Zambia

SAVVY REPORT
2015 - 16

Mortality and Causes of Death Information From Verbal Autopsy

2015/16 Zambia Sample Vital Registration with Verbal Autopsy Report

Ministry of Home Affairs
Lusaka, Zambia

Central Statistical Offlce
Lusaka, Zambia

Ministry of Health
Lusaka, Zambia

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Finally, I thank all CRVS Technical Working Group members who were involved in their various capacities in coordinating and conducting various stages of the survey including the data collection, data processing, analysis and writing of this report.

Mathews Nyirongo
Registrar General
National Registration, Passport and Citizenship

ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal Care
ARI	Acute Respiratory Infection
BID	Brought in Dead
CDR	Crude Death Rate
CMR	Child Mortality Rate
CRVS	Civil Registration and Vital Statistics
CSMF	Cause Specific Mortality Fraction
CSO	Central Statistical Office
DNRPC	Department of National Registration Passport and Citizenship
EMTCT	Elimination of Mother to Child Transmission
EmONC	Emergency Obstetric and Neonatal Care
HIS	Health Information System
HIV	Human Immunodeficiency Virus
HMIS	Health Information Management System
IMCI	Integrated Management of Childhood Illnesses
IEC	Information Education and Communication
IMR	Infant Mortality Rate
ITN	Insecticide Treated Net
MCH	Maternal and Child Health
MDGs	Millennium Development Goals
MMR	Maternal Mortality Ratio
MoH	Ministry of Health
NCD	Non-Communicable Diseases
NMR	Neonatal Mortality Rate
REC	Reaching Every Child
RED	Reaching Every District
SAVVY	Sample Vital Registration with Verbal Autopsy
SDGs	Sustainable Development Goals
U5MR	Under Five Mortality Rate
VA	Verbal Autopsy
VMMC	Voluntary Medical Male Circumcision
ZAMPHIA	Zambia Population-Based HIV Impact Assessment
ZDHS	Zambia Demographic and Health Survey

FOREWORD

The Department of National Registration, Passport and Citizenship (DNRPC) under Ministry of Home Affairs, working in conjunction with the Central Statistical Office and the Ministry of Health led the 2015/16 SAVVY implementation.

The Central Statistical Office (CSO) provided technical expertise which included adaptation of 2015/16 SAVVY tools, training of key field workers and monitoring and supervision of field implementation, data processing and analysis, and report writing.

SAVVY implementation relied on the existing Ministry of Health (MoH) infrastructure and technical expertise on health matters. In this regard MoH provided key personnel who participated in the 2015/16 SAVVY including verbal autopsy interviewers and community key informants. Additionally, MoH medical staff reviewed and certified causes of death from the verbal autopsies.

The 2015/16 SAVVY undertaking provided an opportunity to supplement Zambia's vital registration system, as well as provide key vital information on births, deaths and causes of death. This is against a background of a weakened national civil registration system over the years which is affected by low coverage levels, resulting in the failure to produce vital statistics which are crucial to providing key demographic indicators and monitoring development and health programs in addition to being used as inputs to evidence based planning.

It is expected that, findings and lessons learned from the concluded 2015/16 SAVVY survey, and future implementation of the survey will contribute to improved possession of legal identity documents which enhances the rights of citizens, residents and especially decedents and facilitate the assessment of obligations to each other both by the state and populace. Further, the processing of 2015/16 SAVVY records will enhance national vital statistics tremendously.

Chileshe Mulenga PhD.
Permanent Secretary
Ministry of Home Affairs

EXECUTIVE SUMMARY

The Department of National Registration, Passport and Citizenship in collaboration with the Central Statistical Office and the Ministry of Health conducted the Sample Vital Registration with Verbal Autopsy (SAVVY) in 10 provinces from 2015/16. The survey focused on capturing the occurrence of key vital events in sampled areas to support the civil registration system and to produce vital statistics from registered vital events which are currently inadequate. The implementation of this activity has to a larger extent positively affected the civil registration environment in Zambia. The survey used the World Health Organisation (WHO) standard methodology for 2015/16 SAVVY to report leading causes of death in Zambia.

The 2015/16 SAVVY undertaking was part of the 2015-2019 National Strategic Action Plan to reform and improve civil registration and vital statistics in Zambia. The program was initiated in response to the lack of a fully-functioning civil registration system and the growing need for accurate and reliable vital statistics and mortality indicators at various levels. The main objective of 2015/16 SAVVY was to provide nationally representative estimates of age and sex cause-specific mortality fractions in Zambia.

The 2015/16 SAVVY sample was designed to provide reliable estimates of annual deaths and cause of death data at national and provincial levels. It was a stratified sample design with 350 segments selected. The survey assumed an average population of 1,200 for rural sample segments and 1,800 for urban sample segments assuming a sample population of about 500,000 at the national level. This represented about 4 percent of the national population.

Results show that, HIV related diseases is the leading cause of death at 15.2 percent. However, there has been a reduction in the proportion of deaths due HIV related diseases compared to the 2012 SAVVY findings which reported 20.3 percent.

Overall, Malaria is the second leading cause of death at 12.6 percent. However, for children below 15 years of age Malaria is the leading cause of death, 22.5 percent for children under 5 years and 32.2 percent for children aged 5-14 years.

Among under five children (0-4 years), the most common childhood conditions including malaria, diarrheal diseases, pneumonia/ARI and malnutrition are among the top 5 leading causes of deaths.

Notably, there is a difference in the leading causes of death by region. HIV related diseases are the leading cause of death in the urban areas at 18.4 percent while Malaria is the leading cause of death in rural areas at 16.1 percent.

Non-communicable diseases also rank among the top 10 causes of death: diseases of the circulatory system accounting for 12.1 percent, neoplasms 3.5 percent and diabetes mellitus 2.1 percent.

Among the external causes deaths, Road traffic accidents (RTA) is the leading cause of death accounting for 28.8 percent.

Maternal Mortality Ratio (MMR) in the study was recorded at 467 maternal deaths per 100,000 live births. Of all the maternal deaths reported, 75.1 percent occur from health facility while 24.0 percent occur from home. Delays in making the decision to seek medical care contributed largely to maternal deaths at 68.4 percent.

Overall, 88.2 percent of the deceased sought treatment from formal health facilities. More than half (53.1 percent) of deaths occur from hospital or health facility, while a large proportion of deaths still occur from home (40.4 percent).

Overall, delay in making decision to seek medical care (67.3 percent) contributes largely to deaths that occur.

Summary of Key Findings

- HIV and AIDS is still the leading cause of death at 15.2 percent.

- Malaria is the second leading cause of death at 12.6 percent, it is however the leading cause of death in rural areas and among the 5 to 14 years age group.

- Deaths due to Non communicable diseases accounts for 28.4 percent of all deaths.

- Among under five children, Malaria is the leading cause of death (22.5 percent).

- Maternal Mortality Ratio (MMR) is estimated at 467 deaths per 100,000 live births.

- Three quarters (75.1 percent) of all maternal deaths occurred at a health facility, while 24.0 percent occurred at home.

- Delays in making decisions to seek medical care contributes largely to maternal deaths at 68.4 percent.

- External causes are still among the top ten causes of death and Road Traffic accidents (RTA) were the leading cause of death due to external causes at 28.8 percent.

- Three quarters (75.2 percent) of deceased persons received treatment at some point during the illness leading to death.

- Overall, 88.2 percent of the deceased sought treatment from formal health facilities.

Chapter 1: Introduction

1.1 Overview of Civil Registration and Vital Statistics Systems

The value of civil registration and vital statistics systems worldwide have witnessed a growing recognition in recent years. An increasing number of countries where civil registration and vital statistics systems may be non-existent or not effective have prioritized the establishment or strengthening of such systems. Globally, the importance of civil registration and vital statistics systems was recognised in the framework of the Sustainable Development Goals (SDGs). In particular, goals 16 and 17 use birth and death registration coverage as monitoring indicators. Additionally, vital statistics are used as inputs in the computation of a number of indicators pertaining to other goals.

Data on births and deaths are crucial for estimating the annual change in the size and structure of the population. Data on live births are used for implementing and monitoring health and health-care programmes. Data on deaths, classified by various characteristics of the deceased, are necessary for calculating life-tables and estimating the probability of dying at various ages. More importantly, vital statistics and cause of death data are crucial for implementing health interventions and monitoring and evaluation of these programs.

A vital statistics system comprise of:

    (a) Legal registration;
    (b) Statistical reporting of vital events; and
    (c) Collection, compilation, and dissemination of statistics pertaining to vital events.

The ideal source of vital statistics is the civil registration system, which involves the continuous, permanent, compulsory and universal gathering of information on all relevant vital events occurring in a country. The Government of the Republic of Zambia has embarked on a number of initiatives to improve and strengthen the CRVS system in the country, with support from stakeholders and other development partners. Despite these efforts, the CRVS system in Zambia is still deficient, and characterized by weak linkages between the Department of National Registration, Passports and Citizenship (DNRPC) - the institution responsible for civil registration, and other stakeholder institutions. Consequently, the existing system does not generate usable vital statistics to inform health policy. For these reasons, alternative sources of vital statistics have been employed to generate vital statistics and in particular cause of death statistics. Though there are no long term substitutes for a civil registration system, population-based surveys and facility-based surveys can provide cause of death statistics at regular intervals.

Information on mortality is collected on routine basis from health facilities as a component of the Health Management Information System (HMIS) throughout Zambia. However, this system only collects information on events that occur in the health facilities. The HMIS does not collect data on deaths that occur in the community, which are considered to represent a substantial proportion of deaths in the country. These community deaths often are not certified, especially in rural areas, as such the cause of death remains unknown. Mortality data is also provided through population censuses and population-based surveys such as the Zambia Demographic and Health Surveys. Mortality data from these sources do not provide data on cause-specific mortality. Therefore, mortality estimates have not been sufficient for setting health sector priorities or for assessing program progress and impact.

1.2 Sample Vital Registration with Verbal Autopsy (SAVVY)

SAVVY is one method used to collect information on vital events where CRVS systems are poor. The SAVVY methodology was initiated in Zambia in response to the lack of a fully functioning civil registration and vital statistics system and the growing need for accurate and reliable vital statistics and mortality indicators at subnational level. SAVVY was commissioned first as a pilot in order to test the feasibility of using a World Health Organisation (WHO) standard methodology for SAVVY to report leading causes of death and in particular HIV-associated mortality in Zambia. The first round of full SAVVY implementation was conducted by the Central Statistical Office in 2010-2012. This second round conducted in 2015-2016 is a follow up to the first round. This report presents the findings of the second survey which was conducted in all selected areas in ten provinces.

SAVVY was implemented by the Department of National Registration, Passports and Citizenship in collaboration with the Central Statistical Office and the Ministry of Health. Funds for SAVVY undertaking were provided by the US Government through the Centers for Disease Control and Prevention. MEASURE Evaluation at the University of North Carolina in the US provided technical assistance to the survey.

1.3 Rationale for SAVVY Implementation in Zambia

The current system of vital registration in Zambia is not capable of ensuring that key information required for accurate fertility and mortality assessment is readily available in an accurate and timely manner. Further, it cannot provide timely indicators for disease monitoring. SAVVY aims not to replace the current registration system, but to complement, support and strengthen the reporting, recording, analysis and dissemination of vital events, particularly births and deaths in order to help inform policy makers and support routine surveillance, monitoring and evaluation. SAVVY systems therefore provides a means of assessing the impact of health interventions at the community level. SAVVY, as a stepping stone towards improving CRVS, would help in filling the current data gaps related to births, deaths and causes of death.

1.4 Goals and Objectives

The goal of the SAVVY is to improve birth and death registration and utilise the detailed information from the registrations for governance, planning, management, monitoring, and evaluation of national programmes. The main objective is to provide accurate estimates of births, deaths, and causes of death information in Zambia.

1.5 Specific Objectives

1. To enhance the national registration database for managing internal affairs and to build capacity for the Registrar General's office to publish and disseminate, in collaboration with its partners, periodical reports on births and cause specific deaths by socio-demographic or economic background using globally agreed upon standards.

2. To enhance death certification in sampled areas that would be used to flag decedents from the National Registration database, and securely and accurately remove the decedents from the voter, pension registration and other similar rolls.

3. Together with mortality data from health facilities, to determine the levels, magnitude and pattern of mortality and causes of death in Zambia.

4. To provide indicators which are currently not available for intensified monitoring of progress towards global targets such as the MDGs, post-MDGs, SDGs and UNGASS, and other performance monitoring indicators of national programmes such as the National AIDS Strategic Framework and the Seventh National Development Plan.

5. To generate demographic and health data to be used for information and planning purposes in different sectors.

6. To publish information on causes of death and birth patterns in particular communities and avail information to community outreach workers which they can use to promote various interventions against HIV/AIDS, unsafe birth practices, and short birth spacing among others.

7. To increase birth and death registration thereby enhancing the rights of children especially those made vulnerable from orphanhood largely due to the HIV epidemic by providing them with birth certificates and death certificates of their parents.

8. To contribute to the development of an effective and efficient national system of vital registration.

Chapter 2: Methodology

2.1 Introduction

The initial process for implementing a functioning SAVVY system begins with the establishment of a representative sample of clusters, followed by a baseline census as a first step towards on-going demographic surveillance in these clusters. The baseline census serves as a basis for identifying births and deaths within the SAVVY areas, usually those within the previous 12 months. The deaths identified during the baseline census are followed up with Verbal Autopsy (VA) interviews, and the VA information is then used for certification and coding of cause of death. The current SAVVY system was designed to assess the feasibility of linking SAVVY with the civil registration system in Zambia, and to explore ways to provide support for further development of civil registration, with a focus on mortality and causes of death. As part of the initiative, Zambia hoped to maintain ongoing demographic and mortality surveillance within the SAVVY sites, with special emphasis on capturing births and deaths that occur outside health facilities in the communities.

The first Sample Vital Registration with Verbal Autopsy (SAVVY), conducted from 2010-2012, provided an opportunity to supplement the nation's vital registration system and provided key vital information on births, deaths and causes of death. The 2015/16 SAVVY was expanded in content and size to take into account the study objectives, an acceptable level of accuracy, and resource availability. This chapter presents the specific methods employed in the study design, implementation, and analysis of SAVVY data in Zambia.

2.2 Sample Design

The sample for the SAVVY was designed to provide estimates at the national and provincial levels as well as for rural and urban areas on annual deaths and cause of death statistics by age, sex, and socio-economic background.

The 2010 Census of Population and Housing provided the source of data on the households and population at different political/administrative levels. The hierarchical administrative divisions of Zambia are the provinces, districts, constituencies and wards. These administrative units are further divided into rural and urban areas. The wards were further divided into CSAs and EAs. The EA was defined as the area to be covered by one enumerator during the census enumeration, and three to four EAs were grouped into a CSA for the first line of supervision.

