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Preface

This statistical release presents information on mortality and causes of death in South Africa for deaths that occurred during the 2023 calendar year. Deaths that occurred during the years 2002–2022 have also been included to show trends in mortality and causes of death, using updated information which includes late registrations. The statistical release is based on deaths collected through the South African civil registration system maintained by the Department of Home Affairs. The information on causes of death is captured as it was recorded on death notification forms completed by medical practitioners and other certifying officials.

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Abbreviations/acronyms

AIDS	Acquired Immuno Deficiency Syndrome
ANACoD	Analysing Mortality and Causes of Death
CDC	Centre for Disease Control
COVID-19	Corona Virus Disease of 2019
CRVS	Civil Registration and Vital Statistics
DHA	Department of Home Affairs
ECA	Economic Commission for Africa
GBD	Global Burden of Diseases
HIV	Human Immunodeficiency Virus
ICD-10	International Classification of Diseases 10th Revision
ICD-11	International Classification of Diseases 11th Revision
MACOD	Mortality and Causes of Death
MDR-TB	MultiDrug-Resistant Tuberculosis
MMDS	Mortality Medical Data System
NCDs	Non-Communicable Diseases
NDP	National Development Plan
NPR	National Population Register
Stats SA	Statistics South Africa
TB	Tuberculosis
UNECA	United Nation's Economic Commission for Africa
WHO	World Health Organization
XDR-TB	Extensively Drug-Resistant Tuberculosis

1. Introduction

1.1 Background

The responsibility of a well-established civil registration and vital statistics system (CRVS) is to attach a discrete legal identity to every individual in society (Peters, 2016). Over and above this basic function, CRVS provides essential data for policymaking, it is the foundation from which evidence-based decisions and policies can be formulated. Such a system provides a foundation for human rights and identity, data for development planning, monitoring of health and development goals, improving health systems, disaster response and humanitarian action (AbouZahr *et al*. 2017).

The CRVS system in South Africa is a well-established framework, with near-perfect registration completeness rates for both births and deaths. Its sustainability is supported by a strong legal framework that effectively captures both hospital and community deaths. The registration of deaths in South Africa is governed by the Births and Deaths Registration Act No. 51 of 1992 (Republic of South Africa, 1992). The Statistics Act No. 6 of 1999, as amended through Act 29 of 2024, gives Statistics South Africa (Stats SA) the legal mandate to publish vital statistics based on births and deaths reported through the civil registration system (Republic of South Africa, 2024).

Stats SA, in collaboration with DHA, National Department of Health (NDoH) and other stakeholders, has ensured continued provision of mortality data from the civil registration system. Sustained partnerships between the stakeholders are essential for improvements in mortality statistics to be realised and the findings from this statistical release will inform efforts aimed at strengthening civil registration and vital statistics systems in the country.

The utility of mortality data depends largely on the accuracy and completeness of cause-of-death reporting. The basis of which is the accurate completion of death notification forms by medical doctors, aligning with the International Classification of Diseases (ICD) for standardised reporting of causes of death which is gold standard for cause of death recording. Equally, timely information is critical for interventions and during health emergencies, it is key to informing health leaders on areas for intervention. Mortality and causes of death continue to be one of the key outputs for Stats SA. Consistent efforts to address the four-year backlog in the processing of MACOD are underway in order to meet its mandate to provide reliable information on the levels and causes of mortality through the application of appropriate quality criteria and standards, classifications and procedures for vital statistics (Republic of South Africa, 1999).

Accurate and reliable mortality data are also fundamental for understanding disease patterns, improving health outcomes, public health planning, and monitoring progress towards health and development goals. It is one of the indicators of the well-being and health status of a population, hence the South African government's flagship plan, National Development Plan (NDP), has "Health care for all by 2030" as one of the key development objectives (National Planning Commission, 2012).

1.2 Objectives of this statistical release

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

- To outline emerging trends spanning a 22-year period (2002–2023) and differentials in mortality by selected socio-demographic and geographic characteristics for deaths that occurred in 2023; and
- To present statistics on the causes of death for deaths that occurred in 2023, focusing on the underlying causes of death.

1.3 Scope of this statistical release

This release is based on information on mortality and causes of death from the South African civil registration system. All death notification forms from the DHA for deaths that occurred in 2023 or earlier that reached Stats SA during the 2025/2026 processing phase are covered. However, the main focus is on deaths that occurred in 2023. Deaths that occurred during the period 2002 to 2022 are also provided to show trends in mortality and causes of death. This release excludes stillbirths, which are also collected through the civil registration system using the same death notification form. The definitions of technical terms used in this release are provided in Appendix A.

1.4 Organisation and presentation of this statistical release

This release is composed of five sections. The first section consists of information on the background and purpose of the release. Section two lays out the data and methods, which focuses on data sources, including methods used in data processing, data editing, quality assurance and data analysis. The third section on registered deaths presents mortality levels, trends and differentials, specifically focusing on the socio-demographic and geographic characteristics of the deceased. The fourth section mainly covers information on the underlying causes of death for 2023 death occurrences. In addition, the section provides information on immediate, contributing, and underlying causes of death differentials by natural versus non-natural causes, as well as the Global Burden of Disease (GBD). Due to fewer proportions of COVID-19 deaths, there will be no dedicated sub-section for COVID-19, as was the case in 2020 and 2021. Finally, the last section presents a summary of the findings and concluding remarks.

This release is accompanied by additional analysis in Appendices D to Q under the tab *"Additional downloads"* on the Stats SA website. The workbook provided covers information on deaths and causes of deaths (including main group, broad group and underlying causes of death by population group), and the analysis is disaggregated by province and district municipality of death. Any information not provided in this release, or additional downloads may be requested from Stats SA. Enquiries may be made on any information not provided in this statistical release.

2. Data and methods

In this section, focus is placed on data sources, methods used in data processing, data editing and data analysis. Procedures followed in assessment of the quality of data are also covered.

2.1 Data source

This statistical release is based on administrative records from death notification forms acquired from the Department of Home Affairs (DHA). The DHA currently uses two death notification forms to register deaths: Form BI-1663 which was introduced in 1998 and Form DHA-1663 which was introduced in 2009 as a replacement of Form BI-1663. Form BI-1663 continues to be used in areas where it is still in stock. In the event that a medical practitioner could not certify the occurrence of death, a traditional leader (such as chief, induna, headman) completes Form DHA-1680 (referred to as the Death Report) to certify the occurrence of death and to provide a description of the circumstances that resulted in death. The completed Death Report is then sent to DHA where the information is transcribed on to the DHA-1663. During processing at Stats SA, the two death notifications (Form BI-1663 and Form DHA-1663) were merged into one dataset as data elements in these two forms are largely comparable. The main difference between the two forms is in the registration of perinatal deaths (stillbirths and deaths occurring within the first seven days of life). Form BI-1663 records perinatal deaths in the same section as all other deaths, whereas Form DHA-1663 has a separate section for the comprehensive recording of the details of perinatal deaths.

The Births and Deaths Registration Act, 1992 (Act No. 51 of 1992), amended in 2010 as the Births and Deaths Registration Amendment Act, 2010 (Act No. 18 of 2010) is the legislation governing the registration of deaths in South Africa (Republic of South Africa, 1992; Republic of South Africa, 2010). In addition, the 2014 Births and Deaths Regulations which repealed the 1992 Regulations prescribe that notice of death or stillbirth for all deaths that occur must be given within 72 hours of death occurrence by an informant, regardless of citizenship status of the deceased (Republic of South Africa, 1992). After death registration is completed, the DHA issues a death certificate to the informant and updates the National Population Register (NPR). The NPR only includes deaths for South African citizens and permanent residents whose birth records were already captured onto the NPR prior to death. Those not eligible for inclusion in the NPR are non-South African citizens who sojourn temporarily in the country and all South African citizens and permanent residents who died before notice of their births had been registered. Statistics South Africa (Stats SA) collects all death notification forms, irrespective of the deceased's citizenship status for processing, analysis and dissemination of mortality and causes of death information.

This statistical release is based on a total of 476 605 deaths that occurred in 2023 and 12 580 late death registrations for 2002 to 2022 that were registered at the DHA and reached Stats SA in time for the 2025/2026 processing phase.

2.2 Data processing

The processing of the completed death notification forms takes place at the Stats SA Data Processing Centre. The stages of data processing start with sorting of forms by year of death occurrence, pasting unique identifier labels on each form, data capturing; and coding socio-demographic and causes of death variables.

2.2.1 Classification of the causes of death

The cause-of-death statistics in this publication are compiled using the International Classification of Diseases (ICD), 10th Revision 2016 and 2019 Editions. The ICD is a system of categories to which morbid entities of either external or pathological causation are assigned according to established criteria. It is developed collaboratively between the World Health Organization (WHO) and various international agencies who are involved in mortality data quality improvement. It is revised from time to time in line with new adaptations, classifications and glossaries. All member states of the United Nations, including South Africa, agreed to use ICD as the standard classification system for compiling morbidity and mortality statistics. The South African National Information System also adopted it as a standard.

The primary purpose of ICD is to provide for conversion of word descriptions of diseases or conditions into an alphanumeric code, which permit easy storage, retrieval and analysis of data. It also allows for the systematic and standardised recording, analysis, interpretation, comparison and sharing of morbidity and mortality data within a population and across countries. The ICD-10 provides for coding and classification of diseases and injuries and a wide range of signs, symptoms and other abnormal findings (WHO, 2014a).

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

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

The quality of causes of mortality statistics depends on completeness and accuracy of certified death notification forms. Coders at Stats SA follow the principle of ‘what you see is what you code’ when coding causes-of-death statistics. The coders use the ICD-10 for categories of causes of death coded in the ICD-10 manual. For categories that are not coded in the ICD-10 manual, Stats SA has outlined specific guidelines and

procedures. For example, according to these rules and procedures, immunosuppression is coded as immunodeficiency and not as human immunodeficiency virus (HIV) disease.

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

2.2.2 Generation of the underlying causes of death

The underlying cause of death is defined as: “(a) the disease or injury that initiated the sequence of events leading directly to death, or (b) the circumstances of the accident or violence that produced the fatal injury” (WHO, 2016: 31).

Stats SA uses IRIS software for the automated derivation of the underlying causes of death according to the ICD-10 rules. IRIS is the most up-to-date software available for coding as Mortality Medical Data System (MMDS) is no longer being supported by the US Centre for Disease Control who have moved to join the IRIS development core group. IRIS software contains language-dependent tables that can be developed to suit individual jurisdictions e.g. can include common phrases used in South African death certificates which may not be included in the standard English dictionary released with the IRIS package.

In instances where the software fails to derive the underlying cause of death, experienced coders at Stats SA derive the underlying cause of death manually within IRIS software. In efforts to improve the quality, timeliness, and consistency of coded data, IRIS was used to its full potential (i.e coding of the causes and derivation of the underlying cause of death).

2.3 Data editing

On completion of all data processing stages, the Stats SA data editing rules document was used to check for data consistency and accuracy and to flag implausible causes of death for further investigations. In addition, two electronic tools both developed by WHO: Analysing mortality levels and causes-of-death (ANACoD) version 3.0 and CoDEdit version 1.0 were used to further check data consistency and plausibility (WHO, 2014a and WHO, 2014b). The tools were developed to enhance the value of mortality statistics in informing health policies and programmes. Both tools were used to automatically check the 2023 death data for accuracy and consistency by highlighting cases with causes that were unlikely to cause death categorised by age and sex (sex-specific causes, age-specific causes and notifiable diseases) and possible misuse of ICD-10 codes as well as providing a summary of the records within the dataset (WHO, 2014a; WHO, 2014b). For example, for causes of death that are specific to one sex, the tools warn and flag for errors when the combination of sex and cause is wrong. The errors that were flagged by the tools were manually investigated (checked on the original death notification form) for verification and corrections were made where necessary.

The main difference between the two tools is that CoDEdit assesses data consistency and plausibility for each unit record while ANACoD checks the data at an aggregate level. However, this does not undermine the importance of ANACoD as it can calculate demographic indicators such as crude death rates, life expectancy and death registration completeness level.

2.4 Assessment of the quality of data

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

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

For the purpose of this statistical release, in addition to the ANACoD and CoDEdit electronic tools, the framework proposed by Mahapatra et al. (2007) was used to assess the quality of the 2023 causes of death data. A detailed assessment is provided in Appendix C.

2.5 Data analysis

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

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

The second section lays out analyses of information on causes of death, mainly based on ranking the natural underlying causes of death and proportions of deaths due to specific causes. The top-ranking causes determine the leading causes of death. The ranking indicates the frequency of causes of death among those causes eligible to be ranked and does not reflect causes of death in terms of their importance from a public health perspective. Causes of death with the same proportion received the same rank, and a rank was skipped

for the next cause. For example, if two causes of death had the same proportion and were ranked third, they both received the same rank, and the next cause received rank five.

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

In addition, the second section also provides information on causes of death based on the Global Burden of Disease. Causes of deaths are categorised into three broad groups, namely Group I (communicable diseases), Group II (non-communicable diseases) and Group III (injuries). *Symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified* (R00–R99) deaths which are ill-defined natural causes of death were accorded across communicable and non-communicable diseases categories.

3. Mortality

This chapter provides an analysis on the distribution of 2023 registered deaths that reached Stats SA during the 2025/2026 processing phase. The section mainly focuses on absolute numbers and percentage distributions of 2023 deaths by selected background characteristics of the deceased such as age, sex, place/institution of death and geographic information. Levels and trends of registered deaths over the period 2002−2022 are also included.

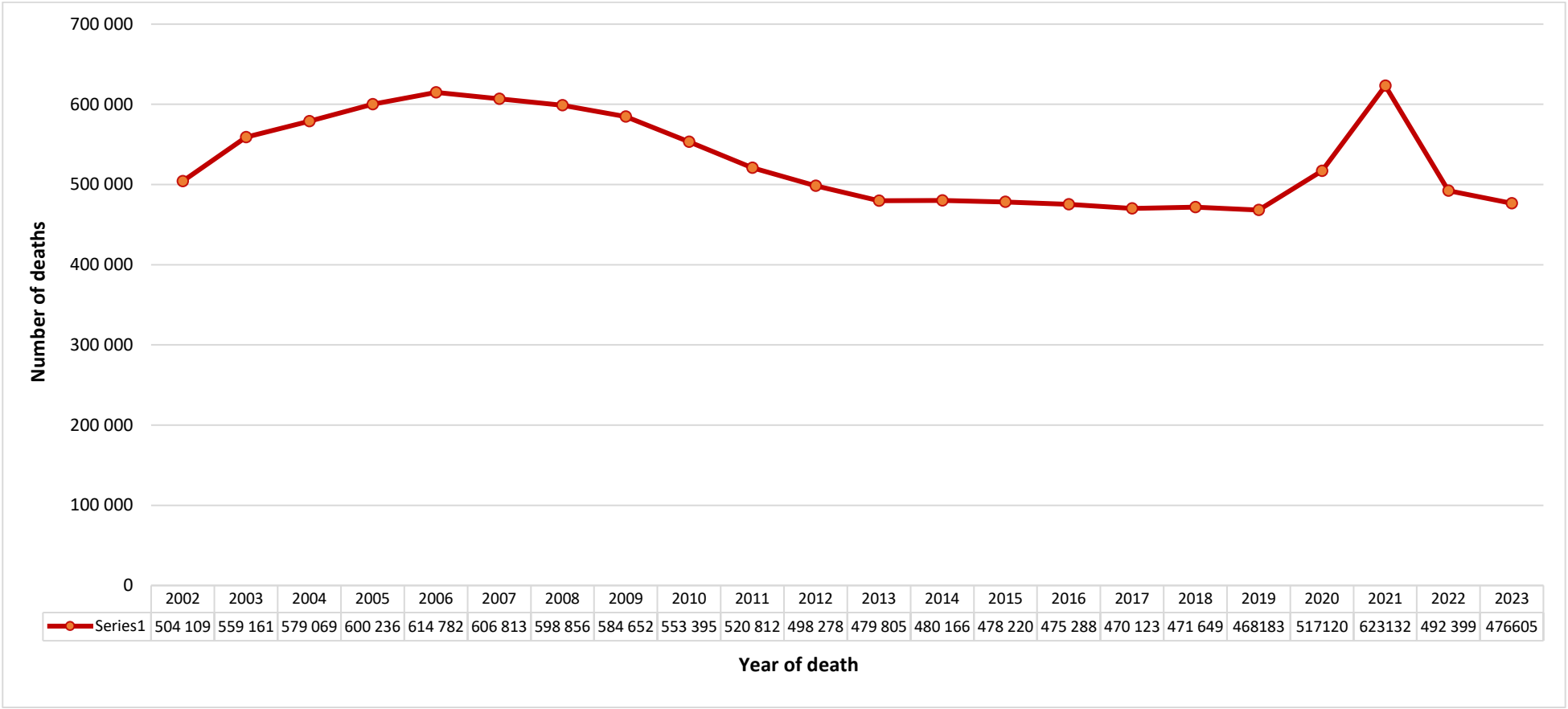
3.1 Levels and trends of mortality in 2023

Figure 3.1 shows that the total number of deaths that occurred and were registered at the DHA and processed by Stats SA for 2023 was 476 605, a decrease when compared with 492 417 deaths that were processed for 2022. This decline continues a downward trend observed after 2021, following a decrease in COVID-19–related deaths.

The general trend in the number of registered deaths processed by Stats SA indicates an increase from 2002 to 2006 when the number of deaths peaked at 614 782, and a decrease thereafter until 2019. A notable increase in the number of deaths was observed in 2020 (517 120), increasing to 623 132 deaths in 2021. This was followed by a sharp decrease in the number of deaths in 2022 (492 399), reaching pre-COVID-19 levels, and a further decline in 2023 (476 605).

The overall number of deaths per year increases as additional forms are processed at Stats SA. Additional forms may result from delayed registration or transmission of forms from DHA to Stats SA. It is, therefore, expected that additional forms, 2023 forms in particular, and for the previous years, will still be received for processing at Stats SA in the coming years. Updated information will be provided in the next statistical release.

Figure 3.1 - Number of registered deaths by year of death, 2002–2023*



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Series1	504 109	559 161	579 069	600 236	614 782	606 813	598 856	584 652	553 395	520 812	498 278	479 805	480 166	478 220	475 288	470 123	471 649	468183	517120	623132	492 399	476605

*Data for 2002–2022 have been updated with late registrations / delayed death notification forms processed in 2025/2026

3.2 Age differentials

Table 3.1 below, shows the number and percentage distribution of deaths by age groups for deaths that occurred in 2023. The highest proportion of deaths were amongst those aged 65–69 years (8,8%), closely followed by those 70–74 years (8,6%) and 60–64 years (8,5%). The age groups which contributed the least number of deaths were age groups 5–9 years (0,6%) and 10–14 years (0,7%). Infants (age zero years) constituted 4,5% of the registered deaths.

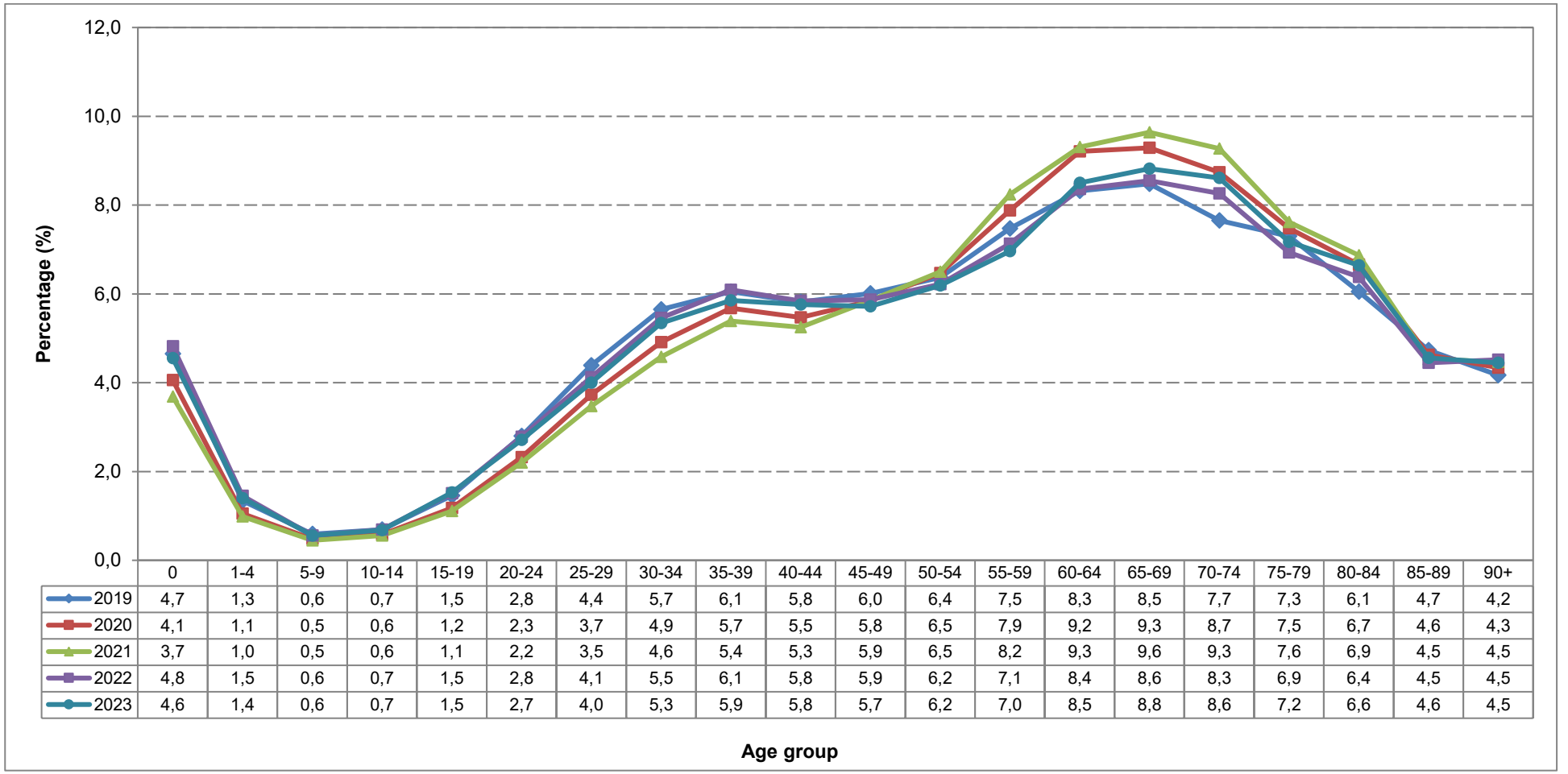
Table 3.1 - Number and percentage (%) distribution of deaths by age group, 2023

Age group	Number	Percentage (%)
0	21 681	4,5
1−4	6 657	1,4
5−9	2 658	0,6
10−14	3 256	0,7
15−19	7 280	1,5
20−24	12 920	2,7
25−29	19 076	4,0
30−34	25 427	5,3
35−39	27 874	5,8
40−44	27 444	5,8
45−49	27 242	5,7
50−54	29 499	6,2
55−59	33 195	7,0
60−64	40 510	8,5
65−69	42 059	8,8
70−74	41 032	8,6
75−79	34 177	7,2
80−84	31 650	6,6
85−89	21 755	4,6
90+	21 213	4,5
Total	**476 605**	**100,0**

Figure 3.2 shows the percentage distribution of deaths by age groups and year of death between 2019 and 2023. A general observation is that the age pattern of mortality was somewhat consistent over the five-year period. However, slight deviations were observed during the COVID-19 years (2020 and 2021). During this time, the age groups between 0 years and 40–44 years recorded slightly lower proportions of deaths than typically observed. In contrast, the age groups between 55–59 years to 75–79 years showed a higher proportion of deaths than usual during the same period.

