47)	289	5,6	5	Chronic lower respiratory diseases (J40-J47)	110	5,2	5	Chronic lower respiratory diseases (J40-J47)	177	5,8
6	Human immunodeficiency virus [HIV] disease (B20-B24)	266	5,1	6	Malignant neoplasms of digestive organs (C15-C26)	106	5,0	6	Human immunodeficiency virus [HIV] disease (B20-B24)	135	4,4
7	Other forms of heart disease (I30-I52)	237	4,6	7	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	95	4,5	7	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	125	4,1
8	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	218	4,2	8	Human immunodeficiency virus [HIV] disease (B20-B24)	75	3,5	8	Hypertensive diseases (I10-I15)	114	3,7
9	Hypertensive diseases (I10-I15)	203	3,9	9	Hypertensive diseases (I10-I15)	73	3,5	9	Malignant neoplasms of digestive organs (C15-C26)	108	3,5
10	Malignant neoplasms of digestive organs (C15-C26)	196	3,8	10	Other forms of heart disease (I30-I52)	63	3,0	10	Other forms of heart disease (I30-I52)	107	3,5
	Other natural causes	1 939	37,4		Other natural causes	759	35,9		Other natural causes	1 008	32,9
	Non natural causes	479	9,2		non natural	291	13,8		Non natural causes	316	10,3
	All causes	5 191	100,0		All causes	2 115	100,0		All causes	3 064	100,0

*Excluding 569 cases with unspecified district municipality.

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

Appendix O1: The ten leading underlying natural causes of death by district municipality of death occurrence, Eastern Cape, 2012*

Alfred Nzo		No.	%	Amathole		No.	%	Buffalo City Metro		No.	%
1	Tuberculosis (A15-A19)**	444	7,6	1	Tuberculosis (A15-A19)**	1 500	11,3	1	Tuberculosis (A15-A19)**	1 044	13,6
2	Other viral diseases (B25-B34)	197	3,4	2	Chronic lower respiratory diseases (J40-J47)	735	5,5	2	Cerebrovascular diseases (I60-I69)	437	5,7
3	Intestinal infectious diseases (A00-A09)	156	2,7	3	Cerebrovascular diseases (I60-I69)	723	5,5	3	Other forms of heart disease (I30-I52)	395	5,1
4	Influenza and pneumonia (J09-J18)	124	2,1	4	Other forms of heart disease (I30-I52)	660	5,0	4	Diabetes mellitus (E10-E14)	387	5,0
5	Other forms of heart disease (I30-I52)	106	1,8	5	Influenza and pneumonia (J09-J18)	578	4,4	5	Malignant neoplasms of digestive organs (C15-C26)	370	4,8
6	Cerebrovascular diseases (I60-I69)	103	1,8	6	Other viral diseases (B25-B34)	565	4,3	6	Chronic lower respiratory diseases (J40-J47)	285	3,7
7	Certain disorders involving the immune mechanism (D80-D89)	97	1,7	7	Hypertensive diseases (I10-I15)	533	4,0	7	Other viral diseases (B25-B34)	282	3,7
8	Other diseases of the respiratory system (J95-J99)	92	1,6	8	Diabetes mellitus (E10-E14)	532	4,0	8	Hypertensive diseases (I10-I15)	258	3,4
9	Diabetes mellitus (E10-E14)	75	1,3	9	Human immunodeficiency virus [HIV] disease (B20-B24)	403	3,0	9	Influenza and pneumonia (J09-J18)	191	2,5
10	Other disorders originating in the perinatal period (P90-P96)	71	1,2	10	Intestinal infectious diseases (A00-A09)	343	2,6	10	Human immunodeficiency virus [HIV] disease (B20-B24)	185	2,4
	Other natural causes	3 971	68,1		Other natural causes	5 306	40,1		Other natural causes	3 061	39,8
	Non natural causes	399	6,8		Non natural causes	1 366	10,3		Non natural causes	794	10,3
	All causes	5 835	100,0		All causes	13 244	100,0		All causes	7 689	100,0
Cacadu		No.	%	Chris Hani		No.	%	Joe Gqabi		No.	%
1	Tuberculosis (A15-A19)**	456	11,8	1	Tuberculosis (A15-A19)**	1 004	11,4	1	Tuberculosis (A15-A19)**	400	8,9
2	Cerebrovascular diseases (I60-I69)	217	5,6	2	Other forms of heart disease (I30-I52)	490	5,6	2	Certain disorders involving the immune mechanism (D80-D89)	217	4,8
3	Other forms of heart disease (I30-I52)	196	5,1	3	Cerebrovascular diseases (I60-I69)	455	5,2	3	Other forms of heart disease (I30-I52)	217	4,8
4	Chronic lower respiratory diseases (J40-J47)	185	4,8	4	Chronic lower respiratory diseases (J40-J47)	433	4,9	4	Influenza and pneumonia (J09-J18)	192	4,3
5	Hypertensive diseases (I10-I15)	178	4,6	5	Influenza and pneumonia (J09-J18)	423	4,8	5	Cerebrovascular diseases (I60-I69)	162	3,6
6	Human immunodeficiency virus [HIV] disease (B20-B24)	168	4,3	6	Diabetes mellitus (E10-E14)	389	4,4	6	Diabetes mellitus (E10-E14)	156	3,5
7	Diabetes mellitus (E10-E14)	165	4,3	7	Other viral diseases (B25-B34)	367	4,2	7	Chronic lower respiratory diseases (J40-J47)	141	3,1
8	Ischaemic heart diseases (I20-I25)	115	3,0	8	Certain disorders involving the immune mechanism (D80-D89)	318	3,6	8	Hypertensive diseases (I10-I15)	139	3,1
8	Influenza and pneumonia (J09-J18)	115	3,0	9	Hypertensive diseases (I10-I15)	285	3,2	9	Other viral diseases (B25-B34)	108	2,4
10	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	89	2,3	10	Intestinal infectious diseases (A00-A09)	240	2,7	10	Human immunodeficiency virus [HIV] disease (B20-B24)	102	2,3
	Other natural causes	1 564	40,4		Other natural causes	3 551	40,3		Other natural causes	2 286	50,7
	Non natural causes	425	11,0		Non natural causes	864	9,8		Non natural causes	386	8,6
	All causes	3 873	100,0		All causes	8 819	100,0		All causes	4 506	100,0

*Excluding 1 050 cases with unspecified district municipality.