A stratified cluster sampling methodology was used for the SAVVY. Three hundred and fifty (350) clusters were selected. Assuming an average population of 1,200 for rural sample clusters and 1,800 for urban sample clusters, and an approximately proportional allocation of the sample clusters to the urban and rural strata, this resulted in a sample population of at least 500,000 at the national level. The total population in Zambia from the 2010 Census was about 13 million. Thus the sample of about 500,000 persons represents about 4 percent of the population. Assuming a crude death rate of 13 per 1000 (according to the 2010 census), the sample base population provided an average sample of about 6,500 death events at the national level each year, or an average of about 18 deaths per sample cluster.

The sample was also adequate for capturing rare events like maternal deaths and making estimates such as Maternal Mortality Ratio (MMR), annual birth rate, Infant Mortality Rate (IMR), and generating major causes of death according to the International Statistical Classification of Diseases and Related Health Problems 10th Revision (ICD-10). The distribution of selected clusters by province and region is shown in Table 2.1

Table 2.1: Number of SAVVY sites at representative sub national levels			
Province	Rural	Urban	Total
Central	23	13	36
Copperbelt	14	30	44
Eastern	28	10	38
Luapula	21	11	32
Lusaka	13	31	44
Muchinga	18	10	28
Northern	22	10	32
North-Western	18	10	28
Southern	26	14	40
Western	20	8	28
Total	203	147	350

It was necessary for the SAVVY study to establish clusters with well-defined boundaries, to be covered by the enumeration, surveillance and VA. A reasonably large segment size is cost-effective for providing the large sample base population needed to obtain a sufficient number of deaths.

Taking into account the enumerator/key informant workload, lessons learned from the previous SAVVY, and the distribution of the sampling frame, it was recommended that rural segments with a population within 1,200, and urban segments with a population within 1,800, be used for SAVVY. This recommendation satisfied concerns about quality and operational control, and ensuring a sufficient size for the SAVVY sample base population.

The CSA is the area unit closest to the proposed segment size, and it has well-defined boundaries identified on the census maps. In the case of large CSAs (in terms of population), a smaller segment, which could be one or more EAs within the same CSA, was selected. A few small CSAs were combined with neighboring CSAs to form a segment with the target population size. This in some cases constituted a ward.

2.3 Baseline Census

The primary objective of the baseline census was to create a database of population denominators that could be used to compute the SAVVY birth and death indicators. The baseline census was also used to identify births and deaths that occurred in the households among the usual household members within the last 12 months before the interview. Questions about the basic characteristics of persons usually living in the household were included in the SAVVY baseline census.

The baseline enumeration census was implemented in May to August 2016. Computer Assisted Personal Interviewing (CAPI) was used to collect data for the baseline census. All households within the SAVVY sites were visited. Data collected include the information on the head of household, sex, marital status, education, and occupation of each household member. For children under age 18, data on orphanhood status was also collected. Retrospective birth and death events in the previous 18 months were recorded. The reference time period for births and deaths was January 1, 2015 to July 31, 2016. In addition to providing population denominators, the SAVVY baseline census had two goals: first, to provide demographic and socioeconomic indicators of the population in the sampled areas, and second, to identify deaths in the past year that were then followed up with verbal autopsies to determine cause of death. Findings from the SAVVY baseline census are presented in the 2016 SAVVY Baseline census report.

2.4 Verbal Autopsy Questionnaires

Verbal autopsy questionnaires employed for the 2015/16 SAVVY were based on the 2010/2012 SAVVY questionnaires and 2012/14 World Health Organization (WHO) standardized verbal autopsy questionnaires and were adapted to make them country specific. SAVVY used all the three age specific VA questionnaires. The questionnaires are in Appendix 4.

2.5 Verbal Autopsy Fieldwork and Data Collection

VA data collection was done using Paper based questionnaires. The first step was to identify the household listed to have had a death in the reference period from the list of deaths obtained from the baseline census. The next step was to identify an appropriate respondent who lived with or cared for the deceased as the main respondent. When an appropriate respondent was absent or not available, another time/day was scheduled to conduct the interview. The VA interviewer made up to three attempts to visit the household to find an appropriate respondent. If by the third visit it was not possible to complete the interview, the case was reported to the supervisor. Interviewers were instructed to complete the questionnaire with as much information as was available.

In order to determine which of the three VA questionnaires to complete, the interviewer first asked for the age of the deceased. In most cases, interviewers were able to complete the VA during the first visit. Completed VA questionnaires were reviewed by provincial level supervisors from CSO and DNRPC for quality and completeness before being transferred to the DNRPC office in Lusaka for further scrutiny and processing.

2.6 Certification, ICD-10 Coding, and Tabulation of Cause of Death

There are several methods available to assign the causes of death from verbal autopsy questionnaires, including physician review, expert algorithms, and data driven algorithms, such as regression, neural networks, and Bayesian approaches. In Zambia, physician review of VA questionnaires was the preferred method. A team of 10 physicians were recruited and trained on death certification and coding in accordance with the International Classification of Diseases 10th revision (ICD-10) standards.

Physicians were trained to use the international death certificate to assign the cause of death (copy of SAVVY death certificate used is attached in Appendix 3). The international death certificate is part of the ICD-10 procedures. It is used to assign the underlying and direct causes of death, as well as to identify other significant conditions that contribute to death. The certificate is composed of two parts. Part I lists

medical conditions in the order of their causal relationship, and allows physicians to register up to four conditions that represented the chain of events leading to death. The order of these events is important, because each condition gives rise to another in the line above it. The condition on the lowest line is the underlying cause, and the condition on the top line of the list as the direct or immediate cause of death. Part II of the death certificate is used to acknowledge other significant conditions that contributed to death, but were not related to the sequence of events listed in Part I. In Parts I and II, each line has a place for recording the time interval between the onset of each condition and death. Finally, in Part I, the ICD code for each listed condition is filled in.

Two physicians independently reviewed each VA questionnaire and completed an international death certificate. In cases where there was disagreement, the questionnaires were returned to the two physicians and they were allowed to work together to produce a final, ratified death certificate. All completed VA questionnaires and death certificates were then taken to DNRPC central office for data entry and processing.

2.7 Data Processing

Data entry and processing for SAVVY occurred in two parts. The first part of data processing was for the SAVVY baseline census. Data was extracted from the server where data from the tablets were uploaded and stored. The baseline census data was then exported to SPSS for further cleaning, management and analysis. Once data from the baseline census was processed, a death listing file was created. This file contained a list of deaths reported in each household including name, age, and sex of deceased and geographic location for the household and name of the head of household. At this stage, each death was assigned a unique identification number so that deaths could later be linked to their completed VA forms and death certificates.

Second part of data processing involved VA questionnaires and death certificates. Once VA questionnaires were received from the field, they were reviewed by a team of editors from the SAVVY technical working group. Furthermore, the VA questionnaires were reviewed by a team of medical doctors who were responsible for death certification and coding of cause of death. All VA questionnaires and death certificates were then entered into a VA database, using Census and Survey Processing System (CSPro). The data processing team was composed of a programmer/IT personnel, data manager, and a team of about 10 data entry personnel.

Once data entry was completed, the VA data file and death certification file were merged, using the unique identifier assigned to each death. The combined VA file and SAVVY baseline census data file are the source of the analyses presented in this report.

2.8 Tabulation of Causes of Death

The combined VA and death certificate data sets were converted from CSPro to Stata and SPSS for further cleaning, tabulation, and analysis. Tabulation was performed to provide detailed information about demographic and socio-economic characteristics of the population, and the causes of death by age group, sex, area of residence, use of health services, and place of death. Generally, only the immediate and underlying causes of death were tabulated for analysis, using a Zambia-specific tabulation list of causes of death and the proposed WHO 2016 list of causes of death from verbal autopsies. The underlying cause

of death is of particular interest to health professionals and policy makers because it represents the condition that sets off the sequence of morbid events leading directly to death. The immediate cause of death suggests opportunities for treatment to prevent death.

2.9 Data Analysis

Analysis of both SAVVY baseline census, and verbal autopsy and death certificates data was done using SPSS and STATA. Unless otherwise specified, all analyses conducted were weighted to take into account the design of the SAVVY survey using appropriate survey techniques. The data analyses conducted included descriptive analyses of demographic and socio-economic data from the baseline census, and this information is presented in another report specifically for findings from baseline census.

Mortality and fertility rates were also calculated for the sampled areas. Further, cause-specific mortality data was tabulated by age, sex, geographic and socio-economic strata. This was done by tabulating the underlying causes of death. The analyses of the causes of mortality were done and classified for the major groups according to the 10th revision of the International Statistical Classification of Disease and Related Health Problems (ICD-10), and WHO tabulation of causes of death. The results on mortality and its causes are presented in subsequent chapters in this report.

2.10 Statistical Significance of Results

All tables in the report, with the exception of appendix tables, show results only if the number of unweighted (actual) cases is 20 or higher. If the table cell is based on fewer than 20 unweighted cases, an asterisk is shown in the table. Unless otherwise specified, results in the tables, figures, and text are based on the weighted analysis taking into account the design of the study. All direct or implied comparisons in the text are significantly different at the 95 percent confidence level unless otherwise stated. It should be noted that this report does not make comparisons of individual leading causes of death with the category of "other causes of death". The "other causes of death" category is comprised of all other causes of death that were not individually listed as leading causes.

2.11 Response Rates

The overall response rate for the SAVVY baseline census was 99.6 percent. A total of 4,350 deaths were reported during the baseline census, and verbal autopsies were completed for 3,529 deaths, yielding a response rate of 81.1 percent (see Table 2.2). Physicians were able to assign a cause of death in 93.4 percent of the deaths from verbal autopsy reviews, and cause of death could not be determined in about 6.6 percent of all deaths from VA reviews.

Table 2.2: Response rate for the SAVVY baseline census and verbal autopsy, by Province

	Baseline census			Verbal autopsy		
Province	Total households to be interviewed	Completed household interviews	Response rate	Deaths identified from baseline census	Completed VA in the field	Response rate
Central	13,169	13,101	99.5	344	231	67.2
Copperbelt	20,295	20,149	99.3	639	556	87.0
Eastern	13,069	13,042	99.8	366	315	86.1
Luapula	12,256	12,223	99.7	506	433	85.6
Lusaka	24,203	24,124	99.7	802	546	68.1
Muchinga	8,524	8,497	99.7	319	266	83.4
Northern	10,254	10,225	99.7	373	320	85.8
Northwestern	9,524	9,501	99.8	313	276	88.2
Southern	14,632	14,593	99.7	292	260	89.0
Western	11,399	11,379	99.8	396	326	82.3
Total	137,325	136,834	99.6	4,350	3,529	81.1

2.12 Study Limitations

Estimates based on retrospective death histories gathered using verbal autopsy, such as those included in the SAVVY system in Zambia, are susceptible to different types of error, including sampling error, non-sampling error, and recall bias.

In general, estimates derived from a sample survey are affected by two types of errors: (1) non-sampling errors and (2) sampling errors. Sampling error occurs when the characteristics of a sample are measured, instead of those of the entire population (as from a census). Note that sample-based estimates will vary depending on the particular sample selected from the population, but all estimates attempt to approximate the actual figures. Measures of the magnitude of sampling error reflect the variation in the estimates over all possible samples that could have been selected from the population using the same sampling, data collection, and processing methods. Standard errors are primarily measures of the magnitude of sampling error.

In addition to sampling error, non-sampling errors may be introduced during any phase of data collection or processing. For example, operations such as editing, reviewing, or keying data from questionnaires may introduce error into the estimates. Non-sampling errors may also be the result of mistakes made in the field, such as failure to locate and interview the correct household, misunderstanding of the questions on the part of either the interviewer or the respondent, and errors made when filling out questionnaires.

The number of births and deaths reported in the baseline census appear to be too low compared to expectations. While there is evidence that fertility has been declining in Zambia, the 2013-14 Zambia Demographic and Health Survey reported a total fertility rate of 5.3 for close to the same period as the SAVVY baseline census. The crude death rate for the SAVVY baseline census was 7.4 deaths per 1000 population, while an estimate of around 12.8 deaths per 1000 population was expected. On the other hand, the infant and child mortality rates calculated from the baseline census are comparable with the latest ZDHS figures of 45 infant deaths per 1,000 live births (46.3 from SAVVY baseline census), hence implying reliability of data coming from the SAVVY baseline census. By its very nature, verbal autopsy

data may be affected by recall bias. Some respondents may not have accurately recalled if the death of a loved one occurred within the specified time frame of one year prior to August 2016. Furthermore, the circumstances that led to death may not have been recollected accurately by the respondent. Some verbal autopsies were not conducted until 2017, which could involve a recall period exceeding two years.

Physician review for assigning causes of death from data collected by verbal autopsy can be prone to misclassification; and certain causes of death are easier to assign from a verbal autopsy than others (Marsh et al., 2003; Chandramohan et al., 1998; Kahn et al., 2000; Rodriguez et al., 1998; Mobley et al., 1996).

Following the award and design of the study (January 2014), almost two years passed before final approval of the study protocol (December 2015). This caused delay in the implementation of field work, given the original timelines and scope of work described in the SAVVY work plan. There was also a significant gap between implementation of the baseline census and follow-up of deaths identified in the baseline census using verbal autopsy. This delay created serious challenges during VA follow up, because some households, especially in the farming and fishing communities, had moved to other locations, and hence could not be traced/interviewed. In some households, it was difficult to find an appropriate respondent who took care of the deceased person during illness, or had detailed knowledge of the illness that led to death. For such cases, despite three attempts to get the appropriate respondent, it was not possible to get complete information on the signs, symptoms and the duration of the symptoms for the deceased person. Only partial information was obtained, resulting in undetermined cause of death.

Data for under five mortality was adjusted for under-reporting. Readers of this report are advised to bear these limitations in mind when considering the study results.

Chapter 3: Mortality and Causes of Death from Verbal Autopsies

3.1 Introduction

Mortality information is crucial for monitoring and evaluating health interventions, and putting in place mechanisms to address them. This survey was conducted with focus on capturing information on mortality in addition to key demographic variables that are important for evidence based planning. During the baseline census the key indicators computed from the data collected shows that: Crude Death Rate (CDR) is at 12.3; Infant Mortality Rate (IMR) is at 34.3; Under Five Mortality Rate (U5MR) is at 59.1 and Child Mortality Rate (CMR) is at 34.2. Life expectancy at birth is 52.7 years (see periodic life table in Appendix 1).

This chapter presents findings on mortality and causes of death from verbal autopsies. It focuses on the disease burden for the top ten leading causes of mortality and this has been further broken down to show; patterns of mortality by age group, comparing between the baseline census and verbal autopsies, causes of death among all ages by sex and region. Age is broken down into broad age groups of; 0 to 27 days (neonates), 0 to 4 years, 5 to 14 years and 15 years and older. For the 15 years and older, further analysis by sex disaggregation is done.

