Statistics South Africa

your leading partner in quality statistics

Statistical release

P0309.3

Mortality and causes of death in South Africa, 2010: Findings from death notification

Embargoed until:
11 April 2013
10:00

Enquiries:

User Information Services
(012) 310 8600

Forthcoming issue:	Expected release date
2011	November 2013

170 Andries Street, Pretoria 0002, Private Bag X44, Pretoria 0001, South Africa
Tel: +27 12 310 8911, Fax: +27 12 321 7381, www.statssa.gov.za, info@statssa.gov.za

Mortality and causes of death in South Africa, 2010: Findings from death notification

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

Stats SA publishes approximately 300 different statistical releases each year. It is not economically viable to produce them in more than one of South Africa's eleven official languages. Since the releases are used extensively, not only locally but also internationally, Stats SA releases are published in English only.

This publication is available on the Internet at www.statssa.gov.za.

Stats SA products

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

- National Library of South Africa, Pretoria Division
- National Library of South Africa, Cape Town Division
- Natal Society Library, Pietermaritzburg
- Library of Parliament, Cape Town
- Bloemfontein Public Library
- 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, Mafikeng

Stats SA also provides a subscription service.

Enquiries:

Printing and distribution
Tel: (012) 310 8251
Fax: (012) 321 7381
Email: distribution@statssa.gov.za

User information services
(012) 310 8600
(012) 310 8500 / 8495
info@statssa.gov.za

Preface

This statistical release presents information on mortality and causes of death in South Africa for deaths that occurred in 2010. It also provides information on death occurrences from 1997 to 2009 to show trends in mortality and causes of death. It is based on data collected through the South African civil registration system that is maintained by the Department of Home Affairs. The information on causes of death provided is as recorded on death notification forms completed by medical practitioners and other certifying officials.

PJ Lehohla
Statistician-General

Contents

List of tables

List of figures

1. Introduction

1.1 Background

The World Health Organisation (WHO) states that existing effective and affordable interventions can save the lives of many people, but health systems fail to adequately address preventable causes of morbidity and mortality (WHO, 2007a). It also states that countries need to know how many people are born and die each year and the main causes of death in order to have well-functioning health systems, and that the only way to count everyone and track all births and deaths is through civil registration (WHO, 2007b). The civil registration system in South Africa is maintained by the Department of Home Affairs (DHA), guided by several legislative frameworks and regulations.

The registration of deaths in South Africa is governed by the Births and Deaths Registration Act, 1992 (Act No. 51 of 1992), as amended. The Act states that "in the case of a death due to natural causes, any person who was present at the time of death, or who became aware thereof, or who has charge of the burial concerned, shall give, as soon as practicable notice of death" (Republic of South Africa, 1992). If there is any doubt whether the death was due to natural causes, such death has to be reported to a police officer.

Statistics from civil registration are the only national source of information on mortality and causes of death in South Africa. Such information is invaluable for the assessment and monitoring of the health status of the population and for planning of adequate health interventions. Accordingly, these statistics are also essential in tracking progress and monitoring trends of the Millennium Development Goals (MDGs) in the country. The main MDG goals that require mortality and causes of death information are goals four, five and six namely: to reduce child mortality; to improve maternal health; and to combat HIV/AIDS, malaria and other diseases. The indicators that can be derived may be used as the numerator to measure under-five mortality rate, infant mortality rate, maternal mortality ratio, death rates associated with malaria and death rates associated with tuberculosis.

Statistics South Africa (Stats SA), in close collaboration with the DHA and the Department of Health (DOH), provides annual information on reported mortality and causes of death from the civil registration system in South Africa. These three government departments and other stakeholders have made concerted efforts to improve the registration of vital events and the quality of data from the civil registration system in the country.

1.2 Objectives of this statistical release

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

- To provide contextual information on the data and methods used in order to support further specialist analysis of the data available from death notification forms;
- To outline trends in mortality from 1997 to 2010 and differentials of mortality by selected demographic, social and geographic characteristics for deaths that occurred in 2010; and
- To present statistics on the causes of death for deaths that occurred in 2010, focusing on the underlying causes of death.

1.3 Scope of this statistical release

This release covers data from all death notification forms that had reached Stats SA during the 2011/13 processing phase, focusing on deaths that occurred in 2010. The release also provides statistics for deaths that occurred between 1997 and 2009 (including late registrations processed in 2011/13) 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 are provided in Appendix A.

1.4 Organisation and presentation of this statistical release

The remainder of this release is organised as follows:

Section 2 describes the data and methods utilised to produce the release. Data sources, data processing methodologies and techniques used for data analysis are discussed. Further, data quality issues, including late registrations, timeliness of death registration and reporting of causes of death information are also discussed in this section.

Section 3 presents the overall levels, patterns, and trends of mortality. Age and sex differentials of the deceased are given prominence. This section also presents the distribution of deaths for other variables such as population group, place or institution of death occurrence, province of death occurrence and province of residence of the deceased.

Information on the underlying causes of death for all deaths registered in 2010 is presented in Section 4. Comparisons with data from 1997 to 2009 are also included. Further analysis distinguishes between natural and non-natural causes of death and comparisons between immediate, contributing and underlying causes of death are included.

The last section, Section 5, provides the summary and concluding remarks.

2. Data and methods

This section describes the data sources, data processing methodology, data analysis and assessment of the quality of data on mortality and causes of death data for 2010.

2.1 Data sources

This release is based on administrative records from death notification forms collected from the Department of Home Affairs (DHA). The release covers deaths that occurred in 2010 and were registered at DHA including deaths that occurred in 1997 to 2009, but were registered between 2010 and 2012, hereafter known as late registrations. The data reported in this release are based on two forms: Form BI-1663, which was introduced in 1998 (see Appendix B) as well as Form DHA-1663, which was introduced in 2009 (see Appendix B1). In the event that a medical practitioner could not certify the occurrence of death (usually for late registrations), a traditional leader (such as chief, *induna* or headman) completes Form DHA-1680 (referred to as the Death Report) to certify the occurrence of death and to provide a description of circumstances that led to and caused the death.

Both forms are currently being used in the country to report deaths. In this release, 86,1% of the data are from the BI-1663 form and 13,9% from the DHA-1663 form. The data elements in the two forms were largely comparable, which allowed for the merging of the data into one source. Where variables were not aligned (for example a particular variable not sharing the same codes), efforts were undertaken to ensure consistency. Details of the alignments made for specific variables are explained in relevant sections of this release.

The registration of deaths in South Africa is undertaken at the DHA. When a death occurs, notice of death should be given and duly registered. After the death is registered, the DHA issues a death certificate to the informant who registered the death, and updates the National Population Register (NPR) on condition that the deceased was a South African citizen or permanent resident and whose birth was already registered on the NPR at the time of death. Details of the deceased who were non-South African citizens but who had sojourned temporarily in the country and all South African citizens and permanent residents who died before notice of their births had been registered are not captured in the NPR. However, a hand-written death certificate is issued following the registration of death.

All death notification forms, irrespective of citizenship of the deceased, are then collected by Statistics South Africa (Stats SA) for data processing, analysis and dissemination of information on mortality and causes of death. It is for this reason that the number of deaths processed by Stats SA will always be higher than the number of deaths recorded on the NPR for the same period.

During the 2011/13 processing phase, Stats SA processed a total of 543 856 deaths that occurred in 2010 and 8 786 late registrations for deaths that occurred between 1997 and 2009 (excluding duplicate registrations). The figure for 2010 deaths processed by Stats SA is 6,9% higher than the number of 2010 deaths recorded on the NPR (508 751). As with previous releases, the annual number of deaths processed by Stats SA is always higher than the annual NPR figures during 1997–2010 (see Figure 3.1).

2.2 Data processing

Processing of death notification forms collected from the DHA takes place at Stats SA. 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 data capturing.

Classification of the causes of death

The mortality statistics released in this document are compiled in accordance with the World Health Organization (WHO) regulations that require that member nations classify and code causes of death in accordance with the tenth revision of the International Statistical Classification of Diseases and Related Health Problems [ICD-10] (WHO, 1992). The ICD-10 coding provides the basic guidance used in virtually all countries to code and classify

causes of death data. It provides information on coding in terms of disease, injury and poisoning categories. It also provides the rules for selecting the underlying cause of death from the several diagnoses that may be reported on the death notification form, as well as definitions, tabulation lists, guidelines for the death notification form, and regulations on the use of the classification. The ICD-10 contains approximately 8 000 categories of causes of death. The classification has been constructed for convenience and its usage is not mandatory. The ICD-10 has been adopted by member states, and in South Africa, the National Health Information System of South Africa has also adopted it as its standard. The processing of 2010 data on causes of death used 4-character coding.

Stats SA follows the principle of 'what you see is what you code' in coding the information on causes of death provided by certifying officials. Furthermore, Stats SA has outlined specific guidelines for coding *immunosuppression* and *acquired immune suppression* which do not have codes in the ICD-10 manuals. 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 reported the cause of death as *acquired immune suppression*. In terms of the Stats SA coding procedures, this term was interpreted as *HIV disease* and given an HIV code (group 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.

Generation of the underlying causes of death

Stats SA uses a computerised coding system on the underlying causes of death using a software programme called Automated Classification of Medical Entities (ACME 2000.05) developed by the United States National Center for Health Statistics (NCHS). The ACME program applies the WHO rules on the selection of underlying causes of death. The ACME program is used as the international standard in the automated coding of causes of death.

During the processing of 2010 data, an additional software programme called IRIS was also used to derive the underlying causes of death. The usage of IRIS was mainly meant to test this system, with anticipation of full implementation in 2013/14. IRIS is an automatic system for coding multiple causes of death and for the selection of the underlying cause of death. IRIS is based on the international form of death certificate provided by WHO. The coding of causes of death follows ICD-10 rules and guidelines.

The ACME programme automatically derived the underlying cause of death for 94,4% of all individual death records processed during the 2011/13 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 analysis

This release provides tables and graphs, which show descriptive statistics in the form of frequency distributions, cross-tabulations and median ages at death. The median ages at death are used to measure the tempo of mortality, which indicates how rapidly or slowly, or how early or late mortality occurs in the population. Although both medians and means may be influenced by the quality of age reporting, medians are preferred over means since the distribution of mortality in age-time or duration-time is likely to be skewed. Demographic indicators are also presented, which include the sex ratio, crude and age-specific death rates. Trend analysis was undertaken to demonstrate the levels and patterns of mortality over time. This allows for comparison over time and also to assess the quality of the data at any given point in time.

Crude death rates (CDR) by sex were computed for the years 2006 to 2010. They were calculated by dividing the number of deaths occurring in each year for each sex by the total population for each sex for that specific year, multiplied by 1 000. The mid-year population estimated by sex was used for the calculations (Stats SA, 2011). The Age-Specific Death Rates (ASDRs) were also calculated for deaths occurring in 2006 to 2010.

The analysis of information on causes of death was mainly based on ranking the underlying causes of death and providing proportions of deaths due to specific causes. Ranking the underlying causes of death is useful for illustrating the relative burden of cause-specific mortality. The ranking simply denotes the frequency of causes of death among those causes eligible to be ranked, and does not reflect the causes of death in terms of their importance from a public health point of view.

The top-ranking causes determine 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-ranking 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 of death have been ranked separately. Furthermore, 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. Although in some cases these causes would have been among the ten leading underlying causes, they are excluded from the ranking.

This release also presents tables on mortality and causes of death for district municipalities in the country, shown in the appendices. Information on local municipalities is also available, but is provided on request from Stats SA. The boundaries for local municipalities, district municipalities and provinces are in line with the 2011 municipal boundaries.

2.4 Data quality

Mortality and causes of death statistics can suffer from incomplete registration, missing data and causes of death attributed to ill-defined causes. Data quality for this release assessed the extent of late registrations; timeliness of death registration; completeness of information for selected variables; ill-defined causes of death; and then applied the Mahapatra et al. (2007) framework to summarise the quality of mortality and cause-of-death statistics.

2.4.1 Completeness of death registration

Various methods are available for the assessment of the completeness of coverage of death registration data, with each method having strengths and limitations. Recent studies have recommended a combination of the Generalised Growth Balance method (Hill, 1987) and the Synthetic Extinct Generations method (Bennett and Horiuchi, 1981 and 1984) for the estimation of the completeness of death registration in non-stable populations such as South Africa. These methods have been applied to estimate the completeness of death registration in South Africa (see for example, Dorrington and Bradshaw, 2011). Based on these methods, the authors estimated the level of completeness of death registration as about 93% between 2001 and 2007.

The estimation of the completeness of death registration for the period between 2007 and 2011 is dependet on availability of specific data elements from the 2011 population census, which are required as input for the estimation procedure. Specifically, the methods require the distribution of net migrants in South Africa classified by age and sex. At the time of finalising this statistical release, the required information was not yet available. As such, the measurement of the completeness of death registration between 2007 and 2011 will be provided in the next statistical release on mortality and causes of death.

2.4.2 Late registrations

According to the Births and Deaths Registration Act, 1992, notice of death should be given as soon as practicable. For the purpose of this release late registrations refer to deaths that were registered later than the year in which they occurred. Table 2.1 provides information on the number of deaths published in November 2011 for the years 1997–2009; additional forms received during the current processing phase (2011/13) for these years; and the total number of deaths for each year as of December 2012.

In total, 8 786 additional death notification forms for 1997–2009 were processed during 2011/13. During this processing phase, the majority of the late death registrations were for deaths that occurred in 2009. This represents 80,1% of late registrations. About 5% (5,4%) of the late registrations were for deaths that occurred in 2008. There were fewer late registrations for the other years, representing less than 3% of the late registrations each year. The distribution of the updated deaths from 1997 to 2009 and for 2010 deaths by age and sex is provided in Appendices C (1997–1999), C.1 (2000–2002), C.2 (2003–2005), C.3 (2006–2008) and C.4 (2009–2010).

Table 2.1: Number of deaths published in November 2011 and late registrations processed during the 2011/13 processing phase by year of death, 1997–2009

Year of death	Number of deaths published in November 2011	Additional forms received in the 2011/13 processing phase	Total number of deaths (by December 2012)
1997	317 151	19	317 170
1998	365 867	17	365 884
1999	381 839	19	381 858
2000	416 316	104	416 420
2001	454 971	155	455 126
2002	502 133	204	502 337
2003	556 882	116	556 998
2004	576 809	233	577 042
2005	598 240	81	598 321
2006	613 040	68	613 108
2007	604 100	260	604 360
2008	595 152	472	595 624
2009	572 673	7 038	579 711
Total	**6 555 173**	**8 786**	**6 563 959**

2.4.3 Timeliness of death registration

The interval between the date of death occurrence and the date of death registration is used to measure timeliness in death registrations. Table 2.2 shows the number of days it took for deaths that occurred in 2010 to be registered. Within the day of occurrence, 11,3% of deaths were registered and a quarter (25,0%) were registered a day after the death occurred. By the second day, at least half of the deaths that occurred in 2010 were registered and more than three-quarters were registered within four days of occurrence. By the end of the first week, 88,2% of deaths were registered and almost all (97,6%) deaths were registered within the first month of occurrence.

Table 2.2: Distribution of deaths by the number of days it took to register the death, 2010

Number of days	Number of deaths	%	Cumulative %
Within a day of death	61 402	11,3	11,3
1 day	135 967	25,0	36,3
2 days	101 142	18,6	54,9
3 days	76 712	14,1	69,0
4 days	51 435	9,5	78,5
5 days	32 715	6,0	84,5
6 days	20 170	3,7	88,2
7-13 days	38 992	7,2	95,3
14-20 days	7 448	1,4	96,7
21-30 days	4 633	0,9	97,6
31-364 days	12 585	2,3	99,9
1 year+	655	0,1	100,0
Total	**543 856**	**100,0**	

2.4.4 Completeness of information for selected variables

Another way to assess data quality is to measure the completeness of information for selected variables. This requires that certain variables are checked for unknown or unspecified values. In this release, the percentages of cases where information was unknown or unspecified for specific variables are shown in Table 2.3. The unknown cases refer to cases where more than one option was selected or where the information could not be classified according to specified categories. The unspecified cases refer to missing data for that variable.

According to Table 2.3 incomplete information for sex and age and province of death occurrence was less than 1%. The proportion of deaths with unknown or unspecified province of usual residence was 8,0%; 16,2% for place or institution of death occurrence; and 17,0% for province of birth. About 25% of deaths had unknown or unspecified information on method used to ascertain cause of death and on population group. Education, smoking status, pregnancy status, occupation and industry had more than half of cases which had unknown or unspecified values. There have not been any notable changes in reporting these variables over time.

In line with previous releases, no analyses were undertaken for all variables where more than half of the deaths had unknown or unspecified information. However, a dataset containing unit records of data on recorded deaths for 2010 is available on request from Stats SA, which allows for further analysis of these variables.

Table 2.3: Percentage of deaths classified as unknown/unspecified for selected variables, 2010

Variables	Applicable group	% unknown or unspecified
Sex	All	0,2
Age	All	0,2
Province of death occurrence	All	0,6
Province of usual residence of deceased	All	8,0
Place or institution of death occurrence	All	16,2
Province of birth	All	17,0
Method used to ascertain cause of death	All	22,7
Population group	All	24,2
Education	Aged 6 and older	54,7
Smoking status	Aged 16 and older	53,6
Pregnancy status	Females aged 10–55	74,8
Occupation	Aged 15 and older	76,6
Industry	Aged 15 and older (economically active)	62,0

2.4.5 Quality of causes of death information

Accurate information on causes of death is critical to guide decision-making in public health. As such, it is important that this information be assessed in order to measure the extent to which the data may be utilised for basic health policy purposes. Furthermore, the assessment will assist in identifying and correcting potential quality problems on cause of death medical certification.

For the processing of the 2010 causes of death data, 4-character coding was used as a way of improving the details of information on causes of death, and this was also necessary for the implementation of the IRIS software. However, due to the quality of information recorded on death notification forms, most causes were coded to other or unspecified causes (.8 or .9, respectively). The coding to 4-characters will still continue for the processing of the 2011 causes of death and the quality of data monitored annually.

During the processing of the mortality and causes of death statistics at Stats SA, a number of quality checks are put in place during different stages, including 100% verification on coding of causes of death. At the end of data processing, data editing is undertaken to check the consistencies of the causes of death data with regard to age, sex, rare causes and unlikely causes for specific ages.

Following data editing, the data on causes of death were further assessed using the “Analysing mortality levels and causes-of-death” (ANACoD) electronic tool, version 1.1 (WHO, 2013). ANACoD is a step-by-step approach that enables users to quickly conduct a comprehensive analysis of data on mortality levels and causes of death. The tool highlighted diseases that were unlikely to cause death generally or unlikely to cause death for specific ages. These were manually investigated (checked the original form) for verification and correction where necessary.

Based on reported deaths, the tool also calculated mortality rates such as crude death rates and age-specific mortality rates (including infant and under-5 mortality rates). The rates may be used to assess the completeness of death reporting; to examine the plausibility of the age and sex patterns of mortality; and to compare the results of registered deaths with other sources.

The ANACoD tool also provides the assessment of the quality of causes of death data based on the proportion 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. The ill-defined causes of death include deaths classified as *symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified*

(R00-R99); *event of undetermined intent (Y10-Y34)* and other causes such as *malignant neoplasms of other and ill-defined sites; acute, chronic and unspecified renal failure; cardiac arrest;* and *heart failure* (see Appendix D for a complete list). However, these causes (with the exception of *symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified*) still help to describe the overall mortality due to broad diseases. Overall, about a quarter of all underlying causes of death were ill-defined (23,9%), with a slightly higher percentage of ill-defined causes for female deaths (25,1%) than for male deaths (22,7%).

Table 2.4 provides the distribution of ill-defined causes by main groups of causes of death as summarised by the ANACoD tool. *Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified* accounted for 55,2% and 57,4% of all ill-defined causes for male and female deaths, respectively. These are cases where, for example, medical practitioners wrote the causes of death as *natural cause*. In about 20% of the ill-defined causes, the main group of causes of death was *diseases of the circulatory system* and these were mainly deaths recorded as *heart failure*. There was also a higher proportion of ill-defined causes due to *external causes of morbidity and mortality*, which was much higher for males (8,2%) than for females (2,3%).

Table 2.4: Number of ill-defined causes of death by main groups of causes, 2010*

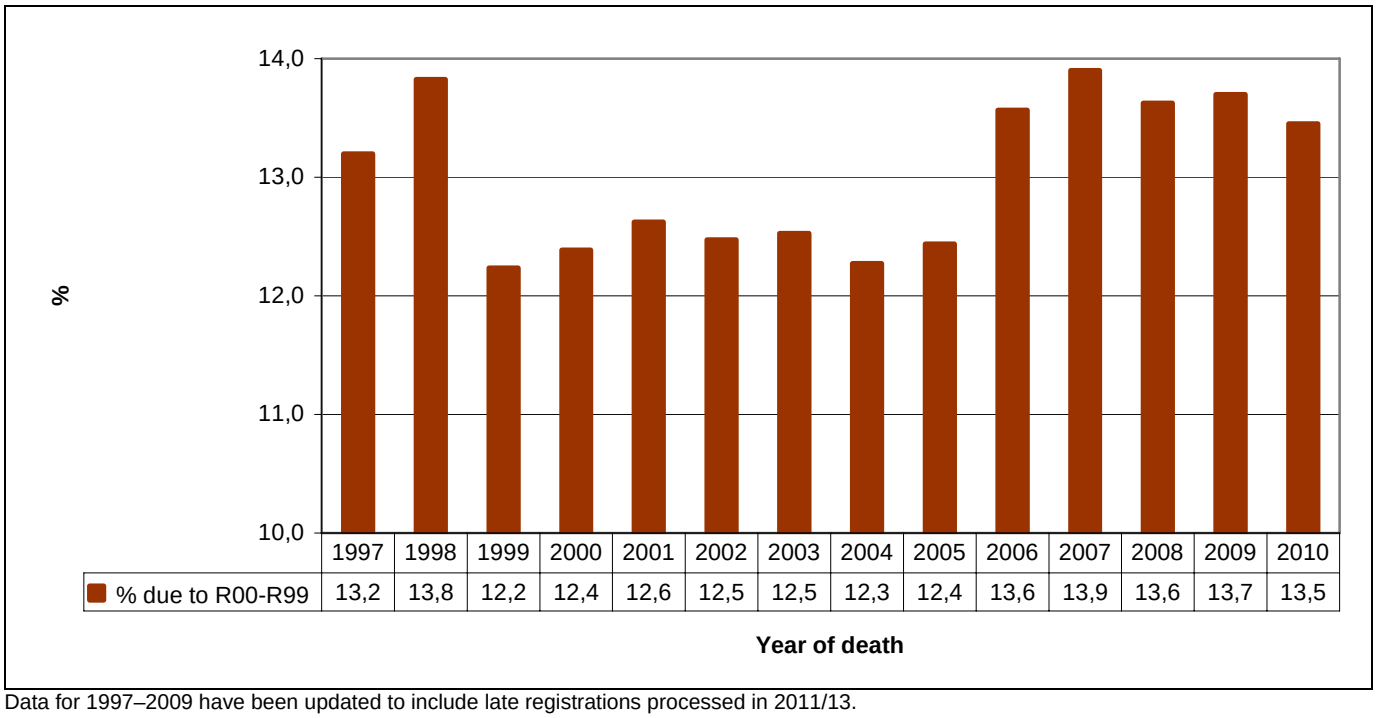
Causes of deaths (based on ICD-10)	Number			Percentage		
	Male	Female	Both sexes	Male	Female	Both sexes
Certain infectious and parasitic diseases (A00-B99)	2 515	2 967	5 482	4,0	4,5	4,2
Neoplasms (C00-D48)	1 781	1 769	3 550	2,8	2,7	2,7
Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism (D50-D89)	45	65	110	0,1	0,1	0,1
Endocrine, nutritional and metabolic diseases (E00-D90)	1 023	1 019	2 042	1,6	1,5	1,6
Diseases of the circulatory system (I00-I99)	12 336	16 013	28 349	19,4	24,2	21,9
Diseases of the respiratory system (J00-J99)	963	930	1 893	1,5	1,4	1,5
Diseases of the digestive system (K00-K93)	978	748	1 726	1,5	1,1	1,3
Diseases of the genitourinary system (N00-N99)	3 639	3 161	6 800	5,7	4,8	5,2
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (R00-R99)	35 035	37 939	72 974	55,2	57,4	56,3
External causes of morbidity and mortality (V01-Y98)	5 208	1 497	6 705	8,2	2,3	5,2
Total ill-defined causes	**63 523**	**66 108**	**129 631**	**100,0**	**100,0**	**100,0**

*Excluding 1 071 deaths with unspecified sex

The large number of deaths that were classified under *symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified* is analysed further for a better understanding of these causes and to review trends in reporting these causes. This group includes all ill-defined conditions for which no diagnosis classified elsewhere is recorded. For practical purposes, these categories could be designated as “not otherwise specified”, or as “unknown etiology”, or as “transient”.

Figure 2.1 shows that there has not been much improvement in the reporting of causes of death since 1997, with the lowest proportion of 12,2% recorded in 1999 and the highest of 13,9% recorded in 2007. The reporting was a bit stable between 1999 and 2005 when the proportion of deaths due to *symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified* was between 12,2% to 12,6% each year. There was then an increase in the proportions up to 2007, after which proportions remained in the range of 13,5%–13,7%. By 2010, 13,5% of all deaths were assigned to *symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified*.

Figure 2.1: Percentage distribution of deaths classified under symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified and year of death, 1997–2010*



Data for 1997–2009 have been updated to include late registrations processed in 2011/13.

The specific broad groups of causes of death due to *symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified* for 2010 are given in Table 2.5. A great majority of these deaths (91,2%) were due to *ill-defined and unknown causes of mortality*, which includes *sudden infant syndrome, other sudden death with cause unknown, unattended death and other ill-defined* and *unspecified causes of mortality* (death not otherwise stated or unknown cause of mortality). About 6% of deaths due to *symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified* were due to *general symptoms and signs* and these include causes such as *fever, headache, pain, fatigue* and *senility*.

Table 2.5: Number of causes of death due to symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified by main groups of causes, 2010

Underlying causes of death (based on ICD-10)	Number	Percentage
Symptoms and signs involving the circulatory and respiratory systems (R00-R09)	1 405	1,9
Symptoms and signs involving the digestive system and abdomen (R10-R19)	609	0,8
Symptoms and signs involving the skin and subcutaneous tissue (R20-R23)	10	0,0
Symptoms and signs involving the nervous and musculoskeletal systems (R25-R29)	6	0,0
Symptoms and signs involving the urinary system (R30-R39)	26	0,0
Symptoms and signs involving cognition, perception, emotional state and behaviour (R40-R46)	41	0,1
Symptoms and signs involving speech and voice (R47-R49)	15	0,0
General symptoms and signs (R50-R69)	4 203	5,7
Abnormal findings on examination of blood, without diagnosis (R70-R79)	68	0,1
Abnormal findings on examination of urine, without diagnosis (R80-R82)	0	0,0
Abnormal findings on examination of other body fluids, substances and tissues, without diagnosis (R83-R89)	5	0,0
Abnormal findings on diagnostic imaging and in function studies, without diagnosis (R90-R94)	36	0,0
Ill-defined and unknown causes of mortality (R95-R99)	66 725	91,2
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (R00-R99)	**73 149**	**100,0**

2.4.6 Assessment framework for death registration data

Several frameworks for assessment of death registration data have been proposed by different researchers. For the purpose of this statistical release, the framework proposed by Mahapatra et al. (2007) is used to assess the quality of the 2010 death statistics from the civil registration system. Mahapatra et al. (2007) proposed two categories, namely, general vital statistics and cause-of-death statistics. Criteria under these categories include accuracy, relevance, comparability, timeliness and accessibility.

The results of the assessment framework for the 2010 mortality and causes of death data from the South African civil registration system are shown in Table 2.6. These have been modified due to availability of information required. For the assessment of the vital statistics, about 93% of deaths for the period 2001–2007 were covered by the civil registration system, with both age and sex generally well-reported. The information on population group was not well reported as over 20% of the variable had missing information. The relevance and comparability of mortality statistics is regarded as complete.

For cause-of-death statistics about half (48,0%) of the deaths occurred within a healthcare facility. This is used to measure the percentage of medically certified deaths. 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 2010 data show that 13,5% of all deaths were assigned to ill-defined causes.

Despite not meeting the above-mentioned threshold, the information on mortality is highly 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 9 provinces and 52 district municipalities in the country, relevance of cause-of-death statistics is regarded as completely appropriate. Furthermore, the proportions of cause-specific mortality are consistent between 2009 and 2010 and the international classification of diseases (10th revision) is used for coding causes of death. Therefore, comparability is also considered complete.

The table further shows that there is wide accessibility to statistical releases and data sets published on mortality and causes of death. However, the 2010 data took a much longer time to process, as compared to the previous years (16 months) as a result of improvements in data processing methodologies (including coding) and data processing systems. The mean time from end of reference period (2010) to publication is about two years and three months.

Table 2.6: Assessment of the 2010 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 (%)		**Accuracy**	
Completeness of death registration	93% (2001–2007)	Proportion of deaths that occurred in healthcare facilities	48,0%
Missing data		Proportion of deaths assigned to symptoms and signs of disease not elsewhere classified	13,5%
Population group	24,2%		
Province of birth	17,0%		
Province of residence	8,0%		
Age	0,2%		
Sex	0,2%		
Relevance		**Relevance**	
Routine tabulations by sex and 5-year age groups	100%	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 municipalities
Comparability		**Comparability**	
Stability of key definitions over time	100%	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 death, revision used and code level to which tabulations are published	No coding for certification; coding causes of death using the tenth revision at 4-digit level
Timeliness			
Processing time	16 months		
Mean time from end of reference period to publication	27 months		
Accessibility			
Media – number of formats in which data are released	Two: website and compact discs		
Metadata	Published with compact disc and available on request		
Availability of user service	Email: info@statssa.gov.za / Tel: 012 310 8600 / Fax (012) 310 8500 / 8495		

3. Registered deaths

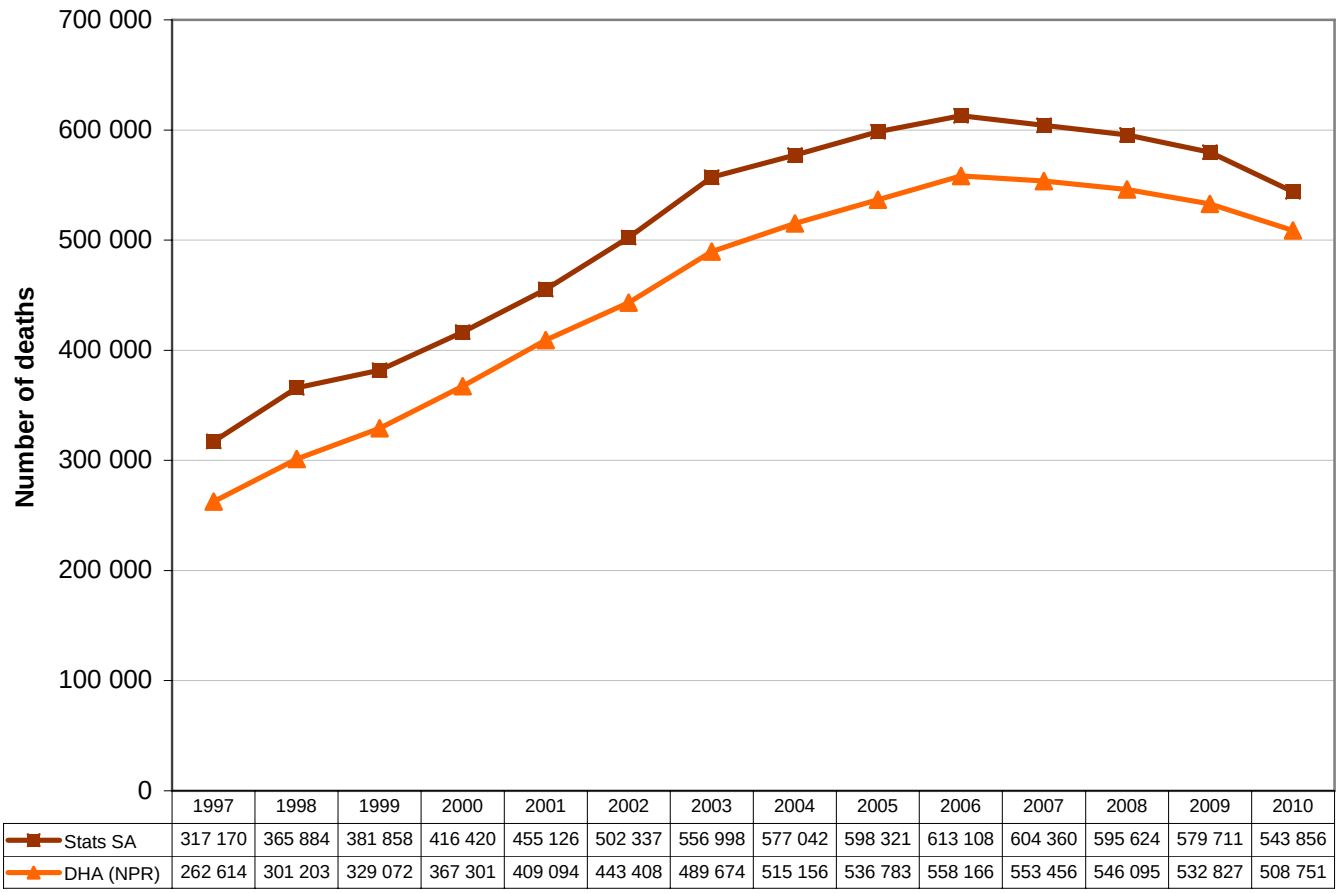
This section provides levels and trends of registered deaths over the 14-year period (1997–2010) as well as age and sex differentials in mortality. Absolute numbers and percentage distributions of deaths by population group, institution of death occurrence and province and local municipality are also shown.

3.1 Levels and trends of registered deaths

The number of registered deaths processed by Stats SA and those recorded on the National Population Register (NPR) maintained by the Department of Home Affairs (DHA) for the period 1997–2010 is shown in Figure 3.1. In the past 14 years, the number of deaths processed by Stats SA has been higher than that recorded on the NPR. Between 1997 and 2006, the number of registered deaths for both sources increased consistently but, since 2007, the numbers have declined gradually.

In 2010, the number of deaths processed by Stats SA was 543 856. This is a 6,2% decline from the total of 579 711 deaths that occurred in 2009. The number of deaths on the NPR declined by 4,5% during the same period (from 532 827 in 2009 to 508 751 in 2010).

Figure 3.1: Number of registered deaths by source of data and year of death, 1997–2010*



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Stats SA	317 170	365 884	381 858	416 420	455 126	502 337	556 998	577 042	598 321	613 108	604 360	595 624	579 711	543 856
DHA (NPR)	262 614	301 203	329 072	367 301	409 094	443 408	489 674	515 156	536 783	558 166	553 456	546 095	532 827	508 751

*Data for 1997–2009 have been updated to include late registrations processed in 2011/13.

3.2 Age differentials

Table 3.1 shows the number and percentage of deaths by age for 2010. The highest number of deaths that occurred in 2010 were among those aged 35–39 and 30–34 years, comprising respectively 8,2% and 8,0% of all deaths. The lowest percentage of deaths was among those aged 5–9 and 10–14 years (each comprising 0,8% of all deaths).

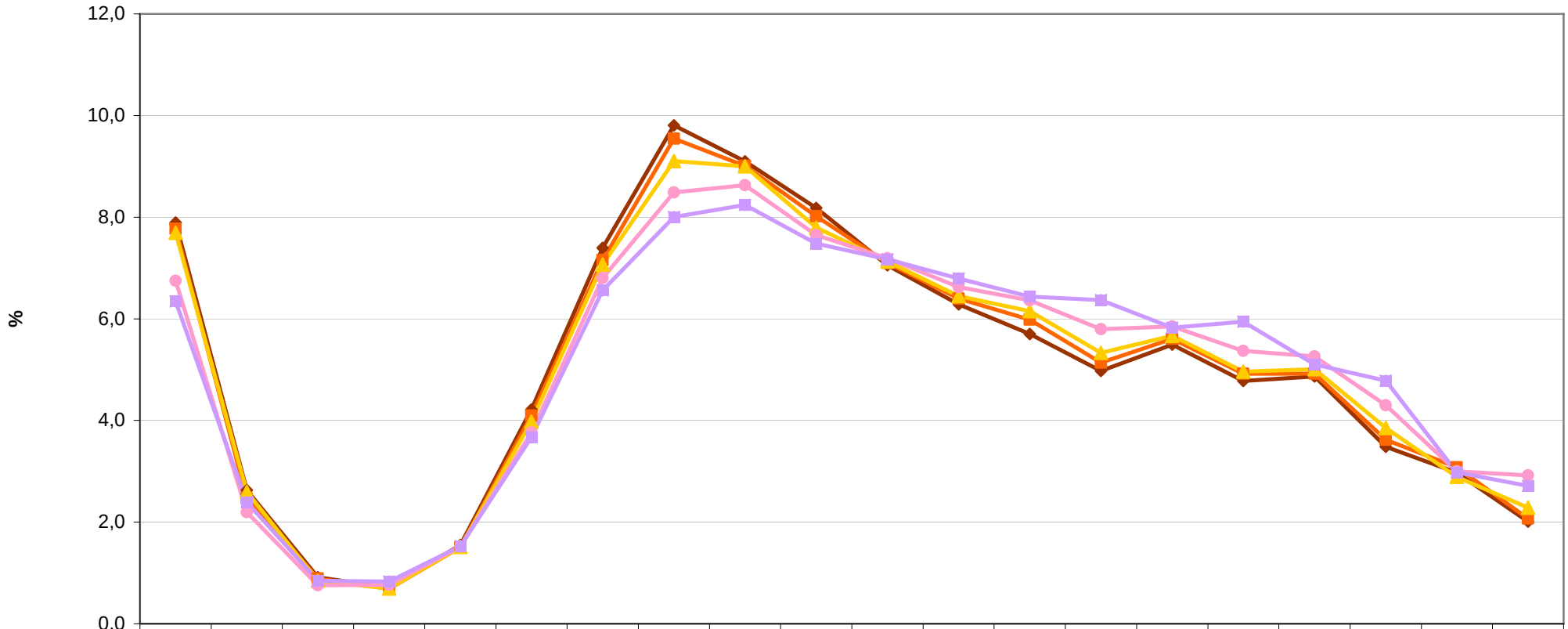
Table 3.1: Number and percentage distribution of deaths by age, 2010

Age group	Number	Percentage
0	34 430	6,3
1-4	12 987	2,4
5-9	4 573	0,8
10-14	4 494	0,8
15-19	8 295	1,5
20-24	19 910	3,7
25-29	35 613	6,5
30-34	43 427	8,0
35-39	44 728	8,2
40-44	40 580	7,5
45-49	38 936	7,2
50-54	36 864	6,8
55-59	34 945	6,4
60-64	34 548	6,4
65-69	31 613	5,8
70-74	32 241	5,9
75-79	27 690	5,1
80-84	25 961	4,8
85-89	16 164	3,0
90+	14 706	2,7
Unspecified	1 151	0,2
Total	**543 856**	**100,0**

Figure 3.2 shows the distribution of deaths by age and year of death for the past five years (2006 to 2010). These are shown to provide an indication of the age pattern of mortality over time. A general observation is that the age pattern of mortality was uniform over the five-year period. The lowest number of deaths occurred in age groups 5–9 and 10–14, and the highest number of deaths occurred in age groups 30–34 and 35–39. The proportion of deaths has decreased consistently over the five-year period for infants as well as among age groups 35–39 to 55–59.

The comparison between deaths occurring in 2009 and 2010 indicates that the proportion of deaths decreased consistently for age groups younger than 45 years, with the exception of age group 10–19, and generally increased for ages 50 and older. Specifically, there were notable decreases in the number of deaths at ages 0, 30–34 and 35–39.

Figure 3.2: Percentage distribution of deaths by age and year of death, 2006–2010*



	0	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90+
2006	7,9	2,6	0,9	0,7	1,5	4,2	7,4	9,8	9,1	8,2	7,1	6,3	5,7	5,0	5,5	4,8	4,9	3,5	3,0	2,0
2007	7,8	2,5	0,9	0,7	1,5	4,1	7,2	9,5	9,0	8,0	7,1	6,4	6,0	5,1	5,6	4,9	4,9	3,6	3,1	2,1
2008	7,7	2,6	0,8	0,7	1,5	4,0	7,1	9,1	9,0	7,8	7,1	6,4	6,2	5,3	5,7	5,0	5,0	3,9	2,9	2,3
2009	6,7	2,2	0,8	0,8	1,5	3,8	6,8	8,5	8,6	7,6	7,2	6,6	6,4	5,8	5,8	5,4	5,3	4,3	3,0	2,9
2010	6,3	2,4	0,8	0,8	1,5	3,7	6,6	8,0	8,2	7,5	7,2	6,8	6,4	6,4	5,8	5,9	5,1	4,8	3,0	2,7

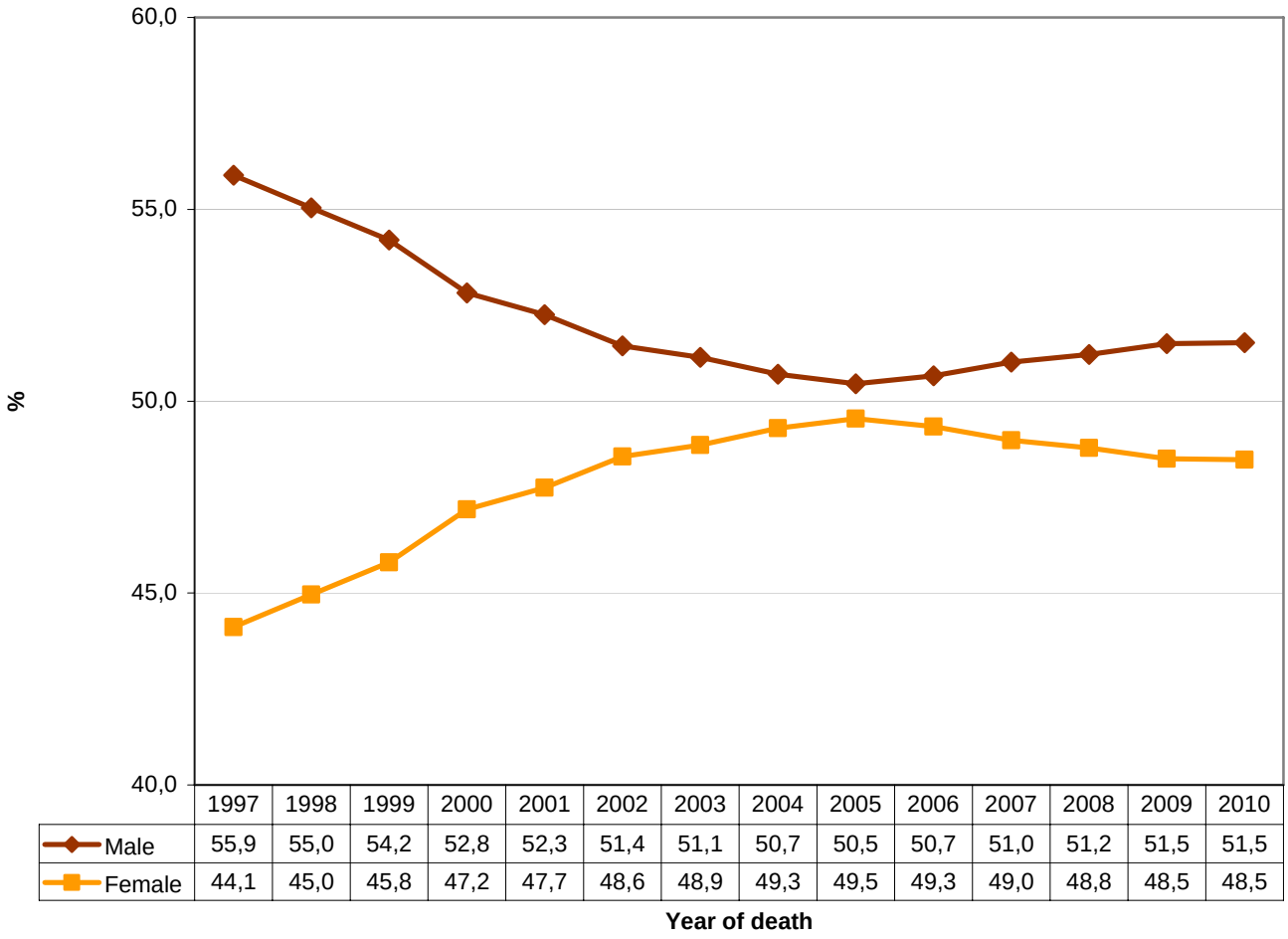
Age group

* (1) Excluding deaths with unspecified age (1 364 deaths in 2006; 1 243 in 2007; 1 049 in 2008 1 437 in 2009, and 1 151 deaths in 2010).
(2) Data for 2006–2009 have been updated to include late registrations processed in 2011/13.

3.3 Sex differentials

Figure 3.3 shows the percentage distribution of deaths by sex and year of death from 1997–2010. The figure shows that there were slightly more male (51,5%) than female deaths (48,5%) in 2010. This is also similar to previous years where male deaths were slightly higher than female deaths. Two distinct patterns can be observed from Figure 3.3. Prior to 2006, the proportion of male deaths persistently declined while that of female deaths increased. In 2005, there were almost as many male deaths as female deaths. The second pattern shows that from 2006, the proportion of male deaths has been increasing, while a downward trend was observed among female deaths, consequently widening the gap between the proportion of male and female deaths between 2007 and 2010.

Figure 3.3: Percentage distribution of deaths by sex and year of death, 1997–2010*



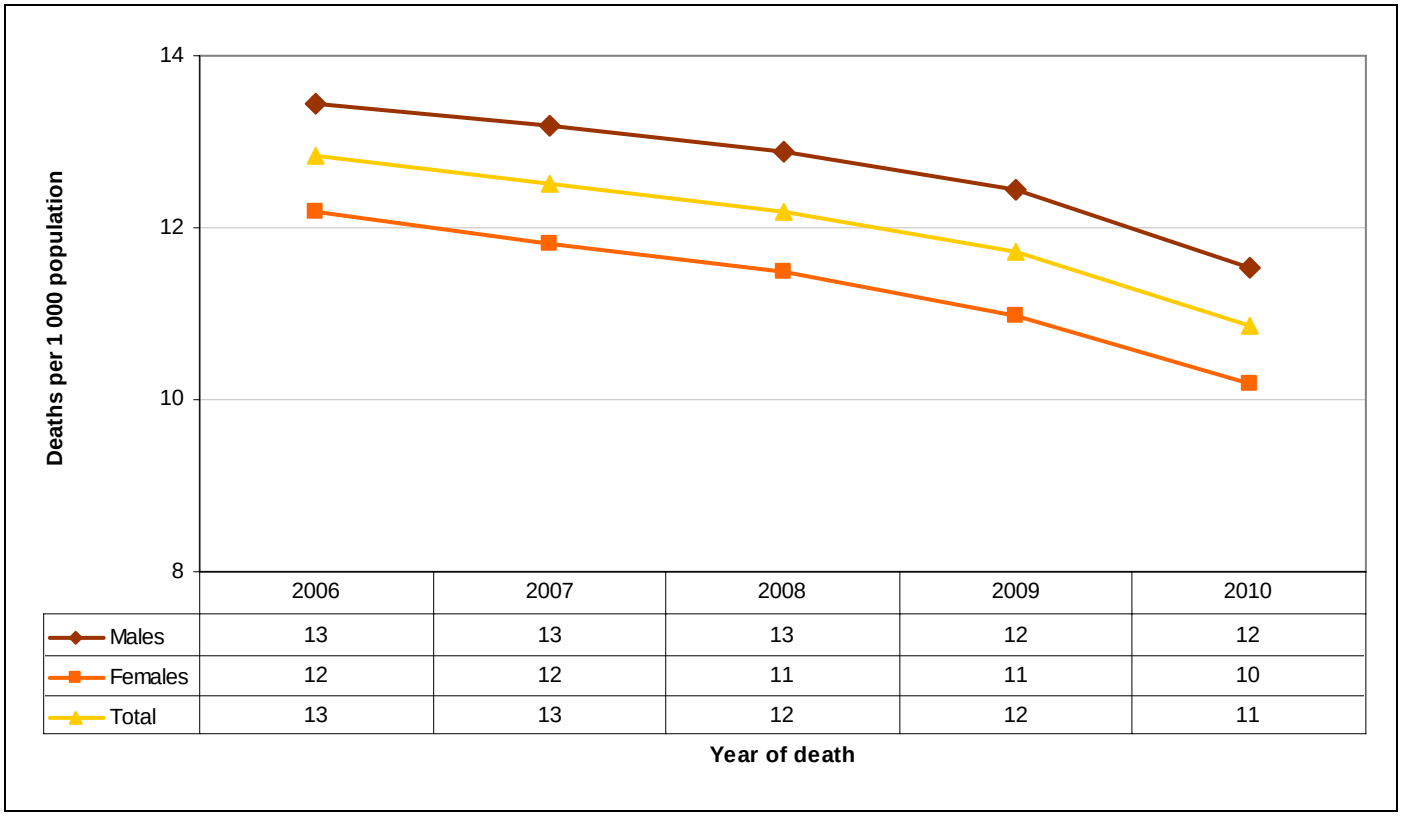
	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Male	55,9	55,0	54,2	52,8	52,3	51,4	51,1	50,7	50,5	50,7	51,0	51,2	51,5	51,5
Female	44,1	45,0	45,8	47,2	47,7	48,6	48,9	49,3	49,5	49,3	49,0	48,8	48,5	48,5

* (1) Excluding deaths with unspecified sex: (1 030 deaths in 1997; 1 930 in 1998; 2 079 in 1999; 1 724 in 2000; 1 648 in 2001, 1 946 in 2002; 1 976 in 2003; 1 619 in 2004; 1 720 in 2005; 1 743 in 2006, 995 in 2007; 839 in 2008; 1 236 in 2009, and 1 071 deaths in 2010).
(2) Data for 1997–2009 have been updated to include late registrations processed in 2011/13.

The annual percentage changes in the number of deaths and year of death are shown in Appendix E. Between 1997 and 2005, female deaths increased at a higher rate than male deaths. From 2006, the number of deaths for both males and females decreased, with higher decreases observed for female deaths as compared to male deaths for each year from 2006 to 2010. Both males and females observed their highest increases in the number of deaths between 1997 and 1998 and their largest declines in the number of deaths between 2009 and 2010.

Crude death rates (CDR) by sex were calculated for the period 2006–2010 using registered number of deaths (see Figure 3.4). Over the five-year period, the mortality rate was slightly higher for males as compared to females. In 2010, the crude death rate for males was 12 deaths per 1 000 population and 10 deaths per 1 000 population for females. The rates show a modest and consistent decline between 2006 and 2010.

Figure 3.4: Crude Death Rates (CDR) by year of death and sex, 2006–2010*



	2006	2007	2008	2009	2010
Males	13	13	13	12	12
Females	12	12	11	11	10
Total	13	13	12	12	11

*Data for 2006–2009 have been updated to include late registrations processed in 2011/13.

Age-Specific Death Rates (ASDRs) for the total population for the period 2006–2010 are shown in Appendix F to provide an indication of the age pattern of mortality over the five-year period, taking into consideration population size at each age. Generally, the age pattern of death was the same for the five-year period, with rates higher at age 0 and from age group 65–69. Death rates for all years increased consistently from age group 50–54, reaching their highest levels at ages 80 and older. The rates were much lower between age groups 5–9 and 15–19. There was a noticeable drop in death rates in 2010 for most age groups, more so at age 0 and from age group 30–34 up to age group 40–44.

3.4 Age and sex differentials

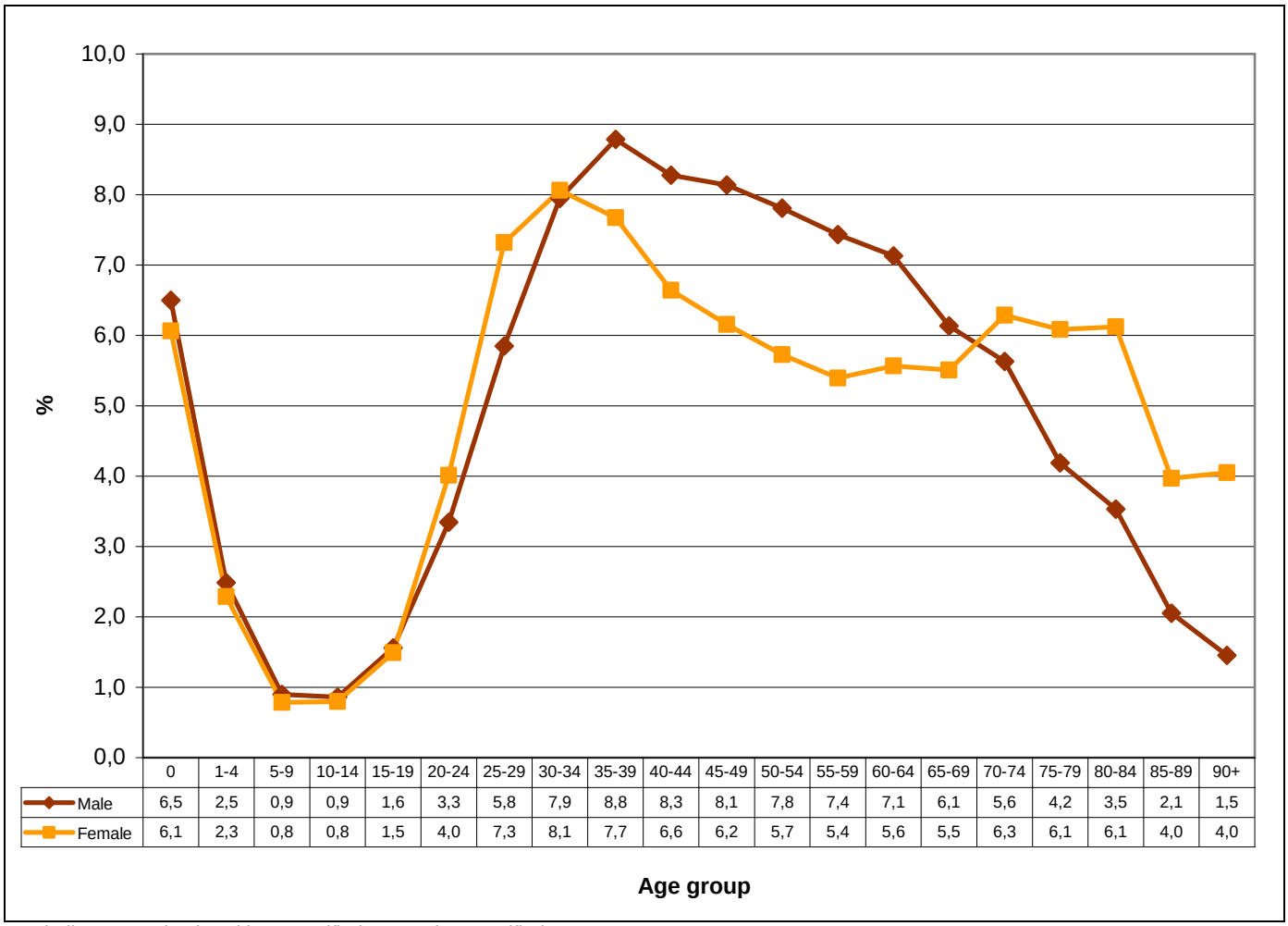
Percentage distribution

The age and sex percentage distribution of deaths that occurred in 2010 is shown in Figure 3.5 (absolute numbers are provided in Appendix C.4). The proportions of deaths show that female deaths exceeded male deaths in age groups 20–24, 25–29 and 30–34; and from age group 70–74 up to age 90 and older. The proportion of male deaths exceeded those of female deaths for the remaining age groups. The gap in the proportions of deaths for males and females is particularly evident between age groups 35–39 and 60–64 as well as from age group 70–74 to 90 years and older.

