

VITAL STATISTICS REPORT ZAMBIA 2016

Abstract

Vital Statistics are a key ingredient for evidence based planning and for monitoring implementation of development goals and health interventions. In an effort to provide informative vital statistics, the Department for Civil Registration has embarked on reforming and improving civil registration and this report is the outcome of such efforts with the help of stakeholders and cooperating partners..



2016 VITAL STATISTICS REPORT

Central Statistical Office
Lusaka, Zambia

Ministry of Home Affairs
Lusaka, Zambia

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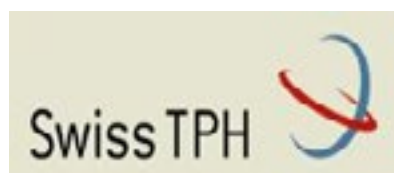




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Preface

A well-developed Civil Registration and Vital Statistics (CRVS) system can be a key source of Vital Statistics (VS) if among other things, completeness, continuity, timeliness of registration of vital events is entrenched and sustained. For Zambia, this is the first Vital Statistical Report from Civil Registration after the start of the implementation of the 2015 National Strategic Action Plan (NSAP) to reform and improve Civil Registration in Zambia. The report covers the vital events that were registered in the year 2016 with focus on births and deaths. It addresses the vital statistical needs in a number of institutions and sectors, such as the monitoring of health interventions, with accurate statistics on causes of death. For instance, we can see whether there are improvements in-terms of controlling mortality from specific conditions and diseases. Accurate demographic statistics on births and deaths are indispensable to planning, implementation and monitoring of development programs such as sustainable development goals (SDGs). They provide some indication to government and other stakeholders on areas and types of need in this era of evidence based planning and action.

It must be noted that as a country, Zambia is faced with challenges in increasing coverage and completeness for birth and death registration. Coverage for birth registration is 11 percent for under-five children (ZDHS 2013/2014), while coverage of death registration is about 5 percent (DNRPC, 2013). This report presents an opportunity for the country to showcase how much progress has, so far, been achieved, how vital statistics can help the situation in terms of meeting the data needs at various levels and what needs to be done for the country to have a comprehensive Civil Registration System.



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Acknowledgements

The Ministry of Home Affairs recognizes the invaluable contributions from various stakeholders and cooperating partners towards the implementation of the National Strategic Action Plan for reforming and Improving Civil Registration and Vital Statistics in the Country. The implementation of the plan has led to a number of improvements making it possible to generate vital statistics from civil registration.

The contributions of sectoral ministries such as the Ministry of Health, Ministry of National Development Planning, Ministry of Local Government and Housing and Ministry of Chiefs and Traditional Affairs continue to play a key role in ensuring that vital events occurring in health institutions are captured and the registered vital events are processed into usable vital statistics. Appreciation is further extended to Cooperating Partners, particularly the United Nations Economic Commission for Africa for driving the CRVS agenda and compelling member countries to generate Vital Statistics reports regardless of the level of completeness. We further wish to acknowledge financial and technical support from the Bloomberg Data for Health Initiative (BD4HI) towards data processing and writing of the report.

We would also like to specially recognize the efforts of the Civil Registration and Vital Statistics Technical Working Group members for their contribution and commitment to the improvement of civil registration in the Country in line with the regional and national efforts that have placed high demand for data on vital statistics.

Lastly, but not the least I want to thank the Country Coordinator Vibeke Nielsen from Statistics Norway for providing valuable technical support to the CRVS technical working group assigned to write this vital statistical report based on data from civil registration. It is my hope that this report will set the tone and create a platform for generating these reports on an annual basis.



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Executive Summary

The Technical Working Group (TWG) on Civil Registration and Vital Statistics Chaired by Central Statistical Office and the Secretariat being the Department of National Registration, Passport and Citizenship with technical assistance from Statistics Norway and UNECA developed the 2016 Vital Statistics Report from Civil Registration. This milestone has been achieved after ECA advised that despite the low coverage levels, countries must be writing annual reports on Vital Statistics from Civil Registration.

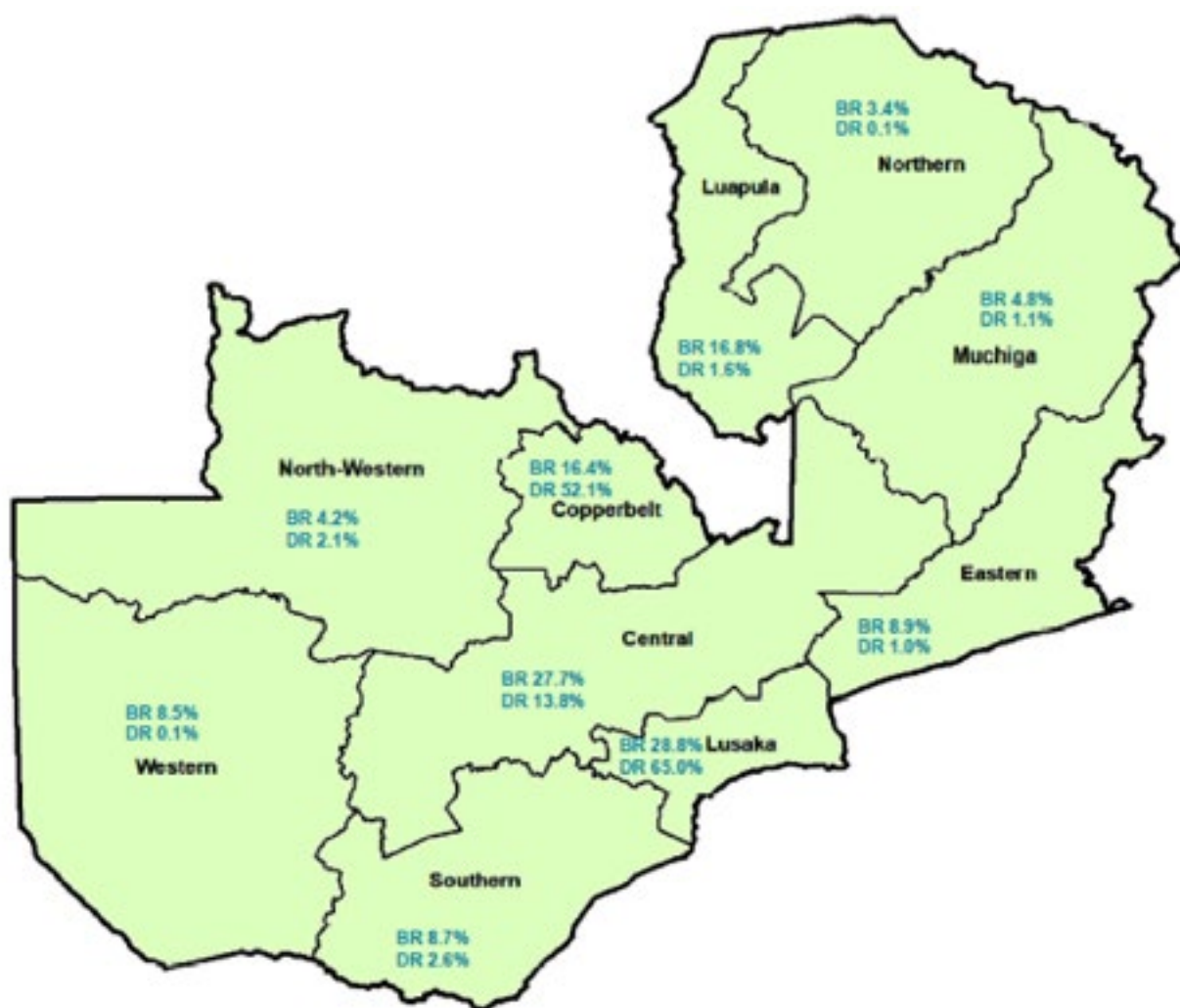
This report has been generated using data extracted from the civil registration database for the year 2016. The report reveals that an overall coverage rate for Birth Registration is 14.7 percent and that if put according to regions, the rates are 20.4 percent for urban and 11.0 percent for rural areas. The report further shows that at provincial level, Lusaka Province had the highest birth completeness rate at 28.8 percent, followed by Central Province at 27.7 percent. Northern Province had the lowest birth completeness rate at 3.4 percent.

On death registration, the report shows that death registration completeness rate in the country is still low standing at 20 percent. The region comparison shows 48.0 percent for urban areas and 1.0 percent for rural areas. However, even within urban areas, the deaths registration rates differ from one Province to the other. Lusaka has the highest rate at 65 percent while Northern Province has the lowest rate at 0.1 percent.

Figure 4.1 of the report shows that the national sex ratio at birth for 2016 was 101, indicating that there were 101 males born per 100 females born. The figure is consistent with the Census 2010 figure at 103.

The crude death rate was recorded at 2.6 deaths per thousand midyear population. Comparing this figure to the 2010 census figure of 13.0 suggests lack of completeness of death registration in the civil registration system. Rural areas recorded a much lower crude death rate (0.1) compared to urban areas (6.0).

Birth And Death Registration Coverage, Zambia 2016



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
INRIS	Integrated National Registration 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 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.

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, thus enabling 100 per cent—or universal—coverage.

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 as “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. For vital statistics purposes, symptoms or modes of dying, such as heart failure and asthenia, are not considered to be causes of death. See underlying cause of death.

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. See Foetal death

Chapter I. Introduction and background

Civil Registration and Vital Statistics (CRVS) is the system that involves registration of vital events by a civil registration authority and other interlinked institutions and the generation of vital statistics from civil registration records for publication by a Vital Statistics authority (WBG, 2014). In Zambia we have the Department of National Registration, Passport and Citizenship (DNRPC) as the Civil Registration authority and Central Statistical Office (CSO) as the Vital Statistics authority. However, there has been no functional linkage between the two institutions leading to the later not generating vital statistics from the former. This has resulted in a huge gap in the production of vital statistics leading to dependence on periodic censuses and surveys for vital statistics data. This report therefore, provides vital statistics from civil registration on birth, deaths and on causes of death for the year 2016. It also showcases the improvements that have been achieved so far and the potential that the CRVS system holds.

A functional CRVS system can meet some of the data needs to enable the country to measure the performance towards achieving Sustainable Development Goals (SDGs), national development programmes and other health interventions in addition to providing evidence for planning (UNSD, 2014). The benefits of a high quality, continuous and well maintained civil registration system are many, both to individual persons and communities. For an individual, civil registration will be the main avenue to securing their right to a legal identity by acquiring a birth certificate, national registration and other official documentation of important life events (DNRPC, 2014). At country level the benefit of an effective (CRVS) system is the role it plays in supporting and informing effective evidence-based planning for socio-economic development, supporting good governance through data driven planning, and accountability links with electoral rolls, financial management by linkage to social security and data management to Identity systems (DNRPC, 2014). At community level the CRVS system will support monitoring of health interventions. Therefore, Zambia as a country is committed to improving her Civil Registration and Vital Statistics system so as to realize the immense benefits that such a system once improved can offer to her nationals.

The importance of civil registration and vital statistics in advancing Africa's development agenda including accelerating regional integration and meeting Sustainable Development Goals (SDGs) was recognized. This, in addition, resonates well with the country's objective of improving coverage for both birth and death registration. It is for this reason that Government with support from cooperating partners has embarked on this road. It should be noted that immediately after the Second Conference of African Ministers responsible for Civil Registration held in Durban, South Africa; in September 2012, Zambia went through a process of formulating the Plan of Action to reform and improve the Civil Registration and Vital Statistics system running from 2015 - 2019.

The implementation of the National strategic Action Plan (NSAP) for CRVS has resulted in a number of improvements that have made the generation of vital statistics from civil registration possible, these include; improvement in the data collection tools (registration forms)—capturing key UN recommended variables, introduction of Statutory Instrument No. 44 which provides decentralisation of certification for vital events, opening up of birth registration desks in selected health centres and increased public awareness on the importance of civil registration.

It must be noted however that, Birth and death registration coverage is still very low for all age groups. According to the ZDHS 2013/14, the birth registration for under five children was at 11 percent. The report further shows that, coverage of registration is relatively high in Lusaka and Copperbelt provinces for both births and deaths. In most rural provinces, birth registration is reasonably high compared to death registration. The report also contains information on causes of death, it shows the major causes of deaths for all registered deaths in the civil registration system for the year under review. The cause of death figures were arrived at by using the standard method for calculating coverage and WHO standard guidelines for generating causes of death information. The period being reported on is the year 2016 covering all events registered and processed within the same year. The cut-off date for processing vital events for the previous year is 31st of March of the succeeding year.

Chapter 2. Civil Registration System of the Country

2.1. Introduction

This chapter focuses on the description of civil registration and vital statistics system as it is on the ground, it highlights the CRVS situation in the country and strides made towards publishing the vital statistics report from the civil registration and vital statistics system. This chapter also highlights some important historical, legal, organizational, administrative and practical issues.

2.2. The Civil Registration System

A Civil Registration and Vital Statistics (CRVS) system records vital events such as births, deaths, marriages, divorces and foetal deaths. The civil registration authority creates a permanent record of each event and other interlinked institutions mandated to produce vital statistics then generate vital statistics from the civil registration records for publication. The CRVS system in Zambia captures vital events through an administrative system in line with the relevant pieces of legislation. In Zambia the Civil registration system in its current form 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 while marriages and adoptions are registered using the manual system.

2.3. History

Registration of vital events was introduced in the Country by the Colonial government in the early twentieth century. However, the system only provided for the registration of events occurring among the whites and those of Asian origin, thus, omitting the registration of indigenous people. This was the case even after independence in 1964 until 1973 when a law was enacted to provide for the registration of “every birth and every death that occurs within the boundaries of Zambia without distinction to origin or descent” (Birth and Death Act Cap 126). 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.

The Civil Registration system provided for by the Birth and Death Registration ACT Cap 51 was centralised. The implementation of this ACT has not been very proactive, as such there is very low coverage of birth and death registration. This was the situation for a number of decades until the 2012 ministerial conference held in Durban, South Africa. During this Conference, the African Ministers responsible for civil registration recommended that countries needed to develop country owned national action plans to reform and improve civil registration and vital statistics. This marked a new movement towards improving the civil registration system. The conference urged African countries to conduct comprehensive assessments of CRVS and formulation of the National Strategic Action Plans. It is against this background that Zambia carried out a comprehensive assessment of the CRVS system and produced the national strategic action plan to reform and improve the CRVS system. Activities outlined in the plan included putting in place the statutory instrument no. 44 of 2016 that provided for change of birth and death notification forms and decentralised certification of the two events respectively.

The implementation of the plan is yet to answer some of the major shortcomings of the CRVS system in the country. The supply constraints in the structural organisation of civil registration has, however, remained static. This has resulted in challenges in responding to changes in the environment as well as meeting the surging demand for birth and death certificates. The other limitation has been the inability to transmit data to the Statistical Office which is the vital statistics authority for them to produce and

disseminate vital statistics from civil registration. This is therefore the first time in the last two decades that a vital statistical report has been generated from the routine civil registration data.

2.4. Legal and administrative issues

Registration of vital events in the country is fragmented and managed by various pieces of legislation. Those that fall under the civil registration authority include; Birth and Death Registration Act Cap. 51, Marriage Act Cap. 50, and Adoption Act Cap 54. Registration of marriage is done by the local authorities and the judiciary as provided for under Local Government Act Cap 281. Issuance of birth records and medical certificates of the cause of death is done by Ministry of Health. This makes coordination a key challenge towards achieving increased levels of registration coverage and systematic recording, storing and retrieval of vital event records.

As earlier stated, the births and deaths registration act CAP 51 of the laws of Zambia was put in place in March 1973, the Act provides for the registration of births and deaths, prescribes guidelines and procedures in the subsidiary part; the key highlight is that, it provides for the registration of every birth and death that occurs within the boundaries of the country without discriminating any grouping. The ACT, however, provides for the centralised certification which puts a heavy burden on the civil registration headquarters. The centralised Certification has been a major setback in certification as it demotivated a lot of parents whose children's certificates were taking long to be printed. As a step towards solving the problem of delayed certification, the Zambian Government amended the Birth and Death Registration Act (CAP 51) with Statutory Instrument number 44 of 2016 which decentralised Certification beyond the District level. Equally, on the strength of this amendment, so far the Government has managed to set up one printing Centre, in Kabwe, Central Province in an effort to decongest the Headquarters. A plan has been put in place to slowly set up printing centres in every region and eventually reach every district so as to motivate the parents to register births and thereby increase the registration coverage. The Marriage Act and the Adoptions act equally provide for the registration of those events, however, the system used is manual and paper based, as a result could not be included in the analysis.

Different section of Cap 51 provide for the following: 'the birth of every child born and the death of every person dying in Zambia after the commencement of this Act shall be registered in accordance with the provisions of this Act'. Section 6 obligates the informant to notify the occurrence of a birth or death using the prescribed forms and provide accurate information therein to the best of their knowledge.

Section 14 (1) (c) further provides for the time frame; 'in the case of a child born alive, the person having charge of the child; to give notice in the prescribed form containing the prescribed particulars of the birth within one month thereof to the Registrar of the district in which such child is born.

Section 18 (1) provides for the registration of every person dying and who should notify that death. On timelines, it provides for the notifier; "to give notice of the death of such person in the prescribed form or forms containing the prescribed particulars to the Registrar of the district in which such person died within one calendar month of such death, or, if the Registrar is satisfied that such notice could not be given within the said period and that no undue delay has taken place, within three months after the death. The administrative interpretation of these timelines are as shown in the table below for both birth and death registration:

#	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

When an event is registered within the current registration timeframe, it is absolutely free, for late and delayed registration, even though the Act provides for penalties, they have been administratively relaxed - meaning that penalties are not enforced. This, according to the Civil Registration Authority, is to promote registration of vital events (NSAP 2014). Delayed registration has no capping, for as long as the event meets the legal criteria, registration can still be done.

2.5. Registrars and Registration centres, data sharing and responsible institution.

The birth and death registration Act provides powers to the Minister to appoint any person in the country, in addition to appointed civil registrars, to act as a Registrar of birth and deaths and to prescribe the registration centre. This essentially means that, registration can take place at any administrative level the Minister so prescribes, however, certification is only done at the central level in Lusaka. All forms completed at local level are transported to headquarters for processing.

Data sharing has become the critical issue in civil registration for the purpose of generating vital statistics, the ACT only empowers the registrar general to be the custodian of the birth and death register. However, it also prescribes a form that must be populated whenever an event is registered with variables of statistical importance which is supposed to be passed on to the Vital Statistical Authority. This is according to Rule 19, (Completion of Vital Statistics Form of the Births and Deaths Registration Act) which makes provision for the collection of vital statistics. There is, however, no provision for transmission and publication of this information, even the Census and Statistics Act Cap 127 of the laws of Zambia does not have any corresponding provisions relating to transmission and publication of vital statistics from Civil registration (DNRPC, 2014).

The Civil Registration office is responsible for the implementation of the Civil Registration Act, but when it comes to penalties and conflict, it works with the law enforcement agencies. The same department is also responsible for the implementation of the National Registration Act Cap 126 of the laws of Zambia which governs the national identity system. However, even though the same institution manages the two systems, there is no functional linkage between civil registration and the national identification system.

2.6. Organizational structure, registration process and information flows

Civil Registration and Vital Statistics organisation structure is in line with the legal frameworks that govern the civil registration and vital statistics. However, the structure is not adequate as it has never been revised to take into account population growth and other emerging realities.

The registration process for vital events is such that, the target events are registered from various registration points and then brought to the National level for processing. Completed notification forms are validated, entered in the civil registration system and processed. For a long time, the process ended with issuance of the certificates which is the administrative function of the civil registration.

Regarding information flow, there was no focus or effort directed towards generating vital statistics from civil registration by both mandate holders. However, to produce this 2016 vital statistical report from civil registration, the link to the vital statistical side had to be re-activated, a data set was extracted from the electronic civil registration data base and passed on to the vital statistical authority for analysis and report writing.