3.2 Patterns of Mortality by Age

This section compares patterns of mortality by age for death rates recorded during baseline census and the deaths captured during verbal autopsy field work. Figure 3.1 shows the pattern of mortality in the country:

Figure 3.1: Age Pattern of Mortality, Zambia 2015/16
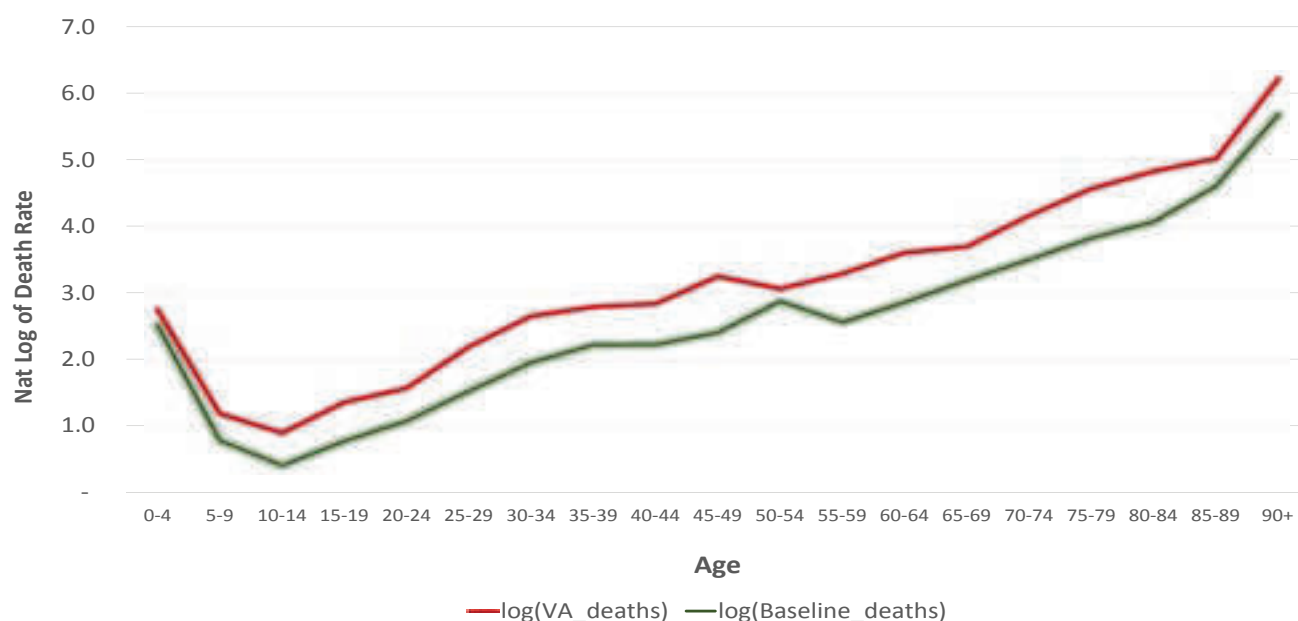
Figure 3.1 shows the typical age pattern of mortality that is driven by HIV and AIDS impact. We see a shift in the mortality curve indicating an increase in mortality from middle to older ages as compared to previous age patterns of mortality when HIV and AIDS was at its peak (INDEPTH Network, 2004). This shift to a larger extent could be attributed to availability of treatment and other health interventions which have contributed to a reduction in the number of people dying early from HIV and AIDS.

3.3 Top 10 Underlying Causes of Death

This section presents findings on top ten causes of deaths for all ages, disaggregated by sex and region. Figure 3.2 shows the percentage distribution of top ten causes of death for all age groups. The figure shows that HIV related diseases is the leading cause of death at 15.2 percent. Despite HIV related diseases being the leading cause of death, there has been a reduction in the proportion compared to the 2010-2012 SAVVY findings which reported 20.3 percent.

Figure 3.2 Percentage distribution of top ten causes of death for all age groups, Zambia 2015/16
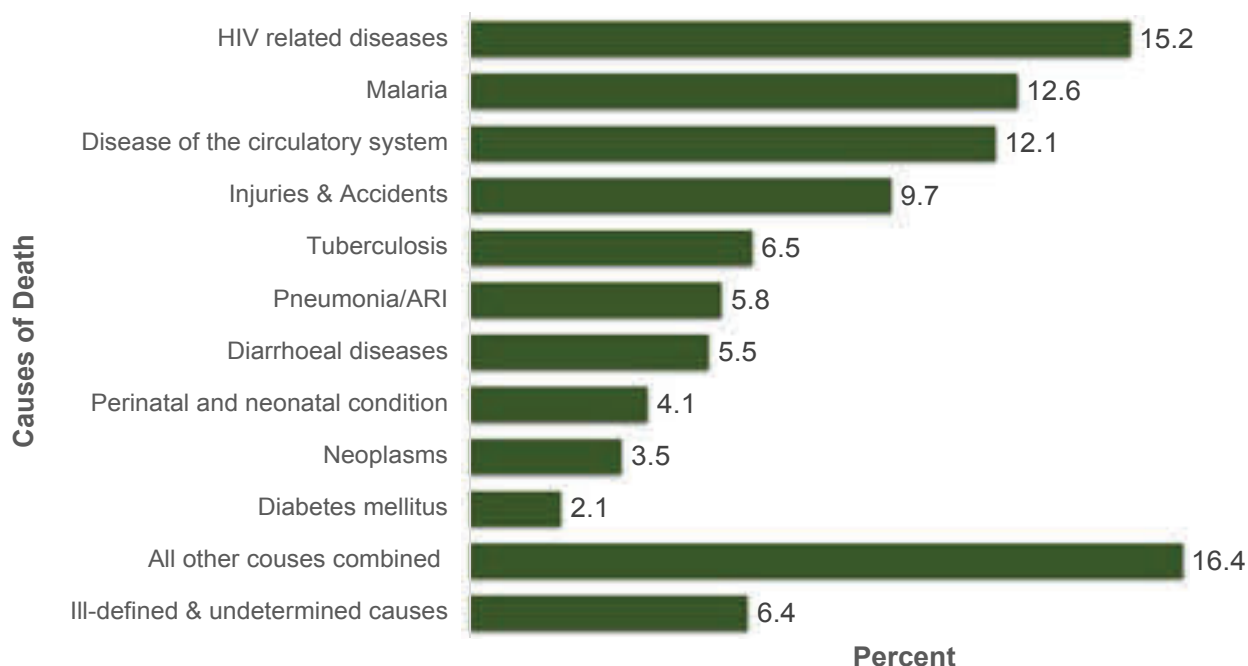
Malaria is the second leading cause of death at 12.6 percent followed by diseases of the circulatory system at 12.1 percent. External causes of death (Injuries and accidents) account for a high proportion of deaths at 9.7 percent. Non-communicable diseases also rank among the top 10 causes of death with Diabetes Mellitus accounting for 2.1 percent of all deaths.

Table 3.1 shows further breakdown of the diseases of the circulatory system shown in figure 3.2 above.

Table 3.1: Distribution of deaths due to diseases of the circulatory system, by specific cause, Zambia 2015/16

Causes of death	Number	Percent
Hypertensive diseases	13,510	57.8
Stroke	5,377	23.0
Other and unspecified cardiac diseases	2,830	12.1
Cerebrovascular diseases	894	3.8
Ischaemic heart diseases	687	2.9
Pulmonary heart disease	55	0.2
Total	23,353	100.0

Figure 3.3 shows percentage distribution of top ten causes of death disaggregated by sex. The proportion of deaths due to HIV related diseases are high among both males (15.4 percent) and females (14.8 percent). The proportion of deaths resulting from malaria are higher among females at 14.1 percent compared to 11.5 percent for males. Tuberculosis and Diabetes Mellitus are higher among males (7.8 and 2.5 percent, respectively) than among females (4.6 and 1.4 percent, respectively) whereas Pneumonia and Neoplasm are higher among females than males. Results further show that proportion of deaths resulting from Injuries and accidents are much higher among males at 13 percent compared to 5.1 percent among females.

Figure 3.3: Percentage distribution of top ten causes of death by sex, Zambia 2015/16

Causes of Death	Male	Female
HIV related diseases	15.4	14.8
Malaria	11.5	14.1
Disease of the circulatory system	10.2	14.7
Injuries & Accidents	13.0	5.1
Tuberculosis	7.8	4.6
Pneumonia/ARI	5.2	6.7
Diarrhoeal diseases	5.5	5.6
Perinatal and neonatal condition	3.9	4.4
Neoplasms	2.4	5.0
Diabetes mellitus	2.5	1.4
All other couses combined	15.8	18.0
Ill-defined & undetermined causes	7.0	5.5

■ Male ■ Female
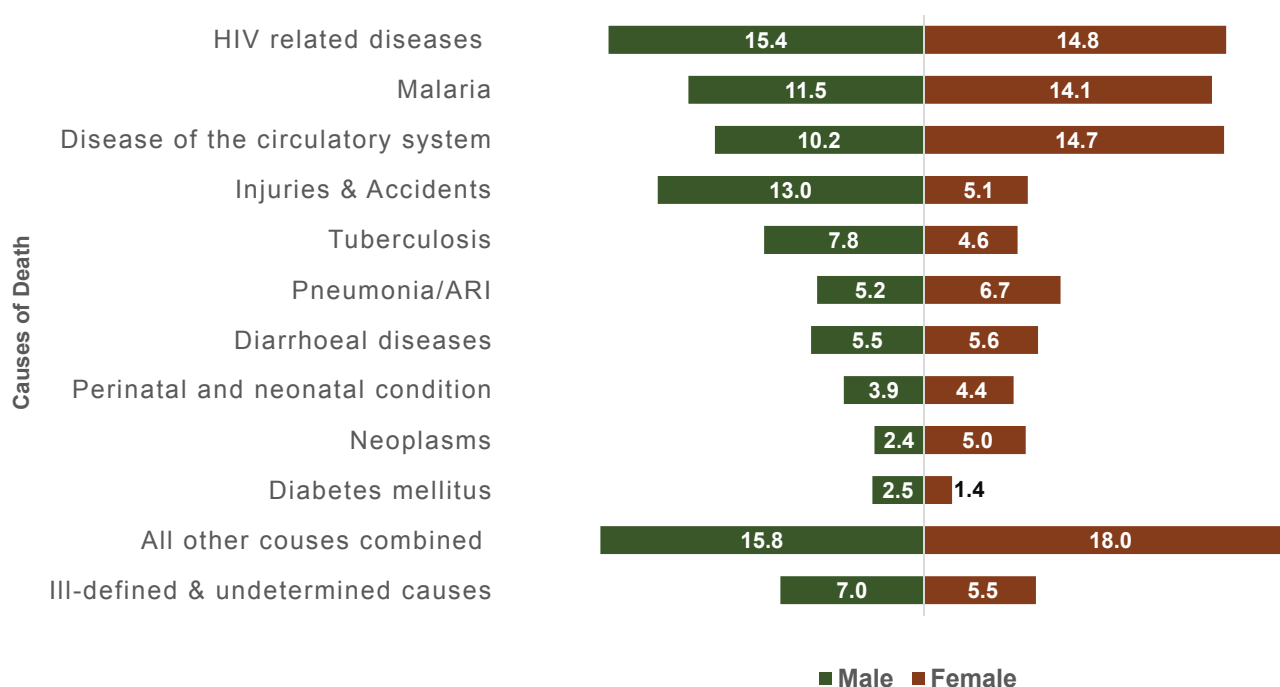
Figure 3.4 shows percent distribution of top ten causes of death by region (rural-urban). The proportion of deaths attributed to HIV related diseases is higher in the urban areas (18.4 percent) compared to rural areas (11.7 percent) whereas the proportion of deaths due to malaria is higher in rural areas (16.1 percent) compared to urban areas (9.4 percent).

3.4 Leading Causes of Mortality Among Children Aged 0-14 Years

Cause-specific mortality fractions for children under the age of 14 years are presented in this section. Findings are presented for neonatal deaths, deaths among children aged 0 – 4 years and deaths among children aged 5 – 14 years.

Figure 3.4: Percent distribution of top ten causes of death by region, Zambia 2015/16

Table 3.2 shows the percentage distribution of the leading causes of death among infants under 28 days (Neonates). Perinatal and neonatal conditions are the leading causes of death among neonates at 77.9 percent. Still birth is the second leading cause of deaths at 16.2 percent. Causes of still births include mother's maternal conditions (previous and current), placental/cord complications and death before complete expulsion.

Table 3.2: Percentage distribution for the top five causes of death among neonates, Zambia 2015/16.

Causes Of Deaths For Neonates	Number	Percent
Perinatal and neonatal condition	7,039	77.9
Stillbirth	1,462	16.2
Pneumonia/ARI	179	2.0
Sudden infant death syndrome	129	1.4
Diarrheal diseases	77	0.9

The most common childhood conditions including malaria, diarrheal diseases, pneumonia/ARI and malnutrition are among the top 5 leading causes of deaths (CSO, 2014). Figure 3.5 shows percentage distribution for the top ten causes of deaths among children aged 0-4 years. Malaria is the leading cause of death at 22.5 percent, followed by perinatal and neonatal conditions (21.3 percent). Malnutrition is among the top 5 accounting for 6.7 percent. The results further show that deaths resulting from injuries and accidents (4.4 percent) is unusually high for this age group. Proportion of HIV and AIDS deaths is at 2.0 percent.

Figure 3.5: Percentage Distribution for the top ten causes of Death among Children aged 0-4 Years, Zambia 2015/2016
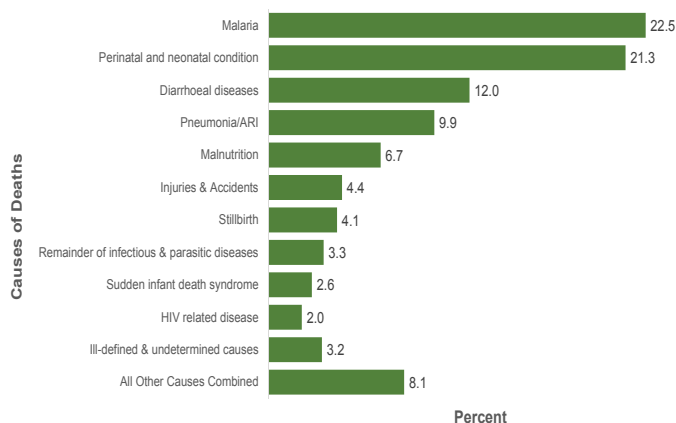
Figure 3.6 shows percentage distribution for the top ten causes of death among children aged 5-14 years. Malaria at 32.2 percent is the leading cause of death among children in this age group. External causes of deaths (injuries and accidents) are second at 15.3 percent. Non-communicable diseases also feature in this age group among the top ten causes of death: sickle cell disorders (5.1 percent) and malnutrition (3.1 percent). HIV and AIDS deaths are at 2.3 percent.

