2018

Vital Statistics

Zambia

Republic of Zambia

2018 VITAL STATISTICS REPORT

Zambia Statistics Agency
Lusaka, Zambia

Ministry of Home Affairs
Lusaka, Zambia

December 2020

The Global Fund
To Fight AIDS, Tuberculosis and Malaria

Bloomberg Philanthropies DATA FOR HEALTH INITIATIVE

Abstract

Mortality Surveillance is important for recording trends and information pertaining to the disease burden and causes of death obtaining in the country's population over a given time period. Health authorities would then use this information to design effective health policies and other interventions to address the occurring mortality and cause of death in the population.

The Civil Registration Authority and the Zambia Statistics Agency working with other stakeholders have scaled up efforts aimed at reforming and improving Civil Registration and Vital Statistics in the country. The aim is to strengthen the CRVS system, to enable it generate accurate and timely vital statistics and causes of death information on a continuous basis. Vital statistics are important because of their contribution to effective evidence based planning and monitoring of health interventions. This report showcases progress made towards reforming and improving CRVS in the Country. It contains vital statistics and causes of death information based on registered vital events.

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PREFACE

Vital Statistics are key to facilitating good governance, national planning and monitoring of development programmes and health interventions in the country. It is therefore important for countries to have a reliable and continuous source of vital statistics. One of such sources of vital statistics is a well-developed Civil Registration and Vital Statistics (CRVS) system that is continuous, permanent, compulsory and universal. For Zambia, like the case may be for other African countries, the country has been implementing strategies aimed at reforming and improving the CRVS system. These efforts among others, have resulted in the routine generation and publication of the annual vital statistics reports from the year 2016. This Vital Statistics Report therefore, covers vital events that were registered and certified in the year 2018 with specific focus on: births, deaths and causes of death information. Annual production and publication of vital statistics reports is expected to respond to a number of vital statistical needs for the country, including monitoring the implementation of the Seventh National Development Plan (7NDP) and other plans that will follow, Vision 2030 and the Global Sustainable Development Goals (SDGs) among other developmental initiatives.

It is important to note that, the country is still faced with a number of challenges affecting the compilation of vital statistics. at present Key among them is the low coverage and completeness rate for vital events registration which limits the compilation and usage of vital statistics based on civil registration data. However, the implementation of the 2015 – 2019 National Strategic Action Plan (NSAP) for reforming and improving the CRVS system has created a conducive platform for achieving increased coverage through collaborative efforts with CRVS stakeholders and cooperating partners. This vital statistics report, therefore, depicts how much progress has been made in this respect and also highlights the shortcomings that need to be addressed in order to achieve a comprehensive Civil Registration and Vital Statistics System in the country.

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ACKNOWLEDGEMENTS

The Department of National Registration, Passport and Citizenship in the Ministry of Home Affairs appreciates the invaluable contribution and participation of all stakeholders in the current reform efforts of CRVS system. Civil registration is so multifaceted that without collaboration, no meaningful results can be recorded, especially in a system that is in its infancy of development. Further, compilation, analysis and presentation of the statistics that emanate from civil registration can only be a result of a well coordinated team effort in the CRVS system.

Special thanks therefore to the following Ministries, institutions and partners: the Ministry of Health, Ministry of National Development Planning, Ministry of Local Government and Housing, Ministry of Community Development and Social Services, and Ministry of Chiefs and Traditional Affairs among others, for their contribution to the registration of births, deaths and the compilation of information on causes of death. The collaboration with the Zambia Statistics Agency (formerly Central Statistical Office [CSO]) has been key in the production of vital statistics from registered vital events. I also acknowledge the support by Cooperating Partners, particularly the United Nations Economic Commission for Africa (UNECA) for driving the CRVS agenda and compelling UN member countries to generate Vital Statistics reports regardless of the level of completeness. Further, financial support from Global Fund and the Bloomberg Data for Health Initiative (BD4HI) towards data processing and writing of the report is highly appreciated.

Lastly, I would also like to recognize the tireless efforts and commitment of the Civil Registration and Vital Statistics technical working group members towards the improvement of civil registration in the Country.

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EXECUTIVE SUMMARY

The African Union (AU) and the United Nations Economic Commission for Africa (UNECA) working through the Africa Programme for Accelerated Improvement of Civil Registration and Vital Statistics (APAI - CRVS) have been encouraging AU Member Countries to start producing Vital Statistics from Civil Registration. In Zambia, production of Vital Statistics is spearheaded by the CRVS Technical Working Group (TWG) chaired by the Zambia Statistics Agency (formerly Central Statistical Office) and the Department of National Registration, Passport and Citizenship (DNRPC), which serves as the TWG secretariat. Global Fund (GF) and Bloomberg Data for Health Initiative (BD4HI) provided financial and technical support for developing the vital statistics report.

This vital statistics report highlights births and deaths captured in the civil registration system for 2018. The report indicates an overall coverage rate for Birth Registration of 19.3 percent and 11.3 percent for birth certification. Death registration completeness rate stood at 19.6 percent while death certification was at 14 percent. With regards to data from regions, birth certification rates were 17.6 percent for urban and 7.0 percent for rural areas. The rates for death certification were 33.3 percent for urban areas and 0.5 percent for rural areas. The data suggests that both birth and death registration is higher in urban areas than in rural areas.

The report further shows that there were more female children born than males in 2018 with a national sex ratio of 98. The Crude Death Rate (CDR) was 1.8 deaths per thousand midyear population which is far below the 2010 census figure of 13.0 and 12.3 in the 2015-16 SAVVY Report. This suggests low completeness of death registration in the civil registration system. Rural areas recorded a much lower crude death rate (0.1 percent) compared to urban areas (4.1 percent).

ABBREVIATIONS AND ACRONYMS

BD4HI	Bloomberg Data for Health Initiative
CR	Civil Registration
CRC	Convention on the Rights of a Child
CRVS	Civil Registration and Vital Statistics
CSO	Central Statistical Office
DHS	Demographic Health Survey
DNRPC	Department of National Registration, Passport and Citizenship
ICD	International Classification of Diseases
ICT	Information and Communication Technology
IHME	Institute for Health Metrics and Evaluation
INRIS	Integrated National Registration Information System
MCDMCH	Ministry of Community Development, Mother and Child Health
MDD	Management Development Division
MDG	Millennium Development Goals
MoH	Ministry of Health
MoHA	Ministry of Home Affairs
MoLGH	Ministry of Local Government and Housing
MoYS	Ministry of Youth and Sport
NSAP	National Strategic Action Plan
NGO	Non-Governmental Organization
RSA	Republic of South Africa
SAVVY	Sample Vital Registration with Verbal Autopsy
UNCRC	United Nations Convention on the Rights of the Child
UNICEF	United Nations International Children Education Fund
UNDP	United Nations Development Fund
UNFPA	United Nations Population Fund
UNHCR	United Nations High Commission for Refugees
USAID	United States Agency for International Development
VA	Verbal Autopsy
VS	Vital Statistics
ZDHS	Zambia Demographic Health Survey
ZLDC	Zambia Law Development Commission
SDGs	Sustainable Development Goals

Definitions

The United Nations defines **Civil Registration** as the continuous, permanent, compulsory and universal recording of the occurrence and characteristics of vital events pertaining to the population in accordance with legal requirements of each country (UNSD, 2014).

A **vital statistics system** is defined as a "process of compiling, processing, evaluating, presenting and disseminating civil registration information in statistical form" (UNSD, 2014).

Vital Events: these are events concerning life and death of individuals, as well as their family and civil status (UNSD, 2014). These vital events are live births, adoptions, legitimations, recognitions, deaths and foetal deaths, marriages, divorces and separations.

Crude Death Rate: is the number of deaths per thousand midyear population

Coverage: means the extent to which the registration system applies to the entire population - a basic requirement within a vital statistics system is that each vital event occurring within the geographical area covered by the system be registered once and only once for legal purposes and reported for statistical purposes within the time period stipulated by law.

Completeness: means the extent to which all births and deaths are reported where the registration system applies, whereas the coverage refers to the extent to which the registration system applies to the entire population.

Notification: is the provision of all the information on and all the characteristics of an event that is to be legally registered by the local registrar or legal agent (UNSD, 2014).

Registration: A vital event is registered when a local civil registrar makes an entry of the occurrence and characteristics of the vital event in the appropriate register (World Bank Group, 2014).

Live Birth: is "the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy, which, after such separation, breathes or shows any other evidence of life, such as beating of the heart, pulsation of the umbilical cord or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached; each product of such a birth is considered live born (all live-born infants should be registered and counted as such, irrespective of gestational age or whether alive or dead at the time of registration, and if they die at any time following birth, they should also be registered and counted as deaths), (UN, 2014).

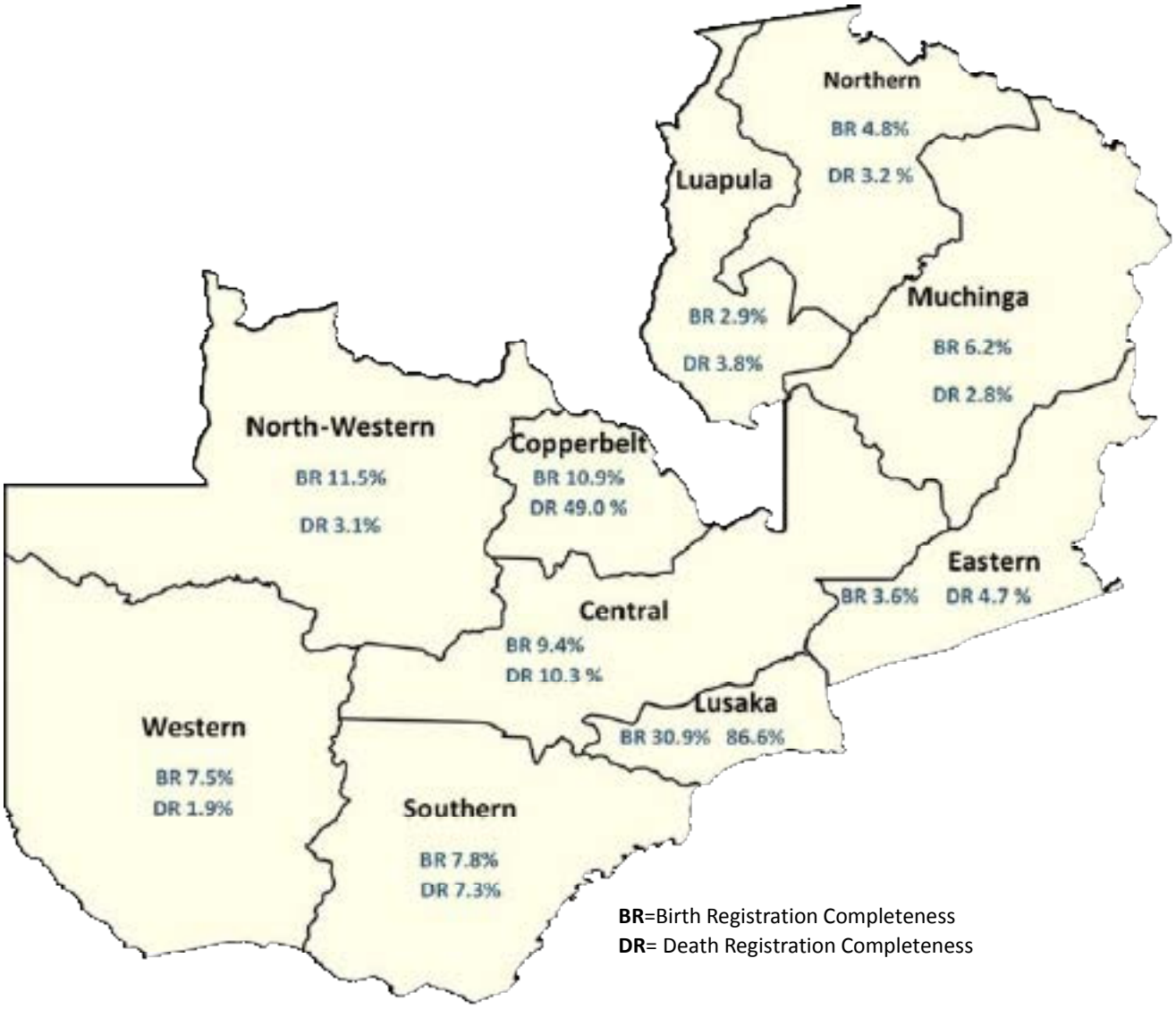
Causes of Death: All diseases, morbid conditions or injuries that either resulted in or contributed to death, and the circumstances of the accident or violence that produced any such injuries.

Underlying Cause of Death: The disease or injury which initiated the train of morbid events leading direct to death, or circumstances of the accident or violence which produced the fatal injury, (UN, 2014).

Death: The permanent disappearance of all evidence of life at any time after the occurrence of live birth, i.e., the postnatal cessation of vital functions without capability of resuscitation. This definition excludes foetal deaths.

Verbal Autopsy: A method of determining individuals' causes of death and cause-specific mortality fractions in populations without a complete vital registration system.

Birth and Death Registration Coverage, Zambia 2018



BR=Birth Registration Completeness
DR= Death Registration Completeness

Chapter 1: Introduction and Background

This report is as a result of continued efforts to generate vital statistics from Civil Registration. It is the third one after the 2016 and 2017 reports and the country will continue to do so whilst improving the coverage for vital events registration. This is inevitable as Zambia should have a wide range of sources of data for measuring progress towards the realisation of Sustainable Development Goals (SDG), Vision 2030 and the Seventh National Development Plan (7NDP). This report presents vital statistics from civil registration on births, deaths and on causes of death in the year 2018.

The report describes the evolution of civil registration in Zambia, including strides for improvement. It presents the characteristics of births and deaths and a section on mortality and causes of death information based on certified hospital deaths. In order to complement mortality statistics, the report also gives an insight into causes of death information from verbal autopsy. It is hoped that the triangulation of the sources of these statistics will provide more useful statistics for users.

In Zambia, Civil Registration is the mandate of the Department of National Registration, Passport and Citizenship (DNRPC) whereas the production of Vital Statistics is the mandate of the Zambia Statistics Agency (ZAMSTATS). The agency is also mandated to develop and coordinate an integrated National Statistical System coupled with promoting the usage of statistics. The 2018 Vital Statistics report is a product of the collaborative efforts of the two institutions.

The need for a functional CRVS system is inevitable not only for generating vital statistics required for measuring the performance towards achieving SDGs and aspirations in the 7NDP, and successive Development Plans and other health interventions especially those related to reproductive, maternal, child and adolescent health. The causes of death derived from a functional civil registration system are key in monitoring progress made in reducing deaths attributable to HIV and AIDS, Tuberculosis, Malaria, Non-communicable diseases and external causes such as Road traffic accidents, which according to reports produced so far rank among the leading ones.

Certain assumptions were used to code a number of key variables such as region, occupation, relationship and education level to make the data analysis meaningful. For example, to be able to analyse region, place of birth was used. The limitations observed will inform efforts aimed at improving the civil registration system.

Chapter 2: Civil Registration and Vital Statistics System

2. 1 The Civil Registration and Vital Statistics System

The Civil Registration (CR) system records vital events such as births, deaths, marriages, divorces and foetal deaths which are processed and archived in the civil registration database. The Vital Statistical (VS) System compiles and analyses data from the civil registration system for publication in statistical form. The CRVS system in Zambia captures vital events through an administrative system in line with the relevant pieces of legislation. However, the system does not capture or record all UN recommended vital events but only captures; births, deaths and causes of death information into the electronic CRVS system. The system also captures statutory marriages and adoptions using a manual process.

2.2 History

Civil Registration in Zambia dates back to the early 1900's during the Colonial government. Registration of vital events was however, designed to capture events occurring among the whites and those of Asian origin. It left out the registration of vital events occurring among the indigenous population. The status quo continued even after the Country become independent in 1964. However, in 1973, the Births and Deaths Registration Act Cap 51 of the Laws of Zambia was enacted. The law provides for compulsory registration of every birth and every death that occurs within the boundaries of Zambia without distinction to origin or descent. The change in law was done to remove the inequality promoted by the previous law and answer to the need for the indigenous children to be registered. It ensured that no child should be disfranchised on account of legislative provisions.

In line with the guidance from UNECA, Zambia conducted a comprehensive CRVS assessment in 2013, and subsequently formulated a five year CRVS strategic action plan 2015-2019 aimed at improving and impacting CRVS in the country. Plans are underway to develop the succeeding plan which will focus on building on the successes achieved and lessons learnt during the implementation of first CRVS plan

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2.3 Legal and Administrative Issues

The legal basis on which vital events are registered in the country is provided in the following pieces of legislation:

i. Birth and Death Registration Act Cap. 51,
ii. Marriage Act Cap. 50,
iii. Adoption Act Cap 54.

Vital event registration in Zambia is the mandate of the Department of National Registration, Passport and Citizenship. The Department works in collaboration with other key players in the civil registration system. These players include; Ministry of Health who issue birth records and medical certificates of cause of death which documents form the basis for birth and death registration respectively. Local Authorities participate in the registration process of statutory marriages through solemnization and issuance of certificates of marriages. Further, the Department of Social Welfare in the Ministry of Community Development and Social Services facilitates the adoption process to the point when adoption orders are granted by the Courts of Law. While the Judiciary administer divorces, these are not registered by the Civil Registration System.

Birth and Death registration is compulsory as provided for under the Births and Deaths Registration Act Chapter 51 of the Laws of Zambia. The Law further provides for the time frames within which these events must be registered as shown in the table below.

Table 1: Birth and Death Registration Time lines

#	Registration Timeliness	Birth	Death
1	Current Registration	1 Month	1 Month
2	Late registration	2-12 Months	2-3 Months
3	Delayed registration	After 12 months	After three months

An event registered within the required registration time frame is free. However, the Law provides for penalties for late and delayed registration. The DNRPC does not enforce these penalties in order to encourage reporting and registration of births and deaths.

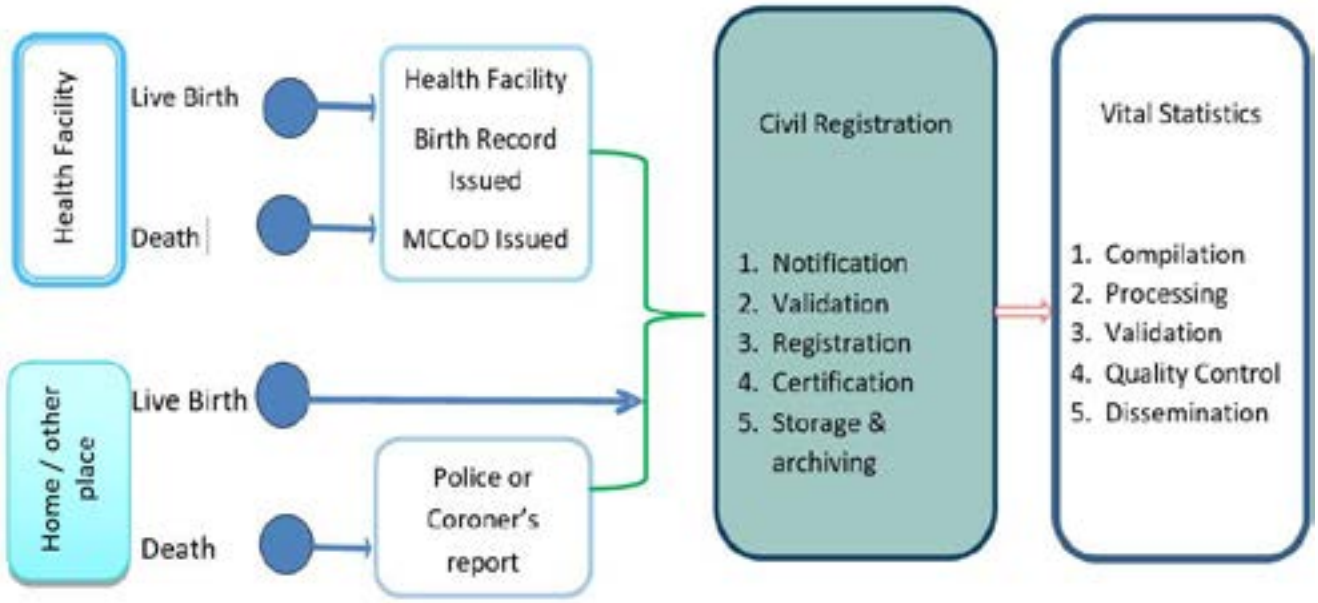
2.4 Registrars and Registration Officers

In addition to the civil registrars who are appointed in line with the civil registration institutional structure, the Minister of Home Affairs by law may appoint any person to act as a Registrar of birth and death. The minister makes these appointments according to the provisions in the Birth and Death registration Act which allows for the establishment of registration centres as well as appointment of Registrars

2.5 Institutional arrangements for civil registration and vital statistics

Vital Events are registered at various points in the civil registration process. Upon notification of a target vital event by means of a completed notification form, validation of the information commences and thereafter entered in the civil registration system and later analysed and published.

Figure 2.1 **Simplified Process Flow for Registered Vital Events**



To produce vital statistics, data from the civil registration system is electronically shared with Zambia Statistics Agency for data processing, analysis and publication.

2.5.1 Transfer of records and information flow in the civil registration system

Birth and Death notification takes place in the District of occurrence as stipulated in the Birth and Death Registration Act (Cap 51) of 1973. Once the birth is notified, the District Registrar validates and enters the notification details in the District register. The notification forms are then entered in the electronic civil register for certification at provincial level. Certificates are then sent to the registration districts for issuance to the respective applicants.