The highest percentage of male deaths occurred among those aged 35–39 (8,8%), followed by age group 40–44 (8,3%) and age group 45–49 (8,1%). For female deaths, the highest percentage of deaths was among those aged 30–34 (8,1%), followed by those aged 35–39 (7,7%) and those aged 25–29 (7,3%). For both males and females, the lowest percentage of deaths occurred among those aged 5–14 (0,9% for males and 0,8% for females).

From age group 35–39, the number of male deaths decreased considerably whilst female deaths declined from age group 30–34 to age group 55–59, increased slightly from age group 60–64, and then declined again from age group 75–79.

Figure 3.5: Percentage distribution of deaths by age and sex, 2010*



	0	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90+
Male	6,5	2,5	0,9	0,9	1,6	3,3	5,8	7,9	8,8	8,3	8,1	7,8	7,4	7,1	6,1	5,6	4,2	3,5	2,1	1,5
Female	6,1	2,3	0,8	0,8	1,5	4,0	7,3	8,1	7,7	6,6	6,2	5,7	5,4	5,6	5,5	6,3	6,1	6,1	4,0	4,0

*Excluding 2 222 deaths with unspecified age and unspecified sex.

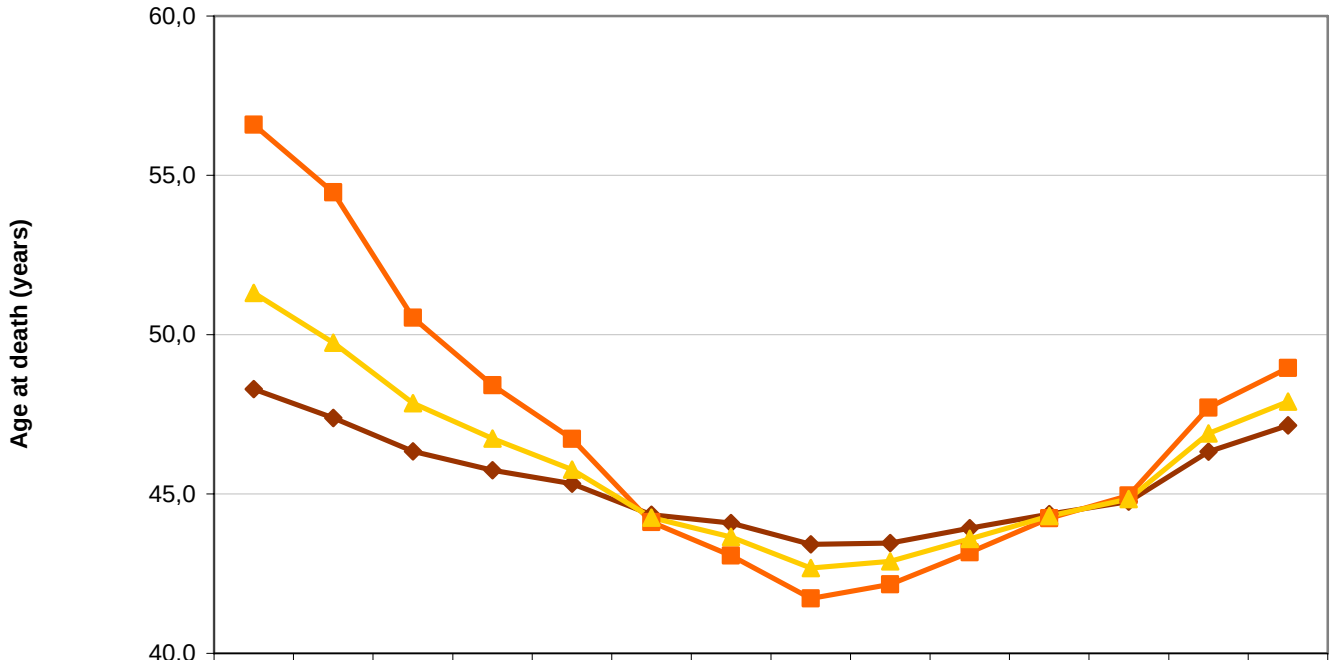
Median ages at death by sex

Figure 3.6 shows the median ages at death by sex and year of death for 1997 to 2010. The median ages show how early or late mortality occurs in the population and specifies the age at which half of the reported deaths occur. Lower median ages at death indicate that mortality is occurring earlier, while higher median ages indicate that mortality is occurring later.

Figure 3.6 shows that the median ages at death for both males and females decreased from 1997 and reached their lowest levels in 2004. The decrease was more pronounced among females, which shows that mortality increased at a higher rate for females as compared to males. From 2005, the median ages increased again gradually for both sexes, indicating decreasing mortality.

The results generally show that between 1997 and 2001, females died at a later age than males on average, a pattern that was reversed between 2002 and 2007 when on average males died later than females. This pattern was reversed again from 2008 when female deaths started to occur at later ages than male deaths.

Figure 3.6: Median ages at death by sex and year of death, 1997–2010*



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Males	48,3	47,4	46,3	45,7	45,3	44,3	44,1	43,4	43,5	43,9	44,4	44,8	46,3	47,1
Females	56,6	54,5	50,5	48,4	46,7	44,1	43,1	41,7	42,2	43,2	44,2	45,0	47,7	49,0
Total	51,3	49,7	47,8	46,7	45,8	44,3	43,7	42,7	42,9	43,6	44,3	44,8	46,9	47,9

Data for 1997–2009 have been updated to include late registrations processed in 2011/13.

Sex ratios by age

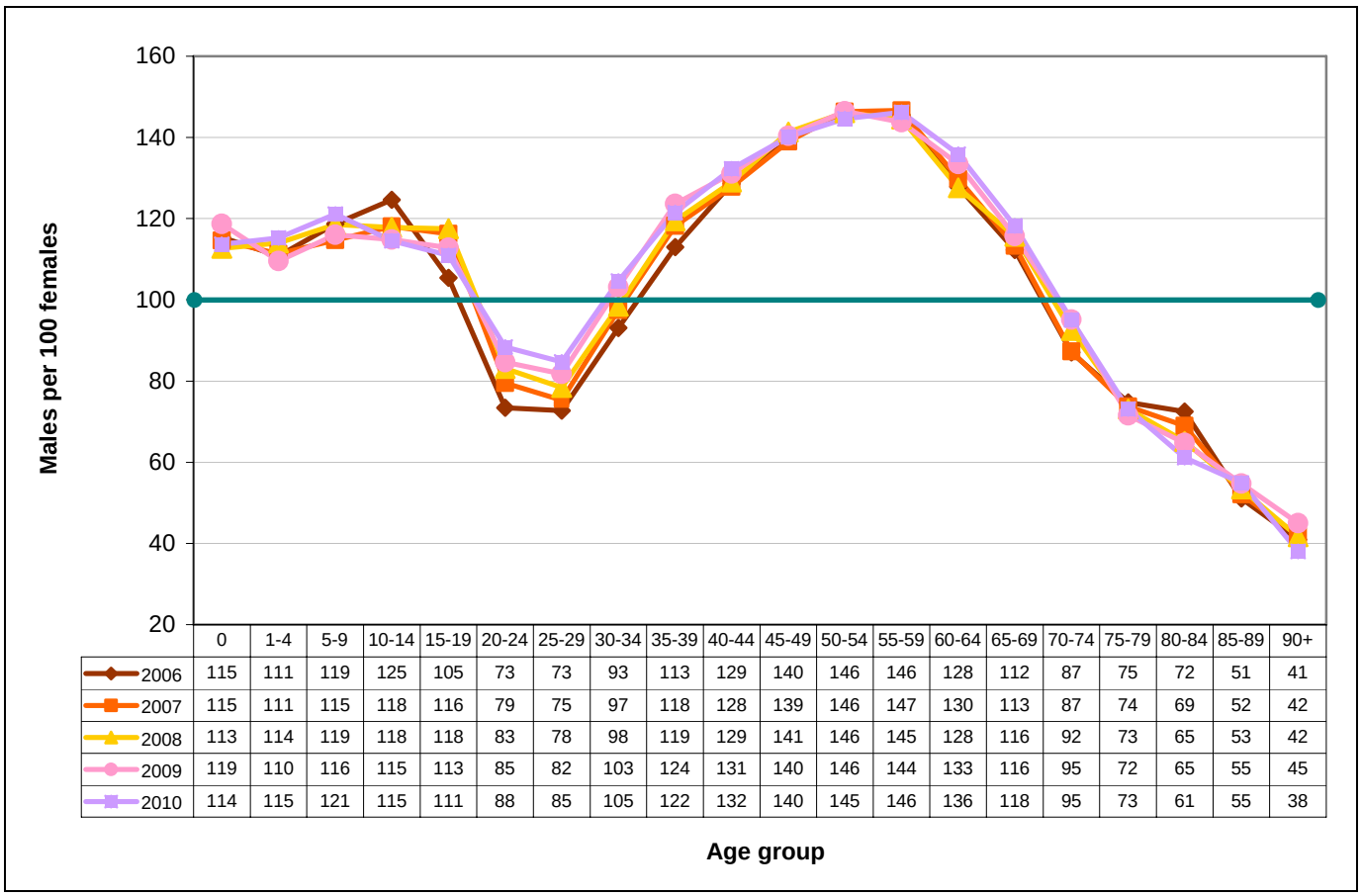
The sex ratio of deaths (the number of male deaths per 100 female deaths) is another measure that shows the relative number of male to female deaths. A ratio of 100 indicates that there is an equal number of male and female deaths, a number less than 100 indicates more female death occurrences; and a number more than 100 indicates more male death occurrences.

Figure 3.7 shows the sex ratios for the years 2006 to 2010 by age. It is observed that the age pattern of sex ratios was similar during these years with more male deaths from age 0 to age group 15–19 and also from age groups 35–39 to age group 65–69. Conversely, there were more female than male deaths at age groups 20–24 and 25–29 and from 70 years and older.

Over the five-year period, there has been a consistent increase in sex ratios for age groups 20–24, 25–29 and 30–34, implying that female deaths were decreasing much more than male deaths in these ages. The 30–34 age group shows that sex ratios declined over time such that by 2009 there were more male than female deaths in this age group, which had not been the case for many years.

The overall sex ratios for 1997 to 2010 are shown in Appendix G. The sex ratio for 2010 deaths was 106 male deaths per 100 female deaths, indicating that there were more male than female deaths that occurred in 2010. Over the 14-year period, sex ratios at death were always over 100, showing that male deaths have always exceeded female deaths. However, sex ratios decreased from 127 male deaths per 100 female deaths in 1997 to 102 male deaths per 100 female deaths in 2005. Sex ratios then increased by one male death per 100 female deaths every year from 2006 to 2009 and have remained constant between 2009 and 2010.

Figure 3.7: Sex ratios by age and year of death, 2006–2010*



	0	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85-89	90+
2006	115	111	119	125	105	73	73	93	113	129	140	146	146	128	112	87	75	72	51	41
2007	115	111	115	118	116	79	75	97	118	128	139	146	147	130	113	87	74	69	52	42
2008	113	114	119	118	118	83	78	98	119	129	141	146	145	128	116	92	73	65	53	42
2009	119	110	116	115	113	85	82	103	124	131	140	146	144	133	116	95	72	65	55	45
2010	114	115	121	115	111	88	85	105	122	132	140	145	146	136	118	95	73	61	55	38

* (1) Excluding deaths with unspecified sex: (1 743 in 2006; 995 in 2007; 839 in 2008; 1 236 in 2009 and 1 071 in 2010).
(2) Data for 2006–2009 have been updated to include late registrations processed in 2011/13.

3.5 Population group differences in mortality

Table 3.2 shows the distribution of deaths by population group in 2010. Black Africans contributed the highest percentage of registered deaths (62,8%), followed by the white population group (6,8%) and then the coloured population group (4,7%). The Indian/Asian population group (1,4%) had the lowest percentage of deaths. This pattern is consistent with the previous years.

The table also shows that about a quarter (24,4%) of registered deaths in 2010 had population group classified as 'other', unspecified or unknown. The high percentage of unknown, unspecified, or 'other' population groups, which has persisted since 1997, compromises analyses on population group and has to be treated with caution.

Table 3.2: Number and percentage distribution of deaths by population group, 2010

Population group	Number	Percentage
Black African	341 395	62,8
Coloured	25 610	4,7
Indian/Asian	7 437	1,4
White	36 828	6,8
Other, unknown or unspecified	132 586	24,4
Total	**543 856**	**100,0**

3.7 Differences in mortality by place or institution of death occurrence

Table 3.3 shows that about 48,0% of deaths took place in a health facility (43,9% in hospital; 1,7% in ER or outpatient; and 2,4% in a nursing home). Nearly 30% (29,7%) of deaths took place at home and 2,2% of the deceased were already dead on arrival at hospitals.

Table 3.3: Number and percentage distribution of deaths by place of death occurrence, 2010

Place of death	Number	Percentage
Hospital	238 585	43,9
ER or outpatient	9 023	1,7
Dead on arrival	12 128	2,2
Nursing home	12 848	2,4
Home	161 487	29,7
Other	21 834	4,0
Unknown or unspecified	87 951	16,2
Total	**543 856**	**100,0**

3.8 Geographic variations in mortality

This subsection provides information on the distribution of deaths by province of death occurrence, province of usual residence of the deceased as well as district municipality of death occurrence for deaths that occurred in 2010. The information on geography was derived from place names, based on the 2011 municipal boundaries. The number and percentage distribution of deaths by province of death occurrence and province of usual residence of the deceased are provided in Appendix H and H.1, respectively. Appendix I provides the distribution of deaths at provincial and district municipality levels by age while the sex distribution is provided in Appendix J.

3.8.1 Differences by province

Table 3.4 presents the distribution of deaths by province of death and province of usual residence of the deceased. The highest number of deaths occurred in KwaZulu-Natal (21,3%), followed by Gauteng (19,4%) and Eastern Cape (14,8%). Northern Cape had the lowest percentage (2,8%). The order of province of usual residence of the deceased remained the same as that of death occurrence, with KwaZulu-Natal (19,2%) having the highest, followed by Gauteng (18,1%) and Eastern Cape (13,8%). The comparison of the number of deaths by usual province of residence and province of death occurrence should be treated with caution given the high proportion of unspecified information on province of residence (8,0%).

The majority of deaths occurred within the province of usual residence (see appendices H and H.1). At least 79,0% of deaths occurred within the province of usual residence in all provinces, with as much as 91,8% of the deceased that resided in Free State also dying within the same province.

Subsequent analysis on geography focuses only on place of death occurrence; not on place of residence or place of birth of the deceased. The information on place of residence of the deceased, as well as their place of birth is available on request from Stats SA.

Table 3.4: Distribution of deaths by province of death occurrence and province of usual residence of the deceased, 2010

Province	Province of death occurrence		Province of usual residence of deceased	
	Number	%	Number	%
Western Cape	45 711	8,4	40 950	7,5
Eastern Cape	80 627	14,8	74 987	13,8
Northern Cape	15 183	2,8	14 514	2,7
Free State	45 018	8,3	43 305	8,0
KwaZulu-Natal	115 889	21,3	104 160	19,2
North West	40 059	7,4	36 067	6,6
Gauteng	105 673	19,4	98 224	18,1
Mpumalanga	41 773	7,7	41 178	7,6
Limpopo	50 017	9,2	46 514	8,6
Foreign	725	0,1	349	0,2
Unspecified	3 181	0,6	43 608	8,0
Total	**543 856**	**100,0**	**543 856**	**100,0**

The age-sex distribution of deaths by province showed that the pattern was not the same for all provinces (see Appendix I for absolute numbers). North West and Free State had the highest proportion of children dying in infancy (8,7% and 7,7% respectively), and Eastern Cape had the lowest proportion (3,9%). Western Cape (36,8%) and Eastern Cape (31,3%) had the highest proportions of deaths occurring in old ages (65 years and older).

The sex ratio at death as indicated in Appendix J ranged from 97 male per 100 female deaths in Limpopo to 119 male deaths per 100 female deaths in Western Cape. Limpopo was the only province where the number of female deaths exceeded male deaths while Eastern Cape had almost the same number of male and female deaths in 2010.

3.8.2 Differences by district municipality of death occurrence

The number of deaths by age and municipality of death occurrence is shown in Appendix I. John Taolo Gaetsewe in Northern Cape (10,3%) and Dr Ruth Segomotsi Mompati in North West (10,1%) had the highest proportions of infant deaths. Ekurhuleni Metro in Gauteng (9,0%) had the third highest proportion of infant deaths. District municipalities which had lowest proportions of infant deaths were in Eastern Cape [Amathole (2,6%) O.R. Tambo (3,1%)]. The elderly (65 years and older) deceased were mostly found in Overberg in Western Cape (41,7%), Namakwa in Northern Cape (41,5%) and Eden in Western Cape (40,8%).

The sex distribution of the deceased by district municipality of death occurrence is provided in Appendix J. With the exception of City of Cape Town, all districts in Western Cape had sex ratios of over 120 male per 100 female deaths. Three other districts (Siyanda and Namakwa in Northern Cape and West Rand in Gauteng) also had sex ratios of 120 male deaths or more per 100 female deaths. A total of 13 districts had sex ratios of less than 100, indicating that in these provinces there were more female than male deaths. The districts with sex ratios of 95 or less male deaths per 100 female deaths were: Alfred Nzo and O.R. Tambo in Eastern Cape; Amajuba and Sisonke in KwaZulu-Natal; and Mopani and Greater Sekhukhune in Limpopo.

4. Causes of death

4.1 Introduction

This section presents information on causes of death for all deaths that occurred in 2010 and were registered at the Department of Home Affairs (DHA) between 2010 and 2012 using either form BI-1663 (see Appendix B) or form DHA-1663 (see Appendix B1). Since 1998, the DHA used Form BI-1663 to register deaths but a new death notification form (DHA-1663) was introduced in 2009. Both the old and the new forms were used to register deaths that occurred in 2010 and the old form will continue to be used at various DHA offices until their stock is depleted.

While the section of the form dealing with causes of death remained the same in both the BI-1663 and the DHA-1663 forms for all deaths occurring after seven days of birth, there were some changes with recording of deaths for perinatal deaths (stillbirths and deaths occurring within seven days of birth). A total of 7 687 (86,2%) of deaths occurring within the first seven days of births were registered on the old form and 1 224 (13,8%) registered on the new form.

As mentioned in Section 2 of this statistical release, the coding of causes of death follows the guidelines provided by the International Classification of Diseases, 10th revision (ICD-10). The analyses undertaken focuses mainly on the underlying cause of death, which is defined as *the disease or injury that initiated the train of events leading directly to death; or the circumstances of the accident or violence which produced the fatal injury* (WHO, 1992). Information on underlying causes of death is provided according to 19 of the 22 main groups (chapters) of the classification of morbidity or mortality (excluding Chapters 19, 21 and 22). Additional analyses on causes of death include classification of causes by natural and non-natural underlying causes of death; and broad groups of underlying natural causes of death.

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

The analyses undertaken classify the underlying causes of death by the respective groups highlighted above, as well as classifications by age, sex and province of death occurrence. In addition, a 14-year trend analysis covering the period 1997 to 2010 is undertaken for the classification of natural and non-natural causes of death while a 3-year trend analysis covering the period 2008–2010 is undertaken for the analysis of main groups and broad groups of the underlying causes of death. The 1997–2009 data used have been updated with late registrations that were processed during the processing of 2010 data in 2011/13.

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.

4.2 Reported causes of death

The death notification form used to register deaths makes provision for recording one or more causes of death in Part 1 and Part 2 under “Medical Certificate of Cause of Death” or under “Causes of Death” for perinatal deaths. Table 4.1 shows information on the number of causes of death reported on death notification forms for deaths that occurred in 2010. During this year, the number of causes recorded ranged from zero to six causes. A total of 1 338 forms did not have any cause of death provided in the section of recording causes of death on the form. Further investigation of the data indicated that 1 280 (95,7%) of these forms had a doctor’s tick to show that it was a natural cause of death. For the remaining 4,7%, the doctors indicated that they were “not in a position to certify” or that the “death was under investigation”. All 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 (58,9%) had only one cause of death recorded on each form. About a quarter of the forms (26,2%) had two causes; 10,7% three causes; 3,2% four causes and less than one percent had five or six causes.

The distribution of the number of causes of death recorded on death notification forms by institution where the death took place (results not shown) indicated that over half of deaths that occurred in a hospital (58,5%) and in emergency room or outpatient (51,3%) had two or more causes. Conversely, less than 30% of those that occurred at home (26,1%) and those that had already died by the time they reached the hospital (28,7%) had two or more causes recorded on the forms. At province of death level, only Western Cape had over half of the forms with two or more causes (54,2%), similar to the observation made for 2009 deaths. The provinces with the lowest proportions of recording two or more causes were Limpopo (30,1%), Free State (36,0%), Mpumalanga (36,2%) and North West (36,8%).

Table 4.1: Distribution of death notification forms by the number of causes entered on the form, 2010

Number of reported causes of death	Number of death notification forms	Percentage
No cause given	1 338	0,2
One cause	320 064	58,9
Two causes	142 494	26,2
Three causes	58 329	10,7
Four causes	17 232	3,2
Five causes	4 373	0,8
Six causes	26	0,0
Total	**543 856**	**100,0**

4.3 Method used to ascertain the cause of death

The death notification form makes provision for a certifying official to indicate the method that was used to ascertain the cause of death. When the BI-1663 form was revised, the option on answers for the question on method used to ascertain the cause of death was slightly changed for deaths that occurred after seven days of birth. There was an additional option of post-mortem examination included. For perinatal deaths, the options are as follows (1) certified cause of death has been confirmed by autopsy; (2) autopsy information may be available later; and (3) autopsy not performed. The resulting categories after combining comparable information in BI-1663 and DHA-1663 are provided in Table 4.2.

Less than 10% of the causes of death were ascertained by autopsy (8,7%) while 3,4% were ascertained by post mortem examination. In about half (50,4%) of the deaths, the causes of death were ascertained by opinions of medical personnel (31,3% by opinion of the attending medical practitioner; 15,3% by opinion of attending medical practitioner on duty; and 3,8% by opinion of registered professional nurse). An interview with family members was used to ascertain the cause of death for 12,9% of the deaths. Of these cases, the majority (78,1%) were for deaths that occurred at home. In more than 20% of the deaths, the method used to ascertain the causes of death was not specified (22,7%). Further analysis of the data (results not shown) indicated that about three quarters (76,3%) of non-natural deaths were ascertained by autopsy, with about 2,0% of natural causes were ascertained in this way.

Table 4.2: Number and percentage distribution of deaths by method used to ascertain the cause of death, 2010

Method used to ascertaining cause of death	Number	Percentage
Autopsy	47 086	8,7
Post mortem examination	18 561	3,4
Opinion of attending medical practitioner	170 000	31,3
Opinion of attending medical practitioner on duty	83 091	15,3
Opinion of registered nurse	20 832	3,8
Interview of family member	70 178	12,9
Other	10 330	1,9
Autopsy results may be available later*	11	0,0
Autopsy not performed*	175	0,0
Unspecified	123 592	22,7
Total	**543 856**	**100,0**

*For perinatal deaths only

4.4 Main groups of the underlying causes of death

The ICD-10 classifies diseases and related health problems into 22 chapters, 19 of which are used in the reporting of information on underlying causes of death (see Table 4.3). The following chapters are thus excluded in this report:

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 etiology. 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 deaths by the 19 main groups (chapters) of the classification of causes of death is provided in Table 4.3. The top ranking main group of causes of death in 2010 was *certain infections and parasitic diseases*, comprising about a quarter (24,8%) of all deaths. This group also included 856 deaths due to *MDR-TB* and 171 deaths due to *XDR-TB*. A separate analysis of deaths due to *MDR-TB* and *XDR-TB* showed that the number of deaths due to *MDR-TB* have increased consistently from 2006 to 2009 but there was a decline of 28,2% between 2009 and 2010 (from 1 193 deaths in 2009 to 856 deaths in 2010). The number of deaths due to *XDR-TB* has been increasing since 2008. There was an increase of 12,5% noted between 2009 and 2010 (from 152 deaths in 2009 to 171 deaths in 2010).

The second most common main group of causes of death was *diseases of the circulatory system* (15,2%), followed by *symptoms and signs not elsewhere classified* (13,5%), and *diseases of the respiratory system* (12,4%). Less than 10% of the deaths were due to *external causes of morbidity and mortality* (8,9%) and each of the other remaining main groups. *Neoplasms* comprised 6,7% of all deaths, *certain conditions originating in the perinatal period* contributed 2,0% of all deaths, while *pregnancy, childbirth and puerperium* contributed 0,3% of all deaths.

Table 4.3: Distribution of deaths by main groups of causes of death, 2010

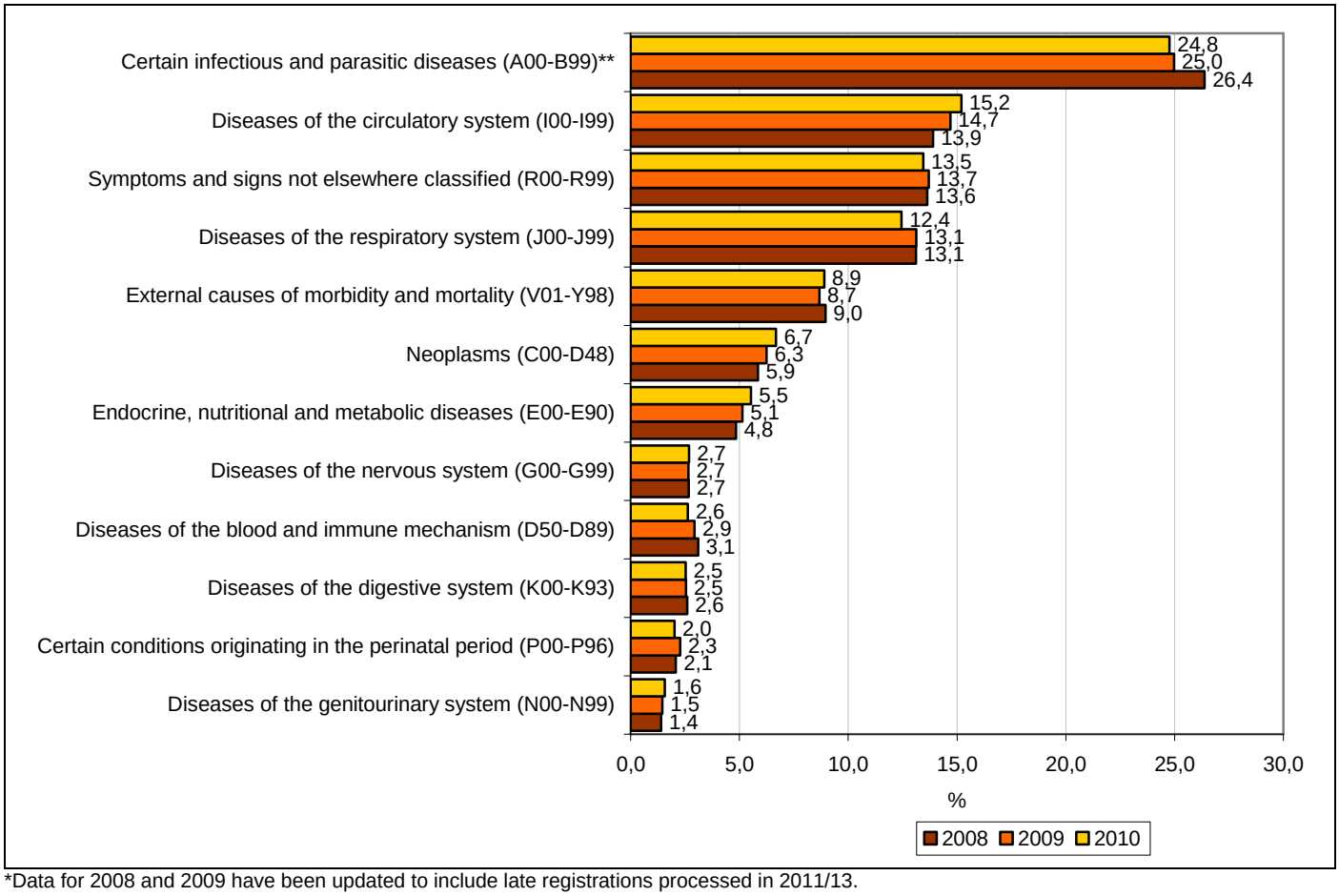
No.	Main groups of underlying causes of death (based on ICD-10)	Number	Percentage
1.	Certain infectious and parasitic diseases (A00-B99)*	134 678	24,8
2.	Neoplasms (C00-D48)	36 340	6,7
3.	Diseases of the blood and immune mechanism (D50-D89)	14 254	2,6
4.	Endocrine, nutritional and metabolic diseases (E00-E90)	30 089	5,5
5.	Mental and behavioural disorders (F00-F99)	1 755	0,3
6.	Diseases of the nervous system (G00-G99)	14 587	2,7
7.	Diseases of the eye and adnexa (H00-H59)	37	0,0
8.	Diseases of the ear and mastoid process (H60-H95)	88	0,0
9.	Diseases of the circulatory system (I00-I99)	82 686	15,2
10.	Diseases of the respiratory system (J00-J99)	67 706	12,4
11.	Diseases of the digestive system (K00-K93)	13 765	2,5
12.	Diseases of the skin and subcutaneous tissue (L00-L99)	1 346	0,2
13.	Diseases of the musculoskeletal system etc. (M00-M99)	2 037	0,4
14.	Diseases of the genitourinary system (N00-N99)	8 572	1,6
15.	Pregnancy, childbirth and puerperium (O00-O99)	1 658	0,3
16.	Certain conditions originating in the perinatal period (P00-P96)	11 027	2,0
17.	Congenital malformations (Q00-Q99)	1 705	0,3
18.	Symptoms and signs not elsewhere classified (R00-R99)	73 149	13,5
19.	External causes of morbidity and mortality (V01-Y98)	48 377	8,9
	Total	**543 856**	**100,0**

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

A three-year (2008–2010) trend analysis on the distribution of deaths by selected main groups of causes of death (with at least 1% of deaths in 2010) was undertaken and the results are shown in Figure 4.1. It is observed that the rankings of the main groups of causes of death by year have remained more or less the same during the period 2008–2010. *Certain infectious and parasitic diseases* were the most common causes of death for the three years and accounted for about a quarter of the deaths for each year. *Symptoms and signs not elsewhere classified, diseases of the circulatory, diseases of the respiratory system* were the second, third and fourth leading groups, respectively. They each contributed between 12% and 15% of the deaths for each year and for each cause.

On the one hand, the main groups of causes of death that showed a consistent increases in the proportions of deaths over the three years were *diseases of the circulatory system; neoplasms; endocrine, nutritional and metabolic disease;* and *diseases of the genitourinary system.* On the other hand, the proportions decreased consistently for *certain infectious and parasitic diseases; diseases of the respiratory system;* and *diseases of the blood and immune mechanism.* For the rest of the main groups, the proportions were either inconsistent over time or remained generally the same.

Figure 4.1: Percentage distribution of deaths by selected main groups of causes of death and year of death occurrence, 2008–2010*



*Data for 2008 and 2009 have been updated to include late registrations processed in 2011/13.
**Including deaths due to MDR-TB and XDR-TB.

4.5 Natural and non-natural causes of death

At the time of certifying deaths, medical practitioners or professional nurses (for stillbirths only) have to indicate on a separate section of the form (see Section D of BI-1663 and Sections B and C of DHA-1663) the following:

- The deceased died solely and exclusively due to natural causes; or
- They are not in a position to certify that the deceased died exclusively due to natural causes. These cases are referred for medico-legal investigations. In this case, the medical practitioner or forensic pathologist conducting the investigation of death has to indicate the following:
    - The death was due to natural causes;
    - The death was due to unnatural causes; or
    - The death was under investigation.

From these options, the causes of death can be classified as natural and non-natural causes. However, this classification was not used in this release. The natural and non-natural causes of death information reported in this release are derived from the underlying causes of death based on specific causes of death recorded by certifiers. That is, all causes coded between A00 and R99 (numbers 1 to 18 in Table 4.3) are classified as natural causes and those coded between V01 and Y98 (number 19 in Table 4.3) are classified as non-natural causes.

Table 4.4 and Figure 4.2 show the number and percentage of deaths due to natural and non-natural causes, respectively, from 1997 to 2010. The number of natural deaths increased consistently from 263 074 deaths in 1997 to 559 873 deaths in 2006, after which the number decreased consistently, reaching 495 479 deaths in 2010. There was no consistent pattern observed with the number of non-natural deaths between 1997 and 2007. However, from 2008, the number of non-natural deaths decreased consistently. The number of deaths due to natural causes decreased by 2,4% between 2008 and 2009 and by 6,4% between 2009 and 2010. Similarly, the number of deaths due to non-natural causes decreased by 5,7% between 2008 and 2009 and by 3,8% between 2009 and 2010.

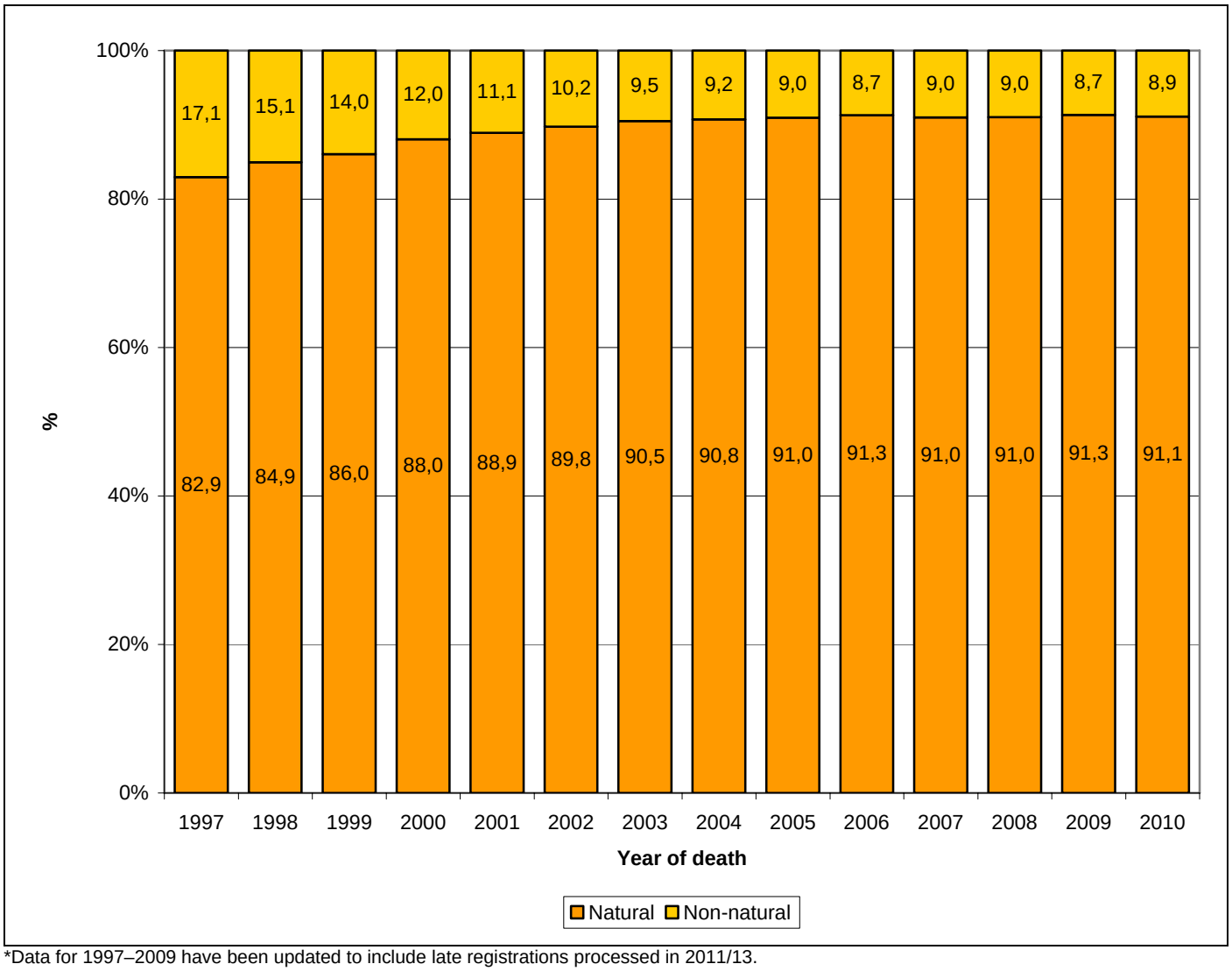
Table 4.4: Number of natural and non-natural deaths by year of death, 1997–2010*

Year of death	Number of natural deaths	Number of non-natural deaths	Total
1997	263 074	54 096	317 170
1998	310 776	55 108	365 884
1999	328 522	53 336	381 858
2000	366 633	49 787	416 420
2001	404 775	50 351	455 126
2002	450 851	51 486	502 337
2003	504 148	52 850	556 998
2004	523 676	53 366	577 042
2005	544 344	53 977	598 321
2006	559 873	53 235	613 108
2007	549 865	54 495	604 360
2008	542 274	53 350	595 624
2009	529 428	50 283	579 711
2010	495 479	48 377	543 856

*Data for 1997–2009 have been updated to include late registrations processed in 2011/13.

Figure 4.2 shows that throughout the years, the majority of deaths were due to natural causes (between 82% and 90% during 1997–2002 and more than 90% during 2003–2010). The percentage of deaths due to natural causes increased gradually from 1997 to 2006, after which it remained more or less constant at around 91% until 2010.

Figure 4.2: Percentage distribution of natural and non-natural causes of death by year of death, 1997–2010*



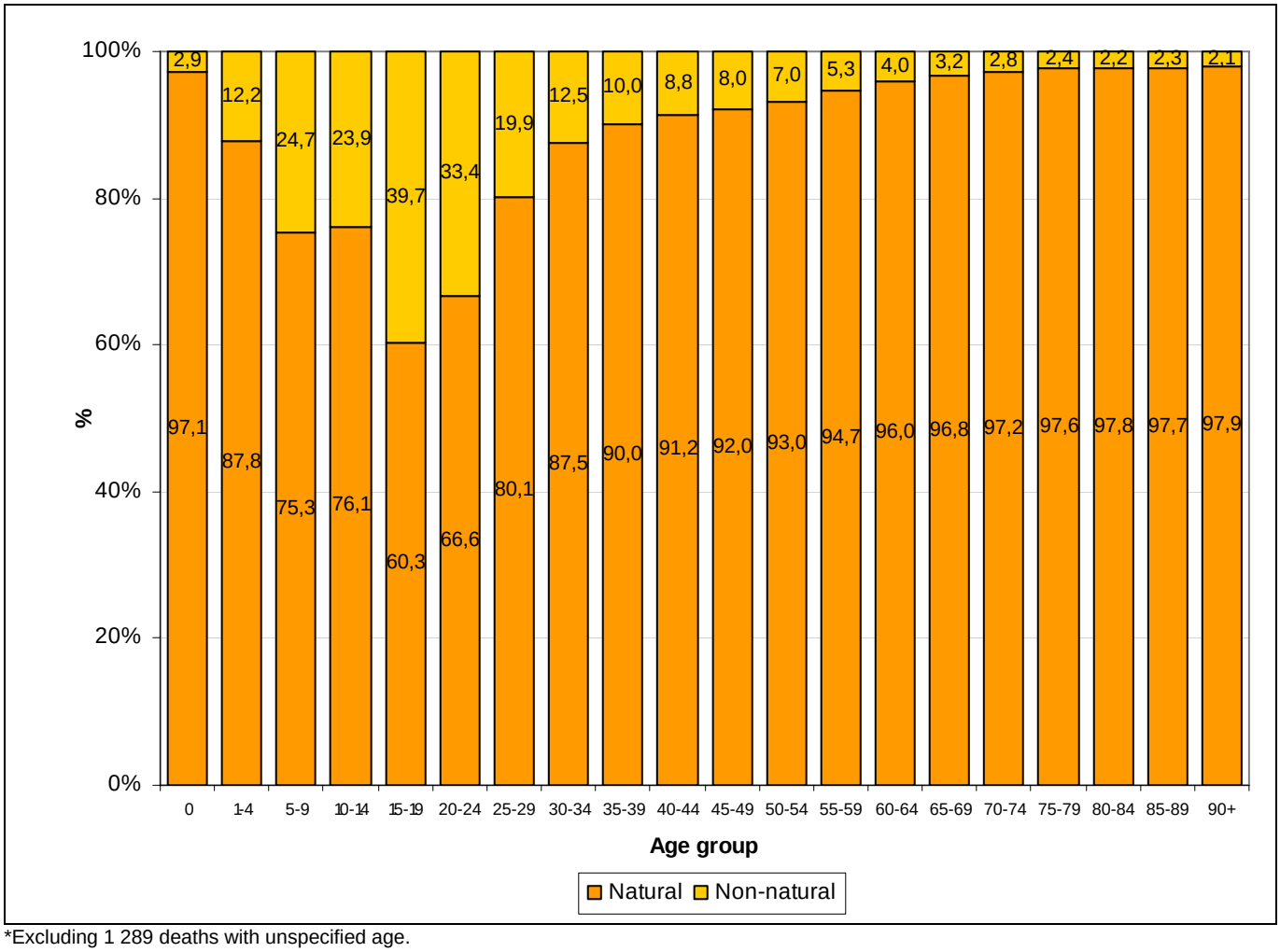
*Data for 1997–2009 have been updated to include late registrations processed in 2011/13.

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 2010 is provided in Figure 4.3. The general pattern observed is that the proportion of deaths due to non-natural causes increased consistently from age 0 (2,9%) to age group 15–19 (39,7%) and decreased thereafter.

Figure 4.3 shows that age group 15–19 was the age mostly affected by non-natural causes. Other ages with higher proportions (over 20%) of deaths due to non-natural causes were age groups 20–24 (33,4%), 5–9 (24,7%) and 10–14 (23,9%). Ages least affected by non-natural deaths were infancy (less than 0) and older ages (60 years and older) where less than 5% of the deaths in each of these age groups were due to non-natural causes of death.

Figure 4.3: Percentage distribution of natural and non-natural causes of death by age, 2010*



*Excluding 1 289 deaths with unspecified age.

4.6 Underlying natural causes of death

This subsection presents information on the leading underlying natural causes of death. The ten leading causes are identified by ranking the causes of death by frequency among those eligible for ranking as described in Section 2. Basically, this subsection only reports on underlying natural causes of death, excluding natural causes of death due to *symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (R00-R99)* as well as all non-natural deaths (*external causes of morbidity and mortality (V01-Y98).* The top-ranking causes determine the leading underlying natural causes of death.

Overall pattern of the leading underlying natural causes of death

The ten leading underlying causes of death in South Africa in 2008–2010 are shown in Table 4.5. These three years are selected to show recent trends in natural causes of death. The distribution of deaths by all broad groups of causes of death ranked by frequency (including non-natural causes and symptoms and signs not elsewhere classified) for 2010 is shown in Appendix K while the breakdown of individual causes for the broad groups that were among the ten leading causes in 2010 is provided in Appendix L. It is important to note that observed changes in the number of deaths from one year to another may also be a reflection of improvements in recording specific causes of death on the death notification form.

Table 4.5 shows that nine of the ten leading natural underlying causes of death were the same for the three years, with seven of these having the same rank order. While *other viral diseases* appeared in the ten leading causes of death in 2010, it was not among the ten leading causes of death for 2008 and 2009, rather, *certain disorders involving the immune mechanism* which was not in the ten leading causes for 2010 was among the ten leading in

2008 and 2009. Furthermore, what is notable is that *hypertensive diseases* ranked eighth in both 2009 and 2010, having increased from the tenth rank in 2008.

Tuberculosis was the leading cause of death during the three years, accounting for around 12% of all deaths each year (12,6% in 2008; 12,0% in 2009; and 11,6% in 2010). For all the years, *influenza and pneumonia* was the second leading underlying cause of death, followed by *intestinal infectious diseases*, *other forms of heart disease, cerebrovascular diseases* and *diabetes mellitus. Human immunodeficiency virus (HIV) disease* was the seventh. *Other viral diseases*, which was the tenth leading cause in 2010, was mainly due to *other viral diseases, not elsewhere classified (B33).*

A comparison of the absolute number of deaths for the ten leading underlying natural causes of death during 2008–2010 shows that the number of deaths due to the first three leading underlying natural causes of death (*tuberculosis, influenza and pneumonia* and *intestinal infectious diseases*) consistently decreased over time while those due to *diabetes mellitus* and *HIV disease* consistently increased over the three years. The number of deaths due to *tuberculosis, influenza and pneumonia* and *intestinal infectious diseases* all decreased by 10% or more between 2009 and 2010 (10,0%, 10,2% and 11,9% respectively). Conversely, the number of deaths due to *diabetes mellitus* increased by 3,8% between 2009 and 2010 and those due to *HIV disease* increased by 3,0% during the same period.

Table 4.5: The ten leading underlying natural causes of death, 2008–2010*

Causes of death (based onICD-10)	2008			2009			2010		
	Rank	Number	%	Rank	Number	%	Rank	Number	%
Tuberculosis (A15-A19)**	1	75 281	12,6	1	69 791	12,0	1	62 827	11,6
Influenza and pneumonia (J09-J18)	2	45 826	7,7	2	43 449	7,5	2	39 027	7,2
Intestinal infectious diseases (A00-A09)	3	39 530	6,6	3	31 070	5,4	3	27 383	5,0
Other forms of heart disease (I30-I52)	4	26 327	4,4	4	26 738	4,6	4	25 827	4,7
Cerebrovascular diseases (I60-I69)	5	24 473	4,1	5	25 062	4,3	5	24 664	4,5
Diabetes mellitus (E10-E14)	6	19 636	3,3	6	20 680	3,6	6	21 475	3,9
Human immunodeficiency virus [HIV] disease (B20-B24)	7	15 179	2,5	7	17 785	3,1	7	18 325	3,4
Hypertensive diseases (I10-I15)	10	14 236	2,4	8	15 486	2,7	8	14 890	2,7
Chronic lower respiratory diseases (J40-J47)	9	14 338	2,4	9	14 334	2,5	9	13 099	2,4
Other viral diseases (B25-B34)	…	…	…	…	…	…	10	12 332	2,3
Certain disorders involving the immune mechanism (D80-D89)	8	14 728	2,5	10	13 256	2,3	…	…	…
Other natural causes		252 720	42,4		251 777	43,4		235 630	43,3
Non-natural causes		53 350	9,0		50 283	8,7		48 377	8,9
All causes		**595 624**	**100,0**		**579 711**	**100,0**		**543 856**	**100,0**

*Data for 2008–2009 have been updated to include late registrations processed in 2011/13.
** Including deaths due to MDR-TB and XDR-TB.
… Category not in top ten

Leading underlying natural causes of death by sex

The distribution of the ten leading underlying natural causes of death by sex in 2010 is shown in Table 4.6 and indicates different patterns of underlying natural causes between males and females. The ten leading causes of male deaths contributed 45,5% of all male deaths while the ten leading causes for females contributed 51,0% of all female deaths.

While eight leading causes of death for both sexes were the same, the ranks were only the same for the first two leading causes. In addition, there were two causes of death that were among the leading causes of death for males and not for females and vice versa. *Chronic lower respiratory diseases* and *ischaemic heart diseases* were among the ten leading causes of death for males, but not for females. Conversely, *other viral diseases* and *certain disorders involving the immune mechanism* were among the top ten underlying causes of death for females but not for males.

Tuberculosis and *influenza and pneumonia* were the leading underlying natural causes of death for both males and females. However, while the ranks may be the same, the contribution of each cause to the total number of deaths differed for each sex. The proportion of deaths due to *tuberculosis* was slightly higher for males (12,6%) as compared to females (10,4%) while the proportion of deaths due *influenza and pneumonia* was higher for females (7,5%) as compared to males (6,9%). *Intestinal infectious diseases* were the third leading cause of death for males, while the third leading cause of death for females was *cerebrovascular diseases*. Although *intestinal infectious diseases* were the third leading cause of death for males, it contributed a higher percentage of female deaths (5,4%) than male deaths (4,6%).

Human immunodeficiency virus (HIV) disease was the sixth leading cause of death for males (accounting for 3,2% of male deaths), but was the seventh leading cause of death among females (accounting for 3,6% of female deaths).

Table 4.6: The ten leading underlying natural causes of death for males and females, 2010*

Causes of death (based on ICD-10)	Male			Female		
	Rank	Number	%	Rank	Number	%
Tuberculosis (A15-A19)**	1	35 255	12,6	1	27 483	10,4
Influenza and pneumonia (J09-J18)	2	19 230	6,9	2	19 700	7,5
Intestinal infectious diseases (A00-A09)	3	12 999	4,6	4	14 310	5,4
Other forms of heart disease (I30-I52)	4	11 742	4,2	5	14 066	5,3
Cerebrovascular diseases (I60-I69)	5	10 200	3,6	3	14 446	5,5
Human immunodeficiency virus [HIV] disease (B20-B24)	6	8 830	3,2	7	9 468	3,6
Diabetes mellitus (E10-E14)	7	8 415	3,0	6	13 055	5,0
Chronic lower respiratory diseases (J40-J47)	8	7 864	2,8	…	…	…
Ischaemic heart diseases (I20-I25)	9	7 060	2,5	…	…	…
Hypertensive diseases (I10-I15)	10	5 708	2,0	8	9 178	3,5
Other viral diseases (B25-B34)	…	…	…	9	6 860	2,6
Certain disorders involving the immune mechanism (D80-D89)	…	…	…	10	5 538	2,1
Other natural causes		115 536	41,3		117 604	44,7
Non-natural causes		36 843	13,2		11 395	4,3
All causes		**279 682**	**100,0**		**263 103**	**100,0**

*Excluding 1 071 cases with unspecified sex
**Including deaths due to *MDR-TB* and *XDR-TB*
… Category not in top ten.

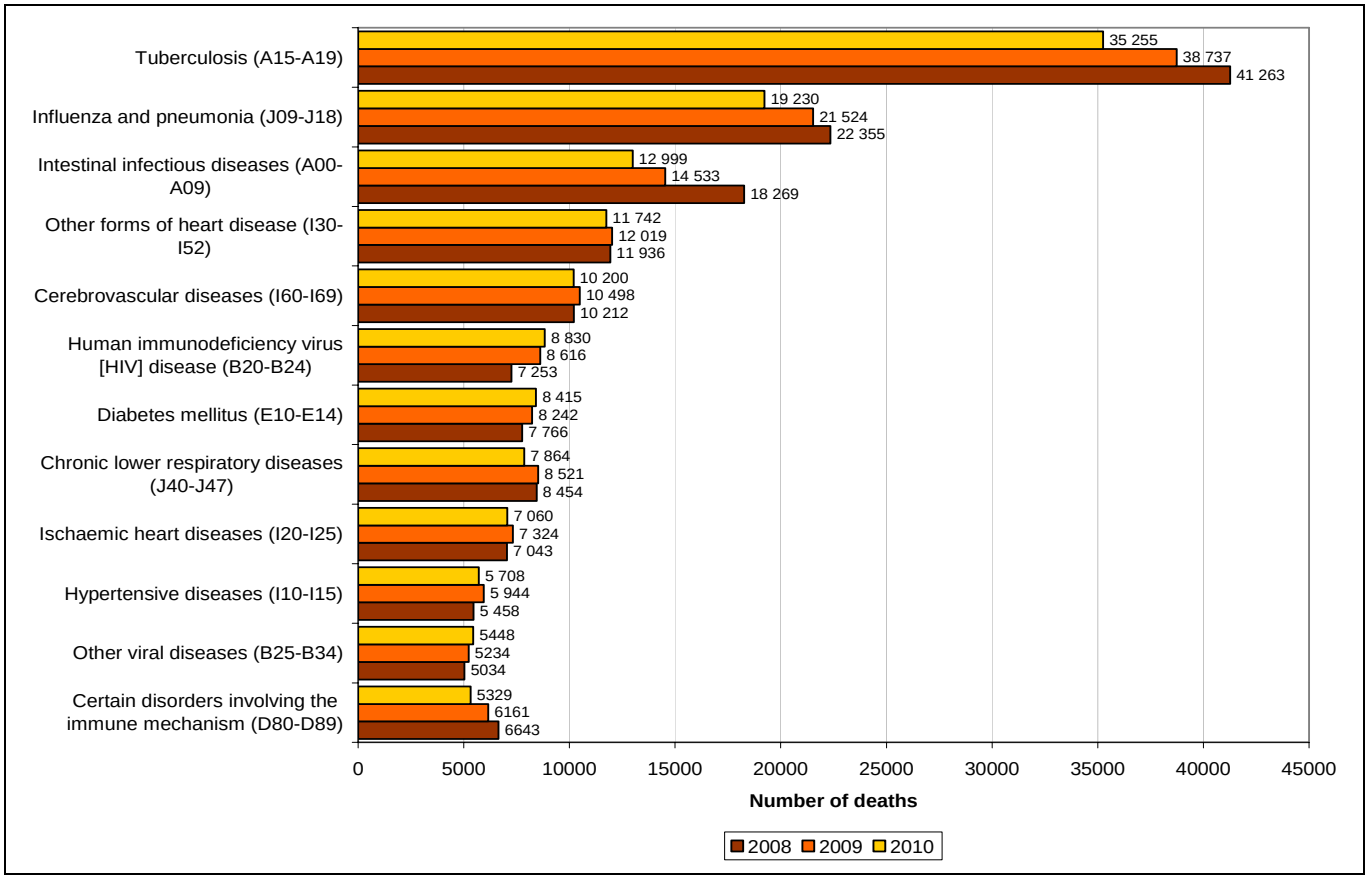
The number of deaths associated with the ten leading causes of death classified by sex for the period 2008–2010 is shown in Figure 4.4. Over the three-year period, *tuberculosis* and *influenza and pneumonia* remained the first two leading causes of death for both males and females. In addition, the first five leading causes of death were the same for males for the three years while for females only the first two were leading throughout the three-year period. The main change in the causes of death for females was the movement of *cerebrovascular diseases* from the fifth rank in 2008 and 2009 to the third rank in 2010 and the movement of *intestinal infectious diseases* from the third rank in 2008 and 2009 to the fifth rank in 2010.