Figure 3.6: Percentage distribution for the top ten causes of death among children aged 5-14 years, Zambia 2015/16.

Cause of Deaths	Percent
Malaria	32.2
Injuries & Accidents	15.3
Pneumonia/ARI	8.5
Diarrhoeal diseases	8.5
Sickle cell disorders	5.1
Malnutrition	3.1
HIV disease	2.3
Other & unspec disorders of the	1.7
Nutritional and other anemias	1.6
Disease of the circulatory syste	1.6
Ill-defined & undetermined cause	8.5
All Other Causes Combined	11.5
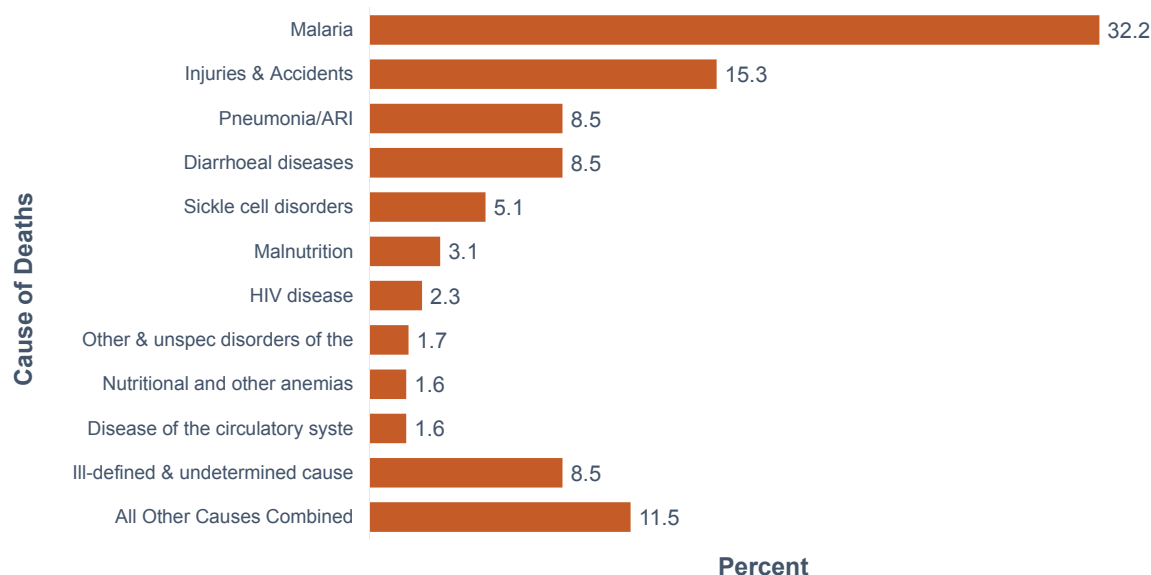
3.5 Leading Causes of Death among Adults (15 years and older)

Top ten causes of deaths among adults aged 15 years and older are presented in this section. The findings are further disaggregated by sex.

Figure 3.7 shows percentage distribution of the top ten leading causes of death in Zambia among adults aged 15 years and older. HIV related diseases are the leading cause of death at 19.7 percent. Deaths resulting from non-communicable diseases are high in this age group, with diseases of the circulatory system ranking second at 16.0 percent. External causes and tuberculosis are the third and fourth, respectively. Malaria at 8.3 percent is the fifth leading cause of death among adults.

Figure 3.7: Percentage distribution of the top ten leading causes of death among adults 15 years and older, Zambia 2015/16

Causes of Death	Percent
HIV related diseases	19.7
Disease of the circulatory system	16.0
Injuries & Accidents	10.6
Tuberculosis	8.5
Malaria	8.3
Neoplasms	4.6
Pneumonia/ARI	4.5
Diarrhoeal diseases	3.6
Diabetes mellitus	2.7
Maternal causes	2.1
Ill-defined & undetermined causes	7.0
All Other Causes Combined	12.4
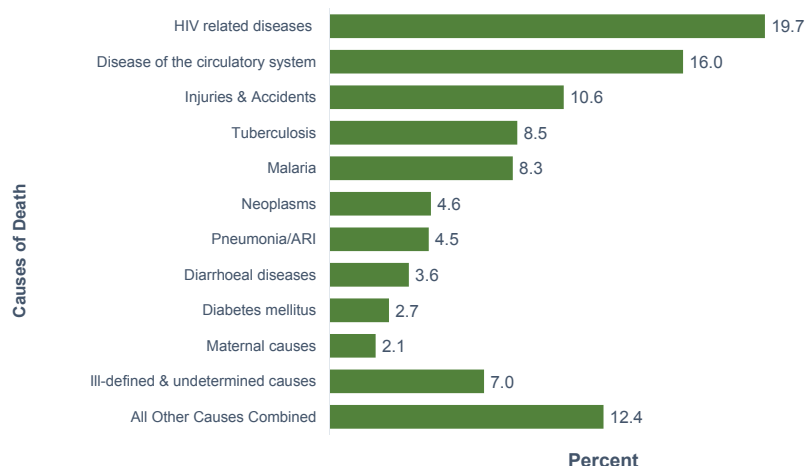
Figure 3.8 shows percentage distribution of top ten leading causes of death among adults aged 15 years and older by sex. Among women, Disease of the circulatory system, HIV related diseases, malaria, neoplasms, and maternal causes are the five leading causes of death in the order stated. Among males HIV related diseases, injuries and accidents, disease of the circulatory system, tuberculosis and malaria are the leading causes of death in the order stated.

Figure 3.8: Percentage distribution of the top ten leading causes of death among adults aged 15 years and older by sex, Zambia 2015/16.
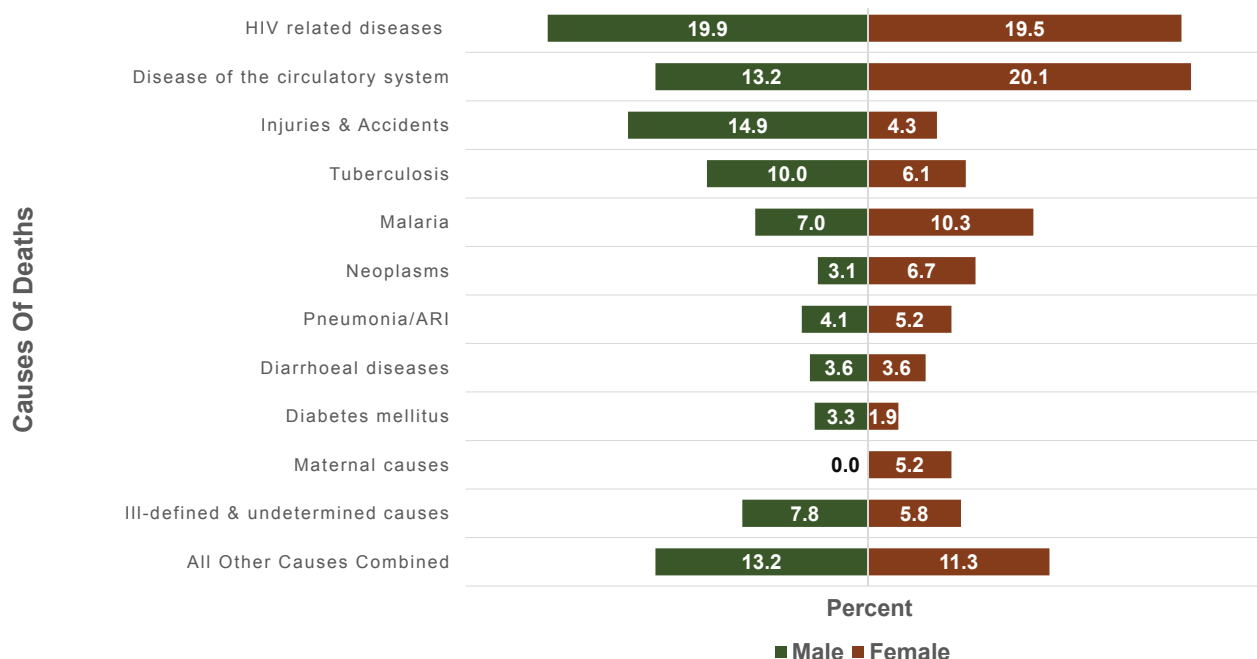
3.6 Percent Distribution of Deaths by Province

Figure 3.9 shows overall distribution of deaths by Province. The results show that a large proportion of deaths occur in Lusaka (17.8 percent) followed by Copperbelt Province (13.6 percent). Luapula and Northern provinces tie at 11.0 percent. For the other provinces, the proportion of deaths falls below 10.0 percent.

Figure 3.9: Percentage distribution of deaths by Province, Zambia 2015/16
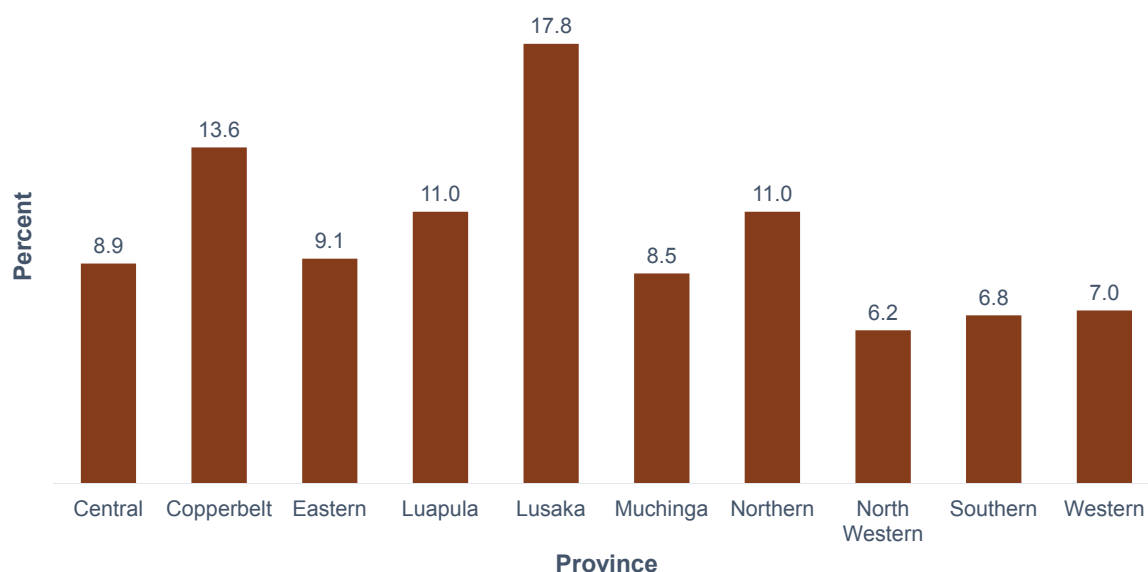
Chapter 4: Deaths from Specific Causes

4.1 Introduction

This chapter focuses on deaths due to specific causes that are preventable through specific interventions. It further discusses information on health service use, treatment and risk factors associated with the selected conditions. The main focus are deaths due to Malaria, HIV, external causes, non-communicable diseases and maternal causes.

4.2 Malaria

Malaria is one of the major public health concerns in Zambia. Its eradication has been high on the Zambian agenda as this has overtime affected children under the age of five, expectant mothers, chronically ill as well as the immune-compromised persons. Priorities have been put in place to ensure universal access to malaria prevention and treatment services at all levels of health care. The objectives of malaria programme as indicated in the National Health Strategic Plan (2017 to 2021) are therefore: to ensure increased malaria-free health facility catchment areas from 0.5 percent in 2015 to 100 percent in 2021; to reduce malaria incidence from 336 cases per 1000 population to less than 5 cases per 1000 population in 2021; and to reduce malaria deaths from 15.2 deaths per 100,000 to less than 5 deaths per 100,000 population in 2021.

4.2.1 Malaria Deaths by Region and Sex

Overall malaria accounts for 12.6 percent of the burden of mortality (see chapter 3). Figure 4.1 presents distribution of malaria deaths by sex and rural/urban. Of those who died from malaria, the higher proportion are males (53.5 percent) compared to females (46.5 percent). In urban areas, among those who died of malaria, 54.5 percent are males and 45.5 percent are females, whereas in the rural areas the proportions are 52.9 percent and 47.7 percent for males and females, respectively.

Figure 4.1: Percentage distribution of malaria deaths by region and by sex, Zambia 2015/16
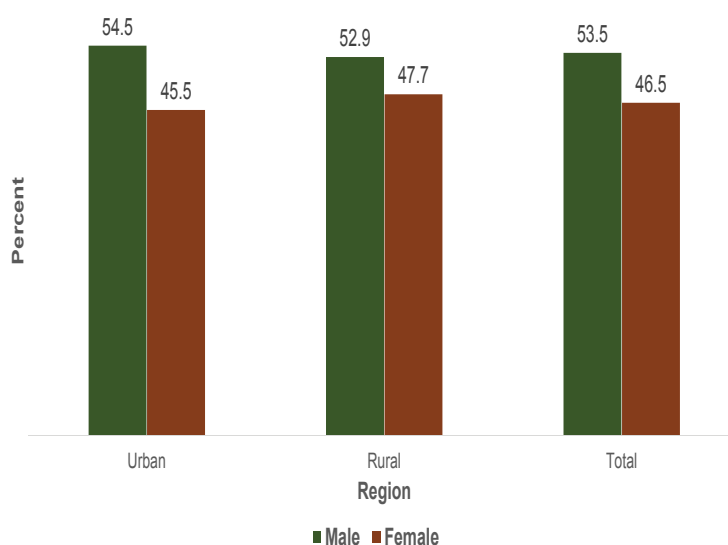
The proportion of malaria deaths in the rural areas (16.1 percent) is significantly higher than in the urban areas (9.4 percent). The contribution of malaria deaths among all deaths to women (14.1 percent) is significantly higher than the contribution of malaria deaths among all deaths to men (11.5 percent). (Refer to appendix 1)

4.2.2 *Malaria Deaths by Region and Age*

Figure 4.2 shows distribution of malaria deaths by rural/urban and age. Overall malaria deaths accounted for 34.1 percent in children under five and 65.9 percent in older children and adults. The proportion of deaths as a result of malaria in children under the age of five years was higher in the rural areas at 44.7 percent compared to urban at 17.2 percent. In the older age group (5 years and older), proportion of malaria deaths in urban areas is higher at 82.8 percent compared to proportion of malaria deaths in rural areas at 55.3 percent.