The civil registration authority is collaborating with the Ministry of Health to complete birth notifications at the point of occurrence (selected health facilities) since 84 percent of all births occur in health facilities.

2.5.2 Systems for checking, editing and validating data

Data quality is ensured during the process of registration by completing all mandatory fields at the point of notification. The District registrar then validates the information at the point of registration. Further quality checks are done during data processing in the civil registration system.

2.5.3 Organization of vital statistics production and dissemination

Vital events registration is the administrative process of data collection for the primary purpose of registration and certification. The vital events data collected are then de-identified for onward transmission to the statistical authority for analysis and publication.

Chapter 3: Data Quality and Completeness

3.1 Birth Registration and Completeness

The importance of birth registration and its contribution to the production of usable vital statistics cannot be over emphasised. It is therefore imperative for countries to ensure higher level of completeness. According to World Bank (2014), there are three milestones countries are required to report on, these are notification, registration and certification. Of the three milestones, Zambia is only able to report on the registration and certification. The completeness of birth registration and certification is shown in Tables 3.1 to 3.3.

Overall, birth registration completeness was 19.3 percent. At provincial level, Lusaka had the highest at 38.9 percent, followed by North Western with 27.1 percent. Southern was third with 25.7 percent. Eastern had the lowest birth registration completeness at 4.2 percent and Central was second from bottom with 8.2 percent

Table 3.1: Birth Registration Completeness by Province, Zambia 2018

Province	Estimated Annual Births	Number of Births Registered	Completeness Rate
Zambia	696,305	134,557	19.3
Central	68,413	5586	8.2
Copperbelt	93,540	15,054	16.1
Eastern	86,211	3652	4.2
Luapula	55,035	8251	15.0
Lusaka	120,542	46,886	38.9
Muchinga	46,680	4772	10.2
Northern	63,693	13,555	21.3
North Western	38,351	10,402	27.1
Southern	83,220	21,417	25.7
Western	40,620	4,979	12.3

Source: Department of National Registration Passport and Citizenship (DNRPC) 2018 Administrative Data

Birth certification refers to the number of people issued with a birth certificate after their birth is registered. In the year 2018, the country recorded 11.3 percent certification as shown in Table 3.2. In Central Province, the number of births certified was higher than number of births registered for 2018. This was as a result of processing the backlog:

Table 3.2: Birth Certification by Province, Zambia 2018.

Province	Estimated Annual Births	Number of Births Certified	Percentage of Completeness
Zambia	696,305	78,549	11.3
Rural	416,388	29,325	7.0
Urban	279,917	49,224	17.6
Central	68,413	6,426	9.4
Copperbelt	93,540	10,205	10.9
Eastern	86,211	3,107	3.6
Luapula	55,035	1,572	2.9
Lusaka	120,542	37,292	30.9
Muchinga	46,680	2,913	6.2
Northern	63,693	3,068	4.8
North Western	38,351	4,413	11.5
Southern	83,220	6,493	7.8
Western	40,620	3,060	7.5

Source: Department of National Registration Passport and Citizenship (DNRPC) 2018 Administrative Data

Table 3.3 shows the trend of birth certification completeness by province for the years 2013 to 2018. Despite the gradual increase in overall births certified over the period 2013-2018, the completeness has been below 20 percent. The top three provinces that recorded the high increases in completeness in 2018 were Lusaka with 30.9 percent followed by North Western with 11.5 percent and Copperbelt with 10.9 percent. The province with the lowest certification completeness was Luapula with 2.9 percent.

Table 3.3: Birth Certification by Province, Zambia 2013-2018

Province	2013	2014	2015	2016	2017	2018
Zambia	1.3	7.1	9.3	14.7	15.3	11.3
Central	3.2	2.4	5.9	27.7	20.5	9.4
Copperbelt	0.4	5.2	14.6	16.4	17.9	10.9
Eastern	3.0	13.1	6.4	8.9	26.6	3.6
Luapula	1.1	14	8.9	16.8	7.0	2.9
Lusaka	0.3	5.5	20.2	28.8	24.3	30.9
Muchinga	0.2	16.3	7.5	4.8	3.1	6.2
Northern	0.2	1.4	1.5	3.4	4.6	4.8
North Western	0.4	3.4	3.9	4.2	11.4	11.5
Southern	1.3	6.1	3.6	8.7	10.9	7.8
Western	3.0	5.4	9.4	8.5	5.6	7.5

Source: Department of National Registration Passport and Citizenship (DNRPC) 2013-18 Administrative Data

3.2 Death Registration Completeness

Table 3.4 shows 19.6 percent death registration completeness at national level for the year 2018. At provincial level, Lusaka Province had the highest death registration completeness at 86.6 percent, followed by Copperbelt Province at 49.0 percent. Western province had the lowest death registration completeness at 1.9 percent.

Table 3.4: Death Registration Completeness by Province, Zambia 2018.

Province	Estimated Annual Deaths	Number of Deaths Registered	Completeness Rate
Zambia	208,288	40,791	19.6
Central	28,784	2,962	10.3
Copperbelt	30,522	14,967	49.0
Eastern	19,183	899	4.7
Luapula	13,366	502	3.8
Lusaka	19,887	17,232	86.6
Muchinga	9,365	258	2.8
Northern	17,794	557	3.1
Northwestern	20,817	657	3.2
Southern	33,945	2,476	7.3
Western	14,625	281	1.9

Source: Department of National Registration Passport and Citizenship (DNRPC) 2018 Administrative Data

Table 3.5 shows the death certification completeness at national and provincial levels for the year 2018. Overall, death certification completeness was at 14 percent. It was much higher in urban areas at 33.3 percent as opposed to rural areas 0.5 percent. At provincial level, Lusaka Province had the highest death certification completeness at 85.7 percent, followed by Copperbelt Province at 25.8 percent. Eastern, Northern and Western provinces had the lowest death certification completeness below 1 percent.

Table 3.5: Death Certification Completeness Rate by Province, Zambia 2018.

Province	Estimated Annual Deaths	Number of Deaths Certified	Percentage of Completeness
Total	**208,288**	**29,085**	**14.0**
Rural	122,616	553	0.5
Urban	85,672	28,532	33.3
Central	28,784	2,648	9.2
Copperbelt	30,522	7,875	25.8
Eastern	19,183	112	0.6
Luapula	13,366	277	2.1
Lusaka	19,887	17,045	85.7
Muchinga	9,365	89	1.0
Northern	17,794	16	0.1
Northwestern	20,817	334	1.6
Southern	33,945	684	2.0
Western	14,625	5	0.0

Source: Department of National Registration Passport and Citizenship (DNRPC) 2018 Civil Registration System

Chapter 4: Births

This chapter presents data on certified births. It presents information on the number of births certified in the electronic civil registration database from 2013 to 2018. There is an under-representation for the first two years as a large number of births registered in those years were not entered in the electronic civil registration system. Registration was done using the paper-based system.

4.1 Certified Live Births by Province

Table 4.1 presents the trend in the number of certified births by province. Since 2013, there has been an increase in the number of certified births in the country. The number of births certified however, dropped in 2018 to 78,549 thereby decreasing the number of births certified by 25.1 percent from 2017. The biggest increase in the number of certified births was recorded in Lusaka Province from 313 in 2013 to 37,292 in 2018. Luapula Province recorded the lowest increase from 582 in 2013 to 1,572 in 2018.

Table 4.1 Total Number of Live Births Certified by Province, 2013-2017

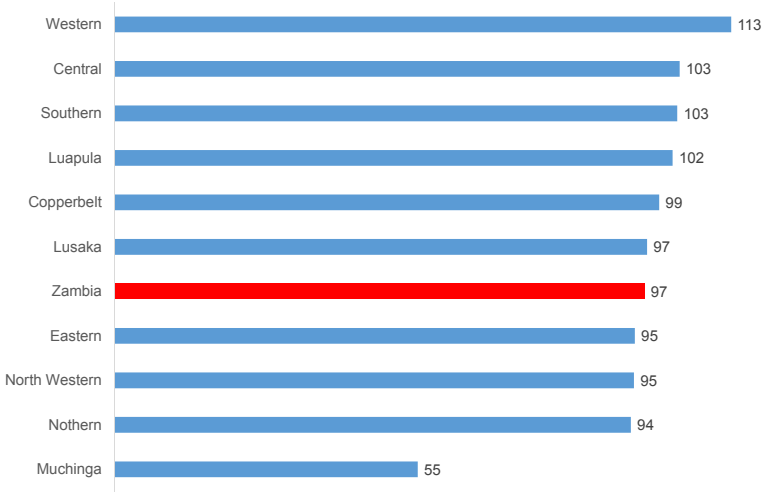
	Year					
Province	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
Zambia	8,111	45,661	60,973	98,448	104,816	78,549
Central	2,030	1,562	3,808	18,280	13,748	6,426
Copperbelt	363	4,499	12,846	14,775	16,438	10,205
Eastern	2,361	10,593	5,290	7,459	22,597	3,107
Luapula	582	7,364	4,754	9,043	3,807	1,572
Lusaka	313	5,883	22,195	32,726	28,462	37,292
Muchinga	63	6,737	3,179	2,109	1,385	2,913
Northern	107	823	875	2,078	2,864	3,068
North Western	140	1,255	1,423	1,550	4,308	4,413
Southern	973	4,801	2,851	7,025	8,964	6,493
Western	1,179	2,144	3,752	3,403	2,243	3,060

Source: Department of National Registration Passport and Citizenship (DNRPC) 2013-2018 Civil Registration System

4.2 Sex Ratio at Birth

Sex ratio at birth is defined as the number of males per hundred females born in a specified period of time. Figure 4.1 shows the sex ratio at birth by province. The national sex ratio at birth based on certified births in 2018 was 97, suggesting that there were more female children certified as opposed to males. These results are not consistent with the census and other surveys results which have consistently shown a higher sex ratio at birth. At provincial level, Western had the highest sex ratio of certified births at 113, whereas Muchinga had the lowest at 55. The inconsistence is as a result of low birth registration completeness.

***Figure 4.1:* Sex Ratio at Birth among Certified Births by Province, Zambia 2018**

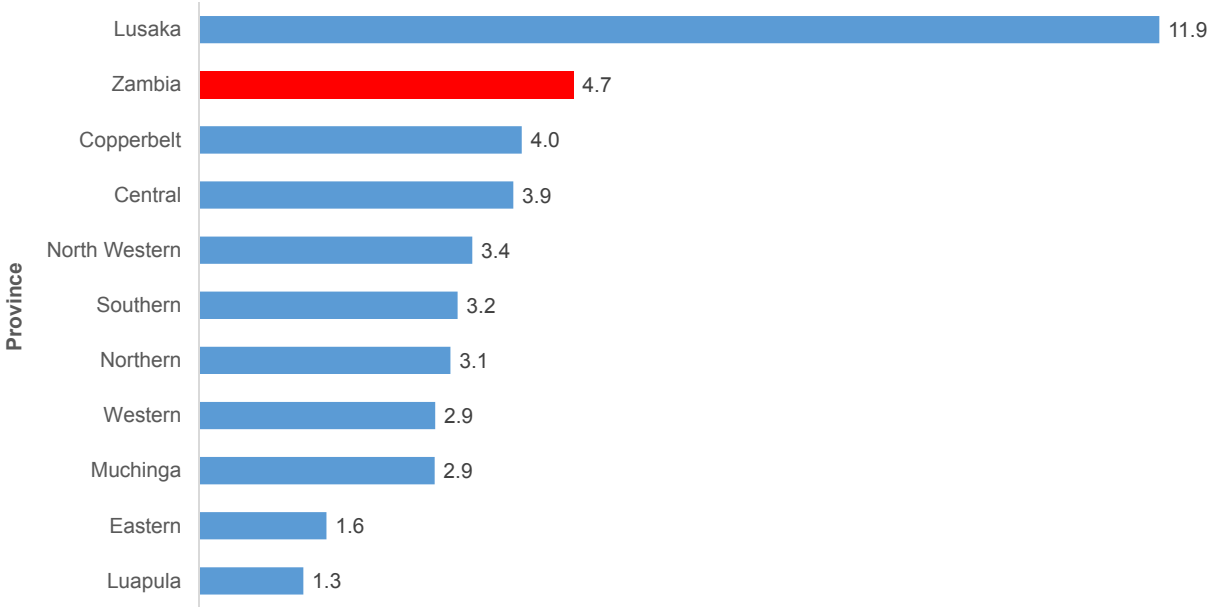


Source: Department of National Registration Passport and Citizenship (DNRPC) 2018 Administrative Data

4.3. Crude Birth Rate

Crude Birth Rate (CBR) is the number of births in a given year per thousand midyear population in that given year. To derive the CBR, certified births in 2018 were divided by the projected midyear population for the same year. Figure 4.2 shows that CBRs derived from the civil registration were very low, implying that the country's fertility rate was low which is not the case. This could be attributed mainly to the low birth registration completeness. According to the Zambia Demographic and Health Survey (ZDHS 2018), the crude birth rate was 35.3 births per thousand mid-year population. Hence a National crude birth rate of 4.7 in 2018 suggests very low birth registration completeness as opposed to low birth rate. The pattern is similar at provincial level.

***Figure 4.2:* Crude Birth Rate by Province, Zambia 2018**



Source: Department of National Registration Passport and Citizenship (DNRPC) 2013-18 Administrative Data.

The number and percentage of certified births by sex and province is shown in Table 4.3. Overall, more female children (50.8 percent) were certified than male (49.2 percent).

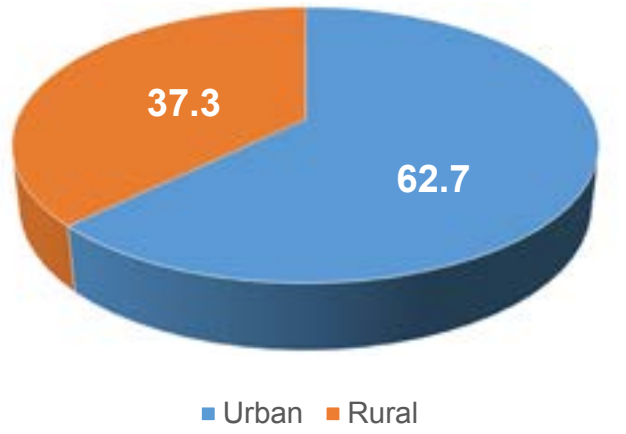
Table 4.3: Number and Percent of Certified Births by Province and Sex, Zambia 2018.

Province	Sex					
	Total		Male		Female	
	Number of Births	Percent	Number of Births	Percent	Number of Births	Percent
Total	78,549	100	38,610	49.2	39,939	50.8
Central	6,426	100	3,262	50.8	3,164	49.2
Copperbelt	10,205	100	5,086	49.8	5,119	50.2
Eastern	3,107	100	1,513	48.7	1,594	51.3
Luapula	1,572	100	793	50.4	779	49.6
Lusaka	37,292	100	18,375	49.3	18,917	50.7
Muchinga	2,913	100	1,037	35.6	1,876	64.4
Northern	3,068	100	1,488	48.5	1,580	51.5
North Western	4,413	100	2,147	48.7	2,266	51.3
Southern	6,493	100	3,289	50.7	3,204	49.3
Western	3,060	100	1,620	52.9	1,440	47.1

Source: Department of National Registration Passport and Citizenship (DNRPC) 2018 Administrative Data

The percentage distribution of certified births by region is shown in figure 4.2.1. There were more certified births that occurred in urban areas (62.7%) than those that occurred in rural areas (37.3%)..

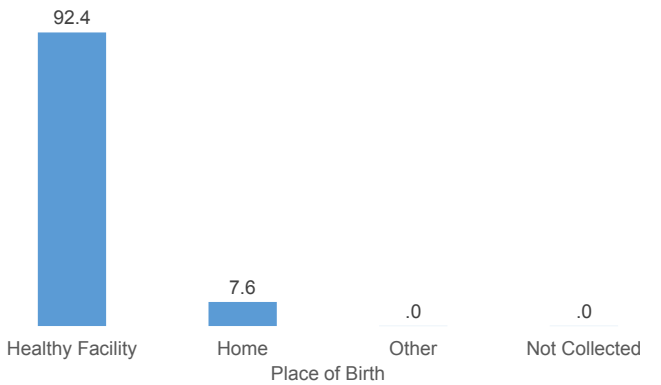
***Figure 4.2.1* Percent Distribution of Certified Births by Region, Zambia 2018**



4.4 Place of Birth

The percentages of births by place of occurrence are shown in Figure 4.3. About nine out of ten births that were certified in 2018 occurred at health facilities. About one in ten of the births certified took place at home representing 7.6 percent, and less than 1 percent occurred from any other place.

***Figure 4.3:* Percent of Births by Place of Occurrence, Zambia 2018**

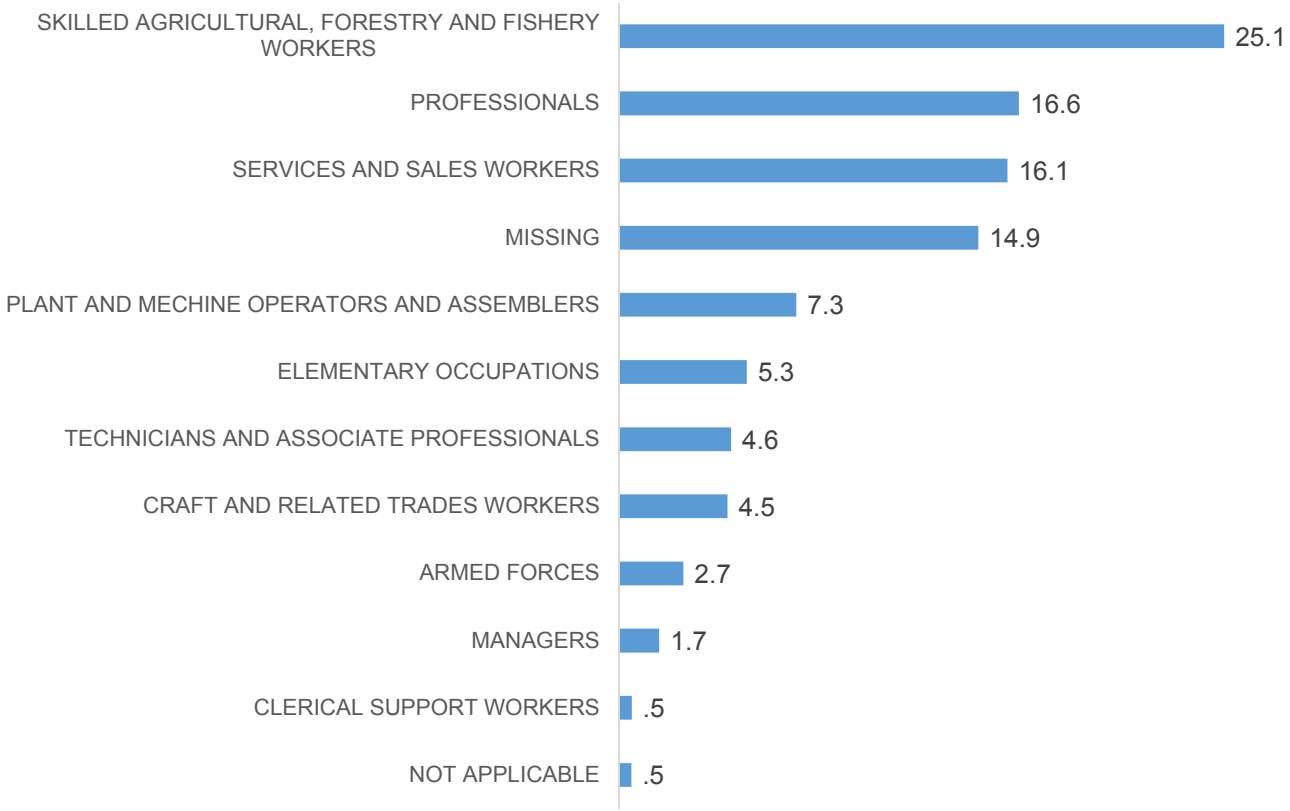


Source: Department of National Registration Passport and Citizenship (DNRPC) 2018 Administrative Data

4.5 Birth certified by Occupation of Child's Father

Information on certified births by occupation of the child's father is presented in Figure 4.4. The highest percentage of certified births were among children whose fathers were engaged in skilled agriculture, forestry and fishery representing 25.1 percent. These were followed by those whose fathers were Professional workers representing 16.6 percent. The least registered births were among children whose fathers were Clerical support workers representing 0.5 percent.

***Figure 4.4:* Birth Certification by Occupation of Father, Zambia 2018**



Chapter 5: Deaths

This chapter presents data on the certified deaths. As discussed in chapter three, a total of 40,791 deaths were registered in 2018 of which, a total of 29,085 were certified representing 71.3 percent.