The main similarity between males and females is that there were year-by-year increases in the number of deaths due to *HIV disease* and *diabetes mellitus* for both sexes and decreases in the number of deaths due to *tuberculosis, influenza and pneumonia, intestinal infectious diseases and certain disorders involving the immune mechanism* for both sexes. There were no marked differences in the number of deaths due to *cerebrovascular diseases, other forms of heart diseases* and *ischaemic heart diseases* over the three-year period for both sexes.

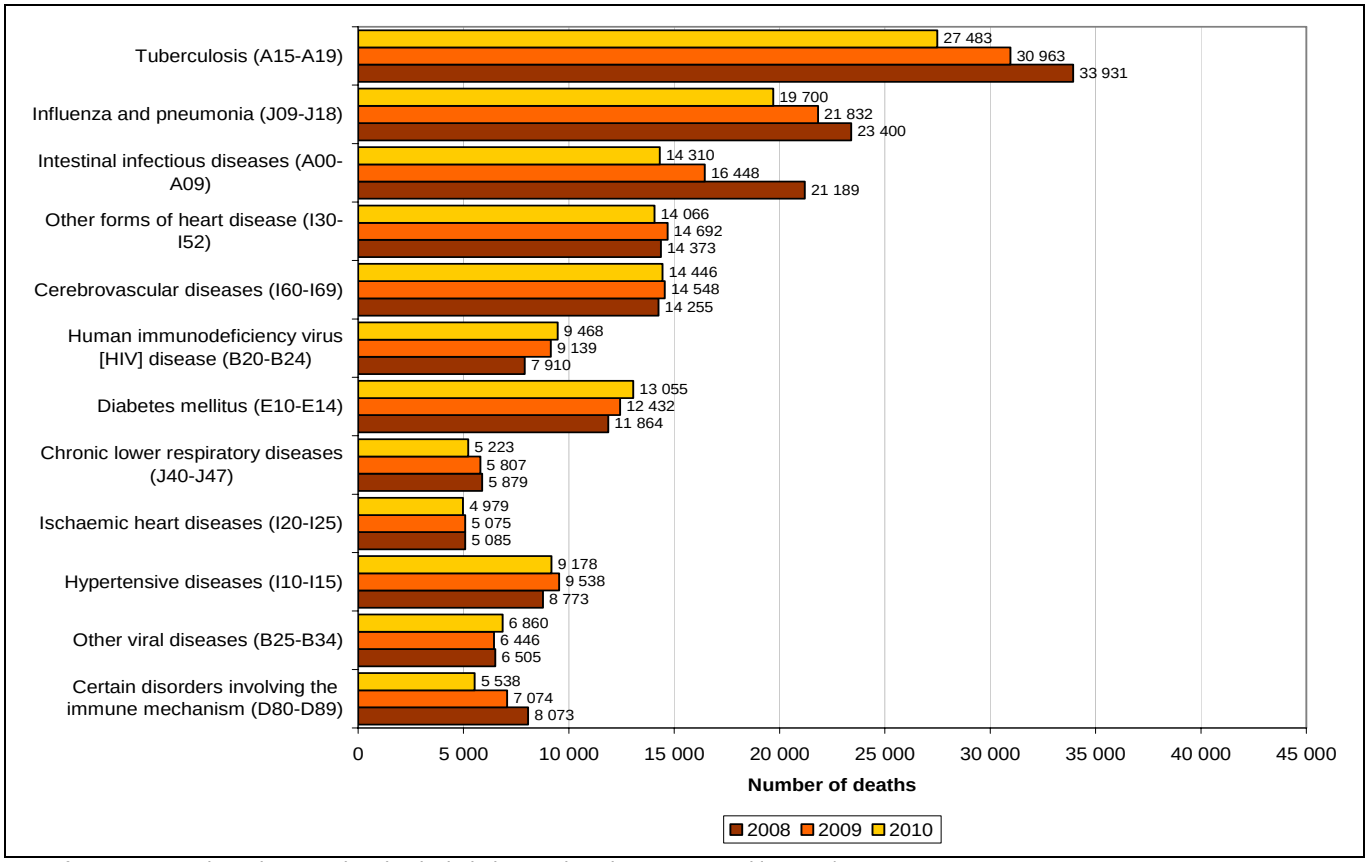
For both sexes, the greatest decrease between 2009 and 2010 was observed in the number of deaths due to *certain disorders involving the immune mechanism* (13,5% for males and 21,7% for females) and the greatest increase in the number of deaths due to *other viral disease* (4,1% for males and 6,4% for females). Further comparison between males and females showed that female deaths exceeded male deaths in all specified causes for all the three years, with the exception of *tuberculosis, ischaemic heart diseases* and *chronic lower respiratory infections.*

Figure 4.4: Distribution of deaths for the leading causes of death by year of death and sex, 2008–2010*

Males



Females



*Data for 2008–2009 have been updated to include late registrations processed in 2011/13.
** Including deaths due to MDR-TB and XDR-TB.

Leading underlying natural causes of death by age

The ten leading causes of death classified by broad age groups 0–14, 15–49, 50–64, and 65 years and older for 2010 are given in Table 4.7. Further disaggregations of age and leading underlying natural causes of death are provided in Tables 4.8 (under-5 years) and 4.9 (15–24 years).

Table 4.7 shows that three underlying natural causes of death (*intestinal infectious diseases*, *influenza and pneumonia* and *tuberculosis)* were common for all these broad age groups. However, the ranks of these causes and their individual contribution to the total number of deaths differed widely by age. For example, *tuberculosis* was the leading underlying natural cause of death for those aged 15–49 and 50–64 (contributing 19,1% and 11,1% of deaths in each of these age groups, respectively) but was the fifth leading cause of death for those aged 0–14 (contributing 3,5% of deaths in this age group) and the eighth leading cause of death for those aged 65 year and older (contributing 3,2%). Similarly, *intestinal infectious diseases* was the first leading cause of death for those aged 0–14 (16,9%) but the fourth leading cause of death for those aged 15–49 (4,8%) and the tenth for the those aged 50–64 and those aged 65 and older (3,0% and 2,3%, respectively).

The leading underlying natural cause of death for those aged 0–14 was *intestinal infectious diseases*, followed by *influenza and pneumonia.* These two causes contributed over a quarter of deaths (27,9%) in this age group. *Respiratory and cardiovascular disorders specific to the perinatal period* was the third leading cause of death in this age group (9,3%), followed by *malnutrition* (3,6%). *HIV disease* was the ninth leading cause of death, contributing 1,8% of all deaths.

Amongst those aged 15–49, *tuberculosis* (19,1%) was the leading cause of death, followed by *influenza and pneumonia* (8,1%) and *HIV disease* (6,3%)*. HIV disease* appeared among the ten leading causes of death in age groups 0–14 and 15–49 only.

The ten leading causes of death for those aged 50–64 and 65 years and older were the same, with differences in rank and the contribution of each cause to the overall number of deaths in each age group. While *cerebrovascular diseases* were the leading cause of death among those aged 65 and older, contributing 10,1% of deaths in this age group, it was the fourth leading cause of death among those aged 50–64, accounting for 5,8% of deaths. Conversely, *tuberculosis* was the leading cause of death for those aged 50–64 (11,1%) and the eighth leading cause of death for those aged 65 and older (3,2%).

Four *diseases of the circulatory system* (*other forms of heart disease, cerebrovascular diseases, ischaemic heart diseases* and *hypertensive diseases*) were among the ten leading causes of death for those aged 50–64 and 65 years and older, contributing a total of 18,4% and 30,0% of deaths in each age group, respectively. *Malignant neoplasm of digestive organs* was the only neoplasm appearing among the leading causes of death in ages 50–64 and 65 years and older and contributed 3,2% of deaths in each age group.

Table 4.7: The ten leading underlying natural causes of death for broad age groups, 2010

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	9 534	16,9	4	11 159	4,8	10	3 210	3,0	10	3 448	2,3
Influenza and pneumonia (J09-J18)	2	6 237	11,0	2	18 826	8,1	3	6 335	6,0	5	7 560	5,1
Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	3	5 248	9,3	…	…	…	…	…	…	…	…	…
Malnutrition (E40-E46)	4	2 059	3,6	…	…	…	…	…	…	…	…	…
Tuberculosis (A15-A19)*	5	1 974	3,5	1	44 160	19,1	1	11 761	11,1	8	4 785	3,2
Other disorders originating in the perinatal period (P90-P96)	6	1 733	3,1	…	…	…	…	…	…	…	…	…
Disorders related to length of gestation and foetal growth (P05-P08)	7	1 431	2,5	…	…	…	…	…	…	…	…	…
Infections specific to the perinatal period (P35-P39)	8	1 317	2,3	…	…	…	…	…	…	…	…	…
Human immunodeficiency virus [HIV] disease (B20-B24)	9	1 011	1,8	3	14 493	6,3	…	…	…	…	…	…
Other acute lower respiratory infections (J20-J22)	10	983	1,7	9	3 704	1,6	…	…	…	…	…	…
Other viral diseases (B25-B34)	…	…	…	5	9 464	4,1	…	…	…	…	…	…
Certain disorders involving the immune mechanism (D80-D89)	…	…	…	6	8 327	3,6	…	…	…	…	…	…
Other forms of heart disease (I30-I52)	…	…	…	7	5 829	2,5	5	5 977	5,6	2	13 410	9,0
Inflammatory diseases of the central nervous system (G00-G09)	…	…	…	8	5 265	2,3	…	…	…	…	…	…
Other acute lower respiratory infections (J20-J22)	…	…	…	…	…	…	…	…	…	…	…	…
Cerebrovascular diseases (I60-I69)	…	…	…	10	3 426	1,5	4	6 170	5,8	1	14 918	10,1
Diabetes mellitus (E10-E14)	…	…	…	…	…	…	2	7 129	6,7	3	11 621	7,8
Hypertensive diseases (I10-I15)	…	…	…	…	…	…	6	4 003	3,8	4	9 193	6,2
Chronic lower respiratory diseases (J40-J47)	…	…	…	…	…	…	7	3 998	3,8	7	6 597	4,4
Ischaemic heart diseases (I20-I25)	…	…	…	…	…	…	8	3 443	3,2	6	7 009	4,7
Malignant neoplasm of digestive organs (C15-C26)							9	3 362	3,2	9	4 684	3,2
Other natural causes		20 181	35,7		73 248	31,6		45 166	42,5		61 331	41,3
Non-natural causes		4 777	8,5		33 588	14,5		5 802	5,5		3 819	2,6
All causes		**56 485**	**100,0**		**231 489**	**100,0**		**106 356**	**100,0**		**148 375**	**100,0**

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

Leading underlying natural causes of death for infants and children

Table 4.8 shows the ten leading causes of death for neonatal deaths (those occurring within 28 days of births), post-neonatal deaths (those occurring from 29 days to 11 months), all infant deaths (those occurring within the first year of birth), and deaths among those aged 1–4 years. Infant deaths are composed of both neonatal and post-neonatal deaths.

It is observed that, with the exception of *intestinal infectious diseases,* there were no overlapping leading underlying causes of death for those who died during the neonatal and post-neonatal periods. However, there was a much smaller percentage of deaths due to *intestinal infectious diseases* for neonatal deaths (1,8%) as compared to post-neonatal deaths (26,4%). There were four similar underlying causes of death for deaths occurring within the first year of life and those occurring between one and four years (*intestinal infectious diseases, influenza and pneumonia, malnutrition* and *other acute lower respiratory infections)*. The total contribution of these causes was 34,3% for infant deaths and 42,0% for deaths occurring between one and four years.

Neonatal deaths mainly resulted from the main groups of *conditions originating in the perinatal period* and *congenital malformations, deformations and chromosomal abnormalities*. The leading cause of death for neonatal deaths in 2010 was *respiratory and cardiovascular disorders specific to the perinatal period*, accounting for 43,1% of all neonatal deaths. This was followed by *other disorders originating in the perinatal period* (13,9%), *disorders related to length of gestation and foetal growth* (11,0%) and *infections specific to the perinatal period* (10,8%). These four broad groups contributed 78,7% of all deaths occurring within the neonatal period. Congenital malformations appearing in the ten leading natural causes of neonatal deaths contributed a total of 3,0% of these deaths.

The leading cause of death for those who died during the post-neonatal period was *intestinal infectious diseases* (26,4%) followed by *influenza and pneumonia* (18,1%). These two causes contributed 44,5% of deaths occurring during this period. *Malnutrition* (4,3%) was the third leading cause of death; *tuberculosis (2,2%)* the sixth; and *HIV disease* (1,8%) the seventh.

For overall infant deaths, the leading cause of death was *intestinal infectious diseases* (17,7%), followed by *respiratory and cardiovascular disorders specific to the perinatal period* (15,2%) and *influenza and pneumonia* (11,8%). These three causes accounted for 44,7% of all infant deaths. The three leading causes of death for those aged 1–4 years were *intestinal infectious diseases* (21,1%), *influenza and pneumonia* (11,5%) and *malnutrition* (7,9%). *Tuberculosis* (4,7%) was the fourth leading cause of death while *HIV disease* (2,1%), *other viral diseases (2,0%)* and *certain disorders involving the immune mechanism* (1,7%) were the fifth, sixth and seventh positions, respectively.

Table 4.8: The ten leading underlying natural causes of death for infants and children, 2010

Causes of death (based on ICD-10)	Neonatal (0–28 days)			Post-neonatal (29 days to 11 months)			Less than 1 year			1-4 years		
	Rank	Number	%	Rank	Number	%	Rank	Number	%	Rank	Number	%
Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	1	5 211	43,1	…	…	…	2	5 248	15,2	…	…	…
Other disorders originating in the perinatal period (P90-P96)	2	1 676	13,9	…	…	…	4	1 723	5,0	…	…	…
Disorders related to length of gestation and foetal growth (P05-P08)	3	1 332	11,0	…	…	…	5	1 425	4,1	…	…	…
Infections specific to the perinatal period (P35-P39)	4	1 302	10,8	…	…	…	6	1 317	3,8	…	…	…
Foetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	5	500	4,1	…	…	…	10	505	1,5	…	…	…
Haemorrhagic and haematological disorders of foetus and newborn (P50-P61)	6	352	2,9	…	…	…	…	…	…	…	…	…
Other congenital malformations (Q80-Q89)	7	233	1,9	…	…	…	…	…	…	…	…	…
Digestive system disorders of foetus and newborn (P75-P78)	8	229	1,9	…	…	…	…	…	…	…	…	…
Intestinal infectious diseases (A00-A09)	9	221	1,8	1	5 888	26,4	1	6 109	17,7	1	2 746	21,1
Congenital malformations of the circulatory system (Q20-Q28)	10	136	1,1	…	…	…	…	…	…	…	…	…
Influenza and pneumonia (J09-J18)	…	…	…	2	4 039	18,1	3	4 046	11,8	2	1 488	11,5
Malnutrition (E40-E46)	…	…	…	3	970	4,3	7	972	2,8	3	1 021	7,9
Other acute lower respiratory infections (J20-J22)	…	…	…	4	659	3,0	8	690	2,0	9	194	1,5
Other bacterial diseases (A30-A49)	…	…	…	5	557	2,5	9	560	1,6	…	…	…
Tuberculosis (A15-A19)*	…	…	…	6	492	2,2	…	…	…	4	615	4,7
Human immunodeficiency virus [HIV] disease (B20-B24)	…	…	…	7	410	1,8	…	…	…	5	273	2,1
Other viral diseases (B25-B34)	…	…	…	8	384	1,7	…	…	…	6	263	2,0
Protozoal diseases (B50-B64)	…	…	…	9	369	1,7	…	…	…	…	…	…
Other diseases of the respiratory system (J95-J99)	…	…	…	10	350	1,6	…	…	…	…	…	…
Certain disorders involving the immune mechanism (D80-D89)	…	…	…	…	…	…	…	…	…	7	226	1,7
Inflammatory diseases of the central nervous system (G00-G09)	…	…	…	…	…	…	…	…	…	8	198	1,5
Other forms of heart disease (I30-I52)	…	…	…	…	…	…	…	…	…	10	193	1,5
Other natural causes		773	6,4		7 363	33,0		10 851	31,5		4 180	32,2
Non-natural causes		134	1,1		851	3,8		985	2,9		1 590	12,2
All causes		**12 099**	**100,0**		**22 332**	**100,0**		**34 431**	**100,0**		**12 987**	**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

The World Health Organization recommended that the 15–24 age group must also be included in the analysis for international comparison (WHO, 1992). This analysis is provided in Table 4.9. *Tuberculosis* was the leading cause of death in this age group, accounting for 13,7% of the deaths. It was followed by *influenza and pneumonia* (6,1%), *HIV disease* (4,0%) and *intestinal infectious diseases* (3,5%). *Other viral diseases* (2,9%) and *certain disorders involving the immune mechanism (2,2%)* were the fifth and seventh leading causes of death, respectively. The ten leading causes of death in 2010 were the same as those observed in 2008 and 2009, although some causes changed ranks.

Table 4.9: The ten leading underlying natural causes of death for the population aged 15–24 years, 2010

Causes of death (based on ICD-10)	15-24 years		
	Rank	Number	%
Tuberculosis (A15-A19)*	1	3 871	13,7
Influenza and pneumonia (J09-J18)	2	1 728	6,1
Human immunodeficiency virus [HIV] disease (B20-B24)	3	1 126	4,0
Intestinal infectious diseases (A00-A09)	4	993	3,5
Other viral diseases (B25-B34)	5	821	2,9
Inflammatory diseases of the central nervous system (G00-G09)	6	658	2,3
Certain disorders involving the immune mechanism (D80-D89)	7	631	2,2
Other forms of heart disease (I30-I52)	8	540	1,9
Episodic and paroxysmal disorders (G40-G47)	9	353	1,3
Other acute lower respiratory infections (J20-J22)	10	327	1,2
Other natural causes		7 207	25,6
Non-natural causes		9 950	35,3
All causes		**28 205**	**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 differences in the ranking of the ten leading underlying causes of death for 2010. Detailed information on the distribution of the ten leading underlying causes by province, age and sex is provided in Appendices M to M.9.

Tuberculosis was the leading cause of death in all provinces except Free State and Limpopo where it ranked second in both provinces. In these two provinces, *influenza and pneumonia* was the leading cause of death. Although *tuberculosis* ranked first in seven provinces, its contribution differed by province. The highest proportion of deaths due to *tuberculosis* was observed in KwaZulu-Natal (15,7%), followed by Mpumalanga (13,4%), Eastern Cape (12,7%) and North West (12,3%). The proportion of deaths due to *tuberculosis* in all three of these provinces was higher than the national average of 11,6% in 2010. The lowest proportion of deaths due to *tuberculosis* was observed in Western Cape, contributing 7,8% of deaths in this province.

The causes of death that were common for all nine provinces were *tuberculosis, diabetes mellitus, cerebrovascular diseases, hypertensive diseases* and *other forms of heart disease*. However, the ranks of these causes differed between provinces. For example, while *diabetes mellitus* was the second leading cause of death in Western Cape (6,6%), it was the fifth leading cause in Limpopo (3,8%) and the eighth leading cause in Northern Cape (3,0%).

HIV disease was among the ten leading causes of death in all provinces except Free State. It was the second leading cause of death in Northern Cape, accounting for 5,0% of deaths in the province and the third in Western Cape, accounting for 6,0% of all deaths in this province. *HIV disease* was among the ten leading causes of death in Limpopo for the first time in 2010. It was the tenth leading cause of death in this province (1,6%).

Influenza and pneumonia and *intestinal infectious diseases* were among the ten leading causes of death in all provinces, with the exception of Western Cape. Conversely, *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. Furthermore, *other acute lower respiratory infections* were among the ten leading causes of death only in Mpumalanga.

Table 4.10: The ten leading underlying natural causes of death in each province of death occurrence, 2010

Causes of death (based on tICD-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.	%
Tuberculosis (A15-A19)*	1	3 573	7,8	1	10 205	12,7	1	1 396	9,2	2	5 004	11,1	1	18 205	15,7	1	4 942	12,3	1	9 247	8,8	1	5 595	13,4	2	4 199	8,4
Diabetes mellitus (E10-E14)	2	3 035	6,6	7	2 864	3,6	8	463	3,0	7	1 245	2,8	6	5 214	4,5	7	1 302	3,3	6	3 747	3,5	6	1 561	3,7	5	1 915	3,8
HIV disease (B20-B24)	3	2 754	6,0	9	2 519	3,1	2	761	5,0	…	…	…	7	5 060	4,4	9	1 090	2,7	7	3 248	3,1	8	1 188	2,8	10	785	1,6
Ischaemic heart diseases (I20-I25)	4	2 646	5,8	…	…	…	…	…	…	10	805	1,8	10	2 454	2,1	…	…	…	8	2 844	2,7	…	…	…	…	…	…
Cerebrovascular diseases (I60-I69)	5	2 458	5,4	3	3 491	4,3	4	630	4,1	5	1 932	4,3	4	5 636	4,9	5	1 657	4,1	4	4 138	3,9	4	1 992	4,8	4	2 583	5,2
Chronic lower respiratory diseases (J40-J47)	6	2 016	4,4	6	3 006	3,7	7	514	3,4	9	821	1,8	…	…	…	…	…	…	10	2 217	2,1	…	…	…	…	…	…
Malignant neoplasm of digestive organs (C15-C26)	7	1 893	4,1	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…
Malignant neoplasm of respiratory and intrathoracic organs (C30-39)	8	1 757	3,8	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…
Hypertensive diseases (I10-I15)	9	1 503	3,3	10	2 061	2,6	9	433	2,9	8	1 182	2,6	9	2 711	2,3	6	1 616	4,0	9	2 638	2,5	7	1 275	3,1	7	1 375	2,7
Other forms of heart disease (I30-I52)	10	1 470	3,2	2	3 697	4,6	5	592	3,9	4	2 365	5,3	5	5 615	4,8	3	2 527	6,3	3	5 494	5,2	5	1 989	4,8	6	1 897	3,8
Influenza and pneumonia (J09-J18)	…	…	…	4	3 458	4,3	3	747	4,9	1	5 440	12,1	3	6 492	5,6	2	3 630	9,1	2	7 940	7,5	2	3 932	9,4	1	5 984	12,0
Intestinal infectious diseases (A00-A09)	…	…	…	5	3 041	3,8	6	586	3,9	3	2 976	6,6	2	6 583	5,7	4	2 162	5,4	5	3 936	3,7	3	3 094	7,4	3	4 099	8,2
Other viral diseases (B25-B34)	…	…	…	8	2 621	3,3	…	…	…	…	…	…	8	3 550	3,1	10	1 030	2,6	…	…	…	…	…	…	9	872	1,7
Certain disorders involving the immune mechanism (D80-D89)	…	…	…	…	…	…	10	412	2,7	6	1 643	3,6	…	…	…	8	1 091	2,7	…	…	…	10	1 092	2,6	8	1 061	2,1
Other acute lower respiratory infections (J20-J22)	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	9	1 180	2,8	…	…	…
Other natural causes		17 363	38,0		36 301	45,0		7 305	48,1		18 335	40,7		44 156	38,1		16 058	40,1		49 886	47,2		15 420	36,9		21 490	43,0
Non-natural causes		5 243	11,5		7 363	9,1		1 344	8,9		3 270	7,3		10 213	8,8		2 954	7,4		10 338	9,8		3 455	8,3		3 757	7,5
All causes		**45 711**	**100,0**		**80 627**	**100,0**		**15 183**	**100,0**		**45 018**	**100,0**		**115 889**	**100,0**		**40 059**	**100,0**		**105 673**	**100,0**		**41 773**	**100,0**		**50 017**	**100,0**

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

Underlying causes of death by district municipality of death occurrence

Main group

The main groups of underlying causes of death for deaths that occurred in 2010 by district municipality are provided in Appendices N to N.2. The main groups have conveniently 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. Percentage distributions of the same information are provided in Appendices O to O.2.

Appendices O to O.2 show that, with the exception of Western Cape, *certain infectious and parasitic diseases* were the most common main group of causes of death in all provinces. This main group affected around 30% of deaths occurring in KwaZulu-Natal (31,5%) and Mpumalanga (28,9%). The district municipalities with the highest percentage of deaths due to *certain infectious and parasitic diseases* were mostly in KwaZulu-Natal. The leading six districts were uMkhanyakude (39,8%), iLembe (38,4%), Zululand (36,5%), uThungulu (34,8%), uMzinyathi (34,6%) and Ugu (34,3%). Only 18,3% of deaths occurring in Western Cape were due to *certain infectious and parasitic diseases*. Namakwa in Northern Cape (11,1%) and the following districts in Western Cape had the lowest percentage of deaths due to *certain infectious and parasitic diseases:* Eden (16,9%), Central Karoo (16,2%) and Overberg (14,4%).

Diseases of the circulatory system were more prevalent in Western Cape and contributed the highest proportion of deaths in this province (19,2%). This group was also the second leading main group of causes death in all other provinces except Mpumalanga and Limpopo where *diseases of the respiratory system* were the second leading main group. Eden (22,6%), West Coast (21,6%), both in Western Cape, had the highest percentage of deaths due to *diseases of the circulatory system.* They were followed by City of Tshwane (20,9%) in Gauteng, Overberg in Western Cape (19,9%) and Greater Sekhukhune in Limpopo (19,3%).

Greater Sekhukhune (25,6%) had the highest proportion of deaths due to *diseases of the respiratory system.* Other districts with higher proportion of deaths due to this cause were Amajuba in KwaZulu-Natal (20,8%), Ngaka Modiri Molema in North West (19,9%) and three districts in Free State Lejweleputswa (19,7), Thabo Mofutsanyane (19,2%) and Fezile Dabi (18,8%).

The province with the highest proportion of deaths due to *neoplasms* was Western Cape, accounting for 16,1% of deaths in this province. The other provinces had less than 10% of deaths due to this cause, with the lowest observed in Mpumalanga (4,0%) and Limpopo (4,3%). The highest proportions were all observed in districts in Western Cape: Overberg (19,6%), City of Cape Town (16,4%), Eden (16,1%) and Cape Winelands (15,3%).

Broad groups

Information on the ten leading natural causes of death by district municipality (Appendices P to P.8) shows that the leading causes in all districts were either *tuberculosis* or *influenza and pneumonia*. *Tuberculosis* was the leading cause of death in all districts in Eastern Cape, Northern Cape, KwaZulu-Natal, North West and Mpumalanga. In Western Cape, *tuberculosis* was the leading cause of death in all districts except in Overberg, while in Gauteng it was the leading cause of death in all districts except in Sedibeng. In Free State and Limpopo, the leading cause of death was *influenza and pneumonia* in all districts with the exceptions of Mangaung Metro in Free State; and Waterberg and Vhembe in Limpopo where *tuberculosis* was the leading cause of death.

HIV disease was among the ten leading underlying causes of death in at least one district municipality in all provinces. It was among the ten leading causes of death in all district municipalities in Western Cape and North West. The districts with the highest percentage of deaths due to *HIV disease* were uMkhanyakude in KwaZulu-Natal (14,2%); Siyanda in Northern Cape (8,3%); Cape Winelands (6,6%), City of Cape Town (6,3%) and Eden (5,9%) all in Western Cape; and Cacadu in Eastern Cape (5,8%). It should also be noted that while the proportions differed per district, *HIV disease* was the second leading cause of death in Cape Winelands (Western Cape), Cacadu (Eastern Cape), Siyanda (Northern Cape) and uMkhanyakude (KwaZulu-Natal) and the third leading cause of death in uThungulu (KwaZulu-Natal) and Dr Kenneth Kaunda (North West). *HIV disease* was not one of the ten leading causes of death in the following districts: Chris Hani in Eastern Cape; Lejweleputswa and Fezile Dabi both in Free State; Amajuba and uThukela both in KwaZulu-Natal; Sedibeng in Gauteng; Nkangala in Mpumalanga; and Mopani and Waterberg both in Limpopo.

Underlying causes of death by population group

Due to a large proportion of unknown or unspecified cases, the ten leading underlying natural causes of death by population group are not discussed in this section. The discussion and distribution of underlying causes of death by population group are provided in Appendices Q and Q.1, respectively.

4.7 Non-natural causes of death

This subsection discusses non-natural causes of death based on all *external causes of morbidity and mortality (V01-Y98)* derived from the causes of death specified on the death notification forms.

Table 4.11 shows the broad groups of non-natural causes and the associated number of deaths. It is observed that the majority of non-natural causes of death resulted from *other external causes of accidental injury* (61,5% of non-natural causes and 5,5% of all causes). *Event of undetermined intent* (an ill-defined group of non-natural causes of death) was the second most common non-natural cause of death and accounted for 13,9% of non-natural causes and 1,2% of all causes of death. The third most common cause of non-natural deaths was *transport accidents* (11,7%), followed by *assault* (10,5%). *Complications of medical and surgical care, intentional self-harm* and *sequelae of external causes of morbidity and mortality* each accounted for less than 2% of non-natural causes of death.

Table 4.11: Distribution of non-natural causes of death by broad groups, 2010

Causes of death (based on ICD-10, 1992)	Number	% of non-natural causes	% of all causes (N = 543 856)
Other external causes of accidental injury (W00-X59)	29 768	61,5	5,5
Event of undetermined intent (Y10-Y34)	6 721	13,9	1,2
Transport accidents (V01-V99)	5 661	11,7	1,0
Assault (X85-Y09)	5 059	10,5	0,9
Complications of medical and surgical care (Y40-Y84)	714	1,5	0,1
Intentional self-harm (X60-X84)	394	0,8	0,1
Sequelae of external causes of morbidity and mortality (Y85-Y89)	60	0,1	0,0
Total	**48 377**	**100,0**	

A breakdown of deaths due to *other external causes of accidental injury* is provided in Table 4.12 to provide information that can be used for a better understanding of deaths due to this cause, which comprised nearly two-thirds of all non-natural deaths. The table shows that over half of these deaths (52,4%) were due to *accidental exposure to other and unspecified factors*, mainly *exposure to unspecified factor*. The next common cause was *other accidental threats to breathing*, which accounted for 15,2% of *other external causes of accidental injury.* The majority of these (82,2% results not shown) were due to *other accidental hanging and strangulation*. The third common *other external causes of accidental injury* was *exposure to inanimate mechanical forces* (14,2%). A great majority (98,4% results not shown) of deaths due to *inanimate mechanical forces* were due to *discharge from other and unspecified firearms*.

Table 4.12: Distribution of deaths due to other external causes of accidental injury, 2010

Causes of death (based on ICD-10)	Number	%
Accidental exposure to other and unspecified factors (X58-X59)	15 594	52,4
Other accidental threats to breathing (W75-W84)	4 513	15,2
Exposure to inanimate mechanical forces (W20-W49)	4 216	14,2
Exposure to smoke, fire and flames (X00-X09)	2 350	7,9
Accidental drowning and submersion (W65-W74)	1 428	4,8
Accidental poisoning by and exposure to noxious substance (X40-X49)	879	3,0
Exposure to electric current, radiation and extreme ambient air temperature and pressure (W85-W99)	280	0,9
Exposure to forces of nature (X30-X39)	261	0,9
Falls (W00-W19)	123	0,4
Contact with venomous animals and plants (X20-X29)	59	0,2
Exposure to animate mechanical forces (W50-W64)	30	0,1
Overexertion, travel and privation (X50-X57)	22	0,1
Contact with heat and hot substances (X10-X19)	13	0,0
Total	**29 768**	**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, 15–49, 50–64 and 65 and older) for deaths that occurred in 2010. The results show that the age group mostly affected by non-natural causes of death was age group 15–49 for both sexes, accounting for 14,5% of all deaths in this age group. The age group least affected by non-natural causes was those aged 65 years and older where less than 3% (2,6%) of deaths in this age group were due to non-natural causes.

Differences by sex show that males had a higher proportion of deaths due to non-natural causes (13,1%) as compared to females (4,3%). Furthermore, for each of the age groups, males had higher proportions of deaths due to non-natural causes than females, with the gap much wider at age group 15–49 where as much as 22,3% of male deaths resulted from non-natural cause compared to 5,7% of females in the same age group. In terms of absolute numbers, the total number of male deaths due to non-natural causes was more than three times the total number of female deaths (36 549 *vs.* 11 358). The differences were particularly wide in age group 15–49 where male deaths exceeded female deaths by 4,4 times (27 299 *vs.* 6 234).

It is noted that the order of the causes of death for both males and females combined and for males and for females was generally the same. *Other external cause of accidental injury* was the leading non-natural cause of death for all groups, followed by *event of undetermined intent*. While *transport accidents* was the third leading group of causes of death for both sexes combined and for females only, it was the fourth for males. The third leading non-natural cause was *assault* for males but this cause was the fourth for both sexes combined and for females only. The remaining causes had the same rank for all groups.

Excluding deaths due to *other external causes of accidental injury* and *event of undetermined intent*, it is observed that *transport accidents* was the most common non-natural causes of death in all age groups for both sexes combined, with the exception of those aged 15–49 years. *Assault* was more common among those aged 15–49, affecting 13,4% of non-natural deaths in this age group. The same observation was made for males. However, in the case of females, *transport accidents* were most common for all age groups.

For specific causes, the main difference between males and females was the percentage of deaths due to *assault* and *complications of medical and surgical care.* On the one hand, 11,9% of male non-natural deaths were due to *assault*, while 5,8% of female deaths were due to the same cause. On the other hand, 3,0% of non-natural causes of death for females were due to *complications of medical and surgical care* while 1,0% of male deaths were due to the same cause. Furthermore, for each of the age groups (with the exception of those aged 65 years and older), females had a higher proportion of deaths due to *transport accidents* than males, while males had a higher proportion of deaths due to *assault* than females, with the exception of age group 0–14 where the proportion for females exceeded that for males by only 0,1%.

Table 4.13: Underlying non-natural causes of death by age group and sex, 2010

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*										
Other external causes of accidental injury (W00-X59)	3 559	19 604	3 652	2 712	29 527	74,5	58,4	62,9	71,0	61,5
Event of undetermined intent (Y10-Y34)	476	4 977	819	371	6 643	10,0	14,8	14,1	9,7	13,8
Transport accidents (V01-V99)	580	3 942	771	331	5 624	12,1	11,7	13,3	8,7	11,7
Assault (X85-Y09)	70	4 490	334	131	5 025	1,5	13,4	5,8	3,4	10,5
Complications of medical and surgical care (Y40-Y84)	82	242	160	230	714	1,7	0,7	2,8	6,0	1,5
Intentional self-harm (X60-X84)	10	307	48	28	393	0,2	0,9	0,8	0,7	0,8
Sequelae of external causes of morbidity and mortality (Y85-Y89)	0	26	18	16	60	0,0	0,1	0,3	0,4	0,1
Sub-total	**4 777**	**33 588**	**5 802**	**3 819**	**47 986**	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**
Non-natural causes	4 777	33 588	5 802	3 819	47 986	8,5	14,5	5,5	2,6	8,8
Natural causes	51 708	197 901	100 554	144 556	494 719	91,5	85,5	94,5	97,4	91,2
All causes	**56 485**	**231 489**	**106 356**	**148 375**	**542 705**	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**
Males**										
Other external causes of accidental injury (W00-X59)	2 134	15 867	2 791	1 401	22 193	75,0	58,1	64,1	68,5	60,7
Event of undetermined intent (Y10-Y34)	278	4 009	623	232	5 142	9,8	14,7	14,3	11,3	14,1
Transport accidents (V01-V99)	342	3 064	547	195	4 148	12,0	11,2	12,6	9,5	11,3
Assault (X85-Y09)	40	3 977	262	75	4 354	1,4	14,6	6,0	3,7	11,9
Complications of medical and surgical care (Y40-Y84)	45	124	88	110	367	1,6	0,5	2,0	5,4	1,0
Intentional self-harm (X60-X84)	8	235	33	23	299	0,3	0,9	0,8	1,1	0,8
Sequelae of external causes of morbidity and mortality (Y85-Y89)	0	23	13	10	46	0,0	0,1	0,3	0,5	0,1
Sub-total	**2 847**	**27 299**	**4 357**	**2 046**	**36 549**	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**
Non-natural causes	2 847	27 299	4 357	2 046	36 549	9,5	22,3	7,0	3,2	13,1
Natural causes	27 112	95 152	58 036	62 091	242 391	90,5	77,7	93,0	96,8	86,9
All causes	**29 959**	**122 451**	**62 393**	**64 137**	**278 940**	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**
Females***										
Other external causes of accidental injury (W00-X59)	1 413	3 704	857	1 309	7 283	73,7	59,4	59,6	74,0	64,1
Event of undetermined intent (Y10-Y34)	198	961	196	139	1 494	10,3	15,4	13,6	7,9	13,2
Transport accidents (V01-V99)	238	871	223	135	1 467	12,4	14,0	15,5	7,6	12,9
Assault (X85-Y09)	29	505	70	56	660	1,5	8,1	4,9	3,2	5,8
Complications of medical and surgical care (Y40-Y84)	36	118	72	120	346	1,9	1,9	5,0	6,8	3,0
Intentional self-harm (X60-X84)	2	72	15	5	94	0,1	1,2	1,0	0,3	0,8
Sequelae of external causes of morbidity and mortality (Y85-Y89)	0	3	5	6	14	0,0	0,0	0,3	0,3	0,1
Sub-total	**1 916**	**6 234**	**1 438**	**1 770**	**11 358**	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**
Non-natural causes	1 916	6 234	1 438	1 770	11 358	7,3	5,7	3,3	2,1	4,3
Natural causes	24 202	102 486	42 437	82 406	251 531	92,7	94,3	96,7	97,9	95,7
All causes	**26 118**	**108 720**	**43 875**	**84 176**	**262 889**	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**

* Excluding 1 151 cases with unspecified age, ** Excluding 742 cases with unspecified age; *** Excluding 177 cases with unspecified age.

Non-natural causes of death by province of death occurrence

The distribution of the underlying non-natural causes of death by province for 2010 is shown in Table 4.14. It is observed that Western Cape (11,5%) had the highest proportion of deaths due to non-natural causes, followed by Gauteng (9,8%); Eastern Cape (9,1%); Northern Cape (8,9%) and KwaZulu-Natal (8,8%). All these provinces exceeded the national average of 8,8% of deaths due to non-natural causes in 2010. The lowest proportions of deaths due to non-natural causes were observed in Free State (7,3%), North West (7,4%) and Limpopo (7,5%).

The most common causes of non-natural deaths in all provinces were *other external causes of accidental injury* where at least 44% of deaths resulted from this broad group in each province. The proportion of deaths due to this cause was highest in Mpumalanga (80,8%) and lowest in Limpopo (44,5%). Excluding this cause and *event of undetermined intent*, *transport accidents* accounted for the highest proportion of deaths in Eastern Cape, Free State and Limpopo. The most common non-natural cause of death for the remaining provinces was *assault. Complications of medical and surgical care, intentional self-harm* and *sequelae of external causes of morbidity and mortality* were least common in all provinces.

The highest proportion of deaths due to *transport accidents* was observed in Limpopo where over a third (36,3%) of non-natural cases were due to this cause, followed by Free State (16,3%). Gauteng (5,4%) had the lowest proportion of non-natural deaths due to *transport accidents.*

The proportion of deaths due to *assault* was highest in Eastern Cape (17,0%), followed by Western Cape (16,7%), Free State (15,0%) and Northern Cape (14,7%). Mpumalanga (3,4%), Limpopo (4,5%) and Gauteng (6,4%) had the lowest proportions of deaths due to *assault. Intentional self-harm* was highest in Northern Cape (4,2%).

Non-natural causes of death by district municipalities

The information provided in Appendices O to O.2 also shows the proportion of deaths due to non-natural causes for each of the district municipalities. As noted above, the provinces with the highest proportion of deaths due to non-natural causes were Western Cape, Gauteng, Eastern Cape, Northern Cape and KwaZulu-Natal.

Districts with the highest proportion of deaths due to *external causes of morbidity and mortality* (non-natural causes) was Central Karoo in Western Cape, where as much as 21,4% of deaths in this district were due to this main group of causes of death. The other districts with high proportions of deaths due to non-natural causes (over 10%) were Overberg in Western Cape (13,3%); Siyanda in Northern Cape (11,6%); City of Cape Town in Western Cape (11,4%); Buffalo City Metro in Eastern Cape (11,2%); Cape Winelands in Western Cape (10,9%); West Rand in Gauteng (10,9%); Cacadu in Eastern Cape (10,8%); West Coast (10,7%) and Eden (10,6%) in Western Cape; and eThekwini Metro in KwaZulu-Natal (10,2%).

Districts with the lowest proportion of non-natural causes of death were Sisonke in KwaZulu-Natal (5,5%); Dr Ruth Segomotsi Mompati (5,6%) and Ngaka Modiri Molema (5,9%) both in North West; and John Taolo Gaetsewe in Northern Cape (5,6%).

Table 4.14: Underlying non-natural causes of death by province, 2010

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.	%
Other external causes of accidental injury (W00-X59)	2 976	56,8	3 932	53,4	905	67,3	1 885	57,6	6 499	63,6	1 764	59,7	7 094	68,6	2 791	80,8	1 671	44,5
Event of undetermined intent (Y10-Y34)	641	12,2	1 200	16,3	42	3,1	270	8,3	1 539	15,1	574	19,4	1 808	17,5	103	3,0	485	12,9
Transport accidents (V01-V99)	568	10,8	857	11,6	116	8,6	532	16,3	932	9,1	277	9,4	559	5,4	370	10,7	1 364	36,3
Assault (X85-Y09)	874	16,7	1 250	17,0	197	14,7	490	15,0	968	9,5	296	10,0	665	6,4	117	3,4	168	4,5
Complications of medical and surgical care (Y40-Y84)	89	1,7	82	1,1	25	1,9	67	2,0	159	1,6	27	0,9	188	1,8	40	1,2	33	0,9
Intentional self-harm (X60-X84)	77	1,5	30	0,4	56	4,2	23	0,7	107	1,0	15	0,5	13	0,1	31	0,9	36	1,0
Sequelae of external causes of morbidity and mortality (Y85-Y89)	18	0,3	12	0,2	3	0,2	3	0,1	9	0,1	1	0,0	11	0,1	3	0,1	0	0,0
Sub-total	**5 243**	**100,0**	**7 363**	**100,0**	**1 344**	**100,0**	**3 270**	**100,0**	**10 213**	**100,0**	**2 954**	**100,0**	**10 338**	**100,0**	**3 455**	**100,0**	**3 757**	**100,0**
Non-natural causes	5 243	11,5	7 363	9,1	1 344	8,9	3 270	7,3	10 213	8,8	2 954	7,4	10 338	9,8	3 455	8,3	3 757	7,5
Natural causes	40 468	88,5	73 264	90,9	13 839	91,1	41 748	92,7	105 676	91,2	37 105	92,6	95 335	90,2	38 318	91,7	46 260	92,5
All causes	**45 711**	**100,0**	**80 627**	**100,0**	**15 183**	**100,0**	**45 018**	**100,0**	**115 889**	**100,0**	**40 059**	**100,0**	**105 673**	**100,0**	**41 773**	**100,0**	**50 017**	**100,0**

4.8 Comparison between immediate, contributing and underlying causes of death

The death notification form makes provision for several causes of death to be reported on each form. As provided in Table 4.1, the maximum number of causes recorded was six causes. These causes are recorded as either immediate, contributing or underlying. For the 2010 deaths, over half of the forms (58,9%) had just one cause of death indicated while 40,9% had two or more causes.

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

Tuberculosis was the most frequently recorded cause of death in 2010, mentioned in a total of 77 924 (14,3%) death notification forms, followed by *ill-defined and unknown cause of mortality* mentioned in 67 142 (12,3%) forms, *influenza and pneumonia* mentioned in 65 858 (12,1%) death notification forms and *other forms of heart disease*, mentioned in 56 202 (10,3%) death notification forms. *Hypertensive diseases* (7,0%) were the fifth most commonly mentioned cause of death.

Other external causes of accidental injury were the eighth most commonly mentioned causes (5,7%) and the only non-natural cause appearing among the 20 most commonly mentioned causes of death. None of the neoplasms were among the 20 most commonly mentioned causes of death.

Other viral diseases (4,6%), *certain disorders involving the immune mechanism* (4,1%) and *HIV disease* (3,4%) were the ninth, eleventh and sixteenth most commonly mentioned causes of death.

Based on the 20 most commonly mentioned causes, the most common main groups of causes of death mentioned on death notification forms in 2010 were *certain infectious and parasitic diseases, diseases of the respiratory system* and *diseases of the circulatory system.* Almost a third (32,2%) of forms mentioned *certain infectious and parasitic diseases* on the 2010 forms, while *diseases of the respiratory system* were mentioned on 21,7% of the forms, and *diseases of the circulatory system* in 20,7% of the forms. *Endocrine, nutritional and metabolic diseases* were mentioned in a total of 8,2% of the forms.

Table 4.15: Distribution of the 20 most commonly reported causes of death, 2010

Rank	Causes of death (ICD-10)	Number of deaths in which the cause was reported	% of all deaths
1	Tuberculosis (A15-A19)*	77 924	14,3
2	Ill-defined and unknown causes of mortality (R95-R99)	67 142	12,3
3	Influenza and pneumonia (J09-J18)	65 858	12,1
4	Other forms of heart disease (I30-I52)	56 202	10,3
5	Hypertensive diseases (I10-I15)	37 979	7,0
6	Cerebrovascular diseases (I60-I69)	34 594	6,4
7	Intestinal infectious diseases (A00-A09)	31 729	5,8
8	Other external causes of accidental injury (W00-X59)	31 108	5,7
9	Other viral diseases (B25-B34)	24 904	4,6
10	Diabetes mellitus (E10-E14)	24 208	4,5
11	Certain disorders involving the immune mechanism (D80-D89)	22 088	4,1
12	Other bacterial diseases (A30-A49)	21 830	4,0
13	Metabolic disorders (E70-E90)	20 151	3,7
14	Renal failure (N17-N19)	20 017	3,7
15	Other diseases of the respiratory system (J95-J99)	19 262	3,5
16	Human immunodeficiency virus [HIV] disease (B20-B24)	18 697	3,4
17	Chronic lower respiratory diseases (J40-J47)	18 352	3,4
18	Ischaemic heart diseases (I20-I25)	18 145	3,3
19	Other acute lower respiratory infections (J20-J22)	14 783	2,7
20	Inflammatory diseases of the central nervous system (G00-G09)	12 658	2,3

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

All the natural underlying causes of death that appeared among the ten leading causes of death also appeared among the 20 most commonly mentioned causes. The ten leading underlying natural causes of death shown in Table 4.5 for 2010 deaths are presented in Table 4.16 to show the breakdown of the number of deaths by whether the death was selected as the underlying cause or whether it was reported as the immediate or contributing cause. Within each category, the counts of underlying causes and immediate or contributing causes are not duplicated, so that they can be summed up to equal the total number of times a specific cause of death was recorded on a death notification form.

The table shows that in over 80% of deaths where *HIV disease* (98,0%), *diabetes mellitus* (88,7%), *intestinal infectious diseases* (86,3%) and *tuberculosis* (80,6%) were mentioned, they were selected as underlying causes. In less than half of the cases where *hypertensive diseases* (39,2%), *other forms of heart disease* (46,0%) and *other viral diseases* (49,5%) were mentioned, they were selected as the underlying causes.

Table 4.16: Number and percentage of deaths selected as underlying or reported as immediate or contributing causes of death: 2010

Causes of death (ICD-10)	Under-lying rank	Number of deaths			Percentage of any mention		
		Underlying	Immediate or contributing	Total recorded	Underlying	Immediate or contributing	Total recorded
Tuberculosis (A15-A19)*	1	62 827	15 097	77 924	80,6	19,4	100,0
Influenza and pneumonia (J09-J18)	2	39 027	26 831	65 858	59,3	40,7	100,0
Intestinal infectious diseases (A00-A09)	3	27 383	4 346	31 729	86,3	13,7	100,0
Other forms of heart disease (I30-I52)	4	25 827	30 375	56 202	46,0	54,0	100,0
Cerebrovascular diseases (I60-I69)	5	24 664	9 930	34 594	71,3	28,7	100,0
Diabetes mellitus (E10-E14)	6	21 475	2 733	24 208	88,7	11,3	100,0
Human immunodeficiency virus [HIV] disease (B20-B24)	7	18 325	372	18 697	98,0	2,0	100,0
Hypertensive diseases (I10-I15)	8	14 890	23 089	37 979	39,2	60,8	100,0
Chronic lower respiratory diseases (J40-J47)	9	13 099	5 253	18 352	71,4	28,6	100,0
Other viral diseases (B25-B34)	10	12 332	12 572	24 904	49,5	50,5	100,0

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

5. Summary and concluding remarks

This statistical release is based on information on mortality and causes of death from the South African civil registration system. The data were drawn from death notification forms that are completed when deaths are registered at the Department of Home Affairs (DHA). The information on causes of death is as reported by medical practitioners and other certifying officials. All completed forms are sent to Statistics South Africa (Stats SA) for data processing and publication of information on mortality and causes of death. This release focuses on deaths that occurred in 2010, with some information drawn from death occurrences for the period 1997–2009 to show trends in mortality and causes of death.

The results generally showed that mortality continues to decline in the country. A total of 543 856 deaths occurred in 2010, which was a 6,2% decline from 579 711 deaths that occurred in 2009. Decreases in the overall number of deaths from the civil registration system have been observed since 2007. The National Population Register, which is maintained by the Department of Home Affairs, also showed annual declines in the number of deaths since 2007. Furthermore, median ages at deaths showed that mortality occurs later in life, which is also an indication of declining mortality. In 2010, the median age at death was estimated at around 48 years, which has increased by about five years since 2004.

The highest number of deaths that occurred in 2010 were among those aged between 30 and 39 years while the lowest number was observed among those aged between five and 14 years. During 2006–2010, the proportion of deaths consistently declined annually in ages younger than 45 years but increased in ages 50 years and older. The decrease was particularly notable at age zero and at ages 30 to 39 years.

With regard to sex differentials, the results showed that there were more male than female deaths in 2010. The trend analysis from 1997 showed two distinct patterns: Prior to 2005, the proportion of male deaths declined while that of female deaths increased, thus gradually closing the gap in the proportion of deaths between males and females. After 2005, there was a reversal in the direction of the proportions such that the proportions of male deaths started to increase and that of female deaths began to decline, gradually widening the gap between the proportions of male and female deaths.

Other differentials indicated that most deaths took place in KwaZulu-Natal and Gauteng and the least in Northern Cape, which is in line with the population distribution in the country. The majority of those who died in 2010 died in the provinces in which they usually lived. Nearly 30% of all deaths took place at home.

A great majority of deaths that took place in 2010 were due to natural causes, mainly from the main group of *certain infectious and parasitic diseases* which accounted for about a quarter of all deaths in 2010. *Tuberculosis* maintained its rank as the number one leading cause of death in South Africa. Nearly 12% of deaths that occurred in 2010 were due to *tuberculosis.* While the number of deaths due to *multidrug-resistant tuberculosis* decreased between 2009 and 2010, there was an increase in deaths associated with *extensively drug-resistant tuberculosis.*

Other causes that contributed considerably to the number of deaths in 2010 were *influenza pneumonia*, *intestinal infectious diseases*, *other forms of heart disease, cerebrovascular diseases* and *diabetes mellitus. Human immunodeficiency virus (HIV) disease* was the seventh leading cause of death, contributing 3,4% of all deaths that occurred in 2010. What is also notable in the trend analysis of causes of death is the decrease in the number of deaths due to the first three leading underlying natural causes of death (*tuberculosis, influenza and pneumonia* and *intestinal infectious diseases*). The number of deaths due to these causes decreased by at least 10% each, between 2009 and 2010. On the contrary, the number of deaths due to *diabetes mellitus* and *HIV disease* increased by 3,8% and 3,0% respectively between 2009 and 2010. These observations were also made for males as well as for females.

Differentials by sex show that *tuberculosis* and *influenza and pneumonia* were the leading underlying natural causes of death for both males and females. However, *tuberculosis* contributed slightly more to male deaths than to female deaths while *influenza and pneumonia* contributed more to female deaths than to male deaths. Whereas eight of the ten leading causes of death were the same for males and females, *chronic lower respiratory* and *ischaemic heart diseases* were among the ten leading causes of death only for the males while *other viral diseases*

and *certain disorder involving the immune mechanism* were among the ten leading causes of death only for the females.

The leading cause of death for neonatal deaths in 2010 was *respiratory and cardiovascular disorders specific to the perinatal period*, which accounted for over 40% of all neonatal deaths. *Intestinal infectious diseases* were the leading cause of death from 29 days up to fourteen years, after which *tuberculosis* was leading up to 64 years. The most common causes of death at older ages (65 and older) were *cerebrovascular diseases* and *other forms of heart disease.*

Tuberculosis was the leading cause of death in all provinces except Free State and Limpopo where it ranked second in both provinces. KwaZulu-Natal had the highest proportion of deaths due to *tuberculosis* and Western Cape had the lowest proportion of deaths due to this cause. The leading cause of death in Free State and Limpopo was *influenza and pneumonia.*

The 2010 data showed that nearly 10% of deaths were due to non-natural causes, mainly affecting age group 15–19. Furthermore, the number of male deaths due to non-natural causes was more than three times the number of female deaths due to non-natural causes. Most non-natural causes resulted from *other external causes of accidental injury*. *Transport accidents* and *assault* contributed about 10% of all non-natural causes of death for each cause.