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

Appendix O1: The ten leading underlying natural causes of death by district municipality of death occurrence, Eastern Cape, 2012* (concluded)

Nelson Mandela Bay Metro		No.	%	O. R. Tambo		No.	%
1	Tuberculosis (A15-A19)**	699	11,1	1	Tuberculosis (A15-A19)**	1 451	10,2
2	Diabetes mellitus (E10-E14)	410	6,5	2	Human immunodeficiency virus [HIV] disease (B20-B24)	877	6,2
3	Cerebrovascular diseases (I60-I69)	371	5,9	3	Other viral diseases (B25-B34)	553	3,9
4	Hypertensive diseases (I10-I15)	360	5,7	4	Other forms of heart disease (I30-I52)	536	3,8
5	Human immunodeficiency virus [HIV] disease (B20-B24)	339	5,4	5	Cerebrovascular diseases (I60-I69)	430	3,0
6	Ischaemic heart diseases (I20-I25)	265	4,2	6	Influenza and pneumonia (J09-J18)	318	2,2
7	Chronic lower respiratory diseases (J40-J47)	252	4,0	7	Diabetes mellitus (E10-E14)	293	2,1
8	Other forms of heart disease (I30-I52)	214	3,4	8	Intestinal infectious diseases (A00-A09)	287	2,0
9	Malignant neoplasms of digestive organs (C15-C26)	199	3,2	9	Chronic lower respiratory diseases (J40-J47)	264	1,9
10	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	163	2,6	10	Certain disorders involving the immune mechanism (D80-D89)	237	1,7
	Other natural causes	2 444	38,8		Other natural causes	7 295	51,5
	Non natural causes	578	9,2		Non natural causes	1 630	11,5
	All causes	6 294	100,0		All causes	14 171	100,0

*Excluding 1 050 cases with unspecified district municipality.

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

Appendix O2: The ten leading underlying natural causes of death by district municipality of death occurrence, Northern Cape, 2012*

Frances Baard		No.	%	John Taolo Gaetsewe		No.	%	Namakwa		No.	%
1	Tuberculosis (A15-A19)**	362	9,4	1	Tuberculosis (A15-A19)**	181	7,1	1	Chronic lower respiratory diseases (J40-J47)	75	6,8
2	Human immunodeficiency virus [HIV] disease (B20-B24)	328	8,5	2	Human immunodeficiency virus [HIV] disease (B20-B24)	142	5,5	2	Ischaemic heart diseases (I20-I25)	60	5,5
3	Influenza and pneumonia (J09-J18)	175	4,5	3	Influenza and pneumonia (J09-J18)	107	4,2	3	Tuberculosis (A15-A19)**	57	5,2
4	Cerebrovascular diseases (I60-I69)	171	4,4	4	Other acute lower respiratory infections (J20-J22)	97	3,8	4	Other forms of heart disease (I30-I52)	54	4,9
5	Diabetes mellitus (E10-E14)	132	3,4	5	Cerebrovascular diseases (I60-I69)	81	3,2	5	Diabetes mellitus (E10-E14)	52	4,7
6	Hypertensive diseases (I10-I15)	125	3,2	6	Intestinal infectious diseases (A00-A09)	74	2,9	6	Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	50	4,5
7	Other forms of heart disease (I30-I52)	122	3,2	7	Other viral diseases (B25-B34)	74	2,9	7	Hypertensive diseases (I10-I15)	48	4,4
8	Certain disorders involving the immune mechanism (D80-D89)	116	3,0	7	Hypertensive diseases (I10-I15)	74	2,9	8	Cerebrovascular diseases (I60-I69)	47	4,3
9	Chronic lower respiratory diseases (J40-J47)	103	2,7	9	Other forms of heart disease (I30-I52)	58	2,3	9	Influenza and pneumonia (J09-J18)	39	3,5
10	Malignant neoplasms of digestive organs (C15-C26)	99	2,6	10	Diabetes mellitus (E10-E14)	43	1,7	10	Malignant neoplasms of digestive organs (C15-C26)	36	3,3
	Other natural causes	1 750	45,2		Other natural causes	1 388	54,2		Other natural causes	450	40,9
	Non natural causes	385	10,0		Non natural causes	240	9,4		Non natural causes	131	11,9
	All causes	3 868	100,0		All causes	2 559	100,0		All causes	1 099	100,0
Pixley ka Seme		No.	%	Siyanda		No.	%				
1	Tuberculosis (A15-A19)**	318	9,6	1	Tuberculosis (A15-A19)**	294	10,3				
2	Human immunodeficiency virus [HIV] disease (B20-B24)	242	7,3	2	Human immunodeficiency virus [HIV] disease (B20-B24)	201	7,1				
3	Cerebrovascular diseases (I60-I69)	207	6,2	3	Chronic lower respiratory diseases (J40-J47)	171	6,0				
4	Influenza and pneumonia (J09-J18)	138	4,2	4	Cerebrovascular diseases (I60-I69)	139	4,9				
4	Chronic lower respiratory diseases (J40-J47)	138	4,2	5	Hypertensive diseases (I10-I15)	137	4,8				
6	Diabetes mellitus (E10-E14)	130	3,9	6	Diabetes mellitus (E10-E14)	114	4,0				
7	Other forms of heart disease (I30-I52)	122	3,7	7	Other viral diseases (B25-B34)	88	3,1				
8	Hypertensive diseases (I10-I15)	104	3,1	8	Other forms of heart disease (I30-I52)	86	3,0				
9	Ischaemic heart diseases (I20-I25)	92	2,8	8	Influenza and pneumonia (J09-J18)	86	3,0				
10	Malignant neoplasms of digestive organs (C15-C26)	88	2,7	10	Certain disorders involving the immune mechanism (D80-D89)	82	2,9				
	Other natural causes	1 406	42,4		Other natural causes	1 066	37,4				
	Non natural causes	330	10,0		Non natural causes	385	13,5				
	All causes	3 315	100,0		All causes	2 849	100,0				