Figure 4.2: Percentage distribution of malaria deaths by region and age, Zambia 2015/16
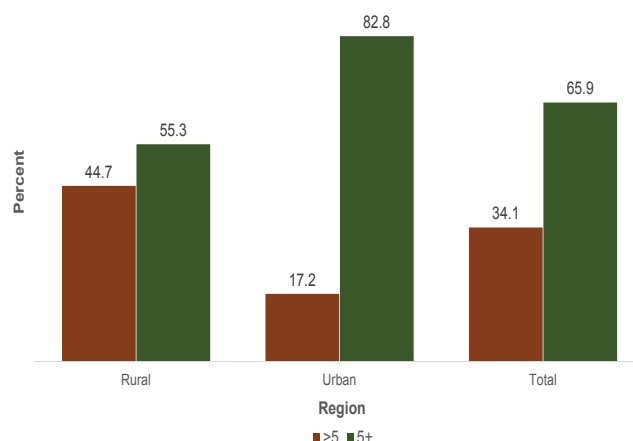
4.2.3 *Malaria Deaths by Place of Treatment*

Figure 4.3 shows the malaria deaths as defined by place at which the deceased sought treatment prior to death. Note that proportions sum to more than 100 percent because the deceased may have received treatment from more than one place in the period leading to their death. For example, the same person may have sought medical treatment/care from a government facility, then went to a traditional healer, and later on took self-medication at home if there is no improvement in their health condition.

The figure shows that 86.6 percent of the deceased persons who died of malaria sought treatment from a government hospital/heath centre, followed by 72.8 percent who received treatment at home. Private facilities were the least sought place for treatment for all malaria deaths (7.4 percent). However, it is worth noting that about 53.5 percent sought treatment from traditional healers while 34.3 percent sought treatment from either a pharmacy or drugstore and 23.9 percent sought treatment from faith based facilities.

Figure 4.3: Percentage distribution of malaria deaths by place of treatment, Zambia 2015/16
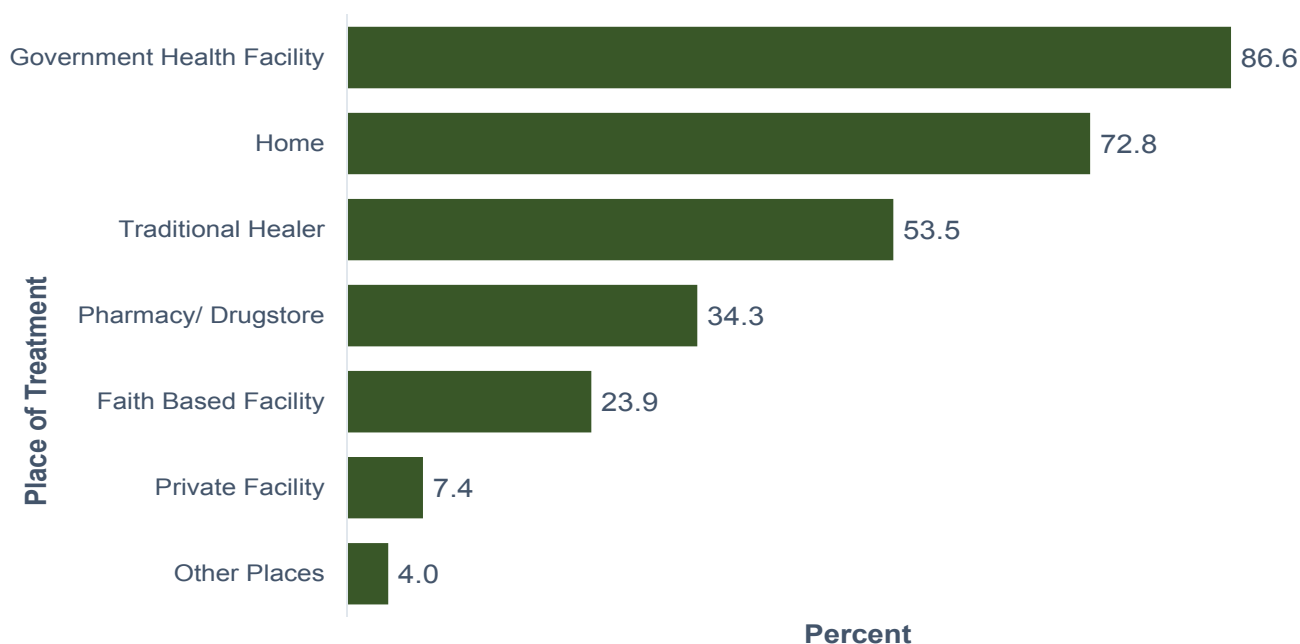
4.2.4 Malaria Deaths by Region and Seasonality

Figure 4.4 shows malaria deaths by rural/ urban and seasonality. Overall, 54.6 percent of all malaria deaths occur during wet season compared to 45.4 percent occurring during the dry season. In rural areas 56.3 percent of malaria deaths occur during wet season whereas 43.7 percent occur during dry season. In the urban settings the proportions are 51.8 percent and 48.2 percent for wet and dry seasons, respectively.

Figure 4.4: Percentage distribution of malaria deaths by region and seasonality, Zambia 2015/16
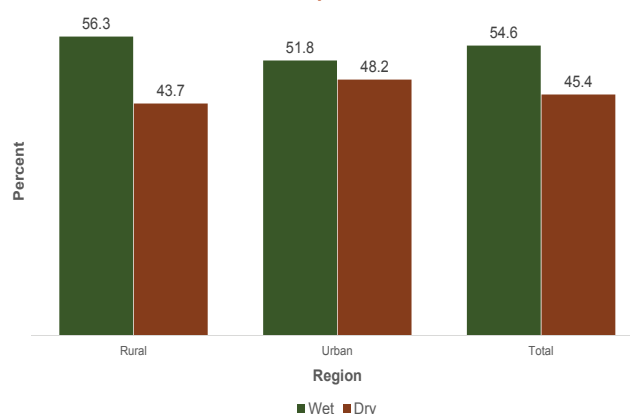
4.2.5 Malaria Deaths by Region, Sex and Province

Table 4.1 presents the distribution of deaths due to malaria by selected characteristics. By rural-urban disaggregation, 61.2 percent of those who died from malaria are from rural areas. By sex disaggregation, 53.5 percent of those who died from malaria are males. Luapula Province has the highest proportion of deaths due to malaria (19.5 percent) followed by Northern Province (16.2 percent). Southern Province has the lowest proportion of deaths due to malaria (4.1 percent)

Table 4.1: Malaria deaths by demographic characteristics, Zambia 2015/16		
Sex/Region/Province	**Number**	**Percent**
Sex		
Male	13,055	53.5
Female	11,341	46.5
Region		
Urban	9,460	38.8
Rural	14,936	61.2
Province		
Central	2,380	9.8
Copperbelt	2,509	10.3
Eastern	2,502	10.3
Luapula	4,746	19.5
Lusaka	1,875	7.7
Muchinga	2,261	9.3
Northern	3,962	16.2
North Western	1,894	7.8
Southern	995	4.1
Western	1,273	5.2

Note: N = 24,396

4.3 HIV Related Diseases

4.3.1 Deaths Due to HIV Related Diseases

HIV related diseases is among the leading causes of morbidity and mortality in Zambia despite recording a decline in prevalence from 14.3 percent in 2007 to 13.3 percent in 2013/14 (CSO, 2014). Aiming at reducing morbidity and mortality from HIV related diseases, achievements have been made through the provision of free Antiretroviral (ARV) drugs in all public health facilities, compulsory testing of all clients presenting at health facilities, strengthening of Elimination of Mother to Child Transmission (EMTCT), Voluntary Medical Male Circumcision (VMMC), condom use and social and behaviour change.

Overall HIV related diseases accounts for 15.2 percent of all deaths. The proportion of HIV related diseases deaths in the urban areas (18.4 percent) is significantly higher than in the rural areas (11.7 percent). (See appendix 1).

4.3.2 Deaths due to HIV Related Diseases by Region and Age

Figure 4.5 presents the distribution of deaths due to HIV related diseases by rural/urban and age. The proportion of deaths due to HIV is higher in individuals aged 15 years and older in urban areas at 63.7 percent compared with those in rural areas (36.3 percent). However, deaths due to HIV among children below the age of 15 is higher in rural areas (52.4 percent) compared to urban areas (47.6 percent). The data also indicates that rural and urban differentials were significant.

Figure 4.5: Percentage distribution of HIV related diseases deaths by region and age, Zambia 2015/16
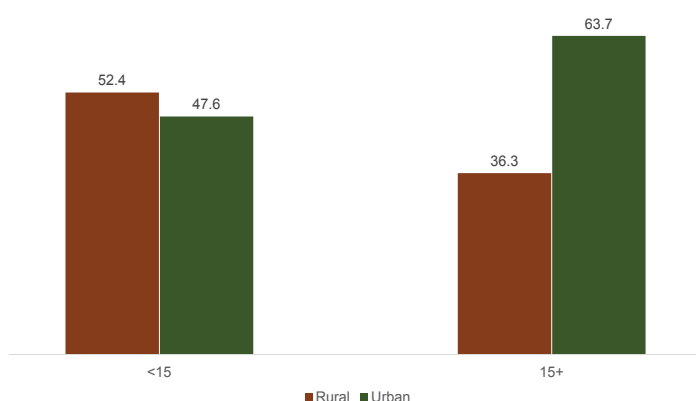
4.3.3 Deaths due to HIV Related Diseases by Region and Sex

Of the persons that died from HIV related diseases, there is a higher proportion for males (59.5 percent) compared to females (40.5 percent). Similarly, a higher proportion of HIV related diseases deaths occur in urban (63.1 percent) compared to rural areas (36.9 percent).

Figure 4.6 presents the percentage distribution of HIV related diseases deaths by sex and rural/urban. The figure shows that in both rural and urban areas there is a higher proportion of males who died of HIV related diseases (60.6 percent in urban and 57.5 percent in rural) compared to females (39.4 percent in urban and 42.5 percent in rural).

Figure 4.6: Percent distribution of HIV deaths by region and sex, Zambia 2015/16
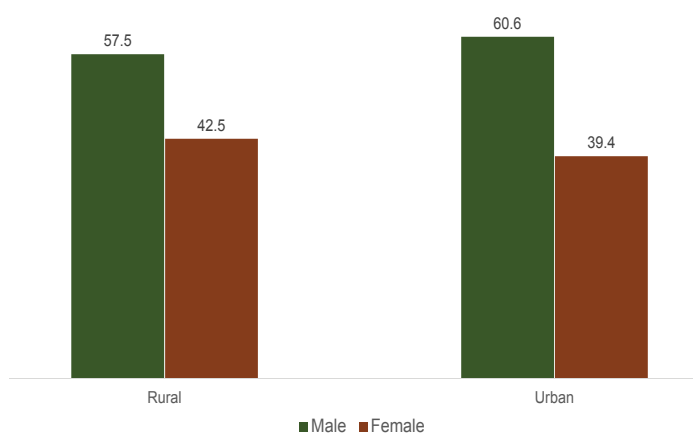
4.3.4 Deaths due to HIV Related Diseases by Province

Table 4.2 presents results of the distribution of HIV related diseases deaths by Province. The table shows that Lusaka Province accounted for 18.7 percent of the reported deaths followed by Copperbelt Province at 17.6 percent and Central Province at 13.4 percent. North Western Province has the lowest proportion at 3.9 percent of deaths due to HIV related diseases.

Table 4.2: Deaths due to HIV related diseases by Province, Zambia 2015/16

Province	Number	Percent
Central	3,940	13.4
Copperbelt	5,186	17.6
Eastern	2,912	9.9
Luapula	2,620	8.9
Lusaka	5,490	18.7
Muchinga	1,261	4.3
Northern	1,848	6.3
North Western	1,149	3.9
Southern	2,631	8.9
Western	2,364	8.0
Total	**29,403**	**100**

4.3.5 Deaths due to HIV Related Diseases by Place of Treatment

Figure 4.7 shows the percentage distribution of deaths due to HIV related diseases by place of treatment. Note that proportions sum to more than 100 percent because the deceased may have received treatment from more than one place in the period leading to their death. Results show that 93.2 percent of the deceased persons who died of HIV related diseases sought treatment from a government hospital/heath centre, followed by 87.9 percent who received treatment at home. Private facilities were the least sought place for treatment for all deaths due to HIV related diseases (5.0 percent). However, it is worth noting that about 68.5 percent sought treatment from traditional healers while 42.4 percent from either a pharmacy or drugstore and 27.2 percent from faith based facilities.

Figure 4.7: Percentage distribution of deaths due to HIV related diseases by place of treatment, Zambia 2015/16
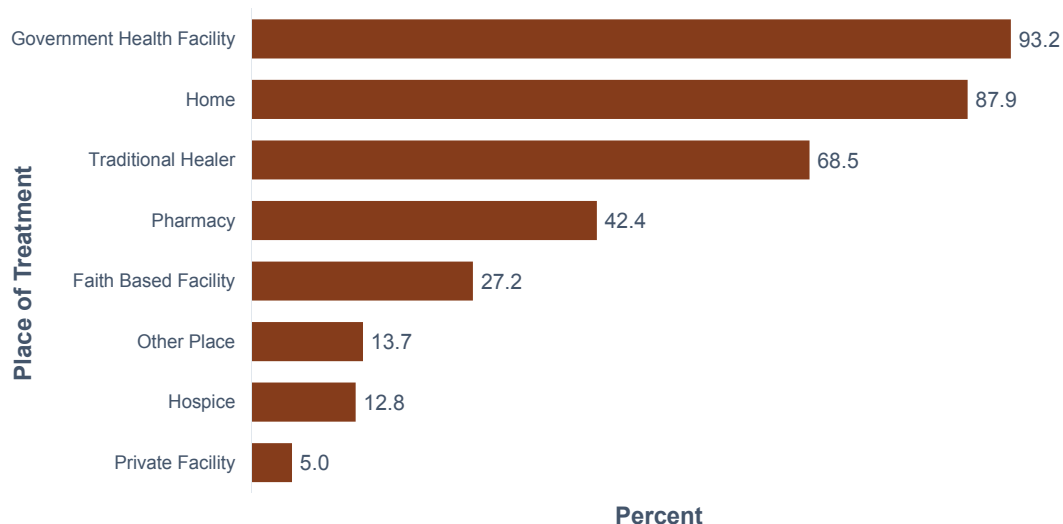
4.4 External Causes

External causes (Injuries and accidents) are becoming a major public health problem in developing countries, and the problem is growing rapidly in sub-Saharan Africa and Zambia, in particular. Studies on the magnitude of external and the groups at risk, have been conducted world-wide, and especially in developed countries. However, not much is done in Africa to fully understand the magnitude of the problem, specific causes of accidents and injuries, and the affected groups of population. Hospital based studies, which are commonly reported from developing countries, presumably provide a representative picture of the prevalence and incidence of external causes, but only a partial picture of the circumstances in which accidents and injuries occur. Previous community-based study in Zambia show that external causes are an important cause of death among adults (CSO, 2014), appearing among the top five leading causes of death.