In Zambia the issue of collaboration and inter-ministerial engagements is at the heart of interventions being employed to improve the CRVS system. For example; the ZDHS report shows that 67% of all births occur in health facilities while the SAVVY report indicates that 53 percent of all deaths occur in health facilities. This places the ministry at a strategic position with respect to capturing of facility events, such that if all health facilities would register each and every birth, then coverage for under five children would rise to about 67% birth registration coverage.

To explain this further, we have included process flow maps for the registration process and transfer of information for both facility and non-facility events:

Figure 2 Process Flow Map for Health Facility Births

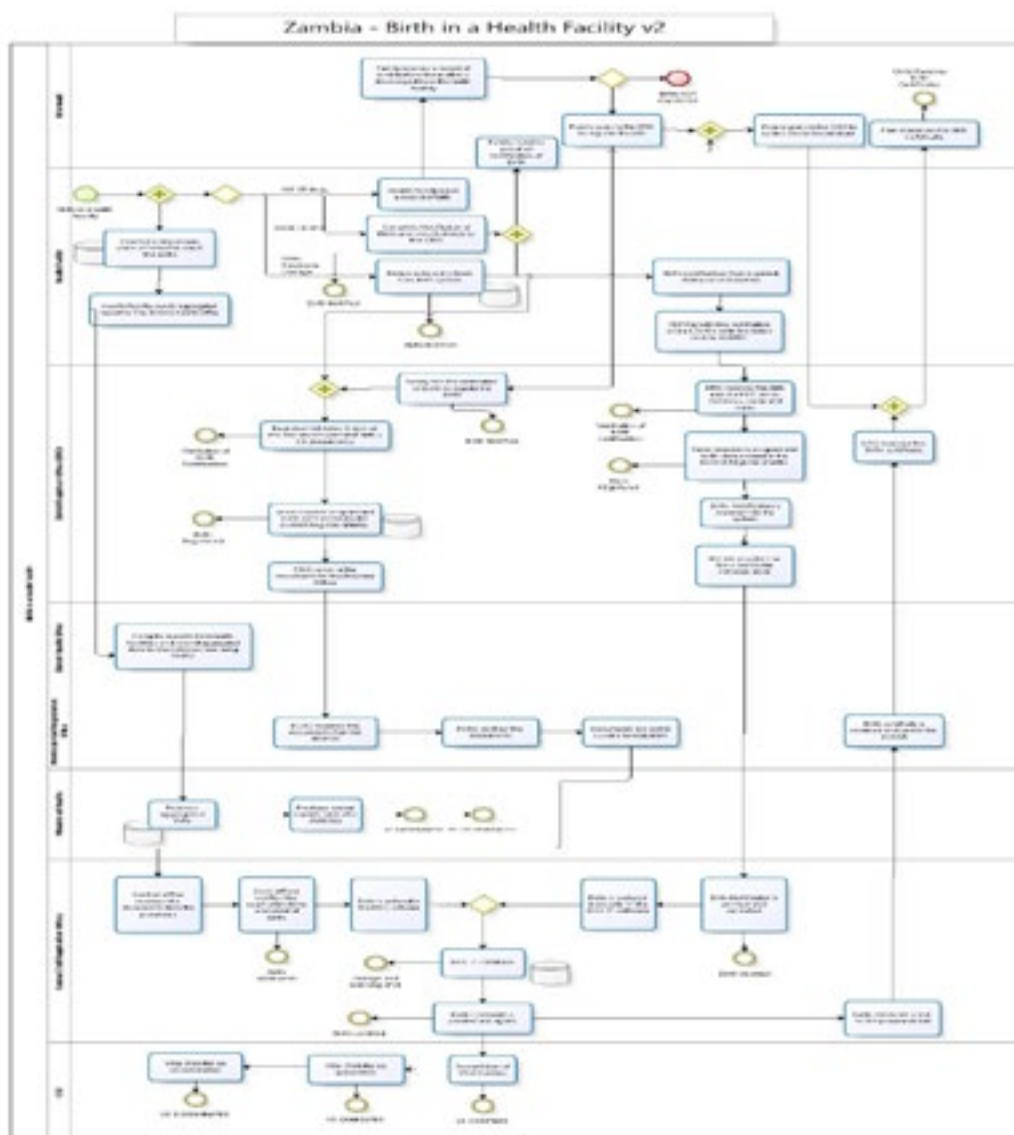


Figure 2.1: Process Flow Map for Births Outside of Health Facility

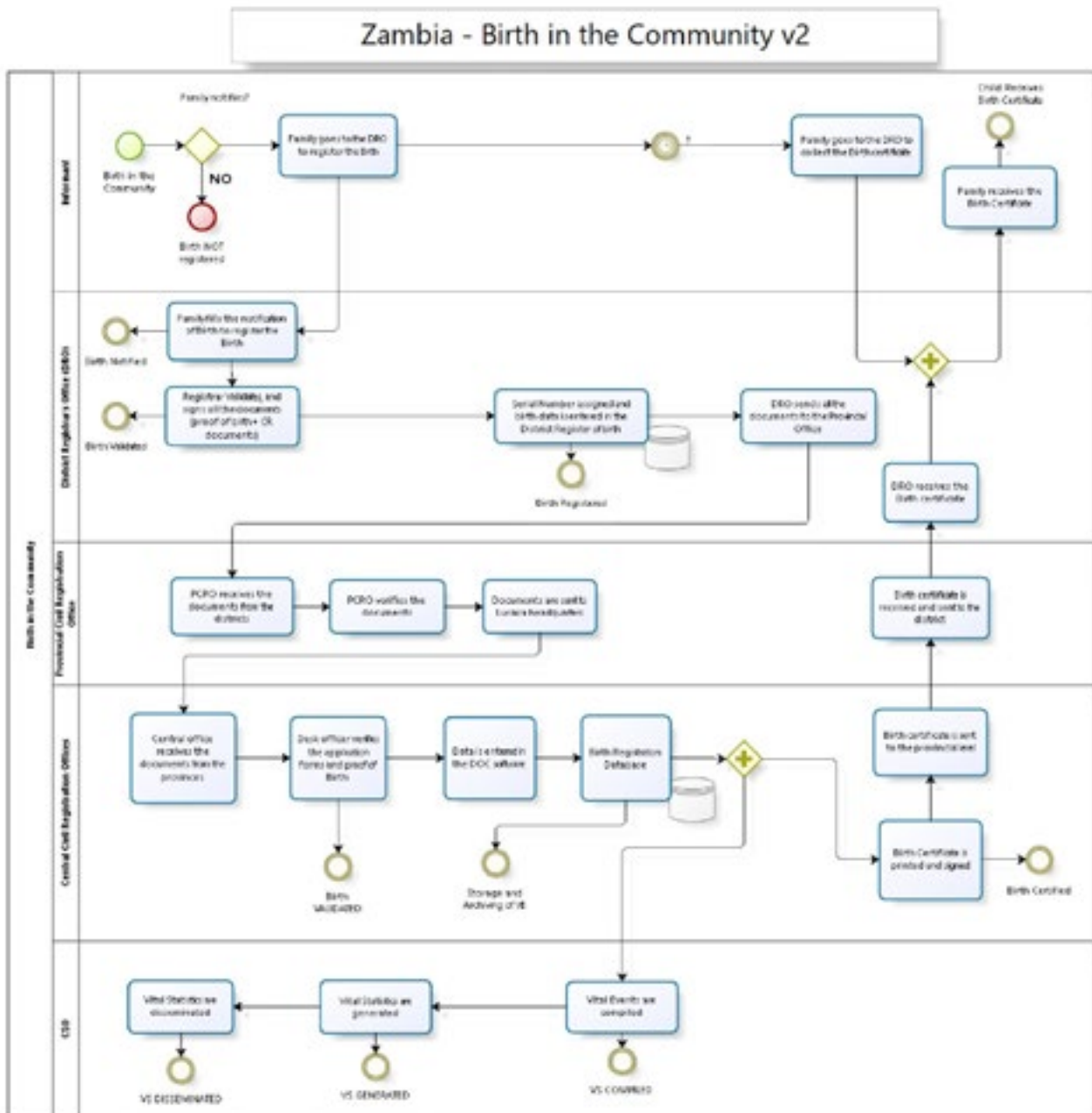


Figure 2.3: Process Map for Health Facility Death

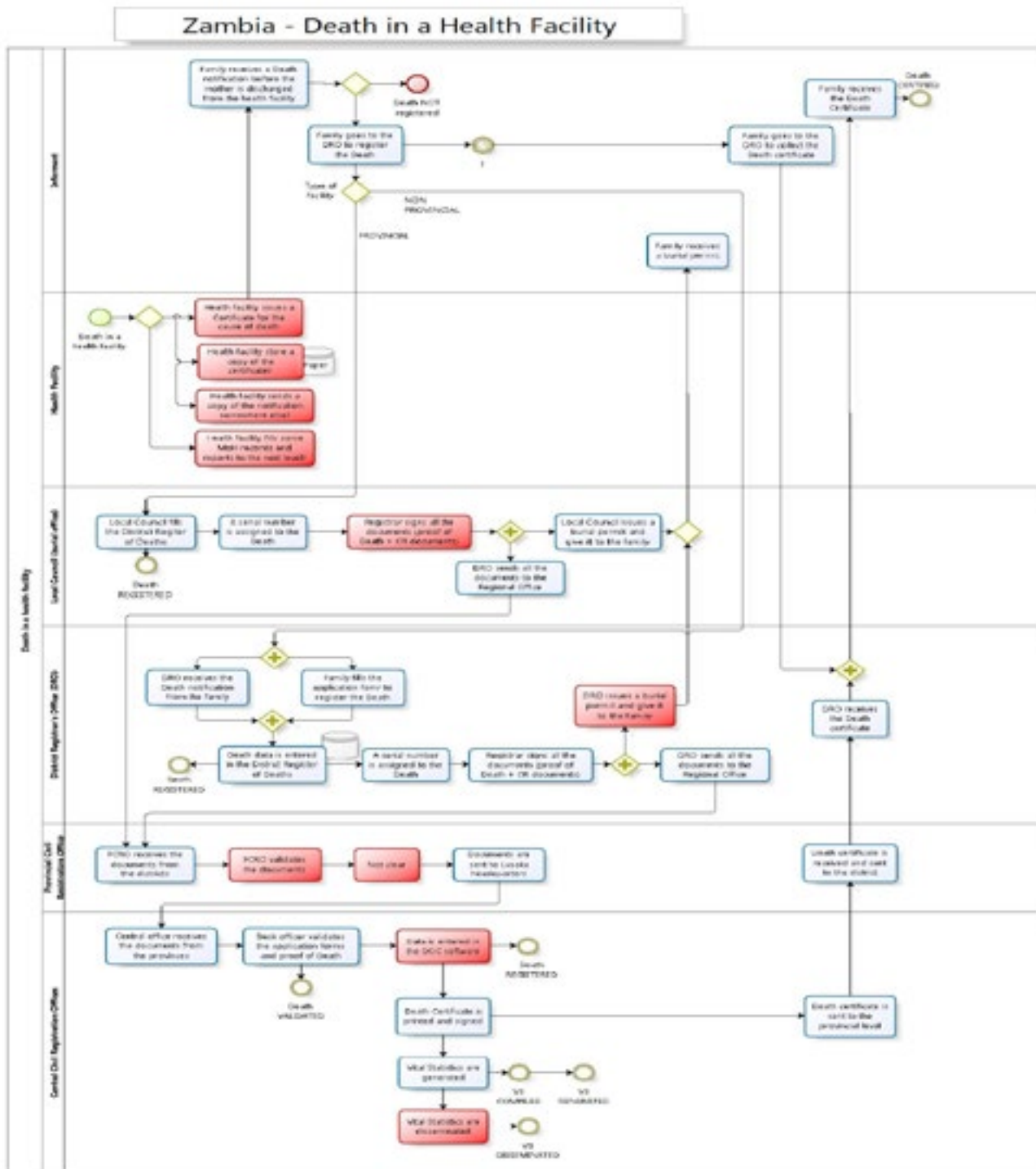
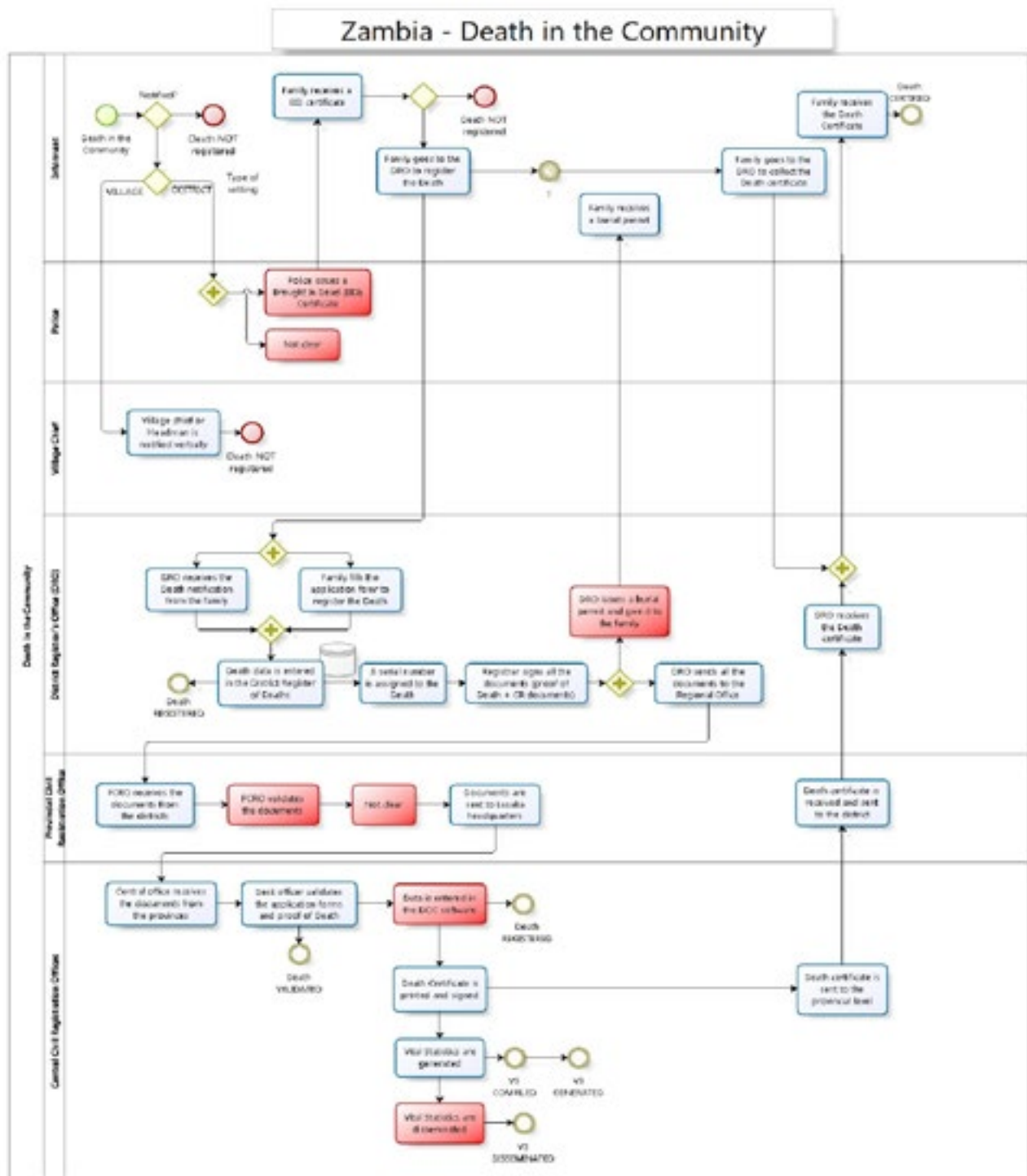
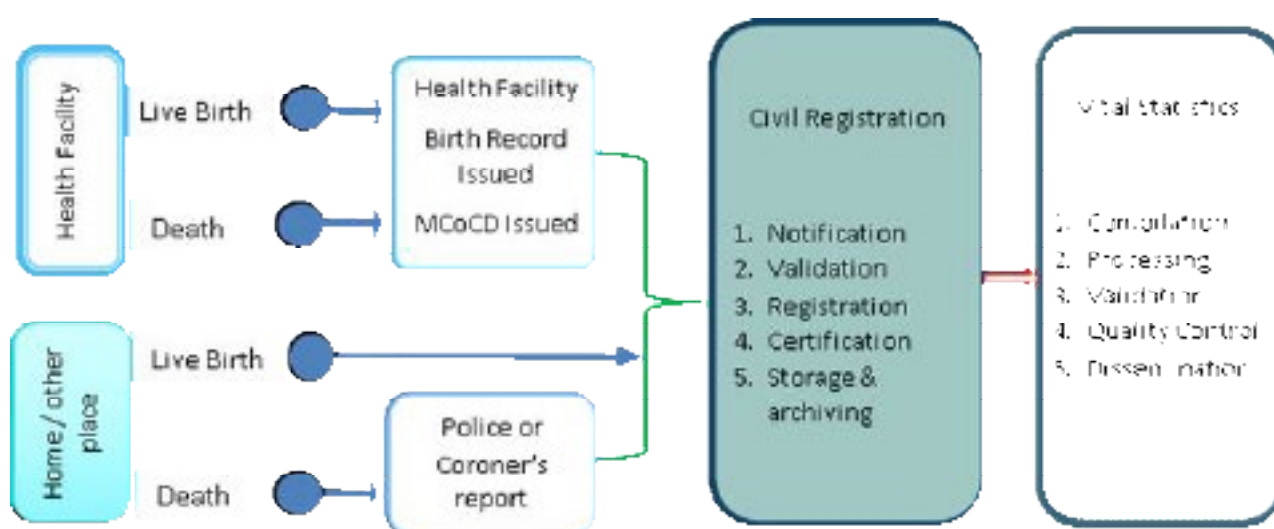


Figure 2.4: Process Map For Community Death



The four process maps show what happens for each event registered with the home – facility distinction. It shows an event happening either at the facility or at home or other places. Registration takes place in the District of occurrence and then completed notification forms are brought to the central level for processing and certification. For the year ending 2016, data for that year was transmitted to the Central Statistical Office for processing, analysis, report writing and dissemination. Data exchange does not therefore take place at lower levels (District and Province), the transfer is only done at National level after aggregation and de-identification. See Figure 2.5 showing a simplified process flow for registered vital events:

Figure 2.5



The link between the CR and VS had not been functional until 2016, when implementation of the NSAP for CRVS has seen a number of improvements made which included efforts to promote the generation of vital statistics from civil registration. The link therefore is officially active on an annual basis. What is remaining is putting in place mechanisms to govern this arrangement.

2.7.1 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, Once the vital event is notified, the District Registrar validates and enters it in the District register. The next step is sending the validated notification forms to the Provincial office which makes arrangements to transport them to HQ where processing and certification is done. Certificates are then sent to the registration centres for issuance to the respective applicants. Figure 2 clearly spells out how the transmission of forms flow from the registration point to the civil registration headquarters. The involvement of the Ministry of Health had been the issuance of birth records and medical certificates of the causes of death to confirm occurrence of the event in the facility. In Addition, following the findings reported in the 2013/2014 ZDHS report that 67% of all births occur at health facilities, the civil registration has partnered with the Ministry of Health to start completing birth notifications at the point of occurrence (selected health facilities). Completed notification forms are then sent to the District Registrar who then validates and registers them and in turn sends them through to headquarters for processing. There is also a feedback loop, if the notifications are incomplete, they are sent back to the facility for corrections.