*Excluding 281 cases with unspecified district municipality.

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

Appendix O3: The ten leading underlying natural causes of death by district municipality of death occurrence, Free State, 2012*

Fezile Dabi		No.	%	Lejweleputswa		No.	%	Mangaung Metro		No.	%
1	Tuberculosis (A15-A19)**	491	9,7	1	Influenza and pneumonia (J09-J18)	865	10,8	1	Tuberculosis (A15-A19)**	958	9,9
2	Influenza and pneumonia (J09-J18)	430	8,5	2	Tuberculosis (A15-A19)**	770	9,6	2	Influenza and pneumonia (J09-J18)	664	6,8
3	Other forms of heart disease (I30-I52)	381	7,5	3	Other forms of heart disease (I30-I52)	387	4,8	3	Cerebrovascular diseases (I60-I69)	520	5,4
4	Cerebrovascular diseases (I60-I69)	262	5,2	4	Cerebrovascular diseases (I60-I69)	367	4,6	4	Other forms of heart disease (I30-I52)	333	3,4
5	Diabetes mellitus (E10-E14)	244	4,8	5	Intestinal infectious diseases (A00-A09)	325	4,1	5	Certain disorders involving the immune mechanism (D80-D89)	297	3,1
6	Hypertensive diseases (I10-I15)	237	4,7	6	Hypertensive diseases (I10-I15)	285	3,6	6	Hypertensive diseases (I10-I15)	292	3,0
7	Human immunodeficiency virus [HIV] disease (B20-B24)	198	3,9	7	Diabetes mellitus (E10-E14)	284	3,6	7	Diabetes mellitus (E10-E14)	260	2,7
8	Intestinal infectious diseases (A00-A09)	195	3,8	8	Other viral diseases (B25-B34)	223	2,8	8	Malignant neoplasms of digestive organs (C15-C26)	233	2,4
9	Other acute lower respiratory infections (J20-J22)	151	3,0	9	Ischaemic heart diseases (I20-I25)	216	2,7	9	Human immunodeficiency virus [HIV] disease (B20-B24)	201	2,1
10	Ischaemic heart diseases (I20-I25)	149	2,9	10	Certain disorders involving the immune mechanism (D80-D89)	202	2,5	10	Intestinal infectious diseases (A00-A09)	192	2,0
	Other natural causes	1 828	36,0		Other natural causes	3 339	41,7		Other natural causes	4 894	50,4
	Non natural causes	513	10,1		Non natural causes	735	9,2		Non natural causes	870	9,0
	All causes	5 079	100,0		All causes	7 998	100,0		All causes	9 714	100,0
Thabo Mofutsanyane		No.	%	Xhariep		No.	%				
1	Tuberculosis (A15-A19)**	758	8,0	1	Tuberculosis (A15-A19)**	240	10,4				
2	Influenza and pneumonia (J09-J18)	735	7,7	2	Influenza and pneumonia (J09-J18)	123	5,4				
3	Other forms of heart disease (I30-I52)	617	6,5	3	Cerebrovascular diseases (I60-I69)	118	5,1				
4	Human immunodeficiency virus [HIV] disease (B20-B24)	582	6,1	4	Other forms of heart disease (I30-I52)	114	5,0				
5	Cerebrovascular diseases (I60-I69)	550	5,8	5	Certain disorders involving the immune mechanism (D80-D89)	112	4,9				
6	Intestinal infectious diseases (A00-A09)	433	4,6	6	Ischaemic heart diseases (I20-I25)	78	3,4				
7	Certain disorders involving the immune mechanism (D80-D89)	431	4,5	7	Hypertensive diseases (I10-I15)	70	3,0				
8	Hypertensive diseases (I10-I15)	407	4,3	8	Diabetes mellitus (E10-E14)	57	2,5				
9	Diabetes mellitus (E10-E14)	376	4,0	9	Intestinal infectious diseases (A00-A09)	51	2,2				
10	Other viral diseases (B25-B34)	296	3,1	10	Malignant neoplasms of digestive organs (C15-C26)	50	2,2				
	Other natural causes	3 523	37,1		Other natural causes	1 048	45,6				
	Non natural causes	799	8,4		Non natural causes	236	10,3				
	All causes	9 507	100,0		All causes	2 297	100,0				

*Excluding 459 cases with unspecified district municipality.