The distribution of the underlying non-natural causes of death by province for 2010 showed that Western Cape had the highest proportion of deaths due to non-natural causes, followed by Gauteng and Eastern Cape. The lowest proportions of deaths due to non-natural causes were observed in Free State, North West and Limpopo.

The release also addressed quality issues of data on mortality and causes of death from the South African civil registration system. Timely reporting of deaths was noted, with an indication that nearly 90% of deaths that are registered do get registered within the week of occurrence. However, this release is published two years and three months from the end of 2010 which, although by international standards is adequate, can be improved. During the processing of 2010 data, the coding of information on causes of death was revised to go up to 4th-character and the data capturing systems were improved.

The number of deaths that were registered late were quite high, with a total of over 8 000 deaths that occurred between 1997 and 2009 but were registered between 2010 and 2012. While the reporting of age, sex and province of death occurrence was very good, the analysis was compromised by the high proportion of missing information for other variables such as population group, province of residence of the deceased, education, smoking status, pregnancy status, occupation and industry.

The quality of information on causes of death is also a concern. The proportion of deaths assigned to ill-defined causes is high and there have not been any improvements over time. This is coupled with the fact that a large proportion of deaths took place at home. It is anticipated that the training of medical practitioners in completing death notification forms that was initiated by Stats SA in collaboration with the DHA and the Department of Health (DoH) during 2012–2013 will improve the quality of death certification in the country.

Notwithstanding data quality issues highlighted above, the data on mortality and causes of death has proved to be a valuable source of data that can be used to assess the well-being and health status of the South Africa population with the aim of preventing and reducing premature mortality and improving the quality of life. Concerted efforts between the public, the DHA, the DoH, Stats SA and other key stakeholders are required for timely, accurate and relevant information on mortality and causes of death in the country.

References

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

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

Dorrington R. E and D. Bradshaw. 2011. “Maternal mortality in South Africa: lessons from a case study in the use of deaths reported by households in censuses and survey”, *Journal of Population Research* 28: 49-73.

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

Mahapatra Prasanta, Kenji Shibuya, Alan D Lopez, Francesca Coullare, Francis C Notzon, Simon Szreter 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.

Preston S. and Hill K., 1980. “Estimating completeness of death registration”, *Population Studies*, 34(2): 349–366.

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

Republic of South Africa, 1959. Inquests Act, 1959 (Act No. 58 of 1959).

Stats SA (Statistics South Africa), 2011. Mid-year population estimates, South Africa (2011), derived from interactive time series data. Pretoria: Statistics South Africa.

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

WHO (World Health Organization), 2003, Epidemiology and Burden of Disease, Geneva: World Health Organization.

WHO (World Health Organization), 2007a. “Civil registration: why counting births and deaths is important”, *Fact sheet Number 324*, October 2007, available at http://www.who.int/mediacentre/factsheets/fs324/en/index.html. Accessed on 29 September 2010.

WHO (World Health Organization), 2007b Everybody's business. Strengthening Health Systems to improve Health outcomes. WHO's Framework for Action. Geneva. Switzerland

WHO (World Health Organization), 2013. Analysing mortality levels and causes-of-death (ANACod) Electronic Tool, Version 1.1. 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 is the complete expulsion or extraction from its mother's womb of a product of conception, irrespective of the duration of the pregnancy, which after such separation, breathes or shows any other evidence of life.

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.

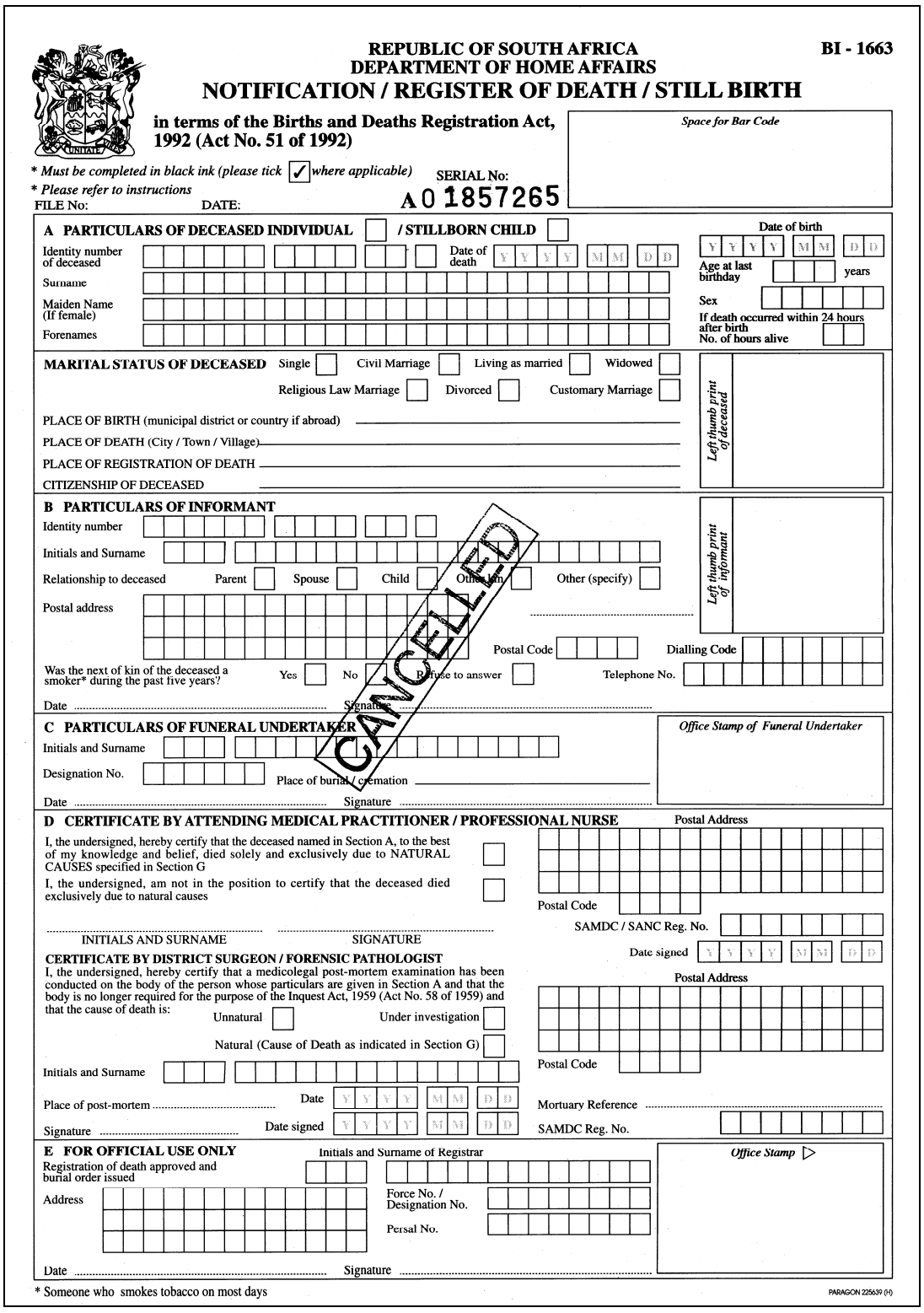
Post-neonatal death is a live-born infant dying after 28 completed days of birth but before the first year of life is completed.

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

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

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

Appendix B: Death notification form (BI-1663)



REPUBLIC OF SOUTH AFRICA
DEPARTMENT OF HOME AFFAIRS

BI - 1663

NOTIFICATION / REGISTER OF DEATH / STILL BIRTH

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

Space for Bar Code

* *Must be completed in black ink (please tick ✓ where applicable)*
* *Please refer to instructions*
FILE No: DATE: SERIAL No: A0 1857265

A PARTICULARS OF DECEASED INDIVIDUAL / STILLBORN CHILD

Identity number of deceased
Date of death (Y Y Y Y M M D D)
Date of birth (Y Y Y Y M M D D)
Age at last birthday ___ years
Surname
Maiden Name (If female)
Forenames
Sex
If death occurred within 24 hours after birth No. of hours alive

MARITAL STATUS OF DECEASED Single Civil Marriage Living as married Widowed Religious Law Marriage Divorced Customary Marriage

Left thumb print of deceased

PLACE OF BIRTH (municipal district or country if abroad)
PLACE OF DEATH (City / Town / Village)
PLACE OF REGISTRATION OF DEATH
CITIZENSHIP OF DECEASED

B PARTICULARS OF INFORMANT

Identity number
Initials and Surname
Relationship to deceased Parent Spouse Child Other kin Other (specify)
Postal address
Postal Code
Dialling Code
Was the next of kin of the deceased a smoker* during the past five years? Yes No Refuse to answer
Telephone No.
Date Signature

Left thumb print of informant

CANCELLED

C PARTICULARS OF FUNERAL UNDERTAKER

Office Stamp of Funeral Undertaker

Initials and Surname
Designation No.
Place of burial / cremation
Date Signature

D CERTIFICATE BY ATTENDING MEDICAL PRACTITIONER / PROFESSIONAL NURSE

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

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

INITIALS AND SURNAME SIGNATURE

Postal Address
Postal Code
SAMDC / SANC Reg. No.
Date signed (Y Y Y Y M M D D)

CERTIFICATE BY DISTRICT SURGEON / FORENSIC PATHOLOGIST

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

Unnatural Under investigation
Natural (Cause of Death as indicated in Section G)

Postal Address
Postal Code

Initials and Surname
Place of post-mortem Date (Y Y Y Y M M D D)
Signature Date signed (Y Y Y Y M M D D)
Mortuary Reference
SAMDC Reg. No.

E FOR OFFICIAL USE ONLY

Registration of death approved and burial order issued
Initials and Surname of Registrar
Address
Force No. / Designation No.
Persal No.
Office Stamp ▷
Date Signature

* Someone who smokes tobacco on most days

PARAGON 225639 (H)

Appendix B: Reverse side of the 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: A01857265

FILE No: DATE:

F DEMOGRAPHIC DETAILS

Initials and Surname of deceased

Identity Number

Place of death 1. Hospital: (Inpatient ☐ ER/ Outpatient ☐ DOA ☐) 2. Nursing Home ☐ 3. Home ☐ 4. Other (Specify) ☐

FACILITY NAME (If not institution, give street and number) .....

Usual residential address of deceased # ..... Suburb

Town / Village

Name of Plot, Farm, etc..... Census Enumerator Area

Street name and number ..... Magist. Dist. .....

Deceased's Education (Specify ✓ only highest class completed/achieved) Postal 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

Province .....

Country .....

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

CANCELLED

Was the deceased a smoker* five years ago? (✓) : Yes ☐ No ☐ Do not know ☐ Not applicable (minor) ☐

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.

		Approximate interval between onset and Death (Days/Months/Years)	FOR OFFICE USE ONLY ICD-10
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? (✓) : Yes ☐ No ☐

If **stillborn**, please write mass in grams

Do you consider the deceased to be: African ☐ White ☐ Indian ☐ Coloured ☐ Other ☐ (Specify) _____

Method of ascertainment of cause of death:

1. Autopsy ☐ 2. Opinion of attending medical practitioner ☐ 3. Opinion of **attending medical practitioner on duty** ☐
4. Opinion of registered professional nurse ☐ 5. Interview of family member ☐
6. Other ☐ (Specify) _____

Where someone lived on most days

* Someone who smokes tobacco on most days

Appendix B1: Death notification form (DHA-1663)

G.P.-S. 09/09

REPUBLIC OF SOUTH AFRICA
DEPARTMENT OF HOME AFFAIRS

DHA-1663 A
Page 1 of 3

BARCODE

NOTICE OF DEATH / STILL BIRTH

[Births and Deaths Registration Act 51 of 1992]

[Regulations 11 and 14]

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

Left thumbprint of deceased

Right thumbprint of deceased

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)

None	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	Unknown
(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, exterritorial 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-1663)

G.P.-S. 09/09

REPUBLIC OF SOUTH AFRICA
DEPARTMENT OF HOME AFFAIRS

DHA-1663 A
Page 2 of 3

BARCODE

NOTICE OF DEATH / STILL BIRTH

[Births and Deaths Registration Act 51 of 1992]

[Regulations 11 and 14]

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

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 Y Y Y Y M M D D Signature

C. CERTIFICATE BY MEDICAL PRACTITIONER/ FORENSIC PATHOLOGIST

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

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

☐ 30.1 Natural ☐ 30.2 Unnatural ☐ 30.3 Under investigation

31. Date of Post-mortem Y Y Y Y M M D D

32. Name of Medico-legal Mortuary / Mortuary 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 Y Y Y Y M M D D Signature

D. PARTICULARS OF INFORMANT

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

40. Identity No. (Passport No. if foreigner) 41. Date of Birth Y Y Y Y M M D D

42. Citizenship

43. Surname

44. Forenames

45. Residential Address: Street

Town

Province Postal Code

Left thumb print of informant

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 Y Y Y Y M M D D Place signed

Appendix B1: Death notification form (DHA-1663)

G.P.-S. 09/09

REPUBLIC OF SOUTH AFRICA
DEPARTMENT OF HOME AFFAIRS

DHA-1663 A
Page 3 of 3

BARCODE

NOTICE OF DEATH / STILL BIRTH

[Births and Deaths Registration Act 51 of 1992]

[Regulations 11 and 14]

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

Left thumbprint of funeral undertaker

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:

Office stamp of funeral undertaker

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):

Office stamp of DHA

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

Appendix B1: Death notification form (DHA-1663)

NOTICE OF DEATH / STILL BIRTH

DHA-1663 B

Page 1 of 1

Confirmation for Medical and Health use Only

(After completion seal to ensure confidentiality)

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 ☑ the CORRECT box, where required.
All fields are COMPULSORY. Incomplete applications and applications that are not legible may be considered invalid.

File no _____ Date _____

G. MEDICAL CERTIFICATE OF CAUSE OF DEATH

Instructions: Section G is to be filled out by **Medical Practitioner /Professional Nurse / Forensic Pathologist**, who has determined the cause of death

PARTICULARS OF DECEASED

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

68. Gender ☐ 68.1 Male ☐ 68.2 Female ☐ 68.3 Indeterminable

69. Surname

70. Forenames

71. Population Group ☐ 71.1 African ☐ 71.2 White ☐ 71.3 Indian/Asian ☐ 71.4 Coloured ☐ 71.5 Other (specify) _____

72. Place of Death ☐ 72.1 Hospital/Inpatient ☐ 72.2 ER/Outpatient ☐ 72.3 DOA ☐ 72.4 Nursing Home ☐ 72.5 At Home ☐ 72.6 Other (specify)

73. Name of Health Facility/Practice

74. Facility Contact Telephone No. incl. Area Code

75. Patient File No.

76. Contact Person at Facility: Surname

Forenames

Role/Rank

G.1 FOR DEATHS OCCURRING AFTER ONE WEEK OF BIRTH

Instructions: Section G.1 is to be completed for **all deaths** that occurred after one week of birth

77. CAUSES OF DEATH

For office use only

ICD-10

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**

Approximate interval between onset and death (Days / Months / Years)

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. b) _____ Due to (or as a consequence of)

Enter UNDERLYING CAUSE last (Disease or injury that initiated events resulting in death) c) _____ Due to (or as a consequence of)

d) _____

Part 2 Other significant conditions contributing to death but not resulting in underlying cause given in **Part 1** _____

78. If a **female**, was she pregnant at the time of death or up to 42 days prior to death? (☑) ☐ 82.1 Yes ☐ 82.2 No

79. Method used to ascertain the cause of death (tick all that apply):

☐ 79.1 Autopsy ☐ 79.2 Post mortem examination ☐ 79.3 Opinion of attending medical practitioner ☐ 79.4 Opinion of attending medical practitioner on duty

☐ 79.5 Opinion of registered professional nurse ☐ 79.6 Interview of family member ☐ 79.7 Other (specify) _____

G.2 FOR STILL BIRTHS AND DEATHS OCCURRING WITHIN ONE WEEK OF BIRTH (PERINATAL DEATHS)

Instructions: Section G.2 is to be completed for all **still births and deaths** that occurred within one week of birth (perinatal deaths)

Mother

80. Identity Number

81. Date Of Birth Y Y Y Y M M D D

82. Age of last birthday/ DoB unknown

83. Number of previous pregnancies resulting in:

☐☐ 83.1 Live births ☐☐ 83.2 Still births ☐☐ 83.3 Abortions

84. Outcome of last previous pregnancy (tick one):

☐ 84.1 Live birth ☐ 84.2 Still birth ☐ 84.3 Abortion

85. Date of last previous delivery Y Y Y Y M M D D

86. First day of last menstrual period Y Y Y Y M M D D

Or, if unknown, estimated duration of pregnancy (in completed weeks)

87. Method of delivery: ☐ 87.1 Spontaneous ☐ 87.2 Forceps delivery ☐ 87.3 Forceps and rotation ☐ 87.4 Vacuum extractor ☐ 87.5 Caesarean section ☐ 87.6 Other (specify) _____

88. Antenatal care two or more visits:

☐ 88.1 Yes ☐ 88.2 No ☐ 88.3 Unknown

Child

89. Type of death: ☐ 89.1 Still birth ☐ 89.2 Live birth

90. Birth weight (in grams)

91. This birth was: ☐ 91.1 Single birth ☐ 91.2 First twin ☐ 91.3 Second twin ☐ 91.4 Other multiple

92. If still born, heartbeat ceased:

☐ 92.1 Before labour

☐ 92.2 During labour but before delivery

☐ 92.3 Before delivery but not known whether before or during labour

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

94. Attendant at birth:

☐ 94.1 Physician

☐ 94.2 Trained midwife

☐ 94.3 Other trained person (specify) _____

☐ 94.4 Other (specify) _____

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 (☑)

☐ 96.1 Certified causes of death has been confirmed by autopsy ☐ 96.2 Autopsy information may be available later ☐ 96.3 Autopsy not performed

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

Age group	1997				1998				1999			
	Males	Females	Unsp.	Total	Males	Females	Unsp.	Total	Males	Females	Unsp.	Total
0	12 986	11 546	203	24 735	14 926	13 254	314	28 494	14 731	13 455	438	28 624
1-4	4 049	3 650	52	7 751	4 860	4 485	96	9 441	5 068	4 636	98	9 802
5-9	1 706	1 253	17	2 976	1 779	1 435	36	3 250	1 894	1 505	34	3 433
10-14	1 546	1 189	20	2 755	1 693	1 288	23	3 004	1 649	1 305	23	2 977
15-19	3 777	2 475	23	6 275	4 105	2 902	62	7 069	4 353	3 325	89	7 767
20-24	8 176	5 447	49	13 672	8 790	6 903	109	15 802	8 637	8 291	105	17 033
25-29	10 922	7 430	43	18 395	13 076	9 853	110	23 039	13 885	12 606	141	26 632
30-34	11 831	7 186	49	19 066	14 363	9 703	127	24 193	16 290	12 255	119	28 664
35-39	11 966	6 856	51	18 873	14 603	8 917	97	23 617	16 446	10 803	111	27 360
40-44	11 778	6 397	36	18 211	13 921	7 920	94	21 935	15 202	8 906	90	24 198
45-49	12 219	6 362	50	18 631	14 182	7 671	88	21 941	14 968	8 511	99	23 578
50-54	11 288	6 237	29	17 554	12 996	7 205	79	20 280	13 862	7 751	79	21 692
55-59	12 642	7 923	45	20 610	13 920	8 873	107	22 900	14 056	8 673	84	22 813
60-64	11 183	9 287	50	20 520	12 418	9 994	59	22 471	12 677	10 036	82	22 795
65-69	12 462	11 038	45	23 545	13 237	12 454	83	25 774	12 820	12 312	91	25 223
70-74	11 285	10 059	48	21 392	12 732	11 790	53	24 575	12 852	12 246	70	25 168
75-79	11 184	12 333	44	23 561	11 413	12 479	87	23 979	10 693	11 583	63	22 339
80-84	6 599	8 777	32	15 408	7 875	11 042	48	18 965	7 600	11 316	73	18 989
85-89	3 950	6 917	25	10 892	4 257	7 804	34	12 095	4 450	7 942	51	12 443
90+	2 028	4 730	13	6 771	2 363	5 560	29	7 952	2 210	5 380	30	7 620
Unspecified	3 109	2 362	106	5 577	2 821	2 092	195	5 108	1 491	1 108	109	2 708
Total	**176 686**	**139 454**	**1 030**	**317 170**	**200 330**	**163 624**	**1 930**	**365 884**	**205 834**	**173 945**	**2 079**	**381 858**

*Data for 1997–1999 have been updated with late registrations processed in 2011/13.

Appendix C1: Number of deaths by age, sex and year of death, 2000–2002*

Age group	2000				2001				2002			
	Males	Females	Unsp.	Total	Males	Females	Unsp.	Total	Males	Females	Unsp.	Total
0	15 001	13 523	351	28 875	15 466	14 070	307	29 843	17 869	16 190	338	34 397
1-4	5 380	4 918	86	10 384	5 877	5 300	78	11 255	6 319	5 677	87	12 083
5-9	1 998	1 595	29	3 622	2 122	1 706	28	3 856	2 400	1 962	17	4 379
10-14	1 722	1 337	36	3 095	1 747	1 465	22	3 234	1 867	1 484	24	3 375
15-19	4 319	3 484	72	7 875	4 475	3 910	62	8 447	4 735	4 287	58	9 080
20-24	8 876	9 871	84	18 831	8 937	10 920	84	19 941	9 571	12 480	109	22 160
25-29	15 075	15 718	105	30 898	16 843	19 277	108	36 228	18 634	23 306	133	42 073
30-34	18 482	15 801	108	34 391	20 909	18 724	109	39 742	23 892	23 520	145	47 557
35-39	18 548	13 598	94	32 240	21 085	15 857	101	37 043	24 077	19 439	124	43 640
40-44	17 123	11 010	77	28 210	19 334	12 848	94	32 276	21 584	15 491	113	37 188
45-49	16 119	9 562	78	25 759	17 895	10 939	62	28 896	19 294	12 652	111	32 057
50-54	15 286	9 095	64	24 445	16 892	10 140	73	27 105	18 608	11 249	102	29 959
55-59	13 931	8 873	74	22 878	14 557	9 126	65	23 748	15 402	10 008	71	25 481
60-64	14 235	11 256	67	25 558	15 104	12 067	66	27 237	16 167	12 703	80	28 950
65-69	12 588	12 066	52	24 706	13 017	12 798	64	25 879	13 742	13 282	63	27 087
70-74	13 117	14 139	67	27 323	14 042	15 123	60	29 225	13 790	15 471	62	29 323
75-79	10 351	11 536	48	21 935	10 849	12 037	61	22 947	11 096	12 834	70	24 000
80-84	8 483	12 639	31	21 153	9 163	13 909	47	23 119	9 540	14 194	60	23 794
85-89	4 681	8 228	27	12 936	4 580	8 359	31	12 970	4 374	8 317	34	12 725
90+	2 530	6 526	31	9 087	3 023	7 158	28	10 209	3 294	7 665	33	10 992
Unspecified	1 185	891	143	2 219	1 046	782	98	1 926	1 137	788	112	2 037
Total	**219 030**	**195 666**	**1 724**	**416 420**	**236 963**	**216 515**	**1 648**	**455 126**	**257 392**	**242 999**	**1 946**	**502 337**

*Data for 2000–2002 have been updated with late registrations processed in 2011/13.

Appendix C2: Number of deaths by age, sex and year of death, 2003–2005*

Age group	2003				2004				2005			
	Males	Females	Unsp.	Total	Males	Females	Unsp.	Total	Males	Females	Unsp.	Total
0	19 948	18 033	434	38 415	21 736	19 167	530	41 433	24 039	21 922	474	46 435
1-4	7 126	6 278	78	13 482	8 252	7 625	71	15 948	8 208	7 310	80	15 598
5-9	2 777	2 197	28	5 002	3 185	2 799	13	5 997	3 358	2 800	21	6 179
10-14	2 001	1 641	25	3 667	2 139	1 774	12	3 925	2 145	1 856	17	4 018
15-19	4 836	4 550	70	9 456	4 681	4 612	41	9 334	4 769	4 540	52	9 361
20-24	10 330	14 170	104	24 604	10 362	15 048	76	25 486	10 488	14 852	89	25 429
25-29	20 007	26 199	147	46 353	19 799	27 526	111	47 436	19 309	27 237	105	46 651
30-34	27 474	28 106	140	55 720	28 429	30 617	79	59 125	28 786	31 233	105	60 124
35-39	26 420	22 627	112	49 159	28 211	25 132	86	53 429	29 398	26 225	100	55 723
40-44	24 717	18 409	117	43 243	26 454	20 539	67	47 060	27 454	21 466	83	49 003
45-49	22 021	14 467	85	36 573	23 075	16 235	64	39 374	24 421	17 359	76	41 856
50-54	20 563	12 874	67	33 504	21 096	14 086	46	35 228	21 501	14 947	57	36 505
55-59	17 185	10 976	49	28 210	18 052	12 014	32	30 098	19 692	13 303	47	33 042
60-64	17 371	13 290	56	30 717	16 958	13 387	28	30 373	16 834	13 240	34	30 108
65-69	14 654	13 884	53	28 591	15 203	13 794	25	29 022	16 362	15 173	36	31 571
70-74	14 462	16 369	55	30 886	13 433	15 419	25	28 877	12 905	15 078	33	28 016
75-79	12 060	14 109	56	26 225	11 800	14 071	15	25 886	12 211	15 910	35	28 156
80-84	9 442	13 696	39	23 177	8 640	11 952	21	20 613	8 433	11 832	21	20 286
85-89	5 435	10 193	36	15 664	5 036	9 473	19	14 528	5 446	10 335	17	15 798
90+	3 380	8 147	18	11 545	3 286	7 478	14	10 778	3 287	7 883	15	11 185
Unspecified	1 657	941	207	2 805	1 920	928	244	3 092	1 975	1 079	223	3 277
Total	**283 866**	**271 156**	**1 976**	**556 998**	**291 747**	**283 676**	**1 619**	**577 042**	**301 021**	**295 580**	**1 720**	**598 321**

*Data for 2003–2005 have been updated with late registrations processed in 2011/13.

Appendix C3: Number of deaths by age, sex and year of death, 2006–2008*

Age group	2006				2007				2008			
	Males	Females	Unsp.	Total	Males	Females	Unsp.	Total	Males	Females	Unsp.	Total
0	25 484	22 080	725	48 289	24 816	21 651	414	46 881	24 071	21 364	295	45 730
1-4	8 384	7 566	117	16 067	7 808	7 013	47	14 868	8 191	7 185	31	15 407
5-9	3 024	2 547	17	5 588	2 866	2 499	4	5 369	2 723	2 297	6	5 026
10-14	2 386	1 914	14	4 314	2 245	1 901	2	4 148	2 225	1 888	2	4 115
15-19	4 846	4 596	38	9 480	4 882	4 198	15	9 095	4 849	4 126	26	9 001
20-24	10 865	14 803	97	25 765	10 922	13 741	49	24 712	10 717	12 900	41	23 658
25-29	19 008	26 147	82	45 237	18 508	24 586	67	43 161	18 460	23 540	43	42 043
30-34	28 880	31 017	93	59 990	28 389	29 124	66	57 579	26 814	27 258	54	54 126
35-39	29 490	26 096	78	55 664	29 421	24 887	48	54 356	29 103	24 366	47	53 516
40-44	28 112	21 855	73	50 040	27 112	21 214	46	48 372	26 088	20 222	28	46 338
45-49	25 148	17 956	45	43 149	24 882	17 898	43	42 823	24 808	17 551	31	42 390
50-54	22 798	15 612	40	38 450	22 912	15 658	17	38 587	22 750	15 573	21	38 344
55-59	20 648	14 187	41	34 876	21 440	14 622	23	36 085	21 602	14 949	19	36 570
60-64	17 068	13 348	25	30 441	17 500	13 485	10	30 995	17 756	13 920	16	31 692
65-69	17 757	15 816	24	33 597	17 957	15 846	9	33 812	18 066	15 619	10	33 695
70-74	13 594	15 610	26	29 230	13 832	15 839	8	29 679	14 163	15 318	2	29 483
75-79	12 727	17 022	24	29 773	12 595	17 086	4	29 685	12 580	17 210	4	29 794
80-84	8 950	12 346	20	21 316	8 912	12 930	3	21 845	9 034	13 864	1	22 899
85-89	6 147	12 031	11	18 189	6 362	12 213	2	18 577	5 986	11 204	1	17 191
90+	3 565	8 715	9	12 289	3 684	8 792	12	12 488	3 976	9 554	27	13 557
Unspecified	864	356	144	1 364	802	335	106	1 243	669	246	134	1 049
Total	**309 745**	**301 620**	**1 743**	**613 108**	**307 847**	**295 518**	**995**	**604 360**	**304 631**	**290 154**	**839**	**595 624**

*Data for 2006–2008 have been updated with late registrations processed in 2011/13.

Appendix C4: Number of deaths by age, sex and year of death, 2009–2010*

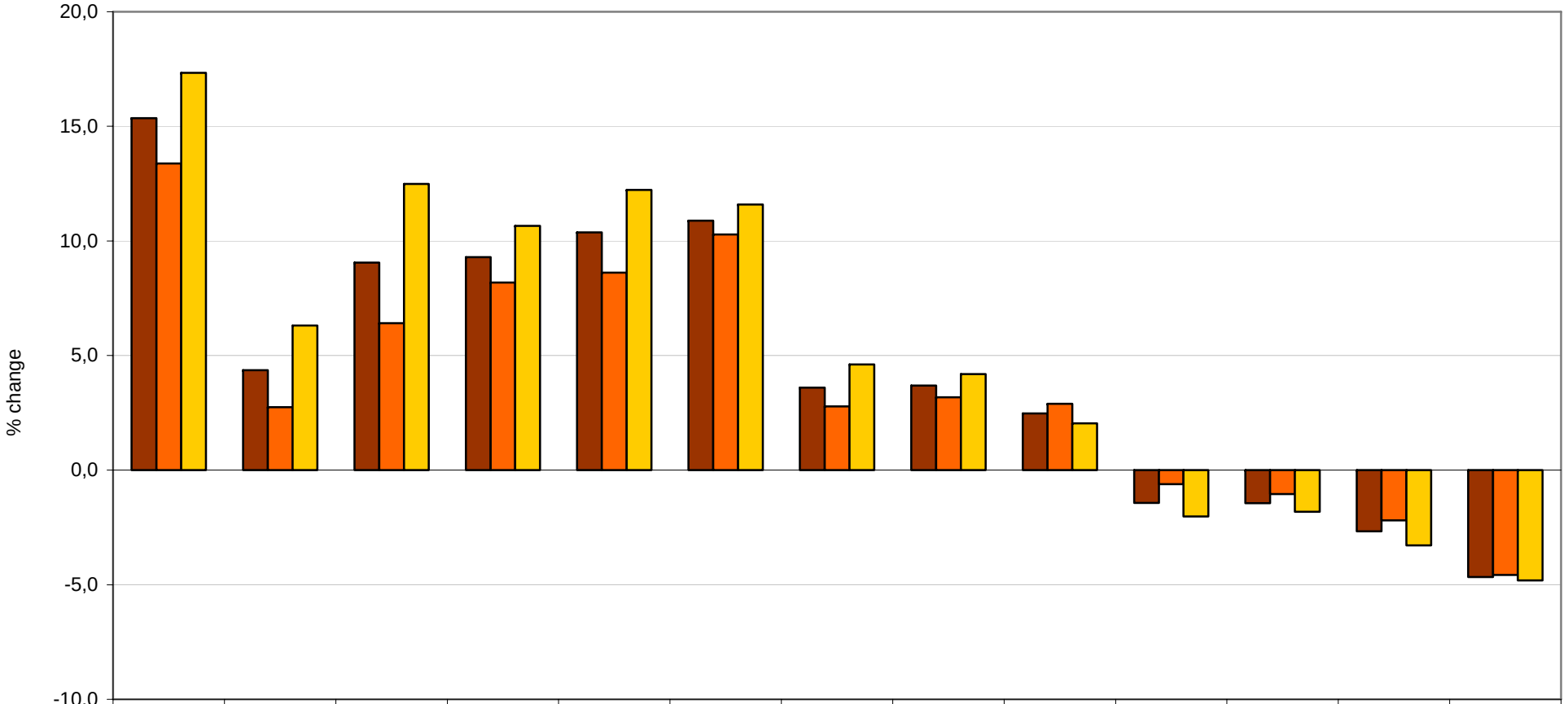
Age group	2009				2010			
	Males	Females	Unsp.	Total	Males	Females	Unsp.	Total
0	20 929	17 636	455	39 020	18 128	15 944	359	34 431
1-4	6 611	6 035	31	12 677	6 931	6 015	41	12 987
5-9	2 346	2 022	6	4 374	2 502	2 066	5	4 573
10-14	2 370	2 063	4	4 437	2 398	2 093	3	4 494
15-19	4 658	4 127	24	8 809	4 354	3 923	18	8 295
20-24	9 950	11 756	50	21 756	9 329	10 549	32	19 910
25-29	17 668	21 607	66	39 341	16 310	19 242	61	35 613
30-34	24 887	24 119	75	49 081	22 170	21 192	65	43 427
35-39	27 566	22 304	53	49 923	24 512	20 171	45	44 728
40-44	25 065	19 119	52	44 236	23 082	17 454	44	40 580
45-49	24 265	17 284	43	41 592	22 694	16 189	53	38 936
50-54	22 745	15 536	38	38 319	21 778	15 055	30	36 863
55-59	21 693	15 088	28	36 809	20 731	14 182	32	34 945
60-64	19 148	14 350	20	33 518	19 884	14 638	26	34 548
65-69	18 139	15 676	14	33 829	17 118	14 476	19	31 613
70-74	15 134	15 911	16	31 061	15 702	16 527	12	32 241
75-79	12 688	17 733	8	30 429	11 688	15 994	8	27 690
80-84	9 761	15 072	9	24 842	9 850	16 100	11	25 961
85-89	6 130	11 198	2	17 330	5 727	10 432	5	16 164
90+	5 242	11 648	1	16 891	4 052	10 647	7	14 706
Unspecified	973	323	141	1 437	742	214	195	1 151
Total	**297 968**	**280 607**	**1 136**	**579 711**	**279 682**	**263 103**	**1 071**	**543 856**

*Data for 2009 have been updated with late registrations processed in 2011/13.

Appendix D: List of ill-defined causes

No.	3-character codes ill-defined causes of death (based on ICD-10)
1	Streptococcal septicaemia (A40)
2	Other septicaemia (A41)
3	Malignant neoplasm of other and ill-defined sites (C76)
4	Malignant neoplasm without specification of site (C80)
5	Malignant neoplasm of independent (primary) multiple sites (C97)
6	Disseminated intravascular coagulation [defibrination syndrome] (D65)
7	Volume depletion (E86)
8	Essential (primary) hypertension (I10)
9	Cardiac arrest (I46)
10	Heart failure (I50)
11	Complications and ill-defined descriptions of heart disease (I51)
12	Other and unspecified disorders of circulatory system (I99)
13	Pulmonary oedema (J81)
14	Respiratory failure, not elsewhere classified (J96)
15	Hepatic failure, not elsewhere classified (K72)
16	Acute renal failure (N17)
17	Chronic renal failure (N18)
18	Unspecified renal failure (N19)
19	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified (R00-R99)
20	Event of undetermined intent (Y10-Y34)

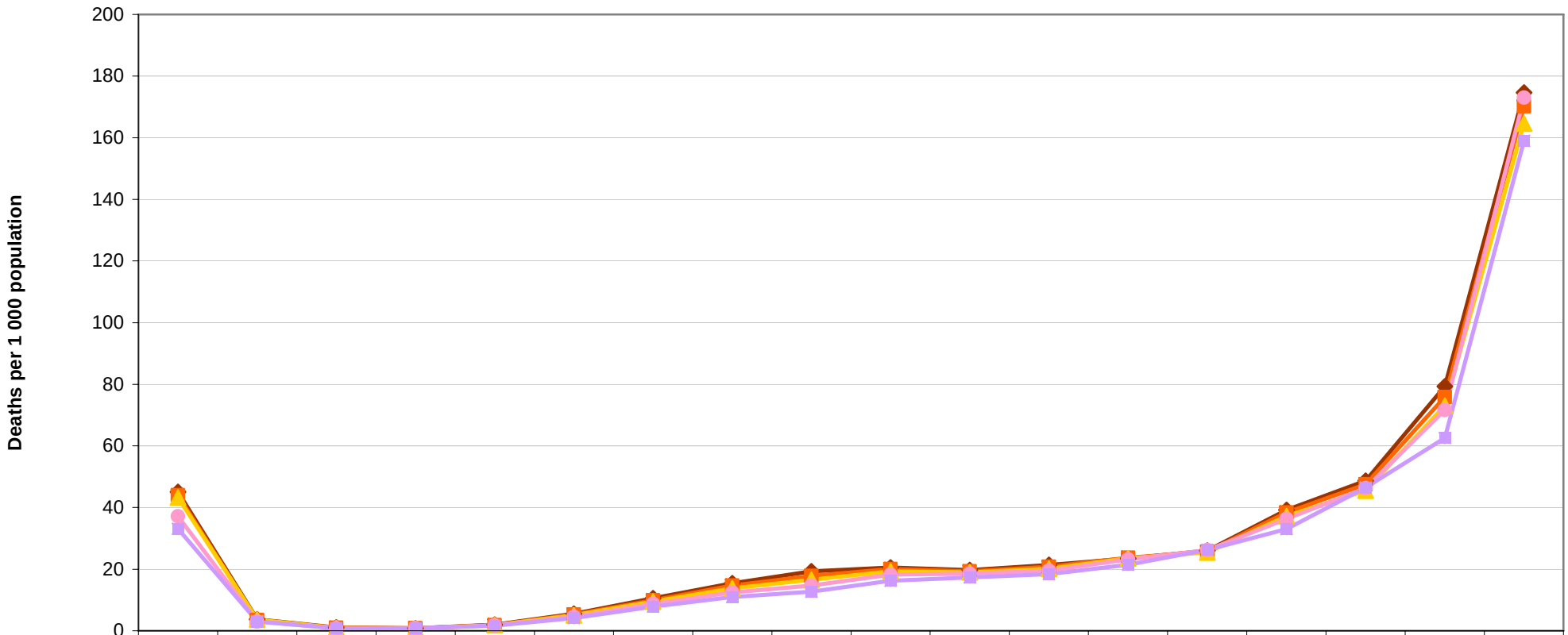
Appendix E: Year-to-year annual percentage changes in number of deaths by sex, 1997–2010*



	1997-1998	1998-1999	1999-2000	2000-2001	2001-2002	2002-2003	2003-2004	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009	2009-2010
Total	15,4	4,4	9,1	9,3	10,4	10,9	3,6	3,7	2,5	-1,4	-1,4	-2,7	-4,7
Males	13,4	2,7	6,4	8,2	8,6	10,3	2,8	3,2	2,9	-0,6	-1,0	-2,2	-4,6
Females	17,3	6,3	12,5	10,7	12,2	11,6	4,6	4,2	2,0	-2,0	-1,8	-3,3	-4,8

*Data for 1997–2009 have been updated to include late registrations processed in 2011/13.

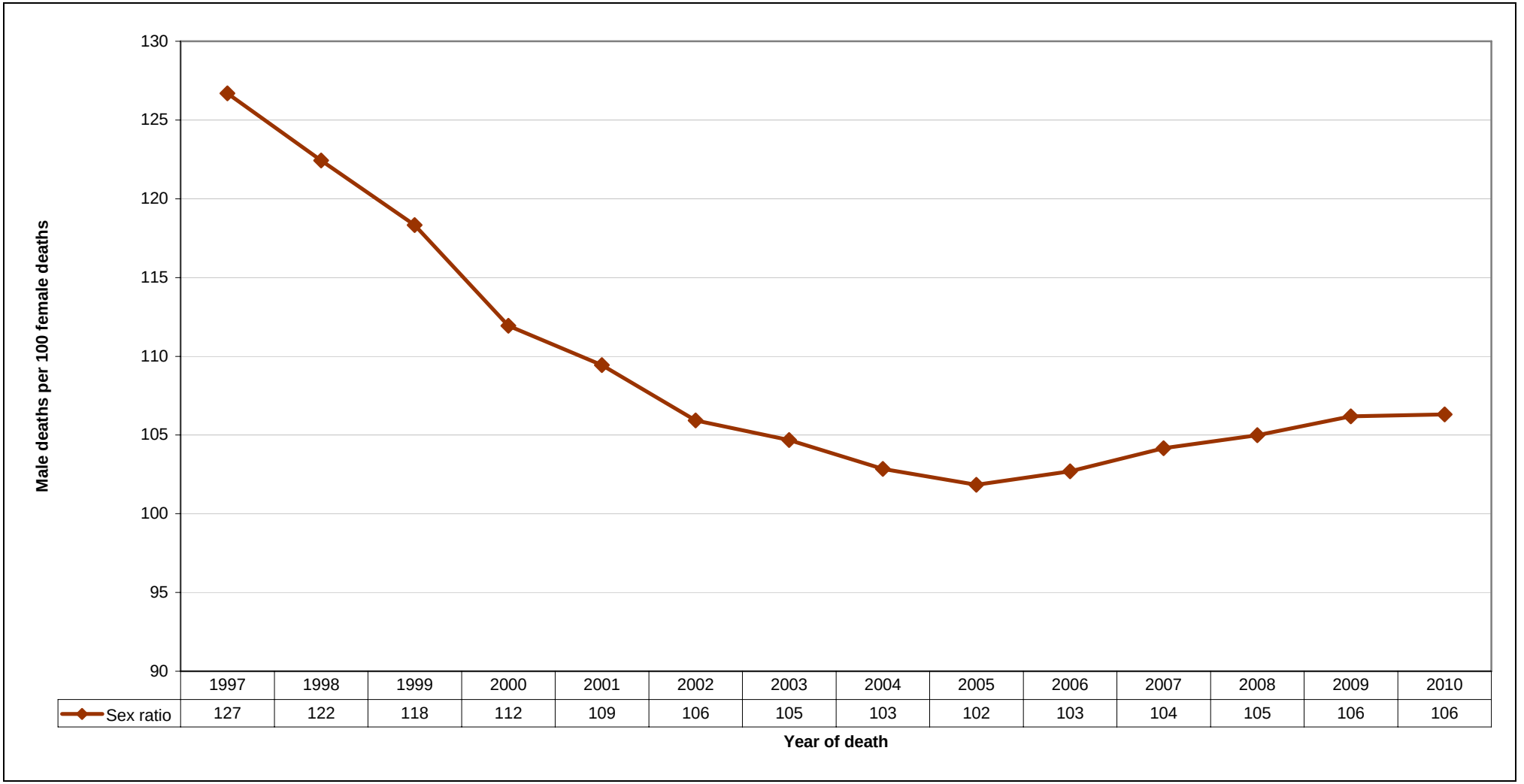
Appendix F: Age specific death rates (ASDR) by year of death, 2006–2010*



	0	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80+
2006	45	4	1	1	2	6	11	15	19	21	20	21	23	26	39	49	79	175
2007	44	3	1	1	2	5	10	15	18	20	19	21	24	26	38	48	76	170
2008	43	4	1	1	2	5	10	14	17	19	19	20	24	25	37	46	73	165
2009	37	3	1	1	2	5	9	12	15	18	19	20	23	26	36	46	72	173
2010	33	3	1	1	2	4	8	11	13	16	17	18	21	26	33	46	63	159

*Data for 1997–2009 have been updated to include late registrations processed in 2011/13.

Appendix G: Sex ratios at death by year of death, 2006–2010*



	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Sex ratio	127	122	118	112	109	106	105	103	102	103	104	105	106	106

*Data for 1997–2009 have been updated to include late registrations processed in 2011/13.

Appendix H: Number of deaths by province of death occurrence and province of usual residence of the deceased, 2010

Province of death occurrence	Province of usual residence of deceased											Total
	Western Cape	Eastern Cape	Northern Cape	Free State	KwaZulu-Natal	North West	Gauteng	Mpu-malanga	Limpopo	Foreign	Unspecified	
Western Cape	39 827	498	165	57	515	75	427	91	156	6	3 894	**45 711**
Eastern Cape	309	71 445	111	158	1 583	103	777	273	107	15	5 746	**80 627**
Northern Cape	111	89	13 463	218	63	328	191	43	82	6	589	**15 183**
Free State	74	261	228	41 306	145	516	771	84	99	32	1 502	**45 018**
KwaZulu-Natal	176	1 771	39	166	99 820	64	1 025	513	127	29	12 159	**115 889**
North West	40	95	260	280	53	31 858	1 849	109	289	7	5 219	**40 059**
Gauteng	206	411	97	808	658	2 470	90 911	1 836	1 562	116	6 598	**105 673**
Mpumalanga	27	145	25	91	407	107	820	36 870	911	25	2 345	**41 773**
Limpopo	44	84	61	65	164	325	695	1 030	42 683	65	4 801	**50 017**
Foreign	23	12	6	79	37	14	227	40	13	41	233	**725**
Unspecified	113	176	59	77	715	207	531	289	485	7	522	**3 181**
Total	**40 950**	**74 987**	**14 514**	**43 305**	**104 160**	**36 067**	**98 224**	**41 178**	**46 514**	**349**	**43 608**	**543 856**

Appendix H1: Percentage distribution of deaths by province of death occurrence and province of usual residence of the deceased, 2010

Province of death occurrence	Province of usual residence of deceased											Total
	Western Cape	Eastern Cape	Northern Cape	Free State	KwaZulu-Natal	North West	Gauteng	Mpu-malanga	Limpopo	Foreign	Unspecified	
Western Cape	87,1	1,1	0,4	0,1	1,1	0,2	0,9	0,2	0,3	0,0	8,5	**100,0**
Eastern Cape	0,4	88,6	0,1	0,2	2,0	0,1	1,0	0,3	0,1	0,0	7,1	**100,0**
Northern Cape	0,7	0,6	88,7	1,4	0,4	2,2	1,3	0,3	0,5	0,0	3,9	**100,0**
Free State	0,2	0,6	0,5	91,8	0,3	1,1	1,7	0,2	0,2	0,1	3,3	**100,0**
KwaZulu-Natal	0,2	1,5	0,0	0,1	86,1	0,1	0,9	0,4	0,1	0,0	10,5	**100,0**
North West	0,1	0,2	0,6	0,7	0,1	79,5	4,6	0,3	0,7	0,0	13,0	**100,0**
Gauteng	0,2	0,4	0,1	0,8	0,6	2,3	86,0	1,7	1,5	0,1	6,2	**100,0**
Mpumalanga	0,1	0,3	0,1	0,2	1,0	0,3	2,0	88,3	2,2	0,1	5,6	**100,0**
Limpopo	0,1	0,2	0,1	0,1	0,3	0,6	1,4	2,1	85,3	0,1	9,6	**100,0**
Foreign	3,2	1,7	0,8	10,9	5,1	1,9	31,3	5,5	1,8	5,7	32,1	**100,0**
Unspecified	3,6	5,5	1,9	2,4	22,5	6,5	16,7	9,1	15,2	0,2	16,4	**100,0**

Appendix I: Number of deaths by age, province and district municipality of death occurrence, 2010*

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	334	82	57	2 160	1 738	2 454	9	6 834
	Central Karoo	36	11	15	298	182	268	4	814
	City of Cape Town Metro	1 590	373	265	9 464	6 035	10 076	74	27 877
	Eden	182	44	37	1 433	1 131	1 950	3	4 780
	Overberg	92	37	19	635	470	899	3	2 155
	West Coast	170	30	27	1 030	746	1 167	4	3 174
	Unspecified	0	0	0	36	17	23	1	77
	Total	**2 404**	**577**	**420**	**15 056**	**10 319**	**16 837**	**98**	**45 711**
Eastern Cape	Alfred Nzo	341	182	148	3 073	1 228	1 903	9	6 884
	Amathole	405	320	256	5 863	2 860	5 698	8	15 410
	Buffalo City Metro	453	165	158	4 808	2 635	3 815	6	12 040
	Cacadu	268	80	48	2 126	1 272	1 816	4	5 614
	Chris Hani	419	179	126	3 680	1 767	3 057	6	9 234
	Joe Gqabi	234	122	74	1 958	962	1 444	5	4 799
	Nelson Mandela Bay Metro	558	149	109	4 312	2 628	3 439	13	11 208
	O.R.Tambo	485	443	443	7 237	2 623	4 029	10	15 270
	Unspecified	3	5	3	61	47	49	0	168
	Total	**3 166**	**1 645**	**1 365**	**33 118**	**16 022**	**25 250**	**61**	**80 627**
Northern Cape	Frances Baard	238	99	34	1 555	808	1 000	3	3 737
	John Taolo Gaetsewe	315	118	37	1 271	591	717	2	3 051
	Namakwa	46	13	6	296	266	444	0	1 071
	Pixley ka Seme	245	93	58	1 763	1 040	1 090	4	4 293
	Siyanda	176	63	26	1 275	723	703	0	2 966
	Unspecified	4	2	1	30	9	19	0	65
	Total	**1 024**	**388**	**162**	**6 190**	**3 437**	**3 973**	**9**	**15 183**
Free State	Fezile Dabi	516	137	68	2 620	1 328	1 586	8	6 263
	Lejweleputswa	936	313	150	5 229	2 284	2 191	5	11 108
	Mangaung Metro	636	219	149	4 428	2 136	2 534	0	10 102
	Thabo Mofutsanyane	1 107	386	209	5 913	2 564	2 820	7	13 006
	Xhariep	282	91	72	1 944	930	1 190	4	4 513
	Unspecified	2	1	1	11	5	6	0	26
	Total	**3 479**	**1 147**	**649**	**20 145**	**9 247**	**10 327**	**24**	**45 018**
KwaZulu-Natal	Amajuba	418	126	122	2 893	1 165	1 334	20	6 078
	eThekwini Metro	1 559	576	712	14 582	6 223	8 305	54	32 011
	iLembe	410	123	213	3 081	1 144	1 470	14	6 455
	Sisonke	506	167	163	3 673	1 282	1 600	10	7 401
	Ugu	650	336	319	5 787	2 022	3 166	21	12 301
	uMgungundlovu	454	156	234	5 749	2 424	3 196	6	12 219
	uMkhanyakude	347	129	169	2 658	789	1 334	15	5 441
	uMzinyathi	422	125	156	2 779	941	1 402	5	5 830
	uThukela	593	168	189	4 091	1 562	1 932	14	8 549
	uThungulu	649	193	290	4 774	1 582	2 074	57	9 619
	Zululand	757	290	285	4 734	1 440	1 866	18	9 390
	Unspecified	28	16	10	287	112	141	1	595
	Total	**6 793**	**2 405**	**2 862**	**55 088**	**20 686**	**27 820**	**235**	**115 889**

*Excluding 3 181 deaths with unspecified province of death occurrence

Appendix I: Number of deaths by age, province and district municipality of death occurrence, 2010* (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 Platinum	1 285	468	198	6 306	2 983	4 013	72	15 325
	Dr Kenneth Kaunda	693	213	94	3 493	1 749	2 135	19	8 396
	Dr Ruth Segomotsi Mompati	607	249	96	2 393	1 088	1 579	0	6 012
	Ngaka Modiri Molema	886	344	136	4 306	1 893	2 702	6	10 273
	Unspecified	6	3	1	20	13	10	0	53
	Total	**3 477**	**1 277**	**525**	**16 518**	**7 726**	**10 439**	**97**	**40 059**
Gauteng	City of Johannesburg Metro	2 243	601	335	12 951	6 565	8 800	311	31 806
	City of Tshwane Metro	1 151	461	246	7 531	4 167	6 218	12	19 786
	Ekurhuleni Metro	2 659	647	342	13 165	5 847	6 842	32	29 534
	Sedibeng	930	275	156	5 299	2 735	3 018	28	12 441
	West Rand	844	254	148	4 942	2 341	2 844	61	11 434
	Unspecified	39	16	11	288	155	159	4	672
	Total	**7 866**	**2 254**	**1 238**	**44 176**	**21 810**	**27 881**	**448**	**105 673**
Mpumalanga	Ehlanzeni	790	614	437	8 181	2 906	3 891	63	16 882
	Gert Sibande	1 130	340	286	6 261	2 431	2 551	10	13 009
	Nkangala	677	309	188	5 185	2 367	2 839	20	11 585
	Unspecified	14	9	11	155	37	69	2	297
	Total	**2 611**	**1 272**	**922**	**19 782**	**7 741**	**9 350**	**95**	**41 773**
Limpopo	Capricorn	877	482	232	5 213	2 380	4 159	7	13 350
	Greater Sekhukhune	548	373	192	4 312	1 746	3 286	2	10 459
	Mopani	810	435	173	4 100	1 770	2 943	7	10 238
	Vhembe	771	437	174	3 512	1 618	3 449	32	9 993
	Waterberg	395	190	82	2 293	967	1 600	1	5 528
	Unspecified	21	23	16	541	259	309	5	1 174
	Total	**3 418**	**1 936**	**864**	**19 637**	**8 570**	**15 543**	**49**	**50 017**
Foreign	**Total**	**4**	**4**	**5**	**334**	**170**	**203**	**5**	**725**

*Excluding 3 181 deaths with unspecified province of death occurrence

Appendix J: Number of deaths by sex, province and district municipality of death occurrence, 2010*