The overall pattern is generally characterised by high proportions of deaths amongst infants (zero years), lower proportions for ages 1−4 years, lowest proportions between 5−9 years and 10−14 years, rising but still low proportions between age group 15−19 years and 20−24 years. High proportions averaging over 6,0% are observed from age group 50−54 years to 80−84 years with decreasing proportions seen from age group 70 and older.

Figure 3.2 - Percentage (%) distribution of deaths by age group and year of death, 2019–2023*



	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+
2019	4,7	1,3	0,6	0,7	1,5	2,8	4,4	5,7	6,1	5,8	6,0	6,4	7,5	8,3	8,5	7,7	7,3	6,1	4,7	4,2
2020	4,1	1,1	0,5	0,6	1,2	2,3	3,7	4,9	5,7	5,5	5,8	6,5	7,9	9,2	9,3	8,7	7,5	6,7	4,6	4,3
2021	3,7	1,0	0,5	0,6	1,1	2,2	3,5	4,6	5,4	5,3	5,9	6,5	8,2	9,3	9,6	9,3	7,6	6,9	4,5	4,5
2022	4,8	1,5	0,6	0,7	1,5	2,8	4,1	5,5	6,1	5,8	5,9	6,2	7,1	8,4	8,6	8,3	6,9	6,4	4,5	4,5
2023	4,6	1,4	0,6	0,7	1,5	2,7	4,0	5,3	5,9	5,8	5,7	6,2	7,0	8,5	8,8	8,6	7,2	6,6	4,6	4,5

*Excluding deaths with unspecified age

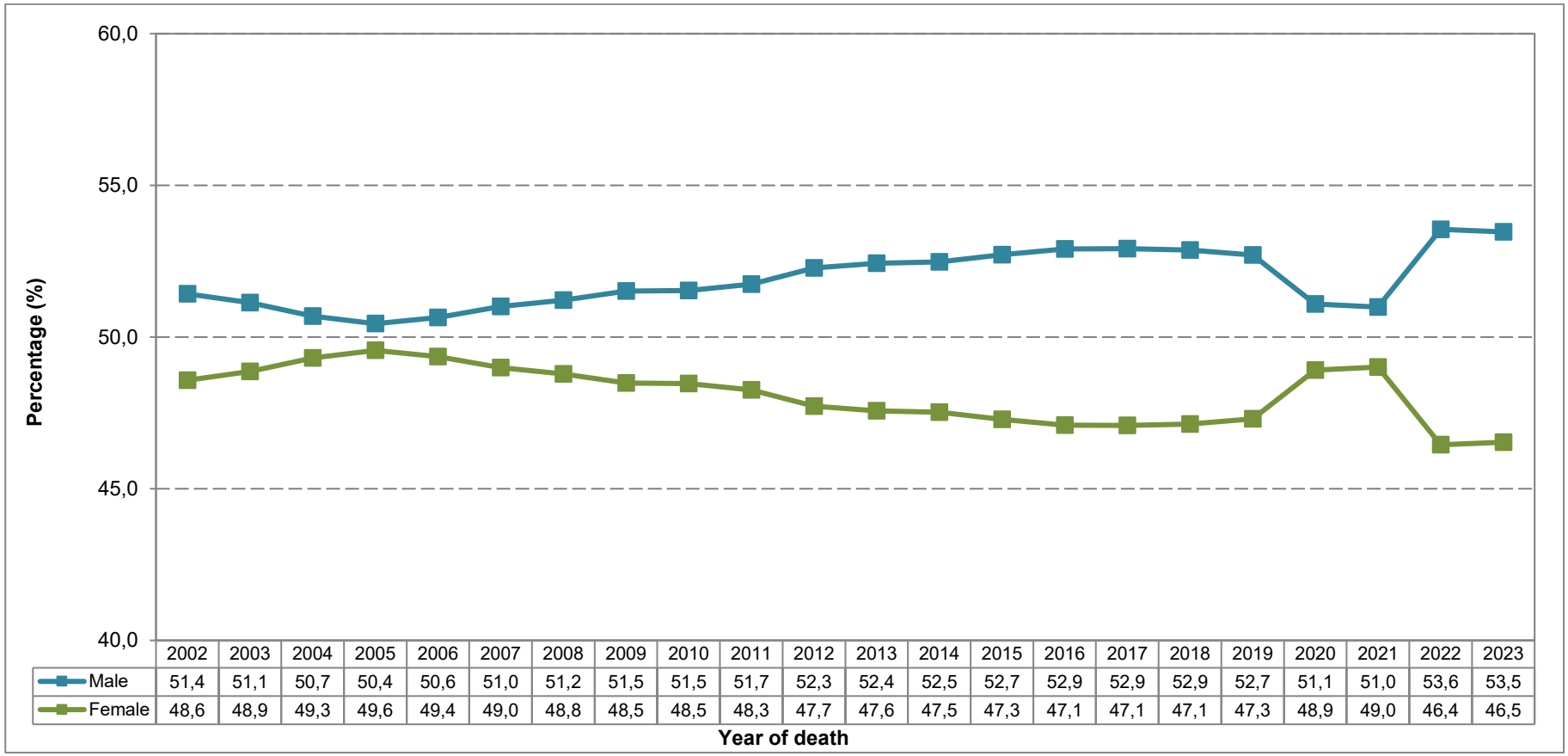
Data for 2019–2022 have been updated with late registrations / delayed death notification forms processed in 2025/2026

3.3 Sex differentials

Figure 3.3 shows the percentage distribution of deaths by sex and year from 2002 to 2023. Over the 22-year period, a consistent and persistent gender disparity in mortality is evident, with male deaths consistently exceeding those of females. In 2023, this pattern continued, with males accounting for 53,5% of deaths and females 46,5%. Notably, 2022 and 2023 recorded the widest gap in the series, marking the highest male share and the lowest female share of deaths observed.

The distribution of the deaths shows that there was a gap in the proportion of male and female deaths in 2002 (2,8 percentage points), but this narrowed yearly until 2005 (0,9 percentage points) and broadened again thereafter, reaching a male excess of 5,8 percentage points in 2016 and 2017. The emergence of COVID-19 in 2020 brought about the convergence in sex differentials, with the gap narrowing between the two sexes. The gap narrowed notably in 2020 (2,2 percentage points) and 2021 (2 percentage points), before widening in 2022 to a high of 7,1 percentage points and remaining similarly high in 2023 (6,9 percentage points). Additional information on annual percentage changes in the number of deaths by sex, and Age-specific Death Rates (ASDRs) is provided in a workbook published separately, under additional downloads.

Figure 3.3 - Percentage (%) distributions of deaths by sex and year of death, 2002–2023*



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Male	51,4	51,1	50,7	50,4	50,6	51,0	51,2	51,5	51,5	51,7	52,3	52,4	52,5	52,7	52,9	52,9	52,9	52,7	51,1	51,0	53,6	53,5
Female	48,6	48,9	49,3	49,6	49,4	49,0	48,8	48,5	48,5	48,3	47,7	47,6	47,5	47,3	47,1	47,1	47,1	47,3	48,9	49,0	46,4	46,5

*Excluding deaths with unspecified sex

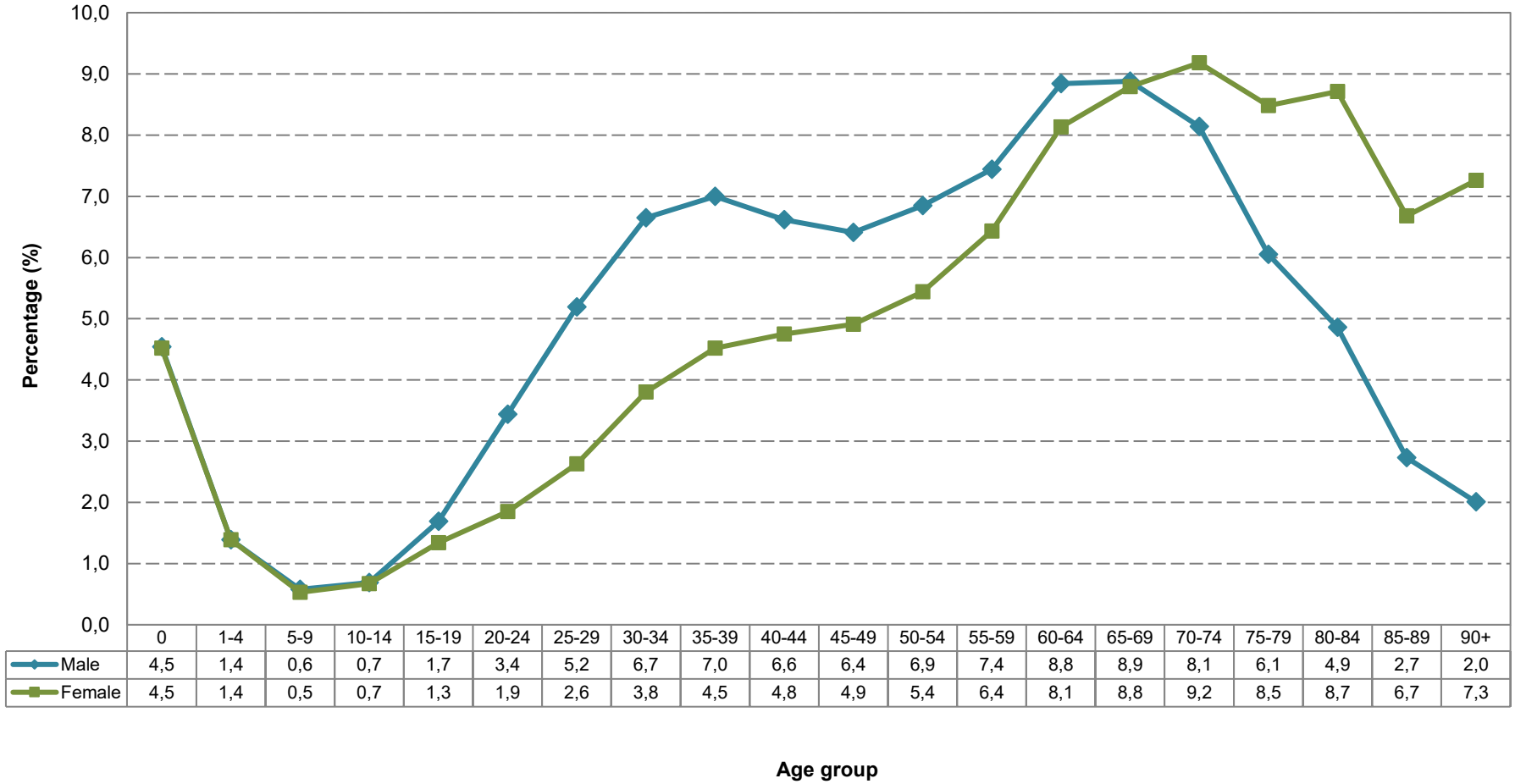
Data for 2002–2022 have been updated with late registrations / delayed death notification forms processed in 2025/2026

3.4 Age and sex differentials

3.4.1 Distribution of deaths by age group and sex

Figure 3.4 shows the age and sex percentage distribution of deaths for 2023. It is observed that the proportion of deaths for males and females were both lowest and somewhat similar for the age groups 5–9 and 10–14 years. Overall, the male deaths exceeded those of females from age group 5–9 years up to 65–69 years, except for age group 10–14 years. From ages 70 years and above there were more female than male deaths. The gap in the proportion for male and female deaths was highest from 80 years and above, where female deaths surpassed male deaths by 3,9% at age group 80–84 years, by 4,0% at age groups 85–89 years and by 5,3% at ages 90 years and above. Additional information on absolute number of deaths by age, sex and year of death is provided in a workbook published separately, under additional downloads.

Figure 3.4 - Percentage (%) distribution of deaths by age group and sex, 2023*



	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	4,5	1,4	0,6	0,7	1,7	3,4	5,2	6,7	7,0	6,6	6,4	6,9	7,4	8,8	8,9	8,1	6,1	4,9	2,7	2,0
Female	4,5	1,4	0,5	0,7	1,3	1,9	2,6	3,8	4,5	4,8	4,9	5,4	6,4	8,1	8,8	9,2	8,5	8,7	6,7	7,3

*Excluding deaths with unspecified sex

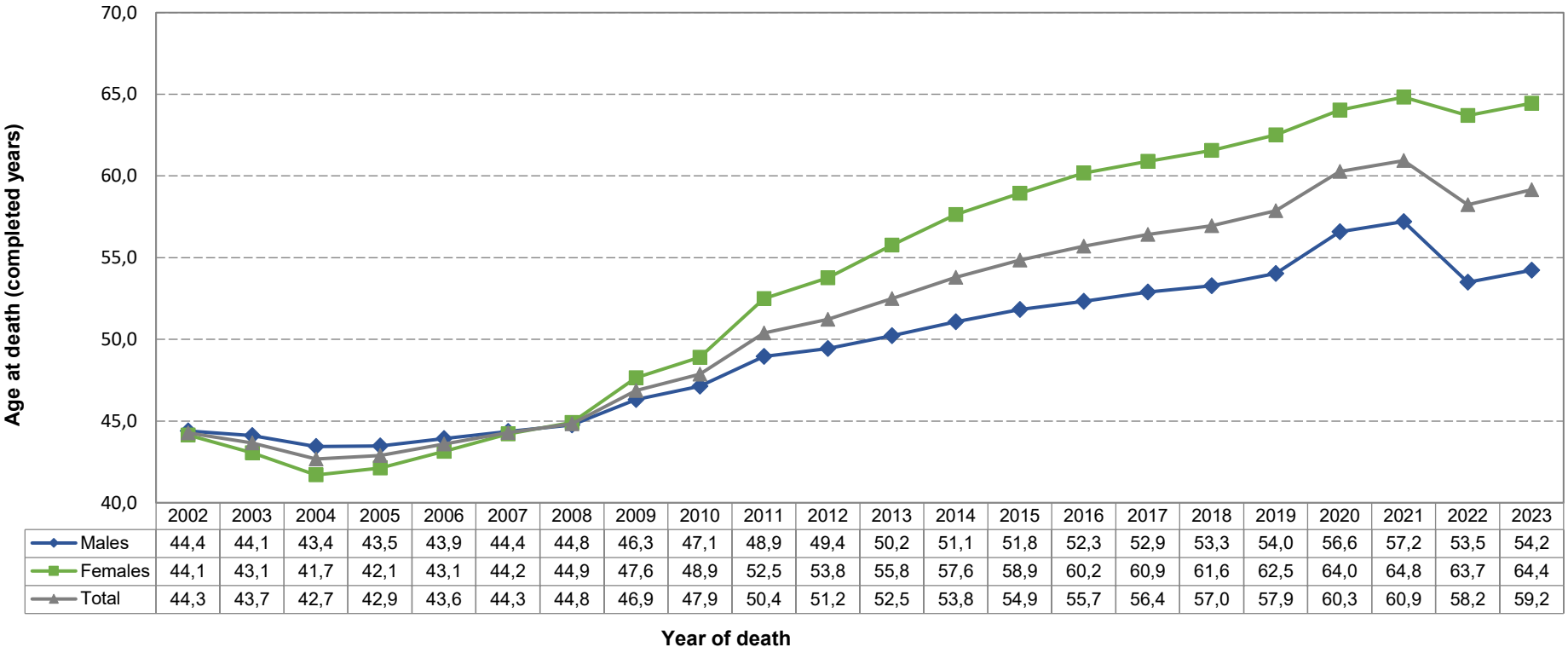
3.4.2 Median ages at death by sex

The median age at death shows how early or late mortality occurs in a population and specifies the age at which half of the reported deaths occur. The median ages at death by sex and year of death over the years 2002 to 2023 are presented in Figure 3.5. Trends in median ages at death are important in the analysis of changes in mortality patterns over time, such as an increase in the proportion of deaths occurring at older ages or at younger ages. The former is indicative of improvements and postponement of mortality to older ages, while the latter indicates premature mortality.

Figure 3.5 shows that the median ages for males, females and total deaths decreased consistently from 2002 to 2004 and thereafter increased. It is also notable that both the declines and the increases were more pronounced amongst females relative to males. The median age for total deaths decreased from 44,3 years in 2002 to a low of 42,7 years in 2004, and then increased gradually from 2005, reaching a high of 60,9 years in 2021 before declining to 58,2 years in 2022. The median age increased slightly again in 2023 to 59,2 years.

The median ages at death for males decreased from 44,4 years in 2002 to 43,4 years in 2004, while a reverse trend was observed between 2005 and 2021, from 43,5 years in 2005 to 57,2 years in 2021. In 2022, the median age at death for males decreased to 53,5 years and increased again to 54,2 years in 2023. Similarly, the female median ages at death decreased prior to 2005, from 44,1 years in 2002 to 41,7 years in 2004. Between 2005 and 2021, the average age at death for females increased from 42,1 years in 2005 to a high of 64,8 years in 2021. Similar to males, the female median age at death also dropped in 2022, recording 63,7 years and increased to 64,4 years in 2023.

Figure 3.5 - Median ages at death by sex and year of death, 2002–2023*



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Males	44,4	44,1	43,4	43,5	43,9	44,4	44,8	46,3	47,1	48,9	49,4	50,2	51,1	51,8	52,3	52,9	53,3	54,0	56,6	57,2	53,5	54,2
Females	44,1	43,1	41,7	42,1	43,1	44,2	44,9	47,6	48,9	52,5	53,8	55,8	57,6	58,9	60,2	60,9	61,6	62,5	64,0	64,8	63,7	64,4
Total	44,3	43,7	42,7	42,9	43,6	44,3	44,8	46,9	47,9	50,4	51,2	52,5	53,8	54,9	55,7	56,4	57,0	57,9	60,3	60,9	58,2	59,2

*Data for 2002–2022 have been updated with late registrations / delayed death notification forms processed in 2025/2026

3.4.3 Sex ratios by age groups

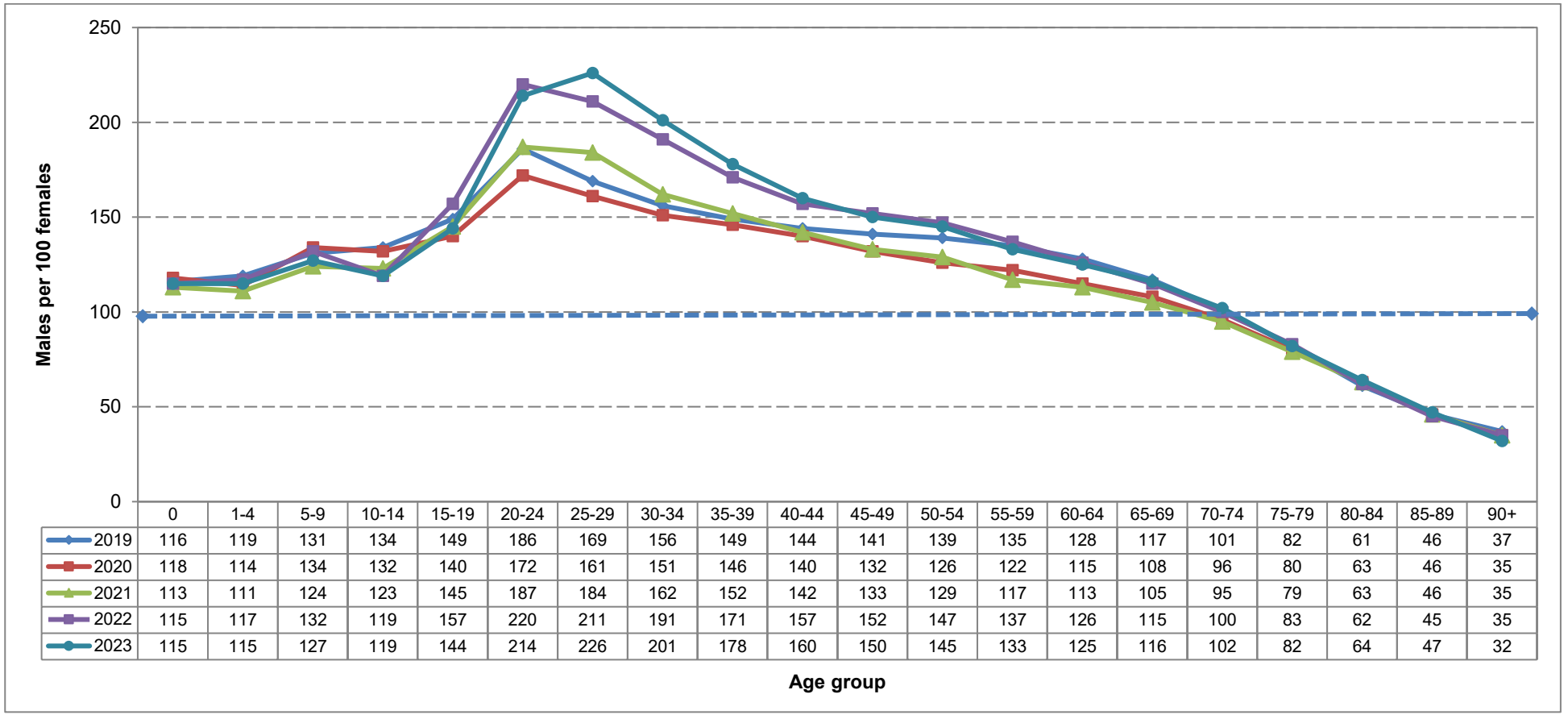
The sex ratio at death is an important demographic indicator, highlighting the number of male deaths relative to the number of female deaths. When there are equal numbers of male and female deaths, the sex ratio at death is equal to 100. If there are more male than female deaths, the sex ratio is above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

Sex ratios at death by age group and year of death for the period 2019–2023 are shown in Figure 3.6. Over the five-year period, more male than female deaths were consistently observed from age 0 up to age group 65–69. Beyond this point, the pattern reversed, with more female deaths recorded than male deaths.