2.7.2 Systems for checking, editing and validating the data and data security

Data quality is ensured in the process of registration, there are mandatory fields that must be completed and validation is done by the District registrar. During processing, the second level of processing, quality checks and editing are done before certification. Issues of data protection and confidentiality are addressed in two ways. Officers processing these records are under oath of secrecy and since data is transferred on paper from lower levels, the issue of cyber security does not come in until when the records are processed at HQ. At that point, there is a dedicated team of ICT officers who handle issues of cyber security.

2.7.3 Organization of vital statistics production and dissemination

Registration of vital events happens to be the process of data collection, the focus for the civil registrar was to collect data for the purpose of issuing a certificate, however, forms have been updated to ensure that statistical variables are included in the forms and that statistical data are collected, processed and tabulated in the aggregated form. The events data are, de-identified for onward transition to the statistical authority. In Zambia, this is the first time data is being sent to the statistical authority, and the team tasked to work on this data is a combination of officers from DNRPC and the Central Statistical Office (CSO). It therefore follows that, we need to put in place clear guidelines (legal framework) on how data transfer will be done, in future, with specified timelines.

2.8 Incentives and disincentives for registration

The issue of incentives for registration of vital events still requires a lot of attention; there are fewer incentives for registration because of the general acceptance for alternative documents for civil certificates. If, as a country, we make these civil certificates a requirement for obtaining other services such as obtaining national registration cards and passports, school enrolment, claim for pension among others, demand will increase. The other challenge has to do with the civil registration structure, it is very limited and creates a situation of inadequate manpower and limited registration points. On the other hand, the system is centralised on the certification side. There is literally no major dis-incentive for not registering, as people can register whenever they need to use the document.



Chapter 3. Data Quality and Completeness

This chapter presents information of data quality and completeness by looking at some of the data collection, processing and analysis that may affect data quality. It further presents detailed information on the issues of completeness at both national level and lower levels. However for death registration, lower level analysis is restricted to areas with registration coverage of over 20 percent.

3.1. Quality of data

Vital statistics from different sources need to be of the highest quality to serve as the basis for better decision-making. The preceding sections have highlighted the process in use in collecting, transmitting, processing, and certification. Notwithstanding the foregoing, and as may have been noticed, there are a number of issues that affected data quality and made the process of data cleaning, analysis and report writing challenging in the process of developing this report, these include:

- The data analysed for this report is authentic data, as contained in the birth and death register under the Registrar General's Office, this means that there was no room for data manipulation.
- Birth and Death notification forms used during the period under review do not capture all UN recommended variables there by making the data lacking some key information for cross tabulation analysis.
- The primary function of Civil Registrar's is issuance of civil certificates. Given the foregoing, the registrars who provide quality checks just focus on variables pertaining to s their primary focus. In contrast if items, in the form, of statistical significance are left blank, they will still approve such a form.

Cases that did not have sufficient information for analysis were dropped thereby reducing the number of cases analysed and as a consequence affected the completeness reported.

This report has a section which contains recommendation for improving data quality.

3.2. Completeness

Calculating of completeness depends on a number of factors from country to country; even when civil registration is well established and well maintained, other sources of demographic data are useful in evaluating demographic indicators and completeness of CR. For example, population censuses are essential in providing the necessary denominators for calculating vital event rates and ratios (UNSD, 2014). Therefore, the use of population census data to obtain denominators is indispensable when the civil registration system is not accompanied by a population register as the case is for Zambia.

This section covers the completeness rates of birth and death registration at the national and subnational levels. However, due to non-availability of estimated births and deaths data at rural and urban levels of each province as well as the other sub divisions, births and deaths completeness are only done at national and provincial levels. In calculating the completeness of both birth and death registration only births and deaths that were processed at the DNRPC Head office were considered.

3.2.1. Birth Registration Completeness

Civil registration and Vital statistics from different sources need to be of the highest quality to serve as the basis for good decision-making. Completeness of the data is key in ensuring quality. The completeness of birth registration is covered in tables 3.1 and 3.2 while that of death registration is covered in Table 3.3.

Table 3.1 shows the birth registration completeness rate at national and provincial levels for the year 2016. Overall, birth registration completeness rate was 14.7 percent. It was lower in rural areas (11.0 percent) as opposed to urban areas (20.4 percent). At provincial level, Lusaka Province had the highest birth registration completeness rate at 28.8 percent, followed by Central Province at 27.7 percent. Northern Province had the lowest birth registration completeness rate at 3.4 percent.

Table 3.1: Birth Registration Completeness Rate by Province, Zambia 2016.

Province	Estimated Live Births	Number of Live Births Registered	Birth Registration Completeness Rate
Zambia	669,889	98,448	14.7
Rural	406,296	44,581	11.0
Urban	263,593	53,867	20.4
Central	66,026	18,280	27.7
Copperbelt	90,042	14,775	16.4
Eastern	83,503	7,459	8.9
Luapula	53,821	9,043	16.8
Lusaka	113,640	32,726	28.8
Muchinga	43,640	2,109	4.8
Northern	61,193	2,078	3.4
North Western	37,289	1,550	4.2
Southern	80,675	7,025	8.7
Western	40,060	3,403	8.5

Source: (DNRPC) 2016 Administrative Data.

Table 3.2 shows the completeness of birth registration by province for the years 2013 to 2016. Despite the gradual increase in overall births registered over the period 2013-2016, the completeness rate has been below 20 percent. The top three provinces that recorded the highest increases in completeness rates were Lusaka, Copperbelt and Central provinces. The bottom three provinces with the lowest rates in registration completeness were Muchinga, North Western and Northern provinces. In 2016 DNRPC increased activities in Central and Lusaka provinces as part of the program to improve registration of births. This explains the higher completeness rates in these provinces.

Table 3.2: Birth Registration Completeness Rate by Province, Zambia 2013-2016.

Province	2013	2014	2015	2016
Zambia	1.3	7.1	9.3	14.7
Central	3.2	2.4	5.9	27.7
Copperbelt	0.4	5.2	14.6	16.4
Eastern	3.0	13.1	6.4	8.9
Luapula	1.1	14.0	8.9	16.8
Lusaka	0.3	5.5	20.2	28.8
Muchinga	0.2	16.3	7.5	4.8
Northern	0.2	1.4	1.5	3.4
North Western	0.4	3.4	3.9	4.2
Southern	1.3	6.1	3.6	8.7
Western	3.0	5.4	9.4	8.5

Source: Department of National Registration Passport and Citizenship (DNRPC) 2013-16 Administrative Data.

Table 3.3 shows the death registration completeness rate at national and provincial levels for the year 2016. Overall, death registration completeness rate was at 20.0 percent. It was much lower in rural areas (0.8 percent) as opposed to urban areas (48.4 percent). At provincial level, Lusaka Province had the highest death registration completeness rate at 65.0 percent, followed by Copperbelt Province at 52.1 percent. Northern and Western provinces had the lowest death registration completeness rate at 0.1 percent.

Table 3.3: Death Registration Completeness Rate by Province, Zambia 2016.

Province	Estimated Annual Deaths	Number of Deaths Registered	Completeness Rate
Zambia	204,163	40,889	20.0
Rural	121,648	920	0.8
Urban	82,515	39,969	48.4
Central	19,527	2,685	13.8
Copperbelt	29,990	15,639	52.1
Eastern	28,454	277	1.0
Luapula	19,105	315	1.6
Lusaka	32,433	21,074	65.0
Muchinga	12,795	145	1.1
Northern	17,445	10	0.1
North Western	9,246	193	2.1
Southern	20,421	534	2.6
Western	14,747	17	0.1

Source: Department of National Registration Passport and Citizenship (DNRPC) 2016 Administrative Data

Chapter 4. Births

This chapter presents data on registered live births. It presents information on the number of births registered in the electronic civil registration database from 2013 to 2016. There is an under-representation for the first two years as a large number of birth registered in those years was not entered in the electronic civil registration records. Registration was done using the paper based system.

Table 4.1 presents the trend in the number of registered births by province. Since 2013, there has been an increase in the number of registered births in the country. The number of registered births increased by 1,114 percent from 8,111 in 2013 to 98,448 in 2016. The biggest increase in the number of registered births was recorded in Lusaka Province from 313 in 2013 to 32,726 in 2016. Eastern Province recorded the lowest increase of 216 percent from 2,361 in 2013 to 7,459 in 2016.

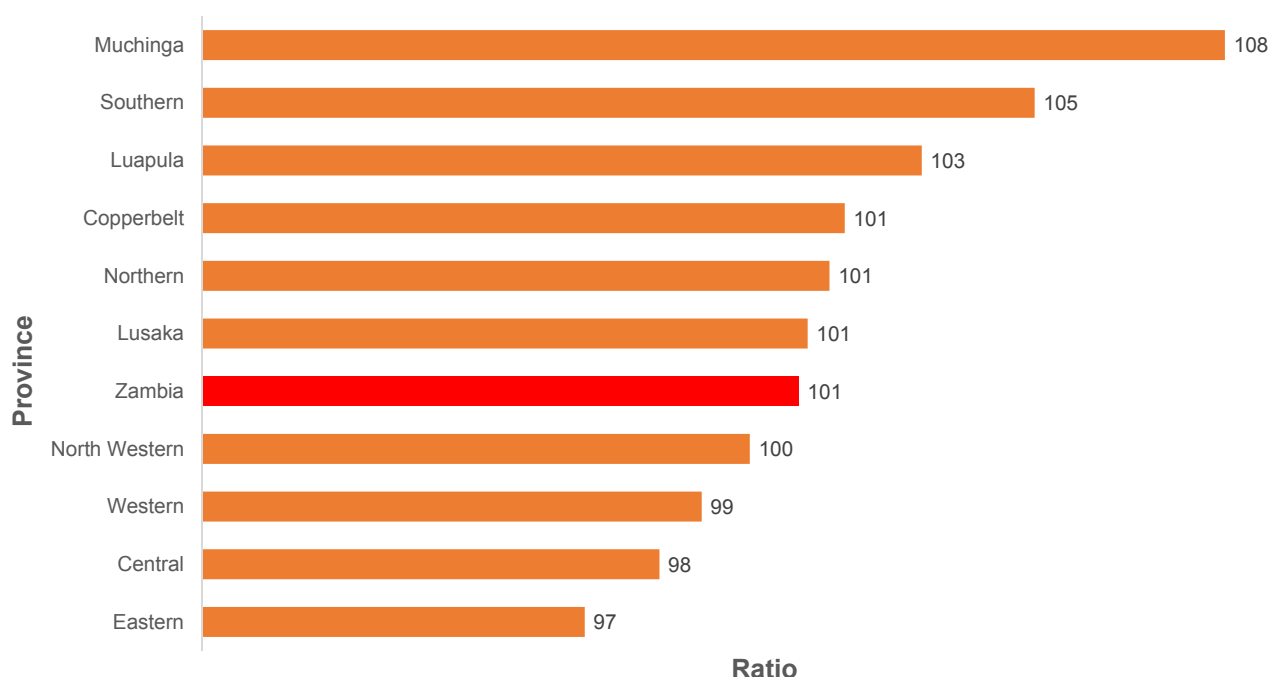
Province	Year			
	2013	2014	2015	2016
Zambia	8,111	45,661	60,973	98,448
Central	2,030	1,562	3,808	18,280
Copperbelt	363	4,499	12,846	14,775
Eastern	2,361	10,593	5,290	7,459
Luapula	582	7,364	4,754	9,043
Lusaka	313	5,883	22,195	32,726
Muchinga	63	6,737	3,179	2,109
Northern	107	823	875	2,078
North Western	140	1,255	1,423	1,550
Southern	973	4,801	2,851	7,025
Western	1,179	2,144	3,752	3,403

Source: (DNRPC) 2013-16 Administrative Data

4.1 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. The ratio of males per hundred females shown in figure 4.1 was derived from the number of registered live births that occurred in 2016. The national sex ratio at birth was 101, indicating that there were 101 males born per 100 females born. The results are consistent with the census and other surveys results which have consistently shown a higher sex ratio at birth. However, at provincial level, the lower sex ratio for some provinces is attributed to the lower birth registration completeness rates.

Figure 4.1: Sex Ratio at Birth among Registered Births by Province, Zambia 2016

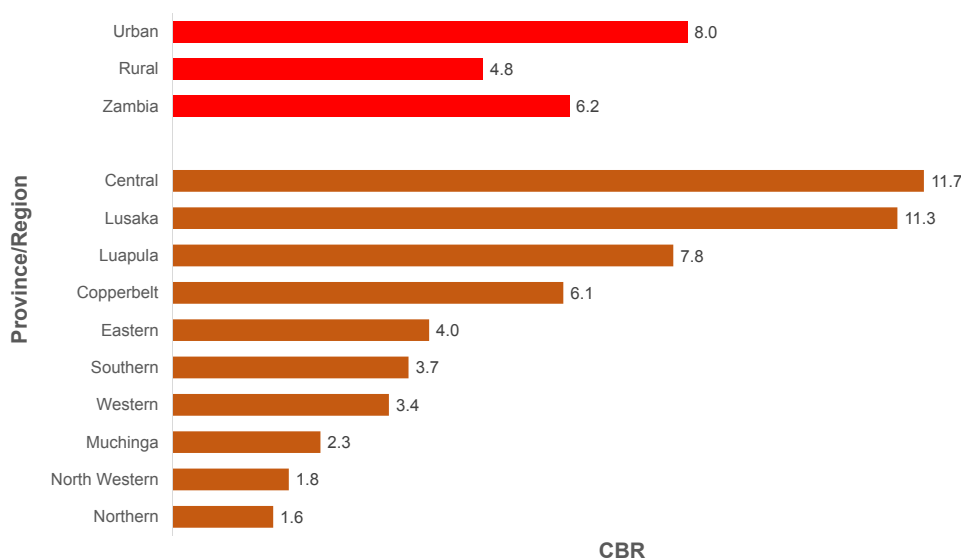


Source: (DNRPC) 2013-16 Administrative Data

4.2 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, registered births in 2016 were divided by the projected midyear population for the same year. The 2010 Census projections provided the estimated population for the year 2016. The CBRs derived from the civil registration births were very low, implying that the country's fertility rate was low which is not the case. However, this could be attributed mainly to the low birth registration completeness rate. According to the Zambia Demographic and Health Survey (ZDHS 2013-14), the crude birth rate was 37 births per thousand mid-year population. Hence a national crude birth rate of 6.2 in 2016 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 2016



Source: Department of National Registration Passport and Citizenship (DNRPC) 2013-16 Administrative Data

The number and percentage of registered births by sex and province is shown in Table 4.3. The pattern on registration by sex of the child is close to what is depicted by the sex ratio at birth. Overall, more male children (50.2 percent) were recorded than girls (49.8 percent). The difference in the percentages could only be due to the fact that there were more males born in the year than females. This pattern can also be observed at provincial level; the provinces that recorded the lowest sex ratio at birth (Central, Eastern and Western) had a higher percentage of female children registered as opposed to male children.

Table 4.3: Number and Percent of Registered Births by Province and Sex, Zambia 2016.

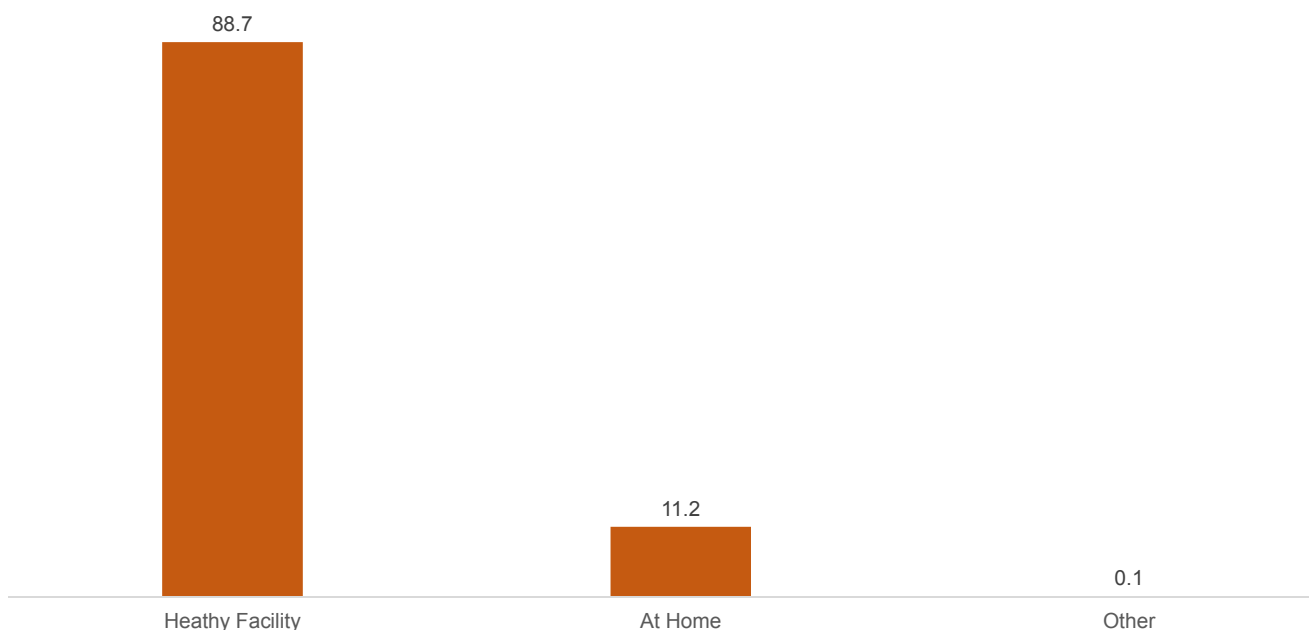
Province	Sex					
	Male		Female		Total	
	Number of Births	Percent	Number of Births	Percent	Number of Births	Percent
Zambia	49,375	50.2	49,073	49.8	98,448	100.0
Central	9,054	49.5	9,226	50.5	18,280	100.0
Copperbelt	7,440	50.4	7,335	49.6	14,775	100.0
Eastern	3,669	49.2	3,790	50.8	7,459	100.0
Luapula	4,584	50.7	4,459	49.3	9,043	100.0
Lusaka	16,426	50.2	16,300	49.8	32,726	100.0
Muchinga	1,096	52.0	1,013	48.0	2,109	100.0
Northern	1,045	50.3	1,033	49.7	2,078	100.0
North Western	774	49.9	776	50.1	1,550	100.0
Southern	3,595	51.2	3,430	48.8	7,025	100.0
Western	1,692	49.7	1,711	50.3	3,403	100.0

Source: Department of National Registration Passport and Citizenship (DNRPC) 2013-16 Administrative Data

4.3 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 registered in 2016 occurred at health facilities (88.7 percent). About one in ten of the births registered took place at home, and less than a percent occurred from any other place.