Province of death occurrence	District municipality of death occurrence	Sex				Sex Ratio**
		Male	Female	Unsp.	Total	
Western Cape	Cape Winelands	3 764	3 058	12	6 834	123
	Central Karoo	454	359	1	814	126
	City of Cape Town Metro	14 983	12 815	79	27 877	117
	Eden	2 650	2 128	2	4 780	125
	Overberg	1 189	961	5	2 155	124
	West Coast	1 751	1 419	4	3 174	123
	Unspecified	36	40	1	77	90
	Total	**24 827**	**20 780**	**104**	**45 711**	**119**
Eastern Cape	Alfred Nzo	3 340	3 532	12	6 884	95
	Amathole	7 675	7 699	36	15 410	100
	Buffalo City Metro	6 180	5 843	17	12 040	106
	Cacadu	2 938	2 661	15	5 614	110
	Chris Hani	4 604	4 620	10	9 234	100
	Joe Gqabi	2 386	2 405	8	4 799	99
	Nelson Mandela Bay Metro	5 769	5 429	10	11 208	106
	O.R.Tambo	7 400	7 835	35	15 270	94
	Unspecified	80	87	1	168	92
	Total	**40 372**	**40 111**	**144**	**80 627**	**101**
Northern Cape	Frances Baard	1 957	1 779	1	3 737	110
	John Taolo Gaetsewe	1 566	1 479	6	3 051	106
	Namakwa	587	483	1	1 071	122
	Pixley ka Seme	2 254	2 031	8	4 293	111
	Siyanda	1 639	1 325	2	2 966	124
	Unspecified	38	27		65	141
	Total	**8 041**	**7 124**	**18**	**15 183**	**113**
Free State	Fezile Dabi	3 276	2 982	5	6 263	110
	Lejweleputswa	5 764	5 331	13	11 108	108
	Mangaung Metro	5 164	4 922	16	10 102	105
	Thabo Mofutsanyane	6 533	6 466	7	13 006	101
	Xhariep	2 362	2 147	4	4 513	110
	Unspecified	14	12		26	117
	Total	**23 113**	**21 860**	**45**	**45 018**	**106**
KwaZulu-Natal	Amajuba	2 951	3 124	3	6 078	94
	eThekwini Metro	16 573	15 409	29	32 011	108
	iLembe	3 269	3 172	14	6 455	103
	Sisonke	3 557	3 836	8	7 401	93
	Ugu	6 173	6 114	14	12 301	101
	uMgungundlovu	6 284	5 914	21	12 219	106
	uMkhanyakude	2 679	2 741	21	5 441	98
	uMzinyathi	2 876	2 941	13	5 830	98
	uThukela	4 182	4 355	12	8 549	96
	uThungulu	4 857	4 739	23	9 619	102
	Zululand	4 592	4 777	21	9 390	96
	Unspecified	293	299	3	595	98
	Total	**58 286**	**57 421**	**182**	**115 889**	**102**

*Excluding 3 181 deaths with unspecified province of death occurrence
** Male deaths per 100 female deaths

Appendix J: Number of deaths by sex, province and district municipality of death occurrence, 2010* (concluded)

Province of death occurrence	District municipality of death occurrence	Sex				Sex Ratio**
		Male	Female	Unsp.	Total	
North West	Bojanala Platinum	8 208	7 062	55	15 325	116
	Dr Kenneth Kaunda	4 512	3 876	8	8 396	116
	Dr Ruth Segomotsi Mompati	3 047	2 959	6	6 012	103
	Ngaka Modiri Molema	5 271	4 986	16	10 273	106
	Unspecified	35	17	1	53	206
	Total	**21 073**	**18 900**	**86**	**40 059**	**111**
Gauteng	City of Johannesburg Metro	16 646	15 021	139	31 806	111
	City of Tshwane Metro	10 350	9 415	21	19 786	110
	Ekurhuleni Metro	15 614	13 839	81	29 534	113
	Sedibeng	6 611	5 814	16	12 441	114
	West Rand	6 212	5 169	53	11 434	120
	Unspecified	358	309	5	672	116
	Total	**55 791**	**49 567**	**315**	**105 673**	**113**
Mpumalanga	Ehlanzeni	8 594	8 253	35	16 882	104
	Gert Sibande	6 711	6 281	17	13 009	107
	Nkangala	6 021	5 543	21	11 585	109
	Unspecified	137	158	2	297	87
	Total	**21 463**	**20 235**	**75**	**41 773**	**106**
Limpopo	Capricorn	6 594	6 745	11	13 350	98
	Greater Sekhukhune	5 021	5 409	29	10 459	93
	Mopani	4 988	5 242	8	10 238	95
	Vhembe	4 873	5 098	22	9 993	96
	Waterberg	2 882	2 639	7	5 528	109
	Unspecified	226	221	2	449	102
	Total	**24 584**	**25 354**	**79**	**50 017**	**97**
Foreign		478	247		725	194

*Excluding 3 181 deaths with unspecified province of death occurrence
** Male deaths per 100 female deaths

Appendix K: All underlying causes of death, 2010

Causes of Death (based on the 10th revision, International Classification of Disease, 1992)	Number	Percent
All Causes	543 856	100,0
Ill-defined and unknown causes of mortality (R95-R99)	66 725	12,3
Tuberculosis (A15-A19)*	62 827	11,6
Influenza and pneumonia (J09-J18)	39 027	7,2
Other external causes of accidental injury (W00-X59)	29 768	5,5
Intestinal infectious diseases (A00-A09)	27 383	5,0
Other forms of heart disease (I30-I52)	25 827	4,7
Cerebrovascular diseases (I60-I69)	24 664	4,5
Diabetes mellitus (E10-E14)	21 475	3,9
Human immunodeficiency virus [HIV] disease (B20-B24)	18 325	3,4
Hypertensive diseases (I10-I15)	14 890	2,7
Chronic lower respiratory diseases (J40-J47)	13 099	2,4
Other viral diseases (B25-B34)	12 332	2,3
Ischaemic heart diseases (I20-I25)	12 044	2,2
Certain disorders involving the immune mechanism (D80-D89)	10 883	2,0
Malignant neoplasm of digestive organs (C15-C26)	9 505	1,7
Other acute lower respiratory infections (J20-J22)	7 317	1,3
Inflammatory diseases of the central nervous system (G00-G09)	7 292	1,3
Renal failure (N17-N19)	6 804	1,3
Event of undetermined intent (Y10-Y34)	6 721	1,2
Other bacterial diseases (A30-A49)	5 691	1,0
Transport accidents (V01-V99)	5 661	1,0
Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	5 255	1,0
Malignant neoplasm of respiratory and intrathoracic organs (C30-39)	5 203	1,0
Assault (X85-Y09)	5 059	0,9
Diseases of liver (K70-K77)	5 030	0,9
General symptoms and signs (R50-R69)	4 203	0,8
Malignant neoplasm of female genital organs (C51-C58)	4 101	0,8
Other diseases of the respiratory system (J95-J99)	4 067	0,7
Metabolic disorders (E70-E90)	3 827	0,7
Episodic and paroxysmal disorders (G40-G47)	3 644	0,7
Protozoal diseases (B50-B64)	3 500	0,6
Malignant neoplasms of ill-defined, secondary & unspecified sites (C76-C80)	3 187	0,6
Malignant neoplasm of breast (C50)	2 958	0,5
Aplastic and other anaemias (D60-D64)	2 769	0,5
Mycoses (B35-B49)	2 574	0,5
Malignant neoplasms stated or presumed primary of lymphoid, haematopoietic & related tissue (C81-C96)	2 547	0,5
Malignant neoplasm of male genital organs (C60-C63)	2 534	0,5
Pulmonary heart disease and diseases of pulmonary circulation (I26-I28)	2 491	0,5

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

Appendix K: All underlying causes of death, 2010 (continued)

Causes of Death (based on the 10th revision, International Classification of Disease, 1992)	Number	Percent
All Causes	543 856	100,0
Diseases of oesophagus, stomach and duodenum (K20-K31)	2 460	0,5
Malnutrition (E40-E46)	2 365	0,4
Noninfective enteritis and colitis (K50-K52)	2 009	0,4
Other disorders of glucose regulation and pancreatic internal secretion (E15-E16)	1 829	0,3
Other disorders originating in the perinatal period (P90-P96)	1 736	0,3
Other respiratory diseases principally affecting the interstitium (J80-J84)	1 733	0,3
Other diseases of intestines (K55-K63)	1 528	0,3
Diseases of arteries, arterioles and capillaries (I70-I79)	1 524	0,3
Disorders related to length of gestation and foetal growth (P05-P08)	1 434	0,3
Symptoms and signs involving the circulatory and respiratory systems (R00-R09)	1 405	0,3
Infections specific to the perinatal period (P35-P39)	1 318	0,2
Malignant neoplasm of mesothelial and soft tissue (C45-C49)	1 303	0,2
Lung diseases due to external agents (J60-J70)	1 209	0,2
Other disorders of the nervous system (G90-G99)	1 167	0,2
Malignant neoplasm of lip, oral cavity and pharynx (C00-C14)	1 094	0,2
Organic, including symptomatic, mental disorders (F00-F09)	1 084	0,2
Neoplasms of uncertain or unknown behaviour (D37-D48)	1 042	0,2
Other diseases of the digestive system (K90-K93)	1 034	0,2
Disorders of gallbladder, biliary tract and pancreas (K80-K87)	996	0,2
Malignant neoplasm of urinary tract (C64-C68)	852	0,2
Other degenerative diseases of the nervous system (G30-G32)	833	0,2
Arthropathies (M00-M25)	817	0,2
Other obstetric conditions, not elsewhere classified (O95-O99)	770	0,1
Cerebral palsy and other paralytic syndromes (G80-G83)	752	0,1
Complications of medical and surgical care (Y40-Y84)	714	0,1
Diseases of veins, lymphatic vessels and lymph nodes, not elsewhere classified (I80-I89)	697	0,1
Other disorders of the skin and subcutaneous tissue (L80-L99)	689	0,1
Other diseases of pleura (J90-J94)	650	0,1
Sequelae of infectious and parasitic diseases (B90-B94)	619	0,1
Symptoms and signs involving the digestive system and abdomen (R10-R19)	609	0,1
Soft tissue disorders (M60-M79)	549	0,1
Malignant neoplasm of eye, brain and other parts of central nervous system (C69-C72)	543	0,1
Congenital malformations of the circulatory system (Q20-Q28)	540	0,1
Viral infections characterized by skin and mucous membrane lesions (B00-B09)	531	0,1
Malignant neoplasm of skin (C43-C44)	523	0,1
Foetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	506	0,1
Malignant neoplasms of independent multiple sites (C97)	441	0,1

Appendix K: All underlying causes of death, 2010 (continued)

Causes of Death (based on the 10th revision, International Classification of Disease, 1992)	Number	Percent
All Causes	543 856	100,0
Infections of the skin and subcutaneous tissue (L00-L08)	413	0,1
Coagulation defects, purpura and other haemorrhagic conditions (D65-D69)	407	0,1
Intentional self-harm (X60-X84)	394	0,1
Chronic rheumatic heart diseases (I05-I09)	384	0,1
Systemic connective tissue disorders (M30-M36)	367	0,1
Extrapyramidal and movement disorders (G20-G26)	364	0,1
Haemorrhagic and haematological disorders of foetus and newborn (P50-P61)	356	0,1
Mental and behavioural disorders due to psychoactive substance use (F10-F19)	345	0,1
Other congenital malformations (Q80-Q89)	330	0,1
Viral hepatitis (B15-B19)	326	0,1
Renal tubulo-interstitial diseases (N10-N16)	316	0,1
Suppurative and necrotic conditions of lower respiratory tract (J85-J86)	300	0,1
Diseases of male genital organs (N40-N51)	297	0,1
Other diseases of urinary system (N30-N39)	283	0,1
Diseases of peritoneum (K65-K67)	272	0,1
Glomerular diseases (N00-N08)	271	0,0
Oedema, proteinuria and hypertensive disorders in pregnancy, childbirth and the puerperium (O10-O16)	271	0,0
Digestive system disorders of foetus and newborn (P75-P78)	268	0,0
Other disorders of kidney and ureter (N25-N29)	266	0,0
Obesity and other hyperalimentation (E65-E68)	250	0,0
Schizophrenia, schizotypal and delusional disorders (F20-F29)	250	0,0
Viral infections of the central nervous system (A80-A89)	238	0,0
Chromosomal abnormalities, not elsewhere classified (Q90-Q99)	236	0,0
Hernia (K40-K46)	227	0,0
Congenital malformations of the nervous system (Q00-Q07)	219	0,0
Disorders of thyroid gland (E00-E07)	211	0,0
Acute upper respiratory infections (J00-J06)	206	0,0
Polyneuropathies and other disorders of the peripheral nervous system (G60-G64)	188	0,0
Complications predominantly related to the puerperium (O85-O92)	187	0,0
Systemic atrophies primarily affecting the central nervous system (G10-G13)	176	0,0
Benign neoplasms (D10-D36)	170	0,0
Osteopathies and chondropathies (M80-M94)	169	0,0
Malignant neoplasm of thyroid and other endocrine glands (C73-C75)	165	0,0
Urticaria and erythema (L50-L54)	156	0,0
Malignant neoplasm of bone and articular cartilage (C40-C41)	155	0,0
Noninflammatory disorders of female genital tract (N80-N98)	154	0,0
Other congenital malformations of the digestive system (Q38-Q45)	153	0,0
Other and unspecified disorders of the circulatory system (I95-I99)	151	0,0

Appendix K: All underlying causes of death, 2010 (continued)

Causes of Death (based on the 10th revision, International Classification of Disease, 1992)	Number	Percent
All Causes	543 856	100,0
Complications of labour and delivery (O60-O75)	144	0,0
Inflammatory diseases of female pelvic organs (N70-N77)	142	0,0
Diseases of appendix (K35-K38)	137	0,0
Dorsopathies (M40-M54)	133	0,0
Pregnancy with abortive outcome (O00-O08)	128	0,0
Other diseases of upper respiratory tract (J30-J39)	98	0,0
Conditions involving the integument and temperature regulation of foetus and newborn (P80-P83)	98	0,0
Other infectious diseases (B99)	93	0,0
Diseases of myoneural junction and muscle (G70-G73)	92	0,0
Helminthiases (B65-B83)	91	0,0
Other maternal disorders predominantly related to pregnancy (O20-O29)	89	0,0
Infections with a predominantly sexual mode of transmission (A50-A64)	88	0,0
Disorders of other endocrine glands (E20-E35)	83	0,0
Diseases of middle ear and mastoid (H65-H75)	80	0,0
Other diseases of blood and blood-forming organs (D70-D77)	76	0,0
Congenital malformations and deformations of the musculoskeletal system (Q65-Q79)	74	0,0
Congenital malformations of the respiratory system (Q30-Q34)	73	0,0
Diseases of oral cavity, salivary glands and jaws (K00-K14)	72	0,0
Demyelinating diseases of the central nervous system (G35-G37)	71	0,0
Maternal care related to the foetus and amniotic cavity and possible delivery problems (O30-O48)	69	0,0
Abnormal findings on examination of blood, without diagnosis (R70-R79)	68	0,0
Congenital malformations of the urinary system (Q60-Q64)	67	0,0
Nutritional anaemias (D50-D53)	60	0,0
Sequelae of external causes of morbidity and mortality (Y85-Y89)	60	0,0
Haemolytic anaemias (D55-D59)	59	0,0
Dermatitis and eczema (L20-L30)	57	0,0
Other nutritional deficiencies (E50-E64)	49	0,0
Mood [affective] disorders (F30-F39)	42	0,0
Symptoms and signs involving cognition, perception, emotional state and behaviour (R40-R46)	41	0,0
Abnormal findings on diagnostic imaging and in function studies, without diagnosis (R90-R94)	36	0,0
Transitory endocrine and metabolic disorders specific to foetus and newborn (P70-P74)	34	0,0
Arthropod-borne viral fevers and viral haemorrhagic fevers (A90-A99)	30	0,0
Symptoms and signs involving the urinary system (R30-R39)	26	0,0
Birth trauma (P10-P15)	22	0,0

Appendix K: All underlying causes of death, 2010 (concluded)

Causes of Death (based on the 10th revision, International Classification of Disease, 1992)	Number	Percent
All Causes	543 856	100,0
Bullous disorders (L10-L14)	20	0,0
Disorders of breast (N60-N64)	20	0,0
Urolithiasis (N20-N23)	19	0,0
In situ neoplasms (D00-D09)	17	0,0
Neurotic, stress-related and somatoform disorders (F40-F48)	16	0,0
Symptoms and signs involving speech and voice (R47-R49)	15	0,0
Acute rheumatic fever (I00-I02)	14	0,0
Other spirochaetal diseases (A65-A69)	13	0,0
Unspecified mental disorder (F99)	12	0,0
Symptoms and signs involving the skin and subcutaneous tissue (R20-R23)	10	0,0
Nerve, nerve root and plexus disorders (G50-G59)	8	0,0
Papulosquamous disorders (L40-L45)	8	0,0
Cleft lip and cleft palate (Q35-Q37)	8	0,0
Disorders of vitreous body and globe (H43-H45)	7	0,0
Other disorders of ear (H90-H95)	7	0,0
Certain zoonotic bacterial diseases (A20-A28)	6	0,0
Pediculosis, acariasis and other infestations (B85-B89)	6	0,0
Disorders of eyelid, lacrimal system and orbit (H00-H06)	6	0,0
Visual disturbances and blindness (H53-H54)	6	0,0
Symptoms and signs involving the nervous and musculoskeletal systems (R25-R29)	6	0,0
Abnormal findings on examination of other body fluids, substances and tissues, without diagnosis (R83-R89)	5	0,0
Disorders of sclera, cornea, iris and ciliary body (H15-H22)	4	0,0
Disorders of lens (H25-H28)	4	0,0
Other diseases caused by chlamydiae (A70-A74)	3	0,0
Behavioural and emotional disorders with onset usually occurring in childhood and adolescence (F90-F98)	3	0,0
Disorders of conjunctiva (H10-H13)	3	0,0
Glaucoma (H40-H42)	3	0,0
Other disorders of eye and adnexa (H55-H59)	3	0,0
Disorders of skin appendages (L60-L75)	3	0,0
Congenital malformations of eye, ear, face and neck (Q10-Q18)	3	0,0
Rickettsioses (A75-A79)	2	0,0
Other disorders of the musculoskeletal system (M95-M99)	2	0,0
Congenital malformations of genital organs (Q50-Q56)	2	0,0
Disorders of adult personality and behaviour (F60-F69)	1	0,0
Mental retardation (F70-F79)	1	0,0
Disorders of psychological development (F80-F89)	1	0,0
Disorders of choroid and retina (H30-H36)	1	0,0
Diseases of inner ear (H80-H83)	1	0,0

Appendix L: Detailed description of the broad groups of natural causes of death which were among the ten leading causes in 2010

Causes of death (based on ICD-10)		Number	%
	Intestinal infectious diseases (A00-A09)		
A00	Cholera (A00)	2	0,0
A01	Typhoid and paratyphoid fevers (A01)	4	0,0
A02	Other salmonella infections (A02)	20	0,1
A03	Shigellosis (A03)	6	0,0
A04	Other bacterial intestinal infections(A04)	18	0,1
A05	Other bacterial food-borne (A05)	2	0,0
A06	Amoebiasis (A06)	16	0,1
A07	Other protozoal intestinal diseases (A07)	16	0,1
A08	Viral and other specified intestinal infections (A08)	68	0,2
A09	Diarrhoea and gastroenteritis of presumed infectious origin (A09)	27 231	99,4
	Total	**27 383**	**100,0**
	Tuberculosis (A15-A19)		
A16	Respiratory tuberculosis, not confirmed bacteriologically or historically (A16)	50 584	80,5
A17	Tuberculosis of nervous system (A17)	3 521	5,6
A18	Tuberculosis of other organs (A19)	1 736	2,8
A19	Miliary tuberculosis (A19)	5 959	9,5
	Drug-resistant tuberculosis		0,0
U51	Multidrug-resistant tuberculosis (U51)	856	1,4
U52	Extensively drug-resistant tuberculosis (U52)	171	0,3
	Total	**62 827**	**100,0**
	Human immunodeficiency virus [HIV] disease (B20-B24)		
B20	Human immunodeficiency virus [HIV] resulting in infectious and parasitic diseases (B20)	12 235	66,8
B21	Human immunodeficiency virus [HIV] resulting in malignant neoplasms (B21)	386	2,1
B22	Human immunodeficiency virus [HIV] resulting in other specific diseases (B22)	815	4,4
B23	Human immunodeficiency virus [HIV] resulting in other conditions (B23)	2 177	11,9
B24	Unspecified human immunodeficiency virus [HIV] disease (B24)	2 712	14,8
	Total	**18 325**	**100,0**
	Other viral diseases (B25-B34)		
B25	Cytomegaloviral disease (B25)	58	0,5
B27	Infectious mononucleosis (B27)	2	0,0
B33	Other viral diseases, not elsewhere classified (B33)	12 018	97,5
B34	Viral infection of unspecified site B34)	254	2,1
	Total	**12 332**	**100,0**
	Diabetes mellitus (E10-E14)		
E10	Insulin-dependent diabetes mellitus (E10)	238	1,1
E11	Non-insulin-dependent diabetes mellitus (E11)	1 249	5,8
E12	Malnutrition-related diabetes mellitus (E12)	2	0,0
E14	Unspecified diabetes mellitus (E14)	19 986	93,1
	Total	**21 475**	**100,0**

Appendix L: Detailed description of the broad groups of natural causes of death which were among the ten leading causes in 2010 (continued)

Causes of death (based on ICD-10)		Number	%
	Hypertensive diseases (I10-I15)		
I10	Essential (primary) hypertension (I10)	7 272	48,8
I11	Hypertensive heart disease (I11)	6 184	41,5
I12	Hypertensive renal disease (I12)	1 168	7,8
I13	Hypertensive heart and renal disease (I14)	266	1,8
	Total	**14 890**	**100,0**
	Other forms of heart disease (I30-I52)		
I30	Acute pericarditis (I30)	10	0,0
I31	Other diseases of pericardium (I31)	224	0,9
I33	Acute and subacute pericardium (I33)	56	0,2
I34	Nonrheumatic mitral viral disorders (I34)	106	0,4
I35	Nonrheumatic aortic valve disorders (I35)	187	0,7
I36	Nonrheumatic tricuspid valve disorders (I36)	1	0,0
I37	Pulmonary valve disorders (I37)	1	0,0
I38	Endocarditis, valve unspecified (I38)	201	0,8
I40	Acute myocarditis (I40)	24	0,1
I42	Cardiomyopathy (I42)	3 225	12,5
I44	Atrioventricular and left bundle-branch block (I44)	30	0,1
I45	Other conduction disorders (I45)	60	0,2
I46	Cardiac arrest (I46)	4 335	16,8
I47	Paroxysmal tachycardia (I47)	23	0,1
I48	Atrial fibrillation and flutter (I48)	387	1,5
I49	Other cardiac arrhythmias (I49)	255	1,0
I50	Heart failure (I50)	15 774	61,1
I51	Complications and ill-defined descriptions of heart disease (I51)	928	3,6
	Total	**25 827**	**100,0**
	Cerebrovascular diseases (I60-I69)		
I60	Subarachnoid haemorrhage (I60)	333	1,4
I61	Intracerebral haemorrhage (I61)	1 453	5,9
I62	Other nontraumatic intracranial haemorrhage (I62	666	2,7
I63	Cerebral infarction (I63)	532	2,2
I64	Stroke, not specified as haemorrhage or infarction (I64)	20 707	84,0
I67	Other cerebrovascular diseases (I67)	690	2,8
I69	Sequelae of cerebrovascular disease (I69)	283	1,1
	Total	**24 664**	**100,0**
	Influenza and pneumonia (J09-J18)		
J09	Influenza due to identified avian influenza virus (J09)	4	0,0
J10	Influenza due to identified influenza virus (J10)	17	0,0
J11	Influenza, virus not identified (J11)	593	1,5
J12	Viral pneumonia, not elsewhere classified (J12)	35	0,1
J13	Pneumonia due to Streptococcus pneumoniae (J13)	8	0,0
J14	Pneumonia due to Haemophilus influenzae (J13)	1	0,0
J15	Bacteria pneumonian not elsewhere classified (J15)	188	0,5
J16	Pneumonia due to other infectious organisms, not elsewhere classified (J16)	2	0,0
J18	Pneumonia, organism unspecified (J18)	38 179	97,8
	Total	**39 027**	**100,0**

Appendix L: Detailed description of the broad groups of natural causes of death which were among the ten leading causes in 2010 (concluded)

Causes of death (based on ICD-10)		Number	%
	Chronic lower respiratory diseases (J40-J47)		
J40	Bronchitis, not specified as acute or chronic (J40)	514	3,9
J42	Unspecified chronic bronchitis (J41)	451	3,4
J43	Emphysema (J43)	841	6,4
J44	Other chronic obstructive pulmonary disease (J44)	6 276	47,9
J45	Asthma (J45)	4 057	31,0
J46	Status asthmaticus (J46)	775	5,9
J47	Bronchiectasis (J47)	185	1,4
	Total	**13 099**	**100,0**

Appendix M: The ten leading underlying natural causes of death by age and sex: South Africa, 2010

	All provinces, both sexes, all ages	No.	%
1	Tuberculosis (A15-A19)*	62 827	11,6
2	Influenza and pneumonia (J09-J18)	39 027	7,2
3	Intestinal infectious diseases (A00-A09)	27 383	5,0
4	Other forms of heart disease (I30-I52)	25 827	4,7
5	Cerebrovascular diseases (I60-I69)	24 664	4,5
6	Diabetes mellitus (E10-E14)	21 475	3,9
7	Human immunodeficiency virus [HIV] disease (B20-B24)	18 325	3,4
8	Hypertensive diseases (I10-I15)	14 890	2,7
9	Chronic lower respiratory diseases (J40-J47)	13 099	2,4
10	Other viral diseases (B25-B34)	12 332	2,3
	Other natural causes	235 630	43,3
	Non-natural causes	48 377	8,9
	All causes	**543 856**	**100,0**

	All provinces, males, all ages	No.	%
1	Tuberculosis (A15-A19)*	35 255	12,6
2	Influenza and pneumonia (J09-J18)	19 230	6,9
3	Intestinal infectious diseases (A00-A09)	12 999	4,6
4	Other forms of heart disease (I30-I52)	11 742	4,2
5	Cerebrovascular diseases (I60-I69)	10 200	3,6
6	Human immunodeficiency virus [HIV] disease (B20-B24)	8 830	3,2
7	Diabetes mellitus (E10-E14)	8 415	3,0
8	Chronic lower respiratory diseases (J40-J47)	7 864	2,8
9	Ischaemic heart diseases (I20-I25)	7 060	2,5
10	Hypertensive diseases (I10-I15)	5 708	2,0
	Other natural causes	115 536	41,3
	Non-natural causes	36 843	13,2
	All causes	**279 682**	**100,0**

	All provinces, females, all ages	No.	%
1	Tuberculosis (A15-A19)*	27 483	10,4
2	Influenza and pneumonia (J09-J18)	19 700	7,5
3	Cerebrovascular diseases (I60-I69)	14 446	5,5
4	Intestinal infectious diseases (A00-A09)	14 310	5,4
5	Other forms of heart disease (I30-I52)	14 066	5,3
6	Diabetes mellitus (E10-E14)	13 055	5,0
7	Human immunodeficiency virus [HIV] disease (B20-B24)	9 468	3,6
8	Hypertensive diseases (I10-I15)	9 178	3,5
9	Other viral diseases (B25-B34)	6 860	2,6
10	Certain disorders involving the immune mechanism (D80-D89)	5 538	2,1
	Other natural causes	117 604	44,7
	Non-natural causes	11 395	4,3
	All causes	**263 103**	**100,0**

	All provinces, both sexes, 0-14	No.	%
1	Intestinal infectious diseases (A00-A09)	9 534	16,9
2	Influenza and pneumonia (J09-J18)	6 237	11,0
3	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	5 248	9,3
4	Malnutrition (E40-E46)	2 059	3,6
5	Tuberculosis (A15-A19)*	1 974	3,5
6	Other disorders originating in the perinatal period (P90-P96)	1 733	3,1
7	Disorders related to length of gestation and fetal growth (P05-P08)	1 431	2,5
8	Infections specific to the perinatal period (P35-P39)	1 317	2,3
9	Human immunodeficiency virus [HIV] disease (B20-B24)	1 011	1,8
10	Other acute lower respiratory infections (J20-J22)	983	1,7
	Other natural causes	20 181	35,7
	Non-natural causes	4 777	8,5
	All causes	**56 485**	**100,0**

	All provinces, males, 0-14	No.	%
1	Intestinal infectious diseases (A00-A09)	5 094	17,0
2	Influenza and pneumonia (J09-J18)	3 128	10,4
3	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	2 906	9,7
4	Malnutrition (E40-E46)	1 073	3,6
5	Tuberculosis (A15-A19)*	1 009	3,4
6	Other disorders originating in the perinatal period (P90-P96)	949	3,2
7	Infections specific to the perinatal period (P35-P39)	738	2,5
8	Disorders related to length of gestation and fetal growth (P05-P08)	735	2,5
9	Human immunodeficiency virus [HIV] disease (B20-B24)	510	1,7
10	Other acute lower respiratory infections (J20-J22)	497	1,7
	Other natural causes	10 473	35,0
	Non-natural causes	2 847	9,5
	All causes	**29 959**	**100,0**

	All provinces, females, 0-14	No.	%
1	Intestinal infectious diseases (A00-A09)	4 399	16,8
2	Influenza and pneumonia (J09-J18)	3 068	11,7
3	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	2 258	8,6
4	Malnutrition (E40-E46)	976	3,7
5	Tuberculosis (A15-A19)*	962	3,7
6	Other disorders originating in the perinatal period (P90-P96)	739	2,8
7	Disorders related to length of gestation and fetal growth (P05-P08)	671	2,6
8	Infections specific to the perinatal period (P35-P39)	561	2,1
9	Human immunodeficiency virus [HIV] disease (B20-B24)	496	1,9
10	Other acute lower respiratory infections (J20-J22)	479	1,8
	Other natural causes	9 593	36,7
	Non-natural causes	1 916	7,3
	All causes	**26 118**	**100,0**

	All provinces, both sexes, 15-49	No.	%
1	Tuberculosis (A15-A19)*	44 160	19,1
2	Influenza and pneumonia (J09-J18)	18 826	8,1
3	Human immunodeficiency virus [HIV] disease (B20-B24)	14 493	6,3
4	Intestinal infectious diseases (A00-A09)	11 159	4,8
5	Other viral diseases (B25-B34)	9 464	4,1
6	Certain disorders involving the immune mechanism (D80-D89)	8 327	3,6
7	Other forms of heart disease (I30-I52)	5 829	2,5
8	Inflammatory diseases of the central nervous system (G00-G09)	5 265	2,3
9	Other acute lower respiratory infections (J20-J22)	3 704	1,6
10	Cerebrovascular diseases (I60-I69)	3 426	1,5
	Other natural causes	73 248	31,6
	Non-natural causes	33 588	14,5
	All causes	**231 489**	**100,0**

	All provinces, males, 15-49	No.	%
1	Tuberculosis (A15-A19)*	23 310	19,0
2	Influenza and pneumonia (J09-J18)	8 738	7,1
3	Human immunodeficiency virus [HIV] disease (B20-B24)	6 815	5,6
4	Intestinal infectious diseases (A00-A09)	4 931	4,0
5	Other viral diseases (B25-B34)	3 959	3,2
6	Certain disorders involving the immune mechanism (D80-D89)	3 914	3,2
7	Other forms of heart disease (I30-I52)	2 758	2,3
8	Inflammatory diseases of the central nervous system (G00-G09)	2 491	2,0
9	Other acute lower respiratory infections (J20-J22)	1 814	1,5
10	Cerebrovascular diseases (I60-I69)	1 570	1,3
	Other natural causes	34 852	28,5
	Non-natural causes	27 299	22,3
	All causes	**122 451**	**100,0**

	All provinces, females, 15-49	No.	%
1	Tuberculosis (A15-A19)*	20 805	19,1
2	Influenza and pneumonia (J09-J18)	10 055	9,2
3	Human immunodeficiency virus [HIV] disease (B20-B24)	7 666	7,1
4	Intestinal infectious diseases (A00-A09)	6 205	5,7
5	Other viral diseases (B25-B34)	5 492	5,1
6	Certain disorders involving the immune mechanism (D80-D89)	4 403	4,0
7	Other forms of heart disease (I30-I52)	3 067	2,8
8	Inflammatory diseases of the central nervous system (G00-G09)	2 772	2,5
9	Other acute lower respiratory infections (J20-J22)	1 888	1,7
10	Cerebrovascular diseases (I60-I69)	1 848	1,7
	Other natural causes	38 289	35,2
	Non-natural causes	6 230	5,7
	All causes	**108 720**	**100,0**

	All provinces, both sexes, 50-64	No.	%
1	Tuberculosis (A15-A19)*	11 761	11,1
2	Diabetes mellitus (E10-E14)	7 129	6,7
3	Influenza and pneumonia (J09-J18)	6 335	6,0
4	Cerebrovascular diseases (I60-I69)	6 170	5,8
5	Other forms of heart disease (I30-I52)	5 977	5,6
6	Hypertensive diseases (I10-I15)	4 003	3,8
7	Chronic lower respiratory diseases (J40-J47)	3 998	3,8
8	Ischaemic heart diseases (I20-I25)	3 443	3,2
9	Malignant neoplasm of digestive organs (C15-C26)	3 362	3,2
10	Intestinal infectious diseases (A00-A09)	3 210	3,0
	Other natural causes	45 166	42,5
	Non-natural causes	5 802	5,5
	All causes	**106 356**	**100,0**

	All provinces, males, 50-64	No.	%
1	Tuberculosis (A15-A19)*	7 933	12,7
2	Influenza and pneumonia (J09-J18)	3 808	6,1
3	Other forms of heart disease (I30-I52)	3 345	5,4
4	Cerebrovascular diseases (I60-I69)	3 239	5,2
5	Diabetes mellitus (E10-E14)	3 217	5,2
6	Chronic lower respiratory diseases (J40-J47)	2 721	4,4
7	Ischaemic heart diseases (I20-I25)	2 389	3,8
8	Malignant neoplasm of digestive organs (C15-C26)	2 122	3,4
9	Hypertensive diseases (I10-I15)	1 845	3,0
10	Intestinal infectious diseases (A00-A09)	1 655	2,7
	Other natural causes	25 762	41,3
	Non-natural causes	4 357	7,0
	All causes	**62 393**	**100,0**

	All provinces, females, 50-64	No.	%
1	Diabetes mellitus (E10-E14)	3 909	8,9
2	Tuberculosis (A15-A19)*	3 810	8,7
3	Cerebrovascular diseases (I60-I69)	2 927	6,7
4	Other forms of heart disease (I30-I52)	2 629	6,0
5	Influenza and pneumonia (J09-J18)	2 521	5,7
6	Hypertensive diseases (I10-I15)	2 158	4,9
7	Intestinal infectious diseases (A00-A09)	1 553	3,5
8	Malignant neoplasm of female genital organs (C51-C58)	1 403	3,2
9	Chronic lower respiratory diseases (J40-J47)	1 273	2,9
10	Malignant neoplasm of digestive organs (C15-C26)	1 239	2,8
	Other natural causes	19 015	43,3
	Non-natural causes	1 438	3,3
	All causes	**43 875**	**100,0**

	All provinces, both sexes, 65+	No.	%
1	Cerebrovascular diseases (I60-I69)	14 918	10,1
2	Other forms of heart disease (I30-I52)	13 410	9,0
3	Diabetes mellitus (E10-E14)	11 621	7,8
4	Hypertensive diseases (I10-I15)	9 193	6,2
5	Influenza and pneumonia (J09-J18)	7 560	5,1
6	Ischaemic heart diseases (I20-I25)	7 009	4,7
7	Chronic lower respiratory diseases (J40-J47)	6 597	4,4
8	Tuberculosis (A15-A19)*	4 785	3,2
9	Malignant neoplasm of digestive organs (C15-C26)	4 684	3,2
10	Intestinal infectious diseases (A00-A09)	3 448	2,3
	Other natural causes	61 331	41,3
	Non-natural causes	3 819	2,6
	All causes	**148 375**	**100,0**

	All provinces, males, 65+	No.	%
1	Other forms of heart disease (I30-I52)	5 328	8,3
2	Cerebrovascular diseases (I60-I69)	5 311	8,3
3	Diabetes mellitus (E10-E14)	3 960	6,2
4	Chronic lower respiratory diseases (J40-J47)	3 781	5,9
5	Ischaemic heart diseases (I20-I25)	3 583	5,6
6	Influenza and pneumonia (J09-J18)	3 511	5,5
7	Hypertensive diseases (I10-I15)	3 095	4,8
8	Tuberculosis (A15-A19)*	2 914	4,5
9	Malignant neoplasm of digestive organs (C15-C26)	2 451	3,8
10	Malignant neoplasm of male genital organs (C60-C63)	1 990	3,1
	Other natural causes	26 167	40,8
	Non-natural causes	2 046	3,2
	All causes	**64 137**	**100,0**

	All provinces, females, 65+	No.	%
1	Cerebrovascular diseases (I60-I69)	9 603	11,4
2	Other forms of heart disease (I30-I52)	8 077	9,6
3	Diabetes mellitus (E10-E14)	7 659	9,1
4	Hypertensive diseases (I10-I15)	6 097	7,2
5	Influenza and pneumonia (J09-J18)	4 042	4,8
6	Ischaemic heart diseases (I20-I25)	3 424	4,1
7	Chronic lower respiratory diseases (J40-J47)	2 814	3,3
8	Malignant neoplasm of digestive organs (C15-C26)	2 231	2,7
9	Intestinal infectious diseases (A00-A09)	2 145	2,5
10	Tuberculosis (A15-A19)*	1 868	2,2
	Other natural causes	34 446	40,9
	Non-natural causes	1 770	2,1
	All causes	**84 176**	**100,0**

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

Appendix M1: The ten leading underlying natural causes of death by age and sex: Western Cape, 2010

	Western Cape, both sexes, all ages	No.	%
1	Tuberculosis (A15-A19)*	3 573	7,8
2	Diabetes mellitus (E10-E14)	3 035	6,6
3	Human immunodeficiency virus [HIV] disease (B20-B24)	2 754	6,0
4	Ischaemic heart diseases (I20-I25)	2 646	5,8
5	Cerebrovascular diseases (I60-I69)	2 458	5,4
6	Chronic lower respiratory diseases (J40-J47)	2 016	4,4
7	Malignant neoplasm of digestive organs (C15-C26)	1 893	4,1
8	Malignant neoplasm of respiratory and intrathoracic organs (C30-39)	1 757	3,8
9	Hypertensive diseases (I10-I15)	1 503	3,3
10	Other forms of heart disease (I30-I52)	1 470	3,2
	Other natural causes	17 363	38,0
	Non-natural causes	5 243	11,5
	All causes	**45 711**	**100,0**

	Western Cape, males, all ages	No.	%
1	Tuberculosis (A15-A19)*	2 194	8,8
2	Ischaemic heart diseases (I20-I25)	1 510	6,1
3	Diabetes mellitus (E10-E14)	1 279	5,2
4	Chronic lower respiratory diseases (J40-J47)	1 238	5,0
5	Human immunodeficiency virus [HIV] disease (B20-B24)	1 227	4,9
6	Malignant neoplasm of respiratory and intrathoracic organs (C30-39)	1 154	4,6
7	Cerebrovascular diseases (I60-I69)	1 097	4,4
8	Malignant neoplasm of digestive organs (C15-C26)	1 063	4,3
9	Other forms of heart disease (I30-I52)	672	2,7
10	Hypertensive diseases (I10-I15)	578	2,3
	Other natural causes	8 727	35,2
	Non-natural causes	4 088	16,5
	All causes	**24 827**	**100,0**

	Western Cape, females, all ages	No.	%
1	Diabetes mellitus (E10-E14)	1 754	8,4
2	Human immunodeficiency virus [HIV] disease (B20-B24)	1 525	7,3
3	Tuberculosis (A15-A19)*	1 372	6,6
4	Cerebrovascular diseases (I60-I69)	1 358	6,5
5	Ischaemic heart diseases (I20-I25)	1 135	5,5
6	Hypertensive diseases (I10-I15)	925	4,5
7	Malignant neoplasm of digestive organs (C15-C26)	828	4,0
8	Other forms of heart disease (I30-I52)	797	3,8
9	Chronic lower respiratory diseases (J40-J47)	776	3,7
10	Malignant neoplasm of breast (C50)	610	2,9
	Other natural causes	8 566	41,2
	Non-natural causes	1 134	5,5
	All causes	**20 780**	**100,0**

	Western Cape, both sexes, 0-14	No.	%
1	Intestinal infectious diseases (A00-A09)	366	10,8
2	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	309	9,1
3	Other disorders originating in the perinatal period (P90-P96)	219	6,4
4	Influenza and pneumonia (J09-J18)	198	5,8
5	Disorders related to length of gestation and fetal growth (P05-P08)	178	5,2
6	Human immunodeficiency virus [HIV] disease (B20-B24)	110	3,2
7	Infections specific to the perinatal period (P35-P39)	95	2,8
8	Congenital malformations of the circulatory system (Q20-Q28)	78	2,3
9	Malnutrition (E40-E46)	61	1,8
10	Tuberculosis (A15-A19)*	60	1,8
	Other natural causes	1 369	40,3
	Non-natural causes	358	10,5
	All causes	**3 401**	**100,0**

	Western Cape, males, 0-14	No.	%
1	Intestinal infectious diseases (A00-A09)	190	10,3
2	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	163	8,8
3	Other disorders originating in the perinatal period (P90-P96)	116	6,3
4	Influenza and pneumonia (J09-J18)	102	5,5
5	Disorders related to length of gestation and fetal growth (P05-P08)	99	5,4
6	Infections specific to the perinatal period (P35-P39)	63	3,4
7	Human immunodeficiency virus [HIV] disease (B20-B24)	50	2,7
8	Malnutrition (E40-E46)	37	2,0
8	Congenital malformations of the circulatory system (Q20-Q28)	37	2,0
9	Tuberculosis (A15-A19)*	33	1,8
	Other natural causes	726	39,4
	Non-natural causes	227	12,3
	All causes	**1 843**	**100,0**

	Western Cape, females, 0-14	No.	%
1	Intestinal infectious diseases (A00-A09)	174	11,4
2	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	140	9,2
3	Other disorders originating in the perinatal period (P90-P96)	96	6,3
4	Influenza and pneumonia (J09-J18)	95	6,2
5	Disorders related to length of gestation and fetal growth (P05-P08)	76	5,0
6	Human immunodeficiency virus [HIV] disease (B20-B24)	60	3,9
7	Congenital malformations of the circulatory system (Q20-Q28)	41	2,7
8	Infections specific to the perinatal period (P35-P39)	31	2,0
9	Other bacterial diseases (A30-A49)	28	1,8
10	Tuberculosis (A15-A19)*	26	1,7
	Other natural causes	627	41,1
	Non-natural causes	130	8,5
	All causes	**1 524**	**100,0**

	Western Cape, both sexes, 15-49	No.	%
1	Tuberculosis (A15-A19)*	2 299	15,3
2	Human immunodeficiency virus [HIV] disease (B20-B24)	2 251	15,0
3	Other viral diseases (B25-B34)	317	2,1
4	Influenza and pneumonia (J09-J18)	297	2,0
5	Diabetes mellitus (E10-E14)	279	1,9
6	Malignant neoplasm of digestive organs (C15-C26)	272	1,8
7	Cerebrovascular diseases (I60-I69)	263	1,7
8	Chronic lower respiratory diseases (J40-J47)	260	1,7
9	Ischaemic heart diseases (I20-I25)	249	1,7
10	Certain disorders involving the immune mechanism (D80-D89)	238	1,6
	Other natural causes	4 457	29,6
	Non-natural causes	3 874	25,7
	All causes	**15 056**	**100,0**

	Western Cape, males, 15-49	No.	%
1	Tuberculosis (A15-A19)*	1 349	14,8
2	Human immunodeficiency virus [HIV] disease (B20-B24)	991	10,9
3	Ischaemic heart diseases (I20-I25)	185	2,0
4	Chronic lower respiratory diseases (J40-J47)	167	1,8
5	Malignant neoplasm of digestive organs (C15-C26)	165	1,8
6	Malignant neoplasm of respiratory and intrathoracic organs (C30-39)	153	1,7
7	Diabetes mellitus (E10-E14)	147	1,6
8	Influenza and pneumonia (J09-J18)	143	1,6
9	Cerebrovascular diseases (I60-I69)	134	1,5
10	Other forms of heart disease (I30-I52)	129	1,4
	Other natural causes	2 355	25,8
	Non-natural causes	3 203	35,1
	All causes	**9 121**	**100,0**

	Western Cape, females, 15-49	No.	%
1	Human immunodeficiency virus [HIV] disease (B20-B24)	1 258	21,3
2	Tuberculosis (A15-A19)*	947	16,0
3	Other viral diseases (B25-B34)	194	3,3
4	Influenza and pneumonia (J09-J18)	152	2,6
5	Malignant neoplasm of breast (C50)	138	2,3
6	Certain disorders involving the immune mechanism (D80-D89)	133	2,3
7	Diabetes mellitus (E10-E14)	132	2,2
8	Cerebrovascular diseases (I60-I69)	127	2,2
9	Malignant neoplasm of digestive organs (C15-C26)	106	1,8
10	Other forms of heart disease (I30-I52)	104	1,8
	Other natural causes	1 949	33,0
	Non-natural causes	661	11,2
	All causes	**5 901**	**100,0**

	Western Cape, both sexes, 50-64	No.	%
1	Diabetes mellitus (E10-E14)	920	8,9
2	Tuberculosis (A15-A19)*	857	8,3
3	Malignant neoplasm of respiratory and intrathoracic organs (C30-39)	707	6,9
4	Chronic lower respiratory diseases (J40-J47)	706	6,8
5	Ischaemic heart diseases (I20-I25)	656	6,4
6	Malignant neoplasm of digestive organs (C15-C26)	648	6,3
7	Cerebrovascular diseases (I60-I69)	620	6,0
8	Hypertensive diseases (I10-I15)	391	3,8
9	Human immunodeficiency virus [HIV] disease (B20-B24)	353	3,4
10	Other forms of heart disease (I30-I52)	272	2,6
	Other causes	3 616	35,0
	Non-natural causes	573	5,6
	All causes	**10 319**	**100,0**

	Western Cape, males, 50-64	No.	%
1	Tuberculosis (A15-A19)*	587	9,7
2	Malignant neoplasm of respiratory and intrathoracic organs (C30-39)	485	8,0
3	Chronic lower respiratory diseases (J40-J47)	457	7,5
4	Ischaemic heart diseases (I20-I25)	456	7,5
5	Diabetes mellitus (E10-E14)	455	7,5
6	Malignant neoplasm of digestive organs (C15-C26)	391	6,4
7	Cerebrovascular diseases (I60-I69)	340	5,6
8	Hypertensive diseases (I10-I15)	185	3,1
9	Human immunodeficiency virus [HIV] disease (B20-B24)	168	2,8
10	Other forms of heart disease (I30-I52)	147	2,4
	Other natural causes	1 968	32,5
	Non-natural causes	425	7,0
	All causes	**6 064**	**100,0**

	Western Cape, females, 50-64	No.	%
1	Diabetes mellitus (E10-E14)	464	10,9
2	Cerebrovascular diseases (I60-I69)	280	6,6
3	Tuberculosis (A15-A19)*	268	6,3
4	Malignant neoplasm of digestive organs (C15-C26)	256	6,0
5	Chronic lower respiratory diseases (J40-J47)	248	5,8
6	Malignant neoplasm of respiratory and intrathoracic organs (C30-39)	221	5,2
7	Malignant neoplasm of breast (C50)	219	5,2
8	Hypertensive diseases (I10-I15)	206	4,9
9	Ischaemic heart diseases (I20-I25)	200	4,7
10	Human immunodeficiency virus [HIV] disease (B20-B24)	185	4,4
	Other natural causes	1 550	36,5
	Non-natural causes	148	3,5
	All causes	**4 245**	**100,0**

	Western Cape, both sexes, 65+	No.	%
1	Diabetes mellitus (E10-E14)	1 833	10,9
2	Ischaemic heart diseases (I20-I25)	1 738	10,3
3	Cerebrovascular diseases (I60-I69)	1 565	9,3
4	Chronic lower respiratory diseases (J40-J47)	1 034	6,1
5	Malignant neoplasm of digestive organs (C15-C26)	972	5,8
6	Hypertensive diseases (I10-I15)	939	5,6
7	Other forms of heart disease (I30-I52)	917	5,4
8	Malignant neoplasm of respiratory and intrathoracic organs (C30-39)	842	5,0
9	Influenza and pneumonia (J09-J18)	477	2,8
10	Malignant neoplasm of male genital organs (C60-C63)	381	2,3
	Other causes	5 748	34,1
	Non-natural causes	391	2,3
	All causes	**16 837**	**100,0**

	Western Cape, males, 65+	No.	%
1	Ischaemic heart diseases (I20-I25)	868	11,2
2	Diabetes mellitus (E10-E14)	674	8,7
3	Cerebrovascular diseases (I60-I69)	621	8,0
4	Chronic lower respiratory diseases (J40-J47)	603	7,8
5	Malignant neoplasm of respiratory and intrathoracic organs (C30-39)	516	6,7
6	Malignant neoplasm of digestive organs (C15-C26)	506	6,5
7	Malignant neoplasm of male genital organs (C60-C63)	381	4,9
8	Other forms of heart disease (I30-I52)	368	4,8
9	Hypertensive diseases (I10-I15)	302	3,9
10	Tuberculosis (A15-A19)*	220	2,8
	Other causes	2 482	32,1
	Non-natural causes	202	2,6
	All causes	**7 743**	**100,0**

	Western Cape, females, 65+	No.	%
1	Diabetes mellitus (E10-E14)	1 158	12,7
2	Cerebrovascular diseases (I60-I69)	943	10,4
3	Ischaemic heart diseases (I20-I25)	870	9,6
4	Hypertensive diseases (I10-I15)	637	7,0
5	Other forms of heart disease (I30-I52)	549	6,0
6	Malignant neoplasm of digestive organs (C15-C26)	466	5,1
7	Chronic lower respiratory diseases (J40-J47)	431	4,7
8	Malignant neoplasm of respiratory and intrathoracic organs (C30-39)	326	3,6
9	Influenza and pneumonia (J09-J18)	261	2,9
10	Malignant neoplasm of breast (C50)	253	2,8
	Other causes	3 006	33,1
	Non-natural causes	187	2,1
	All causes	**9 087**	**100,0**

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

Appendix M2: The ten leading underlying natural causes of death by age and sex: Eastern Cape, 2010

	Eastern Cape, both sexes, all ages	No.	%
1	Tuberculosis (A15-A19)*	10 205	12,7
2	Other forms of heart disease (I30-I52)	3 697	4,6
3	Cerebrovascular diseases (I60-I69)	3 491	4,3
4	Influenza and pneumonia (J09-J18)	3 458	4,3
5	Intestinal infectious diseases (A00-A09)	3 041	3,8
6	Chronic lower respiratory diseases (J40-J47)	3 006	3,7
7	Diabetes mellitus (E10-E14)	2 864	3,6
8	Other viral diseases (B25-B34)	2 621	3,3
9	Human immunodeficiency virus [HIV] disease (B20-B24)	2 519	3,1
10	Hypertensive diseases (I10-I15)	2 061	2,6
	Other natural causes	36 301	45,0
	Non-natural causes	7 363	9,1
	All causes	**80 627**	**100,0**

	Eastern Cape, males, all ages	No.	%
1	Tuberculosis (A15-A19)*	5 661	14,0
2	Chronic lower respiratory diseases (J40-J47)	1 693	4,2
3	Influenza and pneumonia (J09-J18)	1 681	4,2
4	Other forms of heart disease (I30-I52)	1 632	4,0
5	Cerebrovascular diseases (I60-I69)	1 458	3,6
6	Intestinal infectious diseases (A00-A09)	1 337	3,3
7	Human immunodeficiency virus [HIV] disease (B20-B24)	1 110	2,7
8	Other viral diseases (B25-B34)	1 077	2,7
9	Diabetes mellitus (E10-E14)	1 017	2,5
10	Malignant neoplasm of digestive organs (C15-C26)	982	2,4
	Other natural causes	17 090	42,3
	Non-natural causes	5 634	14,0
	All causes	**40 372**	**100,0**

	Eastern Cape, females, all ages	No.	%
1	Tuberculosis (A15-A19)*	4 533	11,3
2	Other forms of heart disease (I30-I52)	2 061	5,1
3	Cerebrovascular diseases (I60-I69)	2 033	5,1
4	Diabetes mellitus (E10-E14)	1 846	4,6
5	Influenza and pneumonia (J09-J18)	1 770	4,4
6	Intestinal infectious diseases (A00-A09)	1 697	4,2
7	Other viral diseases (B25-B34)	1 539	3,8
8	Human immunodeficiency virus [HIV] disease (B20-B24)	1 403	3,5
9	Hypertensive diseases (I10-I15)	1 349	3,4
10	Chronic lower respiratory diseases (J40-J47)	1 311	3,3
	Other natural causes	18 856	47,0
	Non-natural causes	1 713	4,3
	All causes	**40 111**	**100,0**

	Eastern Cape, both sexes, 0-14	No.	%
1	Intestinal infectious diseases (A00-A09)	946	15,3
2	Influenza and pneumonia (J09-J18)	557	9,0
3	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	339	5,5
4	Tuberculosis (A15-A19)*	235	3,8
5	Malnutrition (E40-E46)	227	3,7
6	Disorders related to length of gestation and fetal growth (P05-P08)	104	1,7
7	Human immunodeficiency virus [HIV] disease (B20-B24)	103	1,7
8	Inflammatory diseases of the central nervous system (G00-G09)	100	1,6
9	Other acute lower respiratory infections (J20-J22)	98	1,6
9	Infections specific to the perinatal period (P35-P39)	98	1,6
	Other natural causes	2 673	43,3
	Non-natural causes	696	11,3
	All causes	**6 176**	**100,0**

	Eastern Cape, males, 0-14	No.	%
1	Intestinal infectious diseases (A00-A09)	506	15,6
2	Influenza and pneumonia (J09-J18)	273	8,4
3	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	173	5,3
4	Tuberculosis (A15-A19)*	115	3,6
5	Malnutrition (E40-E46)	114	3,5
6	Inflammatory diseases of the central nervous system (G00-G09)	56	1,7
7	Infections specific to the perinatal period (P35-P39)	56	1,7
8	Other acute lower respiratory infections (J20-J22)	53	1,6
9	Human immunodeficiency virus [HIV] disease (B20-B24)	52	1,6
10	Other disorders originating in the perinatal period (P90-P96)	49	1,5
	Other natural causes	1 344	41,5
	Non-natural causes	445	13,8
	All causes	**3 236**	**100,0**

	Eastern Cape, females, 0-14	No.	%
1	Intestinal infectious diseases (A00-A09)	436	15,1
2	Influenza and pneumonia (J09-J18)	279	9,7
3	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	157	5,4
4	Tuberculosis (A15-A19)*	119	4,1
5	Malnutrition (E40-E46)	109	3,8
6	Disorders related to length of gestation and fetal growth (P05-P08)	57	2,0
7	Human immunodeficiency virus [HIV] disease (B20-B24)	50	1,7
8	Other acute lower respiratory infections (J20-J22)	45	1,6
9	Other viral diseases (B25-B34)	44	1,5
9	Inflammatory diseases of the central nervous system (G00-G09)	44	1,5
	Other natural causes	1 299	45,0
	Non-natural causes	248	8,6
	All causes	**2 887**	**100,0**