4.4.1 Percentage of Deaths Due to External Causes by Region and Sex

Overall external causes of deaths accounts for 9.7 percent of the burden of mortality. The proportion of external causes of deaths among males (12.9 percent) is significantly higher than among females (5.1 percent).(See appendix 1). Figure 4.8 presents distribution of external causes deaths by sex and rural/urban. Of the persons who died from external causes, there is a higher proportion for males (78.2 percent) compared to females (21.8 percent).

The figure shows that in urban areas persons who died from external causes are 82.3 percent males and 17.7 percent females and in rural areas 73.5 percent males and 26.5 percent females.

Figure 4.8: Percentage distribution of deaths due to external causes by region and sex, Zambia 2015/16
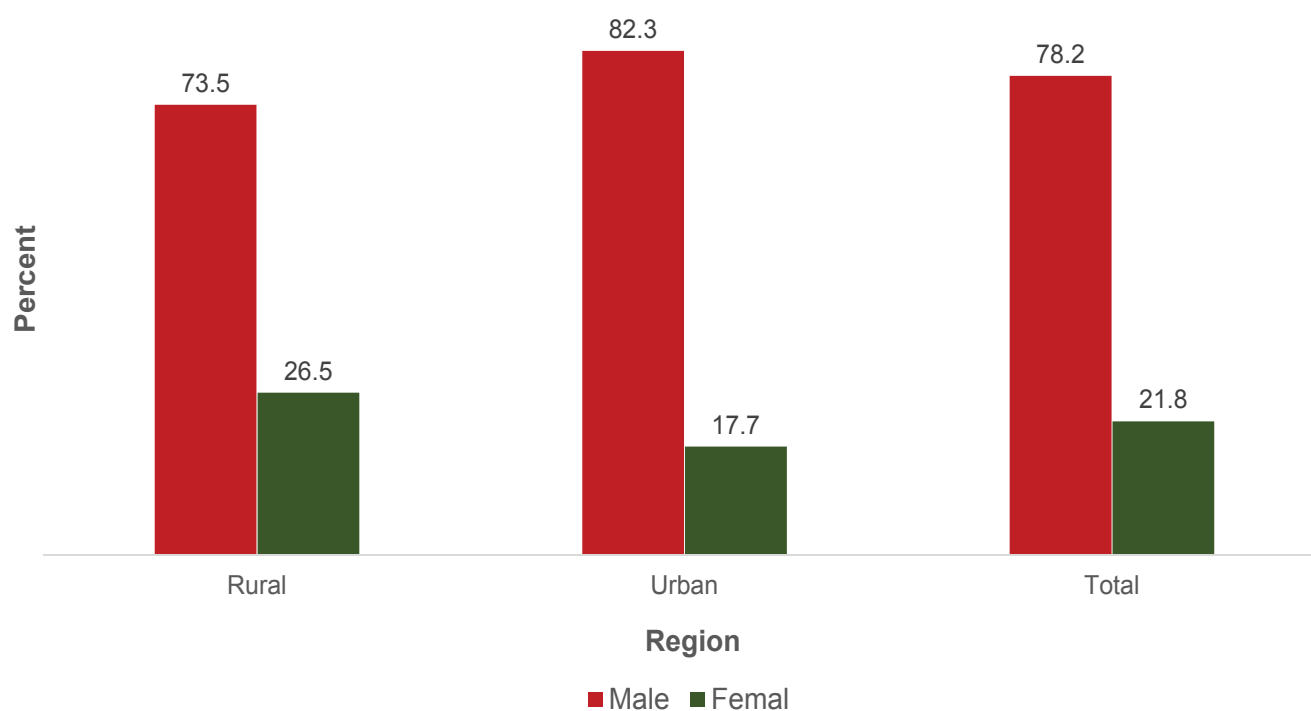
4.4.2 Deaths Due to External Causes by Province

Table 4.4 shows percentage distribution of deaths due to external causes by rural/urban and province. The table shows that a higher proportion of external causes of deaths occur in urban areas (53.7 percent) compared to rural areas (46.3 percent). Analysis by province indicates that there is a highest proportion of external causes of deaths in Lusaka at 20.9 percent followed by Copperbelt Province at 19.7 percent and 10.2 percent in Muchinga Province. The least proportion of deaths were reported in North Western Province at 3.6 percent.

Table 4.4: Percentage Distribution of deaths due to external causes by rural/urban and province, Zambia 2015/16

Region/Province	Number	Percent
Region		
Rural	8,686	46.3
Urban	10,091	53.7
Province		
Central	1,427	7.6
Copperbelt	3,696	19.7
Eastern	1,462	7.8
Luapula	1,788	9.5
Lusaka	3,929	20.9
Muchinga	1,912	10.2
Northern	1,481	7.9
North Western	672	3.6
Southern	1,098	5.8
Western	1,313	7.0
Total	**18,778**	**100**

4.4.3 Deaths Due to External Causes by Region and Age

Figure 4.9 presents information on the percentage distribution of deaths due to external causes by rural/urban and age group. The proportion of deaths due to external causes was higher in individuals aged 15 years and older in urban areas at 56.2 percent compared to 43.8 percent in rural areas. Of the persons below the age of 15 years who died due to external causes, the proportion is higher in rural areas at 56.6 percent compared 43.4 percent in urban areas.

Figure 4.9: Percentage distribution of deaths due to external causes by region and age, Zambia 2015/16
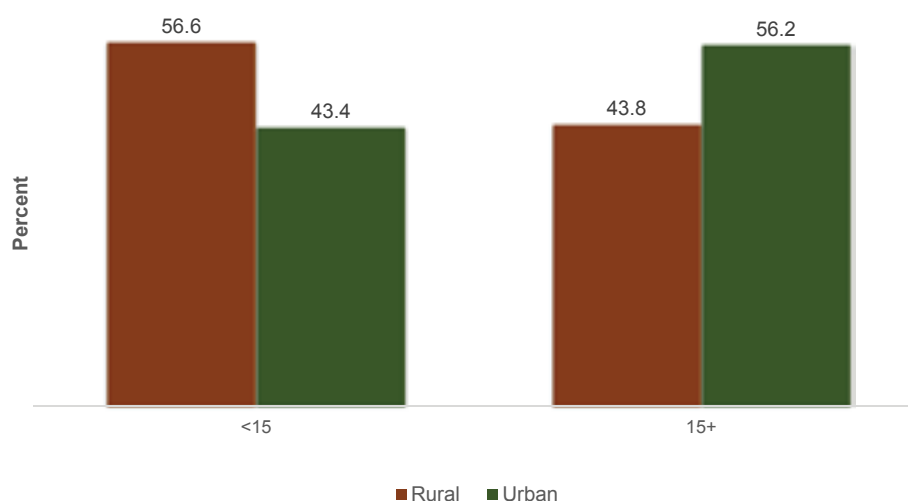
4.4.4 External Causes of Death by Place of Treatment

Figure 4.10 shows the external causes of death as defined by place at which the deceased sought treatment prior to death. Note that proportions sum to more than 100 percent because the deceased may have received treatment from more than one place in the period leading to their death.

The figure shows that 93.1 percent of the deceased persons who died of external causes received treatment from home, followed by 80.9 percent who received treatment from a government hospital/ heath centre. Private facilities were the least sought place for treatment for all external causes of death (8.6 percent). However, it is worth noting that about 73.8 percent sought treatment from traditional healers while 28.8 percent from either a pharmacy or drugstore and 40.1 percent from faith based facilities.

Figure 4.10 Percentage distribution of external causes by place of treatment, Zambia 2015/16
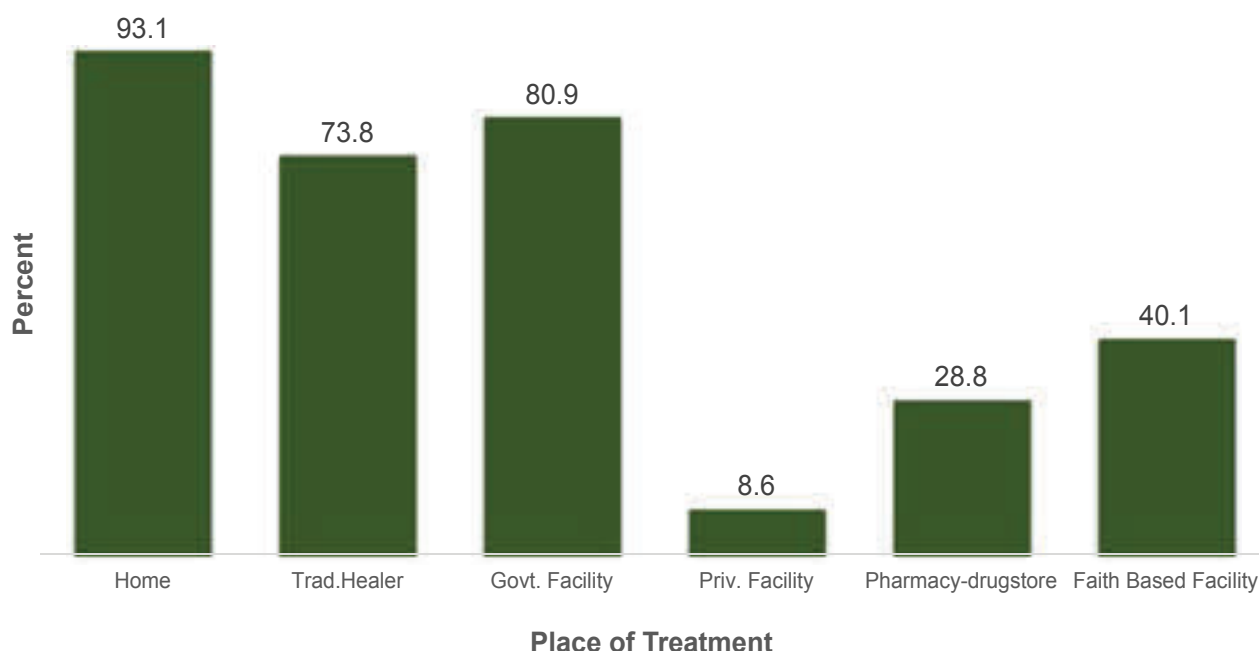
4.4.5 External Causes of Death by Place of Death

Figure 4.11 shows the percentage distribution of deaths due to external causes by place of death. Results indicate that most of the deaths due to external causes occurred in hospitals/heath centres at 37.3 percent followed by other places (died on the spot or on way to a health facility) at 32.3 percent. Those who died at home due to external causes accounted for 27.8 percent.

Figure 4.11: Percent distribution of deaths due to external causes by place of death, Zambia 2015/16
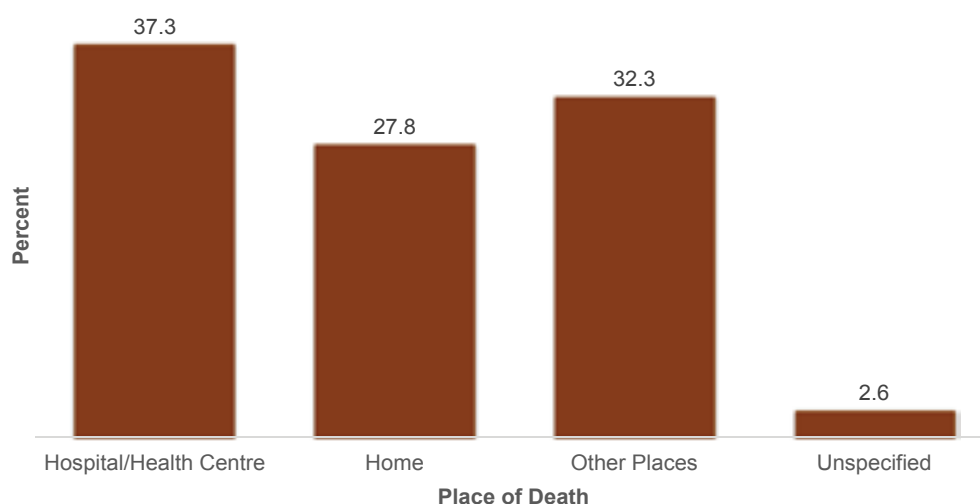
4.4.6 Causes of Injuries and Accidents

Figure 4.12 shows the information on external causes of death from the 2015/16 SAVVY. The figure shows that road traffic accidents were the leading underlying cause of death at 28.8 percent. The second leading cause of death is intentional self-harm at 13.2 percent followed by assault at 12.4 percent. Other causes of death include Accidental drowning and submersion (10.5 percent), falls (6.2 percent) and exposure to smoke fire and flames accounted for 4.2 percent. Accidental poisoning accounts for 3.1 percent of all deaths due to external causes.

Figure 4.12 Specific Causes contributing to Accidents and Injuries, Zambia 2015/16

- Transport accidents
- All other external causes
- Intentional self-harm
- Assault
- Accidental drowning and submersi
- Falls
- Exposure to smoke, fire and flam
- Accidental poisoning by and expo
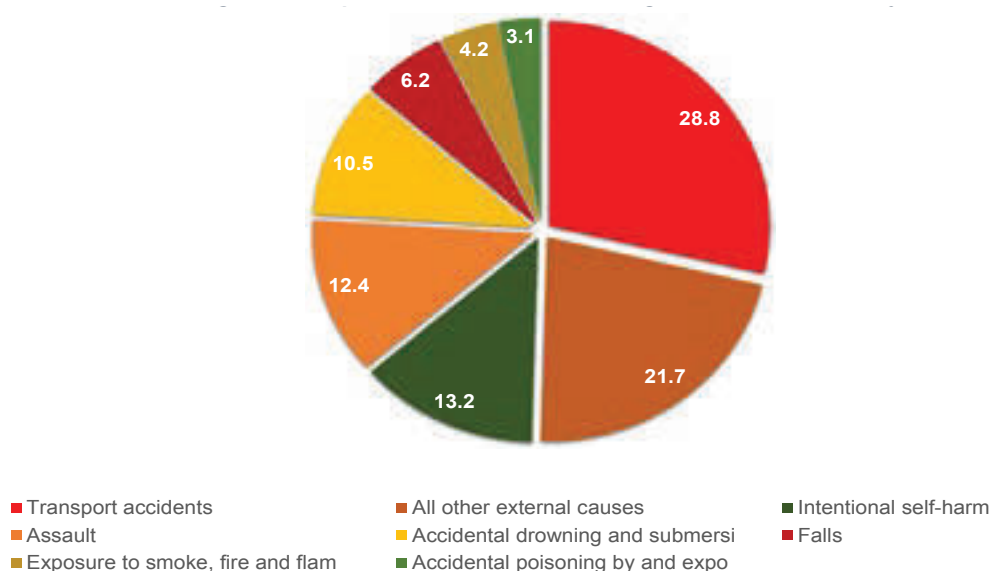
4.5 Non-Communicable Diseases

Non-communicable diseases (NCDs) are one of the leading causes of death globally, accounting for the premature deaths of 16 million lives each year. In Africa, NCDs are responsible for approximately 3.9 million deaths. Deaths related to NCDs in Zambia have been estimated at approximately 23 percent and premature mortality from NCDs is approximately 20 percent (WHO, 2014). NCDs include cardiovascular diseases, cancers, diabetes and chronic respiratory diseases as well as mental health.