Figure 4.3: Percent of Births by Place of Occurrence, Zambia 2016



Source: Department of National Registration Passport and Citizenship (DNRPC) 2016 Administrative Data



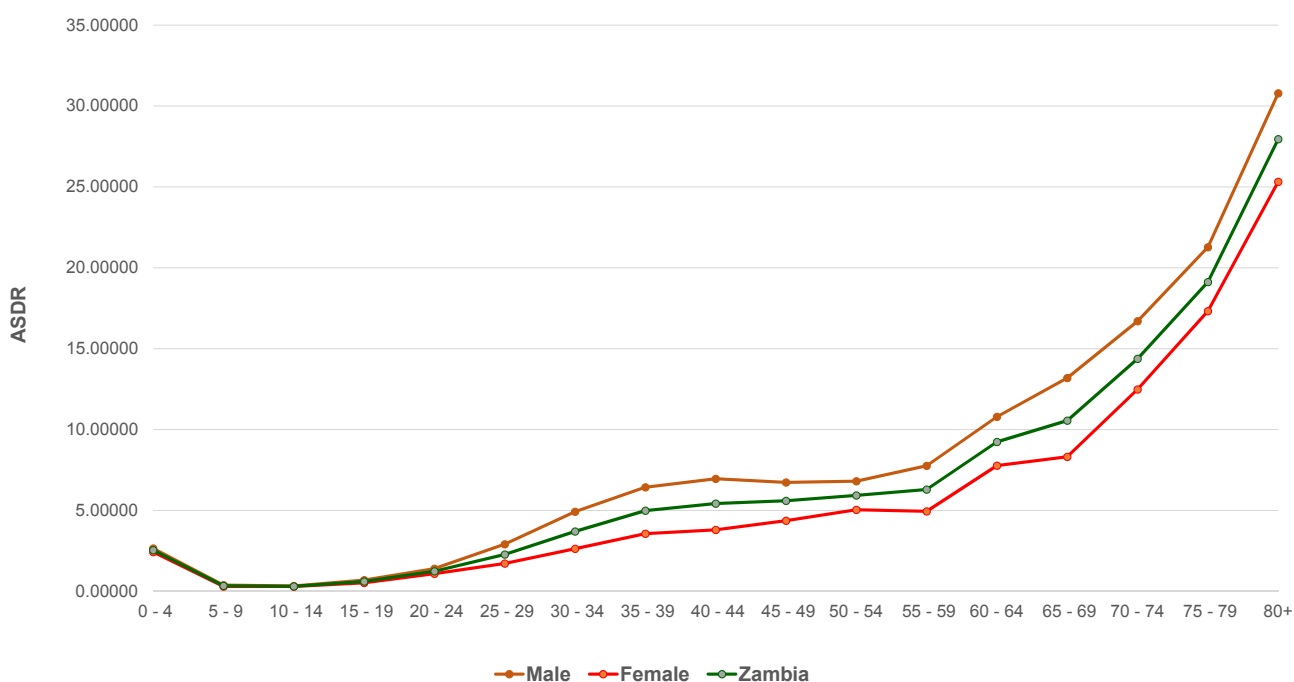
Chapter 5. Deaths

This chapter, presents data on the registered deaths. Due to the fact that the entry of data on deaths started in 2016, the analysis under this chapter is only for the year 2016. In addition, the low completeness of data discussed in Chapter 3 makes it difficult to disaggregate the data to special sub groups such as neonatal deaths as well as foetal deaths. Table 5.1 shows the number of registered deaths by age and sex in 2016. Overall, 40, 889 deaths were registered in 2016. Of these, 23, 680 were male deaths and 17, 199 were female deaths.

Age Group	Sex		
	Male	Female	Total
0 - 4	3,758	3,392	7,150
5 - 9	459	354	823
10 - 14	320	295	615
15 - 19	593	458	1,051
20 - 24	1,023	826	1,849
25 - 29	1,556	1,060	2,616
30 - 34	2,236	1,380	3,616
35 - 39	2,491	1,409	3,900
40 - 44	2,262	1,165	3,427
45 - 49	1,564	930	2,494
50 - 54	1,160	864	2,024
55 - 59	976	679	1,655
60 - 64	924	706	1,630
65 - 69	866	646	1,512
70 - 74	770	711	1,481
75 - 79	692	680	1,372
80 - 84	614	546	1,160
85+	727	650	1,377
Unknown	689	448	1,137
Total	23,680	17,199	40,889

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 age group 5 to 14. The rates rise in the ages 20-44 and slightly reduce between ages 45 and 54. The pattern is similar for both males and females even though males generally have higher age specific death rates compared to females.

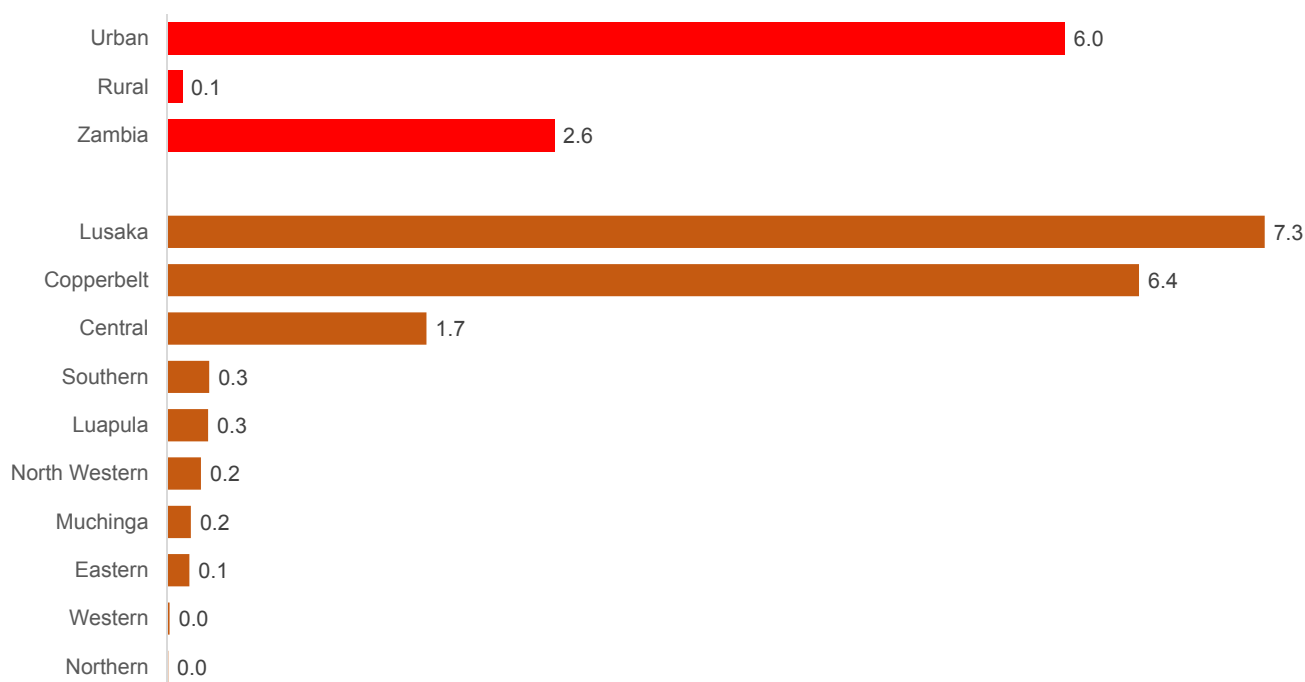
Figure 5.1: Age Specific Death Rates by Sex, Zambia 2016.



5.1 Crude Death Rate

Crude death rate (CDR) is the number of deaths per thousand midyear population. Figure 5.2 shows the crude death rate by province and rural/urban for the year 2016. The crude death rate was recorded at 6.2 deaths per thousand midyear population. Comparing this figure to the 2010 census figure of 13.0 suggests lack of completeness of death registration in the civil registration system. Rural areas recorded a much lower crude death rate (4.8) compared to urban areas (8.0).

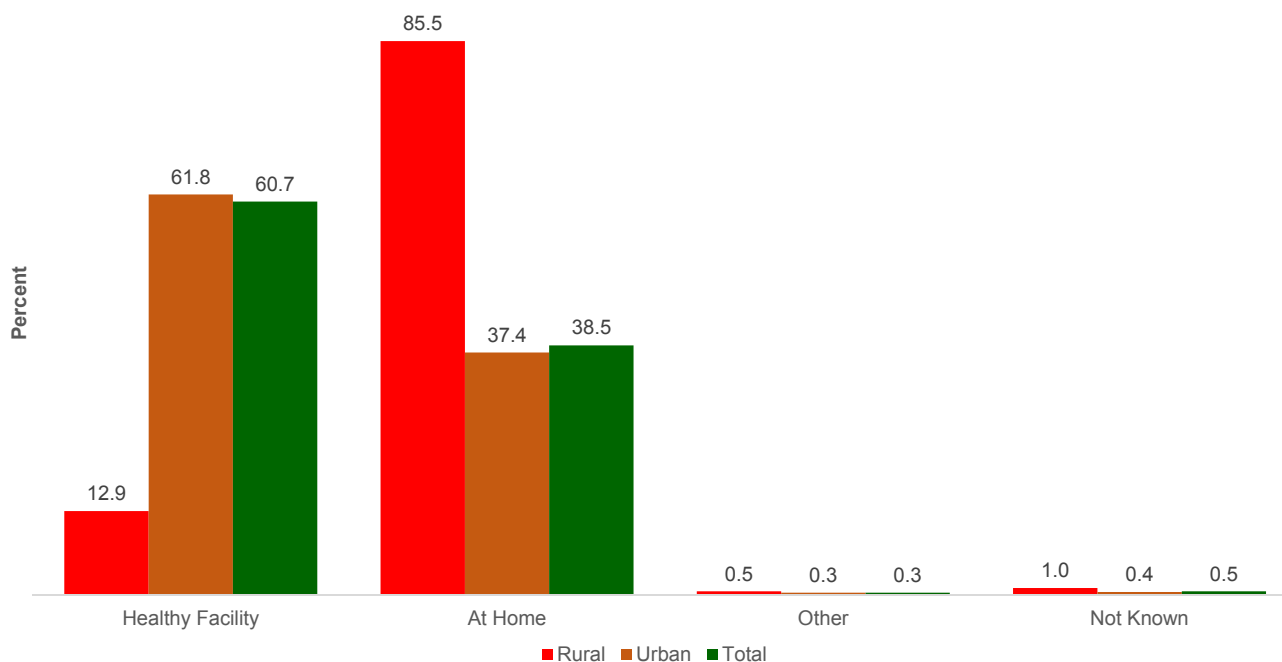
Figure 5.2: Crude Death Rates by Province and Rural/Urban, Zambia 2016.



5.2 Place of Death

Generally, there are more registered deaths occurring at a Health facility level (60.7 percent) than anywhere else as shown in figure 5.3. Deaths occurring from homes were second at 38.5 percent. However, in rural areas, the highest proportion of deaths occurred from Homes (85.5 percent) and only 13 percent occurred from health facilities. Less than a percent of deaths (0.3 percent) occurred at other places (on the road, lakes, rivers) and 0.5 percent at a place unknown.

Figure 5.3: Registered deaths, Place of Death and region, Zambia 2016





Chapter 6. Causes of Deaths

Figure 6.1 shows the top ten non-natural causes of mortality nationwide. Other land transport accidents (34.6 percent) were the leading cause of death in this category, followed by Accidental exposure to other and unspecified factors at 15.7 percent. The least cause of registered non-natural cause of death was 'Other accidental threats to breathing' at 1.7 percent. All other non-natural causes of death in 2016 accounted for 6.0 percent of the deaths. For details refer to Appendix 1.

Figure 6.1: Percentage Distribution of Top Ten All Non-Natural Cause of Death, Zambia 2016

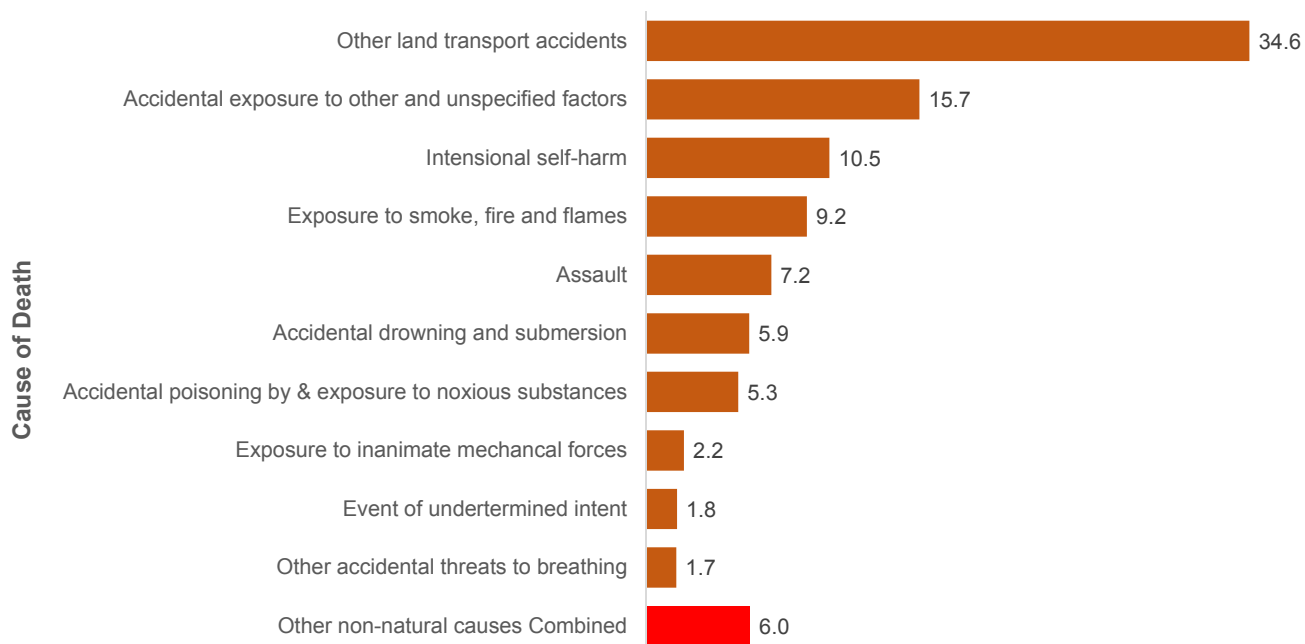


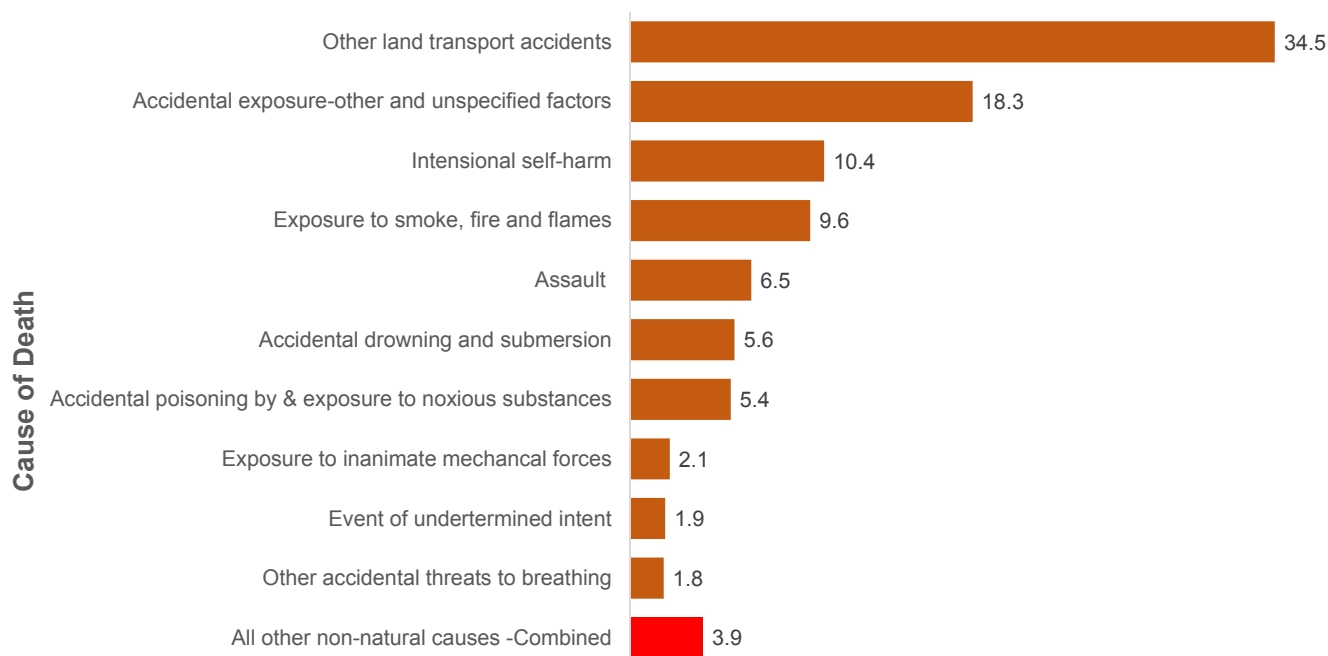
Figure 6.2 shows the top ten non-natural causes of death in rural areas in 2016. The leading non-natural causes of death were 'Other land transport accidents' at 35.3 percent, followed by 'Assault' at 20.1 percent. 'Intentional self-harm' was third at 13 percent. Deaths due to 'Accidental drowning and submission' accounted for 12.2 percent. The least cause of death was 'Exposure to electric current, radiation and extreme temperature or pressure'; and 'Exposure to smoke', both at 1.4 percent. All the other non-natural causes of death combined made up 2.2 percent. For details refer to Appendix 2.

Figure 6.2: Percentage Distribution of Top Ten Non-Natural Causes of Death, Zambia Rural 2016



Figure 6.3 shows the top ten non-natural causes of deaths in urban areas. In 2016, 34.5 percent of non-natural deaths in urban areas were as a result of 'Land transport accidents'. The second leading cause of death was 'Accidental exposure-other and unspecified factors' at 18.3 percent. 'Other accidental threats to breathing' were least at 1.8 percent. The remaining non-natural causes of death were recorded at 3.9 percent. For details refer to Appendix 3.

Figure 6.3: Percentage Distribution of Top Ten Non-Natural Causes of Death, Zambia Urban 2016



The distribution of the national top ten causes of all Natural cause of death for registered deaths are shown in Figure 6.4. The highest percentage of the causes of deaths recorded at 28.6 were ill-defined or unknown. HIV disease was the second leading cause of death at 15.0 percent and tuberculosis was third at 7.3 percent.