	Eastern Cape, both sexes, 15-49	No.	%
1	Tuberculosis (A15-A19)*	6 568	19,8
2	Other viral diseases (B25-B34)	2 090	6,3
3	Human immunodeficiency virus [HIV] disease (B20-B24)	2 001	6,0
4	Influenza and pneumonia (J09-J18)	1 416	4,3
5	Intestinal infectious diseases (A00-A09)	1 265	3,8
6	Certain disorders involving the immune mechanism (D80-D89)	1 031	3,1
7	Other forms of heart disease (I30-I52)	699	2,1
8	Inflammatory diseases of the central nervous system (G00-G09)	684	2,1
9	Chronic lower respiratory diseases (J40-J47)	447	1,3
10	Episodic and paroxysmal disorders (G40-G47)	442	1,3
	Other natural causes	11 353	34,3
	Non-natural causes	5 122	15,5
	All causes	**33 118**	**100,0**

	Eastern Cape, males, 15-49	No.	%
1	Tuberculosis (A15-A19)*	3 321	19,6
2	Human immunodeficiency virus [HIV] disease (B20-B24)	847	5,0
3	Other viral diseases (B25-B34)	807	4,8
4	Influenza and pneumonia (J09-J18)	652	3,8
5	Intestinal infectious diseases (A00-A09)	481	2,8
6	Certain disorders involving the immune mechanism (D80-D89)	442	2,6
7	Other forms of heart disease (I30-I52)	335	2,0
8	Inflammatory diseases of the central nervous system (G00-G09)	327	1,9
9	Episodic and paroxysmal disorders (G40-G47)	275	1,6
10	Chronic lower respiratory diseases (J40-J47)	234	1,4
	Other natural causes	5 046	29,8
	Non-natural causes	4 174	24,6
	All causes	**16 941**	**100,0**

	Eastern Cape, females, 15-49	No.	%
1	Tuberculosis (A15-A19)*	3 243	20,1
2	Other viral diseases (B25-B34)	1 279	7,9
3	Human immunodeficiency virus [HIV] disease (B20-B24)	1 150	7,1
4	Intestinal infectious diseases (A00-A09)	781	4,8
5	Influenza and pneumonia (J09-J18)	763	4,7
6	Certain disorders involving the immune mechanism (D80-D89)	588	3,6
7	Other forms of heart disease (I30-I52)	362	2,2
8	Inflammatory diseases of the central nervous system (G00-G09)	357	2,2
9	Other acute lower respiratory infections (J20-J22)	243	1,5
10	Cerebrovascular diseases (I60-I69)	227	1,4
	Other natural causes	6 189	38,4
	Non-natural causes	937	5,8
	All causes	**16 119**	**100,0**

	Eastern Cape, both sexes, 50-64	No.	%
1	Tuberculosis (A15-A19)*	2 086	13,0
2	Diabetes mellitus (E10-E14)	928	5,8
3	Cerebrovascular diseases (I60-I69)	900	5,6
4	Other forms of heart disease (I30-I52)	827	5,2
5	Chronic lower respiratory diseases (J40-J47)	794	5,0
6	Malignant neoplasm of digestive organs (C15-C26)	604	3,8
7	Influenza and pneumonia (J09-J18)	577	3,6
8	Hypertensive diseases (I10-I15)	530	3,3
9	Other viral diseases (B25-B34)	377	2,4
10	Intestinal infectious diseases (A00-A09)	364	2,3
	Other natural causes	7 122	44,5
	Non-natural causes	913	5,7
	All causes	**16 022**	**100,0**

	Eastern Cape, males, 50-64	No.	%
1	Tuberculosis (A15-A19)*	1 450	15,6
2	Chronic lower respiratory diseases (J40-J47)	527	5,7
3	Cerebrovascular diseases (I60-I69)	472	5,1
4	Other forms of heart disease (I30-I52)	461	5,0
5	Malignant neoplasm of digestive organs (C15-C26)	365	3,9
6	Diabetes mellitus (E10-E14)	364	3,9
7	Influenza and pneumonia (J09-J18)	355	3,8
8	Ischaemic heart diseases (I20-I25)	231	2,5
9	Malignant neoplasm of respiratory and intrathoracic organs (C30-39)	223	2,4
10	Hypertensive diseases (I10-I15)	208	2,2
	Other natural causes	3 968	42,7
	Non-natural causes	673	7,2
	All causes	**9 297**	**100,0**

	Eastern Cape, females, 50-64	No.	%
1	Tuberculosis (A15-A19)*	631	9,4
2	Diabetes mellitus (E10-E14)	563	8,4
3	Cerebrovascular diseases (I60-I69)	428	6,4
4	Other forms of heart disease (I30-I52)	364	5,4
5	Hypertensive diseases (I10-I15)	322	4,8
6	Chronic lower respiratory diseases (J40-J47)	267	4,0
7	Malignant neoplasm of digestive organs (C15-C26)	239	3,6
8	Influenza and pneumonia (J09-J18)	221	3,3
9	Other viral diseases (B25-B34)	187	2,8
10	Intestinal infectious diseases (A00-A09)	181	2,7
	Other natural causes	3 066	45,7
	Non-natural causes	238	3,5
	All causes	**6 707**	**100,0**

	Eastern Cape, both sexes, 65+	No.	%
1	Cerebrovascular diseases (I60-I69)	2 156	8,5
2	Other forms of heart disease (I30-I52)	2 092	8,3
3	Chronic lower respiratory diseases (J40-J47)	1 712	6,8
4	Diabetes mellitus (E10-E14)	1 595	6,3
5	Hypertensive diseases (I10-I15)	1 329	5,3
6	Tuberculosis (A15-A19)*	1 309	5,2
7	Malignant neoplasm of digestive organs (C15-C26)	954	3,8
8	Influenza and pneumonia (J09-J18)	902	3,6
9	Ischaemic heart diseases (I20-I25)	708	2,8
10	Intestinal infectious diseases (A00-A09)	466	1,8
	Other natural causes	11 409	45,2
	Non-natural causes	618	2,4
	All causes	**25 250**	**100,0**

	Eastern Cape, males, 65+	No.	%
1	Chronic lower respiratory diseases (J40-J47)	906	8,3
2	Other forms of heart disease (I30-I52)	799	7,4
3	Cerebrovascular diseases (I60-I69)	784	7,2
4	Tuberculosis (A15-A19)*	772	7,1
5	Diabetes mellitus (E10-E14)	523	4,8
6	Malignant neoplasm of digestive organs (C15-C26)	460	4,2
7	Hypertensive diseases (I10-I15)	423	3,9
8	Influenza and pneumonia (J09-J18)	398	3,7
9	Ischaemic heart diseases (I20-I25)	353	3,3
10	Malignant neoplasm of male genital organs (C60-C63)	303	2,8
	Other causes	4 811	44,3
	Non-natural causes	329	3,0
	All causes	**10 861**	**100,0**

	Eastern Cape, females, 65+	No.	%
1	Cerebrovascular diseases (I60-I69)	1 372	9,5
2	Other forms of heart disease (I30-I52)	1 293	9,0
3	Diabetes mellitus (E10-E14)	1 072	7,5
4	Hypertensive diseases (I10-I15)	906	6,3
5	Chronic lower respiratory diseases (J40-J47)	804	5,6
6	Tuberculosis (A15-A19)*	536	3,7
7	Influenza and pneumonia (J09-J18)	504	3,5
8	Malignant neoplasm of digestive organs (C15-C26)	493	3,4
9	Ischaemic heart diseases (I20-I25)	355	2,5
10	Intestinal infectious diseases (A00-A09)	299	2,1
	Other causes	6 458	44,9
	Non-natural causes	289	2,0
	All causes	**14 381**	**100,0**

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

Appendix M3: The ten leading underlying natural causes of death by age and sex: Northern Cape, 2010

	Northern Cape, both sexes, all ages	No.	%
1	Tuberculosis (A15-A19)*	1 396	9,2
2	Human immunodeficiency virus [HIV] disease (B20-B24)	761	5,0
3	Influenza and pneumonia (J09-J18)	747	4,9
4	Cerebrovascular diseases (I60-I69)	630	4,1
5	Other forms of heart disease (I30-I52)	592	3,9
6	Intestinal infectious diseases (A00-A09)	586	3,9
7	Chronic lower respiratory diseases (J40-J47)	514	3,4
8	Diabetes mellitus (E10-E14)	463	3,0
9	Hypertensive diseases (I10-I15)	433	2,9
10	Certain disorders involving the immune mechanism (D80-D89)	412	2,7
	Other natural causes	7 305	48,1
	Non-natural causes	1 344	8,9
	All causes	**15 183**	**100,0**

	Northern Cape, males, all ages	No.	%
1	Tuberculosis (A15-A19)*	841	10,5
2	Influenza and pneumonia (J09-J18)	389	4,8
3	Human immunodeficiency virus [HIV] disease (B20-B24)	346	4,3
4	Chronic lower respiratory diseases (J40-J47)	318	4,0
5	Intestinal infectious diseases (A00-A09)	284	3,5
6	Other forms of heart disease (I30-I52)	264	3,3
7	Cerebrovascular diseases (I60-I69)	259	3,2
8	Ischaemic heart diseases (I20-I25)	215	2,7
9	Certain disorders involving the immune mechanism (D80-D89)	206	2,6
10	Diabetes mellitus (E10-E14)	183	2,3
	Other natural causes	3 727	46,3
	Non-natural causes	1 009	12,5
	All causes	**8 041**	**100,0**

	Northern Cape, females, all ages	No.	%
1	Tuberculosis (A15-A19)*	554	7,8
2	Human immunodeficiency virus [HIV] disease (B20-B24)	415	5,8
3	Cerebrovascular diseases (I60-I69)	371	5,2
4	Influenza and pneumonia (J09-J18)	356	5,0
5	Other forms of heart disease (I30-I52)	328	4,6
6	Intestinal infectious diseases (A00-A09)	301	4,2
7	Diabetes mellitus (E10-E14)	280	3,9
8	Hypertensive diseases (I10-I15)	256	3,6
9	Certain disorders involving the immune mechanism (D80-D89)	206	2,9
10	Chronic lower respiratory diseases (J40-J47)	194	2,7
	Other natural causes	3 530	49,6
	Non-natural causes	333	4,7
	All causes	**7 124**	**100,0**

	Northern Cape, both sexes, 0-14	No.	%
1	Intestinal infectious diseases (A00-A09)	251	15,9
2	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	131	8,3
3	Influenza and pneumonia (J09-J18)	126	8,0
4	Disorders related to length of gestation and fetal growth (P05-P08)	84	5,3
5	Malnutrition (E40-E46)	71	4,5
6	Human immunodeficiency virus [HIV] disease (B20-B24)	48	3,0
6	Other disorders originating in the perinatal period (P90-P96)	48	3,0
8	Tuberculosis (A15-A19)*	44	2,8
9	Other acute lower respiratory infections (J20-J22)	33	2,1
10	Other diseases of the respiratory system (J95-J99)	32	2,0
	Other natural causes	585	37,2
	Non-natural causes	121	7,7
	All causes	**1 574**	**100,0**

	Northern Cape, males, 0-14	No.	%
1	Intestinal infectious diseases (A00-A09)	130	16,0
2	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	75	9,3
3	Influenza and pneumonia (J09-J18)	62	7,7
4	Disorders related to length of gestation and fetal growth (P05-P08)	37	4,6
5	Malnutrition (E40-E46)	32	4,0
6	Other acute lower respiratory infections (J20-J22)	23	2,8
6	Other disorders originating in the perinatal period (P90-P96)	23	2,8
8	Tuberculosis (A15-A19)*	20	2,5
8	Human immunodeficiency virus [HIV] disease (B20-B24)	20	2,5
10	Other diseases of the respiratory system (J95-J99)	17	2,1
	Other natural causes	293	36,2
	Non-natural causes	78	9,6
	All causes	**810**	**100,0**

	Northern Cape, females, 0-14	No.	%
1	Intestinal infectious diseases (A00-A09)	120	15,9
2	Influenza and pneumonia (J09-J18)	63	8,3
3	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	55	7,3
4	Disorders related to length of gestation and fetal growth (P05-P08)	46	6,1
5	Malnutrition (E40-E46)	39	5,2
6	Human immunodeficiency virus [HIV] disease (B20-B24)	28	3,7
7	Other disorders originating in the perinatal period (P90-P96)	25	3,3
8	Tuberculosis (A15-A19)*	24	3,2
9	Other diseases of the respiratory system (J95-J99)	15	2,0
9	Infections specific to the perinatal period (P35-P39)	15	2,0
	Other natural causes	284	37,6
	Non-natural causes	42	5,6
	All causes	**756**	**100,0**

	Northern Cape, both sexes, 15-49	No.	%
1	Tuberculosis (A15-A19)*	978	15,8
2	Human immunodeficiency virus [HIV] disease (B20-B24)	600	9,7
3	Certain disorders involving the immune mechanism (D80-D89)	307	5,0
4	Influenza and pneumonia (J09-J18)	304	4,9
5	Other viral diseases (B25-B34)	282	4,6
6	Intestinal infectious diseases (A00-A09)	206	3,3
7	Other acute lower respiratory infections (J20-J22)	135	2,2
8	Other forms of heart disease (I30-I52)	125	2,0
9	Diseases of liver (K70-K77)	90	1,5
10	Cerebrovascular diseases (I60-I69)	89	1,4
	Other natural causes	2 136	34,5
	Non-natural causes	938	15,2
	All causes	**6 190**	**100,0**

	Northern Cape, males, 15-49	No.	%
1	Tuberculosis (A15-A19)*	558	16,7
2	Human immunodeficiency virus [HIV] disease (B20-B24)	267	8,0
3	Certain disorders involving the immune mechanism (D80-D89)	149	4,5
4	Influenza and pneumonia (J09-J18)	144	4,3
5	Other viral diseases (B25-B34)	132	4,0
6	Intestinal infectious diseases (A00-A09)	92	2,8
7	Other acute lower respiratory infections (J20-J22)	59	1,8
8	Other forms of heart disease (I30-I52)	55	1,6
9	Chronic lower respiratory diseases (J40-J47)	48	1,4
10	Diseases of liver (K70-K77)	41	1,2
	Other natural causes	1 053	31,6
	Non-natural causes	739	22,1
	All causes	**3 337**	**100,0**

	Northern Cape, females, 15-49	No.	%
1	Tuberculosis (A15-A19)*	419	14,7
2	Human immunodeficiency virus [HIV] disease (B20-B24)	333	11,7
3	Influenza and pneumonia (J09-J18)	159	5,6
4	Certain disorders involving the immune mechanism (D80-D89)	158	5,6
5	Other viral diseases (B25-B34)	149	5,2
6	Intestinal infectious diseases (A00-A09)	114	4,0
7	Other acute lower respiratory infections (J20-J22)	76	2,7
8	Other forms of heart disease (I30-I52)	70	2,5
9	Cerebrovascular diseases (I60-I69)	50	1,8
10	Diseases of liver (K70-K77)	48	1,7
	Other natural causes	1 072	37,7
	Non-natural causes	198	7,0
	All causes	**2 846**	**100,0**

	Northern Cape, both sexes, 50-64	No.	%
1	Tuberculosis (A15-A19)*	284	8,3
2	Chronic lower respiratory diseases (J40-J47)	200	5,8
3	Cerebrovascular diseases (I60-I69)	182	5,3
4	Diabetes mellitus (E10-E14)	171	5,0
5	Influenza and pneumonia (J09-J18)	154	4,5
6	Other forms of heart disease (I30-I52)	147	4,3
7	Malignant neoplasm of digestive organs (C15-C26)	119	3,5
8	Hypertensive diseases (I10-I15)	117	3,4
9	Ischaemic heart diseases (I20-I25)	110	3,2
10	Human immunodeficiency virus [HIV] disease (B20-B24)	103	3,0
	Other natural causes	1 670	48,6
	Non-natural causes	180	5,2
	All causes	**3 437**	**100,0**

	Northern Cape, males, 50-64	No.	%
1	Tuberculosis (A15-A19)*	204	10,3
2	Chronic lower respiratory diseases (J40-J47)	128	6,4
3	Cerebrovascular diseases (I60-I69)	92	4,6
4	Influenza and pneumonia (J09-J18)	90	4,5
5	Malignant neoplasm of digestive organs (C15-C26)	76	3,8
6	Other forms of heart disease (I30-I52)	74	3,7
7	Diabetes mellitus (E10-E14)	73	3,7
8	Ischaemic heart diseases (I20-I25)	71	3,6
9	Malignant neoplasm of respiratory and intrathoracic organs (C30-39)	64	3,2
10	Human immunodeficiency virus [HIV] disease (B20-B24)	54	2,7
	Other natural causes	925	46,6
	Non-natural causes	134	6,8
	All causes	**1 985**	**100,0**

	Northern Cape, females, 50-64	No.	%
1	Diabetes mellitus (E10-E14)	98	6,8
2	Cerebrovascular diseases (I60-I69)	90	6,2
3	Tuberculosis (A15-A19)*	80	5,5
4	Other forms of heart disease (I30-I52)	73	5,0
5	Chronic lower respiratory diseases (J40-J47)	72	5,0
6	Hypertensive diseases (I10-I15)	64	4,4
7	Influenza and pneumonia (J09-J18)	64	4,4
8	Malignant neoplasm of female genital organs (C51-C58)	56	3,9
9	Human immunodeficiency virus [HIV] disease (B20-B24)	49	3,4
10	Malignant neoplasm of digestive organs (C15-C26)	43	3,0
	Other natural causes	714	49,3
	Non-natural causes	46	3,2
	All causes	**1 449**	**100,0**

	Northern Cape, both sexes, 65+	No.	%
1	Cerebrovascular diseases (I60-I69)	356	9,0
2	Other forms of heart disease (I30-I52)	309	7,8
3	Hypertensive diseases (I10-I15)	267	6,7
4	Chronic lower respiratory diseases (J40-J47)	226	5,7
5	Ischaemic heart diseases (I20-I25)	222	5,6
6	Diabetes mellitus (E10-E14)	215	5,4
7	Influenza and pneumonia (J09-J18)	162	4,1
8	Malignant neoplasm of digestive organs (C15-C26)	133	3,3
9	Tuberculosis (A15-A19)*	88	2,2
10	Malignant neoplasm of respiratory and intrathoracic organs (C30-39)	85	2,1
	Other natural causes	1 806	45,5
	Non-natural causes	104	2,6
	All causes	**3 973**	**100,0**

	Northern Cape, males, 65+	No.	%
1	Chronic lower respiratory diseases (J40-J47)	139	7,3
2	Other forms of heart disease (I30-I52)	132	6,9
3	Cerebrovascular diseases (I60-I69)	127	6,7
4	Ischaemic heart diseases (I20-I25)	124	6,5
5	Hypertensive diseases (I10-I15)	105	5,5
6	Influenza and pneumonia (J09-J18)	92	4,8
7	Diabetes mellitus (E10-E14)	78	4,1
8	Malignant neoplasm of digestive organs (C15-C26)	74	3,9
9	Malignant neoplasm of male genital organs (C60-C63)	72	3,8
10	Tuberculosis (A15-A19)*	58	3,0
10	Malignant neoplasm of respiratory and intrathoracic organs (C30-39)	58	3,0
	Other causes	787	41,4
	Non-natural causes	57	3,0
	All causes	**1 903**	**100,0**

	Northern Cape, females, 65+	No.	%
1	Cerebrovascular diseases (I60-I69)	229	11,1
2	Other forms of heart disease (I30-I52)	177	8,6
3	Hypertensive diseases (I10-I15)	162	7,8
4	Diabetes mellitus (E10-E14)	137	6,6
5	Ischaemic heart diseases (I20-I25)	98	4,7
6	Chronic lower respiratory diseases (J40-J47)	87	4,2
7	Influenza and pneumonia (J09-J18)	70	3,4
8	Malignant neoplasm of digestive organs (C15-C26)	59	2,9
9	Intestinal infectious diseases (A00-A09)	42	2,0
10	Malignant neoplasm of female genital organs (C51-C58)	35	1,7
	Other causes	927	44,8
	Non-natural causes	47	2,3
	All causes	**2 070**	**100,0**

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

Appendix M4: The ten leading underlying natural causes of death by age and sex: Free State, 2010

	Free State, both sexes, all ages	No.	%
1	Influenza and pneumonia (J09-J18)	5 440	12,1
2	Tuberculosis (A15-A19)*	5 004	11,1
3	Intestinal infectious diseases (A00-A09)	2 976	6,6
4	Other forms of heart disease (I30-I52)	2 365	5,3
5	Cerebrovascular diseases (I60-I69)	1 932	4,3
6	Certain disorders involving the immune mechanism (D80-D89)	1 643	3,6
7	Diabetes mellitus (E10-E14)	1 245	2,8
8	Hypertensive diseases (I10-I15)	1 182	2,6
9	Chronic lower respiratory diseases (J40-J47)	821	1,8
10	Ischaemic heart diseases (I20-I25)	805	1,8
	Other natural causes	18 335	40,7
	Non-natural causes	3 270	7,3
	Total	**45 018**	**100,0**

	Free State, males, all ages	No.	%
1	Tuberculosis (A15-A19)*	2 873	12,4
2	Influenza and pneumonia (J09-J18)	2 695	11,7
3	Intestinal infectious diseases (A00-A09)	1 464	6,3
4	Other forms of heart disease (I30-I52)	1 030	4,5
5	Certain disorders involving the immune mechanism (D80-D89)	813	3,5
6	Cerebrovascular diseases (I60-I69)	771	3,3
7	Chronic lower respiratory diseases (J40-J47)	542	2,3
8	Diabetes mellitus (E10-E14)	476	2,1
9	Ischaemic heart diseases (I20-I25)	462	2,0
10	Hypertensive diseases (I10-I15)	454	2,0
	Other natural causes	9 070	39,2
	Non-natural causes	2 463	10,7
	All causes	**23 113**	**100,0**

	Free State, females, all ages	No.	%
1	Influenza and pneumonia (J09-J18)	2 738	12,5
2	Tuberculosis (A15-A19)*	2 128	9,7
3	Intestinal infectious diseases (A00-A09)	1 508	6,9
4	Other forms of heart disease (I30-I52)	1 335	6,1
5	Cerebrovascular diseases (I60-I69)	1 160	5,3
6	Certain disorders involving the immune mechanism (D80-D89)	830	3,8
7	Diabetes mellitus (E10-E14)	768	3,5
8	Hypertensive diseases (I10-I15)	728	3,3
9	Human immunodeficiency virus [HIV] disease (B20-B24)	375	1,7
10	Ischaemic heart diseases (I20-I25)	342	1,6
	Other natural causes	9 144	41,8
	Non-natural causes	804	3,7
	All causes	**21 860**	**100,0**

	Free State, both sexes, 0-14	No.	%
1	Intestinal infectious diseases (A00-A09)	1 018	19,3
2	Influenza and pneumonia (J09-J18)	854	16,2
3	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	524	9,9
4	Malnutrition (E40-E46)	289	5,5
5	Tuberculosis (A15-A19)*	168	3,2
6	Other disorders originating in the perinatal period (P90-P96)	156	3,0
7	Disorders related to length of gestation and fetal growth (P05-P08)	147	2,8
8	Certain disorders involving the immune mechanism (D80-D89)	125	2,4
9	Infections specific to the perinatal period (P35-P39)	106	2,0
10	Other acute lower respiratory infections (J20-J22)	90	1,7
	Other natural causes	1 487	28,2
	Non-natural causes	311	5,9
	All causes	**5 275**	**100,0**

	Free State, males, 0-14	No.	%
1	Intestinal infectious diseases (A00-A09)	582	20,6
2	Influenza and pneumonia (J09-J18)	423	15,0
3	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	287	10,2
4	Malnutrition (E40-E46)	152	5,4
5	Tuberculosis (A15-A19)*	93	3,3
6	Other disorders originating in the perinatal period (P90-P96)	85	3,0
7	Disorders related to length of gestation and fetal growth (P05-P08)	83	2,9
8	Certain disorders involving the immune mechanism (D80-D89)	68	2,4
9	Human immunodeficiency virus [HIV] disease (B20-B24)	51	1,8
10	Infections specific to the perinatal period (P35-P39)	50	1,8
	Other natural causes	762	27,0
	Non-natural causes	187	6,6
	All causes	**2 823**	**100,0**

	Free State, females, 0-14	No.	%
1	Intestinal infectious diseases (A00-A09)	435	17,9
2	Influenza and pneumonia (J09-J18)	429	17,6
3	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	233	9,6
4	Malnutrition (E40-E46)	136	5,6
5	Tuberculosis (A15-A19)*	75	3,1
6	Other disorders originating in the perinatal period (P90-P96)	69	2,8
7	Disorders related to length of gestation and fetal growth (P05-P08)	64	2,6
8	Certain disorders involving the immune mechanism (D80-D89)	57	2,3
9	Infections specific to the perinatal period (P35-P39)	56	2,3
10	Other acute lower respiratory infections (J20-J22)	48	2,0
	Other natural causes	709	29,1
	Non-natural causes	123	5,1
	All causes	**2 434**	**100,0**

	Free State, both sexes, 15-49	No.	%
1	Tuberculosis (A15-A19)*	3 627	18,0
2	Influenza and pneumonia (J09-J18)	2 789	13,8
3	Certain disorders involving the immune mechanism (D80-D89)	1 234	6,1
4	Intestinal infectious diseases (A00-A09)	1 221	6,1
5	Human immunodeficiency virus [HIV] disease (B20-B24)	588	2,9
6	Other forms of heart disease (I30-I52)	569	2,8
7	Inflammatory diseases of the central nervous system (G00-G09)	421	2,1
8	Other viral diseases (B25-B34)	351	1,7
9	Other acute lower respiratory infections (J20-J22)	336	1,7
10	Cerebrovascular diseases (I60-I69)	321	1,6
	Other natural causes	6 433	31,9
	Non-natural causes	2 255	11,2
	All causes	**20 145**	**100,0**

	Free State, males, 15-49	No.	%
1	Tuberculosis (A15-A19)*	1 967	18,9
2	Influenza and pneumonia (J09-J18)	1 284	12,3
3	Certain disorders involving the immune mechanism (D80-D89)	583	5,6
4	Intestinal infectious diseases (A00-A09)	564	5,4
5	Human immunodeficiency virus [HIV] disease (B20-B24)	303	2,9
6	Other forms of heart disease (I30-I52)	258	2,5
7	Inflammatory diseases of the central nervous system (G00-G09)	200	1,9
8	Other acute lower respiratory infections (J20-J22)	178	1,7
9	Other viral diseases (B25-B34)	159	1,5
10	Cerebrovascular diseases (I60-I69)	140	1,3
	Other natural causes	2 987	28,7
	Non-natural causes	1 795	17,2
	All causes	**10 418**	**100,0**

	Free State, females, 15-49	No.	%
1	Tuberculosis (A15-A19)*	1 660	17,1
2	Influenza and pneumonia (J09-J18)	1 500	15,4
3	Intestinal infectious diseases (A00-A09)	654	6,7
4	Certain disorders involving the immune mechanism (D80-D89)	651	6,7
5	Other forms of heart disease (I30-I52)	311	3,2
6	Human immunodeficiency virus [HIV] disease (B20-B24)	285	2,9
7	Inflammatory diseases of the central nervous system (G00-G09)	221	2,3
8	Other viral diseases (B25-B34)	192	2,0
9	Cerebrovascular diseases (I60-I69)	181	1,9
10	Aplastic and other anaemias (D60-D64)	178	1,8
	Other natural causes	3 423	35,2
	Non-natural causes	459	4,7
	All causes	**9 715**	**100,0**

	Free State, both sexes, 50-64	No.	%
1	Tuberculosis (A15-A19)*	967	10,5
2	Influenza and pneumonia (J09-J18)	940	10,2
3	Other forms of heart disease (I30-I52)	624	6,7
4	Cerebrovascular diseases (I60-I69)	538	5,8
5	Diabetes mellitus (E10-E14)	452	4,9
6	Broad group of underlying causes of death	406	4,4
7	Hypertensive diseases (I10-I15)	362	3,9
8	Chronic lower respiratory diseases (J40-J47)	287	3,1
9	Certain disorders involving the immune mechanism (D80-D89)	258	2,8
10	Malignant neoplasm of digestive organs (C15-C26)	222	2,4
	Other natural causes	3 750	40,6
	Non-natural causes	441	4,8
	All causes	**9 247**	**100,0**

	Free State, males, 50-64	No.	%
1	Tuberculosis (A15-A19)*	648	12,1
2	Influenza and pneumonia (J09-J18)	568	10,6
3	Other forms of heart disease (I30-I52)	314	5,9
4	Cerebrovascular diseases (I60-I69)	266	5,0
5	Chronic lower respiratory diseases (J40-J47)	206	3,9
6	Intestinal infectious diseases (A00-A09)	192	3,6
7	Diabetes mellitus (E10-E14)	190	3,6
8	Hypertensive diseases (I10-I15)	164	3,1
9	Malignant neoplasm of digestive organs (C15-C26)	156	2,9
10	Ischaemic heart diseases (I20-I25)	155	2,9
	Other natural causes	2 143	40,2
	Non-natural causes	332	6,2
	All causes	**5 334**	**100,0**

	Free State, females, 50-64	No.	%
1	Influenza and pneumonia (J09-J18)	372	9,5
2	Tuberculosis (A15-A19)*	318	8,1
3	Other forms of heart disease (I30-I52)	310	7,9
4	Cerebrovascular diseases (I60-I69)	271	6,9
5	Diabetes mellitus (E10-E14)	261	6,7
6	Intestinal infectious diseases (A00-A09)	214	5,5
7	Hypertensive diseases (I10-I15)	198	5,1
8	Certain disorders involving the immune mechanism (D80-D89)	112	2,9
9	Malignant neoplasm of female genital organs (C51-C58)	106	2,7
10	Chronic lower respiratory diseases (J40-J47)	81	2,1
	Other natural causes	1 556	39,8
	Non-natural causes	109	2,8
	All causes	**3 908**	**100,0**

	Free State, both sexes, 65+	No.	%
1	Other forms of heart disease (I30-I52)	1 134	11,0
2	Cerebrovascular diseases (I60-I69)	1 066	10,3
3	Influenza and pneumonia (J09-J18)	854	8,3
4	Hypertensive diseases (I10-I15)	669	6,5
5	Diabetes mellitus (E10-E14)	609	5,9
6	Ischaemic heart diseases (I20-I25)	469	4,5
7	Chronic lower respiratory diseases (J40-J47)	397	3,8
8	Intestinal infectious diseases (A00-A09)	331	3,2
9	Malignant neoplasm of digestive organs (C15-C26)	262	2,5
10	Tuberculosis (A15-A19)*	240	2,3
	Other natural causes	4 041	39,1
	Non-natural causes	255	2,5
	All causes	**10 327**	**100,0**

	Free State, males, 65+	No.	%
1	Other forms of heart disease (I30-I52)	440	9,7
2	Influenza and pneumonia (J09-J18)	417	9,2
3	Cerebrovascular diseases (I60-I69)	362	8,0
4	Chronic lower respiratory diseases (J40-J47)	261	5,8
5	Ischaemic heart diseases (I20-I25)	238	5,3
6	Hypertensive diseases (I10-I15)	225	5,0
7	Diabetes mellitus (E10-E14)	201	4,4
8	Tuberculosis (A15-A19)*	164	3,6
9	Malignant neoplasm of digestive organs (C15-C26)	153	3,4
10	Intestinal infectious diseases (A00-A09)	126	2,8
	Other causes	1 790	39,6
	Non-natural causes	143	3,2
	All causes	**4 520**	**100,0**

	Free State, females, 65+	No.	%
1	Cerebrovascular diseases (I60-I69)	704	12,1
2	Other forms of heart disease (I30-I52)	694	12,0
3	Hypertensive diseases (I10-I15)	444	7,7
4	Influenza and pneumonia (J09-J18)	437	7,5
5	Diabetes mellitus (E10-E14)	408	7,0
6	Ischaemic heart diseases (I20-I25)	230	4,0
7	Intestinal infectious diseases (A00-A09)	205	3,5
8	Chronic lower respiratory diseases (J40-J47)	136	2,3
9	Malignant neoplasm of female genital organs (C51-C58)	111	1,9
10	Malignant neoplasm of digestive organs (C15-C26)	108	1,9
	Other causes	2 211	38,1
	Non-natural causes	112	1,9
	All causes	**5 800**	**100,0**

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

Appendix M5: The ten leading underlying natural causes of death by age and sex: KwaZulu-Natal, 2010

	KwaZulu-Natal, both sexes, all ages	No.	%
1	Tuberculosis (A15-A19)*	18 205	15,7
2	Intestinal infectious diseases (A00-A09)	6 583	5,7
3	Influenza and pneumonia (J09-J18)	6 492	5,6
4	Cerebrovascular diseases (I60-I69)	5 636	4,9
5	Other forms of heart disease (I30-I52)	5 615	4,8
6	Diabetes mellitus (E10-E14)	5 214	4,5
7	Human immunodeficiency virus [HIV] disease (B20-B24)	5 060	4,4
8	Other viral diseases (B25-B34)	3 550	3,1
9	Hypertensive diseases (I10-I15)	2 711	2,3
10	Ischaemic heart diseases (I20-I25)	2 454	2,1
	Other natural causes	44 156	38,1
	Non-natural causes	10 213	8,8
	All causes	**115 889**	**100,0**

	KwaZulu-Natal, males, all ages	No.	%
1	Tuberculosis (A15-A19)*	9 867	16,9
2	Influenza and pneumonia (J09-J18)	3 261	5,6
3	Intestinal infectious diseases (A00-A09)	3 080	5,3
4	Other forms of heart disease (I30-I52)	2 508	4,3
5	Human immunodeficiency virus [HIV] disease (B20-B24)	2 499	4,3
6	Cerebrovascular diseases (I60-I69)	2 077	3,6
7	Diabetes mellitus (E10-E14)	1 883	3,2
8	Other viral diseases (B25-B34)	1 488	2,6
9	Ischaemic heart diseases (I20-I25)	1 421	2,4
10	Chronic lower respiratory diseases (J40-J47)	1 167	2,0
	Other natural causes	21 241	36,4
	Non-natural causes	7 794	13,4
	All causes	**58 286**	**100,0**

	KwaZulu-Natal, females, all ages	No.	%
1	Tuberculosis (A15-A19)*	8 312	14,5
2	Cerebrovascular diseases (I60-I69)	3 556	6,2
3	Intestinal infectious diseases (A00-A09)	3 487	6,1
4	Diabetes mellitus (E10-E14)	3 330	5,8
5	Influenza and pneumonia (J09-J18)	3 223	5,6
6	Other forms of heart disease (I30-I52)	3 104	5,4
7	Human immunodeficiency virus [HIV] disease (B20-B24)	2 556	4,5
8	Other viral diseases (B25-B34)	2 059	3,6
9	Hypertensive diseases (I10-I15)	1 753	3,1
10	Ischaemic heart diseases (I20-I25)	1 033	1,8
	Other natural causes	22 605	39,4
	Non-natural causes	2 403	4,2
	All causes	**57 421**	**100,0**

	KwaZulu-Natal, both sexes, 0-14	No.	%
1	Intestinal infectious diseases (A00-A09)	2 019	16,7
2	Influenza and pneumonia (J09-J18)	1 130	9,4
3	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	1 115	9,2
4	Tuberculosis (A15-A19)*	646	5,4
5	Malnutrition (E40-E46)	399	3,3
6	Disorders related to length of gestation and fetal growth (P05-P08)	336	2,8
7	Human immunodeficiency virus [HIV] disease (B20-B24)	316	2,6
8	Other disorders originating in the perinatal period (P90-P96)	307	2,5
9	Infections specific to the perinatal period (P35-P39)	293	2,4
10	Other viral diseases (B25-B34)	246	2,0
	Other natural causes	4 103	34,0
	Non-natural causes	1 150	9,5
	All causes	**12 060**	**100,0**

	KwaZulu-Natal, males, 0-14	No.	%
1	Intestinal infectious diseases (A00-A09)	1 039	16,5
2	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	593	9,4
3	Influenza and pneumonia (J09-J18)	575	9,1
4	Tuberculosis (A15-A19)*	340	5,4
5	Other disorders originating in the perinatal period (P90-P96)	192	3,0
6	Malnutrition (E40-E46)	190	3,0
7	Human immunodeficiency virus [HIV] disease (B20-B24)	171	2,7
8	Infections specific to the perinatal period (P35-P39)	160	2,5
9	Disorders related to length of gestation and fetal growth (P05-P08)	154	2,4
10	Other viral diseases (B25-B34)	129	2,0
	Other causes	2 094	33,2
	Non-natural causes	675	10,7
	All causes	**6 312**	**100,0**

	KwaZulu-Natal, females, 0-14	No.	%
1	Intestinal infectious diseases (A00-A09)	969	17,1
2	Influenza and pneumonia (J09-J18)	551	9,7
3	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	500	8,8
4	Tuberculosis (A15-A19)*	305	5,4
5	Malnutrition (E40-E46)	208	3,7
6	Disorders related to length of gestation and fetal growth (P05-P08)	176	3,1
7	Human immunodeficiency virus [HIV] disease (B20-B24)	144	2,5
8	Infections specific to the perinatal period (P35-P39)	129	2,3
9	Other viral diseases (B25-B34)	117	2,1
10	Other disorders originating in the perinatal period (P90-P96)	110	1,9
	Other causes	1 988	35,1
	Non-natural causes	471	8,3
	All causes	**5 668**	**100,0**

	KwaZulu-Natal, both sexes, 15-49	No.	%
1	Tuberculosis (A15-A19)*	13 511	24,5
2	Human immunodeficiency virus [HIV] disease (B20-B24)	4 111	7,5
3	Influenza and pneumonia (J09-J18)	3 295	6,0
4	Intestinal infectious diseases (A00-A09)	3 031	5,5
5	Other viral diseases (B25-B34)	2 805	5,1
6	Inflammatory diseases of the central nervous system (G00-G09)	1 524	2,8
7	Certain disorders involving the immune mechanism (D80-D89)	1 482	2,7
8	Other forms of heart disease (I30-I52)	1 208	2,2
9	Other acute lower respiratory infections (J20-J22)	1 185	2,2
10	Cerebrovascular diseases (I60-I69)	818	1,5
	Other natural causes	15 023	27,3
	Non-natural causes	7 095	12,9
	All causes	**55 088**	**100,0**

	KwaZulu-Natal, males, 15-49	No.	%
1	Tuberculosis (A15-A19)*	6 958	24,0
2	Human immunodeficiency virus [HIV] disease (B20-B24)	1 987	6,8
3	Influenza and pneumonia (J09-J18)	1 588	5,5
4	Intestinal infectious diseases (A00-A09)	1 381	4,8
5	Other viral diseases (B25-B34)	1 113	3,8
6	Certain disorders involving the immune mechanism (D80-D89)	735	2,5
7	Inflammatory diseases of the central nervous system (G00-G09)	696	2,4
8	Other acute lower respiratory infections (J20-J22)	604	2,1
9	Other forms of heart disease (I30-I52)	579	2,0
10	Cerebrovascular diseases (I60-I69)	365	1,3
	Other natural causes	7 203	24,8
	Non-natural causes	5 835	20,1
	All causes	**29 044**	**100,0**

	KwaZulu-Natal, females, 15-49	No.	%
1	Tuberculosis (A15-A19)*	6 539	25,2
2	Human immunodeficiency virus [HIV] disease (B20-B24)	2 122	8,2
3	Influenza and pneumonia (J09-J18)	1 704	6,6
4	Other viral diseases (B25-B34)	1 690	6,5
5	Intestinal infectious diseases (A00-A09)	1 647	6,3
6	Inflammatory diseases of the central nervous system (G00-G09)	828	3,2
7	Certain disorders involving the immune mechanism (D80-D89)	746	2,9
8	Other forms of heart disease (I30-I52)	629	2,4
9	Other acute lower respiratory infections (J20-J22)	581	2,2
10	Protozoal diseases (B50-B64)	470	1,8
	Other natural causes	7 781	29,9
	Non-natural causes	1 254	4,8
	All causes	**25 991**	**100,0**

	KwaZulu-Natal, both sexes, 50-64	No.	%
1	Tuberculosis (A15-A19)*	2 848	13,8
2	Diabetes mellitus (E10-E14)	1 768	8,5
3	Cerebrovascular diseases (I60-I69)	1 372	6,6
4	Other forms of heart disease (I30-I52)	1 319	6,4
5	Influenza and pneumonia (J09-J18)	943	4,6
6	Ischaemic heart diseases (I20-I25)	770	3,7
7	Intestinal infectious diseases (A00-A09)	758	3,7
8	Hypertensive diseases (I10-I15)	735	3,6
9	Chronic lower respiratory diseases (J40-J47)	582	2,8
10	Human immunodeficiency virus [HIV] disease (B20-B24)	539	2,6
	Other natural causes	7 885	38,1
	Non-natural causes	1 167	5,6
	All causes	**20 686**	**100,0**

	KwaZulu-Natal, males, 50-64	No.	%
1	Tuberculosis (A15-A19)*	1 879	15,7
2	Diabetes mellitus (E10-E14)	745	6,2
3	Other forms of heart disease (I30-I52)	744	6,2
4	Cerebrovascular diseases (I60-I69)	662	5,5
5	Influenza and pneumonia (J09-J18)	585	4,9
6	Ischaemic heart diseases (I20-I25)	525	4,4
7	Chronic lower respiratory diseases (J40-J47)	420	3,5
8	Intestinal infectious diseases (A00-A09)	389	3,2
9	Hypertensive diseases (I10-I15)	321	2,7
10	Malignant neoplasm of digestive organs (C15-C26)	315	2,6
	Other natural causes	4 546	37,9
	Non-natural causes	856	7,1
	All causes	**11 987**	**100,0**

	KwaZulu-Natal, females, 50-64	No.	%
1	Diabetes mellitus (E10-E14)	1 023	11,8
2	Tuberculosis (A15-A19)*	963	11,1
3	Cerebrovascular diseases (I60-I69)	709	8,2
4	Other forms of heart disease (I30-I52)	574	6,6
5	Hypertensive diseases (I10-I15)	414	4,8
6	Intestinal infectious diseases (A00-A09)	369	4,2
7	Influenza and pneumonia (J09-J18)	358	4,1
8	Malignant neoplasm of female genital organs (C51-C58)	257	3,0
9	Ischaemic heart diseases (I20-I25)	245	2,8
10	Human immunodeficiency virus [HIV] disease (B20-B24)	236	2,7
	Other natural causes	3 228	37,2
	Non-natural causes	310	3,6
	All causes	**8 686**	**100,0**

	KwaZulu-Natal, both sexes, 65+	No.	%
1	Cerebrovascular diseases (I60-I69)	3 403	12,2
2	Other forms of heart disease (I30-I52)	2 954	10,6
3	Diabetes mellitus (E10-E14)	2 829	10,2
4	Hypertensive diseases (I10-I15)	1 652	5,9
5	Ischaemic heart diseases (I20-I25)	1 338	4,8
6	Tuberculosis (A15-A19)*	1 152	4,1
7	Influenza and pneumonia (J09-J18)	1 112	4,0
8	Chronic lower respiratory diseases (J40-J47)	876	3,1
9	Intestinal infectious diseases (A00-A09)	760	2,7
10	Malignant neoplasm of digestive organs (C15-C26)	725	2,6
	Other natural causes	10 271	36,9
	Non-natural causes	**748**	**2,7**
	All causes	**27 820**	**100,0**

	KwaZulu-Natal, males, 65+	No.	%
1	Other forms of heart disease (I30-I52)	1 117	10,4
2	Cerebrovascular diseases (I60-I69)	1 025	9,5
3	Diabetes mellitus (E10-E14)	876	8,1
4	Ischaemic heart diseases (I20-I25)	664	6,2
5	Tuberculosis (A15-A19)*	660	6,1
6	Influenza and pneumonia (J09-J18)	503	4,7
7	Hypertensive diseases (I10-I15)	486	4,5
8	Chronic lower respiratory diseases (J40-J47)	465	4,3
9	Malignant neoplasm of digestive organs (C15-C26)	363	3,4
10	Intestinal infectious diseases (A00-A09)	263	2,4
	Other causes	3 983	36,9
	Non-natural causes	**381**	**3,5**
	All causes	**10 786**	**100,0**

	KwaZulu-Natal, females, 65+	No.	%
1	Cerebrovascular diseases (I60-I69)	2 377	14,0
2	Diabetes mellitus (E10-E14)	1 952	11,5
3	Other forms of heart disease (I30-I52)	1 835	10,8
4	Hypertensive diseases (I10-I15)	1 166	6,8
5	Ischaemic heart diseases (I20-I25)	674	4,0
6	Influenza and pneumonia (J09-J18)	609	3,6
7	Intestinal infectious diseases (A00-A09)	497	2,9
8	Tuberculosis (A15-A19)*	491	2,9
9	Chronic lower respiratory diseases (J40-J47)	411	2,4
10	Malignant neoplasm of digestive organs (C15-C26)	362	2,1
	Other causes	6 283	36,9
	Non-natural causes	**367**	**2,2**
	All causes	**17 024**	**100,0**

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

Appendix M6: The ten leading underlying natural causes of death by age and sex: North West, 2010

	North West, both sexes, all ages	No.	%
1	Tuberculosis (A15-A19)*	4 942	12,3
2	Influenza and pneumonia (J09-J18)	3 630	9,1
3	Other forms of heart disease (I30-I52)	2 527	6,3
4	Intestinal infectious diseases (A00-A09)	2 162	5,4
5	Cerebrovascular diseases (I60-I69)	1 657	4,1
6	Hypertensive diseases (I10-I15)	1 616	4,0
7	Diabetes mellitus (E10-E14)	1 302	3,3
8	Certain disorders involving the immune mechanism (D80-D89)	1 091	2,7
9	Human immunodeficiency virus [HIV] disease (B20-B24)	1 090	2,7
10	Other viral diseases (B25-B34)	1 030	2,6
	Other natural causes	16 058	40,1
	Non-natural causes	2 954	7,4
	All causes	**40 059**	**100,0**

	North West, males, all ages	No.	%
1	Tuberculosis (A15-A19)*	2 789	13,2
2	Influenza and pneumonia (J09-J18)	1 792	8,5
3	Other forms of heart disease (I30-I52)	1 253	5,9
4	Intestinal infectious diseases (A00-A09)	1 061	5,0
5	Cerebrovascular diseases (I60-I69)	763	3,6
6	Hypertensive diseases (I10-I15)	637	3,0
7	Human immunodeficiency virus [HIV] disease (B20-B24)	595	2,8
8	Chronic lower respiratory diseases (J40-J47)	580	2,8
9	Certain disorders involving the immune mechanism (D80-D89)	556	2,6
10	Diabetes mellitus (E10-E14)	491	2,3
	Other natural causes	8 306	39,4
	Non-natural causes	2 250	10,7
	All causes	**21 073**	**100,0**

	North West, females, all ages	No.	%
1	Tuberculosis (A15-A19)*	2 151	11,4
2	Influenza and pneumonia (J09-J18)	1 825	9,7
3	Other forms of heart disease (I30-I52)	1 274	6,7
4	Intestinal infectious diseases (A00-A09)	1 091	5,8
5	Hypertensive diseases (I10-I15)	979	5,2
6	Cerebrovascular diseases (I60-I69)	893	4,7
7	Diabetes mellitus (E10-E14)	811	4,3
8	Other viral diseases (B25-B34)	545	2,9
9	Certain disorders involving the immune mechanism (D80-D89)	534	2,8
10	Human immunodeficiency virus [HIV] disease (B20-B24)	495	2,6
	Other natural causes	7 605	40,2
	Non-natural causes	697	3,7
	All causes	**18 900**	**100,0**

	North West, both sexes, 0-14	No.	%
1	Intestinal infectious diseases (A00-A09)	1 095	20,7
2	Influenza and pneumonia (J09-J18)	711	13,5
3	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	513	9,7
4	Malnutrition (E40-E46)	235	4,5
5	Tuberculosis (A15-A19)*	228	4,3
6	Disorders related to length of gestation and fetal growth (P05-P08)	151	2,9
7	Other disorders originating in the perinatal period (P90-P96)	147	2,8
8	Other acute lower respiratory infections (J20-J22)	133	2,5
9	Infections specific to the perinatal period (P35-P39)	121	2,3
10	Other bacterial diseases (A30-A49)	91	1,7
	Other natural causes	1 535	29,1
	Non-natural causes	319	**6,0**
	All causes	**5 279**	**100,0**

	North West, males, 0-14	No.	%
1	Intestinal infectious diseases (A00-A09)	576	20,7
2	Influenza and pneumonia (J09-J18)	338	12,1
3	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	286	10,3
4	Malnutrition (E40-E46)	138	5,0
5	Tuberculosis (A15-A19)*	109	3,9
6	Disorders related to length of gestation and fetal growth (P05-P08)	86	3,1
7	Other disorders originating in the perinatal period (P90-P96)	78	2,8
8	Infections specific to the perinatal period (P35-P39)	65	2,3
9	Other acute lower respiratory infections (J20-J22)	58	2,1
10	Other bacterial diseases (A30-A49)	48	1,7
	Other natural causes	820	29,4
	Non-natural causes	183	**6,6**
	All causes	**2 785**	**100,0**

	North West, females, 0-14	No.	%
1	Intestinal infectious diseases (A00-A09)	509	20,8
2	Influenza and pneumonia (J09-J18)	366	15,0
3	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	220	9,0
4	Tuberculosis (A15-A19)	119	4,9
5	Malnutrition (E40-E46)	97	4,0
6	Other acute lower respiratory infections (J20-J22)	74	3,0
7	Disorders related to length of gestation and fetal growth (P05-P08)	62	2,5
7	Other disorders originating in the perinatal period (P90-P96)	62	2,5
9	Infections specific to the perinatal period (P35-P39)	55	2,2
10	Other bacterial diseases (A30-A49)	42	1,7
10	Other viral diseases (B25-B34)	42	1,7
	Other natural causes	663	27,1
	Non-natural causes	136	**5,6**
	All causes	**2 447**	**100**

	North West, both sexes, 15-49	No.	%
1	Tuberculosis (A15-A19)*	3 290	19,9
2	Influenza and pneumonia (J09-J18)	1 775	10,7
3	Human immunodeficiency virus [HIV] disease (B20-B24)	837	5,1
4	Certain disorders involving the immune mechanism (D80-D89)	826	5,0
5	Other viral diseases (B25-B34)	774	4,7
6	Intestinal infectious diseases (A00-A09)	684	4,1
7	Other forms of heart disease (I30-I52)	572	3,5
8	Other bacterial diseases (A30-A49)	259	1,6
9	Inflammatory diseases of the central nervous system (G00-G09)	242	1,5
10	Other acute lower respiratory infections (J20-J22)	241	1,5
	Other natural causes	4 979	30,1
	Non-natural causes	2 039	12,3
	All causes	**16 518**	**100,0**

	North West, males, 15-49	No.	%
1	Tuberculosis (A15-A19)*	1 759	20,3
2	Influenza and pneumonia (J09-J18)	831	9,6
3	Human immunodeficiency virus [HIV] disease (B20-B24)	441	5,1
4	Certain disorders involving the immune mechanism (D80-D89)	407	4,7
5	Other viral diseases (B25-B34)	351	4,1
6	Intestinal infectious diseases (A00-A09)	298	3,4
7	Other forms of heart disease (I30-I52)	283	3,3
8	Other bacterial diseases (A30-A49)	121	1,4
9	Other acute lower respiratory infections (J20-J22)	117	1,4
10	Renal failure (N17-N19)	107	1,2
	Other natural causes	2 310	26,7
	Non-natural causes	1 625	18,8
	All causes	**8 650**	**100,0**

	North West, females, 15-49	No.	%
1	Tuberculosis (A15-A19)*	1 530	19,5
2	Influenza and pneumonia (J09-J18)	941	12,0
3	Other viral diseases (B25-B34)	421	5,4
4	Certain disorders involving the immune mechanism (D80-D89)	419	5,3
5	Human immunodeficiency virus [HIV] disease (B20-B24)	396	5,0
6	Intestinal infectious diseases (A00-A09)	386	4,9
7	Other forms of heart disease (I30-I52)	289	3,7
8	Inflammatory diseases of the central nervous system (G00-G09)	143	1,8
9	Other bacterial diseases (A30-A49)	137	1,7
10	Other acute lower respiratory infections (J20-J22)	123	1,6
	Other natural causes	2 654	33,8
	Non-natural causes	411	5,2
	All causes	**7 850**	**100,0**

	North West, both sexes, 50-64	No.	%
1	Tuberculosis (A15-A19)*	1 023	13,2
2	Other forms of heart disease (I30-I52)	611	7,9
3	Influenza and pneumonia (J09-J18)	572	7,4
4	Cerebrovascular diseases (I60-I69)	434	5,6
5	Diabetes mellitus (E10-E14)	407	5,3
6	Hypertensive diseases (I10-I15)	383	5,0
7	Chronic lower respiratory diseases (J40-J47)	287	3,7
8	Intestinal infectious diseases (A00-A09)	185	2,4
9	Human immunodeficiency virus [HIV] disease (B20-B24)	178	2,3
9	Malignant neoplasm of digestive organs (C15-C26)	178	2,3
	Other natural causes	3 125	40,4
	Non-natural causes	343	**4,4**
	All causes	**7 726**	**100**

	North West, males, 50-64	No.	%
1	Tuberculosis (A15-A19)*	654	14,2
2	Other forms of heart disease (I30-I52)	365	7,9
3	Influenza and pneumonia (J09-J18)	317	6,9
4	Cerebrovascular diseases (I60-I69)	244	5,3
5	Chronic lower respiratory diseases (J40-J47)	194	4,2
6	Diabetes mellitus (E10-E14)	187	4,1
7	Hypertensive diseases (I10-I15)	166	3,6
8	Malignant neoplasm of digestive organs (C15-C26)	116	2,5
9	Human immunodeficiency virus [HIV] disease (B20-B24)	112	2,4
10	Ischaemic heart diseases (I20-I25)	106	2,3
	Other natural causes	1 885	40,8
	Non-natural causes	271	**5,9**
	All causes	**4 617**	**100**