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

Appendix O4: The ten leading underlying natural causes of death by district municipality of death occurrence, KwaZulu-Natal, 2012*

Amajuba		No.	%	eThekweni Metro		No.	%	iLembe		No.	%
1	Tuberculosis (A15-A19)**	707	13,9	1	Tuberculosis (A15-A19)**	2 656	11,7	1	Tuberculosis (A15-A19)**	926	16,3
2	Other forms of heart disease (I30-I52)	409	8,1	2	Diabetes mellitus (E10-E14)	1 386	6,1	2	Cerebrovascular diseases (I60-I69)	430	7,6
3	Influenza and pneumonia (J09-J18)	366	7,2	3	Other forms of heart disease (I30-I52)	1 317	5,8	3	Other viral diseases (B25-B34)	273	4,8
4	Other acute lower respiratory infections (J20-J22)	296	5,8	4	Cerebrovascular diseases (I60-I69)	1 172	5,2	4	Diabetes mellitus (E10-E14)	272	4,8
5	Cerebrovascular diseases (I60-I69)	279	5,5	5	Ischaemic heart diseases (I20-I25)	903	4,0	5	Intestinal infectious diseases (A00-A09)	255	4,5
6	Intestinal infectious diseases (A00-A09)	236	4,6	6	Human immunodeficiency virus [HIV] disease (B20-B24)	898	4,0	6	Human immunodeficiency virus [HIV] disease (B20-B24)	244	4,3
7	Diabetes mellitus (E10-E14)	230	4,5	7	Influenza and pneumonia (J09-J18)	882	3,9	7	Influenza and pneumonia (J09-J18)	190	3,4
8	Hypertensive diseases (I10-I15)	190	3,7	8	Other viral diseases (B25-B34)	715	3,1	8	Hypertensive diseases (I10-I15)	170	3,0
9	Other viral diseases (B25-B34)	124	2,4	9	Hypertensive diseases (I10-I15)	594	2,6	9	Other forms of heart disease (I30-I52)	139	2,5
10	Human immunodeficiency virus [HIV] disease (B20-B24)	120	2,4	10	Malignant neoplasms of digestive organs (C15-C26)	533	2,3	10	Ischaemic heart diseases (I20-I25)	132	2,3
	Other natural causes	1 685	33,2		Other natural causes	9 127	40,2		Other natural causes	2 147	37,9
	Non natural causes	436	8,6		Non natural causes	2 539	11,2		Non natural causes	490	8,6
	All causes	5 078	100,0		All causes	22 722	100,0		All causes	5 668	100,0
Sisonke		No.	%	Ugu		No.	%	uMgungundlovu		No.	%
1	Tuberculosis (A15-A19)	918	15,4	1	Tuberculosis (A15-A19)	1 479	15,5	1	Tuberculosis (A15-A19)	968	8,7
2	Cerebrovascular diseases (I60-I69)	345	5,8	2	Cerebrovascular diseases (I60-I69)	681	7,2	2	Human immunodeficiency virus [HIV] disease (B20-B24)	933	8,4
3	Diabetes mellitus (E10-E14)	304	5,1	3	Diabetes mellitus (E10-E14)	504	5,3	3	Diabetes mellitus (E10-E14)	799	7,2
4	Other viral diseases (B25-B34)	268	4,5	4	Other viral diseases (B25-B34)	431	4,5	4	Cerebrovascular diseases (I60-I69)	574	5,2
5	Influenza and pneumonia (J09-J18)	258	4,3	5	Influenza and pneumonia (J09-J18)	431	4,5	5	Hypertensive diseases (I10-I15)	501	4,5
6	Human immunodeficiency virus [HIV] disease (B20-B24)	189	3,2	6	Human immunodeficiency virus [HIV] disease (B20-B24)	429	4,5	6	Influenza and pneumonia (J09-J18)	356	3,2
7	Hypertensive diseases (I10-I15)	188	3,1	7	Intestinal infectious diseases (A00-A09)	363	3,8	7	Other forms of heart disease (I30-I52)	344	3,1
8	Other forms of heart disease (I30-I52)	185	3,1	8	Other forms of heart disease (I30-I52)	336	3,5	8	Intestinal infectious diseases (A00-A09)	341	3,1
9	Intestinal infectious diseases (A00-A09)	183	3,1	9	Chronic lower respiratory diseases (J40-J47)	302	3,2	9	Ischaemic heart diseases (I20-I25)	275	2,5
10	Certain disorders involving the immune mechanism (D80-D89)	181	3,0	10	Hypertensive diseases (I10-I15)	287	3,0	10	Other viral diseases (B25-B34)	251	2,3
	Other natural causes	2 495	41,7		Other natural causes	3 436	36,1		Other natural causes	4 604	41,5
	Non natural causes	466	7,8		Non natural causes	839	8,8		Non natural causes	1 145	10,3
	All causes	5 980	100,0		All causes	9 518	100,0		All causes	11 091	100,0

*Excluding 4 017 cases with unspecified district municipality.

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

Appendix O4: The ten leading underlying natural causes of death by district municipality of death occurrence, KwaZulu-Natal, 2012* (concluded)