Results indicate that in 2022 and 2023, for the age groups 20–24 years to 35–39, the sex ratio showed a constant increase. In 2023, the sex ratio at death reached a notable peak of 226 males per 100 females in the 25-29 age group, the highest across all age groups and years observed. A similarly high ratio of 220 was recorded in 2022 for the 20–24 age group.

Overall, from 2019 to 2023, the sex ratio generally showed an upward trend, particularly from age group 20–24 to age group 30–34, apart from 2020, where ratios were comparatively lower. After the marked peaks observed at ages 20–24 in 2022 and 25–29 in 2023, the sex ratio decreases steadily across the subsequent age groups. This suggests that while male deaths remain higher than female deaths through much of the adult age range, the gap narrows progressively with increasing age. In the oldest age groups, the sex ratio falls below 100, indicating that female deaths exceed male deaths.

Figure 3.6 - Sex ratios by age group and year of death, 2019–2023*



	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+
2019	116	119	131	134	149	186	169	156	149	144	141	139	135	128	117	101	82	61	46	37
2020	118	114	134	132	140	172	161	151	146	140	132	126	122	115	108	96	80	63	46	35
2021	113	111	124	123	145	187	184	162	152	142	133	129	117	113	105	95	79	63	46	35
2022	115	117	132	119	157	220	211	191	171	157	152	147	137	126	115	100	83	62	45	35
2023	115	115	127	119	144	214	226	201	178	160	150	145	133	125	116	102	82	64	47	32

*Excluding deaths with unspecified age and sex

Data for 2019–2022 have been updated to include late registrations/death notification forms processed in 2025/2026

3.5 Population group differences in mortality

Table 3.2 below, shows the distribution of the 2023 deaths by population group of the deceased. To account for the population composition, the table also shows deaths per thousand population. Black Africans had the highest percentage of deaths, comprising 65,6% of the total deaths, followed by the white population group (9,8%) and then the coloured population group (7,8%). The Indian/Asian population group (2,3%) accounted for the least percentage of registered deaths. The proportions observed are somewhat indicative of the variations in population size by population group.

While the percentage of deaths within the entire population indicates that the black African population group had the highest proportion of deaths, the death rate within each population group, reveals a different picture. The white population group had the highest death rate at 8,7 deaths per thousand population, followed by the coloured and Indian/Asian population group at 8,2 and 6,5 deaths per thousand population, respectively. The black African population group recorded a slightly lower death rate of 6,1.

Additional information on the distribution of underlying causes of death by population group is provided in a workbook, which is published separately.

Table 3.2 - Number and percentage (%) distribution of deaths by population group, 2023

Population group	Number of deaths	Percentage (%) of deaths	Population group size	Deaths per thousand population
Black African	312 570	65,6	51 604 376	6,1
White	46 496	9,8	5 344 113	8,7
Indian/Asian	10 816	2,3	1 654 971	6,5
Coloured	36 963	7,8	4 497 485	8,2
Other	935	0,2		*
Unknown or unspecified*	68 825	14,4		*
Total	**476 605**	**100,0**	**63 100 945**	**7,6**

Source: 2023 Mid-year population estimates, 2025 series
*Deaths per thousand population not calculated for the "Unknown or unspecified" group due to the lack of a directly comparable population base

3.6 Marital status differences in mortality

Table 3.3 depicts the number and percentage distribution of deaths by marital status of the deceased. The majority of the deaths (37,9%) occurred amongst the people that had never been married, followed by those who are married (20,9%) and the widowed (10,4%). It is worth noting that the variations in the percentage of deaths by marital status may be affected by differences in population sizes across the marital status categories. In addition, caution should be exercised when interpreting the results, as 28,5% of the death notification forms had missing information on marital status of the deceased.

Table 3.3 - Number and percentage (%) distribution of deaths by marital status, 2023

Marital status	Number	Percentage (%)
Never married	180 516	37,9
Married	99 405	20,9
Widowed	49 607	10,4
Divorced	11 238	2,4
Unknown/unspecified/not applicable	135 839	28,5
Total	**476 605**	**100,0**

3.7 Differences in mortality by smoking status of the deceased

The number and percentage distribution of 2023 registered deaths classified by smoking status of the deceased is depicted in Table 3.4. below. Smoking status of the deceased is defined as the regular smoking of tobacco during the five years prior to death. The law strictly prohibits the sale of tobacco products to anyone under the age 16 years so the question on smoking status is applicable if the deceased was aged 16 years and older.

The table shows that the highest percentage of deaths were among people who were non-smokers (39,4%) while approximately 20,6% of the deaths occurred among people who were smoking. The table also shows that 33,9% of registered deaths in 2023 had unknown or unspecified smoking status. The high proportion of deaths with missing information on smoking status shows a poor reporting of this information on the death notification forms.

Table 3.4 - Number and percentage (%) distribution of deaths by smoking status among those aged 16 and older, 2023

Smoking status	Number	Percentage (%)
Yes	90 704	20,6
No	173 979	39,4
Do not know	26 801	6,1
Unknown or unspecified	149 749	33,9
Total	**441 233**	**100,0**

3.8 Differences in mortality by place or institution of death occurrence

The distribution of registered deaths by place or institution of death occurrence for 2023 is shown in Table 3.5, below. Results indicate that 38,7% of the deaths took place in hospitals, 2,2% occurred in emergency rooms or outpatient facilities, while 2,4% died in nursing homes. These three places of death occurrence account for 43,4% of total deaths that occurred within a health care facility. A total of 24,4% of all deaths occurred at home in 2023, while 1,3% were amongst people who had already died by the time they reached the hospital. A total of 28,8% of the death notification forms had unknown or unspecified information on place or institution of death.

Table 3.5 - Number and percentage (%) distribution of deaths by place of death occurrence, 2023

Place of death	Number	Percentage (%)
Hospital	184 539	38,7
Emergency room / Outpatient	10 643	2,2
Nursing home	11 434	2,4
Dead on arrival	6 307	1,3
Home	116 382	24,4
Other	9 855	2,1
Unknown/ unspecified	137 445	28,8
Total	**476 605**	**100,0**

3.9 Geographic variations in mortality

This section presents information on the distribution of registered deaths by province of occurrence and by the deceased's usual residence. The information was derived based on the 2020 municipal boundaries. Additional information on province of death by province of usual residence, sex and age group is provided in a workbook published separately.

3.9.1 Differences by province, age and sex

Table 3.6 shows the distribution of 2023 deaths by province of death occurrence and province of usual residence of the deceased. The province of death occurrence may not always be similar to the place of usual residence.

For province of death occurrence, the highest proportion of deaths (21,2%) occurred in Gauteng, followed by KwaZulu-Natal and Eastern Cape, each comprising 18,3% and 16,4%, respectively. The lowest percentage of deaths occurred in Northern Cape (3,2%).

With regard to province of usual residence, the same pattern was observed as that of province of death occurrence. Gauteng (20,3%) had the highest proportion of deaths, followed by KwaZulu-Natal (18,3%) and Eastern Cape (16,4%). The lowest percentage was Northern Cape at 3,1%.

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

Table 3.6 - Distribution of deaths by province of death occurrence and province of usual residence of the deceased, 2023

Province	Province of death occurrence		Province of usual residence of deceased	
	Number	Percentage (%)	Number	Percentage (%)
Western Cape	58 052	12,2	56 615	11,9
Eastern Cape	78 275	16,4	78 001	16,4
Northern Cape	15 299	3,2	14 887	3,1
Free State	28 605	6,0	28 299	5,9
Kwa-Zulu Natal	87 310	18,3	87 171	18,3
North West	30 822	6,5	31 950	6,7
Gauteng	101 184	21,2	96 717	20,3
Mpumalanga	30 317	6,4	31 284	6,6
Limpopo	45 960	9,6	48 130	10,1
Uknown	710	0,1	.	.
Unspecified	71	0,0	3551	0,7
Total	**476 605**	**100,0**	**476 605**	**100,0**

4. Causes of death

This section presents information on causes of death for all deaths that occurred in 2023 and previous years and were registered in 2023, as well as comparisons with data from the previous years. In terms of the Birth and Deaths Act 51 of 1992, as amended, medical practitioners are responsible for certification of causes of death in the dedicated page for recoding the causes of deaths in the death notification form. Other role players are responsible for other sections of the form.

This section has nine sub-sections, namely: introduction, reported causes of death, method of ascertaining the cause of death, main groups of the underlying causes of death, natural and non-natural causes of death, major group of causes of death, broad groups of natural causes of death, non-natural causes of death, and comparison between immediate, contributing and underlying causes of death. A summary of causes of death by age, sex and province of death occurrence is also included in the analysis.

The 10th revision of the International Classification of Diseases (ICD-10) was used to classify the causes of death data in this publication. The analysis undertaken focuses mainly on 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). Previous publications have shown that Non-Communicable Diseases (NCD) pose a major barrier to health, quadrupling the burden of disease and as such, this necessitated the inclusion of analysis on the Global Burden of Diseases. Global Burden of Diseases is a critical resource for informed policymaking, as it provides a tool to quantify and compare the effects of different diseases in a population.

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

4.1 Reported causes of death

Table 4.1 shows information on the number of causes of death provided on each death notification form for deaths that occurred in 2023. Of the 476 751 forms 2 032 had no cause of death recorded on the forms. These are as a result of two scenarios:

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

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

In both scenarios, the age of the deceased was used to establish the underlying cause of death. ICD-10 codes such as R99 (other ill-defined and unspecified causes of mortality) and P96 (other conditions originating in the perinatal period) were used for these deaths, depending on the age of the deceased. ICD-10 code R99 (other ill-defined and unspecified causes of mortality) was used for adult deaths, while P96 (other conditions originating in the perinatal period) was used for perinatal deaths.

More than half of the death notification forms (52,5%) had only one cause recorded, followed by 23,9% of death notification forms which had two causes of death recorded. On 15% of the forms, three causes were recorded while 8,1% had four or more causes recorded.

Table 4.1 - Number and percentage (%) distribution of death notification forms by the number of causes reported on the death notification form, 2023

Number of the reported causes of death	Number of death notification forms	Percentage (%)
No cause	2 032	0,4
One cause	250 538	52,5
Two causes	113 982	23,9
Three causes	71 355	15,0
Four or more causes	38 850	8,1
Total	**476 751**	**100,0**

4.2 Method of ascertaining cause of death

The death notification form makes provision for a certifying official to indicate the method used to ascertain the cause of death. The eight options available on the form for method used to ascertain the death are shown in Table 4.2. In instances where the method of ascertainment was not filled but on the form there is date of post-mortem, the date was used as proxy for method of ascertainment in this case post-mortem.

The opinion of the attending medical practitioner was the most common method of ascertaining causes of death at 52,4%. It was followed by the opinion of the attending medical practitioner on duty at 14,0% and interview of family member at 12,5%. An autopsy was performed in 11,9% of the deaths. There were 4,5% of forms indicated that cause of death was ascertained through postmortem examination, while 2,5% forms that had unspecified method of ascertainment, while 4,5% of forms indicated that cause of death was ascertained through postmortem examination.

Table 4.2 - Number and percentage (%) distribution of deaths by method used to ascertain the cause of death, 2023

Method of ascertaining the cause of death	Number	Percentage
Autopsy	56 852	11,9
Post mortem examination	21 421	4,5
Opinion of attending medical practitioner	249 782	52,4
Opinion of attending medical practitioner on duty	66 763	14,0
Opinion of registered professional nurse	4 353	0,9
Interview of family member	59 450	12,5
Other	3 402	0,7
Autopsy results may be available later*	50	0,0
Autopsy not performed*	1 738	0,4
Unknown	1 053	0,2
Unspecified	11 741	2,5
Total	**476 605**	**100,0**

*For perinatal deaths only

4.3 Main groups of the underlying causes of death

This section presents an overview of the underlying causes of death for main groups (chapters) of classification of causes of death. The ICD-10 classifies diseases and related health problems into 22 chapters, of which 19 are used in the reporting of information on underlying causes of death (see Table 4.3).
This report excludes ICD-10 chapters 19, 21 and 22 and these are discussed briefly below:

I. 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.
II. Chapter 21: *Factors influencing health status and contact with health services (Z00-Z99).* These are only used in morbidity coding.
III. Chapter 22: Codes for special purposes. These codes are used by WHO for the provisional assignment of new diseases of uncertain aetiology. U51 and U52 were used for coding *multidrug-resistant tuberculosis (MDR-TB)* and *extensively drug-resistant tuberculosis (XDR-TB)* in this release for individual causes of death but were both recoded to the broad group of tuberculosis (A15-A19) in the analyses.

Just as with other countries, South Africa (Stats SA) adopted the inclusion of COVID-19 as an additional chapter to the existing 22 chapters. This makes it easier for international comparison between countries and enables South Africa to align with countries using a similar approach. This is because the 2016 version of ICD-10 did not have COVID-19 as a chapter on the underlying causes of death.

Table 4.3 shows both the number and percentage distribution of deaths by the main groups (chapters) of the classification of causes of death. The most common main group of causes of death in 2023 was *symptoms and signs not elsewhere classified*, comprising 18,8% of all deaths. This main group consist mainly of information about various symptoms and signs that may not fit neatly into other categories; for example, some common conditions under this group include abnormal heart sounds (R01) and abnormal blood chemistry (R79).

The second most common main group of causes of death was *diseases of the circulatory system* (17,5%) followed by *certain infectious and parasitic diseases* (14,2%) of deaths. The fourth most common main group of causes of death was *external causes of morbidity and mortality* (13,3%). The rest of the groups contributed less than 10,0% of deaths in 2023. Amongst these were *neoplasms* (9,3%), *diseases of the respiratory system comprising* (7,9%) of all deaths, and *endocrine, nutritional and metabolic diseases* (7,2%), amongst others.

Table 4.3 - Distribution of deaths by main causes of death, 2023

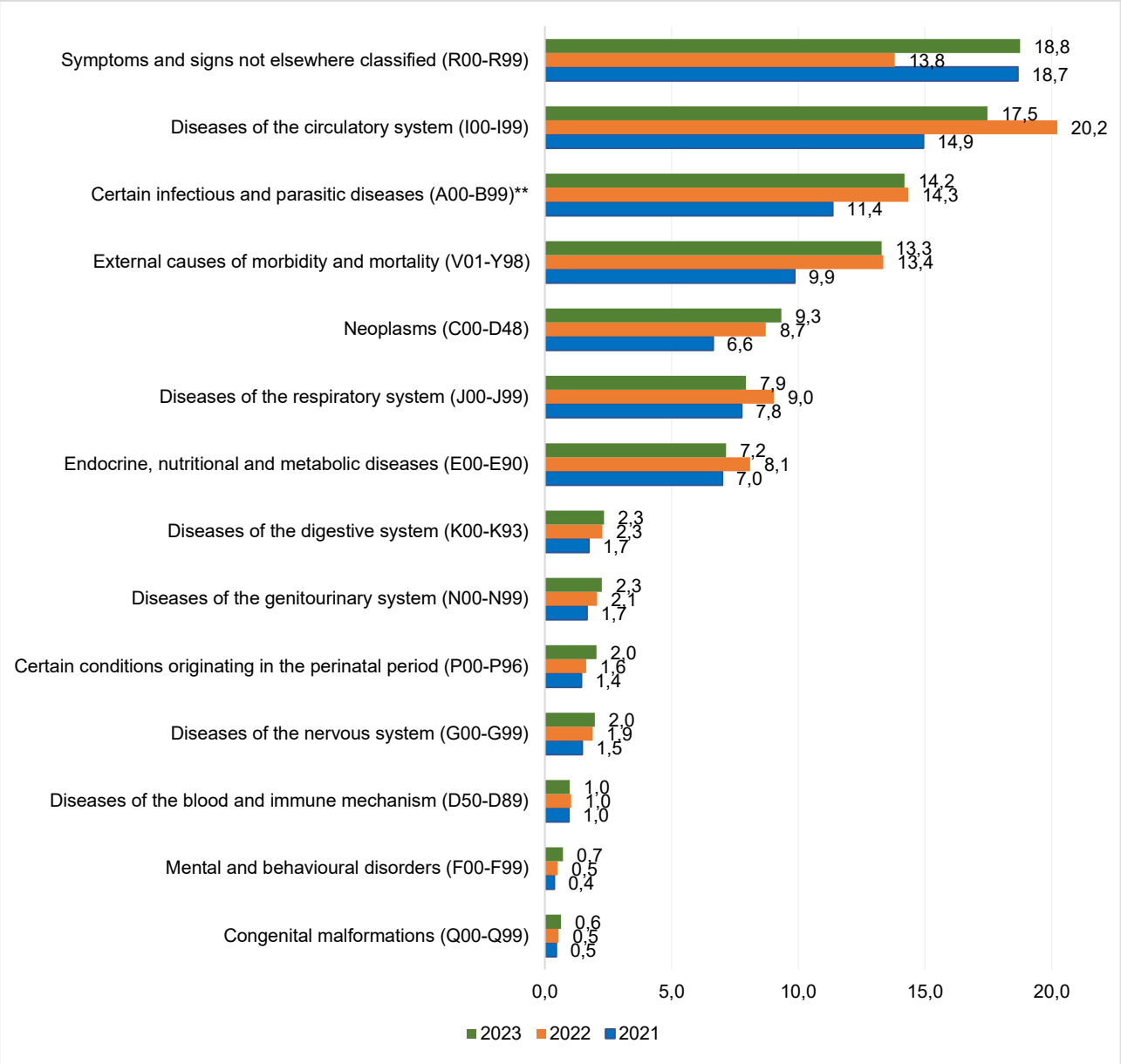
No.	Main groups of underlying causes of death (based on ICD-10)	Number	Percentage (%)
18	Symptoms and signs not elsewhere classified (R00-R99)	89 204	18,8
9	Diseases of the circulatory system (I00-I99)	83 303	17,5
1	Certain infectious and parasitic diseases (A00-B99)	67 673	14,2
20	External causes of morbidity and mortality (V01-Y98)	63 369	13,3
2	Neoplasms (C00-D48)	44 482	9,3
10	Diseases of the respiratory system (J00-J99)	37 819	7,9
4	Endocrine, nutritional and metabolic diseases (E00-E90)	34 081	7,2
11	Diseases of the digestive system (K00-K93)	11 089	2,3
14	Diseases of the genitourinary system (N00-N99)	10 713	2,3
16	Certain conditions originating in the perinatal period (P00-P96)	9 710	2,0
6	Diseases of the nervous system (G00-G99)	9 386	2,0
3	Diseases of the blood and immune mechanism (D50-D89)	4 651	1,0
5	Mental and behavioural disorders (F00-F99)	3 515	0,7
17	Congenital malformations (Q00-Q99)	2 897	0,6
13	Diseases of the musculoskeletal system etc. (M00-M99)	1 730	0,4
12	Diseases of the skin and subcutaneous tissue (L00-L99)	1 387	0,3
	COVID-19 (U071-U072)	985	0,2
15	Pregnancy, childbirth and puerperium (O00-O99)	563	0,1
8	Diseases of the ear and mastoid process (H60-H95)	28	0,0
7	Diseases of the eye and adnexa (H00-H59)	20	0,0
	Total	**476 605**	**100,0**

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

A three-year (2021–2023) trend analysis on the distribution of deaths by main groups of causes of death is shown in Figure 4.1. It was observed that the rankings of the main groups of causes of death by year have remained more or less the same during the period 2021–2023. Throughout 2021–2023, the leading causes of death remained largely consistent, including *symptoms and signs not elsewhere classified, diseases of the circulatory system, certain infectious and parasitic diseases, and external causes of morbidity and mortality*. The most notable change occurred in 2022, when *diseases of the circulatory system* temporarily surpassed *symptoms and signs not elsewhere classified* as the top cause of death.