Figure 6.4: Percentage Distribution of Top Ten All Natural Cause of Death, Zambia 2016

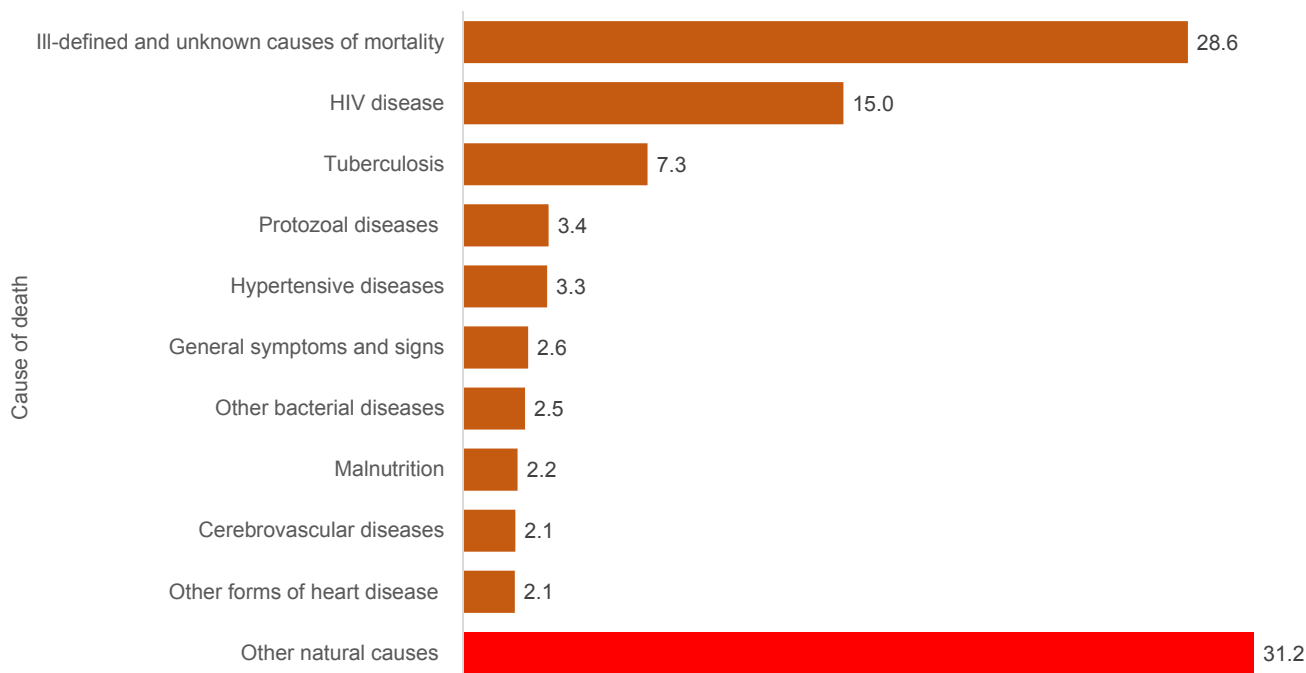
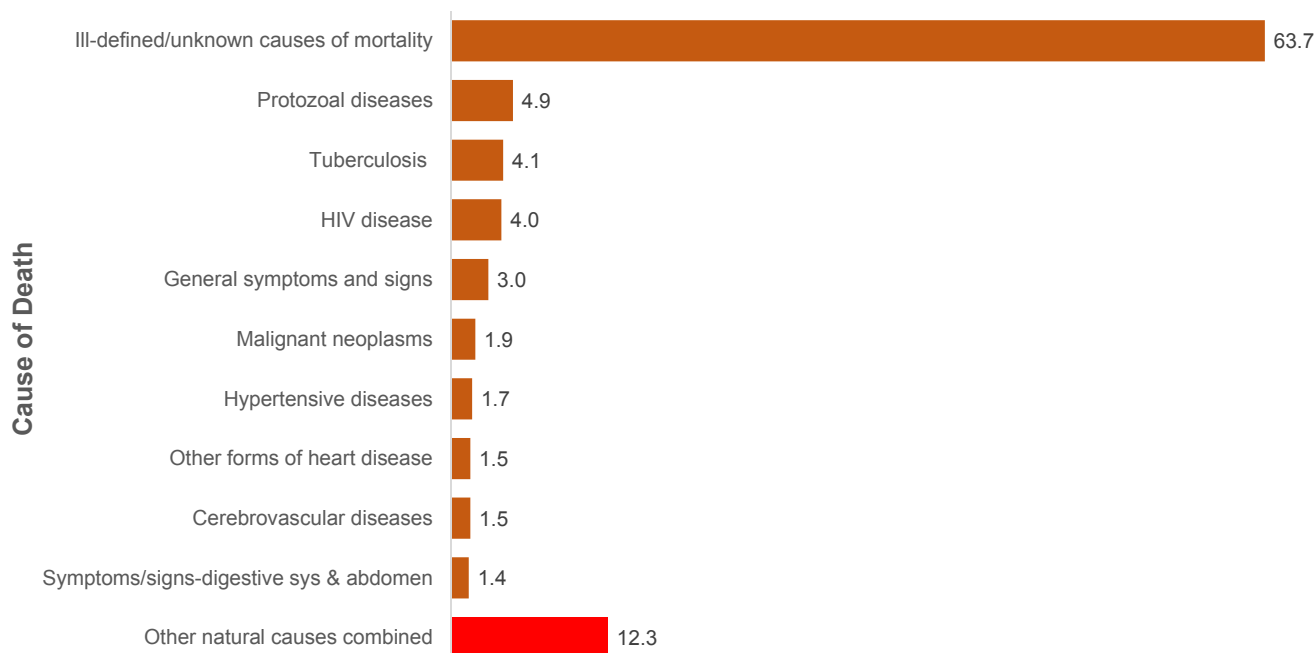


Figure 6.5 shows the top ten deaths resulting from natural causes in rural areas in 2016. Ill-defined or unknown causes accounted for 63.7 percent of deaths. This reflects the fact that most of these deaths occur outside the health facilities and thus the cause was not known. Protozoal diseases were among the leading causes, recorded at 4.9. These were followed by Tuberculosis at 4.1 percent. HIV disease was recorded at 4.0 percent. Chronic diseases such as Hypertensive diseases and other forms of heart diseases appeared on the top ten list with percentage contributions of 1.7 and 1.5 respectively. Other natural causes combined contributed 12.3 percent to the total deaths registered.

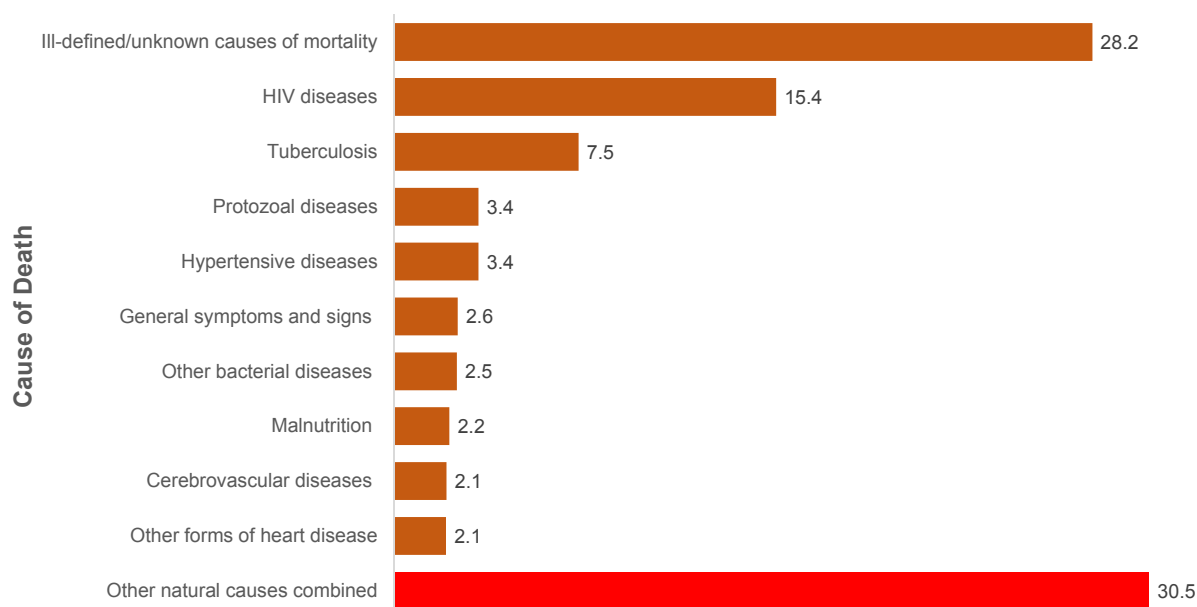
Figure 6.5: Percentage Distribution of Top Ten Natural Causes of Death by Region, Zambia Rural 2016



*For all 'Other causes combined' refer to Appendix 5

The urban areas show a similar pattern to that of the rural areas, though in this case the combined natural causes have the highest proportion. As opposed to rural areas, HIV diseases and Tuberculosis rank highly among the top 10 in urban areas at 15.4 percent and 7.5 percent, respectively. Malnutrition is among the top ten causes of natural death in urban areas at 2.2 percent. Deaths from Non-communicable diseases (Hypertensive diseases at 3.4 percent and forms of heart diseases at 2.1 percent) are equally higher in urban areas than in rural areas.

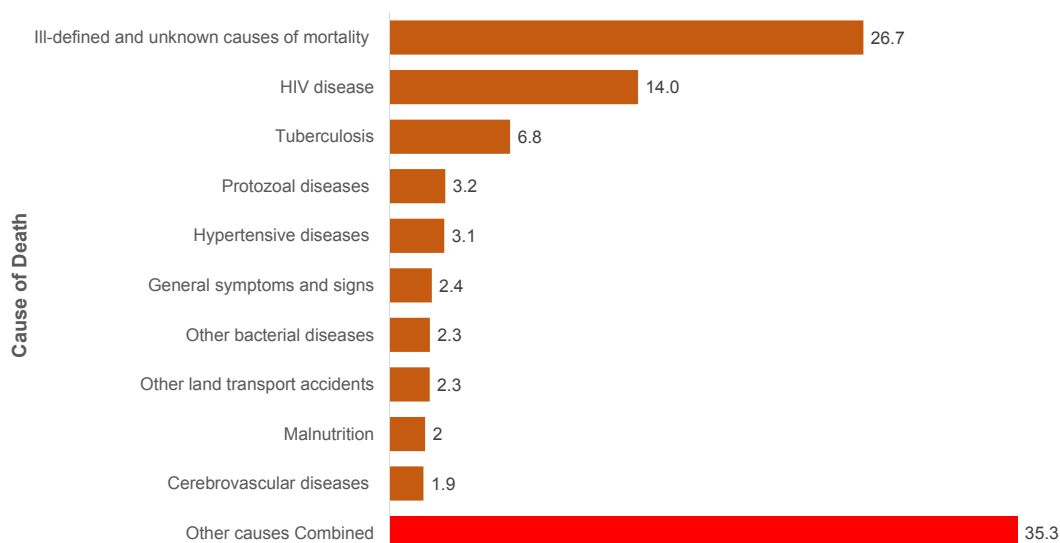
Figure 6.6: Percentage Distribution of Top Ten Natural Causes of Death by, Zambia Urban 2016



*For all 'Other causes combined' refer to Appendix 6

The distribution in Figure 6.7 depicts the top ten causes of registered deaths in 2016. The highest percentage of deaths at 26.7 percent were Ill-defined or unknown in nature. Deaths due to HIV disease were second at 14.0 percent followed by Tuberculosis (6.8 percent). Hypertensive diseases accounted for 2.3 percent of all the Top ten causes of death, and the least cause of death at number 10 was Cerebrovascular Disease at 1.9 percent.

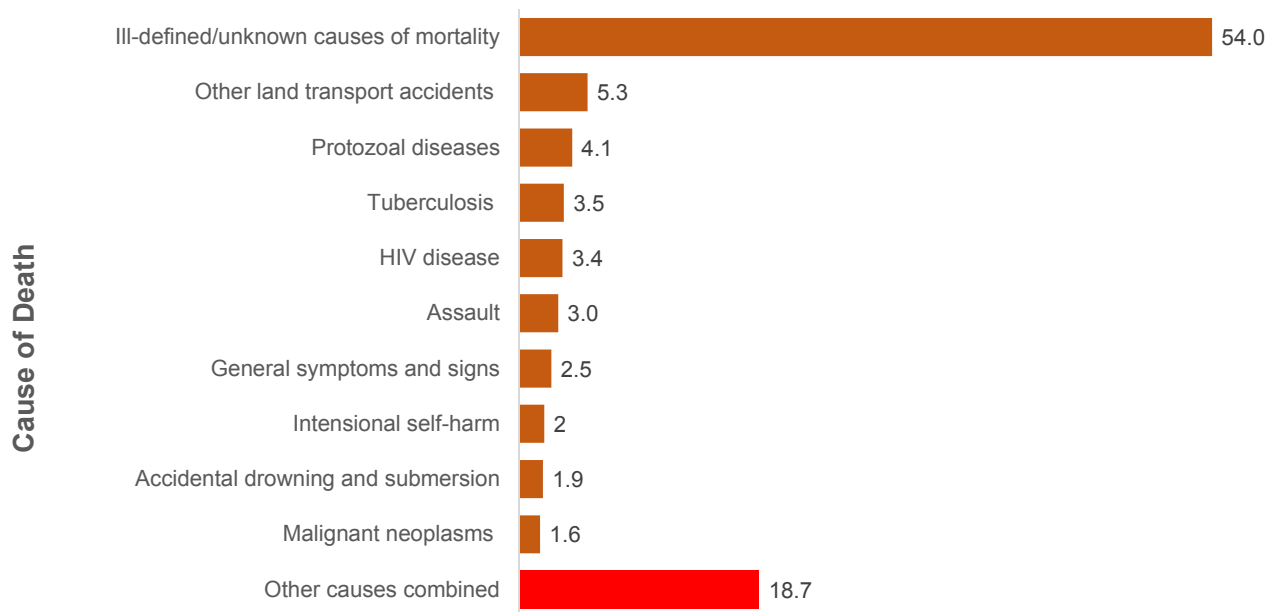
Figure 6.7: Percentage Distribution of Top Ten All Causes of Death for Registered Deaths, Zambia 2016



*For all 'Other causes combined' refer to appendix 7

Figure 6.8 shows the distribution of the top ten causes of deaths for registered deaths in rural areas. The highest proportion of deaths recorded in rural areas (54.0 percent) were 'Ill-defined or unknown'. 'Other land transport accidents' (5.3 percent) were the leading defined causes of death at 5.3 percent, followed by 'Protozoal diseases' (4.1 percent). The least was 'Malignant neoplasms' at 1.6 percent. All the other combined causes accounted for 18.7 percent of deaths.

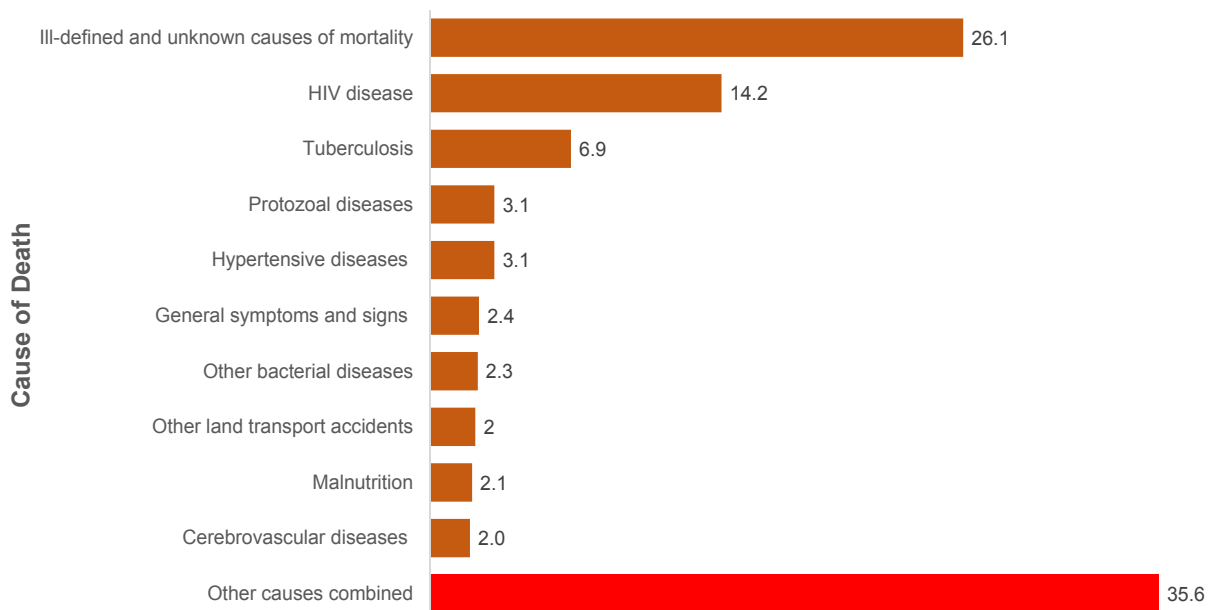
Figure 6.8: Percentage Distribution of Top Ten All Causes of Death by Region, Zambia Rural 2016



*For all 'Other causes combined' refer to Appendix 8

The distribution of the Top ten causes of deaths in urban areas is shown in Figure 6.9. Most of the deaths in urban areas were Ill-defined or unknown (26.1 percent). HIV was the leading cause of all deaths at 14.2, followed by Tuberculosis at 6.9 percent.

Figure 6.9: Percentage Distribution of Top Ten All Causes of Death, Zambia Urban 2016



*For all 'Other causes combined' refer to Appendix 9

References

References used should be added here.

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<http://www.un.org/esa/population/techcoop/DemEst/manual2/chapter2.pdf>

Appendix 1: All Non-natural Underlying Causes of Death, 2016

All underlying causes of death, 2016	Count	Percent
All causes	2702	100.0
Other land transport accidents (V80-V89)	934	34.6
Accidental exposure to other and unspecified factors (X58-X59)	477	17.7
Intentional self-harm (X60-X84)	284	10.5
Exposure to smoke, fire and flames (X00-X09)	249	9.2
Assault (X85-Y09)	194	7.2
Accidental drowning and submersion (W65-W74)	160	5.9
Accidental poisoning by and exposure to noxious substances (X40-X49)	143	5.3
Exposure to forces of nature (X30-X39)	59	2.2
Event of undetermined intent (Y10-Y34)	48	1.8
Other accidental threats to breathing (W75-W84)	47	1.7
Exposure to electric current, radiation and extreme ambient air temperature and pressure (W85-W99)	34	1.3
Exposure to forces of nature (X30-X39)	21	0.8
Misadventures to patients during surgical and medical care Y60-Y69)	6	0.2
Contact with venomous animals and plants (X20-X29)	5	0.2
Exposure to animate mechanical forces (W50-W64)	5	0.2
Pedal cyclist injured in transport accident (V10-V19)	5	0.2
Pedestrian injured in transport accident (V01-V09)	5	0.2
Motorcycle rider injured in transport accident (V20-V29)	4	0.2
Overexertion, travel and privation (X50-X57)	4	0.2
Contact with heat and hot substances (X10-X19)	3	0.1
Drugs, medicaments and biological substances causing adverse effects in therapeutic use (Y40-Y59)	3	0.1
Falls (W00-W19)	3	0.1
Bus occupant injured in transport accidents (V70-V79)	2	0.1
Sequelae of external causes of morbidity and mortality (Y85-Y89)	2	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)	2	0.1
Occupant of heavy transport vehicle injured in transport accident (V60-V69)	1	0.0
Car occupant injured in transport accident (V40-V49)	1	0.0
Occupant of pick-up truck or van injured in transport accident (V50-V59)	1	0.0

Appendix 2: All Non-natural Underlying Causes of Death, 2016 - Rural

All underlying causes of death, 2016	Count	Percent
All causes	139	100
Other land transport accidents (V80-V89)	49	35.3
Assault (X85-Y09)	28	20.1
Intentional self-harm (X60-X84)	18	13.0
Accidental drowning and submersion (W65-W74)	17	12.2
Accidental exposure to other and unspecified factors (X58-X59)	7	5.0
Accidental poisoning by and exposure to noxious substances (X40-X49)	5	3.6
Exposure to forces of nature (X30-X39)	5	3.6
Exposure to forces of nature (X30-X39)	3	2.2
Exposure to electric current, radiation and extreme ambient air temperature and pressure (W85-W99)	2	1.4
Exposure to smoke, fire and flames (X00-X09)	2	1.4
Contact with venomous animals and plants (X20-X29)	1	0.7
Occupant of heavy transport vehicle injured in transport accident (V60-V69)	1	0.7
Other accidental threats to breathing (W75-W84)	1	0.7

Appendix 3: All Non-natural Underlying Causes of Death, 2016 - Urban

All underlying causes of death, 2016	Count	Percent
All causes	2563	100.0
Other land transport accidents (V80-V89)	885	34.5
Accidental exposure to other and unspecified factors (X58-X59)	470	18.3
Intentional self-harm (X60-X84)	266	10.4
Exposure to smoke, fire and flames (X00-X09)	247	9.6
Assault (X85-Y09)	166	6.5
Accidental drowning and submersion (W65-W74)	143	5.6
Accidental poisoning by and exposure to noxious substances (X40-X49)	138	5.4
Exposure to forces of nature (X30-X39)	54	2.1
Event of undetermined intent (Y10-Y34)	48	1.9
Other accidental threats to breathing (W75-W84)	46	1.8
Exposure to electric current, radiation and extreme ambient air temperature and pressure (W85-W99)	32	1.3
Exposure to forces of nature (X30-X39)	18	0.7
Misadventures to patients during surgical and medical care Y60-Y69)	6	0.2
Exposure to animate mechanical forces (W50-W64)	5	0.2
Pedal cyclist injured in transport accident (V10-V19)	5	0.2
Pedestrian injured in transport accident (V01-V09)	5	0.2
Contact with venomous animals and plants (X20-X29)	4	0.2
Motorcycle rider injured in transport accident (V20-V29)	4	0.2
Overexertion, travel and privation (X50-X57)	4	0.2
Contact with heat and hot substances (X10-X19)	3	0.1
Drugs, medicaments and biological substances causing adverse effects in therapeutic use (Y40-Y59)	3	0.1
Falls (W00-W19)	3	0.1
Bus occupant injured in transport accidents (V70-V79)	2	0.1
Sequelae of external causes of morbidity and mortality (Y85-Y89)	2	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)	2	0.1
Car occupant injured in transport accident (V40-V49)	1	0.0
Occupant of pick-up truck or van injured in transport accident (V50-V59)	1	0.0
Occupant of heavy transport vehicle injured in transport accident (V60-V69)	0	0.0