Table 5.1 shows the number of certified deaths by age and sex in 2018. Out of the 29,085 deaths certified, 16,756 were for males and 12,329 females. A total of 398 deaths certified had missing data in the age variable

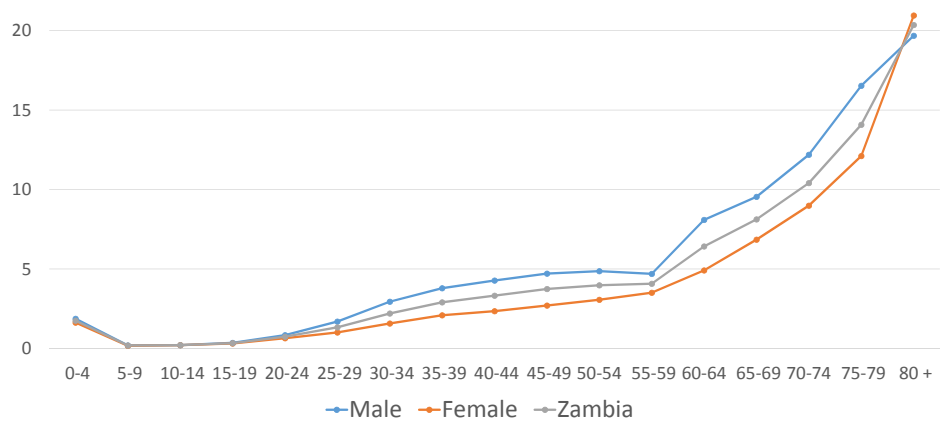
Table 5.1 Certified Deaths by Age and Sex, Zambia 2018

Age Group	Male	Female	Total	Percent
Less than 1 year	2,015	1,759	3,774	13.0
1-4 years	847	690	1,537	5.3
5-9 years	263	224	487	1.7
10-14 years	236	225	461	1.6
15-19 years	330	294	624	2.1
20-24 years	676	540	1,216	4.2
25-29 years	1,084	687	1,771	6.1
30-34 years	1,422	888	2,310	7.9
35-39 years	1,609	963	2,572	8.8
40-44 years	1,515	793	2,308	7.9
45-49 years	1,301	683	1,984	6.8
50-54 years	921	561	1,482	5.1
55-59 years	684	541	1,225	4.2
60-64 years	797	540	1,337	4.6
65-69 years	662	532	1,194	4.1
70-74 years	638	601	1,239	4.3
75-79 years	565	519	1,084	3.7
80-84 years	412	490	902	3.1
85+ years	537	643	1,180	4.1
Missing	242	156	398	1.4
Total	**16,756**	**12,329**	**29,085**	**100.0**

5.1. Age specific death rate

The age specific death rates are shown in Figure 5.1. The figure shows that there are more deaths recorded per 1000 population in the ages 55 years and older. The age specific deaths rates are lowest in the ages 5 to 14. The rates, rise in the ages 20-54, slightly reduces between ages 55 to 59 and rises again from 60 years and older. The pattern is similar for both males and females.

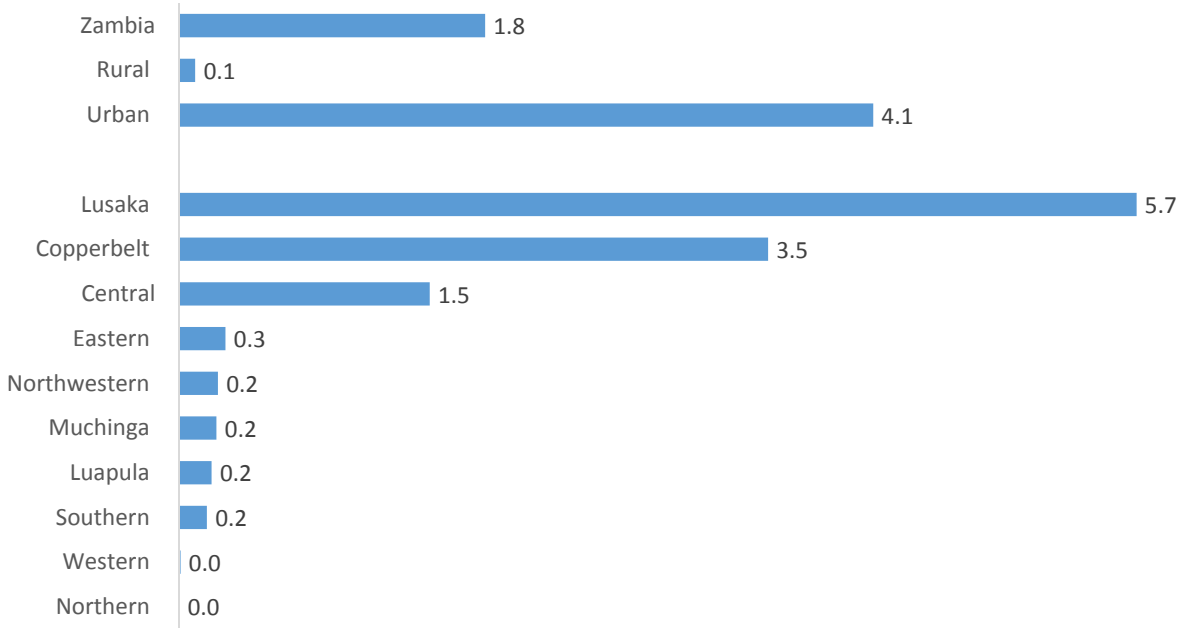
***Figure 5.1:* Age Specific Death Rates by Sex, Zambia 2018**



5.2 Crude Death Rate

Figure 5.2 shows the Crude Death Rate (CDR) by province and rural/urban for the year 2018. The figure shows that CDR was 1.8 deaths per thousand midyear population which is far below the 2010 census figure of 13.0 and 12.3 in the 2015-16 SAVVY Report. This suggests low completeness of death registration in the civil registration system. Rural areas recorded a much lower crude death rate (0.1) compared to urban areas (4.1). At provincial level, Lusaka had the highest crude death rate at 5.7 and Northern and Western had the lowest with less than one.

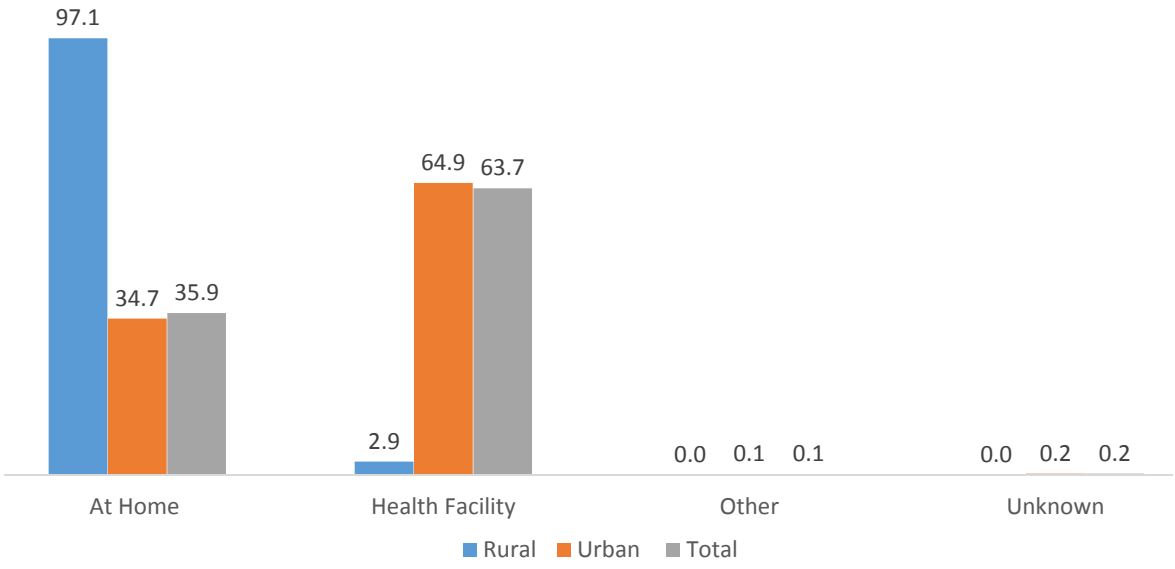
***Figure 5.2:* Crude Death Rates by Province and Region, Zambia 2018**



5.3 Place of Death

Figure 5.3 shows that there are more certified deaths occurring at Health facilities (63.7 %) than those occurring out of health facilities (35.9%). Among deaths occurring out of health facilities in urban areas, 34.7 percent occur at home, 0.1 percent occur in other places and 0.2 percent at unknown places. The highest proportion of deaths in rural areas occurred at home (97.1 %) and 2.9 percent occurred from health facilities.

***Figure 5.3:* Certified deaths, Place of Death and Region, Zambia 2018**



Chapter 6: Causes of Death

This chapter presents causes of death information from the civil registration system for the year 2018. Figure 6.1 shows the percentage distribution of natural and non-natural causes by age group. The data shows that with advancing age, there is a reduction in the number of deaths due to non-natural causes. Inversely, there is an upward trend in natural causes of death as the age advances.

Figure 6.1 **Percentage distribution of natural and non-natural causes of death, Zambia 2018**

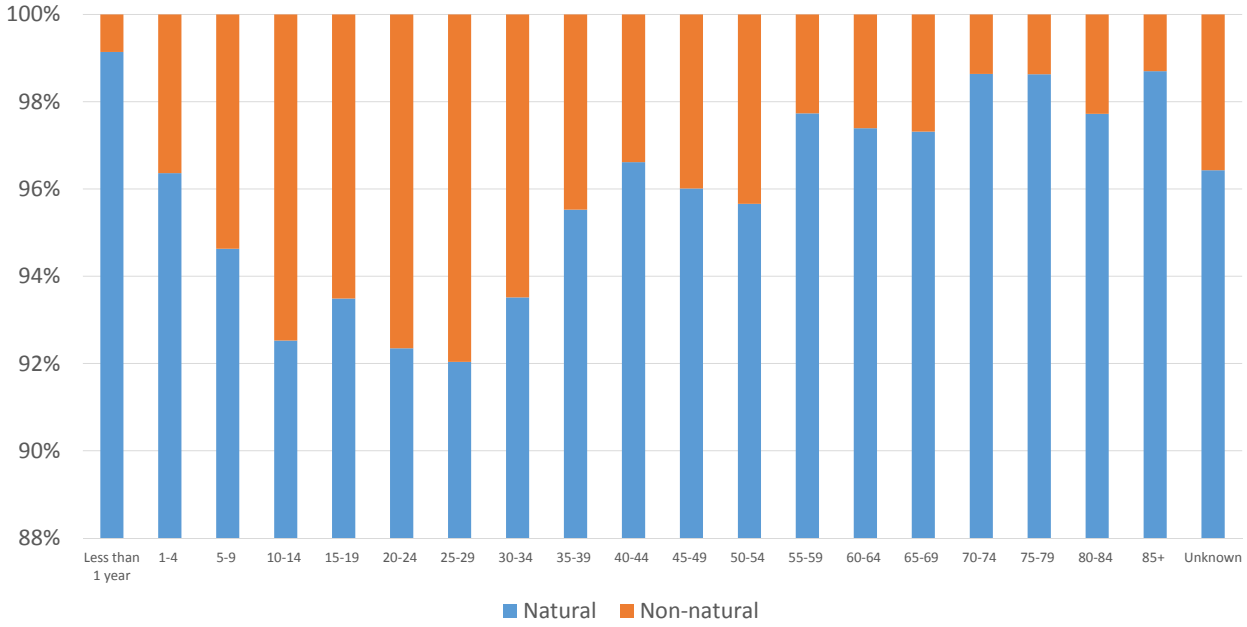


Figure 6.2 shows the top ten non-natural causes of death in 2018. The figure shows that, 'Accidental exposure to other and unspecified factors' at 26.5 percent was the leading cause of death in this category, followed by 'Other land transport accidents' at 20.2 percent. The least cause of non-natural causes of death was 'Exposure to inanimate mechanical forces' at 1.3 percent. All other non-natural causes of death in 2018 accounted for 5.0 percent of the deaths. For details refer to Appendix 1..

Figure 6.2: **Percentage Distribution of Top Ten All Non-Natural Causes of Death, Zambia 2018**

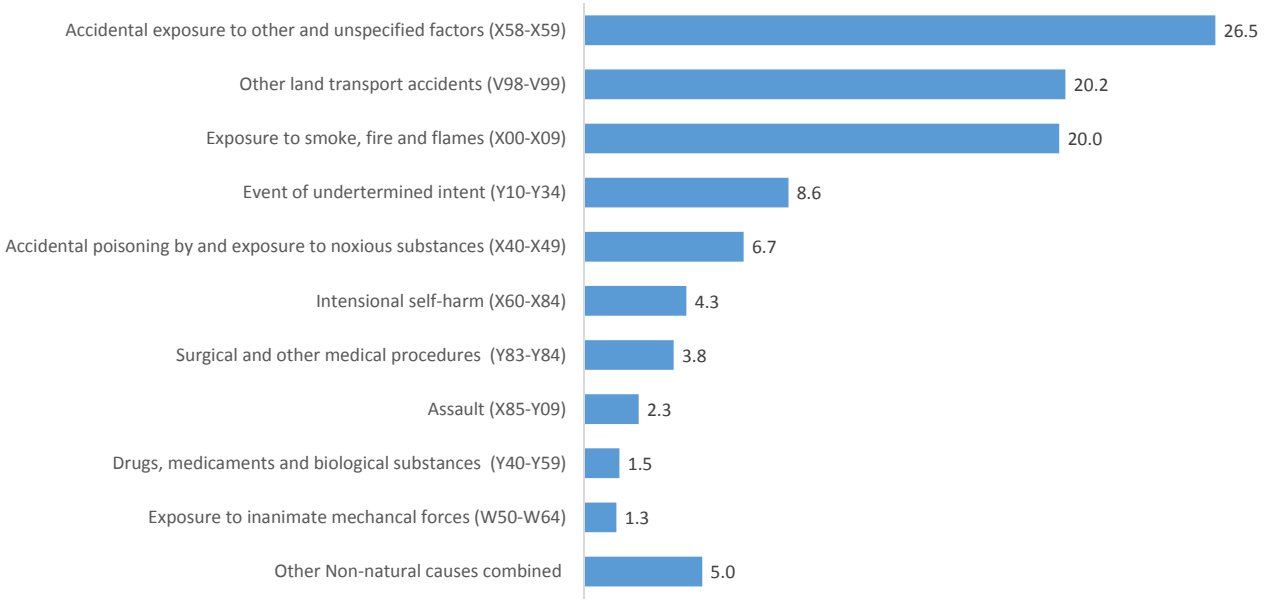


Figure 6.3 shows the top ten non-natural causes of death in rural areas in 2018. 'Other land transport accidents' and 'Accidental drowning and submersion' accounted for 50 percent each.

***Figure 6.3:* Percentage Distribution of Non-Natural Causes of Death, Zambia Rural 2018**

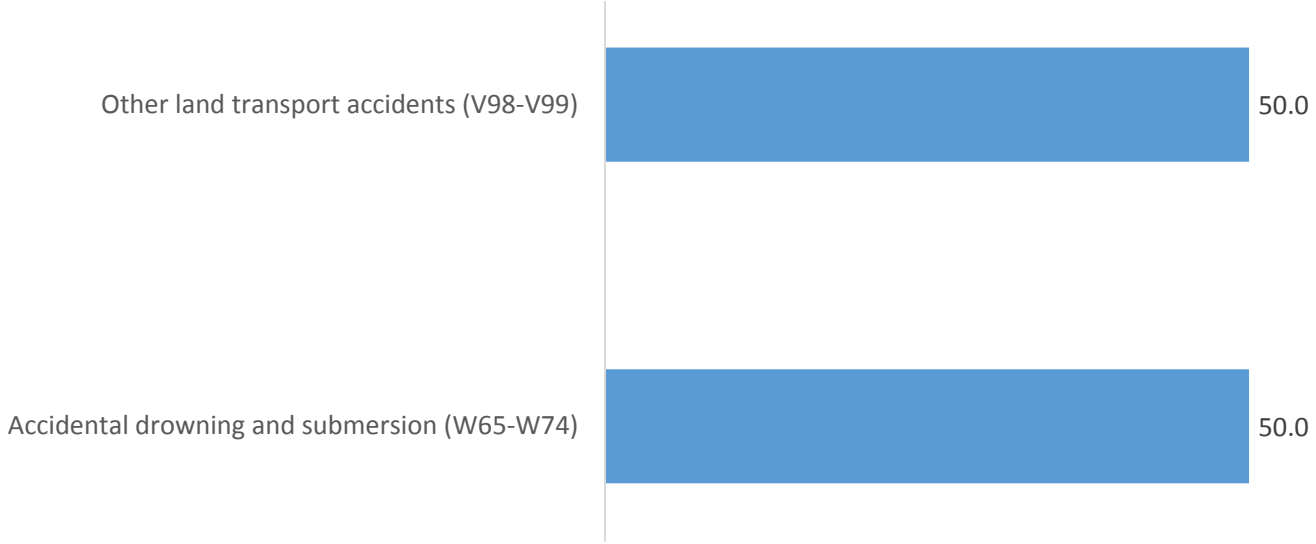
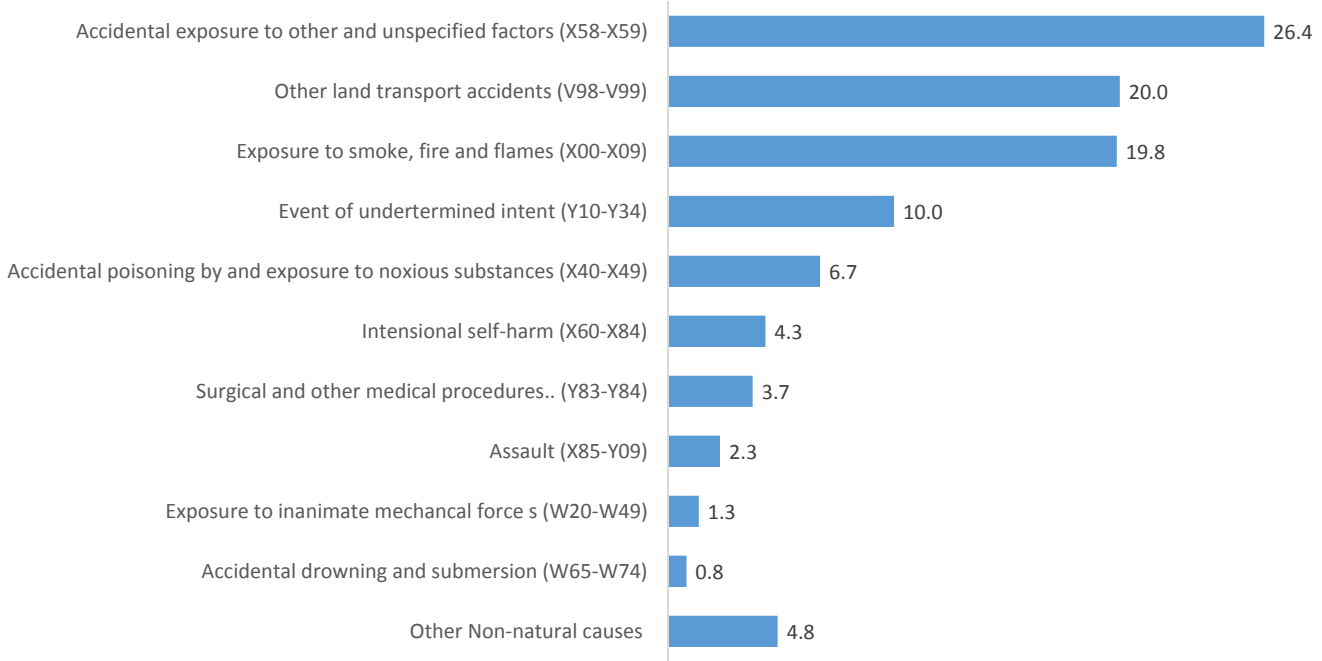


Figure 6.4 shows the top ten non-natural causes of death for urban areas in 2018. 'Accidental exposure to other and unspecified factors' was the leading cause of non-natural deaths at 26.4 percent in urban areas. The second leading cause of death was 'Other land transport accidents' at 20 percent. 'Accidental drowning and submersion' was least at 0.8 percent. The remaining non-natural causes of death combined were 4.8 percent. For detailed information, refer to appendix 1..

***Figure 6.4:* Percentage Distribution of Top Ten Non-Natural Causes of Death, Zambia Urban 2018**



The top ten leading natural causes of death in Zambia for the year 2018 are shown in Figure 6.5. The leading natural cause of death was 'HIV' at 19.9 percent. 'Cerebrovascular disease' was the second leading cause of death at 4.5 percent, followed by 'Tuberculosis' third at 3.6 percent. 'Ill-defined and unknown causes of mortality' accounted for 18.3 percent of natural causes of death while all other natural causes of death combined accounted for 33.4 percent.