A large proportion of NCDs are preventable as they share modifiable behavioural risk factors such as tobacco use, alcohol abuse, unhealthy diet, and physical inactivity, which contribute to cancer, obesity, high blood pressure, and high cholesterol (WHO, 2014). Feasible and cost-effective interventions to combat and reduce the burden of NCDs exist, and sustained action to prevent risk factors and improve health care can avert millions of preventable premature deaths. NCD statistics at country level are essential for planning and implementing health policies in any country. In addition, risk factor data at regular intervals are especially important as predictors of future diseases.

4.5.1 Deaths due to Non-communicable Diseases by Type

In this study, only analysis of deaths due to NCDs for adults aged 15 years and older was done. Figure 4.13 shows the percent distribution of deaths due to non-communicable diseases by type. Diseases of the circulatory system are the most common at 55.3 percent, followed by cancers at 14.8 percent. Diseases of the nervous system were the least common at 3.7 percent.

4.5.2 Deaths due to non-communicable diseases by region and sex

Overall, NCDs account for 28.8 percent of the burden of mortality. The proportion of NCD deaths out of all deaths in the urban areas (30.4 percent) is higher than the proportion of NCD deaths out of all deaths in the rural areas (26.7 percent). The proportion of NCD deaths out of all deaths among women (32.6 percent) is significantly higher than the proportion of NCD deaths out of all deaths among men (26.2 percent).

Figure 4.14 presents distribution of NCDs deaths by sex and rural/urban. In the urban setting, among those who died of NCDs, 52.0 percent are males and 48.0 percent are females, whereas in the rural areas the proportions are 55.8 percent and 44.2 percent for males and females, respectively (see appendix 1).

Figure 4.13: Percentage distribution of NCD deaths, Zambia 2015/16
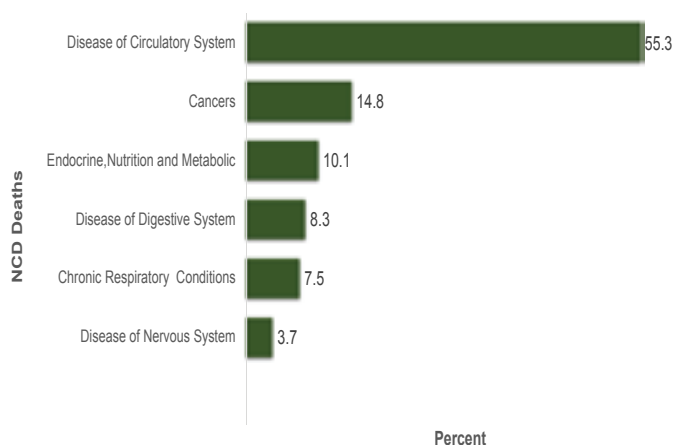
Figure 4.14 Percent distribution of deaths due to non-communicable diseases by region and sex, Zambia 2015/16
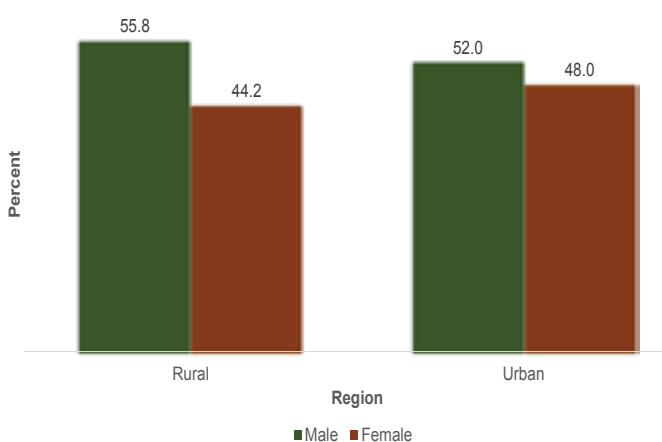
4.5.3 Deaths due to Non-communicable Diseases by Place of Treatment

Figure 4.15 shows the percentage distribution of NCDs deaths as defined by place of treatment. Note that proportions sum to more than 100 percent because the deceased may have received treatment from more than one place in the period leading to their death.

The figure shows that 96.5 percent of the deceased persons who died of NCDs received treatment from home, followed by 82.3 percent who sought treatment from a government hospital/heath centre. Private facilities were the least sought place for treatment for all NCDs deaths (11.8 percent). However, it is worth noting that about 76.5 percent sought treatment from traditional healers while 66.0 percent from either a pharmacy or drugstore and 52.9 percent from faith based facilities.

Figure 4.15: Percentage distribution of NCD deaths by place of treatment, Zambia 2015/16
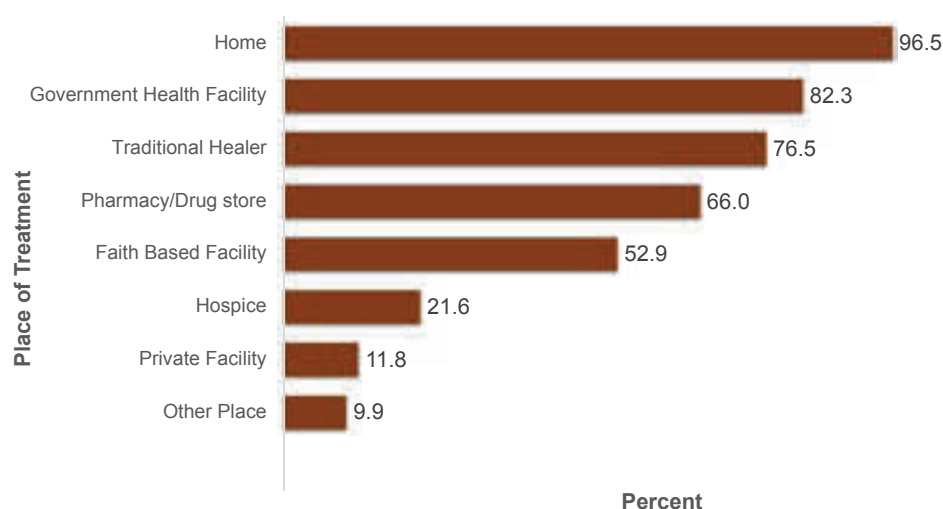
4.5.4 Deaths due to Non-communicate Diseases by Place of Death

Figure 4.16 shows the percentage distribution of deaths due to non-communicable diseases by place of death. Slightly more than half (54.5 percent) of deaths due to non-communicable diseases took place from hospital/health centre. There is still a considerable percentage of deaths due to non-communicable diseases happening from home at 43.6 percent.

Figure 4.16: Percentage distribution of deaths due to non-communicable diseases by place of death, Zambia 2015/16
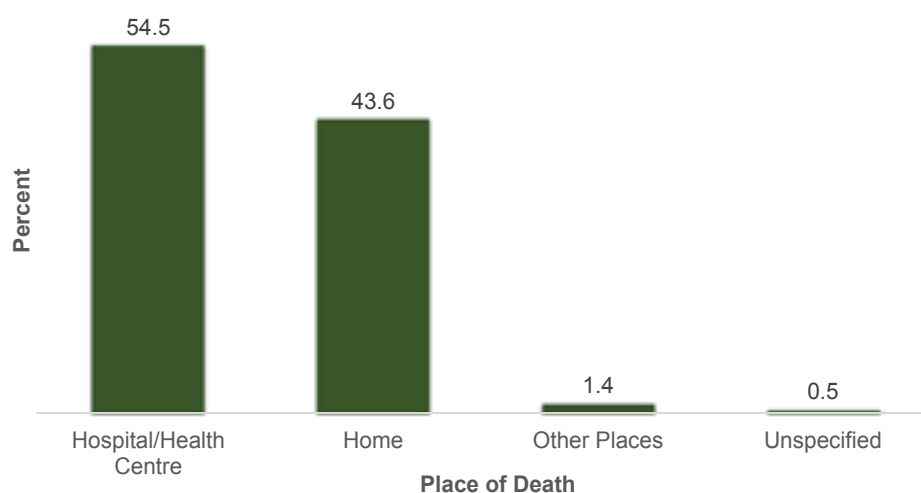
4.5.5 Deaths due to Non-communicable Diseases by Region and Risk Factors

There are several risk factors associated with death due to NCDs. In this study the focus is on smoking and alcohol consumption as risk factors for deaths due to NCDs. Figure 4.17 shows the percentage of NCD deaths by rural/urban associated with alcohol and smoking. The figure shows that 36.8 percent of those who died from NCDs reported to have been taking alcohol whereas 20.4 percent reported to have been smoking. The proportion of deceased persons in urban areas who died from NCD who were reported to have been consuming alcohol is 36.8 percent and 37.0 percent in rural areas. The proportion of deceased persons in urban areas who died from NCD who were reported to have been smoking is 15.2 percent and 27.9 percent in rural areas.

Figure 4.17 Percent distribution of deaths due to NCD associated with risk factors, Zambia 2016/16
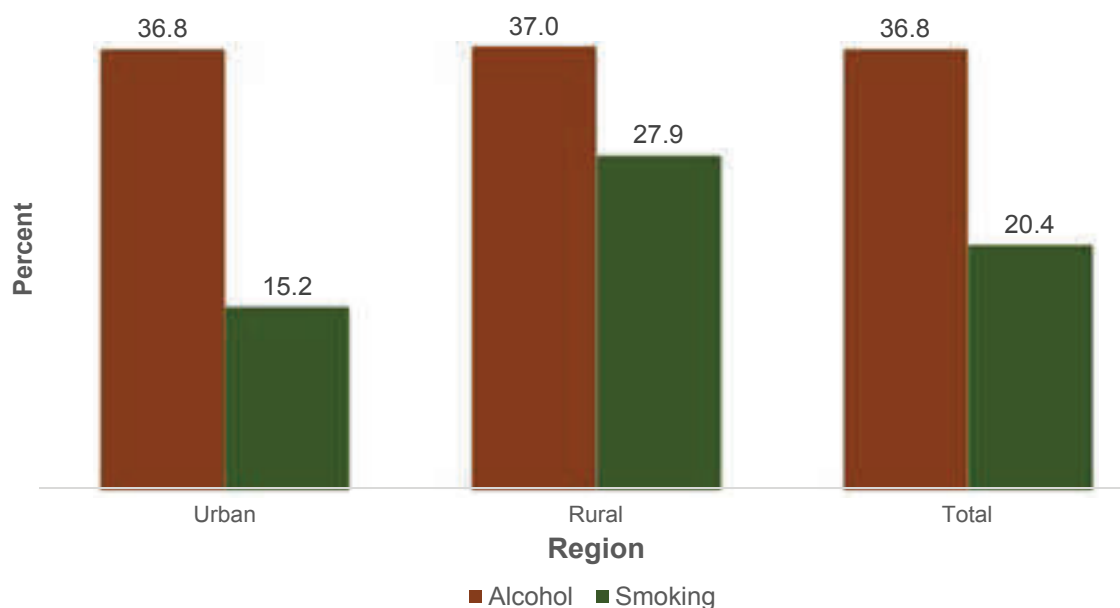
4.6 Maternal Health

Maternal Mortality Ratio has been on the decrease from 729 deaths per 100,000 live births in 2002 to 398 deaths per 100,000 live births in 2013/14 (CSO, 2014). Despite this decrease, maternal mortality remains high in absolute terms. Zambia has since sought to reduce maternal mortality by ensuring universal access to family planning services, increased availability and utilisation of high-impact sexual and reproductive health services, increased availability and utilisation of quality focused antenatal care services, increased access to skilled attendants at birth, and ensuring availability of Emergency Obstetric and Neonatal Care (EmONC).

4.6.1 SAVVY Maternal Mortality Ratio

Maternal Mortality Ratio is computed and given by various data sources. According to the 2013/14 ZDHS, MMR for Zambia was 398 deaths per 100,000 live births. The 2015/16 SAVVY adjusted MMR is 467 deaths per 100,000 live births. This ratio is adjusted based on the 2010 Census projections for 2015 annual births.

4.6.2 Maternal Deaths by Region and Age-Groups

Figure 4.18 shows percentage distribution of maternal deaths by rural/urban and age. The figure shows that more maternal deaths occur in urban areas (57.0 percent) compared to rural areas (43.0 percent). Though there may appear to be more deaths in urban areas than in rural areas, the suggestion however, bears no significant difference between urban and rural occurrences. The results show that there are more deaths among adolescents (12 – 19 years) in rural areas (57.8 percent) compared to urban areas (42.2 percent). For age groups 20-29, maternal deaths are higher (63.8 percent) in urban areas compared to rural areas at 36.2 percent.

Figure 4.18 Percentage distribution of maternal deaths by region and age, Zambia 2015/16
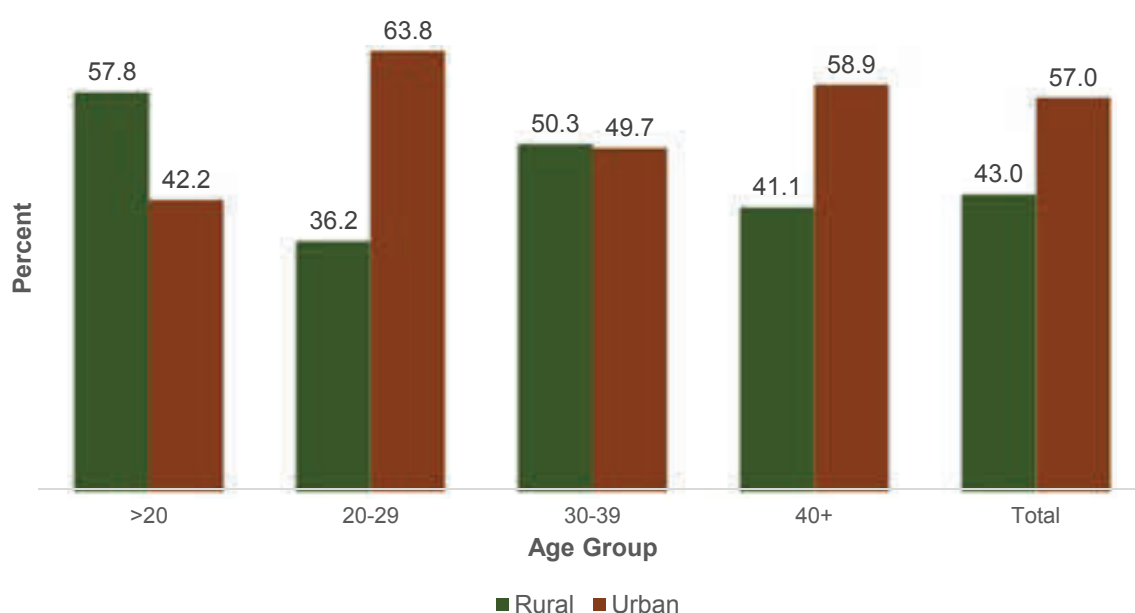
4.6.3 Maternal Deaths by Place of Treatment

Figure 4.19 shows the percentage distribution of maternal deaths as defined by place of treatment. Note that proportions sum to more than 100 percent because the deceased may have received treatment from more than one place in the period leading to their death.