uMkhanyakude		No.	%	uMzinyathi		No.	%	uThukela		No.	%
1	Tuberculosis (A15-A19)	668	14,3	1	Tuberculosis (A15-A19)	740	13,9	1	Tuberculosis (A15-A19)**	859	12,3
2	Human immunodeficiency virus [HIV] disease (B20-B24)	620	13,3	2	Other viral diseases (B25-B34)	329	6,2	2	Influenza and pneumonia (J09-J18)	429	6,2
3	Cerebrovascular diseases (I60-I69)	252	5,4	3	Cerebrovascular diseases (I60-I69)	296	5,6	3	Cerebrovascular diseases (I60-I69)	414	5,9
4	Hypertensive diseases (I10-I15)	179	3,8	4	Other forms of heart disease (I30-I52)	266	5,0	4	Intestinal infectious diseases (A00-A09)	384	5,5
5	Other forms of heart disease (I30-I52)	170	3,6	5	Intestinal infectious diseases (A00-A09)	248	4,7	5	Human immunodeficiency virus [HIV] disease (B20-B24)	377	5,4
6	Diabetes mellitus (E10-E14)	165	3,5	6	Influenza and pneumonia (J09-J18)	234	4,4	6	Other forms of heart disease (I30-I52)	341	4,9
7	Other viral diseases (B25-B34)	154	3,3	7	Human immunodeficiency virus [HIV] disease (B20-B24)	225	4,2	7	Diabetes mellitus (E10-E14)	296	4,2
8	Intestinal infectious diseases (A00-A09)	152	3,3	8	Diabetes mellitus (E10-E14)	205	3,9	8	Certain disorders involving the immune mechanism (D80-D89)	287	4,1
9	Influenza and pneumonia (J09-J18)	128	2,7	9	Other acute lower respiratory infections (J20-J22)	152	2,9	9	Ischaemic heart diseases (I20-I25)	224	3,2
10	General symptoms and signs (R50-R69)	127	2,7	10	Ischaemic heart diseases (I20-I25)	116	2,2	10	Hypertensive diseases (I10-I15)	222	3,2
	Other natural causes	1 667	35,7		Other natural causes	2 036	38,3		Other natural causes	2 572	36,9
	Non natural causes	384	8,2		Non natural causes	470	8,8		Non natural causes	567	8,1
	All causes	4 666	100,0		All causes	5 317	100,0		All causes	6 972	100,0
uThungulu		No.	%	Zululand		No.	%				
1	Tuberculosis (A15-A19)**	1 148	13,6	1	Tuberculosis (A15-A19)**	1 343	18,5				
2	Other viral diseases (B25-B34)	613	7,2	2	Intestinal infectious diseases (A00-A09)	346	4,8				
3	Human immunodeficiency virus [HIV] disease (B20-B24)	522	6,2	3	Cerebrovascular diseases (I60-I69)	319	4,4				
4	Diabetes mellitus (E10-E14)	445	5,3	4	Other forms of heart disease (I30-I52)	297	4,1				
5	Other forms of heart disease (I30-I52)	404	4,8	5	Other viral diseases (B25-B34)	294	4,1				
6	Cerebrovascular diseases (I60-I69)	390	4,6	6	Influenza and pneumonia (J09-J18)	260	3,6				
7	Influenza and pneumonia (J09-J18)	283	3,3	7	Diabetes mellitus (E10-E14)	243	3,3				
8	Intestinal infectious diseases (A00-A09)	257	3,0	8	Other acute lower respiratory infections (J20-J22)	237	3,3				
9	Hypertensive diseases (I10-I15)	218	2,6	9	Certain disorders involving the immune mechanism (D80-D89)	229	3,2				
10	Certain disorders involving the immune mechanism (D80-D89)	143	1,7	10	Hypertensive diseases (I10-I15)	172	2,4				
	Other natural causes	3 212	38,0		Other natural causes	2 855	39,3				
	Non natural causes	826	9,8		Non natural causes	663	9,1				
	All causes	8 461	100,0		All causes	7 259	100,0				

*Excluding 4 017 cases with unspecified district municipality.

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

Appendix O5: The ten leading underlying natural causes of death by district municipality of death occurrence, North West, 2012*

Bojanala Platinum				Dr Kenneth Kaunda				Dr Ruth Segomotsi Mompoti			
		No.	%			No.	%			No.	%
1	Tuberculosis (A15-A19)**	1 089	8,5	1	Tuberculosis (A15-A19)**	1 004	13,0	1	Tuberculosis (A15-A19)**	533	10,0
2	Influenza and pneumonia (J09-J18)	875	6,8	2	Cerebrovascular diseases (I60-I69)	373	4,8	2	Other viral diseases (B25-B34)	381	7,1
3	Other forms of heart disease (I30-I52)	829	6,5	3	Hypertensive diseases (I10-I15)	366	4,7	3	Influenza and pneumonia (J09-J18)	347	6,5
4	Cerebrovascular diseases (I60-I69)	624	4,9	4	Human immunodeficiency virus [HIV] disease (B20-B24)	354	4,6	4	Other forms of heart disease (I30-I52)	291	5,4
5	Hypertensive diseases (I10-I15)	576	4,5	5	Influenza and pneumonia (J09-J18)	353	4,6	5	Certain disorders involving the immune mechanism (D80-D89)	289	5,4
6	Diabetes mellitus (E10-E14)	541	4,2	6	Other viral diseases (B25-B34)	295	3,8	6	Hypertensive diseases (I10-I15)	283	5,3
7	Other viral diseases (B25-B34)	534	4,2	7	Other forms of heart disease (I30-I52)	287	3,7	7	Cerebrovascular diseases (I60-I69)	264	4,9
8	Intestinal infectious diseases (A00-A09)	400	3,1	8	Diabetes mellitus (E10-E14)	245	3,2	8	Intestinal infectious diseases (A00-A09)	216	4,0
9	Human immunodeficiency virus [HIV] disease (B20-B24)	329	2,6	9	Certain disorders involving the immune mechanism (D80-D89)	227	2,9	9	Human immunodeficiency virus [HIV] disease (B20-B24)	162	3,0
10	Certain disorders involving the immune mechanism (D80-D89)	324	2,5	10	Chronic lower respiratory diseases (J40-J47)	224	2,9	10	Diabetes mellitus (E10-E14)	125	2,3
	Other natural causes	5 445	42,6		Other natural causes	3 333	43,0		Other natural causes	2 161	40,4
	Non natural causes	1 213	9,5		Non natural causes	688	8,9		Non natural causes	302	5,6
	All causes	12 779	100,0		All causes	7 749	100,0		All causes	5 354	100,0
Ngaka Modiri Molema											
		No.	%								
1	Tuberculosis (A15-A19)**	1 016	11,3								
2	Influenza and pneumonia (J09-J18)	942	10,5								
3	Other forms of heart disease (I30-I52)	554	6,2								
4	Hypertensive diseases (I10-I15)	462	5,2								
5	Cerebrovascular diseases (I60-I69)	431	4,8								
6	Intestinal infectious diseases (A00-A09)	329	3,7								
7	Diabetes mellitus (E10-E14)	307	3,4								
8	Chronic lower respiratory diseases (J40-J47)	231	2,6								
9	Human immunodeficiency virus [HIV] disease (B20-B24)	230	2,6								
10	Other viral diseases (B25-B34)	226	2,5								
	Other natural causes	3 612	40,3								
	Non natural causes	626	7,0								
	All causes	8 966	100,0								

*Excluding 976 cases with unspecified district municipality.