Figure 6.5: Percentage Distribution of Top Ten Natural Causes of Death, Zambia 2018

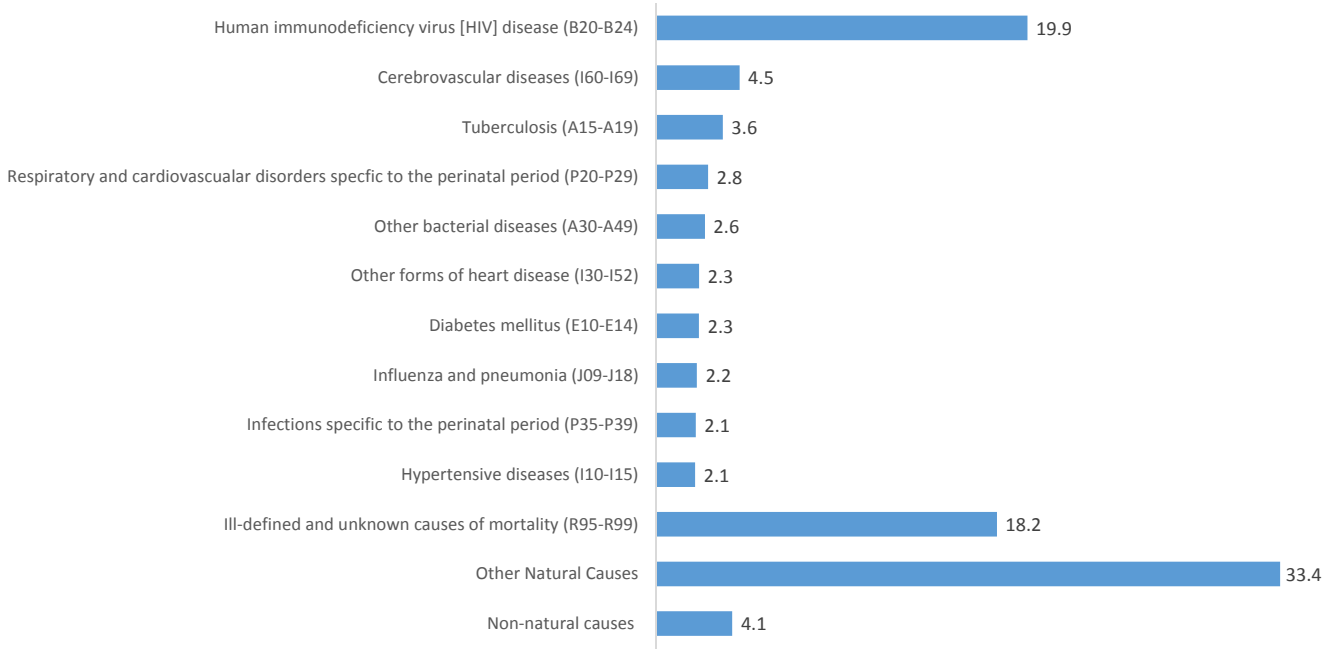


Figure 6.6 shows the top ten natural causes of death in urban areas for the year 2018. 'HIV related deaths' was leading at 19.9 percent followed by 'Cerebrovascular diseases' at 4.5 percent. 'Tuberculosis' was third at 3.6 percent while 'Respiratory and cardiovascular disorders' was number 4 among the top 10 natural causes of death accounting for 2.8 percent. 'Other natural causes of death' combined accounted for 33.4 percent while the deaths resulting from an 'ill-defined or unknown causes' accounted for 18.2 percent.

***Figure 6.6:* Percentage Distribution of Top Ten Natural Causes of Death by Region, Zambia Urban 2018**

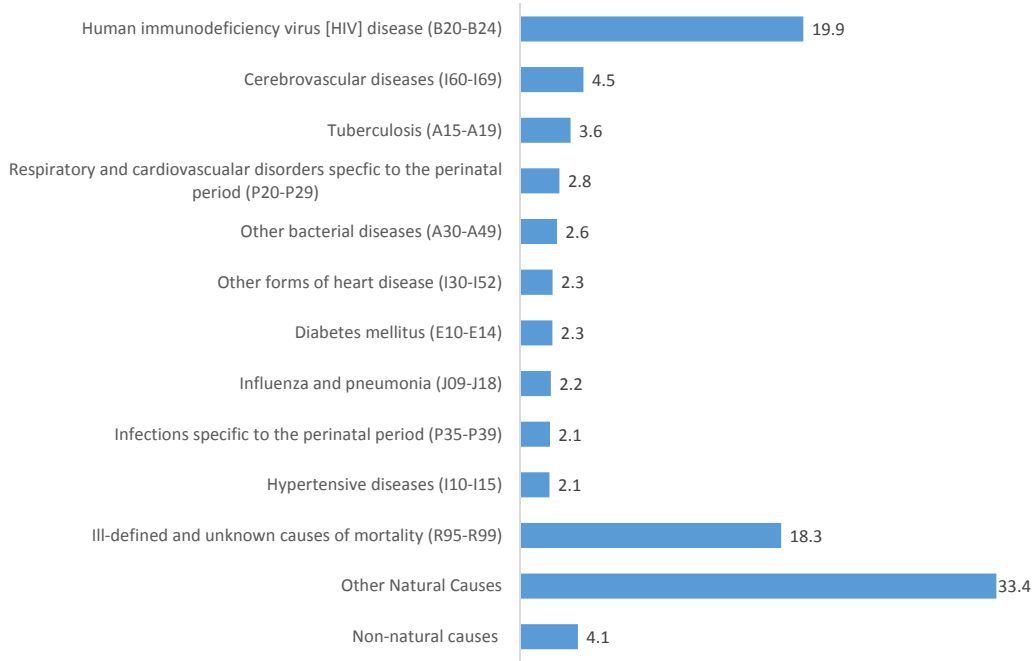
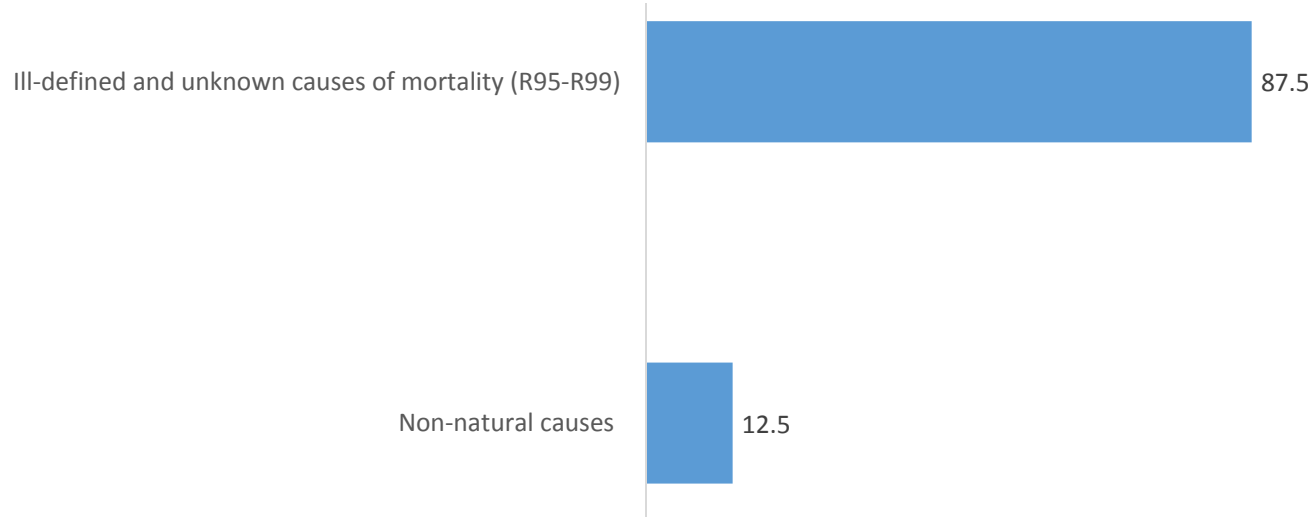


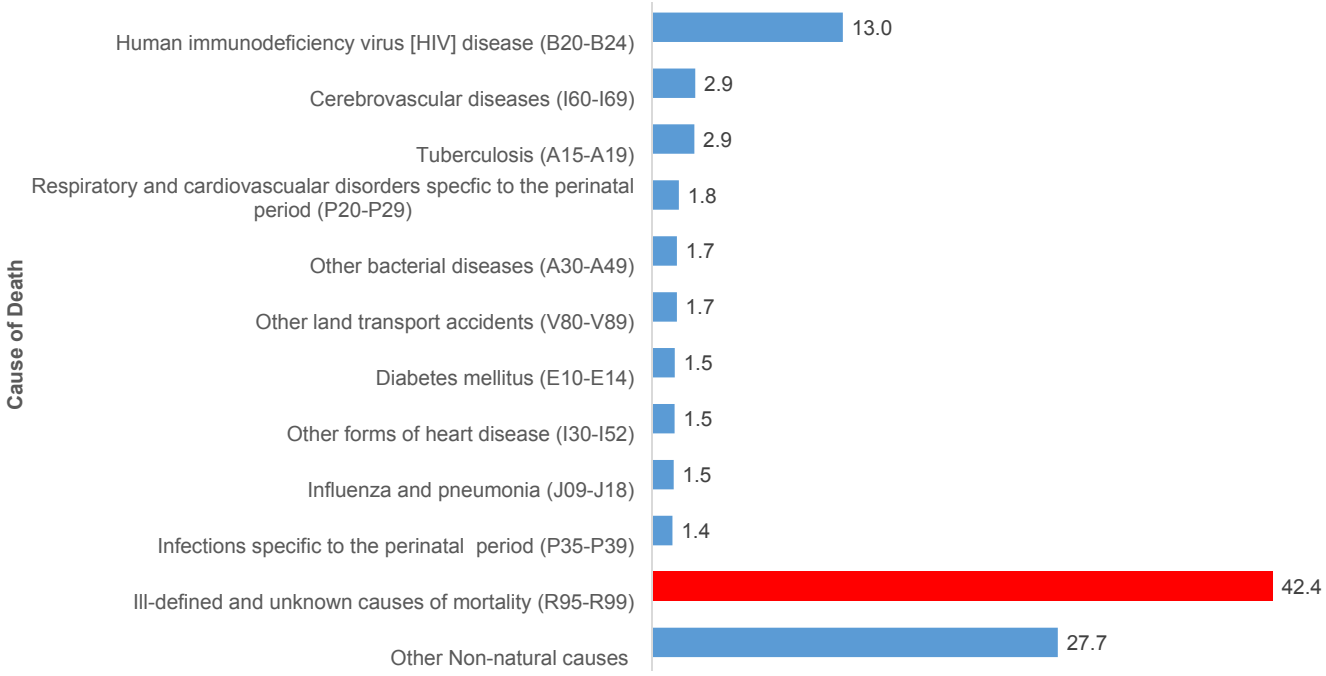
Figure 6.7 shows the natural causes of death for rural areas in 2018. Death registration in rural areas is very low. Out of the health facility deaths that were registered, 87.5 percent were coded as 'Ill-defined and unknown causes' of death and 12.5 percent were as a result of 'non-natural causes'.

***Figure 6.7:* Percentage Distribution of Top Ten Natural Causes of Death, Zambia Rural 2018**



The preceding sections have shown the distribution of causes of death disaggregated by natural and non-natural and also by region. Figure 6.8 shows the distribution of combined top ten causes of death for the year 2018 without disaggregation. The highest contribution was 'HIV' at 13.0 percent, followed by 'Cerebrovascular diseases' and 'Tuberculosis' at 2.9 percent each. Deaths resulting from 'ill-defined or unknown causes' accounted for 42.4 percent.

***Figure 6.8:* Percentage Distribution of Top Ten Causes of Death, Zambia 2018**



The Distribution of causes of death combined in rural areas for the year 2018 is shown in Figure 6.9. The figure shows that, the highest proportion of deaths recorded was as a result of 'Other land accidents' at 3.5 percent, followed by Intentional self-harm at 1.5 percent. 'Tuberculosis' at 0.5 percent and 'Chronic lower respiratory diseases' at 0.4 percent were part of the top 10 causes of death in rural areas. Notably more than half of all the deaths in rural areas were 'Ill-defined and unknown' at 85.6 percent.)

***Figure 6.9:* Percentage Distribution of Top Ten All Causes of Death by Region, Zambia Rural 2018**

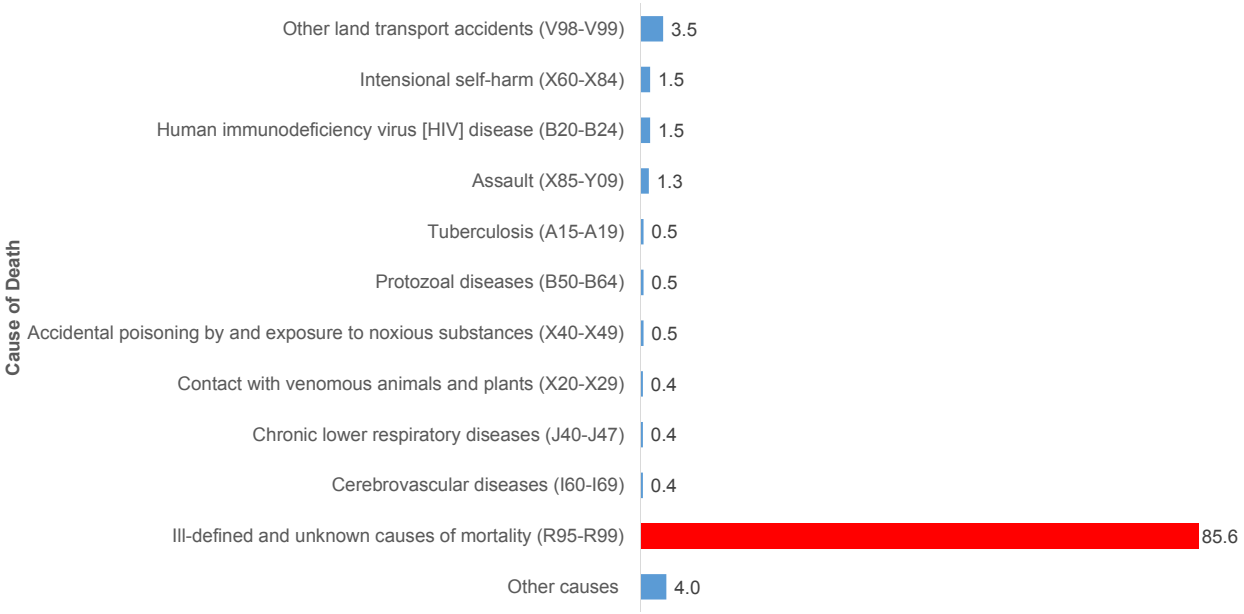
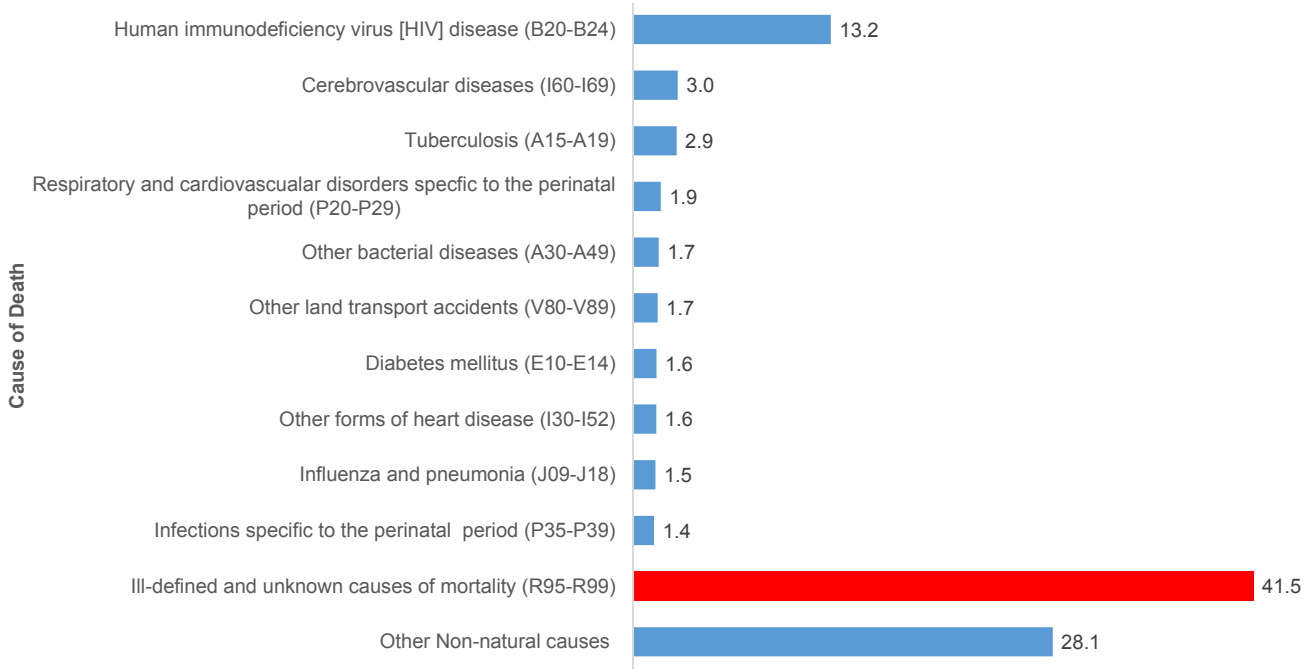


Figure 6.10 shows the distribution of top ten causes of death combined in urban areas for the year 2018. 'HIV related deaths' were leading at 13.2 percent followed by 'Cerebrovascular diseases' accounting for 3.0 percent. 'Other bacterial diseases' was number five at 1.7 percent. 'Other non-natural causes' of death combined accounted for 28.1 percent while the deaths resulting from 'ill-defined or unknown causes' accounted for 41.5 percent.

***Figure 6.10:* Percentage Distribution of Top Ten All Causes of Death, Zambia Urban 2018**



According to ICD-10 classifications, causes of death from chapters 1 to 18 (A00-Q99) are classified as natural causes while chapter 20 (V01-Y98) is classified as non-natural causes. Table 6.1 shows number and percentage of both natural and non-natural causes of death.

Table 6.1 Number and Percentage Distribution by Main Groups of Cause of Death, Zambia 2018.

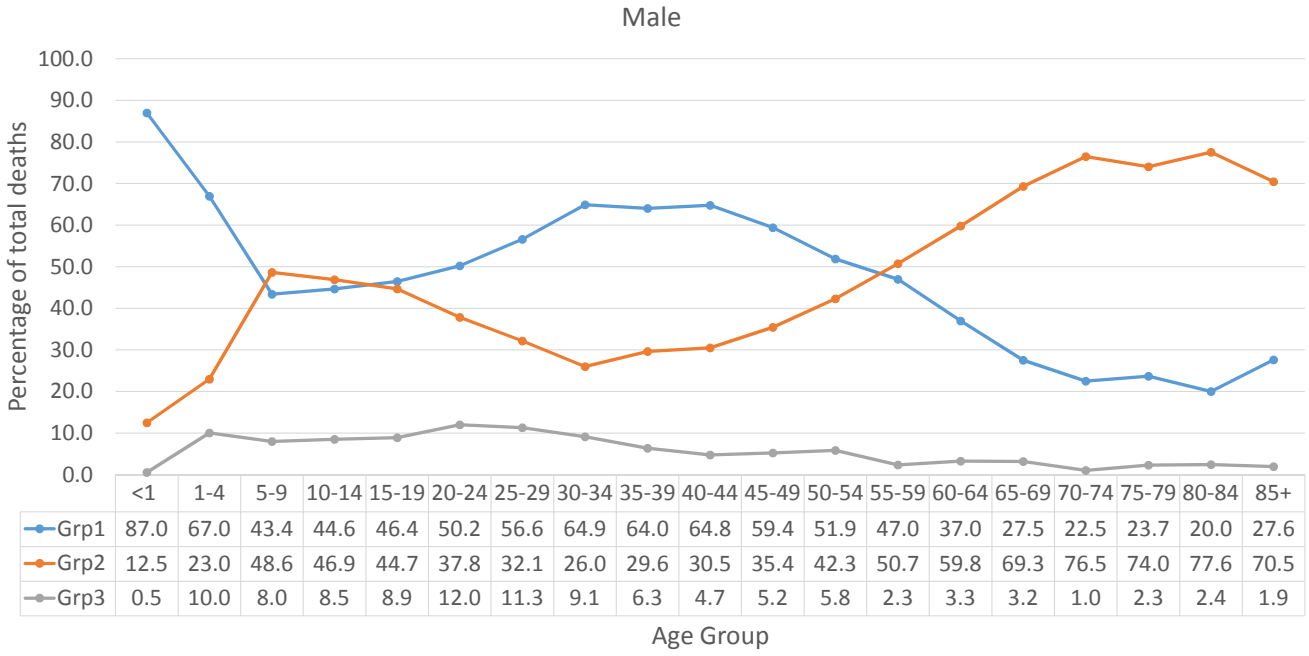
No.	Main Groups of Underlying Causes of Death (ICD 10)	Number	Percent
1	Certain Infectious and Parasitic diseases (A00-B99)	5,325	29.09
2	Symptoms and signs not elsewhere classified (R00-R99)	3,500	19.12
3	Diseases of the circulatory system (I00-I99)	1,818	9.93
4	Neoplasms (C00-D48)	1,578	8.62
5	Certain conditions originating in the perinatal period (P00-P96)	1,490	8.14
6	Endocrine, nutritional and metabolic diseases (E00-E99)	858	4.69
8	External causes of morbidity and mortality (V01-Y98)	747	4.08
7	Diseases of the respiratory system (J00-J99)	631	3.45
9	Diseases of the digestive system (K00-K93)	628	3.43
11	Diseases of the Genitourinary system system (N00-N99)	473	2.58
12	Diseases of the nervous system(G00-G99)	397	2.17
10	Diseases of the blood and immune mechanism (D50-D89)	386	2.11
13	Congenital malformations (Q00-Q99)	238	1.3
14	Pregnancy, childbirth and the puerperium (O00-O99)	99	0.54
16	Mental and behavioural disorders (F00-F99)	60	0.33
15	Diseases of the skin and subcutaneous tissue (L00-L99)	42	0.23
17	Diseases of the musculoskeletal system etc. (M00-M99)	32	0.17
18	Diseases of the eye and adnexa (H00-H59)	4	0.02
	Total	**18,306**	**100.00**

Figure 6.11 shows the Percentage Distribution of Deaths due to Communicable Diseases (Group 1), Non-Communicable Diseases (Group 2) and Injuries (Group 3) by sex and age group for the year 2018. According to the figure, deaths due to communicable diseases was highest in the age group "less than one" and lowest in age group 80 to 85 for both males and females. The pattern for both males and females for non-communicable diseases was similar.