Appendix 4: Non-natural Underlying Causes of Death, 2016

All underlying causes of death, 2016	Count	Percent
All causes	38187	100
Ill-defined and unknown causes of mortality (R95-R99)	10907	28.56
Human immunodeficiency virus [HIV] disease (B20-B24)	5724	14.99
Tuberculosis (A15-A19)	2780	7.28
Protozoal diseases (B50-B64)	1292	3.38
Hypertensive diseases (I10-I15)	1268	3.32
General symptoms and signs (R50-R69)	980	2.57
Other and unspecified disorders of the circulatory system (I95-I99)	937	2.45
Malnutrition (E40-E46)	824	2.16
Cerebrovascular diseases (I60-I69)	791	2.07
Other dorsopathies (M50-M54)	781	2.05
Malignant neoplasms of ill-defined, secondary and unspecified sites (C73-C75)	769	2.01
Influenza and pneumonia (J09-J18)	754	1.97
Disorders related to length of gestation and fetal growth (P05-P08)	734	1.92
Aplastic and other anaemias (D60-D64)	714	1.87
Diabetes mellitus (E10-E14)	682	1.79
Intestinal infectious diseases (A00-A09)	500	1.31
Inflammatory diseases of the central nervous system (G00-G09)	468	1.23
Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	462	1.21
Symptoms and signs involving the circulatory and respiratory systems (R00-R09)	423	1.11
Symptoms and signs involving the digestive system and abdomen (R10-R19)	414	1.08
Infections specific to the perinatal period (P35-P39)	409	1.07
Diseases of liver (K70-K77)	404	1.06
Renal failure (N17-N19)	368	0.96
Malignant neoplasms of digestive organs (C15-C26)	364	0.95
Malignant neoplasms of female genital organs (C51-C58)	278	0.73
Lung diseases due to external agents (J60-J70)	177	0.46
Malignant neoplasms of male genital organs (C60-C63)	167	0.44
Chronic lower respiratory diseases (J40-J47)	155	0.41
Haemolytic anaemias (D55-D59)	153	0.4
Malignant neoplasms, stated or presumed to be primary, of lymphoid, haematopoietic and related tissue (C81-96)	142	0.37
Other diseases of pleura (J90-JJ94)	132	0.35
Other disorders of the musculoskeletal system and connective tissue (M95-M99)	128	0.34
Other disorders of urinary system (N30-N39)	122	0.32
Metabolic disorders (E70-E90)	120	0.31
Episodic and paroxysmal disorders (G40-G47)	110	0.29
Other diseases of blood and blood-forming organs (D70-D77)	109	0.29
Mycoses (B35-B49)	102	0.27
Malignant neoplasms of mesothelial and soft tissue (C45-C49)	96	0.25
Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	94	0.25
Other obstetric conditions, not elsewhere classified (O94-O99)	90	0.24
Diseases of oesophagus, stomach and duodenum (K20-K31)	89	0.23
Malignant neoplasms of breast (C50)	77	0.2
Other diseases of upper respiratory tract (J30-J39)	76	0.2
Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	73	0.19
Other congenital malformations of the digestive system (Q38-Q45)	73	0.19
Pulmonary heart disease and diseases of pulmonary circulation (I26-I28)	72	0.19
Malignant neoplasms of eye, brain and other parts of central nervous system (C69-C72)	69	0.18
Mental and behavioural disorders due to psychoactive substance use (F10-F19)	65	0.17
Malignant neoplasms of urinary tract (C64-C68)	62	0.16

Appendix 4: All Natural Underlying Causes of Death, 2016 (continued)

Ischaemic heart diseases (I20-I25)	59	0.15
Other diseases of intestines (K55-K64)	55	0.14
Other nutritional deficiencies (E50-E64)	54	0.14
Coagulation defects, purpura and other haemorrhagic conditions (D65-D69)	51	0.13
Glomerular diseases (N00-N08)	51	0.13
Other respiratory diseases principally affecting the interstitium (J80-J84)	50	0.13
Other disorders of glucose regulation and pancreatic internal secretion (E15-E16)	45	0.12
Other disorders of the nervous system (G90-G99)	40	0.1
Complications of labour and delivery (O60-O75)	39	0.1
Odema, proteinuria and hypertensive disorders in pregnancy, childbirth and the puerperium (O10-O16)	38	0.1
Neoplasms of uncertain or unknown behaviour (D37-D48)	35	0.09
Viral hepatitis (B15-B19)	35	0.09
Diseases of oral cavity, salivary glands and jaws (K00-K14)	34	0.09
Noninfective enteritis and colitis (K50-K52)	34	0.09
Congenital malformations and deformations of the musculoskeletal system (Q65-Q79)	32	0.08
Cerebral palsy and other paralytic syndromes (G80-G83)	30	0.08
Malignant neoplasms of lip, oral cavity and pharynx (C00-C14)	28	0.07
Benign neoplasms (D10-D36)	27	0.07
Disorders of gallbladder, biliary tract and pancreas (K80-K87)	27	0.07
Other acute lower respiratory infections (J20-J22)	27	0.07
Chronic lower respiratory diseases (J40-J47)	26	0.07
Other disorders of the skin and subcutaneous tissue (L80-L99)	26	0.07
Digestive system disorders of fetus and newborn (P75-P78)	25	0.07
Congenital malformations of the circulatory system (Q20-Q28)	24	0.06
Diseases of male genital organs (N40-N51)	24	0.06
Diseases of veins, lymphatic vessels and lymph nodes, not elsewhere classified (I80-I89)	24	0.06
Infections of the skin and subcutaneous tissue (L00-L08)	23	0.06
Viral infections of the central nervous system (A80-A89)	23	0.06
Malignant neoplasms of thyroid and other endocrine glands (C73-C75)	22	0.06
Other viral diseases (B25-B34)	21	0.05
Congenital malformations of the nervous system (Q00-Q07)	19	0.05
Infections with a predominantly sexual mode of transmission (A50-A64)	19	0.05
Malignant neoplasms of bone and articular cartilage (C40-C41)	19	0.05
Disorders of other endocrine glands (E20-E35)	18	0.05
Other bacterial diseases (A30-A49)	18	0.05
Acute upper respiratory infections (J00-J06)	17	0.04
Certain disorders involving the immune mechanism (D80-D89)	17	0.04
Hernia (K40-K46)	17	0.04
Other accidental threats to breathing (W75-W84)	17	0.04
Melanoma and other malignant neoplasm of skin (C43-C44)	16	0.04
Other diseases of peritoneum (K65-K67)	16	0.04
Chromosomal abnormalities, not elsewhere classified (Q90-Q99)	15	0.04
Other maternal disorders predominantly related to pregnancy (O20-O29)	15	0.04
Symptoms and signs involving the skin and subcutaneous tissue (R20-R23)	15	0.04
Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	14	0.04
Other land transport accidents (V80-V89)	13	0.03
Diseases of arteries, arterioles and capillaries (I70-I79)	12	0.03
Other disorders originating in the perinatal period (P90-P96)	12	0.03
Arthropod-borne viral fevers and viral haemorrhagic fevers (A92-A99)	11	0.03
Complications predominantly related to the puerperium (O85-O92)	11	0.03

Appendix 4: All Natural Underlying Causes of Death, 2016 (continued)

Conditions involving the integument and temperature regulation of fetus and newborn (P80-P83)	11	0.03
Other congenital malformations (Q80-Q89)	11	0.03
Abnormal findings on examination of blood, without diagnosis (R70-79)	10	0.03
Inflammatory disorders of female pelvic organs (N70-N77)	10	0.03
Maternal care related to the fetus and amniotic cavity and possible delivery problems (O30-O48)	10	0.03
Renal tubulo-intestinal diseases (N10-N16)	10	0.03
Schizophrenia, schizotypal and delusional disorders (F20-F29)	10	0.03
Unspecified mental disorder (F99)	10	0.03
Urticaria and erythema (L50-L54)	10	0.03
Suppurative and necrotic conditions of lower respiratory tract (J85-J86)	9	0.02
Noninflammatory disorders of female genital tract (N80-N98)	8	0.02
Other diseases of the respiratory system (J95-J99)	8	0.02
Viral infections characterised by skin and mucous membrane lesions (B00-B09)	8	0.02
Behavioural and emotional disorders with onset usually occurring in childhood and adolescence (F90-F98)	7	0.02
Extrapyramidal and movement disorders (G20-G26)	7	0.02
Organic, including symptomatic, mental disorders (F00-F09)	7	0.02
Transitory endocrine and metabolic disorders of fetus and newborn (P70-P74)	7	0.02
Disorders of thyroid gland (E00-E07)	6	0.02
In situ neoplasms (D00-D09)	6	0.02
Other soft tissue disorders (M70-M79)	6	0.02
Abnormal findings on diagnostic imaging and in function studies, without diagnosis (R90-R94)	5	0.01
Systemic connective tissue disorders (M30-M36)	5	0.01
Behavioural syndromes associated with physiological disturbances and physical factors (F50-F59)	4	0.01
Congenital malformations of eye, ear, face and neck (Q10-Q18)	4	0.01
Disorders of sclera, cornea, iris and ciliary body (H15-H22)	4	0.01
Systemic atrophies primarily affecting the central nervous system (G10-G14)	4	0.01
Cleft lip and cleft palate (Q35-Q37)	3	0.01
Congenital malformations of the urinary system (Q60-Q64)	3	0.01
Disorders of psychological development (F80-F89)	3	0.01
Inflammatory polyarthropathies (M05-M14)	3	0.01
Mood [affective] disorders (F30-F39)	3	0.01
Nutritional anaemias (D50-D53)	3	0.01
Obesity and other hyperalimentation E65-E68)	3	0.01
Other diseases caused by chlamydiae (A70-A74)	3	0.01
Spondylopathies (M45-M49)	3	0.01
Symptoms and signs involving cognition, perception, emotional state and behaviour (R40-R46)	3	0.01
Acute rheumatic fever (I00-I02)	2	0.01
Certain zoonotic bacterial diseases (A20-A28)	2	0.01
Delivery (O80-O84)	2	0.01
Diseases of appendix (K35-K38)	2	0.01
Disorders of adult personality and behaviour (F60-F69)	2	0.01
Disorders of muscles (M60-M63)	2	0.01
Helminthiases (B65-B83)	2	0.01
Other diseases of the digestive system (K90-K93)	2	0.01
Other digestive diseases of the nervous system (G30-G32)	2	0.01
Other forms of heart disease (I30-I52)	2	0.01
Symptoms and signs involving the urinary system (R30-R39)	2	0.01
Arthrosis (M15-M19)	1	0
Congenital malformations of genital organs (Q50-Q56)	1	0
Dermatitis and eczema (L20-L30)	1	0
Diseases of external ear (H60-H62)	1	0

Appendix 4: All Natural Underlying Causes of Death, 2016 (continued)

Diseases of middle ear and mastoid (H65-H75)	1	0
Disorders of bone density and structure (M80-M85)	1	0
Disorders of breast (N60-N64)	1	0
Disorders of choroid and retina (H30-H36)	1	0
Disorders of eyelid, lacrimal system and orbit (H00-H06)	1	0
Glaucoma (H40-H42)	1	0
Nerve, nerve root and plexus disorders (G50-G59)	1	0
Neurotic, stress-related and somatoform disorders (F40-F48)	1	0
Other disorders of kidney and ureter (N25-N29)	1	0
Other joint disorders (M20-M25)	1	0
Rickettsioses (A75-A79)	1	0
Symptoms and signs involving the nervous and musculoskeletal systems (R25-R29)	1	0
Urolithiasis (N20-N23)	1	0
Visual disturbances and blindness (H53-H54)	1	0

Appendix 5: All Underlying Natural Causes of Death, 2016 - Rural

All natural causes of death, 2016	Count	Percent
All causes	781	100
Ill-defined and unknown causes of mortality (R95-R99)	497	63.6
Protozoal diseases (B50-B64)	38	4.9
Tuberculosis (A15-A19)	32	4.1
Human immunodeficiency virus [HIV] disease (B20-B24)	31	4.0
General symptoms and signs (R50-R69)	23	2.9
Malignant neoplasms of ill-defined, secondary and unspecified sites (C73-C75)	15	1.9
Hypertensive diseases (I10-I15)	13	1.7
Cerebrovascular diseases (I60-I69)	12	1.5
Other dorsopathies (M50-M54)	12	1.5
Symptoms and signs involving the digestive system and abdomen (R10-R19)	11	1.4
Aplastic and other anaemias (D60-D64)	8	1.0
Intestinal infectious diseases (A00-A09)	8	1.0
Chronic lower respiratory diseases (J40-J47)	6	0.8
Influenza and pneumonia (J09-J18)	6	0.8
Diabetes mellitus (E10-E14)	5	0.6
Disorders related to length of gestation and fetal growth (P05-P08)	5	0.6
Malnutrition (E40-E46)	5	0.6
Malignant neoplasms of male genital organs (C60-C63)	4	0.5
Other and unspecified disorders of the circulatory system (I95-I99)	4	0.5
Diseases of liver (K70-K77)	3	0.4
Episodic and paroxysmal disorders (G40-G47)	3	0.4
Renal failure (N17-N19)	3	0.4
Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	3	0.4
Symptoms and signs involving the circulatory and respiratory systems (R00-R09)	3	0.4
Diseases of oral cavity, salivary glands and jaws (K00-K14)	2	0.3
Infections specific to the perinatal period (P35-P39)	2	0.3
Inflammatory diseases of the central nervous system (G00-G09)	2	0.3
Malignant neoplasms of breast (C50)	2	0.3
Pulmonary heart disease and diseases of pulmonary circulation (I26-I28)	2	0.3
Arthropod-borne viral fevers and viral haemorrhagic fevers (A92-A99)	1	0.1
Complications of labour and delivery (O60-O75)	1	0.1
Delivery (O80-O84)	1	0.1
Diseases of oesophagus, stomach and duodenum (K20-K31)	1	0.1
Haemolytic anaemias (D55-D59)	1	0.1
Lung diseases due to external agents (J60-J70)	1	0.1
Malignant neoplasms of lip, oral cavity and pharynx (C00-C14)	1	0.1
Malignant neoplasms of urinary tract (C64-C68)	1	0.1
Mental and behavioural disorders due to psychoactive substance use (F10-F19)	1	0.1
Metabolic disorders (E70-E90)	1	0.1
Mycoses (B35-B49)	1	0.1
Neoplasms of uncertain or unknown behaviour (D37-D48)	1	0.1
Other congenital malformations (Q80-Q89)	1	0.1
Other diseases of intestines (K55-K64)	1	0.1
Other diseases of pleura (J90-JJ94)	1	0.1
Other disorders of the musculoskeletal system and connective tissue (M95-M99)	1	0.1
Other disorders of urinary system (N30-N39)	1	0.1
Other maternal disorders predominantly related to pregnancy (O20-O29)	1	0.1
Other obstetric conditions, not elsewhere classified (O94-O99)	1	0.1
Other respiratory diseases principally affecting the interstitium (J80-J84)	1	0.1
Viral infections characterised by skin and mucous membrane lesions (B00-B09)	1	0.1

Appendix 6: All Underlying Natural Causes of Death, 2016 - Urban

All underlying causes of death, 2016	Count	Percent
All causes	37406	100
Ill-defined and unknown causes of mortality (R95-R99)	10410	27.8
Human immunodeficiency virus [HIV] disease (B20-B24)	5693	15.2
Tuberculosis (A15-A19)	2748	7.4
Hypertensive diseases (I10-I15)	1255	3.4
Protozoal diseases (B50-B64)	1254	3.4
General symptoms and signs (R50-R69)	957	2.6
Other and unspecified disorders of the circulatory system (I95-I99)	933	2.5
Malnutrition (E40-E46)	819	2.2
Cerebrovascular diseases (I60-I69)	779	2.1
Other dorsopathies (M50-M54)	769	2.1
Malignant neoplasms of ill-defined, secondary and unspecified sites (C73-C75)	754	2.0
Influenza and pneumonia (J09-J18)	748	2.0
Disorders related to length of gestation and fetal growth (P05-P08)	729	2.0
Aplastic and other anaemias (D60-D64)	706	1.9
Diabetes mellitus (E10-E14)	677	1.8
Intestinal infectious diseases (A00-A09)	492	1.3
Inflammatory diseases of the central nervous system (G00-G09)	466	1.3
Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	459	1.2
Symptoms and signs involving the circulatory and respiratory systems (R00-R09)	420	1.1
Infections specific to the perinatal period (P35-P39)	407	1.1
Symptoms and signs involving the digestive system and abdomen (R10-R19)	403	1.1
Diseases of liver (K70-K77)	401	1.1
Renal failure (N17-N19)	365	1.0
Malignant neoplasms of digestive organs (C15-C26)	364	1.0
Malignant neoplasms of female genital organs (C51-C58)	278	0.7
Lung diseases due to external agents (J60-J70)	176	0.5
Malignant neoplasms of male genital organs (C60-C63)	163	0.4
Haemolytic anaemias (D55-D59)	152	0.4
Chronic lower respiratory diseases (J40-J47)	149	0.4
Malignant neoplasms, stated or presumed to be primary, of lymphoid, haematopoietic and related tissue (C81-96)	142	0.4
Other diseases of pleura (J90-JJ94)	131	0.4
Other disorders of the musculoskeletal system and connective tissue (M95-M99)	127	0.3
Other disorders of urinary system (N30-N39)	121	0.3
Metabolic disorders (E70-E90)	119	0.3
Other diseases of blood and blood-forming organs (D70-D77)	109	0.3
Episodic and paroxysmal disorders (G40-G47)	107	0.3
Mycoses (B35-B49)	101	0.3
Malignant neoplasms of mesothelial and soft tissue (C45-C49)	96	0.3
Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	94	0.3
Other obstetric conditions, not elsewhere classified (O94-O99)	89	0.2
Diseases of oesophagus, stomach and duodenum (K20-K31)	88	0.2
Other diseases of upper respiratory tract (J30-J39)	76	0.2
Malignant neoplasms of breast (C50)	75	0.2
Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	73	0.2
Other congenital malformations of the digestive system (Q38-Q45)	73	0.2
Pulmonary heart disease and diseases of pulmonary circulation (I26-I28)	70	0.2
Malignant neoplasms of eye, brain and other parts of central nervous system (C69-C72)	69	0.2
Mental and behavioural disorders due to psychoactive substance use (F10-F19)	64	0.2

Appendix 6: All Underlying Natural Causes of Death, 2016 - Urban (continued)