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

Appendix O6: The ten leading underlying natural causes of death by district municipality of death occurrence, Gauteng, 2012*

City of Johannesburg Metro				City of Tshwane Metro				Ekurhuleni Metro			
		No.	%			No.	%			No.	%
1	Tuberculosis (A15-A19)**	1 854	6,3	1	Tuberculosis (A15-A19)**	1 626	7,8	1	Tuberculosis (A15-A19)**	2 244	8,6
2	Influenza and pneumonia (J09-J18)	1 420	4,8	2	Other forms of heart disease (I30-I52)	1 561	7,5	2	Influenza and pneumonia (J09-J18)	1 603	6,1
3	Other forms of heart disease (I30-I52)	1 232	4,2	3	Diabetes mellitus (E10-E14)	1 142	5,5	3	Other forms of heart disease (I30-I52)	1 170	4,5
4	Human immunodeficiency virus [HIV] disease (B20-B24)	1 114	3,8	4	Cerebrovascular diseases (I60-I69)	1 129	5,4	4	Cerebrovascular diseases (I60-I69)	1 115	4,3
5	Cerebrovascular diseases (I60-I69)	1 041	3,5	5	Influenza and pneumonia (J09-J18)	1 063	5,1	5	Other viral diseases (B25-B34)	1 056	4,0
6	Diabetes mellitus (E10-E14)	899	3,0	6	Hypertensive diseases (I10-I15)	922	4,4	6	Diabetes mellitus (E10-E14)	955	3,7
7	Ischaemic heart diseases (I20-I25)	797	2,7	7	Human immunodeficiency virus [HIV] disease (B20-B24)	737	3,5	7	Human immunodeficiency virus [HIV] disease (B20-B24)	784	3,0
8	Malignant neoplasms of digestive organs (C15-C26)	762	2,6	8	Ischaemic heart diseases (I20-I25)	719	3,4	8	Hypertensive diseases (I10-I15)	760	2,9
9	Chronic lower respiratory diseases (J40-J47)	651	2,2	9	Malignant neoplasms of digestive organs (C15-C26)	591	2,8	9	Ischaemic heart diseases (I20-I25)	750	2,9
10	Hypertensive diseases (I10-I15)	627	2,1	10	Intestinal infectious diseases (A00-A09)	556	2,7	10	Certain disorders involving the immune mechanism (D80-D89)	744	2,8
	Other natural causes	16 178	54,8		Other natural causes	8 959	42,8		Other natural causes	12 526	47,9
	Non natural causes	2 973	10,1		Non natural causes	1 939	9,3		Non natural causes	2 427	9,3
	All causes	29 548	100,0		All causes	20 944	100,0		All causes	26 134	100,0
Sedibeng				West Rand							
		No.	%			No.	%				
1	Influenza and pneumonia (J09-J18)	1 091	10,6	1	Tuberculosis (A15-A19)**	786	8,7				
2	Tuberculosis (A15-A19)**	942	9,1	2	Influenza and pneumonia (J09-J18)	599	6,6				
3	Other forms of heart disease (I30-I52)	661	6,4	3	Other forms of heart disease (I30-I52)	400	4,4				
4	Cerebrovascular diseases (I60-I69)	569	5,5	4	Cerebrovascular diseases (I60-I69)	349	3,9				
5	Diabetes mellitus (E10-E14)	415	4,0	5	Diabetes mellitus (E10-E14)	279	3,1				
6	Intestinal infectious diseases (A00-A09)	392	3,8	6	Ischaemic heart diseases (I20-I25)	276	3,1				
7	Hypertensive diseases (I10-I15)	389	3,8	7	Other viral diseases (B25-B34)	264	2,9				
8	Ischaemic heart diseases (I20-I25)	303	2,9	8	Human immunodeficiency virus [HIV] disease (B20-B24)	249	2,8				
9	Human immunodeficiency virus [HIV] disease (B20-B24)	290	2,8	9	Hypertensive diseases (I10-I15)	227	2,5				
10	Chronic lower respiratory diseases (J40-J47)	287	2,8	10	Intestinal infectious diseases (A00-A09)	207	2,3				
	Other natural causes	4 002	38,7		Other natural causes	4 261	47,2				
	Non natural causes	1 000	9,7		Non natural causes	1 135	12,6				
	All causes	10 341	100,0		All causes	9 032	100,0				

*Excluding 2 550 cases with unspecified district municipality.