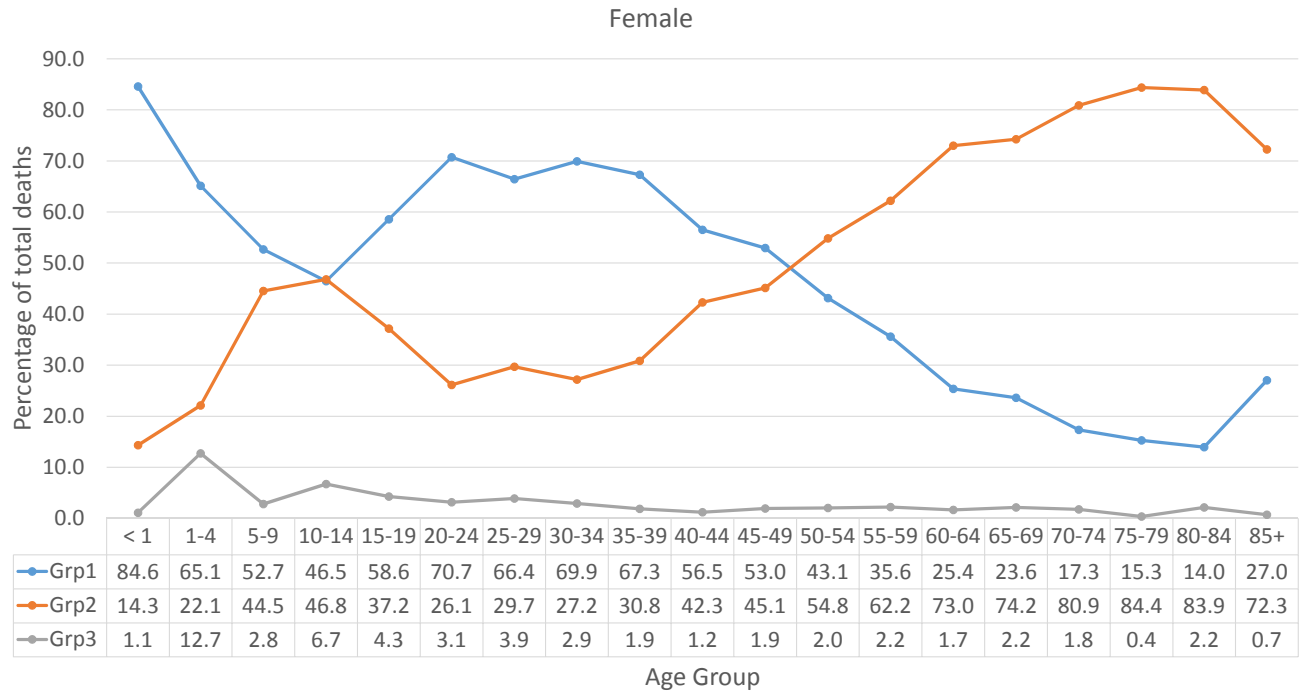
The highest proportion of deaths due to Non-Communicable Diseases was in age group 80-84 for males and 75-79 for females at 77.6 and 84.4 percent, respectively. The highest proportion of deaths due to Non-Communicable Diseases was lowest in age group "less than 1" year for both males and females.

The highest percentage for deaths due to Injuries was 12 percent (20-24) for males and 12.7 percent (1-4) for females. The lowest proportion of deaths recorded due to Injuries was 0.5 percent (70-74) for males and 0.4 for females (75-79).

Figure 6.11:* Percentage Distribution of Deaths Due to Communicable Diseases (Group 1), Non-Communicable Diseases (Group 2) and Injuries (Group 3) by Sex and Age *Group, Zambia 2018



	<1	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+
Grp1	87.0	67.0	43.4	44.6	46.4	50.2	56.6	64.9	64.0	64.8	59.4	51.9	47.0	37.0	27.5	22.5	23.7	20.0	27.6
Grp2	12.5	23.0	48.6	46.9	44.7	37.8	32.1	26.0	29.6	30.5	35.4	42.3	50.7	59.8	69.3	76.5	74.0	77.6	70.5
Grp3	0.5	10.0	8.0	8.5	8.9	12.0	11.3	9.1	6.3	4.7	5.2	5.8	2.3	3.3	3.2	1.0	2.3	2.4	1.9



	< 1	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+
Grp1	84.6	65.1	52.7	46.5	58.6	70.7	66.4	69.9	67.3	56.5	53.0	43.1	35.6	25.4	23.6	17.3	15.3	14.0	27.0
Grp2	14.3	22.1	44.5	46.8	37.2	26.1	29.7	27.2	30.8	42.3	45.1	54.8	62.2	73.0	74.2	80.9	84.4	83.9	72.3
Grp3	1.1	12.7	2.8	6.7	4.3	3.1	3.9	2.9	1.9	1.2	1.9	2.0	2.2	1.7	2.2	1.8	0.4	2.2	0.7

Table 6.2 shows the top ten leading causes of death by sex. 'Human Immunodeficiency Virus' (HIV) (B20-B24) is the leading cause of death for both males and females accounting for 19.9 percent. 'Cerebrovascular diseases' (I60-I69) is the second leading cause of death for females while 'Tuberculosis' (A15-A19) is the second leading cause of death for males. 'Respiratory and cardiovascular disorders specific to the perinatal period' (P20-P29) is ranked fourth for both males and females.

Table 6.2 Top Ten Leading Underlying Causes of Death by Sex 2018

	Male			Female			Total		
Cause of Death (ICD 10)	**Rank**	**Freq.**	**Percent**	**Rank**	**Freq.**	**Percent**	**Rank**	**Freq.**	**Percent**
Human immunodeficiency virus [HIV] disease (B20-B24)	1	2,016	19.7	1	1,619	20.0	1	3,635	19.9
Cerebrovascular diseases (I60-I69)	3	385	3.8	2	432	5.3	2	817	4.5
Tuberculosis (A15-A19)	2	443	4.3	9	210	2.6	3	653	3.6
Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	4	258	2.5	4	251	3.1	4	509	2.8
Other bacterial diseases (A30-A49)	5	254	2.5	5	224	2.8	5	478	2.6
Other forms of heart disease (I30-I52)	8	202	2.0	8	219	2.7	6	421	2.3
Diabetes mellitus (E10-E14)	9	199	1.9	6	220	2.7	7	419	2.3
Influenza and pneumonia (J09-J18)	6	241	2.4				8	399	2.2
Infections specific to the perinatal period (P35-P39)	7	223	2.2	10	165	2.0	9	388	2.1
Hypertensive diseases (I10-I15)				7	219	2.7	10	381	2.1
Malignant neoplasms of female genital organs (C51-C58)				3	309	3.8			
Malignant neoplasms of digestive organs (C15-C26)	7	223	2.2						
Malnutrition (E40-E46)	10	184	1.8						
Ill-defined and unknown causes of mortality (R95-R99)		1,979	19.4		1372	17.0		3,351	18.3
Other Natural Causes		3078	30.1		2634	32.6		6,108	33.4
Non-natural causes		538	5.3		209	2.6		747	4.1
All causes		10,223	100		8,083	100		18,306	100.0

The distribution of the ten leading underlying non natural causes of death by sex in 2018 is shown in Table 6.3. 'Accidental exposure to other and unspecified factors' (X58-X59) and 'Exposure to smoke, fire and flames' (X00-X09) were the leading non-natural cause of death for males and females respectively. The second leading non-natural cause of death among males was 'Other land Transport Accidents' (V98-V99), accounting for 23.1 percent followed by 'Exposure to smoke, fire and flames' (X00-X09). 'Accidental exposure to other and unspecified factors' (X58-X59) ranked second for females accounting for 42 percent followed by 'Other land transport accidents' (V98-V99).

Table 6.3 Top Ten Leading Underlying Non-Natural Causes of Death by Sex Zambia 2018

	Male			Female			Total		
Cause of Death (ICD 10)	**Rank**	**Number**	**Percent**	**Rank**	**Number**	**Percent**	**Rank**	**Number**	**Percent**
Accidental exposure to other and unspecified factors (X58-X59)	1	156	29.0	2	42.0	20.1	1	198	26.5
Other land transport accidents (V98-V99)	2	124	23.1	3	27.0	12.9	2	151	20.2
Exposure to smoke, fire and flames (X00-X09)	3	70	13.0	1	79.0	37.8	3	149	20.0
Event of undertermined intent (Y10-Y34)	4	51	9.5	4	13.0	6.2	4	64	8.6
Accidental poisoning by and exposure to noxious substances (X40-X49)	5	42	7.8	5	8.0	3.8	5	50	6.7
Intentional self-harm (X60-X84)	6	25	4.7	6	7.0	3.4	6	32	4.3
Surgical and other medical procedures as the cause of abnormal reaction of the patient, or of later complication, without mention of misadventure at the time of the procedure (Y83-Y84)	7	20	3.7	5	8.0	3.8	7	28	3.8
Assault (X85-Y09)	8	14	2.6	8	3.0	1.4	8	17	2.3
Drugs, medicaments and biological substances causing adverse effects in therapeutic use (Y40-Y59)	10	7	1.3	7	4.0	1.9	9	11	1.5
Exposure to inanimate mechanical forces (W50-W64)	9	8	1.5				10	10	1.3
Exposure to electric current, radiation (W85-W99)				8	3.0	1.4			
Misadventures to patients during surgical and medical care (Y60-Y69)				8	3.0	1.4			
Exposure to forces of nature (X30-X39)				9	2.0	1.0			
Accidental drowning and submersion (W65-W74)				8	3.0	1.4			
Exposure to inanimate mechanical forces (W20-W49)				9	2.0	1.0			
Other accidental threats to breathing (W75-W84)				9	2.0	1.0			
Contact with heat and hot substances (X10-X19)				10	1.0	0.5			
Pedal cyclist injured in transport accident (V10-V19)				10	1.0	0.5			
Sequelae of external causes of morbidity and mortality (Y85-Y89)				10	1	0.5			
Other Non-natural causes		21	3.9					37	5.0
Total		**538**	**100**		**209**	**100**		**747**	**100.0**

Table 6.4 shows top ten leading underlying natural causes of death for 5 broad age groups for the year 2018. 'Human Immunodeficiency Virus' (HIV) Disease (B20-B24) and 'Other Bacterial Diseases' (A30-A49) were in the top ten of all broad age groups. HIV ranked tenth in age group zero, second in age group 1-14, first in age groups 15-44 and 45-54 and fifth in age group 65+. Other Bacterial diseases ranked seventh in age group zero, third in age group 1-14, third in age group 15-44, ninth in age group 45-64 and sixth in age group 65+.

'Respiratory and cardiovascular disorders specific to the perinatal period' (P20-P29) and 'Haemorrhagic and haematological disorders of foetus and new born' (P50-P61) were the leading natural causes of death for the age groups 0 years and 1-14 years respectively. 'Cerebrovascular diseases' (I60-I69) was the leading cause of death for the age group 65+. 'Respiratory and cardiovascular disorders specific to the perinatal period' (P20-P29) and 'Haemorrhagic and haematological disorders of foetus and new born' (P50-P61) were the leading natural causes of death for the age groups 0 years and 1-14 years respectively. 'Cerebrovascular diseases' (I60-I69) was the leading cause of death for the age group 65+.

Table 6.4 Top Ten Leading Underlying Causes of Death by Broad Age Groups, Zambia 2018.

	0 years			1-14 years		
Causes of Death (ICD 10)	**Rank**	**Number**	**Percent**	**Rank**	**Number**	**Percent**
Human immunodeficiency virus [HIV] disease (B20-B24)	10	38	1.4	2	115	7.7
Cerebrovascular diseases (I60-I69)						
Tuberculosis (A15-A19)				10	29	1.9
Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	1	488	18.3			
Other bacterial diseases (A30-A49)	7	77	2.9	3	61	4.1
Other forms of heart disease (I30-I52)						
Diabetes mellitus (E10-E14)						
Influenza and pneumonia (J09-J18)	5	93	3.5	6	37	2.5
Infections specific to the perinatal period (P35-P39)	2	362	13.5			
Hypertensive diseases (I10-I15)						
Disorders related to length of gestation and fetal growth (P05-P08)	3	270	10.1			
Other disorders originating in the perinatal period (P90-P96)	4	165	6.2			
Malnutrition (E40-E46)	6	84	3.1	1	187	12.5
Haemorrhagic and haematological disorders of foetus and newborn (P50-P61)	8	63	2.4			
Other congenital malformations (Q80-Q89)	9	52	1.9			
Protozoal diseases (B50-B64)				4	56	3.8
Haemolytic anaemias (D55-D59)				5	40	2.7
Inflammatory diseases of the central nervous system (G00-G09)				7	32	2.1
Intestinal infectious diseases (A00-A09)				8	32	2.1
Aplastic and other anaemias (D60-D64)				9	30	2.0
Diseases of liver (K70-K77)						
Renal failure (N17-N19)						
Malignant neoplasms of female genital organs (C51-C58)						
Malignant neoplasms of digestive organs (C15-C26)						
Malignant neoplasms of male genital organs (C60-C63)						
Congenital malformations and deformations of the musculoskeletal system (Q65-Q79)						
Ill-defined and unknown causes of mortality (R95-R99)		481	18.0		406	27.2
Other Natural Causes		477	17.8		329	22.1
Non-natural causes		23	0.9		137	9.2
All causes		2,673	100		1,491	100

Table 6.4 Continued.

	15-44 years			45-64 years		
Causes of Death (ICD 10)	**Rank**	**Number**	**Percent**	**Rank**	**Number**	**Percent**
Human immunodeficiency virus [HIV] disease (B20-B24)	1	2,305	33.7	1	994	25.4
Cerebrovascular diseases (I60-I69)				2	260	6.6
Tuberculosis (A15-A19)	2	351	5.1	3	175	4.5
Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)						
Other bacterial diseases (A30-A49)	3	160	2.3	9	74	1.9
Other forms of heart disease (I30-I52)	7	121	1.8	7	103	2.6
Diabetes mellitus (E10-E14)				5	150	3.8
Influenza and pneumonia (J09-J18)						
Infections specific to the perinatal period (P35-P39)						
Hypertensive diseases (I10-I15)				8	82	2.1
Disorders related to length of gestation and fetal growth (P05-P08)						
Other disorders originating in the perinatal period (P90-P96)						
Malnutrition (E40-E46)						
Haemorrhagic and haematological disorders of foetus and newborn (P50-P61)						
Other congenital malformations (Q80-Q89)						
Protozoal diseases (B50-B64)	9	113	1.6			
Haemolytic anaemias (D55-D59)						
Inflammatory diseases of the central nervous system (G00-G09)	6	121	1.8			
Intestinal infectious diseases (A00-A09)						
Aplastic and other anaemias (D60-D64)	8	120	1.8			
Diseases of liver (K70-K77)	4	134	2.0			
Renal failure (N17-N19)	5	123	1.8	10	70	1.8
Malignant neoplasms of female genital organs (C51-C58)	10	106	1.5	6	138	3.5
Malignant neoplasms of digestive organs (C15-C26)				4	155	4.0
Malignant neoplasms of male genital organs (C60-C63)						
Congenital malformations and deformations of the musculoskeletal system (Q65-Q79)						
Ill-defined and unknown causes of mortality (R95-R99)		1,140	16.6		638	16.3
Other Natural Causes		1,668	24.4		948	24.2
Non-natural causes		387	5.7		134	3.4
All causes		6,849	100		3,921	100

Table 6.4 Continued.

Causes of Death (ICD 10)	65+ years Rank	65+ years Number	65+ years Percent	Unknown Rank	Unknown Number	Unknown Percent	Total Rank	Total Number	Total Percent
Human immunodeficiency virus [HIV] disease (B20-B24)	5	148	4.7	1	35	13.9	1	3,635	19.9
Cerebrovascular diseases (I60-I69)	1	434	13.9	2	18	7.1	2	817	4.5
Tuberculosis (A15-A19)	9	73	2.3	4	9	3.6	3	653	3.6
Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)				3	13	5.2	4	509	2.8
Other bacterial diseases (A30-A49)	6	103	3.3	9	3	1.2	5	478	2.6
Other forms of heart disease (I30-I52)	4	166	5.3	8	4	1.6	6	421	2.3
Diabetes mellitus (E10-E14)	3	178	5.7	9	3	1.2	7	419	2.3
Influenza and pneumonia (J09-J18)	7	101	3.2	6	6	2.4	8	399	2.2
Infections specific to the perinatal period (P35-P39)							9	388	2.1
Hypertensive diseases (I10-I15)	2	218	7.0	5	8	3.2	10	381	2.1
Disorders related to length of gestation and fetal growth (P05-P08)									
Other disorders originating in the perinatal period (P90-P96)									
Malnutrition (E40-E46)				10	2	0.8			
Haemorrhagic and haematological disorders of foetus and newborn (P50-P61)									
Other congenital malformations (Q80-Q89)									
Protozoal diseases (B50-B64)									
Haemolytic anaemias (D55-D59)									
Inflammatory diseases of the central nervous system (G00-G09)									
Intestinal infectious diseases (A00-A09)				10	2	0.8			
Aplastic and other anaemias (D60-D64)				10	2	0.8			
Diseases of liver (K70-K77)				10	2	0.8			
Renal failure (N17-N19)				9	3	1.2			
Malignant neoplasms of female genital organs (C51-C58)	10	60	1.9	7	5	2.0			
Malignant neoplasms of digestive organs (C15-C26)	7	101	3.2	10	2	0.8			
Malignant neoplasms of male genital organs (C60-C63)	8	88	2.8						
Congenital malformations and deformations of the musculoskeletal system (Q65-Q79)				10	2	0.8			
Ill-defined and unknown causes of mortality (R95-R99)		608	19.5		78	31.0		3,351	18.3
Other Natural Causes		785	25.2		46	18.3		6108	33.4
Non-natural causes		57	1.8		9	3.6		747	4.1
All causes		3,120	100		252	100		18,306	100

The ten leading underlying natural causes of death for infants (less than 1 year), children aged 1-4 and children aged below 5 years are shown in table 6.5. Infants or less than 1 year olds include both neo-nates and post-neonate.

'Respiratory and cardiovascular disorders specific to the perinatal period' (P20-P29) was the leading cause of death for infants and under five children. The second leading cause of death for infants was 'Infections specific to the perinatal period' (P35-P39) at 13.5 percent. The third leading underlying cause of death was 'Disorders related to length of gestation and foetal growth' (P05-P08) at 10.1 percent followed by 'Other disorders originating in the perinatal period' (P90-P96) at 6.2 percent. The cause of death at the bottom ten in infants was 'Human immunodeficiency virus [HIV] disease' (B20-B24) at 1.4 percent.

For age group 1–4, the leading cause of death was 'Malnutrition' (E40-E46), accounting for 18.4 percent of deaths, followed by 'Human Immunodeficiency Virus [HIV] disease' (B20-B24) which ranked second accounting for 6.6 percent deaths. 'Other bacterial diseases' (A30-A49) ranked third representing 4.3 percent.

Table 6.5 Top Ten Leading Underlying Natural Causes of Death for Infants and Children Aged Below Five Years, Zambia 2018.

	Infant (less than 1 year)			1-4 years			Under - 5 years		
Cause of Death (ICD 10)	**Rank**	**Number**	**Percent**	**Rank**	**Freq.**	**Percent**	**Rank**	**Freq.**	**Percent**
Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	1	488	18.3				1	491	13.7
Infections specific to the perinatal period (P35-P39)	2	362	13.5				2	367	10.2
Disorders related to length of gestation and foetal growth (P05-P08)	3	270	10.1				3	276	7.7
Malnutrition (E40-E46)	6	84	3.1	1	168	18.4	4	252	7.0
Other disorders originating in the perinatal period (P90-P96)	4	165	6.2				5	165	4.6
Influenza and pneumonia (J09-J18)	5	93	3.5	4	31	3.4	6	124	3.5
Other bacterial diseases (A30-A49)	7	77	2.9	3	39	4.3	7	116	3.2
Human immunodeficiency virus [HIV] disease (B20-B24)	10	38	1.4	2	60	6.6	8	98	2.7
Haemorrhagic and haematological disorders of foetus and new-born (P50-P61)	8	63	2.4				9	64	1.8
Intestinal infectious diseases (A00-A09)				6	18	2.0	10	55	1.5
Other congenital malformations (Q80-Q89)	9	52	1.9						
Protozoal diseases (B50-B64)				5	30	3.3			
Haemolytic anaemias (D55-D59)				7	16	1.8			
Tuberculosis (A15-A19)				8	15	1.6			
Inflammatory diseases of the central nervous system (G00-G09)				9	14	1.5			
Malignant neoplasms, stated or presumed to be primary, of lymphoid, haematopoietic and related tissue (C81-96)				10	12	1.3			
Ill-defined and unknown causes of mortality (R95-R99)		481	18.0		269	29.5		750	20.9
Other Natural Causes		477	17.8		140	15.4		704	19.6
Non-natural causes		23	0.9		100	11.0		123	3.4
All causes		2,673	100		912	100		3,585	100

Table 6.6 shows the top ten underlying causes of death by region. The leading cause of death in urban areas was 'Human Immunodeficiency Virus' (HIV) (B20-B24) followed by 'Cerebrovascular diseases' (I60-I69). Other underlying causes of death that were on the top ten included 'Influenza and Pneumonia' (J09-J18) at number nine, 'Diabetes Mellitus' (E10-E14) at number seven and 'Other Bacterial Diseases' (A30-A49) at number five.