Malignant neoplasms of urinary tract (C64-C68)	61	0.2
Ischaemic heart diseases (I20-I25)	59	0.2
Other diseases of intestines (K55-K64)	54	0.1
Other nutritional deficiencies (E50-E64)	54	0.1
Coagulation defects, purpura and other haemorrhagic conditions (D65-D69)	51	0.1
Glomerular diseases (N00-N08)	51	0.1
Other respiratory diseases principally affecting the interstitium (J80-J84)	49	0.1
Other disorders of glucose regulation and pancreatic internal secretion (E15-E16)	45	0.1
Other disorders of the nervous system (G90-G99)	40	0.1
Complications of labour and delivery (O60-O75)	38	0.1
Oedema, proteinuria and hypertensive disorders in pregnancy, childbirth and the puerperium (O10-O16)	38	0.1
Viral hepatitis (B15-B19)	35	0.1
Neoplasms of uncertain or unknown behaviour (D37-D48)	34	0.1
Noninfective enteritis and colitis (K50-K52)	34	0.1
Congenital malformations and deformations of the musculoskeletal system (Q65-Q79)	32	0.1
Diseases of oral cavity, salivary glands and jaws (K00-K14)	32	0.1
Cerebral palsy and other paralytic syndromes (G80-G83)	30	0.1
Benign neoplasms (D10-D36)	27	0.1
Disorders of gallbladder, biliary tract and pancreas (K80-K87)	27	0.1
Malignant neoplasms of lip, oral cavity and pharynx (C00-C14)	27	0.1
Other acute lower respiratory infections (J20-J22)	27	0.1
Chronic lower respiratory diseases (J40-J47)	26	0.1
Other disorders of the skin and subcutaneous tissue (L80-L99)	26	0.1
Digestive system disorders of fetus and newborn (P75-P78)	25	0.1
Congenital malformations of the circulatory system (Q20-Q28)	24	0.1
Diseases of male genital organs (N40-N51)	24	0.1
Diseases of veins, lymphatic vessels and lymph nodes, not elsewhere classified (I80-I89)	24	0.1
Infections of the skin and subcutaneous tissue (L00-L08)	23	0.1
Viral infections of the central nervous system (A80-A89)	23	0.1
Malignant neoplasms of thyroid and other endocrine glands (C73-C75)	22	0.1
Other viral diseases (B25-B34)	21	0.1
Congenital malformations of the nervous system (Q00-Q07)	19	0.1
Infections with a predominantly sexual mode of transmission (A50-A64)	19	0.1
Malignant neoplasms of bone and articular cartilage (C40-C41)	19	0.1
Disorders of other endocrine glands (E20-E35)	18	0.1
Other bacterial diseases (A30-A49)	18	0.1
Acute upper respiratory infections (J00-J06)	17	0.1
Certain disorders involving the immune mechanism (D80-D89)	17	0.1
Hernia (K40-K46)	17	0.1
Other accidental threats to breathing (W75-W84)	17	0.1
Melanoma and other malignant neoplasm of skin (C43-C44)	16	0.0
Other diseases of peritoneum (K65-K67)	16	0.0
Chromosomal abnormalities, not elsewhere classified (Q90-Q99)	15	0.0
Symptoms and signs involving the skin and subcutaneous tissue (R20-R23)	15	0.0
Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	14	0.0
Other maternal disorders predominantly related to pregnancy (O20-O29)	14	0.0
Other land transport accidents (V80-V89)	13	0.0
Diseases of arteries, arterioles and capillaries (I70-I79)	12	0.0
Other disorders originating in the perinatal period (P90-P96)	12	0.0
Complications predominantly related to the puerperium (O85-O92)	11	0.0

Appendix 6: All Natural Underlying Causes of Death, 2016 – Urban (continued)

Conditions involving the integument and temperature regulation of fetus and newborn (P80-P83)	11	0.0
Abnormal findings on examination of blood, without diagnosis (R70-79)	10	0.0
Arthropod-borne viral fevers and viral haemorrhagic fevers (A92-A99)	10	0.0
Inflammatory disorders of female pelvic organs (N70-N77)	10	0.0
Maternal care related to the fetus and amniotic cavity and possible delivery problems (O30-O48)	10	0.0
Other congenital malformations (Q80-Q89)	10	0.0
Renal tubulo-interstitial diseases (N10-N16)	10	0.0
Schizophrenia, schizotypal and delusional disorders (F20-F29)	10	0.0
Unspecified mental disorder (F99)	10	0.0
Urticaria and erythema (L50-L54)	10	0.0
Suppurative and necrotic conditions of lower respiratory tract (J85-J86)	9	0.0
Noninflammatory disorders of female genital tract (N80-N98)	8	0.0
Other diseases of the respiratory system (J95-J99)	8	0.0
Behavioural and emotional disorders with onset usually occurring in childhood and adolescence (F90-F98)	7	0.0
Extrapyramidal and movement disorders (G20-G26)	7	0.0
Organic, including symptomatic, mental disorders (F00-F09)	7	0.0
Transitory endocrine and metabolic disorders of fetus and newborn (P70-P74)	7	0.0
Viral infections characterised by skin and mucous membrane lesions (B00-B09)	7	0.0
Disorders of thyroid gland (E00-E07)	6	0.0
In situ neoplasms (D00-D09)	6	0.0
Other soft tissue disorders (M70-M79)	6	0.0
Abnormal findings on diagnostic imaging and in function studies, without diagnosis (R90-R94)	5	0.0
Systemic connective tissue disorders (M30-M36)	5	0.0
Behavioural syndromes associated with physiological disturbances and physical factors (F50-F59)	4	0.0
Congenital malformations of eye, ear, face and neck (Q10-Q18)	4	0.0
Disorders of sclera, cornea, iris and ciliary body (H15-H22)	4	0.0
Systemic atrophies primarily affecting the central nervous system (G10-G14)	4	0.0
Cleft lip and cleft palate (Q35-Q37)	3	0.0
Congenital malformations of the urinary system (Q60-Q64)	3	0.0
Disorders of psychological development (F80-F89)	3	0.0
Inflammatory polyarthropathies (M05-M14)	3	0.0
Mood [affective] disorders (F30-F39)	3	0.0
Nutritional anaemias (D50-D53)	3	0.0
Obesity and other hyperalimentation E65-E68)	3	0.0
Other diseases caused by chlamydiae (A70-A74)	3	0.0
Spondylopathies (M45-M49)	3	0.0
Symptoms and signs involving cognition, perception, emotional state and behaviour (R40-R46)	3	0.0
Acute rheumatic fever (I00-I02)	2	0.0
Certain zoonotic bacterial diseases (A20-A28)	2	0.0
Diseases of appendix (K35-K38)	2	0.0
Disorders of adult personality and behaviour (F60-F69)	2	0.0
Disorders of muscles (M60-M63)	2	0.0
Helminthiases (B65-B83)	2	0.0
Other diseases of the digestive system (K90-K93)	2	0.0
Other digestive diseases of the nervous system (G30-G32)	2	0.0
Other forms of heart disease (I30-I52)	2	0.0
Symptoms and signs involving the urinary system (R30-R39)	2	0.0
Arthrosis (M15-M19)	1	0.0
Congenital malformations of genital organs (Q50-Q56)	1	0.0
Delivery (O80-O84)	1	0.0
Dermatitis and eczema (L20-L30)	1	0.0

Appendix 6: All Natural Underlying Causes of Death, 2016 – Urban (continued)

Diseases of external ear (H60-H62)	1	0.0
Diseases of middle ear and mastoid (H65-H75)	1	0.0
Disorders of bone density and structure (M80-M85)	1	0.0
Disorders of breast (N60-N64)	1	0.0
Disorders of choroid and retina (H30-H36)	1	0.0
Disorders of eyelid, lacrimal system and orbit (H00-H06)	1	0.0
Glaucoma (H40-H42)	1	0.0
Nerve, nerve root and plexus disorders (G50-G59)	1	0.0
Neurotic, stress-related and somatoform disorders (F40-F48)	1	0.0
Other disorders of kidney and ureter (N25-N29)	1	0.0
Other joint disorders (M20-M25)	1	0.0
Rickettsioses (A75-A79)	1	0.0
Symptoms and signs involving the nervous and musculoskeletal systems (R25-R29)	1	0.0
Urolithiasis (N20-N23)	1	0.0
Visual disturbances and blindness (H53-H54)	1	0.0

Appendix 7: All Underlying Causes of Death, 2016

All underlying causes of death, 2016	Count	Percent
All causes	40,889	100
Ill-defined and unknown causes of mortality (R95-R99)	10,907	26.7
Human immunodeficiency virus [HIV] disease (B20-B24)	5,724	14.0
Tuberculosis (A15-A19)	2,780	6.8
Protozoal diseases (B50-B64)	1,292	3.2
Hypertensive diseases (I10-I15)	1,268	3.1
General symptoms and signs (R50-R69)	980	2.4
Other bacterial diseases (A30-A49)	937	2.3
Other land transport accidents (V80-V89)	934	2.3
Malnutrition (E40-E46)	824	2.0
Cerebrovascular diseases (I60-I69)	791	1.9
Other forms of heart disease (I30-I52)	781	1.9
Malignant neoplasms of ill-defined, secondary and unspecified sites (C73-C75)	769	1.9
Influenza and pneumonia (J09-J18)	754	1.8
Disorders related to length of gestation and fetal growth (P05-P08)	734	1.8
Aplastic and other anaemias (D60-D64)	714	1.8
Diabetes mellitus (E10-E14)	682	1.7
Intestinal infectious diseases (A00-A09)	500	1.2
Accidental exposure to other and unspecified factors (X58-X59)	468	1.1
Inflammatory diseases of the central nervous system (G00-G09)	468	1.1
Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	462	1.1
Symptoms and signs involving the circulatory and respiratory systems (R00-R09)	423	1.0
Symptoms and signs involving the digestive system and abdomen (R10-R19)	414	1.0
Infections specific to the perinatal period (P35-P39)	409	1.0
Diseases of liver (K70-K77)	404	1.0
Renal failure (N17-N19)	368	0.9
Malignant neoplasms of digestive organs (C15-C26)	364	0.9
Intentional self-harm (X60-X84)	284	0.7
Malignant neoplasms of female genital organs (C51-C58)	278	0.7
Exposure to smoke, fire and flames (X00-X09)	254	0.6
Assault (X85-Y09)	194	0.5
Lung diseases due to external agents (J60-J70)	177	0.4
Malignant neoplasms of male genital organs (C60-C63)	167	0.4
Accidental drowning and submersion (W65-W74)	160	0.4
Chronic lower respiratory diseases (J40-J47)	155	0.4
Haemolytic anaemias (D55-D59)	153	0.4
Accidental poisoning by and exposure to noxious substances (X40-X49)	146	0.4
Malignant neoplasms, stated or presumed to be primary, of lymphoid, haematopoietic and related tissue (C81-96)	142	0.4
Other diseases of the respiratory system (J95-J99)	132	0.3
Other disorders of the nervous system (G90-G99)	128	0.3
Other disorders originating in the perinatal period (P90-P96)	122	0.3
Metabolic disorders (E70-E90)	120	0.3
Episodic and paroxysmal disorders (G40-G47)	110	0.3
Other diseases of intestines (K55-K64)	109	0.3
Mycoses (B35-B49)	102	0.3
Malignant neoplasms of mesothelial and soft tissue (C45-C49)	96	0.2
Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	94	0.2

Appendix 7: All Underlying Causes of Death, 2016 (continued)

Other soft tissue disorders (M70-M79)	90	0.2
Diseases of oesophagus, stomach and duodenum (K20-K31)	89	0.2
Malignant neoplasms of breast (C50)	77	0.2
Other disorders of glucose regulation and pancreatic internal secretion (E15-E16)	76	0.2
Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	73	0.2
Other diseases of the digestive system (K90-K93)	73	0.2
Pulmonary heart disease and diseases of pulmonary circulation (I26-I28)	72	0.2
Malignant neoplasms of eye, brain and other parts of central nervous system (C69-C72)	69	0.2
Mental and behavioural disorders due to psychoactive substance use (F10-F19)	65	0.2
Malignant neoplasms of urinary tract (C64-C68)	62	0.2
Exposure to inanimate mechanical forces (W20-W49)	59	0.1
Ischaemic heart diseases (I20-I25)	59	0.1
Other diseases of peritoneum (K65-K67)	55	0.1
Other respiratory diseases principally affecting the interstitium (J80-J84)	54	0.1
Coagulation defects, purpura and other haemorrhagic conditions (D65-D69)	51	0.1
Glomerular diseases (N00-N08)	51	0.1
Other viral diseases (B25-B34)	50	0.1
Event of undetermined intent (Y10-Y34)	48	0.1
Other accidental threats to breathing (W75-W84)	47	0.1
Other disorders of kidney and ureter (N25-N29)	45	0.1
Other disorders of the skin and subcutaneous tissue (L80-L99)	40	0.1
Complications of labour and delivery (O60-O75)	39	0.1
Oedema, proteinuria and hypertensive disorders in pregnancy, childbirth and the puerperium (O10-O16)	38	0.1
Neoplasms of uncertain or unknown behaviour (D37-D48)	35	0.1
Viral hepatitis (B15-B19)	35	0.1
Diseases of oral cavity, salivary glands and jaws (K00-K14)	34	0.1
Exposure to electric current, radiation and extreme ambient air temperature and pressure (W85-W99)	34	0.1
Noninfective enteritis and colitis (K50-K52)	34	0.1
Congenital malformations and deformations of the musculoskeletal system (Q65-Q79)	32	0.1
Cerebral palsy and other paralytic syndromes (G80-G83)	30	0.1
Malignant neoplasms of lip, oral cavity and pharynx (C00-C14)	28	0.1
Benign neoplasms (D10-D36)	27	0.1
Disorders of gallbladder, biliary tract and pancreas (K80-K87)	27	0.1
Other and unspecified disorders of the circulatory system (I95-I99)	27	0.1
Chronic rheumatic heart diseases (I05-I09)	26	0.1
Other disorders of urinary system (N30-N39)	26	0.1
Digestive system disorders of fetus and newborn (P75-P78)	25	0.1
Congenital malformations of the circulatory system (Q20-Q28)	24	0.1
Diseases of male genital organs (N40-N51)	24	0.1
Diseases of veins, lymphatic vessels and lymph nodes, not elsewhere classified (I80-I89)	24	0.1
Infections of the skin and subcutaneous tissue (L00-L08)	23	0.1
Viral infections of the central nervous system (A80-A89)	23	0.1
Exposure to forces of nature (X30-X39)	22	0.1
Malignant neoplasms of thyroid and other endocrine glands (C73-C75)	22	0.1
Pregnancy with abortive outcome (O00-O08)	21	0.1
Congenital malformations of the nervous system (Q00-Q07)	19	0.1
Infections with a predominantly sexual mode of transmission (A50-A64)	19	0.1
Malignant neoplasms of bone and articular cartilage (C40-C41)	19	0.1
Disorders of other endocrine glands (E20-E35)	18	0.0
Other congenital malformations (Q80-Q89)	18	0.0
Acute upper respiratory infections (J00-J06)	17	0.0

Appendix 7: All Underlying Causes of Death, 2016 (continued)

Certain disorders involving the immune mechanism (D80-D89)	17	0.0
Hernia (K40-K46)	17	0.0
Other acute lower respiratory infections (J20-J22)	17	0.0
Melanoma and other malignant neoplasm of skin (C43-C44)	16	0.0
Other diseases of pleura (J90-JJ94)	16	0.0
Chromosomal abnormalities, not elsewhere classified (Q90-Q99)	15	0.0
Other obstetric conditions, not elsewhere classified (O94-O99)	15	0.0
Symptoms and signs involving the skin and subcutaneous tissue (R20-R23)	15	0.0
Fetus and newborn affected by maternal factors and by complications of pregnancy, labour and delivery (P00-P04)	14	0.0
Other nutritional deficiencies (E50-E64)	13	0.0
Diseases of arteries, arterioles and capillaries (I70-I79)	12	0.0
Other dorsopathies (M50-M54)	12	0.0
Arthropod-borne viral fevers and viral haemorrhagic fevers (A92-A99)	11	0.0
Complications predominantly related to the puerperium (O85-O92)	11	0.0
Conditions involving the integument and temperature regulation of fetus and newborn (P80-P83)	11	0.0
Other congenital malformations of the digestive system (Q38-Q45)	11	0.0
Abnormal findings on examination of blood, without diagnosis (R70-79)	10	0.0
Inflammatory disorders of female pelvic organs (N70-N77)	10	0.0
Maternal care related to the fetus and amniotic cavity and possible delivery problems (O30-O48)	10	0.0
Renal tubulo-intestinal diseases (N10-N16)	10	0.0
Schizophrenia, schizotypal and delusional disorders (F20-F29)	10	0.0
Unspecified mental disorder (F99)	10	0.0
Urticaria and erythema (L50-L54)	10	0.0
Suppurative and necrotic conditions of lower respiratory tract (J85-J86)	9	0.0
Noninflammatory disorders of female genital tract (N80-N98)	8	0.0
Other diseases of upper respiratory tract (J30-J39)	8	0.0
Viral infections characterised by skin and mucous membrane lesions (B00-B09)	8	0.0
Behavioural and emotional disorders with onset usually occurring in childhood and adolescence (F90-F98)	7	0.0
Extrapyramidal and movement disorders (G20-G26)	7	0.0
Organic, including symptomatic, mental disorders (F00-F09)	7	0.0
Transitory endocrine and metabolic disorders of fetus and newborn (P70-P74)	7	0.0
Disorders of thyroid gland (E00-E07)	6	0.0
In situ neoplasms (D00-D09)	6	0.0
Misadventures to patients during surgical and medical care Y60-Y69)	6	0.0
Polyneuropathies and other disorders of the peripheral nervous system (G60-G64)	6	0.0
Abnormal findings on diagnostic imaging and in function studies, without diagnosis (R90-R94)	5	0.0
Contact with venomous animals and plants (X20-X29)	5	0.0
Exposure to animate mechanical forces (W50-W64)	5	0.0
Pedal cyclist injured in transport accident (V10-V19)	5	0.0
Pedestrian injured in transport accident (V01-V09)	5	0.0
Systemic connective tissue disorders (M30-M36)	5	0.0
Behavioural syndromes associated with physiological disturbances and physical factors (F50-F59)	4	0.0
Congenital malformations of eye, ear, face and neck (Q10-Q18)	4	0.0
Disorders of sclera, cornea, iris and ciliary body (H15-H22)	4	0.0
Motorcycle rider injured in transport accident (V20-V29)	4	0.0
Overexertion, travel and privation (X50-X57)	4	0.0
Systemic atrophies primarily affecting the central nervous system (G10-G14)	4	0.0
Cleft lip and cleft palate (Q35-Q37)	3	0.0
Congenital malformations of the urinary system (Q60-Q64)	3	0.0

Appendix 7: All Underlying Causes of Death, 2016 (continued)

Contact with heat and hot substances (X10-X19)	3	0.0
Disorders of psychological development (F80-F89)	3	0.0
Drugs, medicaments and biological substances causing adverse effects in therapeutic use (Y40-Y59)	3	0.0
Falls (W00-W19)	3	0.0
Inflammatory polyarthropathies (M05-M14)	3	0.0
Mood [affective] disorders (F30-F39)	3	0.0
Nutritional anaemias (D50-D53)	3	0.0
Obesity and other hyperalimentation E65-E68)	3	0.0
Other diseases of blood and blood-forming organs (D70-D77)	3	0.0
Spondylopathies (M45-M49)	3	0.0
Symptoms and signs involving cognition, perception, emotional state and behaviour (R40-R46)	3	0.0
Acute rheumatic fever (I00-I02)	2	0.0
Bus occupant injured in transport accidents (V70-V79)	2	0.0
Certain zoonotic bacterial diseases (A20-A28)	2	0.0
Delivery (O80-O84)	2	0.0
Diseases of appendix (K35-K38)	2	0.0
Disorders of adult personality and behaviour (F60-F69)	2	0.0
Disorders of muscles (M60-M63)	2	0.0
Helminthiases (B65-B83)	2	0.0
Other digestive diseases of the nervous system (G30-G32)	2	0.0
Other diseases caused by chlamydiae (A70-A74)	2	0.0
Other joint disorders (M20-M25)	2	0.0
Sequelae of external causes of morbidity and mortality (Y85-Y89)	2	0.0
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)	2	0.0
Symptoms and signs involving the urinary system (R30-R39)	2	0.0
Arthrosis (M15-M19)	1	0.0
Car occupant injured in transport accident (V40-V49)	1	0.0
Congenital malformations of genital organs (Q50-Q56)	1	0.0
Dermatitis and eczema (L20-L30)	1	0.0
Diseases of external ear (H60-H62)	1	0.0
Diseases of middle ear and mastoid (H65-H75)	1	0.0
Disorders of bone density and structure (M80-M85)	1	0.0
Disorders of breast (N60-N64)	1	0.0
Disorders of choroid and retina (H30-H36)	1	0.0
Disorders of eyelid, lacrimal system and orbit (H00-H06)	1	0.0
Glaucoma (H40-H42)	1	0.0
Nerve, nerve root and plexus disorders (G50-G59)	1	0.0
Neurotic, stress-related and somatoform disorders (F40-F48)	1	0.0
Occupant of heavy transport vehicle injured in transport accident (V60-V69)	1	0.0
Occupant of pick-up truck or van injured in transport accident (V50-V59)	1	0.0
Other disorders of the musculoskeletal system and connective tissue (M95-M99)	1	0.0
Other maternal disorders predominantly related to pregnancy (O20-O29)	1	0.0
Rickettsioses (A75-A79)	1	0.0
Symptoms and signs involving the nervous and musculoskeletal systems (R25-R29)	1	0.0
Urolithiasis (N20-N23)	1	0.0
Visual disturbances and blindness (H53-H54)	1	0.0