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

Appendix O7: The ten leading underlying natural causes of death by district municipality of death occurrence, Mpumalanga, 2012*

Ehlanzeni		No.	%	Gert Sibande		No.	%	Nkangala		No.	%
1	Tuberculosis (A15-A19)**	2 154	14,9	1	Tuberculosis (A15-A19)**	1 133	11,1	1	Tuberculosis (A15-A19)**	899	9,1
2	Cerebrovascular diseases (I60-I69)	1 081	7,5	2	Influenza and pneumonia (J09-J18)	735	7,2	2	Influenza and pneumonia (J09-J18)	809	8,2
3	Intestinal infectious diseases (A00-A09)	896	6,2	3	Intestinal infectious diseases (A00-A09)	519	5,1	3	Hypertensive diseases (I10-I15)	610	6,1
4	Human immunodeficiency virus [HIV] disease (B20-B24)	751	5,2	4	Other viral diseases (B25-B34)	500	4,9	4	Cerebrovascular diseases (I60-I69)	483	4,9
5	Influenza and pneumonia (J09-J18)	721	5,0	5	Other forms of heart disease (I30-I52)	493	4,8	5	Diabetes mellitus (E10-E14)	465	4,7
6	Diabetes mellitus (E10-E14)	598	4,1	6	Certain disorders involving the immune mechanism (D80-D89)	475	4,6	6	Other viral diseases (B25-B34)	448	4,5
7	Other forms of heart disease (I30-I52)	516	3,6	7	Diabetes mellitus (E10-E14)	456	4,5	7	Other forms of heart disease (I30-I52)	404	4,1
8	Other viral diseases (B25-B34)	445	3,1	8	Cerebrovascular diseases (I60-I69)	406	4,0	8	Other acute lower respiratory infections (J20-J22)	337	3,4
9	Certain disorders involving the immune mechanism (D80-D89)	416	2,9	9	Hypertensive diseases (I10-I15)	291	2,8	9	Human immunodeficiency virus [HIV] disease (B20-B24)	322	3,2
10	Hypertensive diseases (I10-I15)	406	2,8	10	Other acute lower respiratory infections (J20-J22)	258	2,5	10	Intestinal infectious diseases (A00-A09)	299	3,0
	Other natural causes	5 333	37,0		Other natural causes	3 938	38,5		Other natural causes	3 693	37,2
	Non natural causes	1 105	7,7		Non natural causes	1 020	10,0		Non natural causes	1 152	11,6
	All causes	14 422	100,0		All causes	10 224	100,0		All causes	9 921	100,0

*Excluding 1 732 cases with unspecified district municipality.

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

Appendix O8: The ten leading underlying natural causes of death by district municipality of death occurrence, Limpopo, 2012*

Capricorn				Greater Sekhukhune				Mopani			
		No.	%			No.	%			No.	%
1	Influenza and pneumonia (J09-J18)	1 191	9,7	1	Influenza and pneumonia (J09-J18)	1 646	17,7	1	Tuberculosis (A15-A19)**	964	10,3
2	Tuberculosis (A15-A19)**	1 028	8,4	2	Intestinal infectious diseases (A00-A09)	787	8,5	2	Influenza and pneumonia (J09-J18)	769	8,2
3	Intestinal infectious diseases (A00-A09)	710	5,8	3	Tuberculosis (A15-A19)**	765	8,2	3	Intestinal infectious diseases (A00-A09)	728	7,8
4	General symptoms and signs (R50-R69)	636	5,2	4	Cerebrovascular diseases (I60-I69)	579	6,2	4	Inflammatory diseases of the central nervous system (G00-G09)	435	4,6
5	Diabetes mellitus (E10-E14)	625	5,1	5	Other viral diseases (B25-B34)	571	6,1	5	Cerebrovascular diseases (I60-I69)	394	4,2
6	Human immunodeficiency virus [HIV] disease (B20-B24)	499	4,1	6	Diabetes mellitus (E10-E14)	437	4,7	6	Diabetes mellitus (E10-E14)	387	4,1
7	Cerebrovascular diseases (I60-I69)	494	4,0	7	Hypertensive diseases (I10-I15)	399	4,3	7	Other forms of heart disease (I30-I52)	313	3,3
8	Hypertensive diseases (I10-I15)	479	3,9	8	Other forms of heart disease (I30-I52)	382	4,1	8	Certain disorders involving the immune mechanism (D80-D89)	279	3,0
9	Other viral diseases (B25-B34)	416	3,4	9	Human immunodeficiency virus [HIV] disease (B20-B24)	217	2,3	9	Other viral diseases (B25-B34)	229	2,4
10	Other forms of heart disease (I30-I52)	377	3,1	10	Certain disorders involving the immune mechanism (D80-D89)	206	2,2	10	Other diseases of the respiratory system (J95-J99)	170	1,8
	Other natural causes	4 780	39,1		Other natural causes	2 569	27,7		Other natural causes	4 090	43,7
	Non natural causes	985	8,1		Non natural causes	728	7,8		Non natural causes	605	6,5
	All causes	12 220	100,0		All causes	9 286	100,0		All causes	9 363	100,0
Vhembe				Waterberg							
		No.	%			No.	%				
1	Tuberculosis (A15-A19)**	759	7,9	1	Tuberculosis (A15-A19)**	479	8,9				
2	Intestinal infectious diseases (A00-A09)	504	5,2	2	Influenza and pneumonia (J09-J18)	318	5,9				
3	Diabetes mellitus (E10-E14)	482	5,0	3	Other viral diseases (B25-B34)	244	4,6				
4	Influenza and pneumonia (J09-J18)	413	4,3	4	Diabetes mellitus (E10-E14)	204	3,8				
5	Cerebrovascular diseases (I60-I69)	347	3,6	5	Cerebrovascular diseases (I60-I69)	186	3,5				
6	Certain disorders involving the immune mechanism (D80-D89)	274	2,8	6	Other forms of heart disease (I30-I52)	173	3,2				
7	Other forms of heart disease (I30-I52)	268	2,8	7	Hypertensive diseases (I10-I15)	160	3,0				
8	Other viral diseases (B25-B34)	206	2,1	8	Certain disorders involving the immune mechanism (D80-D89)	155	2,9				
9	Renal failure (N17-N19)	188	2,0	9	Intestinal infectious diseases (A00-A09)	154	2,9				
10	Other acute lower respiratory infections (J20-J22)	154	1,6	10	Human immunodeficiency virus [HIV] disease (B20-B24)	114	2,1				
	Other natural causes	5 369	55,8		Other natural causes	2 672	49,9				
	Non natural causes	659	6,8		Non natural causes	494	9,2				
	All causes	9 623	100,0		All causes	5 353	100,0				

*Excluding 3 276 cases with unspecified district municipality.