Less common causes, such as *certain conditions originating in the perinatal period*, *diseases of the blood and immune mechanism*, *diseases of the nervous system, diseases of the genitourinary system*, *diseases of the digestive system* and *congenital malformations*, consistently accounted for a small proportion of deaths, highlighting areas where mortality remains low.

Figure 4.1 - Percentage (%) distribution of deaths by main groups of causes of death, 2021–2023*



* Data for 2021–2023 have been updated with late registrations/delayed death notification forms processed in 2025/2026

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

4.4 Natural and non-natural causes of death

The ICD-10 codebook classifies all causes of death from chapters 1 to 18 of the ICD-10 as natural causes and chapter 20 (V01-Y98) as non-natural causes. This section discusses both natural and non-natural causes of death. Non-natural causes of death comprise all deaths that were not attributable or may not have been attributable to natural causes. Natural and non-natural causes of death information reported in this release was derived from the underlying causes of death based on specific causes of death recorded on the death notification form.

Table 4.4 shows that since 2002, the number of deaths due to natural causes were higher than the number of deaths due to non-natural causes. Between 2002 and 2006, there was a consistent increase in the number of natural deaths, after which a decline was observed until 2019 and increased again in 2020 and 2021 the decreased again in 2022 and 2023. The increase in natural deaths during 2020 and 2021 was attributed to COVID-19 deaths. Although the number of deaths due to non-natural causes fluctuated over the years, the overall trend from the start to the end points shows an increase, rising from 51 823 in 2002 to 63 369 in 2023.

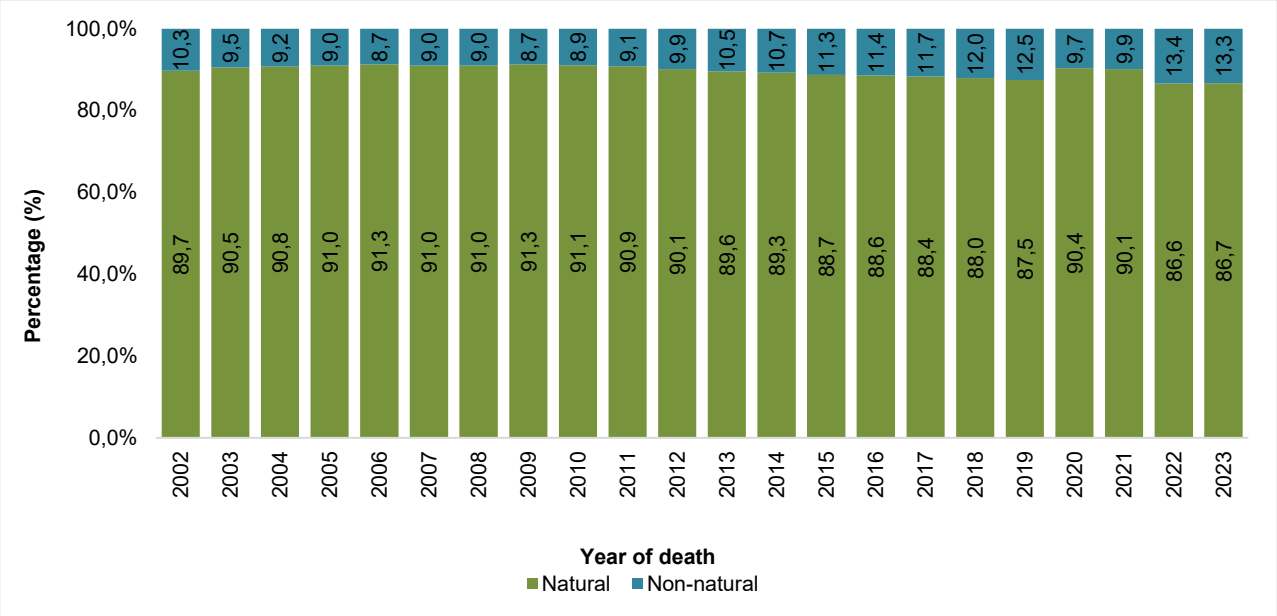
Table 4.4 - Number of natural and non-natural deaths by year of death occurrence, 2002–2023*

Year of death	Number of natural deaths	Number of non-natural deaths	Total
2002	452 286	51 823	**504 109**
2003	506 171	52 990	**559 161**
2004	525 589	53 480	**579 069**
2005	546 143	54 093	**600 236**
2006	561 457	53 325	**614 782**
2007	552 144	54 669	**606 813**
2008	545 143	53 713	**598 856**
2009	533 745	50 907	**584 652**
2010	503 904	49 491	**553 395**
2011	473 210	47 602	**520 812**
2012	449 028	49 250	**498 278**
2013	429 653	50 152	**479 805**
2014	428 834	51 332	**480 166**
2015	424 378	53 842	**478 220**
2016	421 054	54 234	**475 288**
2017	415 375	54 748	**470 123**
2018	414 850	56 799	**471 649**
2019	409 688	58 495	**468 183**
2020	467 230	49 890	**517 120**
2021	561 701	61 431	**623 132**
2022	426 592	65 807	**492 399**
2023	413 236	63 369	**476 605**

*Data for 2002–2022 have been updated with late registrations/delayed death notification forms processed in 2025/2026

Figure 4.2 shows the percentage distributions of natural and non-natural causes of death by year of death for the period 2002 to 2023. The pattern shows that the percentage of deaths due to natural causes was consistently above 85,0% each year. For non-natural causes of death, the pattern shows decreases in the proportion of deaths from 2002 to 2006 followed by an increase to 9,0% in 2007 and 2008. There was a decline to 8,7% in 2009 and from 2010 deaths due to non-natural causes increased steadily until 2019, while in 2020 they decreased to 9,7%, there was a general increase from 2021.

Figure 4.2 - Percentage (%) distribution of natural and non-natural causes of death by year of death, 2002–2023*



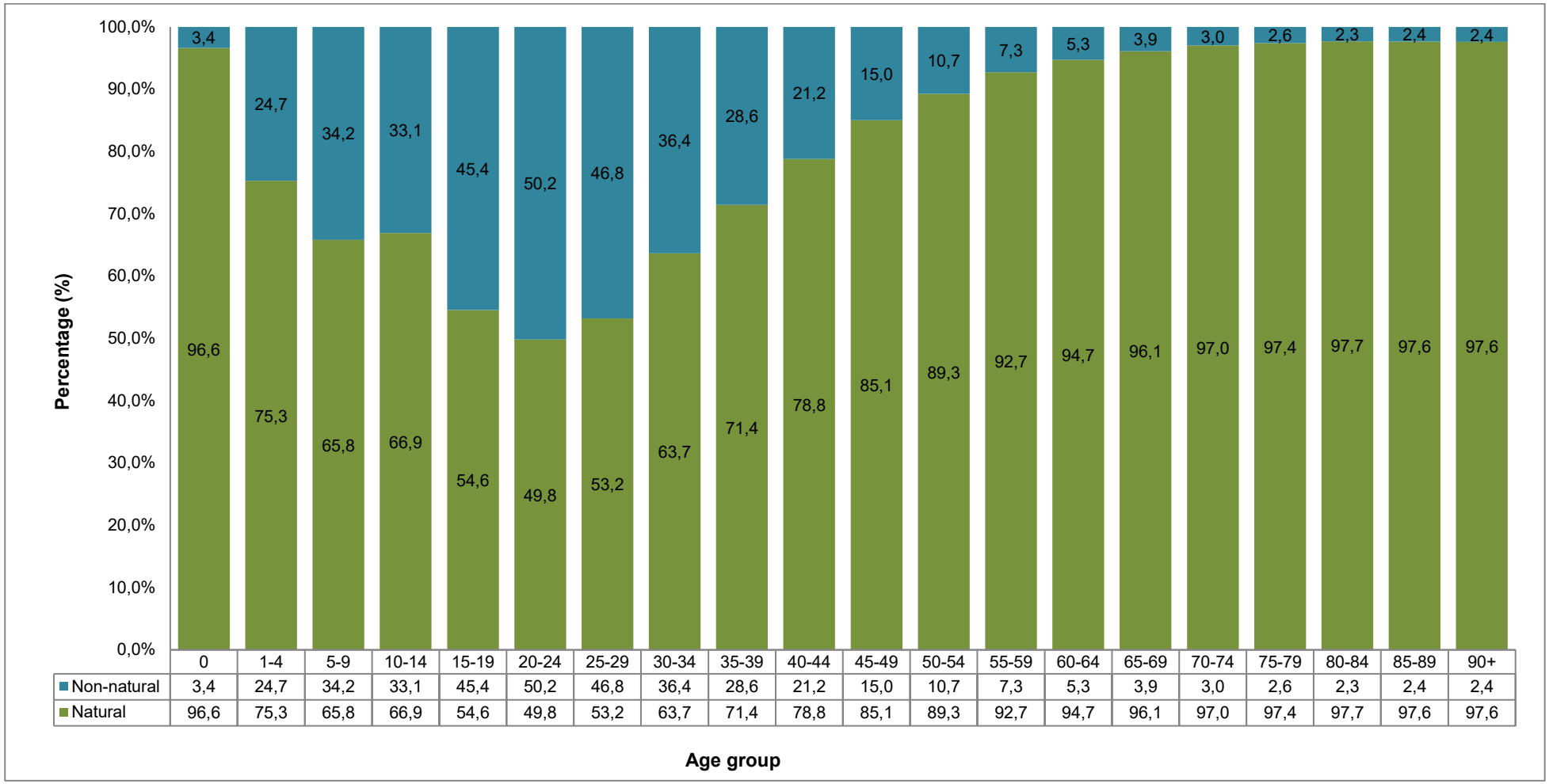
*Data for 2002–2022 have been updated with late registrations/delayed death notification forms processed in 2025/2026

4.4.1 Natural and non-natural causes of death by age

The percentage distribution of deaths due to natural and non-natural causes classified by age group for deaths that occurred in 2023 is provided in Figure 4.3. The general pattern observed is that the proportion of deaths due to non-natural causes generally increased consistently from age 0 (3,4%) to age group 20–24 (50,2%) then decreased thereafter. It is worth noting that age group 20–24 was the age mostly affected by non-natural causes. Other ages with higher proportions (over 30%) of deaths due to non-natural causes were age groups 25–29 (46,8%), 15–19 (45,4%), 5–9 (34,2%), 30–34 (36,4%) and 10–14 (33,1%). Ages least affected by non-natural deaths were infants (less than 0) and older ages (55 years and older) where less than 10,0% of the deaths in each of these age groups were due to non-natural causes of death.

Natural deaths are very high in infancy, accounting for 96,6% of deaths. From age groups 1–4 to 20–24 deaths due to natural causes steadily decline, with the 20–24 age group showing nearly equal proportions of natural (49,8%) and non-natural (50,2%) deaths. Natural deaths generally increase from age group 25–29 (53,2%) up to 80-84 (97,7%), after which they remain relatively stable at around 97,6%.

Figure 4.3 - Percentage (%) distribution of natural and non-natural causes of death by age, 2023



	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+
Non-natural	3,4	24,7	34,2	33,1	45,4	50,2	46,8	36,4	28,6	21,2	15,0	10,7	7,3	5,3	3,9	3,0	2,6	2,3	2,4	2,4
Natural	96,6	75,3	65,8	66,9	54,6	49,8	53,2	63,7	71,4	78,8	85,1	89,3	92,7	94,7	96,1	97,0	97,4	97,7	97,6	97,6

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

The Global Burden of Disease (GBD) Study is an all-inclusive program of disease burden that assesses mortality and disability from major diseases, injuries, and risk factors. It provides a comprehensive picture of mortality and disability across countries, time, age, and sex and is a landmark initiative that systematically quantifies the prevalence, morbidity, and mortality for hundreds of diseases, injuries, and risk factors of global health importance (Institute for Health Metrics and Evaluation). This is a useful measure as countries can combine this type of evidence along with information about policies and their costs to decide how to set their health targets and interventions. GBD also makes comparisons across populations, enabling understanding of the changing health challenges facing people across the world.

The twenty-two ICD-10 chapters used in the reporting of information on underlying causes of death can be further condensed into three groups of causes of death as per the Global Burden of Disease cause list:

Group I:

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

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

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

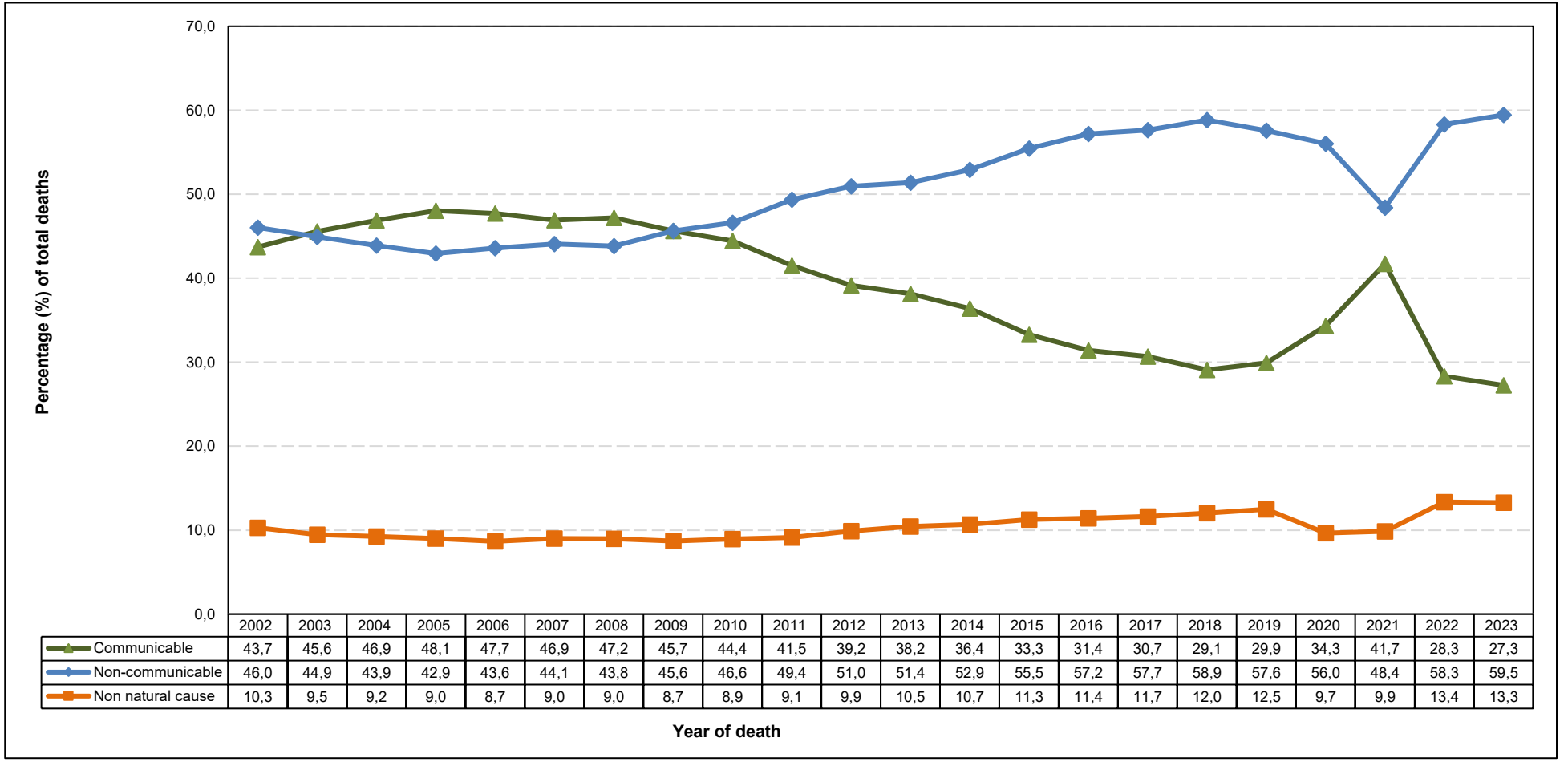
Communicable diseases are diseases caused by pathogenic microorganisms, such as bacteria, viruses, parasites or fungi and can be spread, directly or indirectly, from one person to another. These include, amongst other diseases, diarrhoea, tuberculosis and pneumonia. Non-communicable diseases are medical conditions or diseases that are non-infectious or non-transmissible among people. These diseases last for longer periods of time and progress slowly and include, amongst others, cancer, asthma and heart diseases. External causes of mortality are the non-natural causes of death which are discussed in chapter 20 of the ICD-10.

The percentage distribution of deaths by group type and year of death are depicted in Figure 4.4. The pattern shows that in 2002; there were more deaths from non-communicable diseases relative to communicable diseases. Starting from the year 2004 up to 2008, deaths due to communicable diseases surpassed non-communicable deaths with a percentage point difference ranging between 3 and 5,1. In 2009, there were equal proportion of deaths due to communicable and non-communicable diseases. From 2010 to 2018, the gap between the communicable and non-communicable diseases became wider with more deaths resulting from non-communicable diseases, with a percentage point difference ranging from 2,2 to 29,8. This however changed in the years 2019 to 2021, a convergence was observed between communicable and non-communicable diseases. This as mainly driven by the high number of COVID-19 deaths especially for the years 2020 and 2021. From 2022, the pattern reversed back to the one observed prior to COVID-19 years

where the gap between communicable and non-communicable diseases widened, reaching a high of 32,2 percentage point difference between communicable and non-communicable diseases in 2023.

The figure also shows that non natural causes of death decreased between 2002 and 2006. The increase in the proportion of non-natural deaths was again consistently observed from 2010 (8,9%) to 2019 (12,5%). This pattern was disturbed in 2020 and 2021, after which, proportions surpassing those of pre-COVID-19 were observed in 2022 and 2023, where non-natural deaths accounted for 13,4% and 13,3% of deaths respectively.

Figure 4.4 - Percentage (%) of deaths due to communicable diseases (Group I), non-communicable diseases (Group II) and injuries (Group III) by year of death, 2002–2023*



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Communicable	43,7	45,6	46,9	48,1	47,7	46,9	47,2	45,7	44,4	41,5	39,2	38,2	36,4	33,3	31,4	30,7	29,1	29,9	34,3	41,7	28,3	27,3
Non-communicable	46,0	44,9	43,9	42,9	43,6	44,1	43,8	45,6	46,6	49,4	51,0	51,4	52,9	55,5	57,2	57,7	58,9	57,6	56,0	48,4	58,3	59,5
Non natural cause	10,3	9,5	9,2	9,0	8,7	9,0	9,0	8,7	8,9	9,1	9,9	10,5	10,7	11,3	11,4	11,7	12,0	12,5	9,7	9,9	13,4	13,3

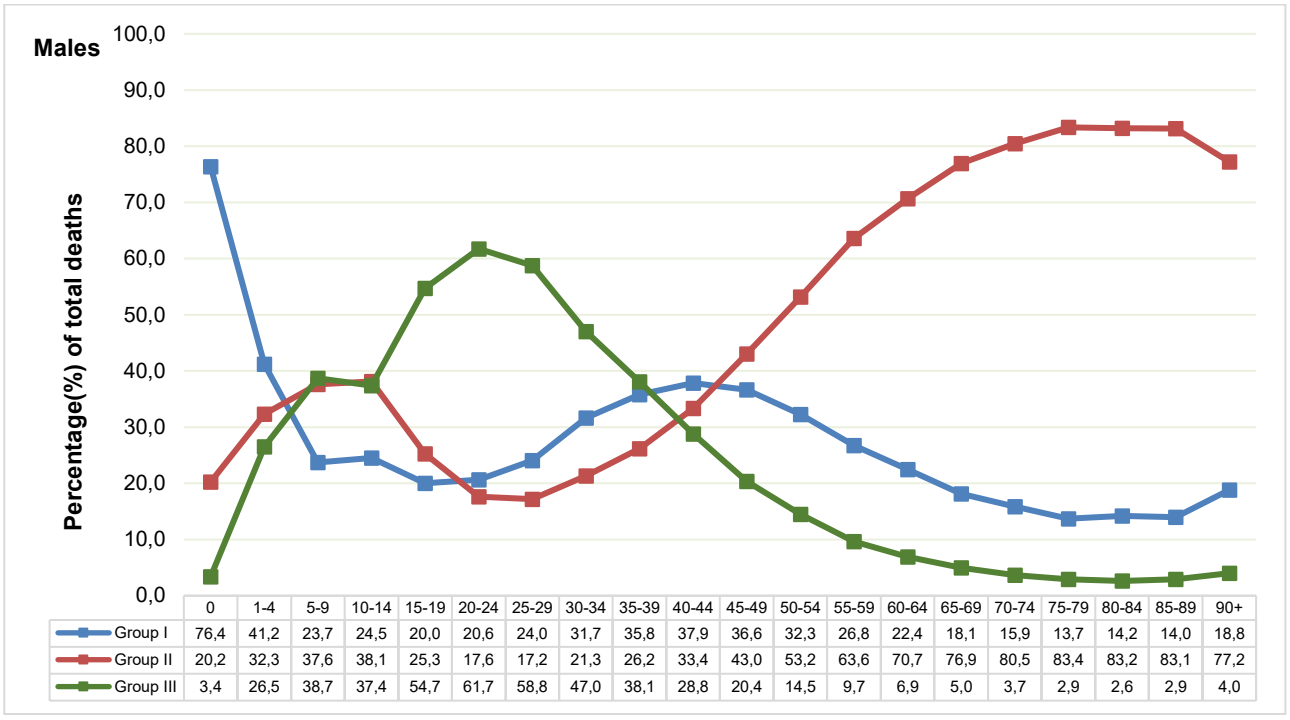
*Data for 2002–2022 have been updated with late registrations/delayed death notification forms processed in 2025/2026

The percentage distribution of group type by sex and age group is presented in Figure 4.5. Infants (aged 0 years) had the highest proportion of deaths due to communicable diseases for both sexes (76,4% for males and 74,9% for females). Deaths due to communicable diseases peak again at ages 40–44 (37,9%) for males while it peaks again from ages 25–34 (51,6%) for females. The proportion of deaths due to communicable diseases declines gradually with age from the age of 45 for males and from the age of 35 for females. Communicable diseases were lowest amongst the elderly for both sexes at age group 75–79 years at 13,7% for males while it was 12,2% for females.