Appendix 8: All Underlying Causes of Death, 2016 - Rural

All underlying causes of death, 2016 Rural	Count	Percent
All causes	920	100
Ill-defined and unknown causes of mortality (R95-R99)	497	54.0
Other land transport accidents (V80-V89)	49	5.3
Protozoal diseases (B50-B64)	38	4.1
Tuberculosis (A15-A19)	32	3.5
Human immunodeficiency virus [HIV] disease (B20-B24)	31	3.4
Assault (X85-Y09)	28	3.0
General symptoms and signs (R50-R69)	23	2.5
Intentional self-harm (X60-X84)	18	2.0
Accidental drowning and submersion (W65-W74)	17	1.9
Malignant neoplasms of ill-defined, secondary and unspecified sites (C73-C75)	15	1.6
Hypertensive diseases (I10-I15)	13	1.4
Cerebrovascular diseases (I60-I69)	12	1.3
Other forms of heart disease (I30-I52)	12	1.3
Symptoms and signs involving the digestive system and abdomen (R10-R19)	11	1.2
Aplastic and other anaemias (D60-D64)	8	0.9
Intestinal infectious diseases (A00-A09)	8	0.9
Accidental exposure to other and unspecified factors (X58-X59)	7	0.8
Chronic lower respiratory diseases (J40-J47)	6	0.7
Influenza and pneumonia (J09-J18)	6	0.7
Accidental poisoning by and exposure to noxious substances (X40-X49)	5	0.5
Diabetes mellitus (E10-E14)	5	0.5
Disorders related to length of gestation and fetal growth (P05-P08)	5	0.5
Exposure to inanimate mechanical forces (W20-W49)	5	0.5
Malnutrition (E40-E46)	5	0.5
Malignant neoplasms of male genital organs (C60-C63)	4	0.4
Other bacterial diseases (A30-A49)	4	0.4
Diseases of liver (K70-K77)	3	0.3
Episodic and paroxysmal disorders (G40-G47)	3	0.3
Exposure to forces of nature (X30-X39)	3	0.3
Renal failure (N17-N19)	3	0.3
Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	3	0.3
Symptoms and signs involving the circulatory and respiratory systems (R00-R09)	3	0.3
Diseases of oral cavity, salivary glands and jaws (K00-K14)	2	0.2
Exposure to electric current, radiation and extreme ambient air temperature and pressure (W85-W99)	2	0.2
Exposure to smoke, fire and flames (X00-X09)	2	0.2
Infections specific to the perinatal period (P35-P39)	2	0.2
Inflammatory diseases of the central nervous system (G00-G09)	2	0.2
Malignant neoplasms of breast (C50)	2	0.2
Pulmonary heart disease and diseases of pulmonary circulation (I26-I28)	2	0.2
Arthropod-borne viral fevers and viral haemorrhagic fevers (A92-A99)	1	0.1
Complications of labour and delivery (O60-O75)	1	0.1
Contact with venomous animals and plants (X20-X29)	1	0.1
Delivery (O80-O84)	1	0.1
Diseases of oesophagus, stomach and duodenum (K20-K31)	1	0.1
Haemolytic anaemias (D55-D59)	1	0.1
Lung diseases due to external agents (J60-J70)	1	0.1
Malignant neoplasms of lip, oral cavity and pharynx (C00-C14)	1	0.1
Malignant neoplasms of urinary tract (C64-C68)	1	0.1
Mental and behavioural disorders due to psychoactive substance use (F10-F19)	1	0.1

Appendix 8: All Underlying Causes of Death, 2016 – Rural (continued)

Metabolic disorders (E70-E90)	1	0.1
Mycoses (B35-B49)	1	0.1
Neoplasms of uncertain or unknown behaviour (D37-D48)	1	0.1
Occupant of heavy transport vehicle injured in transport accident (V60-V69)	1	0.1
Other accidental threats to breathing (W75-W84)	1	0.1
Other congenital malformations of the digestive system (Q38-Q45)	1	0.1
Other diseases of peritoneum (K65-K67)	1	0.1
Other diseases of the respiratory system (J95-J99)	1	0.1
Other disorders of the nervous system (G90-G99)	1	0.1
Other disorders originating in the perinatal period (P90-P96)	1	0.1
Other obstetric conditions, not elsewhere classified (O94-O99)	1	0.1
Other soft tissue disorders (M70-M79)	1	0.1
Other viral diseases (B25-B34)	1	0.1
Viral infections characterised by skin and mucous membrane lesions (B00-B09)	1	0.1

Appendix 9: All Underlying Causes of Death, 2016 - Urban

All underlying causes of death, 2016 - Urban	Count	Percent
All causes	39,969	100
Ill-defined and unknown causes of mortality (R95-R99)	10,410	26.1
Human immunodeficiency virus [HIV] disease (B20-B24)	5,693	14.2
Tuberculosis (A15-A19)	2,748	6.9
Hypertensive diseases (I10-I15)	1,255	3.1
Protozoal diseases (B50-B64)	1,254	3.1
General symptoms and signs (R50-R69)	957	2.4
Other bacterial diseases (A30-A49)	933	2.3
Other land transport accidents (V80-V89)	885	2.2
Malnutrition (E40-E46)	819	2.1
Cerebrovascular diseases (I60-I69)	779	2.0
Other forms of heart disease (I30-I52)	769	1.9
Malignant neoplasms of ill-defined, secondary and unspecified sites (C73-C75)	754	1.9
Influenza and pneumonia (J09-J18)	748	1.9
Disorders related to length of gestation and fetal growth (P05-P08)	729	1.8
Aplastic and other anaemias (D60-D64)	706	1.8
Diabetes mellitus (E10-E14)	677	1.7
Intestinal infectious diseases (A00-A09)	492	1.2
Accidental exposure to other and unspecified factors (X58-X59)	470	1.2
Inflammatory diseases of the central nervous system (G00-G09)	466	1.2
Respiratory and cardiovascular disorders specific to the perinatal period (P20-P29)	459	1.2
Symptoms and signs involving the circulatory and respiratory systems (R00-R09)	420	1.1
Infections specific to the perinatal period (P35-P39)	407	1.0
Symptoms and signs involving the digestive system and abdomen (R10-R19)	403	1.0
Diseases of liver (K70-K77)	401	1.0
Renal failure (N17-N19)	365	0.9
Malignant neoplasms of digestive organs (C15-C26)	364	0.9
Malignant neoplasms of female genital organs (C51-C58)	278	0.7
Intentional self-harm (X60-X84)	266	0.7
Exposure to smoke, fire and flames (X00-X09)	247	0.6
Lung diseases due to external agents (J60-J70)	176	0.4
Assault (X85-Y09)	166	0.4
Malignant neoplasms of male genital organs (C60-C63)	163	0.4
Haemolytic anaemias (D55-D59)	152	0.4
Chronic lower respiratory diseases (J40-J47)	149	0.4
Accidental drowning and submersion (W65-W74)	143	0.4
Malignant neoplasms, stated or presumed to be primary, of lymphoid, haematopoietic and related tissue (C81-96)	142	0.4
Accidental poisoning by and exposure to noxious substances (X40-X49)	138	0.4
Other diseases of the respiratory system (J95-J99)	131	0.3
Other disorders of the nervous system (G90-G99)	127	0.3
Other disorders originating in the perinatal period (P90-P96)	121	0.3
Metabolic disorders (E70-E90)	119	0.3
Other diseases of intestines (K55-K64)	109	0.3
Episodic and paroxysmal disorders (G40-G47)	107	0.3
Mycoses (B35-B49)	101	0.3
Malignant neoplasms of mesothelial and soft tissue (C45-C49)	96	0.2
Haemorrhagic and haematological disorders of fetus and newborn (P50-P61)	94	0.2
Other soft tissue disorders (M70-M79)	89	0.2
Diseases of oesophagus, stomach and duodenum (K20-K31)	88	0.2
Other disorders of glucose regulation and pancreatic internal secretion (E15-E16)	76	0.2

Appendix 9: All underlying causes of death, 2016 – Urban (continued)

Malignant neoplasms of breast (C50)	75	0.2
Malignant neoplasms of respiratory and intrathoracic organs (C30-C39)	73	0.2
Other diseases of the digestive system (K90-K93)	73	0.2
Pulmonary heart disease and diseases of pulmonary circulation (I26-I28)	70	0.2
Malignant neoplasms of eye, brain and other parts of central nervous system (C69-C72)	69	0.2
Mental and behavioural disorders due to psychoactive substance use (F10-F19)	64	0.2
Malignant neoplasms of urinary tract (C64-C68)	61	0.2
Ischemic heart diseases (I20-I25)	59	0.2
Exposure to inanimate mechanical forces (W20-W49)	54	0.1
Other diseases of peritoneum (K65-K67)	54	0.1
Other respiratory diseases principally affecting the interstitium (J80-J84)	54	0.1
Coagulation defects, purpura and other haemorrhagic conditions (D65-D69)	51	0.1
Glomerular diseases (N00-N08)	51	0.1
Other viral diseases (B25-B34)	49	0.1
Event of undetermined intent (Y10-Y34)	48	0.1
Other accidental threats to breathing (W75-W84)	46	0.1
Other disorders of kidney and ureter (N25-N29)	45	0.1
Other disorders of the skin and subcutaneous tissue (L80-L99)	40	0.1
Complications of labour and delivery (O60-O75)	38	0.1
Odema, proteinuria and hypertensive disorders in pregnancy, childbirth and the puerperium (O10-O16)	38	0.1
Viral hepatitis (B15-B19)	35	0.1
Neoplasms of uncertain or unknown behaviour (D37-D48)	34	0.1
Noninfective enteritis and colitis (K50-K52)	34	0.1
Congenital malformations and deformations of the musculoskeletal system (Q65-Q79)	32	0.1
Diseases of oral cavity, salivary glands and jaws (K00-K14)	32	0.1
Exposure to electric current, radiation and extreme ambient air temperature and pressure (W85-W99)	32	0.1
Cerebral palsy and other paralytic syndromes (G80-G83)	30	0.1
Benign neoplasms (D10-D36)	27	0.1
Disorders of gallbladder, biliary tract and pancreas (K80-K87)	27	0.1
Malignant neoplasms of lip, oral cavity and pharynx (C00-C14)	27	0.1
Other and unspecified disorders of the circulatory system (I95-I99)	27	0.1
Chronic rheumatic heart diseases (I05-I09)	26	0.1
Other disorders of urinary system (N30-N39)	26	0.1
Digestive system disorders of fetus and newborn (P75-P78)	25	0.1
Congenital malformations of the circulatory system (Q20-Q28)	24	0.1
Diseases of male genital organs (N40-N51)	24	0.1
Diseases of veins, lymphatic vessels and lymph nodes, not elsewhere classified (I80-I89)	24	0.1
Infections of the skin and subcutaneous tissue (L00-L08)	23	0.1
Viral infections of the central nervous system (A80-A89)	23	0.1
Malignant neoplasms of thyroid and other endocrine glands (C73-C75)	22	0.1
Pregnancy with abortive outcome (O00-O08)	21	0.1
Congenital malformations of the nervous system (Q00-Q07)	19	0.1
Infections with a predominantly sexual mode of transmission (A50-A64)	19	0.1
Malignant neoplasms of bone and articular cartilage (C40-C41)	19	0.1
Disorders of other endocrine glands (E20-E35)	18	0.1
Exposure to forces of nature (X30-X39)	18	0.1
Other congenital malformations (Q80-Q89)	18	0.1
Other obstetric conditions, not elsewhere classified (O94-O99)	14	0.0
Other nutritional deficiencies (E50-E64)	13	0.0
Diseases of arteries, arterioles and capillaries (I70-I79)	12	0.0

Appendix 9: All Underlying Causes of Death, 2016 – Urban (continued)

Other dorsopathies (M50-M54)	12	0.0
Complications predominantly related to the puerperium (O85-O92)	11	0.0
Conditions involving the integument and temperature regulation of fetus and newborn (P80-P83)	11	0.0
Abnormal findings on examination of blood, without diagnosis (R70-79)	10	0.0
Arthropod-borne viral fevers and viral haemorrhagic fevers (A92-A99)	10	0.0
Inflammatory disorders of female pelvic organs (N70-N77)	10	0.0
Maternal care related to the fetus and amniotic cavity and possible delivery problems (O30-O48)	10	0.0
Other congenital malformations of the digestive system (Q38-Q45)	10	0.0
Renal tubulo-interstitial diseases (N10-N16)	10	0.0
Schizophrenia, schizotypal and delusional disorders (F20-F29)	10	0.0
Unspecified mental disorder (F99)	10	0.0
Urticaria and erythema (L50-L54)	10	0.0
Suppurative and necrotic conditions of lower respiratory tract (J85-J86)	9	0.0
Noninflammatory disorders of female genital tract (N80-N98)	8	0.0
Other diseases of upper respiratory tract (J30-J39)	8	0.0
Behavioural and emotional disorders with onset usually occurring in childhood and adolescence (F90-F98)	7	0.0
Extrapyramidal and movement disorders (G20-G26)	7	0.0
Organic, including symptomatic, mental disorders (F00-F09)	7	0.0
Transient endocrine and metabolic disorders of fetus and newborn (P70-P74)	7	0.0
Viral infections characterised by skin and mucous membrane lesions (B00-B09)	7	0.0
Disorders of thyroid gland (E00-E07)	6	0.0
In situ neoplasms (D00-D09)	6	0.0
Misadventures to patients during surgical and medical care Y60-Y69)	6	0.0
Polyneuropathies and other disorders of the peripheral nervous system (G60-G64)	6	0.0
Abnormal findings on diagnostic imaging and in function studies, without diagnosis (R90-R94)	5	0.0
Exposure to animate mechanical forces (W50-W64)	5	0.0
Pedal cyclist injured in transport accident (V10-V19)	5	0.0
Pedestrian injured in transport accident (V01-V09)	5	0.0
Systemic connective tissue disorders (M30-M36)	5	0.0
Behavioural syndromes associated with physiological disturbances and physical factors (F50-F59)	4	0.0
Congenital malformations of eye, ear, face and neck (Q10-Q18)	4	0.0
Contact with venomous animals and plants (X20-X29)	4	0.0
Disorders of sclera, cornea, iris and ciliary body (H15-H22)	4	0.0
Motorcycle rider injured in transport accident (V20-V29)	4	0.0
Overexertion, travel and privation (X50-X57)	4	0.0
Systemic atrophies primarily affecting the central nervous system (G10-G14)	4	0.0
Cleft lip and cleft palate (Q35-Q37)	3	0.0
Congenital malformations of the urinary system (Q60-Q64)	3	0.0
Contact with heat and hot substances (X10-X19)	3	0.0
Disorders of psychological development (F80-F89)	3	0.0
Drugs, medicaments and biological substances causing adverse effects in therapeutic use (Y40-Y59)	3	0.0
Falls (W00-W19)	3	0.0
Inflammatory polyarthropathies (M05-M14)	3	0.0
Mood [affective] disorders (F30-F39)	3	0.0
Nutritional anaemias (D50-D53)	3	0.0
Obesity and other hyperalimentation E65-E68)	3	0.0

Appendix 9: All underlying causes of death, 2016 – Urban (continued)

Other diseases of blood and blood-forming organs (D70-D77)	3	0.0
Spondylopathies (M45-M49)	3	0.0
Symptoms and signs involving cognition, perception, emotional state and behaviour (R40-R46)	3	0.0
Acute rheumatic fever (I00-I02)	2	0.0
Bus occupant injured in transport accidents (V70-V79)	2	0.0
Certain zoonotic bacterial diseases (A20-A28)	2	0.0
Diseases of appendix (K35-K38)	2	0.0
Disorders of adult personality and behaviour (F60-F69)	2	0.0
Disorders of muscles (M60-M63)	2	0.0
Helminthiases (B65-B83)	2	0.0
Other digestive diseases of the nervous system (G30-G32)	2	0.0
Other diseases caused by chlamydiae (A70-A74)	2	0.0
Other joint disorders (M20-M25)	2	0.0
Sequelae of external causes of morbidity and mortality (Y85-Y89)	2	0.0
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)	2	0.0
Symptoms and signs involving the urinary system (R30-R39)	2	0.0
Arthrosis (M15-M19)	1	0.0
Car occupant injured in transport accident (V40-V49)	1	0.0
Congenital malformations of genital organs (Q50-Q56)	1	0.0
Delivery (O80-O84)	1	0.0
Dermatitis and eczema (L20-L30)	1	0.0
Diseases of external ear (H60-H62)	1	0.0
Diseases of middle ear and mastoid (H65-H75)	1	0.0
Disorders of bone density and structure (M80-M85)	1	0.0
Disorders of breast (N60-N64)	1	0.0
Disorders of choroid and retina (H30-H36)	1	0.0
Disorders of eyelid, lacrimal system and orbit (H00-H06)	1	0.0
Glaucoma (H40-H42)	1	0.0
Nerve, nerve root and plexus disorders (G50-G59)	1	0.0
Neurotic, stress-related and somatoform disorders (F40-F48)	1	0.0
Occupant of pick-up truck or van injured in transport accident (V50-V59)	1	0.0
Other disorders of the musculoskeletal system and connective tissue (M95-M99)	1	0.0
Other maternal disorders predominantly related to pregnancy (O20-O29)	1	0.0
Rickettsioses (A75-A79)	1	0.0
Symptoms and signs involving the nervous and musculoskeletal systems (R25-R29)	1	0.0
Urolithiasis (N20-N23)	1	0.0
Visual disturbances and blindness (H53-H54)	1	0.0



Appendix 10: Registration Forms



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.:	
Information Required	Information Provided	District:	Date and Time:
1. DETAILS OF BIRTH	DATE OF BIRTH		
Place of Birth:	Health Facility:	Home:	
	Other (specify):	Sex: M	F
Health Facility Name: <i>(if born at health facility)</i>			
Home Address: <i>(if born at home)</i>			
Other (Specify):			
Surname:			
Given Name:			
Other Name(s):			
Birth Weight:			
2. DETAILS OF FATHER			
Surname:			
Other Name(s):			
Date of Birth:			
National Identity No.:			
Occupation:			
Social Security No.:			
Village of origin:			
Tribe:			
Nationality:			
Residential Address:			
Contact No.:			
3. DETAILS OF MOTHER			
Surname:			
Other Name(s):			
Maiden Surname:			
Date of Birth:			
Age of Mother at Birth of Child above (Years):			
National Identity No.:			
Occupation:			
Social Security No.:			
Village of Origin:			
Tribe:			
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:.....			



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)	(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 <input type="checkbox"/>			
2. And this is sudden death <input type="checkbox"/> 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:.....	

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Iven Sikanyiti	Assistant Director Social Statistics	CSO
Nchimunya Nkombo	Chief Reseach Officer	CSO
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