'Other land transport accidents' (V80-V89) was the leading underlying cause of death in rural areas seconded by 'Human Immunodeficiency Virus' (HIV) (B20-B24). Underlying causes of death that were in the top ten in rural areas but did not feature in urban areas included: 'Accidental drowning and submersion' (W65-W74), 'Protozoal Diseases' (B50-B64), 'Intentional Self-harm' (X60-X84), 'Assault' (X85-Y09), 'Chronic lower respiratory diseases' (J40-J47) and 'Contact with Venomous Animals and Plants' (X20-X29).

Table 6.6: Top Ten Underlying All Causes of Death by Region, Zambia 2018.

	Urban			Rural			Total		
Cause of Death (ICD 10)	**Rank**	**Freq.**	**Percent**	**Rank**	**Freq.**	**Percent**	**Rank**	**Freq.**	**Percent**
Human immunodeficiency virus [HIV] disease (B20-B24)	1	3,729	13.2	2	8	1.5	1	3,737	13.0
Cerebrovascular diseases (I60-I69)	2	843	3.0	8	2	0.4	2	845	2.9
Tuberculosis (A15-A19)	3	822	2.9	7	3	0.5	3	825	2.9
Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	4	524	1.9				4	524	1.8
Other bacterial diseases (A30-A49)	5	484	1.7				5	486	1.7
Other land transport accidents (V80-V89)	6	465	1.7	1	19	3.5	6	484	1.7
Diabetes mellitus (E10-E14)	7	443	1.6				7	444	1.5
Other forms of heart disease (I30-I52)	8	439	1.6				8	440	1.5
Influenza and pneumonia (J09-J18)	9	423	1.5				9	423	1.5
Infections specific to the perinatal period (P35-P39)	10	398	1.4				10	398	1.4
Intentional self-harm (X60-X84)				3	8	1.5			
Assault (X85-Y09)				4	7	1.3			
Accidental drowning and submersion (W65-W74)				5	3	0.5			
Protozoal diseases (B50-B64)				6	3	0.5			
Chronic lower respiratory diseases (J40-J47)				9	2	0.4			
Contact with venomous animals and plants (X20-X29)				10	2	0.4			
Ill-defined and unknown causes of mortality (R95-R99)		11,694	41.5		471	85.6		12,165	42.4
Other causes		7,909	28.1		22	4.0		7952	27.7
Total		**28,173**	**100**		**550**	**100**		**28,723**	**100.0**

Table 6.7 shows the top ten natural causes of death by region for the year 2018. It excludes health facility deaths. 'Human Immunodeficiency Virus' (HIV) (B20-B24) accounted for 19.9 percent of deaths followed by 'Cerebrovascular diseases' at 4.5 percent. 'Hypertensive diseases and infections specific to the perinatal period' had the least percentage at 2.1.

Table 6.7: Top Ten Natural Causes of Death by Region, Zambia 2018

	Urban			Rural			Total		
Cause of Death (ICD 10)	**Rank**	**Freq.**	**Percent**	**Rank**	**Freq.**	**Percent**	**Rank**	**Freq.**	**Percent**
Human immunodeficiency virus [HIV] disease (B20-B24)	1	3,635	19.9				1	3,635	19.9
Cerebrovascular diseases (I60-I69)	2	817	4.5				2	817	4.5
Tuberculosis (A15-A19)	3	653	3.6				3	653	3.6
Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	4	509	2.8				4	509	2.8
Other bacterial diseases (A30-A49)	5	478	2.6				5	478	2.6
Other forms of heart disease (I30-I52)	6	421	2.3				6	421	2.3
Diabetes mellitus (E10-E14)	7	419	2.3				7	419	2.3
Influenza and pneumonia (J09-J18)	8	399	2.2				8	399	2.2
Infections specific to the perinatal period (P35-P39)	9	388	2.1				9	388	2.1
Hypertensive diseases (I10-I15)	10	381	2.1				10	381	2.1
Ill-defined and unknown causes of mortality (R95-R99)		3,337	18.2		14	87.5		3351	18.3
Other Natural Causes		6108	33.4					6,108	33.4
Non-natural causes		745	4.1		2	12.5		747	4.1
All causes		18,290	100		16	100		18306	100

Chapter 7: Causes of Death as Determined by Verbal Autopsy

This chapter presents the findings of the Verbal Autopsy (VA) implementation in Lusaka District for 2018 and shows summary results of the leading causes of death. Verbal Autopsy is a method of determining Causes of Death (COD) and cause-specific mortality fractions in populations without a complete vital registration system. Verbal autopsies consist of a trained interviewer using a questionnaire to collect information about the signs, symptoms, and demographic characteristics of a recently deceased person from an individual familiar with the deceased (IHME, 2019).

The process has emerged as the leading method for obtaining cause of death information for deaths that occur outside health facilities. In many low and middle-income countries, VA is utilized in CRVS to provide more complete mortality data in the hands of policy and decision-makers. In Zambia, it is estimated that 47 percent of deaths occur outside health facilities thus having no cause of death information (SAVVY 2015/16). VA is therefore used to ascertain causes of death for deaths that occur outside health facilities.

The Zambian Government through the DNRPC, with support from the Bloomberg Data for Health Initiative (BD4HI), began implementing routine VA for non-facility deaths through the hospital mortuaries and burial offices for the Brought-In-Dead (BIDs) cases. This is in an effort to (i) improve the registration of the non-facility deaths and (ii) obtain cause of death information for non-facility deaths. This implementation is aimed at linking VA to the national CRVS system. The intervention started in Lusaka District in September 2017 and is currently being rolled out to other districts.

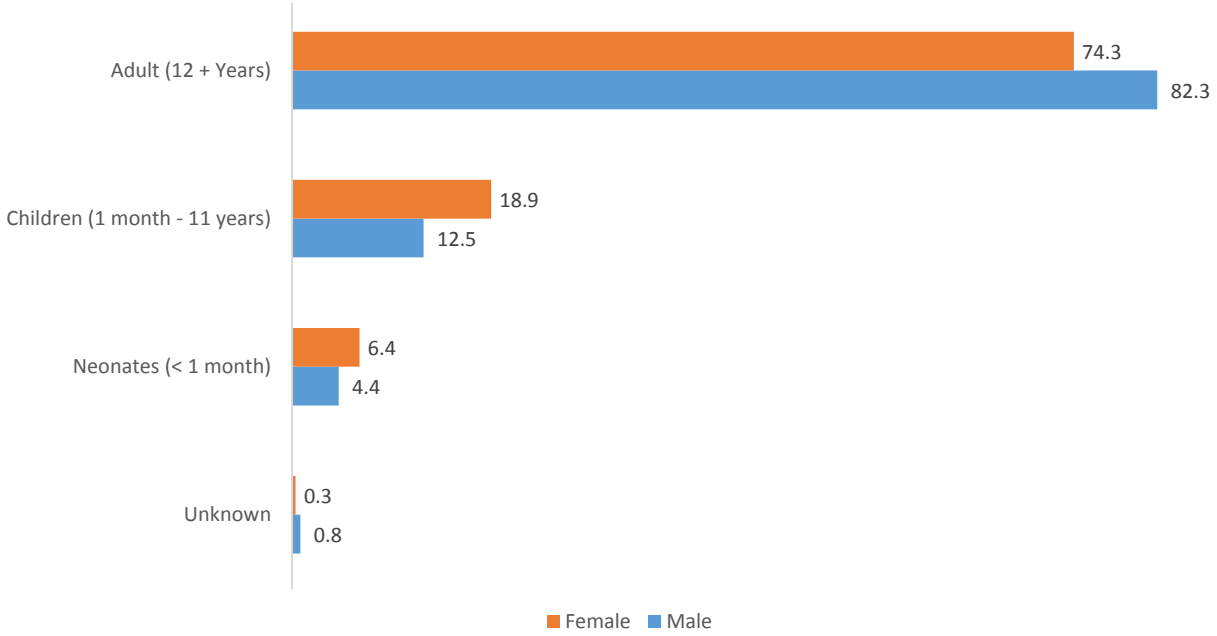
The Institute of Health Metrics and Evaluation (IHME) SmartVA questionnaire which uses the Tariff 2.0 algorithm was used to collect and analyse the 2018 VA data.

7.1 Age and sex distribution of deaths for Verbal Autopsy

A total of 4,414 VA interviews were conducted in Lusaka District in 2018 of which 60.1 percent were male and 39.9 percent were female.

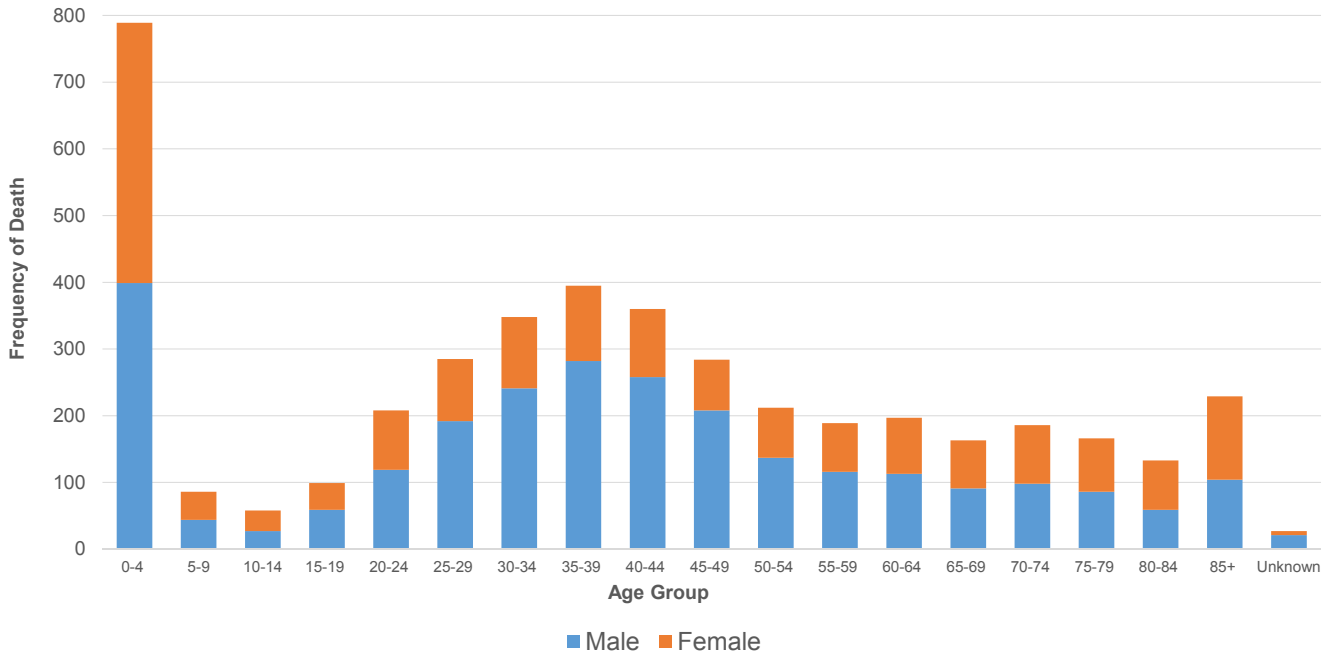
Figure 7.1 shows the distribution of the VAs conducted for adults (12+ years), children (1 month to 11 years) and neonates (less than 1 month) by sex. The majority of the VAs conducted were for adults at 74.3 percent for females and 82.3 percent for males.

Figure 7.1. **Percentage Distribution of VA by Age Group and Sex (N=4,414)**



The age and sex specific mortality patterns in Figure 7.2 show high mortality in infancy, which reduces in the childhood ages, increases in the early adulthood ages with a peak at 35-44 years, and gradually reduces in the older ages. This age and sex mortality pattern is consistent with what is expected in a low-income country, especially with high HIV burden/ or external causes that affects mostly young adults (males in cases of external causes) in the reproductive age groups. These age and sex mortality patterns also suggest that the death registration data for Lusaka District was representative of all the deaths in the district in 2018.

Figure 7.2. **Frequency Distribution of Deaths by Age Groups and Sex of Completed VAs in Lusaka District in 2018 (N=4,414)**



7.2 Quality and Accuracy of the VA data

The average length of the VA interviews, using the shortened Smart VA questionnaire, was 30 minutes. Variations based on the age and sex of the decedent and reported symptoms were observed. The mean period between the date of death and date of interview was one day. Over 85 percent of all VAs were conducted on the same day of the death of the decedent.

The proportion of the undetermined causes was only 16.2 percent, which suggests relatively good quality data. Table 7.1 shows the distribution of the undetermined VAs by age-group, where the majority (23.6%) of the undermined VAs were among the children group and the minority (12.6%) were among the neonates.

Table 7.1: Percentage Distribution of Determined and Undetermined Causes of Death, 2018

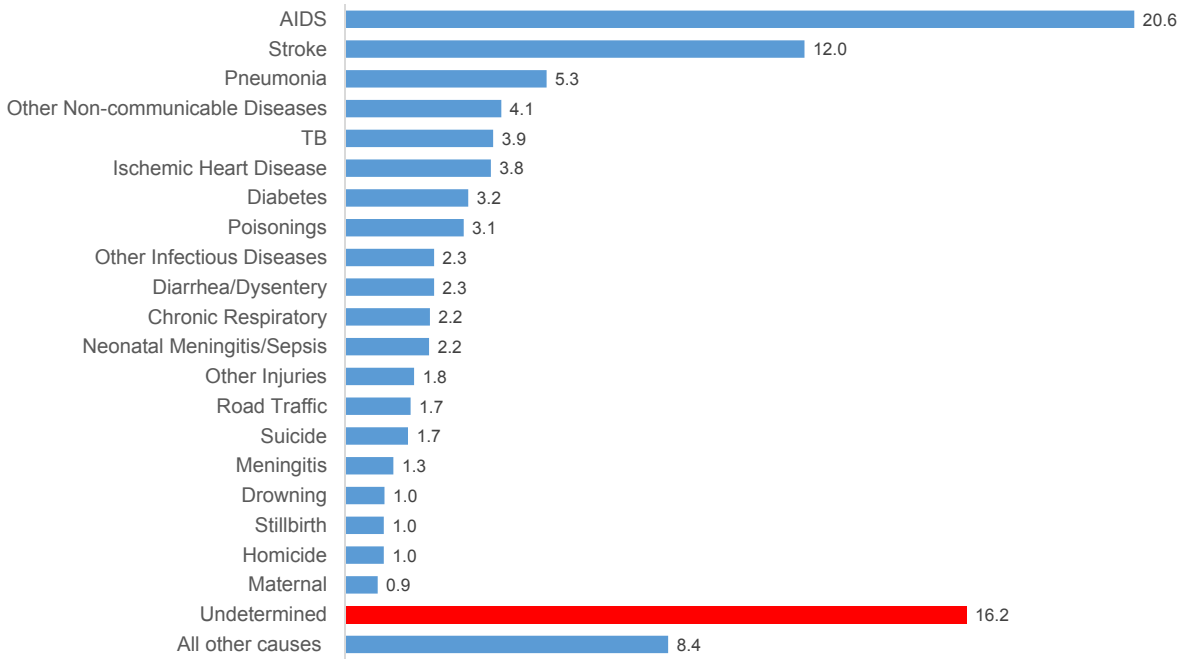
Causes from VA	Neonatal	Child	Adult	Total
Determined causes	87.4	76.4	85.0	83.8
Undetermined	12.6	23.6	15.0	16.2
All causes	100.0	100.0	100.0	100.0

7.3 Leading Causes of Death

In this section, the leading causes of death as ascertained by VA are presented. Figures 7.3 to 7.7 shows the leading causes of the non-facility deaths, by sex and age.

Figure 7.3 shows the top 20 leading causes of death. HIV/AIDS related deaths were the leading cause accounting for 20.6 percent. Stroke followed at 12.0 percent and pneumonia was third at 5.3 percent.

***Figure 7.3.* Leading causes of death ascertained by VA (N=4,414)**



Figures 7.4, 7.5 and 7.6 show the leading causes of death by sex. More males than females died from HIV/AIDS related deaths, tuberculosis, poisonings, road traffic accidents, suicides, drowning, homicides and other injuries. More females than males died from stroke, pneumonia, Ischemic heart diseases, diabetes, diarrhoea causes as well as all other unspecified causes of death (Figure 7.4).