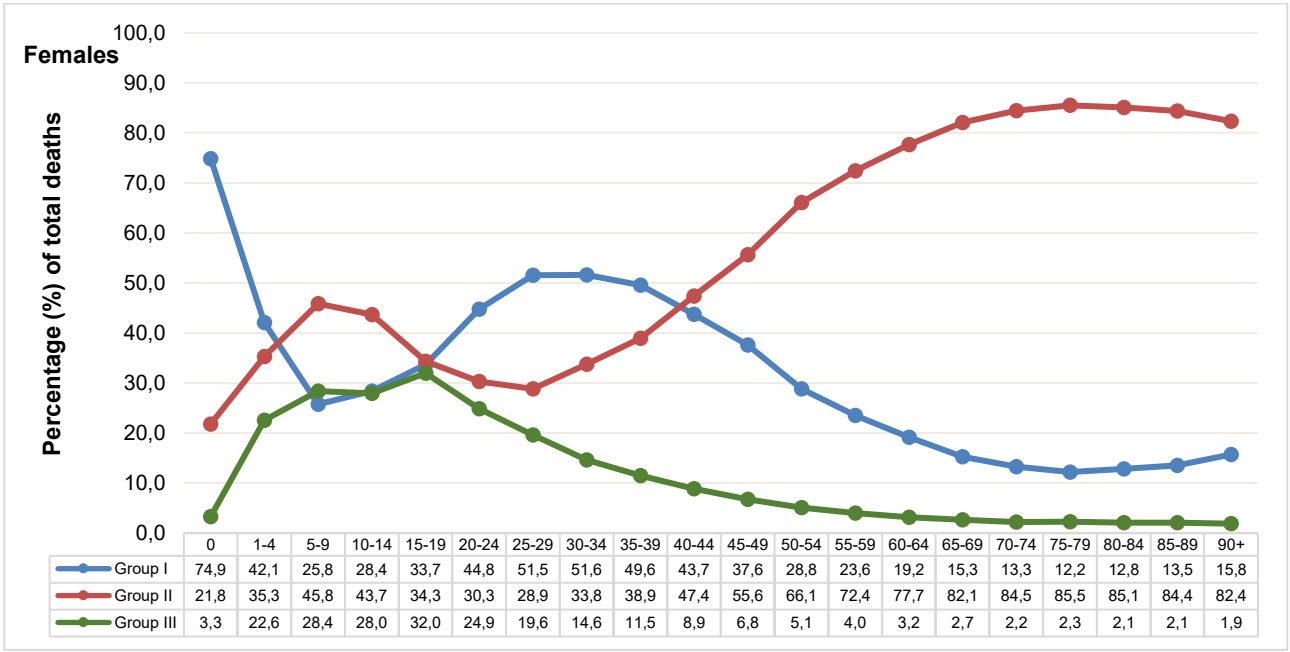
The trend in the proportion of deaths due to non-communicable diseases increases from age groups 30–34 for males (21,3%) and 30–34 years for females (33,8%), until age group 75–79. For males aged 0, below 25% (20,2%) of deaths were due to this group of causes and 21,8% for female infants.

The most notable pattern in non-natural causes of death i.e. external causes of death including accidents and violence, for both sexes is the steady increase and peak at age group 20–24 years for males (61,7%), and age group 15–19 years amongst females (32%). Deaths due to external causes were much higher for males than for females starting from age group 1-4 and through all age groups. For males, non-natural causes of death declined to below 10,0% from age group 55-59 years, while for females the decline is observed from age group 40-44 years.

Figure 4.5 - Percentage (%) of deaths due to communicable diseases (Group I), non-communicable diseases (Group II) and injuries (Group III) by sex and age group, 2023*



	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+
Group I	76,4	41,2	23,7	24,5	20,0	20,6	24,0	31,7	35,8	37,9	36,6	32,3	26,8	22,4	18,1	15,9	13,7	14,2	14,0	18,8
Group II	20,2	32,3	37,6	38,1	25,3	17,6	17,2	21,3	26,2	33,4	43,0	53,2	63,6	70,7	76,9	80,5	83,4	83,2	83,1	77,2
Group III	3,4	26,5	38,7	37,4	54,7	61,7	58,8	47,0	38,1	28,8	20,4	14,5	9,7	6,9	5,0	3,7	2,9	2,6	2,9	4,0



	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+
Group I	74,9	42,1	25,8	28,4	33,7	44,8	51,5	51,6	49,6	43,7	37,6	28,8	23,6	19,2	15,3	13,3	12,2	12,8	13,5	15,8
Group II	21,8	35,3	45,8	43,7	34,3	30,3	28,9	33,8	38,9	47,4	55,6	66,1	72,4	77,7	82,1	84,5	85,5	85,1	84,4	82,4
Group III	3,3	22,6	28,4	28,0	32,0	24,9	19,6	14,6	11,5	8,9	6,8	5,1	4,0	3,2	2,7	2,2	2,3	2,1	2,1	1,9

4.6 Broad groups of natural causes of death

This subsection presents information on the leading underlying natural causes of death for broad groups using top 10 ranking. The ten leading causes were identified by ranking the causes of death by the number of deaths among those eligible for ranking as described in Section 2 and excludes symptoms, signs and abnormal findings, not elsewhere classified as well as all non-natural deaths (external causes of morbidity and mortality). The top-ranking causes determine the leading underlying natural causes of death as it accounts for large numbers of deaths within a specified population and time period.

Ranking causes of death is crucial for identifying major health challenges and allocating resources for prevention and treatment. Unspecified causes don't offer actionable insights for these purposes. Knowing that a large number of deaths are attributed to "unspecified" conditions doesn't help in designing targeted interventions. By focusing on specific, well-defined causes, public health officials can better track trends, identify risk factors, and evaluate the effectiveness of health programs.

4.6.1 Overall pattern of the leading underlying natural causes of death

The ten leading underlying natural causes of death in South Africa for the years 2021–2023 are shown in Table 4.5 below. The previous years 2021 and 2022 have been included in the analysis to show recent trends in natural causes of death. The table provides trends in the ten leading underlying causes of death by absolute numbers and percentages over the three-year period.

Table 4.5 shows that nine of the ten leading causes of death in 2023 were the same for the three-year period, although they differed in rank as well as proportions. The COVID-19 pandemic first reached South Africa in 2020 and became the leading cause of death remained the leading cause of death in 2021. In the 3-year period, it was only in the top 10 leading underlying causes of death in 2021. This gives a reflection that acute phase of the COVID-19 pandemic is now over, however, it is still not completely eradicated as there were still significant number of deaths due to COVID-19 in 2022 and 2023 though they were not in the top ten.

In 2023*, diabetes mellitus* remained the top leading underlying cause of death just as it was in 2022 responsible for 5,8% deaths in the country. It ranked as the second leading underlying cause of death in 2021. The second leading underlying cause of death in 2023 was *cerebrovascular diseases* responsible for 5,4% deaths. In terms of rankings between the years 2022 and 2023, there were no notable changes between the two years. All the other causes changed only 1 rank except for *diabetes mellitus* and *chronic lower respiratory diseases* which kept first and the tenth rank respectively between the two years.

Table 4.5 – The ten leading underlying natural causes of death, 2021–2023*

Causes of death (ICD-10)	2021			2022			2023		
	Rank	Number	%	Rank	Number	%	Rank	Number	%
Diabetes mellitus (E10-E14)	2	37 142	6,0	1	33 068	6,7	1	27 692	5,8
Cerebrovascular diseases (I60-I69)	4	28 286	4,5	3	29 025	5,9	2	25 530	5,4
Hypertensive diseases (I10-I15)	3	30 736	4,9	2	31 446	6,4	3	25 018	5,2
Tuberculosis (A15-A19)	7	17 843	2,9	5	20 658	4,2	4	20 194	4,2
Human immunodeficiency virus [HIV] disease (B20-B24)	5	24 214	3,9	4	21 030	4,3	5	19 153	4,0
Influenza and pneumonia (J09-J18)	6	21 547	3,5	7	19 881	4,0	6	14 472	3,0
Other forms of heart disease (I30-I52)	9	14 062	2,3	6	20 484	4,2	7	14 020	2,9
Ischaemic heart diseases (I20-I25)	8	14 875	2,4	9	13 242	2,7	8	13 424	2,8
Other viral diseases (B25-B34)	10	13 632	2,2	8	13 269	2,7	9	13 233	2,8
Chronic lower respiratory diseases (J40-J47)	…	.	…	10	11 966	2,4	10	11 938	2,5
Covid-19 (U071-U072)	1	93 140	14,9	…	…	…	…	…	…
Other Natural		266 224	42,7		212 523	43,2		228 562	48,0
Non-natural		61 431	9,9		65 807	13,4		63 369	13,3
All causes		**623 132**	**100,0**		**492 399**	**100,0**		**476 605**	**100,0**

*Data from 2021–2022 have been updated with late registrations/delayed death notification forms processed in 2025/2026

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

… Category not in top ten

4.6.2 Leading underlying natural causes of death by sex

Table 4.6 shows the distribution of the ten leading underlying natural causes of death in 2023 by sex. Mainly, nine of the ten leading causes of death were the same for both sexes. The two underlying causes that were not common between the two sexes were *chronic lower respiratory diseases* and *malignant neoplasm of female genital organs*. *Chronic lower respiratory diseases* ranked eighth amongst males responsible for 2,9% male deaths while *malignant neoplasm of female genital organs* ranked ninth amongst females responsible for 2,7% deaths. Only *influenza and pneumonia* had the same rank between the two sexes. It ranked seventh responsible for 3,0% of male deaths and 3,1% female deaths.

The leading underlying cause of death for males was *tuberculosis* accounting for 5,1% male deaths followed closely by *cerebrovascular diseases* and *diabetes mellitus*. *Cerebrovascular diseases* accounted for 4,4% of male deaths while *diabetes mellitus* accounted for 4,3%. Causes that had the same proportion received the same rank and a rank was skipped for the next cause. For example, if two causes of death had the same proportion and were the top-ranking causes, they both received rank one, and the next cause received rank three.

The leading underlying cause of death for females was *diabetes mellitus* responsible for 7,5 % female deaths, followed closely by *hypertensive diseases* responsible for 6,8% female deaths. *Cerebrovascular diseases* ranked third responsible for 6,5% female deaths. For both sexes, six of the ten leading underlying causes of death are non-communicable diseases.

Table 4.6 - The ten leading underlying causes of death for males and females, 2023*

Causes of death (ICD-10)	Male			Female		
	Rank	Number	Percentage (%)	Rank	Number	Percentage (%)
Tuberculosis (A15-A19)	1	13 034	5,1	6	7 140	3,2
Cerebrovascular diseases (I60-I69)	2	11 232	4,4	3	14 285	6,5
Diabetes mellitus (E10-E14)	3	10 974	4,3	1	16 711	7,5
Hypertensive diseases (I10-I15)	4	9 913	3,9	2	15 099	6,8
Human immunodeficiency virus [HIV] disease (B20-B24)	5	9 787	3,8	4	9 352	4,2
Ischaemic heart diseases (I20-I25)	6	7 654	3,0	10	5 767	2,6
Influenza and pneumonia (J09-J18)	7	7 626	3,0	7	6 817	3,1
Chronic lower respiratory diseases (J40-J47)	8	7 276	2,9	…	…	…
Other viral diseases (B25-B34)	9	6 863	2,7	8	6361	2,9
Other forms of heart disease (I30-I52)	10	6 623	2,6	5	7 390	3,3
Malignant neoplasms of female genital organs (C51-C58)	…	…	…	9	5 981	2,7
Other Natural		113 447	44,6		113 341	51,2
Non-natural		49 952	19,6		13 121	5,9
Total		**254 381**	**100,0**		**221 365**	**100,0**

* Excluding deaths with unspecified sex

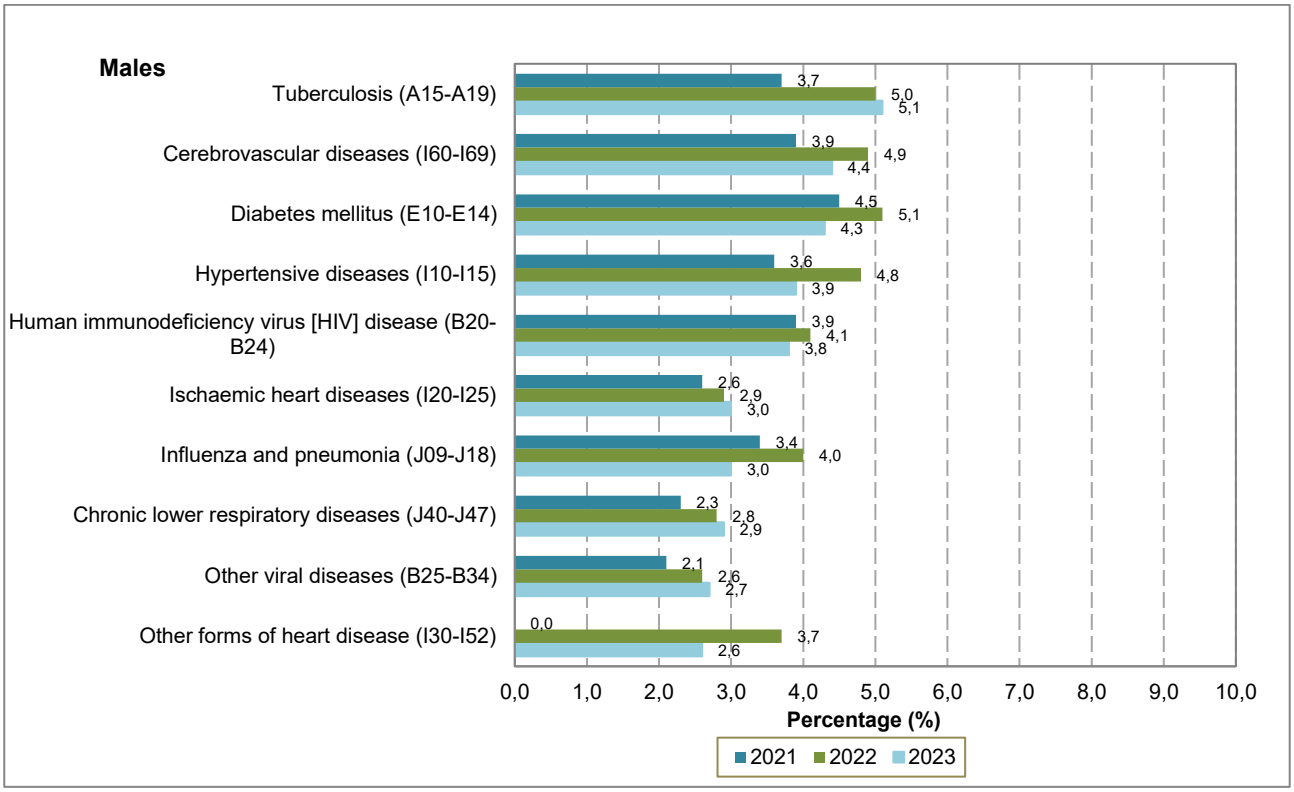
**Including deaths due to *MDR-TB* and *XDR-TB*

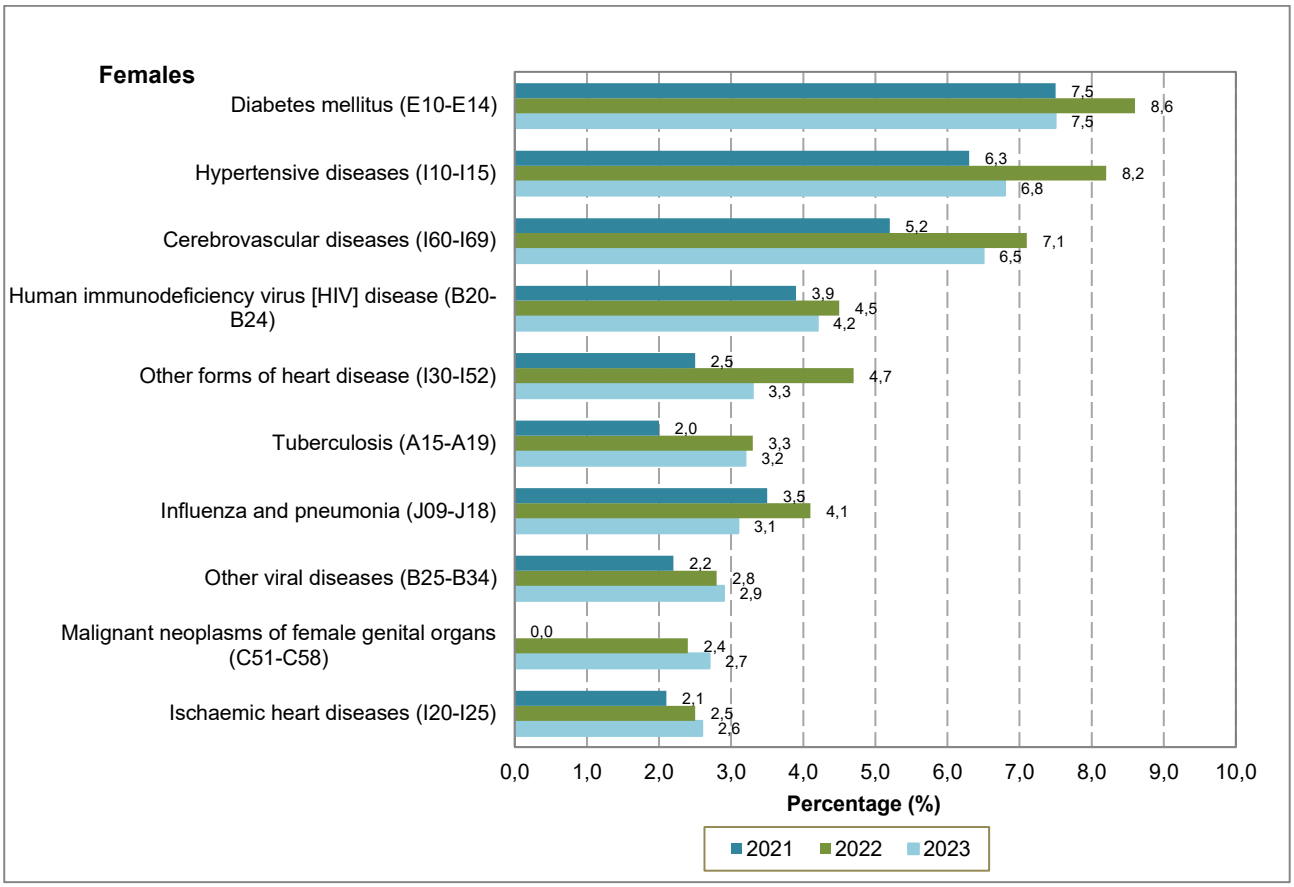
…Category not in top ten

Figure 4.6 shows the percentage distribution of deaths associated with the ten leading causes of death classified by sex for the period 2021–2023. For males, *other forms of heart diseases* were not on the top ten in 2021 but were in the top 10 in both 2022 and 2023 responsible for 3,7% and 2,6% deaths respectively. *Tuberculosis* which was the leading cause of death for males has always been in the top ten leading underlying causes of death in the three-year period. In terms of patterns, *tuberculosis*, *ischaemic heart diseases*, *chronic lower respiratory diseases* and *other viral diseases* showed consistent increases in the 3-year period while the rest of the causes did not show any discernible pattern.

Among females, *malignant neoplasm of female genital organs* was amongst the ten leading underlying causes of death for both 2022 and 2023.*Diabetes mellitus* was amongst the ten leading causes of death over the three years and ranked the leading cause of death in 2023 responsible for 7,5% female deaths. In the 3-year period, it had the highest proportion of deaths in 2022 accounting for 8,6% female deaths. *Ischaemic heart diseases* and *other viral diseases* portrayed consistent increases in the proportion of female deaths in this period while the other causes showed no obvious pattern.

Figure 4.6 - Distribution of deaths for the leading causes of death by year of death and sex, 2021–2023*





*(1) Data for 2021–2022 have been updated with late registrations/delayed death notification forms processed in 2025/2026

(2) Including deaths due to *MDR-TB* and *XDR-TB*

4.6.3 Leading underlying natural causes of death by age

Analysis of the broad age groups (0, 1–14, 15–44, 45–64, and 65 years and older) is recommended by the World Health Organization (WHO) for classifying ages for international comparison (WHO, 2009). Table 4.7 shows the ten leading underlying natural causes of death for these age groups. Further decomposition of age and leading underlying natural causes of death are provided in Tables 4.8 (under 5 years) and 4.9 (15–24 years).

The most notable change was that there were no common underlying causes of death for all age groups, although the ranking varied greatly by age. *Respiratory and cardiovascular disorders specific to the perinatal period* was the leading underlying cause of death for infant deaths (age 0) accounting for 16% infant deaths. The second leading underlying cause of death for infants was *other disorders originating in the perinatal period* responsible for 9,1% infant deaths. *Infections specific to the perinatal period* ranked third responsible for 5,6% infant deaths. *Intestinal infectious diseases* ranked second for age group 1–14 responsible for 5,0% deaths in this age group. *Intestinal infectious diseases* were in the top ten underlying causes of death only in these two age groups.