	North West, females, 50-64	No.	%
1	Tuberculosis (A15-A19)*	368	11,9
2	Influenza and pneumonia (J09-J18)	255	8,2
3	Other forms of heart disease (I30-I52)	246	7,9
4	Diabetes mellitus (E10-E14)	220	7,1
5	Hypertensive diseases (I10-I15)	217	7,0
6	Cerebrovascular diseases (I60-I69)	190	6,1
7	Malignant neoplasm of female genital organs (C51-C58)	105	3,4
8	Chronic lower respiratory diseases (J40-J47)	93	3,0
9	Intestinal infectious diseases (A00-A09)	88	2,8
10	Other viral diseases (B25-B34)	74	2,4
	Other natural causes	1 173	37,8
	Non-natural causes	72	**2,3**
	All causes	**3 101**	**100**

	North West, both sexes, 65+	No.	%
1	Other forms of heart disease (I30-I52)	1 298	12,4
2	Hypertensive diseases (I10-I15)	1 069	10,2
3	Cerebrovascular diseases (I60-I69)	1 005	9,6
4	Diabetes mellitus (E10-E14)	688	6,6
5	Influenza and pneumonia (J09-J18)	566	5,4
6	Chronic lower respiratory diseases (J40-J47)	443	4,2
7	Tuberculosis (A15-A19)*	400	3,8
8	Ischaemic heart diseases (I20-I25)	323	3,1
9	Malignant neoplasm of digestive organs (C15-C26)	221	2,1
10	Intestinal infectious diseases (A00-A09)	196	1,9
	Other natural causes	4 024	38,5
	Non-natural causes	206	2,0
	All causes	**10 439**	100,0

	North West, males, 65+	No.	%
1	Other forms of heart disease (I30-I52)	576	11,6
2	Cerebrovascular diseases (I60-I69)	425	8,6
3	Hypertensive diseases (I10-I15)	399	8,1
4	Influenza and pneumonia (J09-J18)	302	6,1
5	Chronic lower respiratory diseases (J40-J47)	287	5,8
6	Tuberculosis (A15-A19)*	266	5,4
7	Diabetes mellitus (E10-E14)	217	4,4
8	Ischaemic heart diseases (I20-I25)	167	3,4
9	Malignant neoplasm of male genital organs (C60-C63)	129	2,6
10	Malignant neoplasm of digestive organs (C15-C26)	113	2,3
	Other causes	1 936	39,1
	Non-natural causes	134	2,7
	All causes	**4 951**	100,0

	North West, females, 65+	No.	%
1	Other forms of heart disease (I30-I52)	722	13,2
2	Hypertensive diseases (I10-I15)	670	12,2
3	Cerebrovascular diseases (I60-I69)	580	10,6
4	Diabetes mellitus (E10-E14)	471	8,6
5	Influenza and pneumonia (J09-J18)	263	4,8
6	Ischaemic heart diseases (I20-I25)	156	2,8
6	Chronic lower respiratory diseases (J40-J47)	156	2,8
7	Tuberculosis (A15-A19)*	134	2,4
8	Malignant neoplasm of digestive organs (C15-C26)	108	2,0
9	Intestinal infectious diseases (A00-A09)	107	2,0
	Other causes	2 047	37,3
	Non-natural causes	72	1,3
	All causes	**5 486**	100,0

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

Appendix M7: The ten leading underlying natural causes of death by age and sex: Gauteng, 2010

	Gauteng, both sexes, all ages	No.	%
1	Tuberculosis (A15-A19)*	9 247	8,8
2	Influenza and pneumonia (J09-J18)	7 940	7,5
3	Other forms of heart disease (I30-I52)	5 494	5,2
4	Cerebrovascular diseases (I60-I69)	4 138	3,9
5	Intestinal infectious diseases (A00-A09)	3 936	3,7
6	Diabetes mellitus (E10-E14)	3 747	3,5
7	Human immunodeficiency virus [HIV] disease (B20-B24)	3 248	3,1
8	Ischaemic heart diseases (I20-I25)	2 844	2,7
9	Hypertensive diseases (I10-I15)	2 638	2,5
10	Chronic lower respiratory diseases (J40-J47)	2 217	2,1
	Other natural causes	49 886	47,2
	Non-natural causes	10 338	9,8
	All causes	**105 673**	**100,0**

	Gauteng, males, all ages	No.	%
1	Tuberculosis (A15-A19)*	5 290	9,5
2	Influenza and pneumonia (J09-J18)	3 959	7,1
3	Other forms of heart disease (I30-I52)	2 519	4,5
4	Intestinal infectious diseases (A00-A09)	1 944	3,5
5	Cerebrovascular diseases (I60-I69)	1 865	3,3
6	Ischaemic heart diseases (I20-I25)	1 729	3,1
7	Human immunodeficiency virus [HIV] disease (B20-B24)	1 634	2,9
8	Diabetes mellitus (E10-E14)	1 614	2,9
9	Chronic lower respiratory diseases (J40-J47)	1 307	2,3
10	Malignant neoplasm of digestive organs (C15-C26)	1 189	2,1
	Other natural causes	24 815	44,5
	Non-natural causes	7 926	14,2
	All causes	**55 791**	**100,0**

	Gauteng, females, all ages	No.	%
1	Influenza and pneumonia (J09-J18)	3 952	8,0
2	Tuberculosis (A15-A19)*	3 928	7,9
3	Other forms of heart disease (I30-I52)	2 965	6,0
4	Cerebrovascular diseases (I60-I69)	2 268	4,6
5	Diabetes mellitus (E10-E14)	2 133	4,3
6	Intestinal infectious diseases (A00-A09)	1 972	4,0
7	Human immunodeficiency virus [HIV] disease (B20-B24)	1 603	3,2
8	Hypertensive diseases (I10-I15)	1 585	3,2
9	Ischaemic heart diseases (I20-I25)	1 113	2,2
10	Certain disorders involving the immune mechanism (D80-D89)	976	2,0
	Other natural causes	24 710	49,9
	Non-natural causes	2 362	4,8
	All causes	**49 567**	**100,0**

	Gauteng, both sexes, 0-14	No.	%
1	Intestinal infectious diseases (A00-A09)	1 489	13,1
2	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	1 450	12,8
3	Influenza and pneumonia (J09-J18)	1 113	9,8
4	Other disorders originating in the perinatal period (P90-P96)	500	4,4
5	Infections specific to the perinatal period (P35-P39)	436	3,8
6	Malnutrition (E40-E46)	334	2,9
7	Tuberculosis (A15-A19)*	209	1,8
8	Other viral diseases (B25-B34)	204	1,8
9	Disorders related to length of gestation and fetal growth (P05-P08)	198	1,7
10	Other bacterial diseases (A30-A49)	186	1,6
	Other natural causes	4 310	37,9
	Non-natural causes	929	8,2
	All causes	**11 358**	**100,0**

	Gauteng, males, 0-14	No.	%
1	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	846	13,7
2	Intestinal infectious diseases (A00-A09)	814	13,2
3	Influenza and pneumonia (J09-J18)	603	9,8
4	Other disorders originating in the perinatal period (P90-P96)	260	4,2
5	Infections specific to the perinatal period (P35-P39)	242	3,9
6	Malnutrition (E40-E46)	173	2,8
7	Disorders related to length of gestation and fetal growth (P05-P08)	115	1,9
8	Other viral diseases (B25-B34)	111	1,8
9	Tuberculosis (A15-A19)*	99	1,6
10	Other bacterial diseases (A30-A49)	95	1,5
	Other natural causes	2 275	36,9
	Non-natural causes	535	8,7
	All causes	**6 168**	**100,0**

	Gauteng, females, 0-14	No.	%
1	Intestinal infectious diseases (A00-A09)	667	13,1
2	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	582	11,4
3	Influenza and pneumonia (J09-J18)	501	9,8
4	Other disorders originating in the perinatal period (P90-P96)	224	4,4
5	Infections specific to the perinatal period (P35-P39)	188	3,7
6	Malnutrition (E40-E46)	160	3,1
7	Tuberculosis (A15-A19)*	110	2,2
8	Other bacterial diseases (A30-A49)	91	1,8
9	Other viral diseases (B25-B34)	90	1,8
10	Disorders related to length of gestation and fetal growth (P05-P08)	79	1,6
	Other natural causes	2 008	39,4
	Non-natural causes	392	7,7
	All causes	**5 092**	**100,0**

	Gauteng, both sexes, 15-49	No.	%
1	Tuberculosis (A15-A19)*	6 762	15,3
2	Influenza and pneumonia (J09-J18)	3 996	9,0
3	Human immunodeficiency virus [HIV] disease (B20-B24)	2 514	5,7
4	Certain disorders involving the immune mechanism (D80-D89)	1 539	3,5
5	Intestinal infectious diseases (A00-A09)	1 511	3,4
6	Other forms of heart disease (I30-I52)	1 409	3,2
7	Other viral diseases (B25-B34)	1 348	3,1
8	Inflammatory diseases of the central nervous system (G00-G09)	1 192	2,7
9	Cerebrovascular diseases (I60-I69)	732	1,7
10	Other bacterial diseases (A30-A49)	601	1,4
10	Renal failure (N17-N19)	601	1,4
	Other natural causes	14 802	33,5
	Non-natural causes	7 169	16,2
	All causes	**44 176**	**100,0**

	Gauteng, males, 15-49	No.	%
1	Tuberculosis (A15-A19)*	3 670	15,2
2	Influenza and pneumonia (J09-J18)	1 894	7,8
3	Human immunodeficiency virus [HIV] disease (B20-B24)	1 247	5,2
4	Certain disorders involving the immune mechanism (D80-D89)	759	3,1
5	Intestinal infectious diseases (A00-A09)	711	2,9
6	Other forms of heart disease (I30-I52)	667	2,8
7	Other viral diseases (B25-B34)	621	2,6
8	Inflammatory diseases of the central nervous system (G00-G09)	575	2,4
9	Cerebrovascular diseases (I60-I69)	360	1,5
10	Renal failure (N17-N19)	346	1,4
	Other natural causes	7 459	30,8
	Non-natural causes	5 877	24,3
	All causes	**24 186**	**100,0**

	Gauteng, females, 15-49	No.	%
1	Tuberculosis (A15-A19)*	3 078	15,5
2	Influenza and pneumonia (J09-J18)	2 092	10,5
3	Human immunodeficiency virus [HIV] disease (B20-B24)	1 265	6,4
4	Intestinal infectious diseases (A00-A09)	793	4,0
5	Certain disorders involving the immune mechanism (D80-D89)	777	3,9
6	Other forms of heart disease (I30-I52)	741	3,7
7	Other viral diseases (B25-B34)	726	3,6
8	Inflammatory diseases of the central nervous system (G00-G09)	617	3,1
9	Cerebrovascular diseases (I60-I69)	370	1,9
10	Protozoal diseases (B50-B64)	365	1,8
	Other natural causes	7 809	39,2
	Non-natural causes	1 276	6,4
	All causes	**19 909**	**100,0**

	Gauteng, both sexes, 50-64	No.	%
1	Tuberculosis (A15-A19)*	1 770	8,1
2	Influenza and pneumonia (J09-J18)	1 338	6,1
3	Diabetes mellitus (E10-E14)	1 317	6,0
4	Other forms of heart disease (I30-I52)	1 302	6,0
5	Cerebrovascular diseases (I60-I69)	1 174	5,4
6	Ischaemic heart diseases (I20-I25)	835	3,8
7	Hypertensive diseases (I10-I15)	784	3,6
8	Malignant neoplasm of digestive organs (C15-C26)	735	3,4
9	Chronic lower respiratory diseases (J40-J47)	656	3,0
10	Human immunodeficiency virus [HIV] disease (B20-B24)	534	2,4
	Other natural causes	10 129	46,4
	Non-natural causes	1 236	5,7
	All causes	**21 810**	**100,0**

	Gauteng, males, 50-64	No.	%
1	Tuberculosis (A15-A19)*	1 199	9,3
2	Influenza and pneumonia (J09-J18)	796	6,2
3	Other forms of heart disease (I30-I52)	741	5,8
4	Cerebrovascular diseases (I60-I69)	650	5,1
5	Diabetes mellitus (E10-E14)	644	5,0
6	Ischaemic heart diseases (I20-I25)	602	4,7
7	Malignant neoplasm of digestive organs (C15-C26)	486	3,8
8	Chronic lower respiratory diseases (J40-J47)	425	3,3
9	Hypertensive diseases (I10-I15)	395	3,1
10	Human immunodeficiency virus [HIV] disease (B20-B24)	297	2,3
	Other natural causes	5 683	44,2
	Non-natural causes	940	7,3
	All causes	**12 858**	**100,0**

	Gauteng, females, 50-64	No.	%
1	Diabetes mellitus (E10-E14)	673	7,5
2	Tuberculosis (A15-A19)*	568	6,4
3	Other forms of heart disease (I30-I52)	561	6,3
4	Influenza and pneumonia (J09-J18)	539	6,0
5	Cerebrovascular diseases (I60-I69)	523	5,9
6	Hypertensive diseases (I10-I15)	389	4,4
7	Malignant neoplasm of female genital organs (C51-C58)	330	3,7
8	Malignant neoplasm of breast (C50)	251	2,8
9	Malignant neoplasm of digestive organs (C15-C26)	249	2,8
10	Human immunodeficiency virus [HIV] disease (B20-B24)	237	2,7
	Other natural causes	4 322	48,4
	Non-natural causes	294	3,3
	All causes	**8 936**	**100,0**

	Gauteng, both sexes, 65+	No.	%
1	Other forms of heart disease (I30-I52)	2 619	9,4
2	Cerebrovascular diseases (I60-I69)	2 199	7,9
3	Diabetes mellitus (E10-E14)	1 916	6,9
4	Ischaemic heart diseases (I20-I25)	1 634	5,9
5	Hypertensive diseases (I10-I15)	1 538	5,5
6	Influenza and pneumonia (J09-J18)	1 458	5,2
7	Chronic lower respiratory diseases (J40-J47)	1 225	4,4
8	Malignant neoplasm of digestive organs (C15-C26)	964	3,5
9	Renal failure (N17-N19)	674	2,4
10	Malignant neoplasm of respiratory and intrathoracic organs (C30-39)	517	1,9
	Other natural causes	12 294	44,1
	Non-natural causes	843	3,0
	All causes	**27 881**	**100,0**

	Gauteng, males, 65+	No.	%
1	Other forms of heart disease (I30-I52)	1 029	8,4
2	Ischaemic heart diseases (I20-I25)	859	7,0
3	Cerebrovascular diseases (I60-I69)	838	6,8
4	Diabetes mellitus (E10-E14)	717	5,8
5	Chronic lower respiratory diseases (J40-J47)	685	5,6
6	Influenza and pneumonia (J09-J18)	646	5,2
7	Malignant neoplasm of digestive organs (C15-C26)	529	4,3
8	Hypertensive diseases (I10-I15)	503	4,1
9	Malignant neoplasm of male genital organs (C60-C63)	463	3,8
10	Renal failure (N17-N19)	343	2,8
	Other causes	5 237	42,6
	Non-natural causes	457	3,7
	All causes	**12 306**	**100,0**

	Gauteng, females, 65+	No.	%
1	Other forms of heart disease (I30-I52)	1 587	10,2
2	Cerebrovascular diseases (I60-I69)	1 361	8,7
3	Diabetes mellitus (E10-E14)	1 199	7,7
4	Hypertensive diseases (I10-I15)	1 035	6,7
5	Influenza and pneumonia (J09-J18)	812	5,2
6	Ischaemic heart diseases (I20-I25)	774	5,0
7	Chronic lower respiratory diseases (J40-J47)	540	3,5
8	Malignant neoplasm of digestive organs (C15-C26)	435	2,8
9	Renal failure (N17-N19)	331	2,1
10	Malignant neoplasm of female genital organs (C51-C58)	298	1,9
	Other causes	6 801	43,7
	Non-natural causes	385	2,5
	All causes	**15 558**	**100,0**

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

Appendix M8: The ten leading underlying natural causes of death by age and sex: Mpumalanga, 2010

	Mpumalanga, both sexes, all ages	No.	%
1	Tuberculosis (A15-A19)*	5 595	13,4
2	Influenza and pneumonia (J09-J18)	3 932	9,4
3	Intestinal infectious diseases (A00-A09)	3 094	7,4
4	Cerebrovascular diseases (I60-I69)	1 992	4,8
5	Other forms of heart disease (I30-I52)	1 989	4,8
6	Diabetes mellitus (E10-E14)	1 561	3,7
7	Hypertensive diseases (I10-I15)	1 275	3,1
8	Human immunodeficiency virus [HIV] disease (B20-B24)	1 188	2,8
9	Other acute lower respiratory infections (J20-J22)	1 180	2,8
10	Certain disorders involving the immune mechanism (D80-D89)	1 092	2,6
	Other natural causes	15 420	36,9
	Non-natural causes	3 455	8,3
	All causes	**41 773**	**100,0**

	Mpumalanga, males, all ages	No.	%
1	Tuberculosis (A15-A19)*	3 138	14,6
2	Influenza and pneumonia (J09-J18)	1 983	9,2
3	Intestinal infectious diseases (A00-A09)	1 498	7,0
4	Other forms of heart disease (I30-I52)	932	4,3
5	Cerebrovascular diseases (I60-I69)	828	3,9
6	Diabetes mellitus (E10-E14)	613	2,9
7	Other acute lower respiratory infections (J20-J22)	593	2,8
8	Human immunodeficiency virus [HIV] disease (B20-B24)	566	2,6
9	Other viral diseases (B25-B34)	518	2,4
10	Hypertensive diseases (I10-I15)	515	2,4
	Other natural causes	7 691	35,8
	Non-natural causes	2 588	12,1
	All causes	**21 463**	**100,0**

	Mpumalanga, females, all ages	No.	%
1	Tuberculosis (A15-A19)*	2 453	12,1
2	Influenza and pneumonia (J09-J18)	1 942	9,6
3	Intestinal infectious diseases (A00-A09)	1 590	7,9
4	Cerebrovascular diseases (I60-I69)	1 160	5,7
5	Other forms of heart disease (I30-I52)	1 057	5,2
6	Diabetes mellitus (E10-E14)	948	4,7
7	Hypertensive diseases (I10-I15)	759	3,8
8	Human immunodeficiency virus [HIV] disease (B20-B24)	619	3,1
9	Other acute lower respiratory infections (J20-J22)	586	2,9
10	Certain disorders involving the immune mechanism (D80-D89)	579	2,9
	Other natural causes	7 680	38,0
	Non-natural causes	862	4,3
	All causes	**20 235**	**100,0**

	Mpumalanga, both sexes, 0-14	No.	%
1	Intestinal infectious diseases (A00-A09)	1 008	21,0
2	Influenza and pneumonia (J09-J18)	618	12,9
3	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	406	8,4
4	Tuberculosis (A15-A19)*	218	4,5
5	Malnutrition (E40-E46)	178	3,7
6	Other acute lower respiratory infections (J20-J22)	168	3,5
7	Other disorders originating in the perinatal period (P90-P96)	106	2,2
8	Disorders related to length of gestation and fetal growth (P05-P08)	104	2,2
9	Certain disorders involving the immune mechanism (D80-D89)	92	1,9
10	Inflammatory diseases of the central nervous system (G00-G09)	84	1,7
	Other natural causes	1 426	29,7
	Non-natural causes	397	8,3
	All causes	**4 805**	**100,0**

	Mpumalanga, males, 0-14	No.	%
1	Intestinal infectious diseases (A00-A09)	547	21,7
2	Influenza and pneumonia (J09-J18)	301	11,9
3	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	231	9,2
4	Tuberculosis (A15-A19)*	114	4,5
5	Malnutrition (E40-E46)	94	3,7
6	Other acute lower respiratory infections (J20-J22)	83	3,3
7	Other disorders originating in the perinatal period (P90-P96)	60	2,4
8	Disorders related to length of gestation and fetal growth (P05-P08)	57	2,3
9	Certain disorders involving the immune mechanism (D80-D89)	43	1,7
10	Human immunodeficiency virus [HIV] disease (B20-B24)	42	1,7
10	Other viral diseases (B25-B34)	42	1,7
10	Inflammatory diseases of the central nervous system (G00-G09)	42	1,7
	Other natural causes	641	25,4
	Non-natural causes	226	9,0
	All causes	**2 523**	**100,0**

	Mpumalanga, females, 0-14	No.	%
1	Intestinal infectious diseases (A00-A09)	460	20,4
2	Influenza and pneumonia (J09-J18)	314	13,9
3	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	171	7,6
4	Tuberculosis (A15-A19)*	104	4,6
5	Other acute lower respiratory infections (J20-J22)	85	3,8
6	Malnutrition (E40-E46)	82	3,6
7	Certain disorders involving the immune mechanism (D80-D89)	49	2,2
8	Disorders related to length of gestation and fetal growth (P05-P08)	44	2,0
8	Other disorders originating in the perinatal period (P90-P96)	44	2,0
9	Other bacterial diseases (A30-A49)	41	1,8
9	Inflammatory diseases of the central nervous system (G00-G09)	41	1,8
	Other natural causes	648	28,7
	Non-natural causes	171	7,6
	All causes	**2 254**	**100,0**

	Mpumalanga, both sexes, 15-49	No.	%
1	Tuberculosis (A15-A19)*	3 967	20,1
2	Influenza and pneumonia (J09-J18)	2 044	10,3
3	Intestinal infectious diseases (A00-A09)	1 286	6,5
4	Human immunodeficiency virus [HIV] disease (B20-B24)	906	4,6
5	Certain disorders involving the immune mechanism (D80-D89)	803	4,1
6	Other viral diseases (B25-B34)	792	4,0
7	Other acute lower respiratory infections (J20-J22)	653	3,3
8	Inflammatory diseases of the central nervous system (G00-G09)	608	3,1
9	Other forms of heart disease (I30-I52)	569	2,9
10	Cerebrovascular diseases (I60-I69)	315	1,6
	Other natural causes	5 471	27,7
	Non-natural causes	2 368	12,0
	All causes	**19 782**	**100,0**

	Mpumalanga, males, 15-49	No.	%
1	Tuberculosis (A15-A19)*	2 130	20,9
2	Influenza and pneumonia (J09-J18)	984	9,7
3	Intestinal infectious diseases (A00-A09)	574	5,6
4	Human immunodeficiency virus [HIV] disease (B20-B24)	421	4,1
5	Other viral diseases (B25-B34)	363	3,6
6	Certain disorders involving the immune mechanism (D80-D89)	351	3,4
7	Other acute lower respiratory infections (J20-J22)	305	3,0
8	Inflammatory diseases of the central nervous system (G00-G09)	283	2,8
9	Other forms of heart disease (I30-I52)	267	2,6
10	Cerebrovascular diseases (I60-I69)	132	1,3
	Other natural causes	2 488	24,4
	Non-natural causes	1 889	18,5
	All causes	**10 187**	**100,0**

	Mpumalanga, females, 15-49	No.	%
1	Tuberculosis (A15-A19)*	1 834	19,2
2	Influenza and pneumonia (J09-J18)	1 058	11,1
3	Intestinal infectious diseases (A00-A09)	709	7,4
4	Human immunodeficiency virus [HIV] disease (B20-B24)	483	5,0
5	Certain disorders involving the immune mechanism (D80-D89)	449	4,7
6	Other viral diseases (B25-B34)	426	4,5
7	Other acute lower respiratory infections (J20-J22)	348	3,6
8	Inflammatory diseases of the central nervous system (G00-G09)	323	3,4
9	Other forms of heart disease (I30-I52)	302	3,2
10	Cerebrovascular diseases (I60-I69)	182	1,9
	Other natural causes	2 978	31,1
	Non-natural causes	478	5,0
	All causes	**9 570**	**100,0**

	Mpumalanga, both sexes, 50-64	No.	%
1	Tuberculosis (A15-A19)*	985	12,7
2	Influenza and pneumonia (J09-J18)	624	8,1
3	Diabetes mellitus (E10-E14)	519	6,7
4	Cerebrovascular diseases (I60-I69)	504	6,5
5	Other forms of heart disease (I30-I52)	469	6,1
6	Intestinal infectious diseases (A00-A09)	371	4,8
7	Hypertensive diseases (I10-I15)	318	4,1
8	Chronic lower respiratory diseases (J40-J47)	255	3,3
9	Other acute lower respiratory infections (J20-J22)	211	2,7
10	Ischaemic heart diseases (I20-I25)	176	2,3
	Other natural causes	2 887	37,3
	Non-natural causes	422	5,5
	All causes	**7 741**	**100,0**

	Mpumalanga, males, 50-64	No.	%
1	Tuberculosis (A15-A19)*	642	14,2
2	Influenza and pneumonia (J09-J18)	379	8,4
3	Cerebrovascular diseases (I60-I69)	263	5,8
4	Other forms of heart disease (I30-I52)	262	5,8
5	Diabetes mellitus (E10-E14)	243	5,4
6	Intestinal infectious diseases (A00-A09)	194	4,3
7	Chronic lower respiratory diseases (J40-J47)	191	4,2
8	Hypertensive diseases (I10-I15)	149	3,3
9	Other acute lower respiratory infections (J20-J22)	126	2,8
10	Ischaemic heart diseases (I20-I25)	119	2,6
	Other natural causes	1 640	36,2
	Non-natural causes	321	7,1
	All causes	**4 529**	**100,0**

	Mpumalanga, females, 50-64	No.	%
1	Tuberculosis (A15-A19)*	343	10,7
2	Diabetes mellitus (E10-E14)	276	8,6
3	Influenza and pneumonia (J09-J18)	243	7,6
4	Cerebrovascular diseases (I60-I69)	240	7,5
5	Other forms of heart disease (I30-I52)	207	6,5
6	Intestinal infectious diseases (A00-A09)	176	5,5
7	Hypertensive diseases (I10-I15)	169	5,3
8	Malignant neoplasm of female genital organs (C51-C58)	96	3,0
9	Other acute lower respiratory infections (J20-J22)	84	2,6
10	Human immunodeficiency virus [HIV] disease (B20-B24)	73	2,3
	Other natural causes	1 196	37,3
	Non-natural causes	100	3,1
	All causes	**3 203**	**100,0**

	Mpumalanga, both sexes, 65+	No.	%
1	Cerebrovascular diseases (I60-I69)	1 158	12,4
2	Other forms of heart disease (I30-I52)	899	9,6
3	Diabetes mellitus (E10-E14)	817	8,7
4	Hypertensive diseases (I10-I15)	813	8,7
5	Influenza and pneumonia (J09-J18)	642	6,9
6	Intestinal infectious diseases (A00-A09)	425	4,5
7	Tuberculosis (A15-A19)*	411	4,4
8	Chronic lower respiratory diseases (J40-J47)	303	3,2
9	Ischaemic heart diseases (I20-I25)	294	3,1
10	Malignant neoplasm of digestive organs (C15-C26)	180	1,9
	Other natural causes	3 162	33,8
	Non-natural causes	246	2,6
	All causes	**9 350**	**100,0**

	Mpumalanga, males, 65+	No.	%
1	Cerebrovascular diseases (I60-I69)	426	10,3
2	Other forms of heart disease (I30-I52)	379	9,1
3	Influenza and pneumonia (J09-J18)	316	7,6
4	Hypertensive diseases (I10-I15)	298	7,2
5	Diabetes mellitus (E10-E14)	260	6,3
6	Tuberculosis (A15-A19)*	241	5,8
7	Chronic lower respiratory diseases (J40-J47)	187	4,5
8	Intestinal infectious diseases (A00-A09)	180	4,3
9	Ischaemic heart diseases (I20-I25)	160	3,9
10	Malignant neoplasm of male genital organs (C60-C63)	118	2,8
	Other causes	1 452	35,0
	Non-natural causes	135	3,3
	All causes	**4 152**	**100,0**

	Mpumalanga, females, 65+	No.	%
1	Cerebrovascular diseases (I60-I69)	730	14,1
2	Diabetes mellitus (E10-E14)	557	10,7
3	Other forms of heart disease (I30-I52)	520	10,0
4	Hypertensive diseases (I10-I15)	514	9,9
5	Influenza and pneumonia (J09-J18)	326	6,3
6	Intestinal infectious diseases (A00-A09)	245	4,7
7	Tuberculosis (A15-A19)*	170	3,3
8	Ischaemic heart diseases (I20-I25)	134	2,6
9	Chronic lower respiratory diseases (J40-J47)	116	2,2
10	Malignant neoplasm of female genital organs (C51-C58)	100	1,9
	Other causes	1 671	32,2
	Non-natural causes	111	2,1
	All causes	**5 194**	**100,0**

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

Appendix M9: The ten leading underlying natural causes of death by age and sex: Limpopo, 2010

	Limpopo, both sexes, all ages	No.	%
1	Influenza and pneumonia (J09-J18)	5 984	12,0
2	Tuberculosis (A15-A19)*	4 199	8,4
3	Intestinal infectious diseases (A00-A09)	4 099	8,2
4	Cerebrovascular diseases (I60-I69)	2 583	5,2
5	Diabetes mellitus (E10-E14)	1 915	3,8
6	Other forms of heart disease (I30-I52)	1 897	3,8
7	Hypertensive diseases (I10-I15)	1 375	2,7
8	Certain disorders involving the immune mechanism (D80-D89)	1 061	2,1
9	Other viral diseases (B25-B34)	872	1,7
10	Human immunodeficiency virus [HIV] disease (B20-B24)	785	1,6
	Other natural causes	21 490	43,0
	Non-natural causes	3 757	7,5
	All causes	**50 017**	**100,0**

	Limpopo, males, all ages	No.	%
1	Influenza and pneumonia (J09-J18)	2 793	11,4
2	Tuberculosis (A15-A19)*	2 338	9,5
3	Intestinal infectious diseases (A00-A09)	1 904	7,7
4	Cerebrovascular diseases (I60-I69)	1 025	4,2
5	Other forms of heart disease (I30-I52)	848	3,4
6	Diabetes mellitus (E10-E14)	817	3,3
7	Hypertensive diseases (I10-I15)	593	2,4
8	Certain disorders involving the immune mechanism (D80-D89)	497	2,0
9	Chronic lower respiratory diseases (J40-J47)	466	1,9
10	Other viral diseases (B25-B34)	392	1,6
	Other natural causes	10 168	41,4
	Non-natural causes	2 743	11,2
	All causes	**24 584**	**100,0**

	Limpopo, females, all ages	No.	%
1	Influenza and pneumonia (J09-J18)	3 174	12,5
2	Intestinal infectious diseases (A00-A09)	2 187	8,6
3	Tuberculosis (A15-A19)*	1 858	7,3
4	Cerebrovascular diseases (I60-I69)	1 557	6,1
5	Diabetes mellitus (E10-E14)	1 098	4,3
6	Other forms of heart disease (I30-I52)	1 048	4,1
7	Hypertensive diseases (I10-I15)	782	3,1
8	Certain disorders involving the immune mechanism (D80-D89)	562	2,2
9	Other viral diseases (B25-B34)	479	1,9
10	Human immunodeficiency virus [HIV] disease (B20-B24)	420	1,7
	Other natural causes	11 186	44,1
	Non-natural causes	1 003	4,0
	All causes	**25 354**	**100,0**

	Limpopo, both sexes, 0-14	No.	%
1	Intestinal infectious diseases (A00-A09)	1 280	20,6
2	Influenza and pneumonia (J09-J18)	892	14,3
3	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	437	7,0
4	Malnutrition (E40-E46)	253	4,1
5	Tuberculosis (A15-A19)*	155	2,5
6	Other disorders originating in the perinatal period (P90-P96)	142	2,3
7	Disorders related to length of gestation and fetal growth (P05-P08)	125	2,0
8	Inflammatory diseases of the central nervous system (G00-G09)	122	2,0
9	Other viral diseases (B25-B34)	79	1,3
10	Infections specific to the perinatal period (P35-P39)	78	1,3
	Other natural causes	2 190	35,2
	Non-natural causes	465	7,5
	All causes	**6 218**	**100,0**

	Limpopo, males, 0-14	No.	%
1	Intestinal infectious diseases (A00-A09)	674	20,6
2	Influenza and pneumonia (J09-J18)	434	13,2
3	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	237	7,2
4	Malnutrition (E40-E46)	136	4,2
5	Other disorders originating in the perinatal period (P90-P96)	82	2,5
6	Tuberculosis (A15-A19)*	78	2,4
7	Inflammatory diseases of the central nervous system (G00-G09)	74	2,3
8	Disorders related to length of gestation and fetal growth (P05-P08)	59	1,8
9	Infections specific to the perinatal period (P35-P39)	49	1,5
10	Other viral diseases (B25-B34)	42	1,3
	Other natural causes	1 138	34,7
	Non-natural causes	273	8,3
	All causes	**3 276**	**100,0**

	Limpopo, females, 0-14	No.	%
1	Intestinal infectious diseases (A00-A09)	603	20,8
2	Influenza and pneumonia (J09-J18)	450	15,5
3	Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	193	6,6
4	Malnutrition (E40-E46)	116	4,0
5	Tuberculosis (A15-A19)*	77	2,7
6	Disorders related to length of gestation and fetal growth (P05-P08)	66	2,3
7	Other disorders originating in the perinatal period (P90-P96)	57	2,0
8	Inflammatory diseases of the central nervous system (G00-G09)	47	1,6
9	Human immunodeficiency virus [HIV] disease (B20-B24)	41	1,4
10	Other viral diseases (B25-B34)	36	1,2
	Other natural causes	1 028	35,4
	Non-natural causes	191	6,6
	All causes	**2 905**	**100,0**

	Limpopo, both sexes, 15-49	No.	%
1	Tuberculosis (A15-A19)*	2 843	14,5
2	Influenza and pneumonia (J09-J18)	2 775	14,1
3	Intestinal infectious diseases (A00-A09)	1 705	8,7
4	Certain disorders involving the immune mechanism (D80-D89)	814	4,1
5	Other viral diseases (B25-B34)	639	3,3
6	Human immunodeficiency virus [HIV] disease (B20-B24)	588	3,0
7	Inflammatory diseases of the central nervous system (G00-G09)	408	2,1
8	Other forms of heart disease (I30-I52)	403	2,1
9	Protozoal diseases (B50-B64)	265	1,3
10	Diabetes mellitus (E10-E14)	257	1,3
	Other natural causes	6 514	33,2
	Non-natural causes	2 426	12,4
	All causes	**19 637**	**100,0**

	Limpopo, males, 15-49	No.	%
1	Tuberculosis (A15-A19)*	1 432	15,0
2	Influenza and pneumonia (J09-J18)	1 161	12,1
3	Intestinal infectious diseases (A00-A09)	717	7,5
4	Certain disorders involving the immune mechanism (D80-D89)	359	3,8
5	Other viral diseases (B25-B34)	265	2,8
6	Human immunodeficiency virus [HIV] disease (B20-B24)	261	2,7
7	Inflammatory diseases of the central nervous system (G00-G09)	202	2,1
8	Other forms of heart disease (I30-I52)	168	1,8
9	Diabetes mellitus (E10-E14)	123	1,3
10	Cerebrovascular diseases (I60-I69)	108	1,1
	Other natural causes	2 865	29,9
	Non-natural causes	1 910	20,0
	All causes	**9 571**	**100,0**

	Limpopo, females, 15-49	No.	%
1	Influenza and pneumonia (J09-J18)	1 609	16,0
2	Tuberculosis (A15-A19)*	1 408	14,0
3	Intestinal infectious diseases (A00-A09)	984	9,8
4	Certain disorders involving the immune mechanism (D80-D89)	454	4,5
5	Other viral diseases (B25-B34)	374	3,7
6	Human immunodeficiency virus [HIV] disease (B20-B24)	327	3,3
7	Other forms of heart disease (I30-I52)	235	2,3
8	Inflammatory diseases of the central nervous system (G00-G09)	206	2,1
9	Protozoal diseases (B50-B64)	159	1,6
10	Diabetes mellitus (E10-E14)	134	1,3
10	Cerebrovascular diseases (I60-I69)	134	1,3
	Other natural causes	3 508	34,9
	Non-natural causes	512	5,1
	All causes	**10 044**	**100,0**

	Limpopo, both sexes, 50-64	No.	%
1	Influenza and pneumonia (J09-J18)	967	11,3
2	Tuberculosis (A15-A19)*	838	9,8
3	Diabetes mellitus (E10-E14)	617	7,2
4	Intestinal infectious diseases (A00-A09)	509	5,9
5	Cerebrovascular diseases (I60-I69)	404	4,7
6	Other forms of heart disease (I30-I52)	358	4,2
7	Hypertensive diseases (I10-I15)	356	4,2
8	Chronic lower respiratory diseases (J40-J47)	209	2,4
9	Malignant neoplasm of digestive organs (C15-C26)	171	2,0
10	Renal failure (N17-N19)	152	1,8
	Other natural causes	3 527	41,2
	Non-natural causes	462	5,4
	All causes	**8 570**	100,0

	Limpopo, males, 50-64	No.	%
1	Tuberculosis (A15-A19)*	601	11,5
2	Influenza and pneumonia (J09-J18)	592	11,4
3	Diabetes mellitus (E10-E14)	302	5,8
4	Intestinal infectious diseases (A00-A09)	279	5,4
5	Cerebrovascular diseases (I60-I69)	227	4,4
6	Other forms of heart disease (I30-I52)	211	4,0
7	Hypertensive diseases (I10-I15)	190	3,6
8	Chronic lower respiratory diseases (J40-J47)	156	3,0
9	Malignant neoplasm of digestive organs (C15-C26)	115	2,2
10	Ischaemic heart diseases (I20-I25)	108	2,1
	Other natural causes	2 080	39,9
	Non-natural causes	351	6,7
	All causes	**5 212**	**100,0**

	Limpopo, females, 50-64	No.	%
1	Influenza and pneumonia (J09-J18)	375	11,2
2	Diabetes mellitus (E10-E14)	315	9,4
3	Tuberculosis (A15-A19)*	237	7,1
4	Intestinal infectious diseases (A00-A09)	230	6,9
5	Cerebrovascular diseases (I60-I69)	177	5,3
6	Hypertensive diseases (I10-I15)	166	5,0
7	Other forms of heart disease (I30-I52)	147	4,4
8	Malignant neoplasm of female genital organs (C51-C58)	113	3,4
9	Certain disorders involving the immune mechanism (D80-D89)	65	1,9
10	Malignant neoplasm of breast (C50)	64	1,9
	Other natural causes	1 353	40,4
	Non-natural causes	110	3,3
	All causes	**3 352**	**100,0**

	Limpopo, both sexes, 65+	No.	%
1	Cerebrovascular diseases (I60-I69)	1 920	12,4
2	Influenza and pneumonia (J09-J18)	1 348	8,7
3	Other forms of heart disease (I30-I52)	1 100	7,1
4	Diabetes mellitus (E10-E14)	1 037	6,7
5	Hypertensive diseases (I10-I15)	859	5,5
6	Intestinal infectious diseases (A00-A09)	603	3,9
7	Tuberculosis (A15-A19)*	359	2,3
8	Chronic lower respiratory diseases (J40-J47)	342	2,2
9	Malignant neoplasm of digestive organs (C15-C26)	249	1,6
10	Ischaemic heart diseases (I20-I25)	247	1,6
	Other natural causes	7 097	45,7
	Non-natural causes	382	2,5
	All causes	**15 543**	100,0

	Limpopo, males, 65+	No.	%
1	Cerebrovascular diseases (I60-I69)	680	10,5
2	Influenza and pneumonia (J09-J18)	605	9,3
3	Other forms of heart disease (I30-I52)	449	6,9
4	Diabetes mellitus (E10-E14)	390	6,0
5	Hypertensive diseases (I10-I15)	336	5,2
6	Intestinal infectious diseases (A00-A09)	233	3,6
7	Tuberculosis (A15-A19)*	223	3,4
7	Chronic lower respiratory diseases (J40-J47)	223	3,4
9	Malignant neoplasm of male genital organs (C60-C63)	159	2,4
10	Malignant neoplasm of digestive organs (C15-C26)	138	2,1
	Other causes	2 861	44,1
	Non-natural causes	195	3,0
	All causes	**6 492**	100,0

	Limpopo, females, 65+	No.	%
1	Cerebrovascular diseases (I60-I69)	1 240	13,7
2	Influenza and pneumonia (J09-J18)	739	8,2
3	Other forms of heart disease (I30-I52)	651	7,2
4	Diabetes mellitus (E10-E14)	647	7,2
5	Hypertensive diseases (I10-I15)	523	5,8
6	Intestinal infectious diseases (A00-A09)	369	4,1
7	Malignant neoplasm of female genital organs (C51-C58)	143	1,6
8	Tuberculosis (A15-A19)*	136	1,5
9	Chronic lower respiratory diseases (J40-J47)	119	1,3
10	Ischaemic heart diseases (I20-I25)	114	1,3
	Other causes	4 176	46,2
	Non-natural causes	187	2,1
	All causes	**9 044**	**100,0**

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

Appendix N: Number of deaths by main groups of causes of death and district municipality of death occurrence (Western Cape, Eastern Cape and Northern Cape), 2010

Province of death occurrence	District municipality of death occurrence	Certain infectious and parasitic diseases	Neoplasms	Diseases of 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	1 353	1 048	50	479	145	1 275	658	179	115	785	747	**6 834**
	Central Karoo	132	106	17	40	20	154	78	13	20	60	174	**814**
	City of Cape Town Metro	5 161	4 564	263	2 304	615	5 122	2 123	649	602	3 285	3 189	**27 877**
	Eden	806	768	54	327	153	1 078	509	128	64	387	506	**4 780**
	Overberg	310	423	13	144	65	428	178	48	23	237	286	**2 155**
	West Coast	584	440	58	224	65	685	332	74	78	295	339	**3 174**
	Unspecified	29	7	0	4	1	19	7	2	1	5	2	**77**
	Total	**8 375**	**7 356**	**455**	**3 522**	**1 064**	**8 761**	**3 885**	**1 093**	**903**	**5 054**	**5 243**	**45 711**
Eastern Cape	Alfred Nzo	1 434	124	129	192	158	511	725	114	101	2 933	463	**6 884**
	Amathole	3 891	803	370	672	528	2 471	2 309	313	74	2 647	1 332	**15 410**
	Buffalo City Metro	3 063	1 359	207	680	346	2 170	1 283	383	75	1 130	1 344	**12 040**
	Cacadu	1 329	484	109	264	107	1 016	560	132	72	933	608	**5 614**
	Chris Hani	2 267	492	265	505	320	1 409	1 405	185	84	1 497	805	**9 234**
	Joe Gqabi	1 177	178	190	195	136	665	656	94	34	1 123	351	**4 799**
	Nelson Mandela Bay Metro	2 763	1 262	272	897	309	1 943	985	360	220	1 172	1 025	**11 208**
	O.R.Tambo	3 944	520	220	392	399	1 097	1 147	329	69	5 730	1 423	**15 270**
	Unspecified	36	10	7	8	3	26	14	1	0	51	12	**168**
	Total	**19 904**	**5 232**	**1 769**	**3 805**	**2 306**	**11 308**	**9 084**	**1 911**	**729**	**17 216**	**7 363**	**80 627**
Northern Cape	Frances Baard	864	294	216	191	84	602	365	106	78	638	299	**3 737**
	John Taolo Gaetsewe	614	99	63	100	54	256	505	43	97	1 048	172	**3 051**
	Namakwa	119	139	12	59	23	189	110	25	26	249	120	**1 071**
	Pixley ka Seme	1 035	384	111	286	89	714	547	123	86	515	403	**4 293**
	Siyanda	763	236	141	131	82	445	395	87	49	294	343	**2 966**
	Unspecified	12	3	0	1	3	7	7	0	2	23	7	**65**
	Total	**3 407**	**1 155**	**543**	**768**	**335**	**2 213**	**1 929**	**384**	**338**	**2 767**	**1 344**	**15 183**

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

Appendix N.1: Number of deaths by main groups of causes of death and district municipality of death occurrence (Free State, KwaZulu-Natal and North West), 2010

Province of death occurrence	District municipality of death occurrence	Certain infectious and parasitic diseases	Neoplasms	Diseases of 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	1 374	303	350	416	172	1 148	1 176	162	172	474	516	**6 263**
	Lejweleputswa	2 736	464	423	589	304	1 543	2 193	258	267	1 533	798	**11 108**
	Mangaung Metro	2 102	727	406	457	207	1 249	1 150	246	203	2 604	751	**10 102**
	Thabo Mofutsanyane	3 280	481	787	736	354	2 229	2 497	404	327	1 108	803	**13 006**
	Xhariep	909	332	118	163	87	565	616	112	69	1 140	402	**4 513**
	Unspecified	6	3	0	0	1	8	4	0	1	3	0	**26**
	Total	**10 407**	**2 310**	**2 084**	**2 361**	**1 125**	**6 742**	**7 636**	**1 182**	**1 039**	**6 862**	**3 270**	**45 018**
KwaZulu-Natal	Amajuba	1 624	238	166	387	192	1 023	1 262	152	133	413	488	**6 078**
	eThekwini Metro	8 309	2 243	457	2 050	895	5 494	2 760	788	602	5 139	3 274	**32 011**
	iLembe	2 478	242	134	407	173	847	502	152	136	777	607	**6 455**
	Sisonke	2 515	258	123	450	240	779	866	164	189	1 408	409	**7 401**
	Ugu	4 224	541	315	766	315	1 813	1 483	219	210	1 423	992	**12 301**
	uMgungundlovu	3 601	825	174	837	287	1 894	1 271	353	149	1 743	1 085	**12 219**
	uMkhanyakude	2 167	190	97	188	103	595	318	91	94	1 181	417	**5 441**
	uMzinyathi	2 015	148	42	260	153	854	643	119	171	889	536	**5 830**
	uThukela	2 596	312	378	507	306	1 538	1 009	218	182	778	725	**8 549**
	uThungulu	3 352	363	258	561	255	1 232	949	269	266	1 169	945	**9 619**
	Zululand	3 424	255	247	410	343	961	903	219	210	1 725	693	**9 390**
	Unspecified	196	23	12	23	16	94	69	12	5	103	42	**595**
	Total	**36 501**	**5 638**	**2 403**	**6 846**	**3 278**	**17 124**	**12 035**	**2 756**	**2 347**	**16 748**	**10 213**	**115 889**
North West	Bojanala Platinum	3 541	713	608	857	275	2 660	2 000	304	350	2 736	1 281	**15 325**
	Dr Kenneth Kaunda	2 335	711	217	414	188	1 274	930	251	206	1 153	717	**8 396**
	Dr Ruth Segomotsi Mompati	1 799	211	280	278	131	922	911	113	171	859	337	**6 012**
	Ngaka Modiri Molema	2 647	376	248	484	236	1 837	2 047	234	337	1 222	605	**10 273**
	Unspecified	6	1	1	1	1	10	12	0	0	7	14	**53**
	Total	**10 328**	**2 012**	**1 354**	**2 034**	**831**	**6 703**	**5 900**	**902**	**1 064**	**5 977**	**2 954**	**40 059**

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

Appendix N.2: Number of deaths by main groups of causes of death and district municipality of death occurrence (Gauteng, Mpumalanga and Limpopo), 2009

Province of death occurrence	District municipality of death occurrence	Certain infectious and parasitic diseases	Neoplasms	Diseases of 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 Metro	6 115	3 175	685	1 383	717	4 431	3 075	765	871	7 443	3 146	**31 806**
	City of Tshwane Metro	3 976	2 070	543	1 359	583	4 145	2 393	538	373	1 848	1 958	**19 786**
	Ekurhuleni Metro	6 246	1 826	754	1 418	980	4 027	3 572	731	1 013	6 102	2 865	**29 534**
	Sedibeng	2 597	705	389	783	449	2 247	2 226	331	339	1 339	1 036	**12 441**
	West Rand	2 483	794	351	520	337	1 641	1 326	298	289	2 146	1 249	**11 434**
	Unspecified	131	57	18	32	14	88	62	21	22	143	84	**672**
	Total	**21 548**	**8 627**	**2 740**	**5 495**	**3 080**	**16 579**	**12 654**	**2 684**	**2 907**	**19 021**	**10 338**	**105 673**
Mpu-malanga	Ehlanzeni	5 780	787	572	847	628	2 319	2 206	579	228	1 695	1 241	**16 882**
	Gert Sibande	3 416	420	510	747	368	1 713	2 326	367	335	1 728	1 079	**13 009**
	Nkangala	2 786	457	374	709	295	2 033	1 973	343	198	1 321	1 096	**11 585**
	Unspecified	74	9	8	10	7	46	37	8	2	57	39	**297**
	Total	**12 056**	**1 673**	**1 464**	**2 313**	**1 298**	**6 111**	**6 542**	**1 297**	**763**	**4 801**	**3 455**	**41 773**
Limpopo	Capricorn	3 025	798	332	771	334	1 964	2 046	502	232	2 343	1 003	**13 350**
	Greater Sekhukhune	2 311	297	385	548	222	2 019	2 673	265	105	882	752	**10 459**
	Mopani	2 429	362	238	525	320	978	1 271	301	182	2 933	699	**10 238**
	Vhembe	2 029	420	169	653	179	885	932	278	240	3 444	764	**9 993**
	Waterberg	1 259	246	217	257	111	699	626	112	120	1 410	471	**5 528**
	Unspecified	111	18	14	16	8	72	72	14	4	52	68	**449**
	Total	**11 164**	**2 141**	**1 355**	**2 770**	**1 174**	**6 617**	**7 620**	**1 472**	**883**	**11 064**	**3 757**	**50 017**

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

Appendix O: Percentage distribution of deaths by main groups of causes of death and district municipality of death occurrence (Western Cape, Eastern Cape and Northern Cape), 2010

Province of death occurrence	District municipality of death occurrence	Certain infectious and parasitic diseases	Neoplasms	Diseases of 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	19,8	15,3	0,7	7,0	2,1	18,7	9,6	2,6	1,7	11,5	10,9	**100,0**
	Central Karoo	16,2	13,0	2,1	4,9	2,5	18,9	9,6	1,6	2,5	7,4	21,4	**100,0**
	City of Cape Town Metro	18,5	16,4	0,9	8,3	2,2	18,4	7,6	2,3	2,2	11,8	11,4	**100,0**
	Eden	16,9	16,1	1,1	6,8	3,2	22,6	10,6	2,7	1,3	8,1	10,6	**100,0**
	Overberg	14,4	19,6	0,6	6,7	3,0	19,9	8,3	2,2	1,1	11,0	13,3	**100,0**
	West Coast	18,4	13,9	1,8	7,1	2,0	21,6	10,5	2,3	2,5	9,3	10,7	**100,0**
	Unspecified	37,7	9,1	0,0	5,2	1,3	24,7	9,1	2,6	1,3	6,5	2,6	**100,0**
	Total	**18,3**	**16,1**	**1,0**	**7,7**	**2,3**	**19,2**	**8,5**	**2,4**	**2,0**	**11,1**	**11,5**	**100,0**
Eastern Cape	Alfred Nzo	20,8	1,8	1,9	2,8	2,3	7,4	10,5	1,7	1,5	42,6	6,7	**100,0**
	Amathole	25,2	5,2	2,4	4,4	3,4	16,0	15,0	2,0	0,5	17,2	8,6	**100,0**
	Buffalo City Metro	25,4	11,3	1,7	5,6	2,9	18,0	10,7	3,2	0,6	9,4	11,2	**100,0**
	Cacadu	23,7	8,6	1,9	4,7	1,9	18,1	10,0	2,4	1,3	16,6	10,8	**100,0**
	Chris Hani	24,6	5,3	2,9	5,5	3,5	15,3	15,2	2,0	0,9	16,2	8,7	**100,0**
	Joe Gqabi	24,5	3,7	4,0	4,1	2,8	13,9	13,7	2,0	0,7	23,4	7,3	**100,0**
	Nelson Mandela Bay Metro	24,7	11,3	2,4	8,0	2,8	17,3	8,8	3,2	2,0	10,5	9,1	**100,0**
	O.R.Tambo	25,8	3,4	1,4	2,6	2,6	7,2	7,5	2,2	0,5	37,5	9,3	**100,0**
	Unspecified	21,4	6,0	4,2	4,8	1,8	15,5	8,3	0,6	0,0	30,4	7,1	**100,0**
	Total	**24,7**	**6,5**	**2,2**	**4,7**	**2,9**	**14,0**	**11,3**	**2,4**	**0,9**	**21,4**	**9,1**	**100,0**
Northern Cape	Frances Baard	23,1	7,9	5,8	5,1	2,2	16,1	9,8	2,8	2,1	17,1	8,0	**100,0**
	John Taolo Gaetsewe	20,1	3,2	2,1	3,3	1,8	8,4	16,6	1,4	3,2	34,3	5,6	**100,0**
	Namakwa	11,1	13,0	1,1	5,5	2,1	17,6	10,3	2,3	2,4	23,2	11,2	**100,0**
	Pixley ka Seme	24,1	8,9	2,6	6,7	2,1	16,6	12,7	2,9	2,0	12,0	9,4	**100,0**
	Siyanda	25,7	8,0	4,8	4,4	2,8	15,0	13,3	2,9	1,7	9,9	11,6	**100,0**
	Unspecified	18,5	4,6	0,0	1,5	4,6	10,8	10,8	0,0	3,1	35,4	10,8	**100,0**
	Total	**22,4**	**7,6**	**3,6**	**5,1**	**2,2**	**14,6**	**12,7**	**2,5**	**2,2**	**18,2**	**8,9**	**100,0**

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

Appendix O.1: Percentage distribution of deaths by main groups of causes of death and district municipality of death occurrence (Free State, KwaZulu-Natal and North West), 2010