***Figure 7.4.* Leading Causes of Death by sex as ascertained by VA**

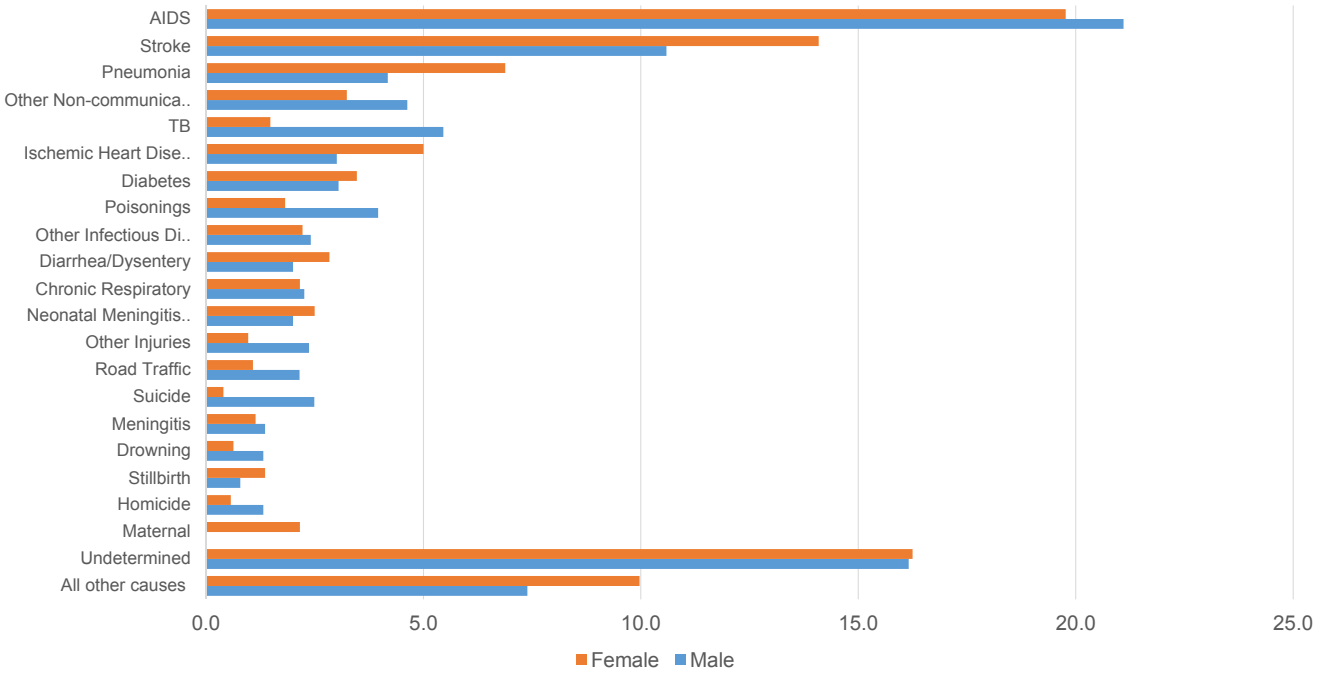


***Figure 7.5.* Leading causes of death in Females as ascertained by VA (N= 1,760)**

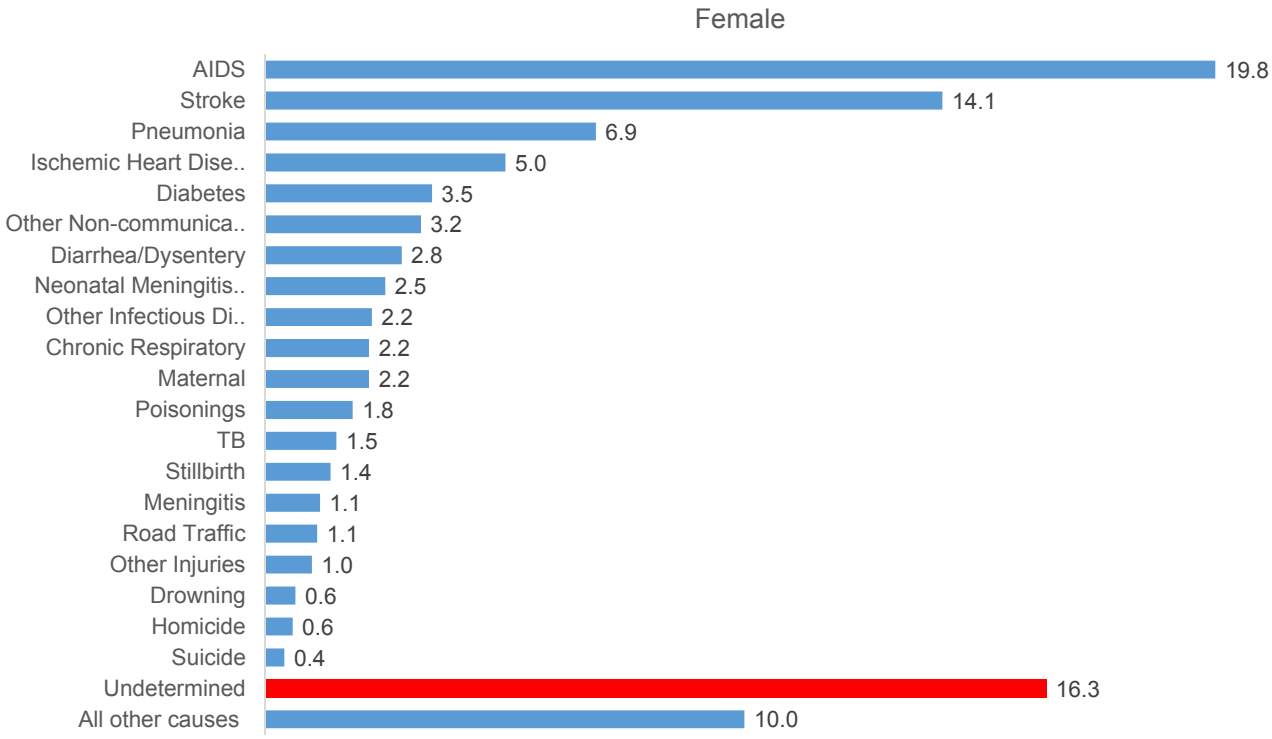


***Figure 7.6.* Leading causes of death in Males as ascertained by VA (N= 2,654)**

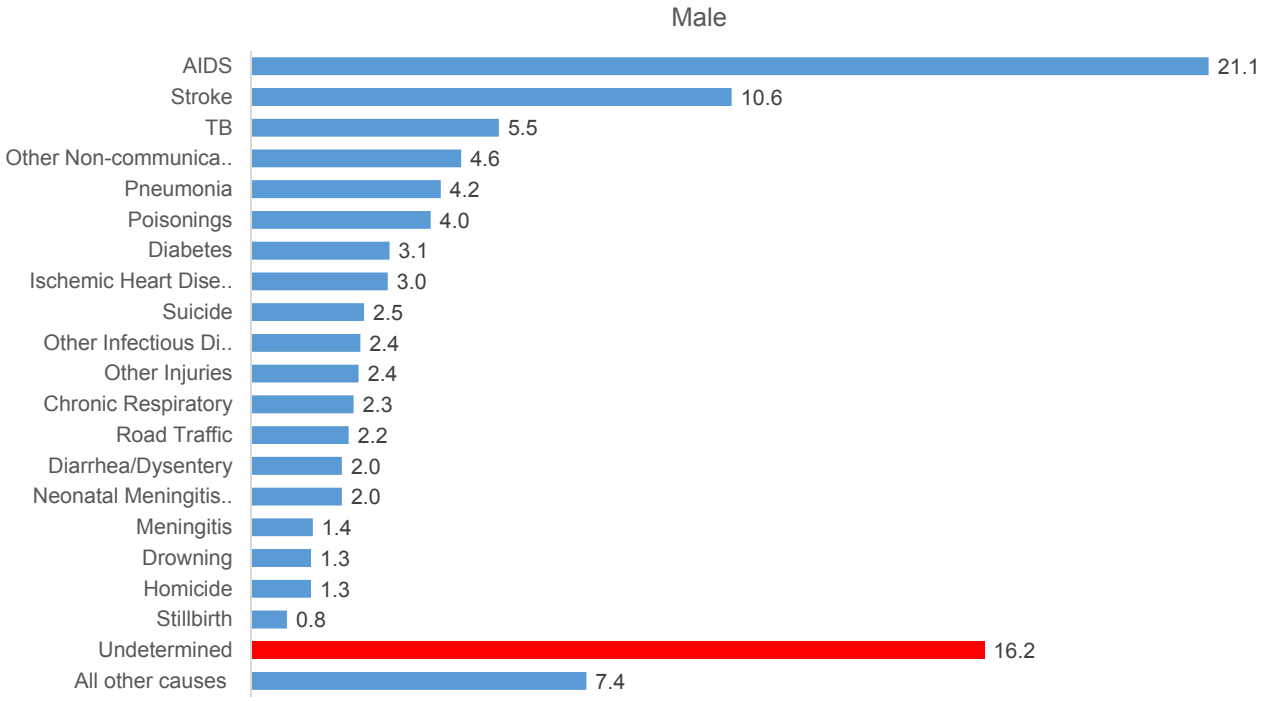
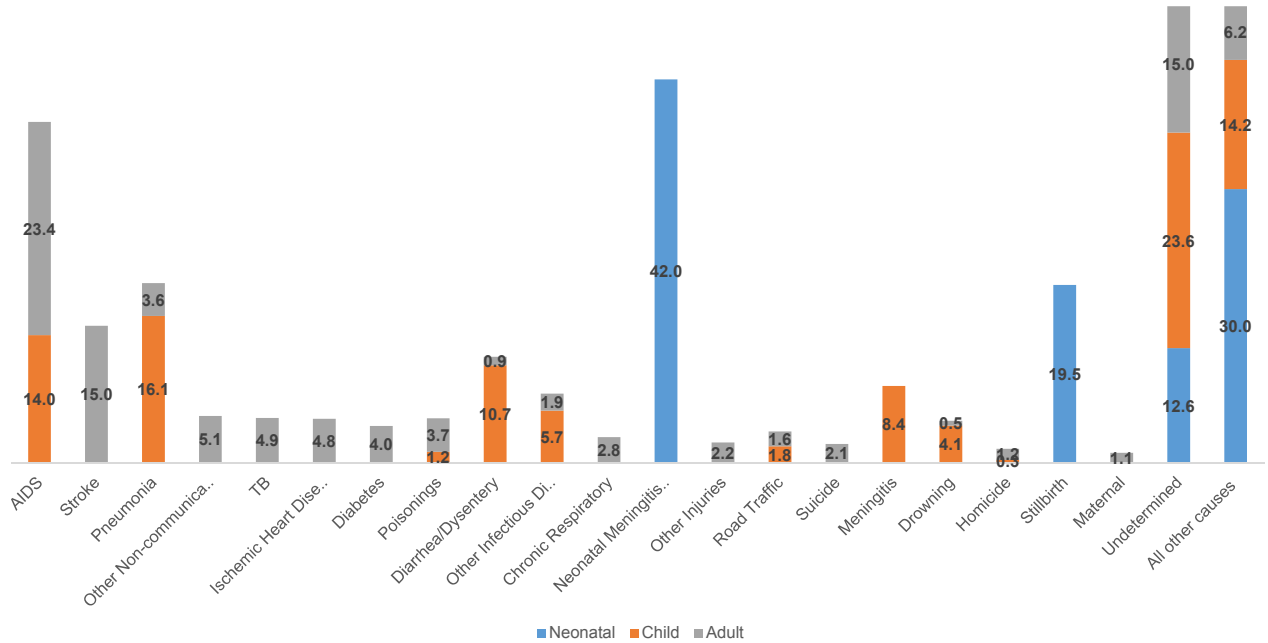


Figure 7.7 shows the leading causes of death by age group. HIV and AIDS was the leading cause among adults at 23.4 percent. The leading cause of death among children and neonates was Pneumonia at 16.1 percent and meningitis at 42.0 percent, respectively. Given that the majority of VAs completed were for adults, adult-related causes dominated the leading causes of death list (Figure 7.7).

***Figure 7. 7.* Leading Causes of Death by Age Group as Ascertained by VA (N=4,387)**



Figures 7.8 shows the leading causes of death in neonates. Fifty-two percent were attributed to neonatal meningitis, followed by neonatal pneumonia (14.5%), pre-term delivery (8.1%), birth asphyxia (7.0%), and other undetermined neonatal causes (15.6%).

***Figure 7.8.* Leading Causes of Death in Neonates as Ascertained by VA (N=186)**

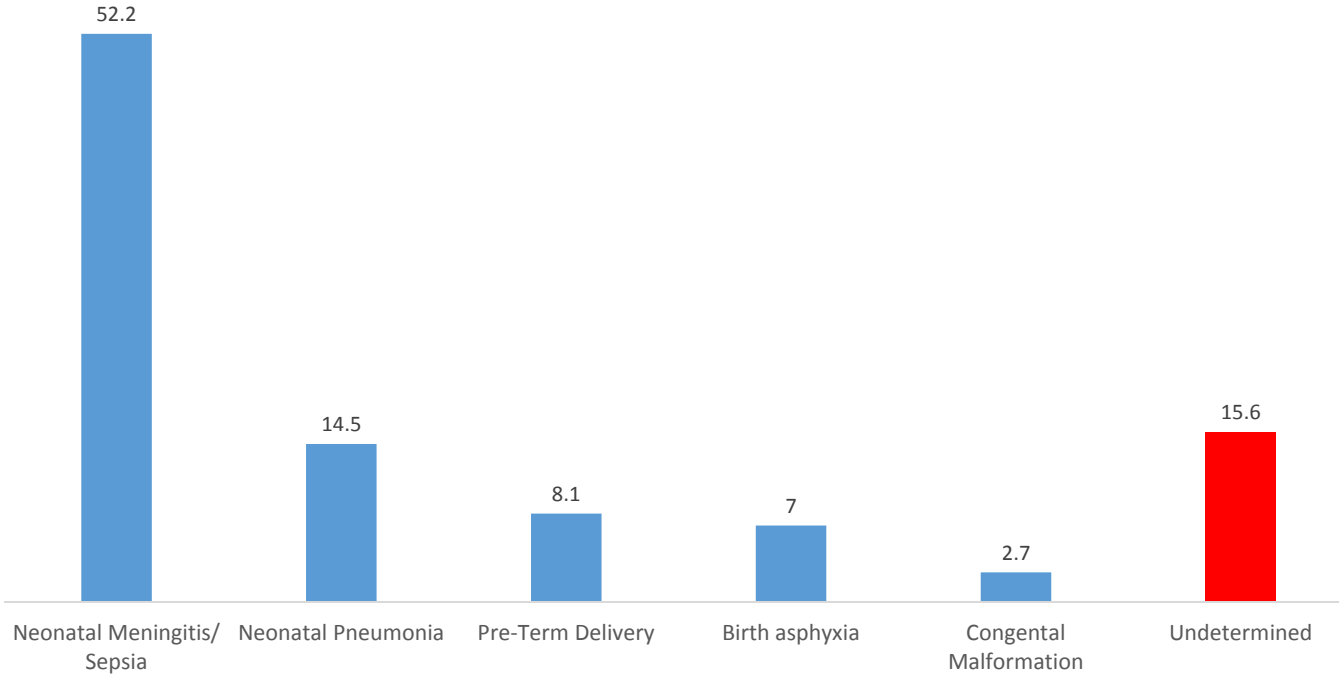


Figure 7.9, shows that the leading cause of death among children was pneumonia at 16.1 percent. HIV and AIDS was second accounting for 14.0 percent, followed by diarrhoea/dysentery related deaths, accounting for 10.7 percent. Meningitis was fourth at 8.4 percent.

***Figure 7.9.* Leading Causes of Death in Children as Ascertained by VA (N=665)**

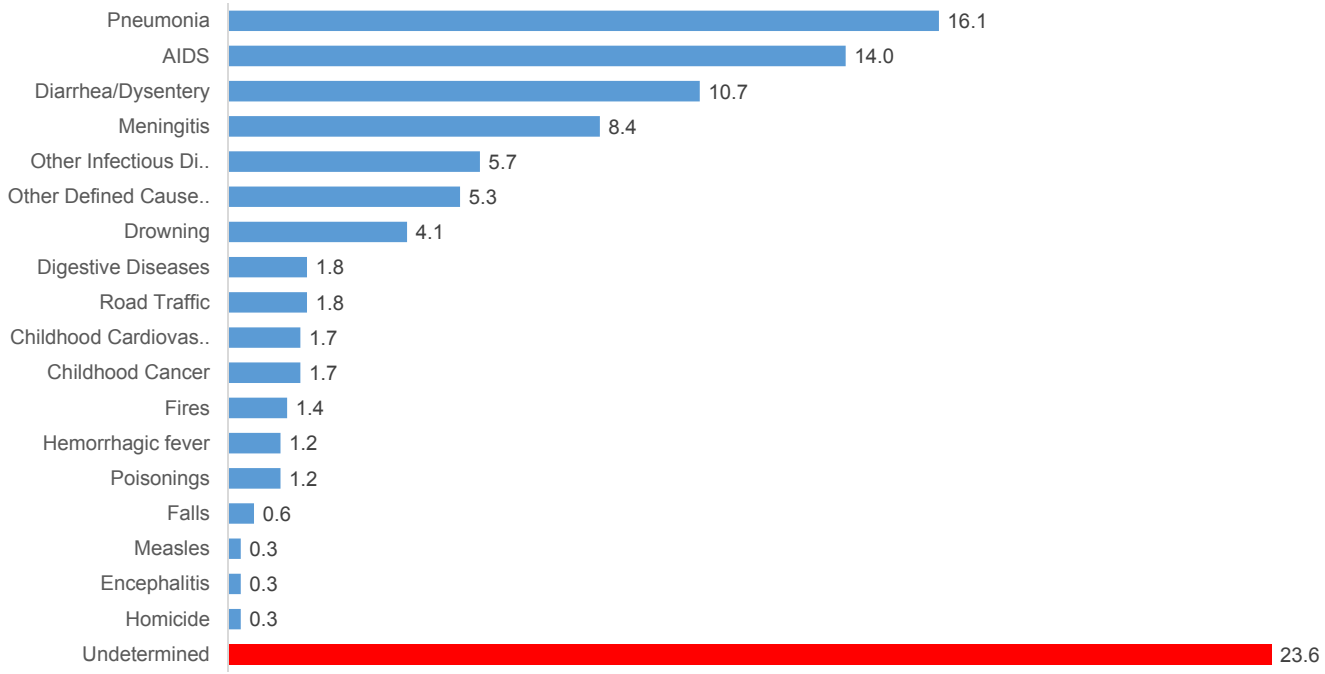


Figure 7.10 shows the leading causes of death in adults. HIV and AIDS was the leading cause of death accounting for 23.4 percent, followed by Stroke at 15.0 percent. Other Non-Communicable diseases was third at 5.1 percent and Tuberculosis was fourth at 4.9 percent.

Figure 7.10. **Leading causes of death in adults as ascertained by VA (N=3,491)**

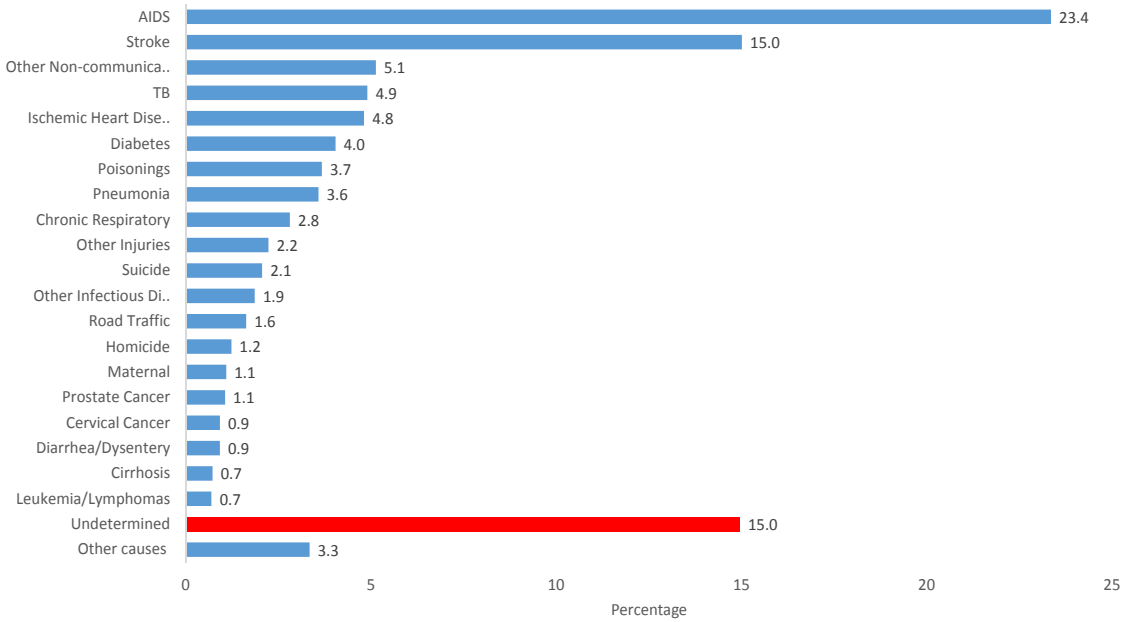
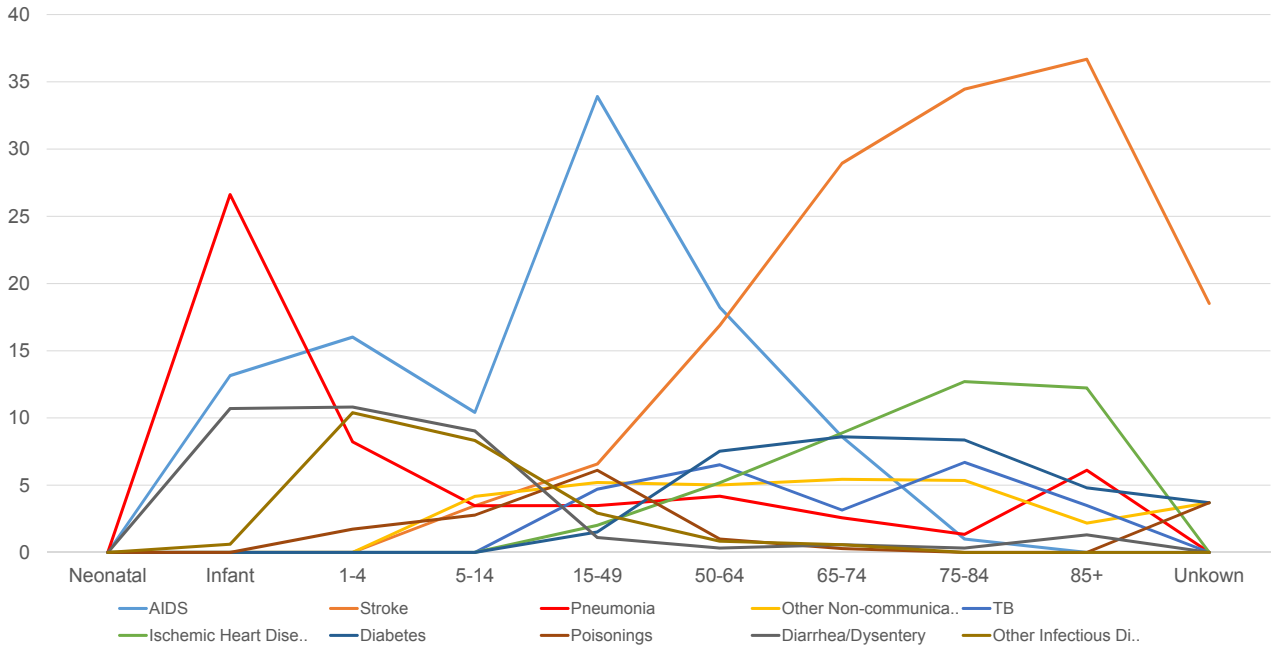


Figure 7.11 shows the top ten leading causes of death across all age groups. HIV and AIDS related deaths accounted for the majority of death across other age groups, with the exception of 1-4 years. Pneumonia was the leading cause of death among children 1-4 years. Stroke accounted for the majority of deaths among the older age groups 50 years and older. Diarrhoea and dysentery deaths were highest among the children below 15 years while Ischemic heart diseases were highest among the 65 years and older. Given the small number of reported cases for neonatal deaths, no neonatal causes are shown in this figure.