Influenza and pneumonia was the leading underlying cause of death for age group 1–14 accounting for 6,0% deaths in this age group. It was in the leading underlying causes of death for all age groups except for age group 45–64 though it varied greatly by rank in those age groups where it was part of the ten leading causes. For example, it was ranked fourth for age group 15–44 whilst it ranked seventh for age group 65+. *Cerebral palsy and other paralytic syndromes* which ranked the third leading underlying cause of death for age group 1–14 and *other bacterial diseases* which ranked eighth were in the ten leading underlying causes of death only in this age group.

The leading underlying cause of death for the age group 15–44 years was *human immune deficiency virus [HIV] diseases*, constituting 8,3% of deaths, followed by *tuberculosis*, accounting for 7,5% of deaths. *Other viral disease*s which ranked third accounting for 5,3%. *Malignant neoplasms of female genital organs* which ranked tenth was in the top ten leading underlying causes of death only in this age group responsible for 1.1% deaths.

Eight of the ten leading causes of death for those 45–64 and 65 years and older were the same, with differences in rank and the contribution of each cause to the overall number of deaths in each age group. While *diabetes mellitus* was the leading cause of death among those aged 45–64, contributing 7,0% of deaths in this age group, it was the second leading cause of death among those aged 65 and older, accounting for 8,8% of deaths. Conversely, *hypertensive diseases* which was the leading cause of death for those aged 65 and older (9,2%), was the fifth leading underlying cause of death for those aged 45–64 (4,7%).

The two underlying causes of death in age group 65 years and older but were not in the age group 45–64 are *renal failure* and *influenza and pneumonia*. *Human immunodeficiency virus [HIV] disease* and *other viral diseases* were among the ten leading causes of death for the age group 45–64 age group, which were not listed for the age group 65 years and older.

Table 4.7 - The ten leading underlying natural causes of death for broad age groups, 2023

Causes of death (ICD-10)	0			1−14			15−44			45−64			65+		
	Rank	Number	%	Rank	Number	%	Rank	Number	%	Rank	Number	%	Rank	Number	%
Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	1	3 466	16,0	...	...	...	...	...	...	...	...	...	...	...	...
Other disorders originating in the perinatal period (P90-P96)	2	1 968	9,1	...	...	...	...	...	...	...	...	...	...	...	...
Infections specific to the perinatal period (P35-P39)	3	1 210	5,6	...	...	...	...	...	...	...	...	...	...	...	...
Intestinal infectious diseases (A00-A09)	4	1 150	5,3	2	625	5,0	...	...	...	...	...	...	...	...	...
Influenza and pneumonia (J09-J18)	5	1 089	5,0	1	756	6	4	3 252	2,7	...	...	...	7	6 019	3,1
Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	6	1 058	4,9	...	...	...	...	...	...	...	...	...	...	...	...
Disorders related to length of gestation and fetal growth (P05-P08)	7	940	4,3	...	...	...	...	...	...	...	...	...	...	...	...
Congenital malformations of the circulatory system (Q20-Q28)	8	596	2,7	...	...	...	...	...	...	...	...	...	...	...	...
Digestive system disorders of fetus and newborn (P75-P78)	9	487	2,2	...	...	...	...	...	...	...	...	...	...	...	...
Other congenital malformations (Q80-Q89)	10	464	2,1	...	...	...	...	...	...	...	...	...	...	...	...
Cerebral palsy and other paralytic syndromes (G80-G83)	…	…	…	3	385	3,1	...	...	...	...	...	...	...	...	...
Tuberculosis (A15-A19)	…	…	…	4	277	2,2	2	8 987	7,5	3	7 353	5,6	10	3 468	1,8
Episodic and paroxysmal disorders (G40-G47)	…	…	…	5	262	2,1	8	1 422	1,2	...	...	...	...	...	...
Malnutrition (E40-E46)	…	…	…	6	261	2,1	...	...	...	...	...	...	...	...	...
Other forms of heart disease (I30-I52)	…	…	…	7	211	1,7	5	2 030	1,7	10	3 573	2,7	5	8 074	4,2
Other bacterial diseases (A30-A49)	…	…	…	8	189	1,5	...	...	...	...	...	...	...	...	...
Human immunodeficiency virus [HIV] disease (B20-B24)	…	…	…	9	188	1,5	1	9 938	8,3	2	7 406	5,7	...	...	...
Other viral diseases (B25-B34)	…	…	…	10	185	1,5	3	6 365	5,3	6	5 190	4	...	...	...
Cerebrovascular diseases (I60-I69)	…	…	…	...	...	...	6	1 986	1,7	4	7 270	5,6	3	16 178	8,4
Diabetes mellitus (E10-E14)	…	…	…	...	...	...	7	1 548	1,3	1	9 111	7	2	16 970	8,8
Renal failure (N17-N19)	…	…	…	...	...	...	9	1 378	1,1	...	...	...	9	4 621	2,4
Malignant neoplasms of female genital organs (C51-C58)	…	…	…	...	...	...	10	1 365	1,1	...	...	...	...	...	...
Hypertensive diseases (I10-I15)	…	…	…	...	...	...	...	...	...	5	6 111	4,7	1	17 591	9,2
Ischaemic heart diseases (I20-I25)	…	…	…	...	...	...	...	...	...	7	4 175	3,2	4	8 125	4,2
Malignant neoplasms of digestive organs (C15-C26)	…	…	…	...	...	...	...	...	...	8	4 005	3,1	8	5 175	2,7
Chronic lower respiratory diseases (J40-J47)	…	…	…	...	...	...	...	...	...	9	3 706	2,8	6	7 121	3,7
Other Natural		8 523	39,3		5 603	44,6		40 011	33,3		60 761	46,6		93 058	48,5
Non-natural		730	3,4		3 629	28,9		41 739	34,8		11 785	9,0		5 486	2,9
All causes		**21 681**	**100,0**		**12 571**	**100,0**		**120 021**	**100,0**		**130 446**	**100,0**		**191 886**	**100,0**

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

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

Ten leading causes of death for neonatal deaths (infants that died within the first 28 days of life), post-neonatal deaths (29 days to 11 months), all infant deaths (aged less than one year), and deaths among those aged 1–4 years are shown in Table 4.8. Infant deaths are composed of both neonatal and post-neonatal deaths.

Table 4.8 shows that *congenital malformations of the circulatory system* were the only underlying cause of death common for all age groups. Neonatal deaths mainly resulted from *respiratory and cardiovascular disorders specific to the perinatal period*, which was the leading underlying cause of death among neonates, and responsible for 29,5% deaths. The second leading underlying cause of death for neonatal deaths was *other disorders originating in the perinatal period* accounting for 18,7% of all neonatal deaths, followed by *infections specific to the perinatal period,* responsible for 10,9% of deaths in this age group.

The leading cause of death for those who died during the post-neonatal period was *intestinal infectious diseases* (10,0%) followed closely by *influenza and pneumonia* (9,5%), These two causes were the highest contributors of post-neonatal deaths, accounting for 19,5% of deaths occurring during this period. *Respiratory and cardiovascular disorders specific to the perinatal period* (3,5%) was the third leading cause of death, and *other bacterial diseases* was fourth responsible for 3,4% deaths in this age group.

Overall, for infants (less than one year), the leading underlying cause of deaths was *respiratory and cardiovascular disorders specific to the perinatal period* (16,0%). *Other disorders originating in the perinatal period* (9,1%) was ranked second. *Infections specific to perinatal period* (5,6%) and *intestinal infectious diseases* (5,3%) and *by influenza and pneumonia* (5,0%) were ranked third, fourth and fifth, respectively.

The three leading causes of death for those aged 1–4 years were *influenza and pneumonia* (7,5%), *intestinal infectious diseases* (7,2%) and *malnutrition* (3,8%) ranking first, second and third, respectively. *Tuberculosis* (1,9%) was the fourth leading underlying cause of death while *metabolic disorders* (1,8%) was the fifth leading underlying cause of death.

For under five ages, *respiratory and cardiovascular disorders specific to the perinatal period* was the leading underlying cause of death responsible for 12,2% of deaths, followed by *other disorders originating in the perinatal period* (6,9%) while *intestinal infectious diseases* accounted for 5,7% of deaths in this age group. *Influenza and pneumonia* was ranked the fourth leading underlying cause of death amongst the under-5 mortality, responsible for 5,6% of deaths.

Table 4.8 - The ten underlying natural causes of death for infants and children aged below five years, 2023

Causes of death (ICD-10)	Neonatal (0-28 days)			Post-neonatal (29 days to 11 months)			Less than 1 year			1-4 years			Under 5 years		
	Rank	Number	%	Rank	Number	%	Rank	Number	%	Rank	Number	%	Rank	Number	%
Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	1	3 068	29,9	3	398	3,5	1	3 466	16,0	…	…	…	1	3 466	12,2
Other disorders originating in the perinatal period (P90-P96)	2	1 917	18,7	…	…	…	2	1 968	9,1	…	…	…	2	1 968	6,9
Infections specific to the perinatal period (P35-P39)	3	1 115	10,9	…	…	…	3	1 210	5,6	…	…	…	5	1 210	4,3
Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	4	1 045	10,2	…	…	…	6	1 058	4,9	…	…	…	6	1 058	3,7
Disorders related to length of gestation and fetal growth (P05-P08)	5	834	8,1	…	…	…	7	940	4,3	…	…	…	7	940	3,3
Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	6	399	3,9	…	…	…	…	…	…	…	…	…	…	…	…
Other congenital malformations (Q80-Q89)	7	392	3,8	…	…	…	10	464	2,1	…	…	…	…	…	…
Digestive system disorders of fetus and newborn (P75-P78)	8	368	3,6	…	…	…	9	487	2,2	…	…	…	…	…	…
Congenital malformations of the circulatory system (Q20-Q28)	9	291	2,8	7	305	2,7	8	596	2,7	6	113	1,7	8	709	2,5
Chromosomal abnormalities, not elsewhere classified (Q90-Q99)	10	196	1,9	10	196	1,7	…	…	…	…	…	…	…	…	…
Intestinal infectious diseases (A00-A09)	…	…	…	1	1 146	10,0	4	1 150	5,3	2	478	7,2	3	1 628	5,7
Influenza and pneumonia (J09-J18)	…	…	…	2	1 088	9,5	5	1 089	5,0	1	500	7,5	4	1 589	5,6
Other bacterial diseases (A30-A49)	…	…	…	4	387	3,4	…	…	…	10	106	1,6	10	495	1,7
Malnutrition (E40-E46)	…	…	…	5	357	3,1	…	…	…	3	252	3,8	9	611	2,2
Other acute lower respiratory infections (J20-J22)	…	…	…	6	314	2,7	…	…	…	8	111	1,7	…	…	…
Metabolic disorders (E70-E90)	…	…	…	8	285	2,5	…	…	…	5	123	1,8	…	…	…
Other diseases of the respiratory system (J95-J99)	…	…	…	9	254	2,2	…	…	…	…	…	…	…	…	…
Tuberculosis (A15-A19)	…	…	…	…	…	…	…	…	…	4	128	1,9	…	…	…
Episodic and paroxysmal disorders (G40-G47)	…	…	…	…	…	…	…	…	…	7	111	1,7	…	…	…
Other forms of heart disease (I30-I52)	…	…	…	…	…	…	…	…	…	9	110	1,7	…	…	…
Other Natural		610	5,9		5986	52,4		8523	39,3		2 981	44,8		12290	43,4
Sub total		**10 235**	**99,7**		**10 716**	**93,7**		**20 951**	**96,5**		**5 013**	**75,4**		**25 964**	**91,5**
Natural causes		10 235	99,7		10 716	93,7		20 951	96,5		5 013	75,4		25 964	91,5
Non-natural causes		22	0,2		708	6,2		730	3,4		1 644	24,7		2 374	8,4
All causes		**10 257**	**100,0**		**11 424**	**100,0**		**21 681**	**100,0**		**6 657**	**100,0**		**28 338**	**100,0**

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

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

According to the WHO recommendations, 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. In 2023, *tuberculosis* was the leading cause of death for those aged 15–24, accounting for 5,4% of deaths, followed by *human immunodeficiency virus [HIV] disease* (4,3%) and *Influenza and pneumonia* (3,0%). *Other viral diseases (2,7%), episodic and paroxysmal disorders* (1,7%) *other forms of heart disease* (1,3%) and were the fourth, fifth and sixth leading causes of death, respectively. The ten leading causes of death in this age group contributed just over a quarter (22,3%) of deaths in this age group.

Table 4.9 - The ten leading underlying causes of death for the population aged 15–24 years, 2023

Causes of death (ICD-10)	15-24		
	Rank	Number	Percentage (%)
Tuberculosis (A15-A19)	1	1 089	5,4
Human immunodeficiency virus [HIV] disease (B20-B24)	2	862	4,3
Influenza and pneumonia (J09-J18)	3	613	3,0
Other viral diseases (B25-B34)	4	548	2,7
Episodic and paroxysmal disorders (G40-G47)	5	338	1,7
Other forms of heart disease (I30-I52)	6	266	1,3
Cerebral palsy and other paralytic syndromes (G80-G83)	7	243	1,2
Intestinal infectious diseases (A00-A09)	8	196	1,0
Inflammatory diseases of the central nervous system (G00-G09)	9	183	0,9
Cerebrovascular diseases (I60-I69)	10	169	0,8
Other Natural		5 904	29,2
Non-natural		9 789	48,5
All Causes	**…**	**20 200**	**100,0**

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

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

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

Diabetes mellitus was the leading cause of death in Western Cape (7,3%), KwaZulu-Natal (6,7%), Limpopo (6,6%), Mpumalanga (6,3%) and Gauteng (4,3%). It was the second leading underlying cause of death in Eastern Cape (5,7%), Free State (5,2%) and North West (5,1%). It was the fifth leading underlying cause in Northern Cape (4,8%).

Hypertensive diseases was the leading underlying cause of death in North West (7,4%), Northern Cape (7,2%), and Free State (6,5%). Six underlying causes of death were common in all nine provinces, namely *diabetes mellitus, cerebrovascular diseases, HIV disease, hypertensive diseases, tuberculosis and other forms of heart diseases*.

However, the ranks of these causes of death differed between provinces. For example, *cerebrovascular diseases* ranked second in Western Cape, Kwa-Zulu Natal and Gauteng, third in Limpopo and fourth in Eastern Cape, Northern Cape, Free State, Mpumalanga and North West.

Western Cape was the only province where *malignant neoplasms of respiratory and intrathoracic organs* was in the top ten leading underlying causes of death. It ranked ninth responsible for 3,5% deaths. This was the case with *intestinal infectious diseases*, it was amongst the top ten leading underlying causes of death only in Limpopo, ranked tenth and was responsible for 1,8% deaths in the province.

The underlying causes of death for all the provinces were a combination of communicable and non-communicable diseases. Western Cape had the highest number of non-communicable diseases with eight out of the ten being non-communicable diseases, followed by Gauteng which had seven non communicable diseases in the top ten. Eastern Cape, Northern Cape, Free State, KwaZulu-Natal, North West and Mpumalanga all had six non-communicable diseases in their top ten leading underlying causes and Limpopo had 50% of both in the top ten leading underlying causes.

Table 4.10 - The ten leading underlying natural causes of death in each province of death occurrence, 2023

Causes of death (ICD-10)	Western Cape			Eastern Cape			Northern Cape			Free State			KwaZulu-Natal			North West			Gauteng			Mpumalanga			Limpopo		
	Rank	No.	%	Rank	No.	%	Rank	No.	%	Rank	No.	%	Rank	No.	%	Rank	No.	%	Rank	No.	%	Rank	No.	%	Rank	No.	%
Diabetes mellitus (E10-E14)	1	4 241	7,3	2	4 450	5,7	5	742	4,8	2	1 481	5,2	1	5 880	6,7	2	1 578	5,1	1	4 373	4,3	1	1 924	6,3	1	3011,0	6,6
Cerebrovascular diseases (I60-I69)	2	3 981	6,9	4	4 227	5,4	4	811	5,3	4	1 406	4,9	2	5 456	6,2	4	1 416	4,6	2	4 345	4,3	4	1 490	4,9	3	2 374	5,2
Ischaemic heart diseases (I20-I25)	3	3 218	5,5	…	…	…	8	472	3,1	10	595	2,1	8	2 406	2,8	10	511	1,7	6	2 843	2,8	3	1 496	4,9	…	…	…
Human immunodeficiency virus [HIV] disease (B20-B24)	4	3 158	5,4	3	4433	5,7	2	853	5,6	3	1 425	5,0	5	3 019	3,5	7	1 034	3,4	…	…	…	5	1 277	4,2	5	1 710	3,7
Hypertensive diseases (I10-I15)	5	2 983	5,1	5	4 064	5,2	1	1 099	7,2	1	1 862	6,5	3	3 849	4,4	1	2 296	7,4	3	4146	4,1	2	1 879	6,2	2	2832	6,2
Tuberculosis (A15-A19)	6	2 834	4,9	1	4 745	6,1	3	822	5,4	6	1 062	3,7	4	3 779	4,3	3	1 440	4,7	7	2 802	2,8	6	1 179	3,9	6	1 528	3,3
Chronic lower respiratory diseases (J40-J47)	7	2 400	4,1	6	2 525	3,2	6	571	3,7	9	737	2,6	…	…	…	9	647	2,1	…	…	…	…	…	…	…	…	…
Malignant neoplasms of digestive organs (C15-C26)	8	2 323	4,0	10	1 558	2,0	…	…	…	…	…	…	…	…	…	…	…	…	9	2377	2,3	…	…	…	…	…	…
Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	9	2 034	3,5	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…
Other forms of heart disease (I30-I52)	10	1 637	2,8	8	1 953	2,5	10	384	2,5	8	949	3,3	6	2 716	3,1	8	1 015	3,3	5	3 425	3,4	9	903	3,0	8	1025,0	2,2
Other viral diseases (B25-B34)	…	…	…	7	2 219	2,8	7	557	3,6	7	960	3,4	7	2 588	3,0	5	1 108	3,6	8	2 754	2,7	8	1 110	3,7	7	1 386	3,0
Influenza and pneumonia (J09-J18)	…	…	…	9	1 756	2,2	9	398	2,6	5	1 198	4,2	9	2 335	2,7	6	1 080	3,5	4	3 429	3,4	7	1 145	3,8	4	1 950	4,2
Renal failure (N17-N19)	…	…	…	…	…	…	…	…	…	…	…	…	10	1 688	1,9	…	…	…	10	2 291	2,3	10	644	2,1	9	875	1,9
Intestinal infectious diseases (A00-A09)	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	…	10	844	1,8
Other Natural		21 716	37,4		35 237	45,0		6 926	45,3		13 841	48,4		40 420	46,3		15 284	49,6		53 837	53,2		13 083	43,2		23 866	51,9
Non-natural		7 527	13,0		11 108	14,2		1 664	10,9		3 089	10,8		13 174	15,1		3 413	11,1		14 562	14,4		4 187	13,8		4 559	9,9
All causes		58 052	100,0		78 275	100,0		15 299	100,0		28 605	100,0		87 310	100,0		30 822	100,0		101 184	100,0		30 317	100,0		45 960	100,0

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

… Category not in top ten

4.7 Non-natural causes of death

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

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

About thirteen percent (13,3%) of all deaths registered in 2023 (refer to Table 4.4) were due *to external causes of morbidity and mortality.* Table 4.11 below, shows the percentage distribution of broad groups of non-natural causes and the associated number of deaths. It is observed that the majority of non-natural causes of death resulted from *other external causes of accidental injury* (77,8%). In terms of all deaths, *other external causes of accidental injury* accounted for 10,3%. This group includes *discharge from other and unspecified firearms* as well as *other accidental hanging and strangulation*.

Assault was the second most common non-natural cause of death and accounted for 10,0% of non-natural causes and 1,3% of all reported deaths. The third most common cause of non-natural deaths was *transport accidents* at 5,6% and constituting 0,7% of all deaths, followed by *event of undetermined intent* (3,4%) and *complications of medical and surgical care* (2,5%). Deaths due to *intentional self-harm* and *sequelae of external causes of morbidity* and mortality contributed less than 1% of non-natural deaths combined.

Table 4.11 - Distribution of non-natural causes of death by broad groups, 2023

Causes of death (ICD-10)	Number	Percentage of non-natural causes	Percentage of all causes (N = 476 605)
Other external causes of accidental injury (W00-X59)	49 292	77,8	10,3
Assault (X85-Y09)	6 330	10,0	1,3
Transport accidents (V01-V99)	3 559	5,6	0,7
Event of undetermined intent (Y10-Y34)	2 179	3,4	0,5
Complications of medical and surgical care (Y40-Y84)	1 594	2,5	0,3
Intentional self-harm (X60-X84)	375	0,6	0,1
Sequelae of external causes of morbidity and mortality (Y85-Y89)	40	0,1	0,0
All non-natural	**63 369**	**100,0**	**13,2**

A breakdown of the 49 292 deaths due to *other external causes of accidental injury* identified in Table 4.11 is provided in Table 4.12 to provide information that can be used to better understand deaths due to this cause, which comprised nearly two-thirds of all non-natural deaths.