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

Appendix P: Population group differences

The ten leading natural causes of death by population group for 2012 are presented in Appendix P1. Information on population group was unknown in 15,6% of all deaths. As such due to the high proportion of deaths by population group categorised as either unknown or unspecified, the analysis was restricted to Appendix P1. It is important to note that the percentage of deaths with missing information on population group declined from around 25% during the years 1997 to 2010, to 17,9% in 2011 and declined further to 15,6% in 2012.

Four of the ten leading causes of death were common for the four population groups namely, *cerebrovascular diseases*, *other forms of heart diseases*, *diabetes mellitus* and *hypertensive disease*, although their rankings differed by population group. In 2012, *cerebrovascular diseases* were the third leading cause of death among the white, black African and coloured population groups, accounting for 6,3%, 5,1% and 6,4% of all deaths in these population groups, respectively. The third leading cause of death for the Indian/Asian population group were *other forms of heart diseases* (7,2%), while *cerebrovascular diseases* appeared in the fourth ranking (5,5%).

The distribution of leading natural causes by population group shows that communicable diseases were generally more common among the black African population. These include *tuberculosis*, *influenza and pneumonia*, *human immunodeficiency virus [HIV] disease*, *other viral diseases*, *intestinal infectious diseases* and *certain disorders involving the immune system*. These six causes together accounted for 33,8% of deaths in the black African population. *Tuberculosis* was the number one leading cause of death for both black Africans and coloured population groups, accounting for 12,1% and 7,9%, respectively. The leading cause of death among the white and Indian/Asian population groups was *ischaemic heart diseases* in the first rank, contributing 11,7% and 14,1%, respectively.

Some of the leading causes of death were shared by some population groups but not by others. Black Africans and coloureds were the only population groups that had *tuberculosis* amongst the ten leading underlying natural causes. *Ischaemic heart diseases*, *malignant neoplasm of digestive organs*, *malignant neoplasm of respiratory and intrathoracic organs* and *chronic lower respiratory diseases* were in the ten leading natural causes of death in all population groups except among black Africans. The black Africans were the only population group that had *certain disorders involving the immune mechanism* and *other viral diseases*.

The second leading underlying natural cause of death for the black African population was *influenza and pneumonia* (6,2%), whilst for the coloured population *diabetes mellitus* was ranked second, responsible for 7,2% of total deaths within this group. The second ranked cause for the white population group was *other forms of heart disease*, accounting for 7,1% of deaths in this group.

Overall, there were no notable differences in the proportion of deaths due to non-natural causes: 10,5% for the coloured population group; 10,4% for the Indian/Asian group; 10,1% for the black Africans; and 9,1% for the white population group.

Appendix P1: The ten leading underlying natural causes of death by population group, 2012

Causes of death (based on ICD-10)	Black African			White			Indian or Asian			Coloured			Other/Unknown/Unspecified		
	Rank	No.	%	Rank	No.	%	Rank	No.	%	Rank	No.	%	Rank	No.	%
Tuberculosis (A15-A19)*	1	40 066	12,1	...	...	...	...	...	...	1	2 227	7,9	1	4 779	6,3
Influenza and pneumonia (J09-J18)	2	20 531	6,2	7	1 434	3,8	9	177	2,4	...	...	...	2	3 471	4,6
Cerebrovascular diseases (I60-I69)	3	16 807	5,1	3	2 415	6,3	4	409	5,5	3	1 796	6,4	4	2 567	3,4
Human immunodeficiency virus [HIV] disease (B20-B24)	4	15 901	4,8	...	...	...	...	...	...	7	1 155	4,1	10	1 512	2,0
Other forms of heart disease (I30-I52)	5	14 792	4,5	2	2 695	7,1	3	531	7,2	10	919	3,3	3	2 675	3,5
Diabetes mellitus (E10-E14)	6	14 194	4,3	6	1 600	4,2	2	1 012	13,7	2	2 035	7,2	5	2 389	3,2
Other viral diseases (B25-B34)	7	13 308	4,0	...	...	...	...	...	...	...	...	...	...	...	...
Intestinal infectious diseases (A00-A09)	8	12 700	3,8	...	...	...	...	...	...	...	...	...	8	1 704	2,3
Hypertensive diseases (I10-I15)	9	11 751	3,6	9	1 041	2,7	5	295	4,0	6	1 256	4,4	6	1 852	2,4
Certain disorders involving the immune mechanism (D80-D89)	10	9 496	2,9	...	...	...	...	...	...	...	...	...	...	...	...
Ischaemic heart diseases (I20-I25)	...	...	...	1	4 482	11,7	1	1 036	14,1	5	1 449	5,1	9	1 572	2,1
Chronic lower respiratory diseases (J40-J47)	...	...	...	4	2 014	5,3	7	242	3,3	4	1 782	6,3	7	1 840	2,4
Malignant neoplasm of digestive organs (C15-C26)	...	...	...	5	2 005	5,2	6	271	3,7	9	1 019	3,6	...	...	...
Malignant neoplasm of respiratory and intrathoracic organs (C30-39)	...	...	...	8	1 349	3,5	10	164	2,2	8	1 142	4,0	...	...	...
Renal failure (N17-N19)	...	...	...	10	807	2,1	8	218	3,0	...	...	...	...	...	...
Other natural causes		127 909	38,7		14 900	39,0		2 247	30,5		10 527	37,2		44 789	59,2
Non-natural causes		33 482	10,1		3 479	9,1		768	10,4		2 967	10,5		6 524	8,6
All causes		330 937	100,0		38 221	100,0		7 370	100,0		28 274	100,0		75 674	100,0

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