Figure 7.11. **Percentage Distribution of Top Ten Leading Causes of Death by Age Group as Ascertained by VA (N=4,414)**



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Appendix 1: All underlying causes of death, 2017

Natural Causes of death (based on the 10th revision, International Classification of Diseases)	Number	Percentage
All underlying causes	28,723	100
Ill-defined and unknown causes of mortality (R95-R99)	12,165	42.4
Human immunodeficiency virus [HIV] disease (B20-B24)	3,737	13.0
Cerebrovascular diseases (I60-I69)	845	2.9
Tuberculosis (A15-A19)	825	2.9
Respiratory and cardiovascualar disorders specfic to the perinatal period (P20-P29)	524	1.8
Other bacterial diseases (A30-A49)	486	1.7
Other land transport accidents (V80-V89)	484	1.7
Diabetes mellitus (E10-E14)	444	1.6
Other forms of heart disease (I30-I52)	440	1.5
Influenza and pneumonia (J09-J18)	423	1.5
Infections specific to the perinatal period (P35-P39)	398	1.4
Hypertensive diseases (I10-I15)	395	1.4
Malignant neoplasms of digestive organs (C15-C26)	370	1.3
Malnutrition (E40-E46)	330	1.2
Accidental exposure to other and unspecified factors (X58-X59)	328	1.1
Malignant neoplasms of female genital organs (C51-C58)	317	1.1
Disorders related to length of gestation and fetal growth (P05-P08)	296	1.0
Protozoal diseases (B50-B64)	264	0.9
Diseases of liver (K70-K77)	261	0.9
Aplastic and other anaemias (D60-D64)	260	0.9
Renal failure (N17-N19)	256	0.9
Inflammatory diseases of the central nervous system (G00-G09)	234	0.8
Intestinal infectious diseases (A00-A09)	188	0.7
Exposure to smoke, fire and flames (X00-X09)	180	0.6
Malignant neoplasms of ill-defined, secondary and unspecified sites (C73-C75)	178	0.6
Other disorders originating in the perinatal period (P90-P96)	175	0.6
Intensional self-harm (X60-X84)	154	0.5
Malignant neoplasms of male genital organs (C60-C63)	134	0.5
Malignant neoplasms, stated or presumed to be primary, of lymphoid, haematopoietic and related tissue (C81-96)	128	0.5
Other diseases of intestines (K55-K64)	116	0.4
General symptoms and signs (R50-R69)	115	0.4
Diseases of oesophagus, stomach and duodenum (K20-K31)	103	0.4
Event of undertermined intent (Y10-Y34)	114	0.4
Malignant neoplasms of breast (C50)	94	0.3
Accidental poisoning by and exposure to noxious substances (X40-X49)	88	0.3
Haemolytic anaemias (D55-D59)	87	0.3
Other disorders of kidney and ureter (N25-N29)	83	0.3
Accidental drowning and submersion (W65-W74)	82	0.3
Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	82	0.3
Other disorders of the nervous system (G90-G99)	77	0.3
Chronic lower respiratory diseases (J40-J47)	74	0.3
Neoplasms of uncertain or unknown behaviour (D37-D48)	74	0.3
Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	69	0.2
Ischaemic heart diseases (I20-I25)	69	0.2
Other congenital malformations (Q80-Q89)	64	0.2
Malignant neoplasms of urinary tract (C64-C68)	58	0.2
Pulmonary heart disease and diseases of pulmonary circulation (I26-I28)	58	0.2
Lung diseases due to external agents ..	54	0.2
Assault (X85-Y09)	52	0.2

Natural Causes of death (based on the 10th revision, International Classification of Diseases)	Number	Percentage
Congenital malformations of the circulatory system (Q20-Q28)	52	0.2
Metabolic disorders (E70-E90)	51	0.2
Other dideases of the digestive system (K90-K93)	51	0.2
Malignant neoplasms of mesothelial and soft tissue (C45-C49)	50	0.2
Diseases of male genital organs (N40-N51)	47	0.2
Other diseases of peritoneum (K65-K67)	47	0.2
Other diseases of the respiratory system and soft tissue (C45-C49)	46	0.2
Chronic rheumatic heart diseases (I05-I09)	44	0.2
Other accidental threats to breathing (W75-W84)	44	0.2
Cerebral palsy and other paralytic syndromes (G80-G83)	43	0.2
Mycoses (B35-B49)	43	0.2
Other disorders of glucose regulation and pancreatic internal secretion (E15-E16)	43	0.2
Congenital malformations and deformations of the musculoskeletal system (Q65-Q79)	42	0.2
Disorders of gallbladder, biliary tract and pancreas (K80-K87)	42	0.2
Mental and behavioural disorders due to psychoactive substance use (F10-F19)	42	0.2
Digestive system disorders of fetus and newborn (P75-P78)	41	0.1
Viral hepatitis (B15-B19)	41	0.1
Malignant neoplasms of lip, oral cavity and pharynx (C00-C14)	38	0.1
Odema, prteinuria and hypertensive disorders in preganacy, childbirth and the puer-perium (O10-O16)	38	0.1
Malignant neoplasms of eye, brain and other parts of central nervous system (C69-C72)	36	0.1
Exposure to electric current, radiation and extreme ambient air temperature and pressure (W85-W99)	33	0.1
Melanoma and other malignant neoplasm of skin (C43-C44)	33	0.1
Noninfective enteritis and colitis (K50-K52)	32	0.1
Renal tubulo-intestitial diseases (N10-N16)	32	0.1
Episodic and paroxysmal disorders (G40-G47)	30	0.1
Exposure to inanimate mechancal force s (W20-W49)	28	0.1
Surgical and other medical procedures as the cause of abnormal reaction of the patient, or of later complication, without mention of misadventure at the time of the procedure (Y83-Y84)	28	0.1
Other respiratory diseases principally affecting the interstitium (J80-J84)	27	0.1
Other disorders of the skin and subcutaneous tissue (L80-L99)	26	0.1
Complications of labour and delivery (O60-O75)	25	0.1
Congenital malformations and deformations of the musculoskeletal system (Q65-Q79)	25	0.1
Coagulation defects, purpura and other haemorrhagic conditions (D65-D69)	24	0.1
Diseases of oral cavity, salivary glands and jaws (K00-K14)	24	0.1
Diseases of veins, lymphatic vessels and lymph nodes, not elsewhere classified (I80-I89)	24	0.1
Glomerular diseases (N00-N08)	24	0.1
Other congenital malformations of the digestive system (Q38-Q45)	24	0.1
Other disorders of urinary system (N30-N39)	22	0.1
Infections with a predominantly sexual mode of transmission (A50-A64)	20	0.1
Chromosomal abnormalities, not elsewhere classified (Q90-Q99)	19	0.1
Malignant neoplasms of bone and articular cartilage (C40-C41)	19	0.1
Malignant neoplasms of thyroid and other endocrine glands (C73-C75)	18	0.1
Benign neoplasms (D10-D36)	17	0.1
Symptoms and signs involving the circulatory and respiratory systems (R00-R09)	17	0.1
Pregnanacy with abortive outcome (O00-O08)	16	0.1
Other nutritional deficiencies (E50-E64)	15	0.1

Natural Causes of death (based on the 10th revision, International Classification of Diseases)	Number	Percentage
Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	14	0.1
Inflammatory disorders of female pelvic organs (N70-N77)	14	0.1
Viral infections of the central nervous system (A80-A89)	14	0.1
Certain disorders involving the immune mechanism (D80-D89)	13	0.1
Conditions involving the integument and temperature regulation of fetus and newborn (P80-P83)	13	0.1
Infections of the skin and subcutaneous tissue (L00-L08)	13	0.1
Other acute lower respiratory infections (J20-J22)	13	0.1
Other diseases of pleura (J90-JJ94)	12	0.0
Other obstetric conditions, not elsewhere classified (O94-O99)	12	0.0
Disorders of other endocrine glands (E20-E35)	11	0.0
Symptoms and signs involving the digestive system and abdomen (R10-R19)	11	0.0
Diseases of arteries, arterioles and capillaries (I70-I79)	10	0.0
Exposure to forces of nature (X30-X39)	10	0.0
Acute upper respiratory infections (J00-J06)	9	0.0
Congenital malformations of the respiratory system (Q30-Q34)	9	0.0
Hernia (K40-K46)	9	0.0
Nutritional anaemias (D50-D53)	8	0.0
Pedestrian injured in transport accident (V01-V09)	8	0.0
Contact with venomous animals and plants (X20-X29)	7	0.0
Diseases of appendix (K35-K38)	7	0.0
Disorders of thyroid gland (E00-E07)	7	0.0
Suppurative and ncrotic conditions of lower respiratory tract (J85-J86)	7	0.0
Abnormal findings on diagnostic imaging and in function studies, without diagnosis (R90-R94)	6	0.0
Complications predominantly related to the puerperium (O85-O92)	6	0.0
Misadventures to patients during surgical and medical care Y60-Y69)	6	0.0
Organic, including symptomatic, mental disorders (F00-F09)	6	0.0
Other diseases of blood and blood-for ming organs (D70-D77)	6	0.0
Other soft tissue disorders (M70-M79)	6	0.0
Polyneuropathies and other disorders of the peripheral nervous system (G60-G64)	6	0.0
Schizophrenia, schizotypal and delusional disorders (F20-F29)	6	0.0
Abnormal findings on examination of blood, without diagnosis (R70-79)	5	0.0
Disorders of bone density and structure (M80-M85)	5	0.0
Falls (W00-W19)	5	0.0
Helminthiases (B65-B83)	5	0.0
Noninflammatory disorders of female genital tract (N80-N98)	5	0.0
Other and unspecified disorders of the circulatory system (I95-I99)	5	0.0
Other osteopathies (M86-M90)	5	0.0
Spondylopathies (M45-M49)	5	0.0
Systemic connective tissue disorders (M30-M36)	5	0.0
Behavioural and emotional disorders with onset usually occuring in childhood and adolescence (F90-F98)	4	0.0
Diseases of middle ear and mastoid (H65-H75)	4	0.0
Extrapyramidal and movement disorders (G20-G26)	4	0.0
Maternal care related to the fetus and amniotic cavity and possible delivery problems (O30-O48)	4	0.0
Other diseases of upper respiratory tract (J30-J39)	4	0.0
Systemic atrophies primarily affectin g the central nervous system (G10-G14)	4	0.0
Viral infections characterised by skin and mucous membrane lesions (B00-B09)	4	0.0
Acute rheumatic fever (I00-I02)	3	0.0
Disorders of muscles (M60-M63)	3	0.0

Natural Causes of death (based on the 10th revision, International Classification of Diseases)	Number	Percentage
Exposure to animate mechancal forces (W50-W64)	3	0.0
Urticaria and erythema (L50-L54)	3	0.0
Air and space transport accidents (V95-V97)	2	0.0
Behavioural syndromes associated with physiological disturbances and physical factors (F50-F59)	2	0.0
Bullous disorders (L10-L14)	2	0.0
Congenital malformations of genital organs (Q50-Q56)	2	0.0
Congenital malformations of the urinary system (Q60-Q64)	2	0.0
Demyelinating diseases of the central nervous system (G35-G37)	2	0.0
In situ neoplasms (D00-D09)	2	0.0
Infectious arthropathies (M00-M03)	2	0.0
Inflammatory polyarthropathies (M05-M14)	2	0.0
Other digestive diseases of the nervous system (G30-G32)	2	0.0
Other infectious diseases (B99)	2	0.0
Other spirochaetal diseases (A65-A69)	2	0.0
Transitory endocrine and metabolic disorders of fetus and newborn (P70-P74)	2	0.0
Arthropod-borne viral fevers and viral haemorrhagic fevers (A92-A99)	1	0.0
Cleft lip and cleft palate (Q35-Q37)	1	0.0
Congenital malformations of eye, ear, face and neck (Q10-Q18)	1	0.0
Contact with heat and hot substances (X10-X19)	1	0.0
Dermatitis and eczema (L20-L30)	1	0.0
Diseases of the myoneural junction and muscle (G70-G73)"	1	0.0
Disorders of breast (N60-N64)	1	0.0
Disorders of synovium and tendon (M65..	1	0.0
Mood [affective] disorders (F30-F39)	1	0.0
Motorcycle rider injured in transport accident (V20-V29)	1	0.0
Nerve, nerve root and plexus disorders (G50-G59)	1	0.0
Papulosquamous disorders (L40-L45)	1	0.0
Pedal cyclist injured in transport accident (V10-V19)	1	0.0
Sequelae of external causes of morbidity and mortality (Y85-Y89)	1	0.0
Sequelae of infectious and parasitic diseases (B90-B94)	1	0.0
Symptoms and signs involving the skin and subcutaneous tissue (R20-R23)	1	0.0
Unspecified mental disorder (F99)	1	0.0
Urolithiasis (N20-N23)	1	0.0

Appendix 2 Distribution of Causes of Death Ascertained by VA According to Global Burden of Disease Categories, by Sex

	Sex					
	Total		Male		Female	
Cause of death	Number	Percent	Number	Percent	Number	Percent
All defined causes	**3,699**	**100**	**2,225**	**100**	**1,474**	**100**
Group I: Communicable, maternal, perinatal, and nutritional conditions						
AIDS	908	24.5	560	25.2	348	23.6
Birth asphyxia	13	0.3	5	0.2	8	0.5
Diarrhea/Dysentery	103	2.8	53	2.4	50	3.4
Encephalitis	2	0.1	1	0.0	1	0.1
Hemorrhagic fever	8	0.2	4	0.2	4	0.3
Maternal	38	1.0	0	0	38	2.6
Measles	2	0.1	0	0	2	0.1
Meningitis	56	1.5)	36	1.6	20	1.4
Neonatal Meningitis	97	2.6	53	2.4	44	2
Neonatal Pneumonia	27	0.7	17	0.8	10	0.7
Other Infectious Disease	103	2.9	64	2.9	39	2.6
Pneumonia	232	6.3)	111	5	121	8.2
Preterm Delivery	15	0.4	5	0.2	10	0.7
Stillbirth	45	1.2	21	0.9	24	1.6
TB	171	4.6	145)	6.5	26	1.8
Total	1,820)	49.2	1,075	48.3	745	50.5

	Sex					
	Total		Male		Female	
Cause of death	Number	Percent	Number	Percent	Number	Percent
All defined causes	**3,699**	**100**	**2,225**	**100**	**1,474**	**100**
Group II: Non-communicable Conditions						
Neoplasms	139	3.8	67	3.0	72	4.9
Childhood Cardiovascular Diseases	11	0.3	2	0.1	9	0.6
Chronic Kidney Diseases	11	0.3	8	0.4	3	0.2
Other Non-communicable Diseases	180	4.9	123	5.5	57	3.9
Other Cardiovascular Diseases	3	0.1	1	0.0	2	0.1
Other Defined Causes of Child Death	35	0.9	18	0.8	17	1.2
Chronic Respiratory	98	2.6	60	2.7	38	2.6
Cirrhosis	25	0.7	19	0.9	6	0.4
Congenital malformation	5	0.1	4	0.2	1	0.1
Diabetes	142	3.8	81	3.6	61	4.1
Digestive Diseases	12	0.3	7	0.3	5	0.3
Ischemic Heart Diseases	168	4.5	80	3.6	88	5.0
Leukemia/Lymphomas	24	0.6	12	0.5	12	0.8
Stroke	529	14.3	281	12.6	248	16.8
Total	1,382	37.4	763	34.3	619	42.0
Group III: Injuries						
External causes of death	497	13.4)	387	17.4	110	7.5
Total	497	13.4	387	17.4	110	7.5

Appendix 3: Registration Forms

REPUBLIC OF ZAMBIA

Form VIII(2016 Rev.)
(Rules 16, 17, 18 and 23)
(To be completed in duplicate)
(Stocked by DNRPC)

NOTICE OF BIRTH

WARNING: In terms of section 9 of the Births and Deaths Registration Act, Cap. 51; any person who is obliged to make a registration and refuses or neglects to state any particular required on this form or gives any false information for the purpose of registration commits an offence and may, on conviction, be fined or imprisoned, or fined and imprisoned.

Please complete in block letters		Shaded fields for official use only	Serial No.:	
			District:	
Information Required		*Information Provided*	Date and Time:	
1.	**DETAILS OF BIRTH**	**DATE OF BIRTH** D D / M M / Y Y Y Y		
	Place of Birth:	Health Facility:	Home:	
		Other (specify):	Sex: M	F
	Health Facility Name: *(if born at health facility)*			
	Home Address: *(if born at home)*			
	Other (Specify):			
	Surname:			
	Given Name:			
	Other Name(s):			
	Birth Weight:			
2.	**DETAILS OF FATHER**			
	Surname:			
	Other Name(s):			
	Date of Birth:	D D / M M / Y Y Y Y		
	National Identity No.:			
	Occupation:			
	Social Security No.:			
	Village of origin:		Chief:	
	Tribe:		District:	
	Nationality:			
	Residential Address:			
	Contact No.:			
3.	**DETAILS OF MOTHER**			
	Surname:			
	Other Name(s):			
	Maiden Surname:			
	Date of Birth:	D D / M M / Y Y Y Y		
	Age of Mother at Birth of Child above (Years):	Years		
BAR CODE	National Identity No.:		Nationality:	
	Occupation:			
	Social Security No.:			
	Village of Origin:		Chief:	
	Tribe:		District:	
	Education:	Never Been to School	Primary	Secondary / Tertiary
	Residential Address:			
	Usual Place of Residence:			
	Attendant at Birth:	Qualified Midwife	Traditional Birth Attendant	
		Others (specify):		
4.	**ACKNOWLEDGEMENT OF PARENTHOOD** (To be completed by Biological Parents)			
	Marital Status of Parents:	Married	Not Married	
	If not married, Parents must complete the following:	I, ...acknowledge myself to be the natural Father of the child in Part 1. Signature:..... Date:.....		
		(Mother) I, …… hereby request and consent that the above named be registered as the Father of the child in Part 1. Signature :……..... Date:…….....		

5.	**LATE NOTICE**		
	If the child is above 12 months: complete the following:	That the reasons I failed to notify the birth of my child within twelve months after birth are: ……..... …….... …….....	
		I, therefore respectfully request that authority be given for the Registration of the Birth of the child in Part 1: …… …… Signature of Declarant Date	
6.	**DETAILS OF INFORMANT.**		
	Surname		
	Other Names		
	National Identity No.:		
	Nationality:		
	Relationship to Child:		
	Residential Address:		
	Postal Address:		
	Contact No.:		
7.	**APPENDICES (Attachments)**		
	Original Birth record		
	Copies of Parent's National Identity Document		
8.	**INFORMANT'S DECLARATION:** I hereby declare that the information provided above is true, correct and complete to the best of my knowledge. I understand that any incorrect, misleading or untrue information or the withholding of any relevant information is an offence. ……..… …… .....…… Name Signature Date		

FOR OFFICIAL USE ONLY

…… ……
Name of Assistant Registrar Signature

…… ……
Name of Registrar Signature

OFFICIAL STAMP

NOTE 1- The informant should be Father or Mother of the child and only if neither is able to give necessary information is one of the following persons entitled to give notice:

(a) the occupier of the house or the person in-charge of the hospital or institution where the child was born;
(b) a person present at birth; or
(c) The person now having charge of the child.

NOTE 2 – In terms of section 15 of the Act, a Registrar shall not enter in the Births Register the name of any person as father of an illegitimate child except at the joint request of the mother and the person acknowledging himself in writing in the presence of the Registrar to be the father of the child.

NOTE 3 – If you are a member of the National Pension Scheme Authority please quote your Social Security Number as this will assist the fund in the payment of benefits.

INSTRUCTIONS FOR COMPLETING NOTICE OF BIRTH

1. Fill in all applicable spaces using BLOCK LETTERS only without ERASURES or use of CORRECTING FLUID.
2. Use black or blue ink only.
3. Ensure that the information provided on the Form is correct to the best of your knowledge.
4. Once the forms have been submitted, the information provided will be considered correct details of the child.

REPUBLIC OF ZAMBIA

Form XIII (2016 Rev)
(Rule 32)
(To be completed in duplicate)
(Stocked by DNRPC)

NOTICE OF DEATH

WARNING: In terms of section 9 of the Births and Deaths Registration Act, Cap. 51; any person who is obliged to make a registration and refuses or neglects to state any particular required on this form or gives any false information for the purpose of registration commits an offence and may, on conviction, be fined or imprisoned or fined and imprisoned.

Please complete in block letters		Shaded fields for official use only	Application No. / Date and Time	
Information Required		*Information Provided*		✓
A.	**DETAILS OF THE DECEASED**	**SERIAL No.:**	**DISTRICT:**	
	Surname of the Deceased			
	Other Name(s)			
	Occupation			
	Residential address			
	Date of Death	D D / M M / Y Y Y Y		
	Place of occurrence of death	Health Facility ☐	Home ☐	
		Other (specify) ☐		
	Name of place of death			
	Date of Birth	D D / M M / Y Y Y Y		
	Age at Death	Years	Months	Days Sex **M** ☐ **F** ☐
	Nationality of Deceased			
	National Identity No.:			
	Social Security No./NAPSA			
	Level of education	NBTS ☐ Primary ☐ Secondary ☐ Tertiary ☐		
B.	**CAUSE OF DEATH:**	**(FOR OFFICIAL USE ONLY)**		
	Healthy Facility Death (attach medical certificate of the cause of death), Home Based (attach letter from traditional leader); Brought in dead (Police to complete Part C or attach Police Report); un-natural cause (attach coroner's report)			
	Immediate Cause		ICD CODE	
	Antecedent Cause		ICD CODE	
	Underlying Cause		ICD CODE	
C.	**POLICE REPORT: BROUGHT-IN-DEAD CERTIFICATE**			
	This is to certify that:MR/MRS/MS			
	Place of Residence			
	Confirms having brought in the body of his/her (relationship)			
	Surname:			
	Other Names:			
	Age:	He/She passed away on D D / M M / Y Y Y Y Time:		
	At (Place):			
	Suddenly / Suffering from:			
	Treatment was at: 1. And this is natural death ☐ 2. And this is sudden death ☐ post mortem examination to be conducted *(Tick applicable situation)*			
	No. and Rank	Formation:		
	Name:.....			
	Signed:..... Date:.....			
	Authorised Medical Practitioner's Remarks:			
	Pupils dilated and fixed:			
	Certified by (Name):.....			
	Signature:..... Date:.....			

D.	**DETAILS OF INFORMANT.**	
	Surname	
	Other Names	
	Relationship to the Deceased	
	Contact No.:	
	National Identity No.:	
	Nationality:	
	Residential Address:	
	Postal Address:	
	Date of Registration:	

E.	**APPENDICES (Attachments)**
	Original Medical Certificate of the Cause of Death
	Original NRC for the Deceased
	Copy of Informant's National Identity Document
	Coroner's Report in case of unnatural death requiring investigation

INFORMANT'S DECLARATION

I hereby declare that the information provided above is true, correct and complete to the best of my knowledge.
I understand that any incorrect, misleading or untrue information or the withholding of any relevant information is an offence.

…… …… ……..
Name Signature Date

FOR OFFICIAL USE ONLY

…… ……
Name of Assistant Registrar Signature

…… ……
Name of Registrar Signature

OFFICIAL STAMP

NOTE 1 – The informant should be a relative present at the death or in attendance during the last illness of the deceased, and in default thereof the person from the following:

(a) A relative living in the district where the deceased died;
(b) A person present at the death; and
(c) The undertaker.

NOTE 2 – The Medical Certificate showing the cause of Death must be attached to this form.

NOTE 3 – If the deceased was a member of the National Pension Authority, please quote his/her Social Security Number as this will assist the Fund in the payment of benefits.

INSTRUCTIONS FOR COMPLETING NOTICE OF DEATH

1. Fill in all applicable spaces using BLOCK LETTERS only without ERASURES or use of CORRECTING FLUID.
2. Use black or blue ink only.
3. Ensure that the information provided on the Form is correct to the best of your knowledge.
4. Once the forms have been submitted, the information provided will be considered correct details of the applicant.