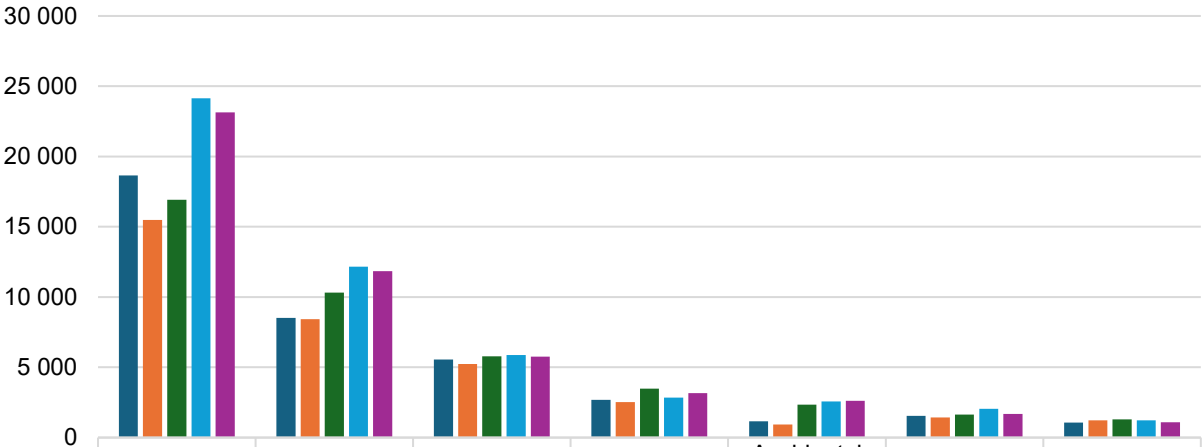
Table 4.12 below, shows that almost half of these deaths (47,0%) were due to *accidental exposure to other and unspecified factors.* This includes *exposure to unspecified factor causing fracture and exposure to other unspecified factors.* Majority of deaths in this group were from *exposure to an unspecified factor*. This was followed by deaths due to *exposure to inanimate mechanical forces* which were the second leading cause, responsible for 24,0% deaths in this group. This group includes *discharge from other and unspecified firearms* as well as *contact with knife or sword*. The third most common cause was *other accidental threats to breathing* (11,7%), which includes *accidental hanging and strangulation*. The fourth most commonly reported deaths due to other external causes of accidental injury was *exposure to smoke, fire and flames* (6,4%), followed by *accidental poisoning by and exposure to noxious substance* (5,3%).

Table 4.12 - Distribution of deaths due to other external causes of accidental injury, 2023

Causes of death (ICD-10)	Number	Percentage (%)
Accidental exposure to other and unspecified factors (X58-X59)	23 149	47,0
Exposure to inanimate mechanical forces (W20-W49)	11 847	24,0
Other accidental threads to breathing (W75-W84)	5 752	11,7
Exposure to smoke, fire and flames (X00 - X09)	3 164	6,4
Accidental poisoning by and exposure to noxious substance(X40-X49)	2 620	5,3
Accidental drowning and submersion(W65-W74)	1 679	3,4
Exposure to electric current, radiation and extreme ambient air temperature and pressure (W85-W99)	553	1,1
Exposure to forces of nature (X30 - X39)	249	0,5
Falls (W00-W19)	161	0,3
Exposure to animate mechanical forces (W50-W64)	50	0,1
Contact with venomous animals and plants(X20-X29)	40	0,1
Contact with heat and hot substances(X10-X19)	22	0,0
Overexertion, travel and privation(X50-X59)	6	0,0
Total	**49 292**	**100,0**

Figure 4.7 below, shows the distribution of *other external causes of accidental injury* from 2019 to 2023. Across the period, the same pattern is observed, with *accidental exposure to other and unspecified factors*, *exposure to inanimate mechanical forces*, *other accidental threats to breathing*, and *exposure to smoke, fire and flames consistently leading*. From 2019 to 2020, most groups declined, with *accidental exposure to other unspecified factors* dropping from 18 642 to 15 486. In 2021, numbers increased across several groups, with *accidental poisoning and exposure to noxious substances* more than doubling to 2 341, resulting in it overtaking *accidental drowning and submersion*. This increase continued into 2022, after which most groups either stabilised or declined slightly in 2023.

Figure 4.7 - Distribution of other external causes of accidental injury, 2019–2023*



	Accidental exposure to other and unspecified factors (X58-X59)	Exposure to inanimate mechanical forces (W20-W49)	Other accidental threads to breathing (W75-W84)	Exposure to smoke, fire and flames (X00 - X09)	Accidental poisoning by and exposure to noxious substance(X 40-X49)	Accidental drowning and submersion(W65-W74)	Other Causes
2019	18 642	8 521	5 560	2 683	1 168	1 551	1 071
2020	15 486	8 431	5 233	2 518	937	1 434	1 226
2021	16 914	10 317	5 786	3 484	2 341	1 645	1 292
2022	24 137	12 157	5 862	2 844	2 574	2 044	1 217
2023	23 149	11 847	5 752	3 164	2 620	1 679	1 081

*(1) Data for 2019–2022 have been updated with late registrations/delayed death notification forms processed in 2025/2026

4.7.1 Non-natural causes of death by age and sex

This subsection focuses on the distribution of non-natural causes of death by sex and broad age groups (0,1–14, 15–29, 30–44, 45–64 and 65+). For international comparison, age group 15–44 has been divided into two age groups (15–29 and 30–44) as recommended by the WHO (1992).

Table 4.13 shows the distribution of non-natural causes of death by sex and broad age groups for deaths that occurred in 2023. The absolute numbers and percentages for both sexes may not be similar to the results presented in Table 4.11, due to the exclusion of deaths with missing sex and age.

The first section of Table 4.13 showing both sexes indicates that for both sexes, the age group mostly affected by non-natural causes of death was age group 15–29, where 47,7% of all deaths in this age group were due to non-natural causes. The age group least affected by non-natural causes for both sexes was 65 years and older, where just 2,9% of deaths in this age group were due to non-natural causes. *Assault* was more common among those aged 15–29, accounting for 14,2% of non-natural deaths in this age group. *Complications of medical and surgical care* were highest amongst the elderly (13,0%).

Differentials by sex show higher proportions of non-natural deaths for males at 19,6% compared to 5,9% of female non-natural deaths. Moreover, for each of the age groups, males had higher proportions of deaths

due to non-natural causes compared to females, with the gap much wider at age group 15–29 where as much as 59,1% of male deaths resulted from non-natural cause compared to 24,1% of females in the same age group. This is the only age group where the proportion of non-natural deaths is more than that of natural deaths for males.

Comparison between male and female deaths due to non-natural causes show that the proportion of deaths due to *assault* were high for males (11,2%) compared to females (5,5%). For both sexes, non-natural deaths due to *complications of medical and surgical care* were higher at infancy (those aged less than a year) as well as among the elderly (those aged 65 years and older). However, this cause of death was high amongst females compared to males, with the proportion of female deaths due to *complications of medical and surgical care* at 5,9% compared to 1,6% for males.

The proportion of non-natural deaths due to *transport accidents* were higher amongst females (6,7%) compared to males (5,3%). For males, *intentional self-harm* and *sequelae of external causes of morbidity and mortality* were uncommon, each comprising less than 1% of deaths. However, for females, *intentional self-harm* affected the age group 15-29 years mostly, accounting for 2,1% of non-natural deaths in this category.
For all age groups, *other external cause of accidental injury* was the highest non-natural cause of death. However, these broad groups do not give valuable information as they cover non-natural deaths not adequately classified.

Table 4.13 - Underlying non-natural causes of death by age group and sex, 2023

Causes of death (ICD-10)	Number							Percentage						
	0	1−14	15−29	30−44	45−64	65+	All ages	0	1−14	15−29	30−44	45−64	65+	All ages
Both sexes*														
Transport accidents (V01-V99)	14	255	933	1 316	809	232	3 559	1,9	7,0	5,0	5,7	6,9	4,2	5,6
Other external causes of accidental injury (W00-X59)	660	3 092	14 114	17 980	9 236	4 210	49 292	90,4	85,2	75,4	78,1	78,4	76,7	77,8
Intentional self-harm (X60-X84)	0	11	146	138	62	18	375	0,0	0,3	0,8	0,6	0,5	0,3	0,6
Assault (X85-Y09)	6	49	2 666	2 634	813	162	6 330	0,8	1,4	14,2	11,4	6,9	3,0	10,0
Event of undetermined intent (Y10-Y34)	11	163	742	753	377	133	2 179	1,5	4,5	4,0	3,3	3,2	2,4	3,4
Complications of medical and surgical care (Y40-Y84)	39	59	108	197	479	712	1 594	5,3	1,6	0,6	0,9	4,1	13,0	2,5
Sequelae of external causes of morbidity and mortality (Y85-Y89)	0	0	7	5	9	19	40	0,0	0,0	0,0	0,0	0,1	0,3	0,1
Sub total	**730**	**3 629**	**18 716**	**23 023**	**11 785**	**5 486**	**63 369**	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**
Non-natural causes	730	3 629	18 716	23 023	11 785	5 486	63 369	3,4	28,9	47,7	28,5	9,0	2,9	13,3
Natural causes	20 951	8 942	20 560	57 722	118 661	186 400	413 236	96,6	71,1	52,4	71,5	91,0	97,1	86,7
All cause	**21 681**	**12 571**	**39 276**	**80 745**	**130 446**	**191 886**	**476 605**	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**
Males*														
Transport accidents (V01-V99)	2	142	726	1 044	599	151	2 664	0,5	6,5	4,7	5,3	6,5	4,9	5,3
Other external causes of accidental injury (W00-X59)	358	1 884	11 760	15 401	7 370	2 356	39 129	91,8	86,7	75,8	78,6	79,9	77,0	78,3
Intentional self-harm (X60-X84)	0	4	82	111	39	9	245	0,0	0,2	0,5	0,6	0,4	0,3	0,5
Assault (X85-Y09)	5	36	2 408	2 349	682	103	5 583	1,3	1,7	15,5	12,0	7,4	3,4	11,2
Event of undetermined intent (Y10-Y34)	4	75	476	578	272	79	1 484	1,0	3,4	3,1	3,0	2,9	2,6	3,0
Complications of medical and surgical care (Y40-Y84)	21	33	57	99	258	354	822	5,4	1,5	0,4	0,5	2,8	11,6	1,6
Sequelae of external causes of morbidity and mortality (Y85-Y89)	0	0	7	4	5	9	25	0,0	0,0	0,0	0,0	0,1	0,3	0,1
Sub total	**390**	**2 174**	**15 516**	**19 586**	**9 225**	**3 061**	**49 952**	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**
Non-natural causes	390	2 174	15 516	19 586	9 225	3 061	49 952	3,4	32,0	59,1	38,0	12,3	3,7	19,6
Natural cause	11 090	4 619	10 740	32 001	65 929	80 050	204 429	96,6	68,0	40,9	62,0	87,7	96,3	80,4
All cause	**11 480**	**6 793**	**26 256**	**51 587**	**75 154**	**83 111**	**254 381**	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**
Females*														
Transport accidents (V01-V99)	12	113	204	265	209	81	884	3,6	7,8	6,6	8,0	8,4	3,3	6,7
Other external causes of accidental injury (W00-X59)	294	1 197	2 279	2 472	1 813	1 851	9 906	88,6	82,9	73,2	74,6	72,5	76,5	75,5
Intentional self-harm (X60-X84)	0	7	64	27	23	9	130	0,0	0,5	2,1	0,8	0,9	0,4	1,0
Assault (X85-Y09)	1	13	251	277	126	58	726	0,3	0,9	8,1	8,4	5,0	2,4	5,5
Event of undetermined intent (Y10-Y34)	7	88	264	174	103	53	689	2,1	6,1	8,5	5,3	4,1	2,2	5,3
Complications of medical and surgical care (Y40-Y84)	18	26	51	97	221	358	771	5,4	1,8	1,6	2,9	8,8	14,8	5,9
Sequelae of external causes of morbidity and mortality (Y85-Y89)	0	0	0	1	4	10	15	0,0	0,0	0,0	0,0	0,2	0,4	0,1
Sub total	**332**	**1 444**	**3 113**	**3 313**	**2 499**	**2 420**	**13 121**	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**
Non-natural causes	332	1 444	3 113	3 313	2 499	2 420	13 121	3,3	25,2	24,1	11,5	4,5	2,2	5,9
Natural causes	9 608	4 293	9 784	25 603	52 649	106 307	208 244	96,7	74,8	75,9	88,5	95,5	97,8	94,1
All cause	**9 940**	**5 737**	**12 897**	**28 916**	**55 148**	**108 727**	**221 365**	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**	**100,0**

Excluding cases with unspecified age and sex.

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

The distribution of the underlying non-natural causes of death by province of death occurrence for the year 2023 are depicted in Table 4.14. KwaZulu-Natal (15,1%), Gauteng (14,4%), Eastern Cape (14,2%) and Mpumalanga (13,8%) had the highest proportion of deaths due to non-natural causes. The lowest percentage of deaths due to non-natural causes were observed in Limpopo (9,9%). KwaZulu-Natal has consistently been the province with the highest proportion of non-natural deaths in the previous years.

The most common underlying cause of non-natural deaths in all provinces was *other external causes of accidental injury* where more than half of non-natural deaths resulted from this broad group in each province. The proportion of deaths due to *other external causes of accidental injury* was highest in Gauteng (83,6%), Mpumalanga (82,5%) and KwaZulu-Natal (78,6%) followed closely by Western Cape at 77,1%.

In 2023, Northern Cape had the highest proportion of deaths due to *assault* than any other province accounting for 13,8 % (down from 15,4% in 2022) of all non-natural deaths in the province. Eastern Cape trailed closely accounting for 13,6% non-natural deaths in the province. Deaths due to *assault* were lowest in Gauteng (7,0%) and Mpumalanga (7,5%).

Deaths due to *transport accidents* were highest in Limpopo responsible for 17,4% of non-natural deaths in the province followed by Northern Cape at 14,4% and North West at 10,5%. Historically, Limpopo and Northern Cape have always had the highest proportion of *transport accidents* in South Africa. Gauteng had the least proportion of deaths due to transport accidents at 0,9%. *Complications of medical and surgical care, intentional self-harm and sequelae of external causes of morbidity and mortality* were the least common, each contributing under 5,0% or less of non-natural deaths in each province.

Table 4.14 - Underlying non-natural causes of death by province, 2023

Causes of death (ICD-10)	Western Cape		Eastern Cape		Northern Cape		Free State		KwaZulu-Natal		North West		Gauteng		Mpumalanga		Limpopo	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Transport accidents (V01-V99)	226	3,0	570	5,1	240	14,4	192	6,2	849	6,4	357	10,5	137	0,9	182	4,3	795	17,4
Other external causes of accidental injury (W00-X59)	5 804	77,1	8 538	76,9	1 035	62,2	2 366	76,6	10 350	78,6	2 452	71,8	12 178	83,6	3 456	82,5	3 043	66,7
Intentional self-harm (X60-X84)	20	0,3	74	0,7	65	3,9	22	0,7	071	0,5	14	0,4	56	0,4	014	0,3	38	0,8
Assault (X85-Y09)	1 017	13,5	1 507	13,6	230	13,8	308	10,0	1 255	9,5	324	9,5	1 023	7,0	316	7,5	349	7,7
Event of undetermined intent (Y10-Y34)	188	2,5	259	2,3	48	2,9	137	4,4	351	2,7	174	5,1	721	5,0	154	3,7	146	3,2
Complications of medical and surgical care (Y40-Y84)	266	3,5	157	1,4	046	2,8	061	2,0	285	2,2	089	2,6	440	3,0	065	1,6	183	4,0
Sequelae of external causes of morbidity and mortality (Y85-Y89)	6	0,1	3	0,0	0	0,0	3	0,1	13	0,1	3	0,1	7	0,0	0	0,0	5	0,1
SubTotal	**7 527**	**100,0**	**11 108**	**100,0**	**1 664**	**100,0**	**3 089**	**100,0**	**13 174**	**100,0**	**3 413**	**100,0**	**14 562**	**100,0**	**4 187**	**100,0**	**4 559**	**100,0**
Non-Natural causes	7 527	13,0	11 108	14,2	1 664	10,9	3 089	10,8	13 174	15,1	3 413	11,1	14 562	14,4	4 187	13,8	4 559	9,9
Natural causes	50 525	87,0	67 167	85,8	13 635	89,1	25 516	89,2	74 136	84,9	27 409	88,9	86 622	85,6	26 130	86,2	41 401	90,1
Total	**58 068**	**100,0**	**78 284**	**100,0**	**15 301**	**100,0**	**28 616**	**100,0**	**87 342**	**100,0**	**30 832**	**100,0**	**101 214**	**100,0**	**30 326**	**100,0**	**45 987**	**100,0**

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

4.8 Comparison between immediate, contributing and underlying causes of death

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

This subsection provides information on the total number of causes of death entered on each form when reporting the cause of death. The total number of causes mentioned on each form were aggregated and grouped by broad groups of underlying causes of death and were then ranked.

The 20 leading causes based on all causes of death recorded on each form are shown in Table 4.15. The list includes both natural and non-natural causes, as well as deaths due to symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified to indicate the frequency of mentioning any cause on the death notification form.

Other forms of heart diseases were the most frequently recorded cause of death in 2023, mentioned in 73 323 (15,4%) death notification forms, followed by *hypertensive diseases* mentioned in 65 732 (13,8%) forms. *Influenza and pneumonia* was the third most recorded cause of death on 36 583 (7,7%) death notification forms.

Table 4.15 - Distribution of the 20 most reported causes of death, 2023

Rank	Causes of death (ICD-10)	Number of deaths in which the causes was reported	Percentage (%) of all deaths
1	Ill-defined and unknown causes of mortality (R95-R99)	77 006	16,2
2	Other forms of heart disease (I30-I52)	73 323	15,4
3	Hypertensive diseases (I10-I15)	65 732	13,8
4	Other external causes of accidental injury (W00-X59)	50 450	10,6
5	Influenza and pneumonia (J09-J18)	36 583	7,7
6	Diabetes mellitus (E10-E14)	35 353	7,4
7	Renal failure (N17-N19)	35 056	7,4
8	Cerebrovascular diseases (I60-I69)	34 771	7,3
9	Tuberculosis (A15-A19)	33 758	7,1
10	Other bacterial diseases (A30-A49)	31 404	6,6
11	Other viral diseases (B25-B34)	20 429	4,3
12	Ischaemic heart diseases (I20-I25)	20 200	4,2
13	Human immunodeficiency virus [HIV] disease (B20-B24)	20 136	4,2
14	Chronic lower respiratory diseases (J40-J47)	19 217	4,0
15	Other diseases of the respiratory system (J95-J99)	17 263	3,6
16	Metabolic disorders (E70-E90)	16 623	3,5
17	Malignant neoplasms of ill-defined, secondary and unspecified sites (C76-C80)	13 534	2,8
18	Other acute lower respiratory infections (J20-J22)	11 531	2,4
19	Malignant neoplasms of digestive organs (C15-C26)	10 709	2,2
20	Intestinal infectious diseases (A00-A09)	10 523	2,2

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

The ten leading underlying natural causes of death shown in Table 4.5 are presented in Table 4.16 to show the breakdown of the number of deaths by whether the cause of death was reported as the immediate or contributing cause and selected as the underlying cause or whether it was selected only as the underlying cause but not mentioned as a cause on the form. The latter means the deceased died from a consequence of a disease without that specific disease being mentioned as an immediate or contributing cause.

Within each category, the counts of underlying causes and 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 mentioned in the 2023 deaths. For example, 27 615 deaths had *diabetes mellitus* as the underlying cause and mentioned on the form as a contributing cause of death while 77 deaths had diabetes mellitus as an underlying cause but was not mentioned as a contributing cause on the form. This gives a total of 27 692 times *diabetes mellitus* was mentioned on the forms. In eight of the ten leading causes of death, 99% of the time where a contributing cause was mentioned, it was selected as the underlying cause of death as well. The exception was on *Hypertensive diseases* and *Human immunodeficiency virus [HIV] disease*. *Human immunodeficiency virus [HIV] disease* was mentioned as an underlying cause a total of 19 153 times however, in 85,8% of those cases, it was not mentioned anywhere on the death notification form as a contributing cause of death.

Table 4.16 - Number and percentage (%) of deaths selected as underlying or reported as immediate or contributing causes of death, 2023

Causes of death (ICD-10)	Underlying rank	Number of deaths			Percentage (%) of any mention		
		Underlying and contributing cause	Underlying and not contributing cause	Total	Underlying and contributing cause	Underlying and not contributing cause	Total
Diabetes mellitus (E10-E14)	1	27 615	77	**27 692**	99,7	0,3	**100,0**
Cerebrovascular diseases (I60-I69)	2	25 431	99	**25 530**	99,6	0,4	**100,0**
Hypertensive diseases (I10-I15)	3	16 023	8 995	**25 018**	64,0	36,0	**100,0**
Tuberculosis (A15-A19)	4	20 131	63	**20 194**	99,7	0,3	**100,0**
Human immunodeficiency virus [HIV] disease (B20-B24)	5	2 717	16 436	**19 153**	14,2	85,8	**100,0**
Influenza and pneumonia (J09-J18)	6	14 461	11	**14 472**	99,9	0,1	**100,0**
Other forms of heart disease (I30-I52)	7	14 005	15	**14 020**	99,9	0,1	**100,0**
Ischaemic heart diseases (I20-I25)	8	13 363	61	**13 424**	99,5	0,5	**100,0**
Other viral diseases (B25-B34)	9	13 215	18	**13 233**	99,9	0,1	**100,0**
Chronic lower respiratory diseases (J40-J47)	10	11 927	11	**11 938**	99,9	0,1	**100,0**

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

5. Conclusion

Registering causes of death is essential for producing reliable mortality statistics, which inform public health policies, enable disease surveillance, and guide resource allocation. Accurate data helps authorities identify leading causes of mortality (e.g. communicable diseases, noncommunicable, or injuries) and track trends over time. This allows for effective health planning, such as allocating resources for specific diseases or targeting interventions to reduce premature deaths. Where this information is well captured, it provides timely information for implementation of interventions during health emergencies as well as preventive and curative measures within the health system. The underlying causes of deaths provide data on leading causes of deaths in the population based on civil registration.