Province of death occurrence	District municipality of death occurrence	Certain infectious and parasitic diseases	Neoplasms	Diseases of 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	21,9	4,8	5,6	6,6	2,7	18,3	18,8	2,6	2,7	7,6	8,2	**100,0**
	Lejweleputswa	24,6	4,2	3,8	5,3	2,7	13,9	19,7	2,3	2,4	13,8	7,2	**100,0**
	Mangaung Metro	20,8	7,2	4,0	4,5	2,0	12,4	11,4	2,4	2,0	25,8	7,4	**100,0**
	Thabo Mofutsanyane	25,2	3,7	6,1	5,7	2,7	17,1	19,2	3,1	2,5	8,5	6,2	**100,0**
	Xhariep	20,1	7,4	2,6	3,6	1,9	12,5	13,6	2,5	1,5	25,3	8,9	**100,0**
	Unspecified	23,1	11,5	0,0	0,0	3,8	30,8	15,4	0,0	3,8	11,5	0,0	**100,0**
	Total	**23,1**	**5,1**	**4,6**	**5,2**	**2,5**	**15,0**	**17,0**	**2,6**	**2,3**	**15,2**	**7,3**	100,0
KwaZulu-Natal	Amajuba	26,7	3,9	2,7	6,4	3,2	16,8	20,8	2,5	2,2	6,8	8,0	**100,0**
	eThekwini Metro	26,0	7,0	1,4	6,4	2,8	17,2	8,6	2,5	1,9	16,1	10,2	**100,0**
	iLembe	38,4	3,7	2,1	6,3	2,7	13,1	7,8	2,4	2,1	12,0	9,4	**100,0**
	Sisonke	34,0	3,5	1,7	6,1	3,2	10,5	11,7	2,2	2,6	19,0	5,5	**100,0**
	Ugu	34,3	4,4	2,6	6,2	2,6	14,7	12,1	1,8	1,7	11,6	8,1	**100,0**
	uMgungundlovu	29,5	6,8	1,4	6,8	2,3	15,5	10,4	2,9	1,2	14,3	8,9	**100,0**
	uMkhanyakude	39,8	3,5	1,8	3,5	1,9	10,9	5,8	1,7	1,7	21,7	7,7	**100,0**
	uMzinyathi	34,6	2,5	0,7	4,5	2,6	14,6	11,0	2,0	2,9	15,2	9,2	**100,0**
	uThukela	30,4	3,6	4,4	5,9	3,6	18,0	11,8	2,6	2,1	9,1	8,5	**100,0**
	uThungulu	34,8	3,8	2,7	5,8	2,7	12,8	9,9	2,8	2,8	12,2	9,8	**100,0**
	Zululand	36,5	2,7	2,6	4,4	3,7	10,2	9,6	2,3	2,2	18,4	7,4	**100,0**
	Unspecified	32,9	3,9	2,0	3,9	2,7	15,8	11,6	2,0	0,8	17,3	7,1	**100,0**
	Total	**31,5**	**4,9**	**2,1**	**5,9**	**2,8**	**14,8**	**10,4**	**2,4**	**2,0**	**14,5**	**8,8**	100,0
North West	Bojanala Platinum	23,1	4,7	4,0	5,6	1,8	17,4	13,1	2,0	2,3	17,9	8,4	**100,0**
	Dr Kenneth Kaunda	27,8	8,5	2,6	4,9	2,2	15,2	11,1	3,0	2,5	13,7	8,5	**100,0**
	Dr Ruth Segomotsi Mompati	29,9	3,5	4,7	4,6	2,2	15,3	15,2	1,9	2,8	14,3	5,6	**100,0**
	Ngaka Modiri Molema	25,8	3,7	2,4	4,7	2,3	17,9	19,9	2,3	3,3	11,9	5,9	**100,0**
	Unspecified	11,3	1,9	1,9	1,9	1,9	18,9	22,6	0,0	0,0	13,2	26,4	**100,0**
	Total	**25,8**	**5,0**	**3,4**	**5,1**	**2,1**	**16,7**	**14,7**	**2,3**	**2,7**	**14,9**	**7,4**	100,0

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

Appendix O.2: Percentage distribution of deaths by main groups of causes of death and district municipality of death occurrence (Gauteng, Mpumalanga and Limpopo), 2009

Province of death occurrence	District municipality of death occurrence	Certain infectious and parasitic diseases	Neoplasms	Diseases of 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 Metro	19,2	10,0	2,2	4,3	2,3	13,9	9,7	2,4	2,7	23,4	9,9	**100,0**
	City of Tshwane Metro	20,1	10,5	2,7	6,9	2,9	20,9	12,1	2,7	1,9	9,3	9,9	**100,0**
	Ekurhuleni Metro	21,1	6,2	2,6	4,8	3,3	13,6	12,1	2,5	3,4	20,7	9,7	**100,0**
	Sedibeng	20,9	5,7	3,1	6,3	3,6	18,1	17,9	2,7	2,7	10,8	8,3	**100,0**
	West Rand	21,7	6,9	3,1	4,5	2,9	14,4	11,6	2,6	2,5	18,8	10,9	**100,0**
	Unspecified	19,5	8,5	2,7	4,8	2,1	13,1	9,2	3,1	3,3	21,3	12,5	**100,0**
	Total	**20,4**	**8,2**	**2,6**	**5,2**	**2,9**	**15,7**	**12,0**	**2,5**	**2,8**	**18,0**	**9,8**	100,0
Mpu-malanga	Ehlanzeni	34,2	4,7	3,4	5,0	3,7	13,7	13,1	3,4	1,4	10,0	7,4	**100,0**
	Gert Sibande	26,3	3,2	3,9	5,7	2,8	13,2	17,9	2,8	2,6	13,3	8,3	**100,0**
	Nkangala	24,0	3,9	3,2	6,1	2,5	17,5	17,0	3,0	1,7	11,4	9,5	**100,0**
	Unspecified	24,9	3,0	2,7	3,4	2,4	15,5	12,5	2,7	0,7	19,2	13,1	**100,0**
	Total	**28,9**	**4,0**	**3,5**	**5,5**	**3,1**	**14,6**	**15,7**	**3,1**	**1,8**	**11,5**	**8,3**	100,0
Limpopo	Capricorn	22,7	6,0	2,5	5,8	2,5	14,7	15,3	3,8	1,7	17,6	7,5	**100,0**
	Greater Sekhukhune	22,1	2,8	3,7	5,2	2,1	19,3	25,6	2,5	1,0	8,4	7,2	**100,0**
	Mopani	23,7	3,5	2,3	5,1	3,1	9,6	12,4	2,9	1,8	28,6	6,8	**100,0**
	Vhembe	20,3	4,2	1,7	6,5	1,8	8,9	9,3	2,8	2,4	34,5	7,6	**100,0**
	Waterberg	22,8	4,5	3,9	4,6	2,0	12,6	11,3	2,0	2,2	25,5	8,5	**100,0**
	Unspecified	24,7	4,0	3,1	3,6	1,8	16,0	16,0	3,1	0,9	11,6	15,1	**100,0**
	Total	**22,3**	**4,3**	**2,7**	**5,5**	**2,3**	**13,2**	**15,2**	**2,9**	**1,8**	**22,1**	**7,5**	100,0

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

Appendix P: The ten leading underlying natural causes of death by district municipality of death occurrence, Western Cape, 2010*

	Cape Winelands	No.	%
1	Tuberculosis (A15-A19)**	552	8,1
2	HIV disease (B20-B24)	448	6,6
3	Cerebrovascular diseases (I60-I69)	433	6,3
4	Chronic lower respiratory diseases (J40-J47)	409	6,0
5	Diabetes mellitus (E10-E14)	402	5,9
6	Ischaemic heart diseases (I20-I25)	349	5,1
7	Malignant neoplasm of respiratory and intrathoracic organs (C30-39)	248	3,6
8	Malignant neoplasm of digestive organs (C15-C26)	235	3,4
9	Other forms of heart disease (I30-I52)	198	2,9
10	Hypertensive diseases (I10-I15)	185	2,7
	Other natural causes	2 628	38,5
	Non-natural causes	747	10,9
	All causes	**6 834**	**100,0**

	Central Karoo	No.	%
1	Tuberculosis (A15-A19)**	68	8,4
2	Chronic lower respiratory diseases (J40-J47)	52	6,4
3	Other forms of heart disease (I30-I52)	48	5,9
4	Cerebrovascular diseases (I60-I69)	39	4,8
5	Diabetes mellitus (E10-E14)	33	4,1
6	Ischaemic heart diseases (I20-I25)	31	3,8
7	HIV disease (B20-B24)	30	3,7
8	Malignant neoplasm of digestive organs (C15-C26)	25	3,1
8	Malignant neoplasm of respiratory and intrathoracic organs (C30-39)	25	3,1
10	Hypertensive diseases (I10-I15)	20	2,5
	Other natural causes	269	33,0
	Non-natural causes	174	21,4
	All causes	**814**	**100,0**

	City of Cape Town	No.	%
1	Tuberculosis (A15-A19)**	2 131	7,6
2	Diabetes mellitus (E10-E14)	1 999	7,2
3	HIV disease (B20-B24)	1 745	6,3
4	Ischaemic heart diseases (I20-I25)	1 568	5,6
5	Cerebrovascular diseases (I60-I69)	1 336	4,8
6	Malignant neoplasm of digestive organs (C15-C26)	1 206	4,3
7	Malignant neoplasm of respiratory and intrathoracic organs (C30-39)	1 043	3,7
8	Chronic lower respiratory diseases (J40-J47)	1 037	3,7
9	Hypertensive diseases (I10-I15)	974	3,5
10	Other forms of heart disease (I30-I52)	845	3,0
	Other natural causes	10 804	38,8
	Non-natural causes	3 189	11,4
	All causes	**27 877**	**100,0**

	Eden	No.	%
1	Tuberculosis (A15-A19)**	352	7,4
2	Ischaemic heart diseases (I20-I25)	331	6,9
3	Cerebrovascular diseases (I60-I69)	327	6,8
4	HIV disease (B20-B24)	284	5,9
5	Diabetes mellitus (E10-E14)	281	5,9
6	Chronic lower respiratory diseases (J40-J47)	267	5,6
7	Malignant neoplasm of respiratory and intrathoracic organs (C30-39)	213	4,5
8	Malignant neoplasm of digestive organs (C15-C26)	188	3,9
9	Other forms of heart disease (I30-I52)	184	3,8
10	Influenza and pneumonia (J09-J18)	179	3,7
	Other natural causes	1 668	34,9
	Non-natural causes	506	10,6
	All causes	**4 780**	**100,0**

	Overberg	No.	%
1	Ischaemic heart diseases (I20-I25)	134	6,2
2	Tuberculosis (A15-A19)**	125	5,8
2	Diabetes mellitus (E10-E14)	125	5,8
4	Malignant neoplasm of digestive organs (C15-C26)	122	5,7
5	Cerebrovascular diseases (I60-I69)	110	5,1
6	HIV disease (B20-B24)	108	5,0
7	Malignant neoplasm of respiratory and intrathoracic organs (C30-39)	93	4,3
8	Chronic lower respiratory diseases (J40-J47)	90	4,2
9	Other forms of heart disease (I30-I52)	89	4,1
10	Hypertensive diseases (I10-I15)	59	2,7
	Other natural causes	814	37,8
	Non-natural causes	286	13,3
	All causes	**2 155**	**100,0**

	West Coast	No.	%
1	Tuberculosis (A15-A19)**	334	10,5
2	Ischaemic heart diseases (I20-I25)	226	7,1
3	Cerebrovascular diseases (I60-I69)	210	6,6
4	Diabetes mellitus (E10-E14)	192	6,0
5	Chronic lower respiratory diseases (J40-J47)	157	4,9
6	Malignant neoplasm of respiratory and intrathoracic organs (C30-39)	133	4,2
7	HIV disease (B20-B24)	128	4,0
8	Influenza and pneumonia (J09-J18)	122	3,8
9	Malignant neoplasm of digestive organs (C15-C26)	117	3,7
10	Other forms of heart disease (I30-I52)	106	3,3
	Other natural causes	1 110	35,0
	Non-natural causes	339	10,7
	All causes	**3 174**	**100,0**

*Excluding 77 cases with unspecified district municipality. **Including deaths due to *MDR-TB* and *XDR-TB*

Appendix P.1: The ten leading underlying natural causes of death by district municipality of death occurrence, Eastern Cape, 2010*

	Alfred Nzo	No.	%
1	Tuberculosis (A15-A19)**	675	9,8
2	Intestinal infectious diseases (A00-A09)	392	5,7
3	Influenza and pneumonia (J09-J18)	240	3,5
4	Other forms of heart disease (I30-I52)	206	3,0
5	Other acute lower respiratory infections (J20-J22)	183	2,7
6	Other diseases of the respiratory system (J95-J99)	181	2,6
7	Cerebrovascular diseases (I60-I69)	176	2,6
8	Other viral diseases (B25-B34)	172	2,5
9	HIV disease (B20-B24)	122	1,8
10	Diabetes mellitus (E10-E14)	114	1,7
	Other natural causes	3 960	57,5
	Non-natural causes	463	6,7
	All causes	**6 884**	**100,0**

	Amathole	No.	%
1	Tuberculosis (A15-A19)**	1 871	12,1
2	Chronic lower respiratory diseases (J40-J47)	993	6,4
3	Other forms of heart disease (I30-I52)	929	6,0
4	Cerebrovascular diseases (I60-I69)	790	5,1
5	Influenza and pneumonia (J09-J18)	757	4,9
6	Intestinal infectious diseases (A00-A09)	667	4,3
7	HIV disease (B20-B24)	580	3,8
8	Other viral diseases (B25-B34)	525	3,4
9	Diabetes mellitus (E10-E14)	524	3,4
10	Hypertensive diseases (I10-I15)	475	3,1
	Other natural causes	5 967	38,7
	Non-natural causes	1 332	8,6
	All causes	**15 410**	**100,0**

	Buffalo City Metro	No.	%
1	Tuberculosis (A15-A19)**	1 832	15,2
2	Other forms of heart disease (I30-I52)	689	5,7
3	Cerebrovascular diseases (I60-I69)	621	5,2
4	Diabetes mellitus (E10-E14)	529	4,4
5	Malignant neoplasm of digestive organs (C15-C26)	496	4,1
6	Influenza and pneumonia (J09-J18)	472	3,9
7	Chronic lower respiratory diseases (J40-J47)	427	3,5
8	Intestinal infectious diseases (A00-A09)	387	3,2
9	Hypertensive diseases (I10-I15)	382	3,2
10	HIV disease (B20-B24)	283	2,4
	Other natural causes	4 578	38,0
	Non-natural causes	1 344	11,2
	All causes	**12 040**	**100,0**

	Cacadu	No.	%
1	Tuberculosis (A15-A19)**	708	12,6
2	HIV disease (B20-B24)	328	5,8
3	Cerebrovascular diseases (I60-I69)	282	5,0
4	Other forms of heart disease (I30-I52)	273	4,9
5	Chronic lower respiratory diseases (J40-J47)	220	3,9
6	Diabetes mellitus (E10-E14)	203	3,6
7	Influenza and pneumonia (J09-J18)	199	3,5
8	Hypertensive diseases (I10-I15)	194	3,5
9	Ischaemic heart diseases (I20-I25)	184	3,3
10	Malignant neoplasm of digestive organs (C15-C26)	140	2,5
	Other natural causes	2 275	40,5
	Non-natural causes	608	10,8
	All causes	**5 614**	**100,0**

	Chris Hani	No.	%
1	Tuberculosis (A15-A19)**	1 136	12,3
2	Influenza and pneumonia (J09-J18)	643	7,0
3	Other forms of heart disease (I30-I52)	557	6,0
4	Intestinal infectious diseases (A00-A09)	470	5,1
5	Chronic lower respiratory diseases (J40-J47)	448	4,9
6	Cerebrovascular diseases (I60-I69)	410	4,4
7	Other viral diseases (B25-B34)	375	4,1
8	Diabetes mellitus (E10-E14)	374	4,1
9	Hypertensive diseases (I10-I15)	220	2,4
10	Malignant neoplasm of digestive organs (C15-C26)	205	2,2
	Other natural causes	3 591	38,9
	Non-natural causes	805	8,7
	All causes	**9 234**	**100,0**

	Joe Gcabi	No.	%
1	Tuberculosis (A15-A19)**	567	11,8
2	Influenza and pneumonia (J09-J18)	337	7,0
3	Other forms of heart disease (I30-I52)	305	6,4
4	Intestinal infectious diseases (A00-A09)	199	4,1
5	Cerebrovascular diseases (I60-I69)	180	3,8
6	Certain disorders involving the immune mechanism (D80-D89)	177	3,7
7	HIV disease (B20-B24)	162	3,4
8	Other viral diseases (B25-B34)	160	3,3
9	Other diseases of the respiratory system (J95-J99)	138	2,9
10	Diabetes mellitus (E10-E14)	116	2,4
	Other natural causes	2 107	43,9
	Non-natural causes	351	7,3
	All causes	**4 799**	**100,0**

*Excluding 168 cases with unspecified district municipality. **Including deaths due to *MDR-TB* and *XDR-TB*

Appendix P.1: The ten leading underlying natural causes of death by district municipality of death occurrence, Eastern Cape, 2010* (concluded)

	Nelson Mandela Bay Metro	No.	%		O. R. Tambo	No.	%
1	Tuberculosis (A15-A19)**	1 665	14,9	1	Tuberculosis (A15-A19)**	1 729	11,3
2	Diabetes mellitus (E10-E14)	732	6,5	2	Other viral diseases (B25-B34)	805	5,3
3	Cerebrovascular diseases (I60-I69)	608	5,4	3	Intestinal infectious diseases (A00-A09)	572	3,7
4	Chronic lower respiratory diseases (J40-J47)	476	4,2	4	HIV disease (B20-B24)	558	3,7
5	Hypertensive diseases (I10-I15)	466	4,2	5	Influenza and pneumonia (J09-J18)	491	3,2
6	Ischaemic heart diseases (I20-I25)	384	3,4	6	Cerebrovascular diseases (I60-I69)	418	2,7
7	HIV disease (B20-B24)	353	3,1	7	Other forms of heart disease (I30-I52)	380	2,5
8	Other forms of heart disease (I30-I52)	352	3,1	8	Diabetes mellitus (E10-E14)	268	1,8
9	Malignant neoplasm of digestive organs (C15-C26)	342	3,1	9	Inflammatory diseases of the central nervous system (G00-G09)	244	1,6
10	Influenza and pneumonia (J09-J18)	310	2,8	10	Chronic lower respiratory diseases (J40-J47)	243	1,6
	Other natural causes	4 495	40,1		Other natural causes	8 139	53,3
	Non-natural causes	1 025	9,1		Non-natural causes	1 423	9,3
	All causes	**11 208**	**100,0**		**All causes**	**15 270**	**100,0**

*Excluding 168 cases with unspecified district municipality. **Including deaths due to *MDR-TB* and *XDR-TB*

Appendix P.2: The ten leading underlying natural causes of death by district municipality of death occurrence, Northern Cape, 2010*

	Frances Baard	No.	%
1	Tuberculosis (A15-A19)**	395	10,6
2	Certain disorders involving the immune mechanism (D80-D89)	181	4,8
3	HIV disease (B20-B24)	180	4,8
4	Cerebrovascular diseases (I60-I69)	173	4,6
5	Influenza and pneumonia (J09-J18)	160	4,3
6	Other forms of heart disease (I30-I52)	139	3,7
7	Hypertensive diseases (I10-I15)	133	3,6
8	Intestinal infectious diseases (A00-A09)	126	3,4
9	Diabetes mellitus (E10-E14)	123	3,3
10	Ischaemic heart diseases (I20-I25)	108	2,9
	Other natural causes	1 720	46,0
	Non-natural causes	299	8,0
	All causes	**3 737**	**100,0**

	John Taolo Gaetsewe	No.	%
1	Intestinal infectious diseases (A00-A09)	201	6,6
2	Tuberculosis (A15-A19)**	201	6,6
3	Other acute lower respiratory infections (J20-J22)	162	5,3
4	Influenza and pneumonia (J09-J18)	145	4,8
5	Other diseases of the respiratory system (J95-J99)	129	4,2
6	Other viral diseases (B25-B34)	94	3,1
7	Other forms of heart disease (I30-I52)	93	3,0
8	HIV disease (B20-B24)	92	3,0
9	Cerebrovascular diseases (I60-I69)	66	2,2
10	Hypertensive diseases (I10-I15)	62	2,0
	Other natural causes	1 634	53,6
	Non-natural causes	172	5,6
	All causes	**3 051**	**100,0**

	Namakwa	No.	%
1	Tuberculosis (A15-A19)**	72	6,7
2	Other forms of heart disease (I30-I52)	55	5,1
3	Chronic lower respiratory diseases (J40-J47)	47	4,4
4	Diabetes mellitus (E10-E14)	43	4,0
5	Ischaemic heart diseases (I20-I25)	41	3,8
6	Malignant neoplasm of digestive organs (C15-C26)	39	3,6
6	Hypertensive diseases (I10-I15)	39	3,6
6	Cerebrovascular diseases (I60-I69)	39	3,6
9	Malignant neoplasm of respiratory and intrathoracic organs (C30-39)	34	3,2
10	Other diseases of the respiratory system (J95-J99)	29	2,7
	Other natural causes	513	47,9
	Non-natural causes	120	11,2
	All causes	**1 071**	**100,0**

	Pixley ka Seme	No.	%
1	Tuberculosis (A15-A19)**	444	10,3
2	Influenza and pneumonia (J09-J18)	240	5,6
3	Cerebrovascular diseases (I60-I69)	229	5,3
4	HIV disease (B20-B24)	228	5,3
5	Other forms of heart disease (I30-I52)	191	4,4
6	Chronic lower respiratory diseases (J40-J47)	179	4,2
7	Diabetes mellitus (E10-E14)	151	3,5
8	Intestinal infectious diseases (A00-A09)	126	2,9
9	Other viral diseases (B25-B34)	118	2,7
10	Hypertensive diseases (I10-I15)	113	2,6
	Other natural causes	1 871	43,6
	Non-natural causes	403	9,4
	All causes	**4 293**	**100,0**

	Siyanda	No.	%
1	Tuberculosis (A15-A19)**	278	9,4
2	HIV disease (B20-B24)	247	8,3
3	Influenza and pneumonia (J09-J18)	177	6,0
4	Chronic lower respiratory diseases (J40-J47)	160	5,4
5	Intestinal infectious diseases (A00-A09)	123	4,1
6	Cerebrovascular diseases (I60-I69)	120	4,0
7	Certain disorders involving the immune mechanism (D80-D89)	118	4,0
8	Other forms of heart disease (I30-I52)	112	3,8
9	Ischaemic heart diseases (I20-I25)	89	3,0
10	Diabetes mellitus (E10-E14)	88	3,0
	Other natural causes	1 111	37,5
	Non-natural causes	343	11,6
	All causes	**2 966**	**100,0**

*Excluding 65 cases with unspecified district municipality. **Including deaths due to *MDR-TB* and *XDR-TB*

Appendix P.3: The ten leading underlying natural causes of death by district municipality of death occurrence, Free State, 2010*

	Fezile Dabi	No.	%
1	Influenza and pneumonia (J09-J18)	831	13,3
2	Tuberculosis (A15-A19)**	673	10,7
3	Intestinal infectious diseases (A00-A09)	442	7,1
4	Other forms of heart disease (I30-I52)	425	6,8
5	Cerebrovascular diseases (I60-I69)	276	4,4
6	Certain disorders involving the immune mechanism (D80-D89)	269	4,3
7	Hypertensive diseases (I10-I15)	246	3,9
8	Diabetes mellitus (E10-E14)	224	3,6
9	Ischaemic heart diseases (I20-I25)	145	2,3
10	Chronic lower respiratory diseases (J40-J47)	141	2,3
	Other natural causes	2 075	33,1
	Non-natural causes	516	8,2
	All causes	**6 263**	**100,0**

	Lejweleputswa	No.	%
1	Influenza and pneumonia (J09-J18)	1 746	15,7
2	Tuberculosis (A15-A19)**	1 334	12,0
3	Intestinal infectious diseases (A00-A09)	819	7,4
4	Other forms of heart disease (I30-I52)	570	5,1
5	Cerebrovascular diseases (I60-I69)	403	3,6
6	Certain disorders involving the immune mechanism (D80-D89)	280	2,5
7	Diabetes mellitus (E10-E14)	265	2,4
8	Hypertensive diseases (I10-I15)	264	2,4
9	Ischaemic heart diseases (I20-I25)	209	1,9
10	Inflammatory diseases of the central nervous system (G00-G09)	197	1,8
	Other natural causes	4 223	38,0
	Non-natural causes	798	7,2
	All causes	**11 108**	**100,0**

	Mangaung Metro	No.	%
1	Tuberculosis (A15-A19)**	1 226	12,1
2	Influenza and pneumonia (J09-J18)	834	8,3
3	Cerebrovascular diseases (I60-I69)	418	4,1
4	Intestinal infectious diseases (A00-A09)	368	3,6
5	Other forms of heart disease (I30-I52)	332	3,3
6	Certain disorders involving the immune mechanism (D80-D89)	331	3,3
7	Hypertensive diseases (I10-I15)	254	2,5
8	Diabetes mellitus (E10-E14)	242	2,4
9	Malignant neoplasm of digestive organs (C15-C26)	179	1,8
10	HIV disease (B20-B24)	168	1,7
	Other natural causes	4 999	49,5
	Non-natural causes	751	7,4
	All causes	**10 102**	**100,0**

	Thabo Mofutsanyane	No.	%
1	Influenza and pneumonia (J09-J18)	1 560	12,0
2	Tuberculosis (A15-A19)**	1 320	10,1
3	Intestinal infectious diseases (A00-A09)	1 131	8,7
4	Other forms of heart disease (I30-I52)	865	6,7
5	Certain disorders involving the immune mechanism (D80-D89)	666	5,1
6	Cerebrovascular diseases (I60-I69)	619	4,8
7	Diabetes mellitus (E10-E14)	425	3,3
8	Hypertensive diseases (I10-I15)	359	2,8
9	HIV disease (B20-B24)	305	2,3
10	Other acute lower respiratory infections (J20-J22)	305	2,3
	Other natural causes	4 648	35,7
	Non-natural causes	803	6,2
	All causes	**13 006**	**100,0**

	Xhariep	No.	%
1	Influenza and pneumonia (J09-J18)	467	10,3
2	Tuberculosis (A15-A19)**	448	9,9
3	Intestinal infectious diseases (A00-A09)	215	4,8
4	Cerebrovascular diseases (I60-I69)	214	4,7
5	Other forms of heart disease (I30-I52)	168	3,7
6	Certain disorders involving the immune mechanism (D80-D89)	97	2,1
7	Diabetes mellitus (E10-E14)	89	2,0
8	HIV disease (B20-B24)	84	1,9
9	Malignant neoplasm of digestive organs (C15-C26)	82	1,8
10	Chronic lower respiratory diseases (J40-J47)	82	1,8
	Other natural causes	2 165	48,0
	Non-natural causes	402	8,9
	All causes	**4 513**	**100,0**

*Excluding 26 cases with unspecified district municipality. **Including deaths due to *MDR-TB* and *XDR-TB*

Appendix P.4: The ten leading underlying natural causes of death by district municipality of death occurrence, KwaZulu-Natal, 2010*

	Amajuba	No.	%
1	Tuberculosis (A15-A19)**	905	14,9
2	Influenza and pneumonia (J09-J18)	532	8,8
3	Other acute lower respiratory infections (J20-J22)	441	7,3
4	Other forms of heart disease (I30-I52)	415	6,8
5	Intestinal infectious diseases (A00-A09)	390	6,4
6	Cerebrovascular diseases (I60-I69)	299	4,9
7	Diabetes mellitus (E10-E14)	255	4,2
8	Hypertensive diseases (I10-I15)	179	2,9
9	Other diseases of the respiratory system (J95-J99)	169	2,8
10	Inflammatory diseases of the central nervous system (G00-G09)	124	2,0
	Other natural causes	1 881	30,9
	Non-natural causes	488	8,0
	All causes	**6 078**	**100,0**

	eThekwini Metro	No.	%
1	Tuberculosis (A15-A19)**	4 407	13,8
2	Other forms of heart disease (I30-I52)	2 112	6,6
3	Diabetes mellitus (E10-E14)	1 683	5,3
4	Influenza and pneumonia (J09-J18)	1 489	4,7
5	Intestinal infectious diseases (A00-A09)	1 377	4,3
6	Cerebrovascular diseases (I60-I69)	1 304	4,1
7	Ischaemic heart diseases (I20-I25)	1 179	3,7
8	HIV disease (B20-B24)	957	3,0
9	Other viral diseases (B25-B34)	695	2,2
10	Hypertensive diseases (I10-I15)	662	2,1
	Other natural causes	12 872	40,2
	Non-natural causes	3 274	10,2
	All causes	**32 011**	**100,0**

	iLembe	No.	%
1	Tuberculosis (A15-A19)**	1 165	18,0
2	Intestinal infectious diseases (A00-A09)	515	8,0
3	Cerebrovascular diseases (I60-I69)	356	5,5
4	HIV disease (B20-B24)	331	5,1
5	Other viral diseases (B25-B34)	330	5,1
6	Diabetes mellitus (E10-E14)	313	4,8
7	Influenza and pneumonia (J09-J18)	258	4,0
8	Other forms of heart disease (I30-I52)	193	3,0
9	Hypertensive diseases (I10-I15)	164	2,5
10	Chronic lower respiratory diseases (J40-J47)	122	1,9
	Other natural causes	2 101	32,5
	Non-natural causes	607	9,4
	All causes	**6 455**	**100,0**

	Sisonke	No.	%
1	Tuberculosis (A15-A19)**	1 393	18,8
2	Intestinal infectious diseases (A00-A09)	456	6,2
3	Influenza and pneumonia (J09-J18)	455	6,1
4	Cerebrovascular diseases (I60-I69)	339	4,6
5	Diabetes mellitus (E10-E14)	327	4,4
6	Chronic lower respiratory diseases (J40-J47)	263	3,6
7	Other viral diseases (B25-B34)	238	3,2
8	Other forms of heart disease (I30-I52)	203	2,7
9	HIV disease (B20-B24)	193	2,6
10	Inflammatory diseases of the central nervous system (G00-G09)	161	2,2
	Other natural causes	2 964	40,0
	Non-natural causes	409	5,5
	All causes	**7 401**	**100,0**

	Ugu	No.	%
1	Tuberculosis (A15-A19)**	1 924	15,6
2	Influenza and pneumonia (J09-J18)	829	6,7
3	HIV disease (B20-B24)	815	6,6
4	Intestinal infectious diseases (A00-A09)	796	6,5
5	Cerebrovascular diseases (I60-I69)	754	6,1
6	Diabetes mellitus (E10-E14)	589	4,8
7	Other forms of heart disease (I30-I52)	452	3,7
8	Other viral diseases (B25-B34)	430	3,5
9	Hypertensive diseases (I10-I15)	390	3,2
10	Chronic lower respiratory diseases (J40-J47)	339	2,8
	Other natural causes	3 991	32,4
	Non-natural causes	992	8,1
	All causes	**12 301**	**100,0**

	uMgungundlovu	No.	%
1	Tuberculosis (A15-A19)**	1 684	13,8
2	Diabetes mellitus (E10-E14)	674	5,5
3	HIV disease (B20-B24)	651	5,3
4	Intestinal infectious diseases (A00-A09)	627	5,1
5	Cerebrovascular diseases (I60-I69)	603	4,9
6	Influenza and pneumonia (J09-J18)	571	4,7
7	Other forms of heart disease (I30-I52)	492	4,0
8	Hypertensive diseases (I10-I15)	362	3,0
9	Ischaemic heart diseases (I20-I25)	336	2,7
10	Other viral diseases (B25-B34)	317	2,6
	Other natural causes	4 817	39,4
	Non-natural causes	1 085	8,9
	All causes	**12 219**	**100,0**

*Excluding 595 cases with unspecified district municipality.

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

Appendix P.4: The ten leading underlying natural causes of death by district municipality of death occurrence, KwaZulu-Natal, 2010* (concluded)

	uMkhanyakude	No.	%
1	Tuberculosis (A15-A19)**	798	14,7
2	HIV disease (B20-B24)	771	14,2
3	Intestinal infectious diseases (A00-A09)	278	5,1
4	Cerebrovascular diseases (I60-I69)	238	4,4
5	Other viral diseases (B25-B34)	181	3,3
6	Other forms of heart disease (I30-I52)	173	3,2
7	Influenza and pneumonia (J09-J18)	158	2,9
8	Diabetes mellitus (E10-E14)	125	2,3
9	Hypertensive diseases (I10-I15)	112	2,1
10	Certain disorders involving the immune mechanism (D80-D89)	81	1,5
	Other natural causes	2 109	38,8
	Non-natural causes	417	7,7
	All causes	**5 441**	**100,0**

	uMzinyathi	No.	%
1	Tuberculosis (A15-A19)**	1 068	18,3
2	Influenza and pneumonia (J09-J18)	398	6,8
3	Intestinal infectious diseases (A00-A09)	373	6,4
4	Cerebrovascular diseases (I60-I69)	341	5,8
5	Other forms of heart disease (I30-I52)	314	5,4
6	Other viral diseases (B25-B34)	282	4,8
7	Diabetes mellitus (E10-E14)	180	3,1
8	HIV disease (B20-B24)	168	2,9
9	Other acute lower respiratory infections (J20-J22)	107	1,8
10	Ischaemic heart diseases (I20-I25)	102	1,7
	Other natural causes	1 961	33,6
	Non-natural causes	536	9,2
	All causes	**5 830**	100,0

	uThukela	No.	%
1	Tuberculosis (A15-A19)**	1 349	15,8
2	Intestinal infectious diseases (A00-A09)	648	7,6
3	Influenza and pneumonia (J09-J18)	644	7,5
4	Cerebrovascular diseases (I60-I69)	598	7,0
5	Other forms of heart disease (I30-I52)	429	5,0
6	Diabetes mellitus (E10-E14)	358	4,2
7	Certain disorders involving the immune mechanism (D80-D89)	340	4,0
8	Ischaemic heart diseases (I20-I25)	229	2,7
9	Inflammatory diseases of the central nervous system (G00-G09)	223	2,6
10	Hypertensive diseases (I10-I15)	214	2,5
	Other natural causes	2 792	32,7
	Non-natural causes	725	8,5
	All causes	**8 549**	**100,0**

	Uthungulu	No.	%
1	Tuberculosis (A15-A19)**	1 539	16,0
2	Influenza and pneumonia (J09-J18)	608	6,3
3	HIV disease (B20-B24)	607	6,3
4	Intestinal infectious diseases (A00-A09)	455	4,7
5	Diabetes mellitus (E10-E14)	430	4,5
6	Cerebrovascular diseases (I60-I69)	415	4,3
7	Other forms of heart disease (I30-I52)	410	4,3
8	Other viral diseases (B25-B34)	382	4,0
9	Hypertensive diseases (I10-I15)	281	2,9
10	Certain disorders involving the immune mechanism (D80-D89)	210	2,2
	Other natural causes	3 337	34,7
	Non-natural causes	945	9,8
	All causes	**9 619**	**100,0**

	Zululand	No.	%
1	Tuberculosis (A15-A19)**	1 871	19,9
2	Intestinal infectious diseases (A00-A09)	641	6,8
3	Influenza and pneumonia (J09-J18)	505	5,4
4	Other viral diseases (B25-B34)	394	4,2
5	Other forms of heart disease (I30-I52)	392	4,2
6	Cerebrovascular diseases (I60-I69)	351	3,7
7	HIV disease (B20-B24)	264	2,8
8	Diabetes mellitus (E10-E14)	262	2,8
9	Inflammatory diseases of the central nervous system (G00-G09)	242	2,6
10	Other acute lower respiratory infections (J20-J22)	199	2,1
	Other natural causes	3 576	38,1
	Non-natural causes	693	7,4
	All causes	**9 390**	**100,0**

*Excluding 595 cases with unspecified district municipality.

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

Appendix P.5: The ten leading underlying natural causes of death by district municipality of death occurrence, North West, 2010*

	Bojanala Platinum	No.	%
1	Tuberculosis (A15-A19)**	1 509	9,8
2	Influenza and pneumonia (J09-J18)	1 230	8,0
3	Other forms of heart disease (I30-I52)	1 115	7,3
4	Intestinal infectious diseases (A00-A09)	893	5,8
5	Cerebrovascular diseases (I60-I69)	638	4,2
6	Diabetes mellitus (E10-E14)	585	3,8
7	Hypertensive diseases (I10-I15)	580	3,8
8	Certain disorders involving the immune mechanism (D80-D89)	515	3,4
9	Other viral diseases (B25-B34)	396	2,6
10	HIV disease (B20-B24)	382	2,5
	Other natural causes	6 201	40,5
	Non-natural causes	1 281	8,4
	All causes	**15 325**	**100,0**

	Dr Kenneth Kaunda	No.	%
1	Tuberculosis (A15-A19)**	1 188	14,1
2	Influenza and pneumonia (J09-J18)	549	6,5
3	HIV disease (B20-B24)	331	3,9
4	Cerebrovascular diseases (I60-I69)	326	3,9
5	Intestinal infectious diseases (A00-A09)	325	3,9
6	Other forms of heart disease (I30-I52)	323	3,8
7	Hypertensive diseases (I10-I15)	268	3,2
8	Diabetes mellitus (E10-E14)	256	3,0
9	Ischaemic heart diseases (I20-I25)	219	2,6
10	Chronic lower respiratory diseases (J40-J47)	202	2,4
	Other natural causes	3 692	44,0
	Non-natural causes	717	8,5
	All causes	**8 396**	**100,0**

	Dr Ruth Segomotsi Mompati	No.	%
1	Tuberculosis (A15-A19)**	798	13,3
2	Influenza and pneumonia (J09-J18)	457	7,6
3	Intestinal infectious diseases (A00-A09)	447	7,4
4	Other forms of heart disease (I30-I52)	306	5,1
5	Hypertensive diseases (I10-I15)	303	5,0
6	Other viral diseases (B25-B34)	267	4,4
7	Cerebrovascular diseases (I60-I69)	242	4,0
8	Certain disorders involving the immune mechanism (D80-D89)	233	3,9
9	Other acute lower respiratory infections (J20-J22)	210	3,5
10	HIV disease (B20-B24)	180	3,0
	Other natural causes	2 232	37,1
	Non-natural causes	337	5,6
	All causes	**6 012**	**100,0**

	Ngaka Modiri Molema	No.	%
1	Tuberculosis (A15-A19)**	1 443	14,0
2	Influenza and pneumonia (J09-J18)	1 388	13,5
3	Other forms of heart disease (I30-I52)	776	7,6
4	Intestinal infectious diseases (A00-A09)	495	4,8
5	Hypertensive diseases (I10-I15)	463	4,5
6	Cerebrovascular diseases (I60-I69)	451	4,4
7	Diabetes mellitus (E10-E14)	322	3,1
8	Chronic lower respiratory diseases (J40-J47)	315	3,1
9	Other bacterial diseases (A30-A49)	242	2,4
10	HIV disease (B20-B24)	197	1,9
	Other natural causes	3 576	34,8
	Non-natural causes	605	5,9
	All causes	**10 273**	**100,0**

*Excluding 53 cases with unspecified district municipality. **Including deaths due to *MDR-TB* and *XDR-TB*

Appendix P.6: The ten leading underlying natural causes of death by district municipality of death occurrence, Gauteng, 2010*

	City of Johannesburg Metro	No.	%
1	Tuberculosis (A15-A19)**	2 350	7,4
2	Influenza and pneumonia (J09-J18)	1 891	5,9
3	Other forms of heart disease (I30-I52)	1 392	4,4
4	HIV disease (B20-B24)	1 311	4,1
5	Cerebrovascular diseases (I60-I69)	1 004	3,2
6	Diabetes mellitus (E10-E14)	977	3,1
7	Intestinal infectious diseases (A00-A09)	831	2,6
8	Ischaemic heart diseases (I20-I25)	803	2,5
9	Malignant neoplasm of digestive organs (C15-C26)	712	2,2
10	Hypertensive diseases (I10-I15)	696	2,2
	Other natural causes	16 693	52,5
	Non-natural causes	3 146	9,9
	All causes	**31 806**	**100,0**

	City of Tshwane Metro	No.	%
1	Tuberculosis (A15-A19)**	1 585	8,0
2	Other forms of heart disease (I30-I52)	1 510	7,6
3	Influenza and pneumonia (J09-J18)	1 301	6,6
4	Diabetes mellitus (E10-E14)	970	4,9
5	Cerebrovascular diseases (I60-I69)	968	4,9
6	Intestinal infectious diseases (A00-A09)	771	3,9
7	Hypertensive diseases (I10-I15)	712	3,6
8	HIV disease (B20-B24)	684	3,5
9	Ischaemic heart diseases (I20-I25)	667	3,4
10	Chronic lower respiratory diseases (J40-J47)	485	2,5
	Other natural causes	8 175	41,3
	Non-natural causes	1 958	9,9
	All causes	**19 786**	**100,0**

	Ekurhuleni Metro	No.	%
1	Tuberculosis (A15-A19)**	3 014	10,2
2	Influenza and pneumonia (J09-J18)	2 299	7,8
3	Other forms of heart disease (I30-I52)	1 299	4,4
4	Cerebrovascular diseases (I60-I69)	1 152	3,9
5	Intestinal infectious diseases (A00-A09)	1 059	3,6
6	Diabetes mellitus (E10-E14)	951	3,2
7	HIV disease (B20-B24)	700	2,4
8	Ischaemic heart diseases (I20-I25)	665	2,3
9	Other viral diseases (B25-B34)	652	2,2
10	Inflammatory diseases of the central nervous system (G00-G09)	608	2,1
	Other natural causes	14 270	48,3
	Non-natural causes	2 865	9,7
	All causes	**29 534**	**100,0**

	Sedibeng	No.	%
1	Influenza and pneumonia (J09-J18)	1 629	13,1
2	Tuberculosis (A15-A19)**	1 154	9,3
3	Other forms of heart disease (I30-I52)	785	6,3
4	Intestinal infectious diseases (A00-A09)	765	6,1
5	Cerebrovascular diseases (I60-I69)	592	4,8
6	Diabetes mellitus (E10-E14)	508	4,1
7	Hypertensive diseases (I10-I15)	410	3,3
8	Ischaemic heart diseases (I20-I25)	336	2,7
9	Chronic lower respiratory diseases (J40-J47)	306	2,5
10	Inflammatory diseases of the central nervous system (G00-G09)	303	2,4
	Other natural causes	4 617	37,1
	Non-natural causes	1 036	8,3
	All causes	**12 441**	**100,0**

	West Rand	No.	%
1	Tuberculosis (A15-A19)**	1 088	9,5
2	Influenza and pneumonia (J09-J18)	785	6,9
3	Intestinal infectious diseases (A00-A09)	496	4,3
4	Other forms of heart disease (I30-I52)	487	4,3
5	Cerebrovascular diseases (I60-I69)	389	3,4
6	Ischaemic heart diseases (I20-I25)	364	3,2
7	Diabetes mellitus (E10-E14)	324	2,8
8	HIV disease (B20-B24)	316	2,8
9	Certain disorders involving the immune mechanism (D80-D89)	282	2,5
10	Other viral diseases (B25-B34)	273	2,4
	Other natural causes	5 381	47,1
	Non-natural causes	1 249	10,9
	All causes	**11 434**	**100,0**

*Excluding 672 cases with unspecified district municipality.

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

Appendix P.7: The ten leading underlying natural causes of death by district municipality of death occurrence, Mpumalanga, 2010*

	Ehlanzeni	No.	%		Ger Sibande	No.	%		Nkangala	No.	%
1	Tuberculosis (A15-A19)**	2 782	16,5	1	Tuberculosis (A15-A19)**	1 523	11,7	1	Tuberculosis (A15-A19)**	1 258	10,9
2	Intestinal infectious diseases (A00-A09)	1 496	8,9	2	Influenza and pneumonia (J09-J18)	1 446	11,1	2	Influenza and pneumonia (J09-J18)	1 241	10,7
3	Influenza and pneumonia (J09-J18)	1 232	7,3	3	Intestinal infectious diseases (A00-A09)	948	7,3	3	Other forms of heart disease (I30-I52)	777	6,7
4	Cerebrovascular diseases (I60-I69)	1 044	6,2	4	Other forms of heart disease (I30-I52)	662	5,1	4	Intestinal infectious diseases (A00-A09)	628	5,4
5	Other acute lower respiratory infections (J20-J22)	577	3,4	5	Cerebrovascular diseases (I60-I69)	502	3,9	5	Hypertensive diseases (I10-I15)	504	4,4
6	Diabetes mellitus (E10-E14)	554	3,3	6	Diabetes mellitus (E10-E14)	498	3,8	6	Diabetes mellitus (E10-E14)	501	4,3
7	HIV disease (B20-B24)	542	3,2	7	Other acute lower respiratory infections (J20-J22)	415	3,2	7	Cerebrovascular diseases (I60-I69)	423	3,7
8	Other forms of heart disease (I30-I52)	532	3,2	8	HIV disease (B20-B24)	413	3,2	8	Other viral diseases (B25-B34)	350	3,0
9	Other viral diseases (B25-B34)	500	3,0	9	Certain disorders involving the immune mechanism (D80-D89)	374	2,9	9	Chronic lower respiratory diseases (J40-J47)	338	2,9
10	Hypertensive diseases (I10-I15)	479	2,8	10	Hypertensive diseases (I10-I15)	291	2,2	10	Certain disorders involving the immune mechanism (D80-D89)	271	2,3
	Other natural causes	5 903	35,0		Other natural causes	4 858	37,3		Other natural causes	4 198	36,2
	Non-natural causes	1 241	7,4		Non-natural causes	1 079	8,3		Non-natural causes	1 096	9,5
	All causes	**16 882**	**100,0**		**All causes**	**13 009**	**100,0**		**All causes**	**11 585**	**100,0**

*Excluding 297 cases with unspecified district municipality.

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

Appendix P.8: The ten leading underlying natural causes of death by district municipality of death occurrence, Limpopo, 2010*

	Capricon	No.	%
1	Influenza and pneumonia (J09-J18)	1 574	11,8
2	Tuberculosis (A15-A19)**	1 190	8,9
3	Intestinal infectious diseases (A00-A09)	1 060	7,9
4	Hypertensive diseases (I10-I15)	618	4,6
5	Diabetes mellitus (E10-E14)	575	4,3
6	Other forms of heart disease (I30-I52)	571	4,3
7	Cerebrovascular diseases (I60-I69)	556	4,2
8	Certain disorders involving the immune mechanism (D80-D89)	255	1,9
9	Chronic lower respiratory diseases (J40-J47)	246	1,8
10	HIV disease (B20-B24)	228	1,7
	Other natural causes	5 474	41,0
	Non-natural causes	1 003	7,5
	All causes	**13 350**	**100,0**

	Greater Sekhukhune	No.	%
1	Influenza and pneumonia (J09-J18)	2 314	22,1
2	Intestinal infectious diseases (A00-A09)	1 081	10,3
3	Cerebrovascular diseases (I60-I69)	994	9,5
4	Tuberculosis (A15-A19)**	755	7,2
5	Other forms of heart disease (I30-I52)	482	4,6
6	Hypertensive diseases (I10-I15)	397	3,8
7	Diabetes mellitus (E10-E14)	395	3,8
8	Certain disorders involving the immune mechanism (D80-D89)	332	3,2
9	Chronic lower respiratory diseases (J40-J47)	193	1,8
10	HIV disease (B20-B24)	146	1,4
	Other natural causes	2 618	25,0
	Non-natural causes	752	7,2
	All causes	**10 459**	**100,0**

	Mopani	No.	%
1	Influenza and pneumonia (J09-J18)	946	9,2
2	Intestinal infectious diseases (A00-A09)	874	8,5
3	Tuberculosis (A15-A19)**	820	8,0
4	Cerebrovascular diseases (I60-I69)	426	4,2
5	Diabetes mellitus (E10-E14)	322	3,1
6	Other forms of heart disease (I30-I52)	315	3,1
7	Other viral diseases (B25-B34)	273	2,7
8	Inflammatory diseases of the central nervous system (G00-G09)	237	2,3
9	Certain disorders involving the immune mechanism (D80-D89)	179	1,7
10	Renal failure (N17-N19)	160	1,6
	Other natural causes	4 987	48,7
	Non-natural causes	699	6,8
	All causes	**10 238**	**100,0**

	Vhembe	No.	%
1	Tuberculosis (A15-A19)**	841	8,4
2	Intestinal infectious diseases (A00-A09)	703	7,0
3	Influenza and pneumonia (J09-J18)	643	6,4
4	Diabetes mellitus (E10-E14)	447	4,5
5	Cerebrovascular diseases (I60-I69)	371	3,7
6	Other forms of heart disease (I30-I52)	314	3,1
7	Diseases of liver (K70-K77)	161	1,6
8	HIV disease (B20-B24)	159	1,6
9	Renal failure (N17-N19)	139	1,4
10	Other viral diseases (B25-B34)	134	1,3
	Other natural causes	5 317	53,2
	Non-natural causes	764	7,6
	All causes	**9 993**	**100,0**

	Waterberg	No.	%
1	Tuberculosis (A15-A19)**	543	9,8
2	Influenza and pneumonia (J09-J18)	449	8,1
3	Intestinal infectious diseases (A00-A09)	345	6,2
4	Cerebrovascular diseases (I60-I69)	208	3,8
5	Other forms of heart disease (I30-I52)	197	3,6
6	Certain disorders involving the immune mechanism (D80-D89)	185	3,3
7	Diabetes mellitus (E10-E14)	165	3,0
8	Ischaemic heart diseases (I20-I25)	134	2,4
9	Hypertensive diseases (I10-I15)	129	2,3
10	Other viral diseases (B25-B34)	123	2,2
	Other natural causes	2 579	46,7
	Non-natural causes	471	8,5
	All causes	**5 528**	**100,0**

*Excluding 449 cases with unspecified district municipality.

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

Appendix Q: Population group differences

Population group was not known in about a quarter (24,4%) of all deaths. While this variable is important in the understanding of mortality and causes of death in the country, further analysis is restricted to the appendix. Readers are therefore advised to treat the breakdowns of deaths by population group with caution due to this large proportion of deaths with population group classified as 'other/unknown/unspecified.

The ten leading causes of death for 2010 by population group are shown in Appendix O. The results show that four of the ten leading causes of death were common for the four population groups, namely *other forms of heart disease*, *cerebrovascular diseases, diabetes mellitus* and *hypertensive disease*. These common causes of death had different ranks and different contributions to the overall number of deaths for each population group. For example *other forms of heart diseases* were the second leading cause of death among the white population group (accounting for 7,5% of all deaths in this group); third among the Indian/Asian population group (8,1%); fourth among the Black African (4,7%); and seventh among the coloured population group (3,5%).

The leading underlying natural cause of death for black African and coloured population groups was *tuberculosis*, which accounted for 13,3% and 8,8% respectively, of all deaths in these groups. The leading cause of death among Indian/Asians was *diabetes mellitus* while *ischaemic heart diseases* were the leading cause among the white population group. The first three and the ninth leading causes of death for the white population group were all diseases of the *circulatory system*, all contributing 27,7% of all deaths among the white population group.

On one hand, *intestinal infectious diseases, certain disorders involving the immune mechanism* and *other viral diseases* were among the ten leading natural causes of death only for the black African population group. On the other hand, *ischaemic heart disease, malignant neoplasm of digestive* organs and *chronic lower respiratory diseases* were among the ten leading underlying causes of natural deaths for all population groups, except for the black African population group.

All population groups except the white population group had *tuberculosis* among the leading underlying natural causes of death. *Tuberculosis* ranked first among the black Africans (13,3%) and among the coloured population group (8,8%) and ranked tenth among the Indian/Asian population group (2,4). *Malignant neoplasms of respiratory and intrathoracic organs* were among the ten leading underlying causes of death only for the white and coloured population groups while *renal failure* was among the ten leading underlying causes of death only for the white and Indian/Asian population groups.

Nine of the ten leading causes of death for the other/unknown/unspecified population group were similar to those of black Africans, with the first five and the eighth leading causes having the same rank. The number of causes that were similar with the other/unknown/unspecified population group was five for the white population group and six each for Indians/Asians and coloured population group, with differing ranks.

The percentages of deaths due to non-natural causes did not differ widely between population groups: 8,5% among the white population group; 9,5% for black Africans; 9,9% for Indians/Asians; and 10,0% for the coloured population group.

Appendix Q.1: The ten leading underlying natural causes of death by population group, 2010

Causes of deaths (based on ICD-10)	Black African			White			Indian/Asian			Coloured			Other/unknown/unspecified		
	Rank	No.	%	Rank	No.	%	Rank	No.	%	Rank	No.	%	Rank	No.	%
Tuberculosis (A15-A19)*	1	45 411	13,3	…	…	…	10	175	2,4	1	2 253	8,8	1	14 745	11,1
Influenza and pneumonia (J09-J18)	2	29 165	8,5	7	1 578	4,3	9	196	2,6	…	…	…	2	7 283	5,5
Intestinal infectious diseases (A00-A09)	3	20 603	6,0	…	…	…	…	…	…	…	…	…	3	6 084	4,6
Other forms of heart disease (I30-I52)	4	16 064	4,7	2	2 749	7,5	3	601	8,1	9	907	3,5	4	5 506	4,2
Cerebrovascular diseases (I60-I69)	5	15 692	4,6	3	2 180	5,9	4	386	5,2	3	1 514	5,9	5	4 892	3,7
HIV disease (B20-B24)	6	13 958	4,1	…	…	…	…	…	…	7	956	3,7	7	3 308	2,5
Diabetes mellitus (E10-E14)	7	12 513	3,7	6	1 584	4,3	1	1 094	14,7	2	1 758	6,9	6	4 526	3,4
Hypertensive diseases (I10-I15)	8	9 940	2,9	9	876	2,4	7	253	3,4	10	906	3,5	8	2 915	2,2
Other viral diseases (B25-B34)	9	9 204	2,7	…	…	…	…	…	…	…	…	…	10	2 901	2,2
Certain disorders involving the immune mechanism (D80-D89)	10	7 945	2,3	…	…	…	…	…	…	…	…	…	…	…	…
Ischaemic heart diseases (I20-I25)	…	…	…	1	4 410	12,0	2	996	13,4	5	1 326	5,2	…	…	…
Malignant neoplasm of digestive organs (C15-C26)	…	…	…	4	2 056	5,6	5	260	3,5	8	917	3,6	…	…	…
Chronic lower respiratory diseases (J40-J47)	…	…	…	5	1 880	5,1	6	255	3,4	4	1 489	5,8	9	2 912	2,2
Malignant neoplasm of respiratory and intrathoracic organs (C30-39)	…	…	…	8	1 296	3,5	…	…	…	6	1 043	4,1	…	…	…
Renal failure (N17-N19)	…	…	…	10	850	2,3	8	215	2,9	…	…	…	…	…	…
Other causes	…	128 310	37,6		14 234	38,6		2 270	30,5		9 978	39,0		68 161	51,4
Non-natural	…	32 590	9,5		3 135	8,5		736	9,9		2 563	10,0		9 353	7,1
All causes	**…**	**341 395**	**100,0**		**36 828**	**100,0**		**7 437**	**100,0**		**25 610**	**100,0**		**132 586**	**100,0**

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