This statistical release provides information on mortality and causes of death for deaths that occurred and were registered in South Africa in 2023 as well as previous years that were registered with Department of Home Affairs (DHA) in 2023. The COVID-19 pandemic caused an unprecedented impact on health systems globally and so was the case with South Africa. After a protracted decline in mortality over several years, increases of 17,0% between 2020 and 2021 were observed. Deaths that occurred in 2022 as well as 2023 show a reversal of the pattern seen in 2020 and 2021. The number of deaths decreased from 623 135 in 2021 to 492 417 in 2022 and further declined to 476 751 in 2023. This was driven by the decline in COVID deaths from 36 046 in 2021 to a low of 985 in 2023.

In 2023, the proportion of male to female deaths was almost the same from infancy until age group 15–19 after which there were more male deaths that female deaths. This trend reversed from age group 70 years and older where there were more female deaths than male deaths. The highest number of deaths amongst females were aged 70-74 (9,2%) and for males it was those aged 65-69 at 8,9%. The lowest number was observed among those aged 5–9 for both sexes 5–9 at 0,6% for males and 0,5% for females. The distribution of deaths by population group show that Black Africans had the highest percentage of deaths followed by the white population group and then the coloured population group however, computation of race specific death rates show that white population group had the highest death rate followed by the coloured and then Indian/Asian population group.

Geographic distribution of deaths by province of death occurrence show that the highest proportion of deaths (21,2%) occurred in Gauteng province, followed by KwaZulu-Natal (18,3%) and then Eastern Cape (16,4%). The lowest proportion of deaths occurred in Northern Cape (3,2%). The highest proportion of deaths occurred hospitals (38,7%) followed by deaths occurring at home (24,4%).

The pattern on the distribution of deaths by natural or non-natural causes continued to be the same as the one observed in 2022 where there was an increase in the proportion of non-natural deaths as compared to the previous years. Though the proportion of non-natural deaths decreased slightly between 2022 and 2023 however both years remain high compared to earlier years. Another noticeable trend was the continued increase in deaths due to non-communicable diseases after a slight decline observed in 2021. Almost 60% of deaths were due to non-communicable diseases in 2023, while communicable disease accounted for just 27% of deaths.

The top three causes of death in 2023 were due to non-communicable diseases, with diabetes accounting for 5,8% deaths, followed by cerebrovascular diseases and hypertensive diseases at 5,4% and 5,2% respectively. COVID-19 remained out of the ten leading causes just as in 2022. Tuberculosis was the leading cause of death amongst males accounting for 5,1 male deaths while diabetes mellitus was the leading cause of death amongst females responsible for 7,5% deaths. The most notable change in rank was the movement of COVID-19 out of the ten leading causes. For both sexes, six of the 10 leading causes of death were non-communicable diseases. The cause of death on the top 10 leading causes of death for males but not for females was chronic lower respiratory diseases.

Looking at leading causes of deaths by broad age groups, influenza and pneumonia were in the top ten leading causes of death for all age groups except for age group 45–64. This is the first time influenza and pneumonia were not common for all broad age groups in recent years. Tuberculosis and other forms of heart diseases were part of the ten underlying causes of death in all age groups, except for infants, while intestinal infectious diseases were among the ten leading underlying causes of death for children, accounting for 5,3% of infant deaths and 5,0% of deaths to children aged 1–14 years. The leading underlying cause of death for infants (age 0) was respiratory and cardiovascular disorders specific to the perinatal period, responsible for 15,9% of deaths. Influenza and pneumonia were the leading underlying cause of death for age group 1–14 years, accounting for 6,0% of deaths while human immunodeficiency virus (HIV), and tuberculosis was the leading underlying cause of death among those aged 15–44 accounting for 8,3% deaths. For age group 45–64 years, diabetes mellitus was the leading cause of death responsible for 7,0% deaths and finally hypertensive diseases were the leading cause of death for those aged 65 years and older at 9,2%.

Diabetes mellitus, chronic lower respiratory diseases, hypertensive diseases, tuberculosis and other forms of heart diseases were in the top 10 leading causes of death for all the provinces. Diabetes mellitus was the leading cause of death in five of the nine provinces. It was not the leading cause of death in Eastern Cape, Northern Cape, Free State and North West. The leading cause of death in Northern Cape, Free State and North West was hypertensive diseases while it was Tuberculosis in Eastern Cape. Malignant neoplasms of respiratory and intrathoracic organs and intestinal infectious diseases were in the top ten leading causes of death in Westen Cape and Limpopo respectively. Ischaemic heart diseases were in the top ten leading causes of death in all provinces except Western Cape.

As expected, males had a higher proportion of deaths attributed to non-natural causes at 19,6% compared to females at 5,9%. Males aged 15–29 years remained the group most burdened by deaths due to non-natural causes (59,1%) compared to females (24,1%) in the same age group. Transport accidents had a higher proportion of female deaths at 6,7% compared to males at 5,3%. Complications of medical and surgical care were highest amongst females. About 15% of deaths were due to complications of medical and surgical care for females aged 65 years and older, compared to just above 11,5% of deaths for males in the same age group.

Although improvements have been made in the reporting of causes of death and completeness of death registration, further improvements are needed in the reduction of unspecified and unknown cases. This applies for both the natural as well as non-natural causes. For natural causes, symptoms and signs not elsewhere classified accounted for 18,8% deaths that occurred in 2023. High levels of ill-defined causes make it

impossible to monitor, evaluate, or compare disease trends over time. It also creates a distorted view of the health status of a population, often masking the true, leading causes of death.

6. References

AbouZahr C, de Savigny D (2017). Towards universal civil registration and vital statistics systems: the time is now. Lancet. 2017;390(10091):1407-1408.

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

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

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

Institute for Health Metrics and Evaluation. https://www.healthdata.org/. Accessed 01 August 2025

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

National Planning Commission (2012) National Development Plan 2030: Our future – make it work. Pretoria: The Presidency, Republic of South Africa. Available at: https://www.gov.za/documents/national-development-plan-2030-our-future-make-it-work

Peters G.B. (2016). Civil Registration and Vital Statistics as a Tool to Improve Public Management. Department of Political Science, University of Pittsburgh. Institutions for Development Sector. Downloaded from https://publications.iadb.org/english/document on 04/08/2025.

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

Stats SA (Statistics South Africa). (2020). Mid-year population estimates, 2020 (P0302). Pretoria: Statistics South Africa.

Stats SA (Statistics South Africa). (2021). Mortality and causes of death in South Africa, 2018: findings from death notification form (P0309.3). Pretoria: Statistics South Africa

Stats SA (Statistics South Africa). (2023). Mortality and causes of death in South Africa, 2019: findings from death notification form (P0309.3). Pretoria: Statistics South Africa.

Statistics South Africa (2024) Statistics Amendment Act, 2024 (Act No. 29 of 2024). Pretoria: Government Printer. Available at: https://www.statssa.gov.za/?page_id=18225

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

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

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

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

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

WHO (World Health Organization). (2019) ICD-11 Implementation or Transition Guide. Geneva.

World health statistics overview 2019: monitoring health for the SDGs, sustainable development goals. Geneva: World Health Organization; 2019.

“World Bank; World Health Organization. 2014. Global Civil Registration and Vital Statistics: A Scaling Up Investment Plan 2015-2024. © http://hdl.handle.net/10986/18962 License: CC BY 3.0 IGO.”

Appendices

Appendix A: Glossary

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

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

COVID-19 a highly contagious infectious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2)

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

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

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

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

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

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

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

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

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

Population group: according to the Population Registration Act Repeal Act (Act No. 114 of 1991), the South African Population Register no longer stores information regarding the population group of individuals whose details are on the register. This Repeal Act is still in place; therefore, the population group used in this report

refers to the population group as identified by the certifying physician/professional nurse on the death notification form and is only used for statistical purposes.
Stillbirth is the intra-uterine death of a foetus of at least 26 weeks of gestation that showed no sign of life after complete birth.

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

Appendix B: Death Notification form

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

Appendix C: Assessment of the quality of data

The gold standard in mortality statistics is to have real-time data on the number of deaths and corresponding medically certified causes of death (WHO, 2013). However, the information needs to be of the highest quality in terms of completeness of death registration, timeliness of death registration and publication of death statistics, and accuracy of information provided embedded in deaths with correct information on characteristics of deceased, accurate causes of deaths and lower proportions of deaths with ill-defined or unspecified causes of deaths. In this regard, data quality confrontation has to be undertaken for improvements in mortality statistics to be realised. Improvements in quality of mortality data are essential in more effective policies and programmes concerning people's health and quality of life with the aim of leaving no one behind.

Completeness of death registration
The proportion of all deaths that occurred in a specific period and were covered by the civil registration of a country (referred to as completeness) was estimated at 96% for adult deaths (15 years and older) for the intercensal period 2011–2016. For the 2023 adult death registration, the 96% completeness level is adopted. The completeness level for male adult deaths was estimated at 97% whereas for females it was slightly lower at 95%. Revised estimates will be provided after the analysis of Census 2022 data. The methods used to derive the level of completeness for the intercensal period 2011-2016 were the Generalised Growth Balance (GGB) as proposed by Hill (1987), and the Synthetic Extinct Generation method (SEG) by Bennett and Horiuchi (1981, 1984). For the underlying assumptions and method followed, refer to Stats SA (2014). The extent of completeness of child deaths registration (0–14 years) is less certain, given the lack of completeness level estimates.

Timeliness of death registration

In South Africa, the Regulations for the Registration of Births and Deaths published in 2014 mandate that a death must be registered within 72 hours (3 days) of occurrence (Republic of South Africa, 2014). Timeliness in death registration indicates that all deaths are registered within the legally stipulated time allowance (UN, 2014). In general, timeliness of death registration refers to the interval between the date of death occurrence and the date it was registered with the Department of Home Affairs (DHA).

The number of days it took for deaths to be registered at DHA offices in 2023 is shown in Table C.1. For deaths that occurred in 2023, 15,9% were registered within a day of occurrence, 29,5% a day after the death had occurred, 17,9% on the second day after death occurrence and 13,0% on the third day. The proportion of deaths which were registered within the 72 hours (3 days) stipulated by the regulations was 76,4%.

Table C.1 – Distribution of deaths by the number of days it took to register the death, 2023

Number of days	Number of deaths	Percentage	Cumulative percentage
Within a day of death	75 815	15,9	15,9
1 day	140 766	29,5	45,4
2 days	85 401	17,9	63,4
3 days	62 018	13,0	76,4
4 days	37 804	7,9	84,3
5 days	22 172	4,7	89,0
6 days	12 967	2,7	91,7
7-13 days	23 720	5,0	96,7
14-20 days	3 723	0,8	97,4
21-30 days	2 343	0,5	97,9
31-364 days	9 527	2,0	99,9
1 year+	349	0,1	100,0
Total	**476 605**	**100,0**	

Timeliness of publication of statistics

The United Nations (UN) recommends that a one-year time lapse from the end of the reference period to publication and dissemination of death statistics from the civil registration be maintained in order for vital statistics to be considered timely (UN, 2014). This statistical release fell short of this recommendation as it is published 72 months from the time the event occurred. Since civil registration deaths are continuously updated, the proportion of total registrations that are delayed or late provide an estimate of under-reporting in previous time periods.

Table C.2 shows the number of deaths published in the 2023 mortality and causes of death report for the years 2002 to 2022, and late or delayed death registrations processed during the 2025/2026 processing year. The table shows that 12 552 additional death notification forms for deaths that occurred between 2002 and 2022 were processed during the 2025/2026 processing phase. Majority (6 266) of the additional forms were for deaths that occurred in 2022. The distribution of deaths for 2002 to 2022 updated for late or delayed death notification forms is provided in Appendix D.

Table C.2 – Number of deaths published in 2022 publication and late registrations processed during the 2025/2026 processing phase by year of death, 2002–2022

Year of death	Number of deaths published in 2022 publication	Additional forms received in the 2025/2026 processing phase	Total number of deaths
2002	504 073	36	**504 109**
2003	559 108	53	**559 161**
2004	579 040	29	**579 069**
2005	600 215	21	**600 236**
2006	614 764	18	**614 782**
2007	606 782	31	**606 813**
2008	598 830	26	**598 856**
2009	584 625	27	**584 652**
2010	553 367	28	**553 395**
2011	520 774	38	**520 812**
2012	498 217	61	**498 278**
2013	479 715	90	**479 805**
2014	480 071	95	**480 166**
2015	478 098	122	**478 220**
2016	474 920	368	**475 288**
2017	469 688	435	**470 123**
2018	471 388	261	**471 649**
2019	467 601	582	**468 183**
2020	515 891	1 229	**517 120**
2021	620 396	2 736	**623 132**
2022	486 133	6 266	**492 399**
Total	**11 163 696**	**12 552**	**11 176 248**

Data confrontation

In previous years, as part of data quality assessment, data confrontation was undertaken with other data sources, primarily, mortality data in the National Population Register data (NPR). However, in the mortality and causes of death 2023 statistical release this process was not undertaken as was case in previous publications. This was attributable to Stats SA not having access to mortality data captured in the national population register at DHA. As a result, the section dealing with comparison of the two datasets in order to assess coherency is excluded. It is envisaged that in forthcoming publications the assessment will be performed.

Quality of causes of death information

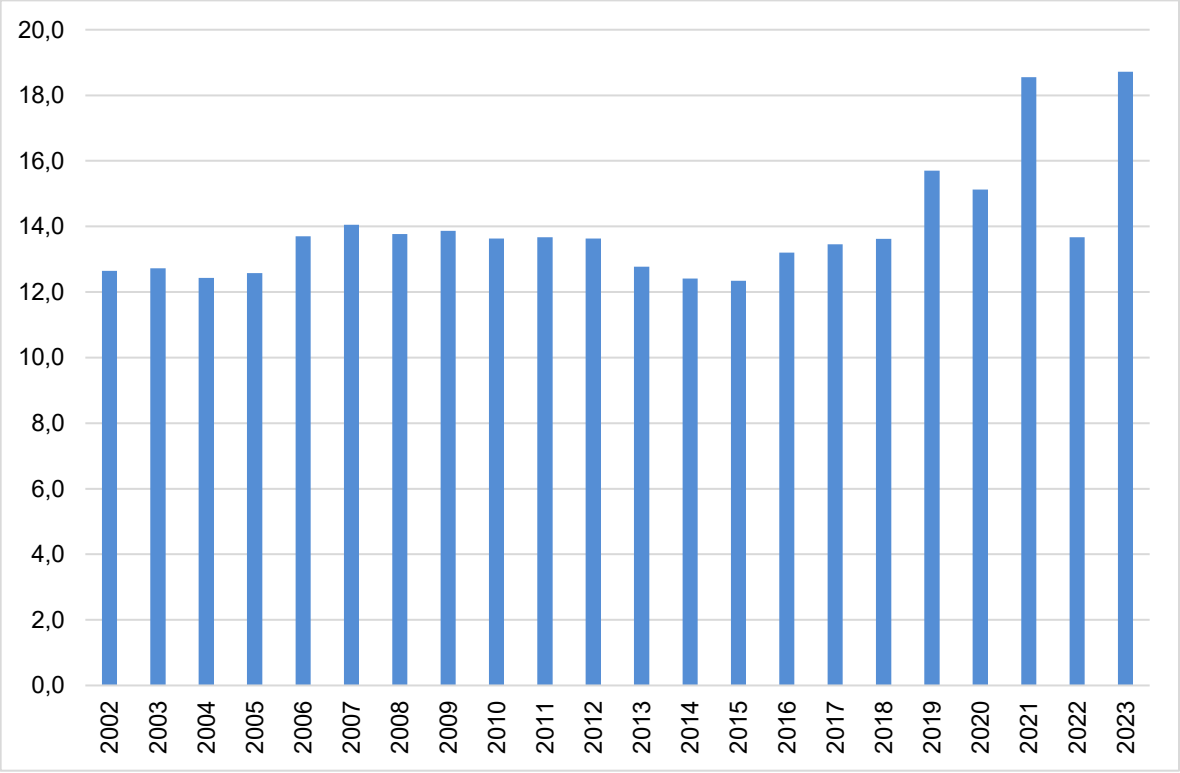
Quality information on the underlying causes of death is critical to guide decision-making in public health. As such, it is important that this information is assessed from data processing through to the data analysis phase in order to measure the extent to which the data may be used for health policies and programmes. The ill-defined causes, typically classified under ICD-10 codes R00–R99, refer to diagnoses that are vague, non-specific and have insufficient details to be of value in promoting preventive and curative health interventions. Although ill-defined causes still help to provide the overall mortality due to broad diseases, they fail to provide a concise picture as they poorly attribute the underlying cause and therefore, widely regarded as an indicator of poor data quality.

Ill-defined causes of death, typically classified under ICD-10 codes R00–R99, remain a persistent challenge in mortality and cause-of-death data in South Africa. This group is widely regarded as an indicator of poor data quality. In South Africa, these causes ranged from 12,7% to 13,6% from 2002 to 2018. From 2019–2023, an

increase in proportion of deaths due to this group, from 15,7% to 18,7%, was observed. The 2019 increase coincides with the implementation of a WHO recommendation to code deaths due to cardiac arrest (I46) as ill-specified (R99), marginally inflating the number of ill-specified causes. The decline in 2022 followed by a renewed increase in 2023, is noted and warrants further investigation.

Further analysis of the 2023 data, albeit preliminary, attributes the majority of ill-defined causes of death to certification based on medical practitioners and nurse's opinion, accounting for 64,5% combined. It further highlights the continued impact of home deaths on quality, contributing the largest proportion of ill-defined causes of death with 32,561 cases (36%). However, certification of home deaths is largely based on medical practitioners and nurses' opinions (16,840). Hospital deaths contributed 5,999 cases (7%), where medical practitioner and nurses' opinion (5,070) was the predominant method. While transition to DHA-1663 marks progress in standardizing certification, the continued usage of DHA-1680 weakens the reliability of cause of death statistics. In 2023, of approximately 22,000 deaths recorded on DHA-1680 forms, 19,800 (88.0%) were classified as ill-defined causes of death.

Figure C 2 – Percentage distribution of deaths assigned to symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified and year of death 2002–2023*



*Data for 2002–2022 have been updated with late registrations/delayed death notification forms processed in 2025/2026.

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Assessment framework for death registration data

This statistical release adopts the assessment framework proposed by Mahapatra et al. (2007) to assess the quality of the 2023 death registration data received from the civil registration system. The framework proposed two categories, namely general vital statistics and causes-of-death statistics. Both categories measure quality in terms of level of accuracy, relevance, comparability, timeliness and accessibility.

The results of the Mahapatra et al. 2007 assessment framework for the 2023 mortality and causes of death data from the South African civil registration system are shown in Table C.3 and Table C.4. Table C.3 shows the percentage of key variables with unknown or unspecified information and forms part of the accuracy criteria in the assessment framework for the year 2023. The unknown cases refer to cases where more than one option was selected on the form or where the information could not be classified according to specified categories while unspecified cases refer to missing data for that variable.

Table C.3 shows that 0,2% of deaths had unknown/unspecified sex, while 0,0% of deaths had unknown/unspecified age of deceased and province of death occurrence. Province of usual residence was 0,8% in 2023. The information on province of birth occurrence decreased from 27,1% in 2022 to 23,6% in 2023. Missing information for marital status remained relatively the same at 21,9% in 2022 and 21,8% in 2023.

The results further indicate that 14,4% of the deaths had unknown or unspecified information on population group increasing from 11,4% in 2022. This variable has been improving in the recent years considering that over the period 1997 to 2014 missing information on this variable was constant at around 25%.

In this release, no analyses were undertaken for all variables where almost half or more of the deaths had unknown or unspecified information. In 2023, education level (53,0%); industry (89,1%) and pregnancy status (78,1%) remained the variables with almost half or more of the information classified as unknown or unspecified. However, a dataset containing unit records on mortality and causes of death 2023, which include variables not covered in this release due to poor reporting, is available on request from Stats SA.

Table C.3 – Percentage (%) of deaths classified as unknown/unspecified for selected variables, 2023

Variables	Applicable group	Percentage (%) unknown or unspecified
Sex	All	0,2
Age	All	0,0
Province of death occurrence	All	0,0
Province of usual residence of deceased	All	0,8
Province of birth	All	23,6
Population group	All	14,4
Place or institution of death occurrence	All	28,8
Method used to ascertain cause of death	All	2,7
Marital Status	All	21,8
Smoking status	Aged 12 and older	33,9
Education	Aged 5 and older	53,0
Occupation	Aged 15 and older	2,8
Industry	Aged 15 and older (economically active)	89,1
Pregnancy status	Females aged 10–55	78,1

In addition, for the accuracy dimension, Table C.4 indicates that 96% of adult (15 years and older) death registrations were reported for the 2011–2016 intercensal period. The table also shows that the relevance and comparability of general vital statistics is regarded as complete.

The table further shows that for causes-of-death-statistics, 43,3% of the 2023 deaths occurred within a health-care facility. This approximates the percentage of deaths whose causes are more likely to be detailed enough for the underlying cause to be derived. Cause-of-death-statistics are regarded as completely relevant as they are based on routine tabulations by sex and five-year age groups as well as the fact that tabulation of cause-of-death information is provided for the nine provinces and 52 district municipalities in the country. The tools used in coding causes of death (International Classification of Diseases 10th revision) for 2023, and the variables analysed were similar to those in previous years. Therefore, comparability over time and with other countries is also regarded as complete.

Table C.4 – Assessment of the 2023 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	96%	Proportion of deaths that occurred in healthcare facilities	43,3%
Missing data	See Appendix C - Table C3	Proportion of deaths assigned to symptoms and signs of disease not elsewhere classified	18,7%
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	Coding causes of death using the 10th revision at 3/4-digit level
Timeliness			
Processing time	10 months		
Mean time from end of reference period to publication	27 months		
Accessibility			
Media - number of formats in which data are released	Data portal on website		
Metadata	Data portal on the website and available on request		
Availability of user service	Email: info@statssa.gov.za / Tel: 012 310 8600 / Fax (012) 310 8500 / 8495		