The figure shows that 72.6 percent of women who died of maternal causes sought treatment from a government hospital/health centre, followed by 62.8 percent who received treatment from faith based facility. Private facilities were the least sought place for treatment for all maternal deaths (11.1 percent). However, it is worth noting that about 58.1 percent sought treatment from traditional healers while 28.3 percent from either a pharmacy or drugstore and 62.8 percent from faith based facilities.

Figure 4.19: Percentage distribution of maternal deaths by place of treatment, Zambia 2015/16
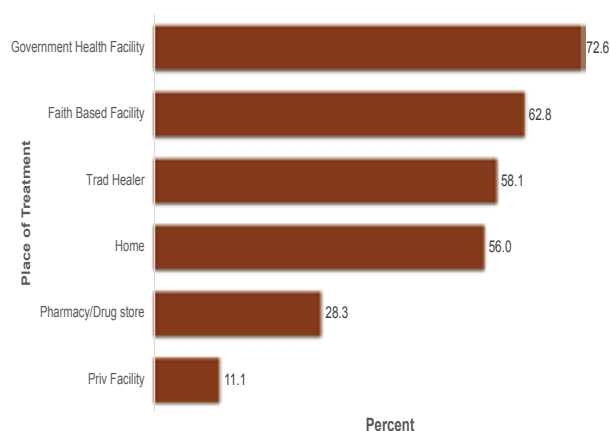
4.6.4 Maternal Deaths by Place of Death

Figure 4.20 presents percentage distribution of maternal deaths by place of death. The figure shows that 75.1 percent occur at health facilities while 24.0 percent occur at home. Of the persons who died due to maternal causes in rural areas, 83.3 percent died in hospital/health centers and in urban areas 69.0 percent died in hospital/health centres. In rural areas 14.7 percent of maternal deaths occur from home and 31.0 percent of maternal deaths occur from home in urban areas.

Figure 4.20: Percentage distribution of maternal deaths by place of death, Zambia 2015/16
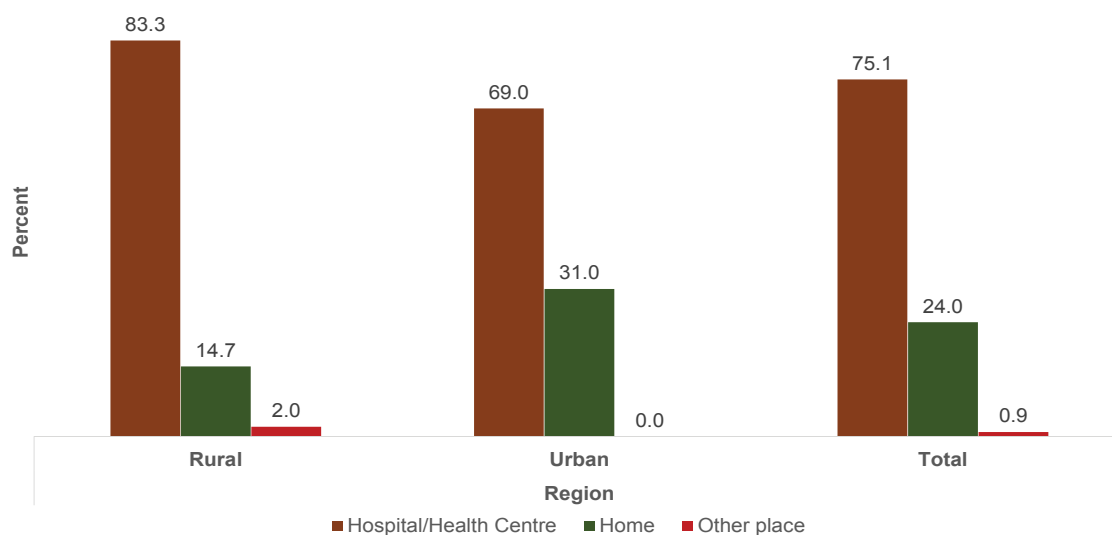
4.6.5 Maternal Deaths as a result of the Three Delays

Maternal health services face challenges from various angles which may be or may not be related to the institutions that offer the service. Therefore, assessing where delays occur in seeking medical health services is critical to ensure safe motherhood. Figure 4.21 show results of the three delays: making a decision to seek medical care, accessing/reaching health facility and receiving care/treatment upon reaching the health facility.

Delays in making the decision to seek medical care largely contributed to maternal deaths (68.4 percent) compared to access (31.5 percent) and receiving treatment (28.4 percent). The totals are not adding to 100 percent because responses are not mutually exclusive.

Figure 4.21: Percentage distribution of maternal deaths as a result of the delays in seeking medical care, Zambia 2015/16
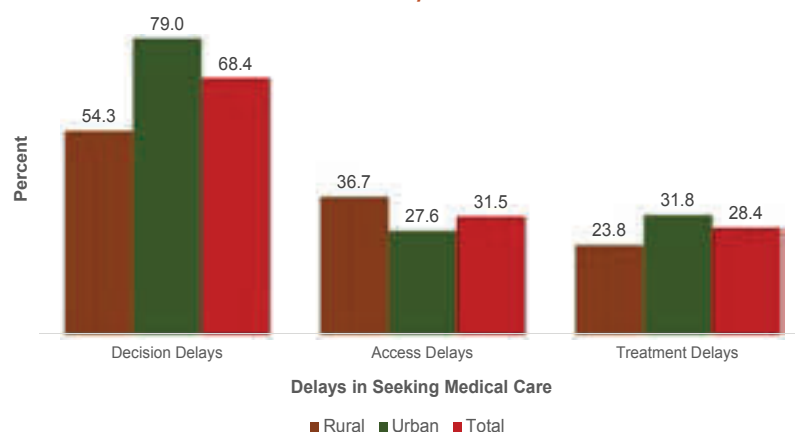
The proportion of maternal deaths attributed to delay in making decision to seek medical care is significantly higher in urban areas (79.0 percent) compared to rural areas (54.3 percent).

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Chapter 5: Treatment Received, Place and Type of Treatment, and Place of Death

5.1 Introduction

Availability of Health facilities that allow for individuals to receive treatment in good time and with relative ease is crucial to maintaining a healthy society and guaranteeing the rights of individuals to good health. Factors that affect or hinder people from receiving treatment may include, distance to health facilities, availability of qualified personnel and drugs at health facilities and traditional beliefs that lead to delay in making decision to seek treatment.

This chapter, presents information on factors that are related to treatment and health seeking behavior of all deceased persons in the period leading to death. The factors analysed include: proportion that received treatment, type of treatment received and place of death by demographic characteristics and exploring potential points where delays in seeking health care may have occurred.

5.2 Treatment Received during Illness

Table 5.1 shows the proportion of deceased persons who received treatment in the period leading to death. This includes those who received treatment and died at the health facility and those who received treatment but died at home or any other place. Overall, about three quarters (75.2 percent) received treatment at some point during the illness that led to their death. More deceased persons in urban than rural areas received treatment for the illness that led to their death (78.8 and 71.4 percent, respectively).

Table 5.1: Treatment received during Illness that led to death by rural/urban, Zambia 2015/16

Received treatment for the Illness	Total		Rural		Urban	
	Number	**Percent**	**Number**	**Percent**	**Number**	**Percent**
Yes	136,878	75.2	62,855	71.4	74,022	78.8
No	45,096	24.8	25,141	28.6	19,954	21.2
Total	181,973	100.0	87,997	100.0	93,977	100.0

Figure 5.1 shows the proportion of deceased persons who received treatment during the period leading to death by sex. A slightly higher proportion of females received treatment than males (76.8 percent compared to 74.1 percent, respectively).

Figure 5.1: Treatment received during illness that led to death by sex, Zambia 2015/16
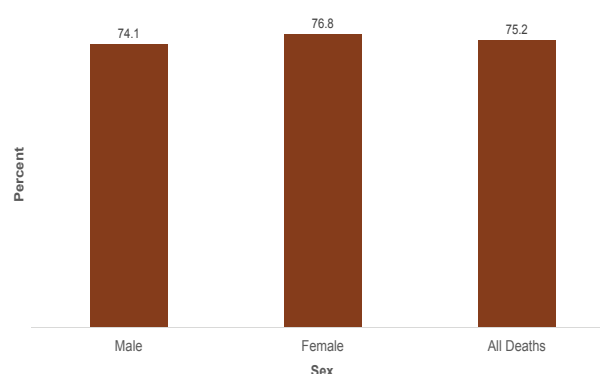
To understand better the health seeking behavior of individuals, it is also important to know where they receive treatment. Figure 5.2 shows that 85.2 percent of the people sought treatment from government health facilities and 69.6 percent sought treatment from traditional healers. Note that in Figure 5.2 proportions sum to more than 100 percent because the deceased may have received treatment from more than one place in the period leading to death. For example, the same person may have sought medical treatment/care from a government facility, then went to a traditional healer, and later on took self-medication at home if there was no improvement in their health condition.

Overall 88.2 percent of the deceased sought treatment from formal health facilities, which is in line with government policy of promoting use of formal heath facilities for care and treatment. Private health facilities account for only 8.1 percent

Figure 5.2: Place of treatment for those who received treatment in the period leading to death, Zambia 2015/16
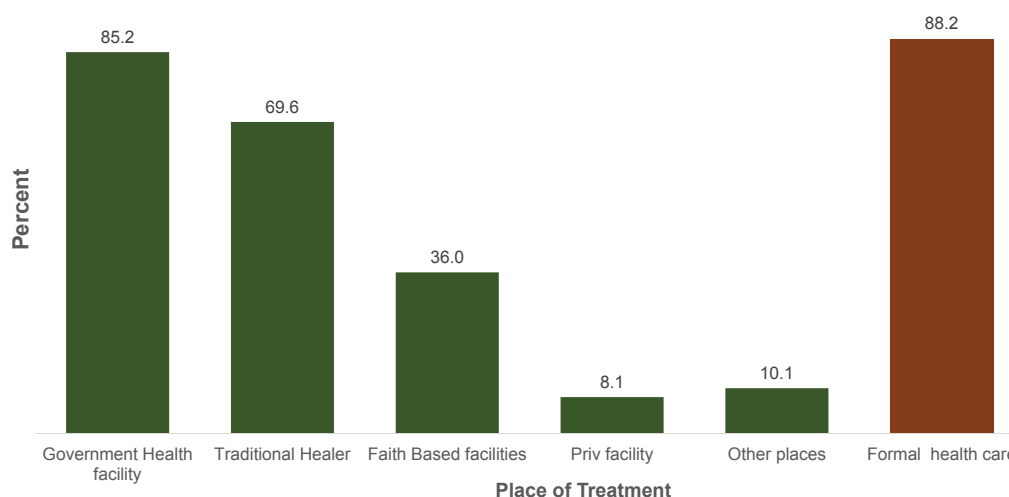
5.3 Type of Treatment Received

The type of treatment received is important to better understand the measures taken for the illness that led to death and it is also important to compare the type of treatment with selected demographic characteristic of the individuals receiving treatment. This may highlight specific issues associated with particular characteristics and or age groups for the decedents.

Figure 5.3 presents type of treatment received by individuals prior to their death. Among the six types of treatments received, IV fluids (54.0 percent) was the most administered treatment to patients in the period leading to death. The least being treatment and/or feeding tube at 8.9 percent. Antibiotics were the second most administered treatment at 46.2 percent. Those who received ART were at 28.9 percent,.

Figure 5.3: Type of treatment for those who received treatment in the period leading to death, Zambia 2015/16
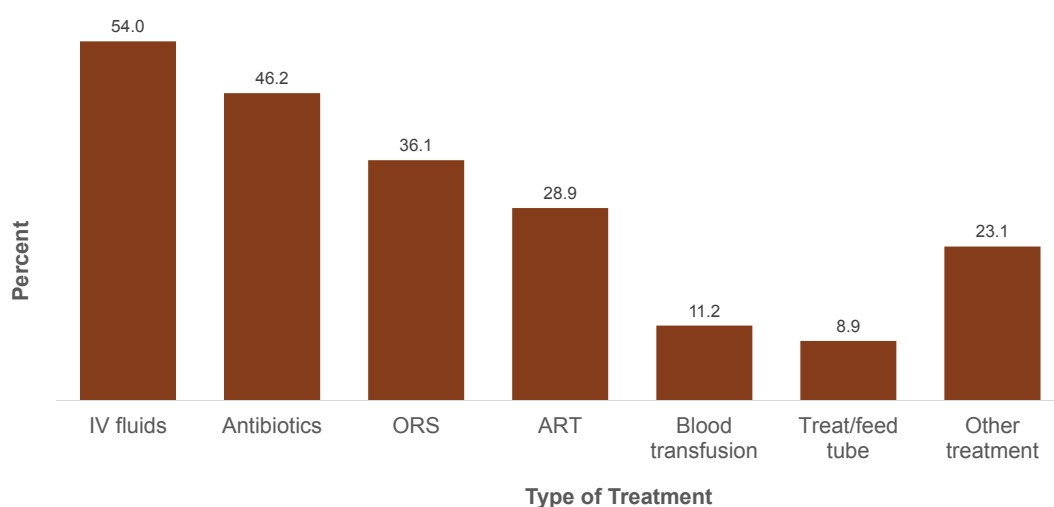
Figure 5.4 shows the types of treatment received in the period leading to death by region. Overall, for all the types of treatment, a higher proportion of deceased in urban than rural areas received treatment for the illness that led to death. Type of treatment by region shows a similar pattern where IV fluids treatment is more prominent in both rural and urban areas. The order of types of treatment is almost the same, suggesting similar morbid conditions affecting communities for both rural and urban areas. Comparison of specific treatment show that, IV Fluids were administered to 59.4 percent in urban areas, compared to 47.8 percent in rural areas. About half (50.6 percent) of the deceased in urban areas received antibiotics compared to 41.6 percent in rural areas. Interestingly, the data shows that in urban areas about a third (32.9 percent) of the deceased received ART, compared to 24.2 percent received ART in rural areas.

Figure 5.4: Type of treatment by region for those who received treatment in the period leading to death, Zambia 2015/16
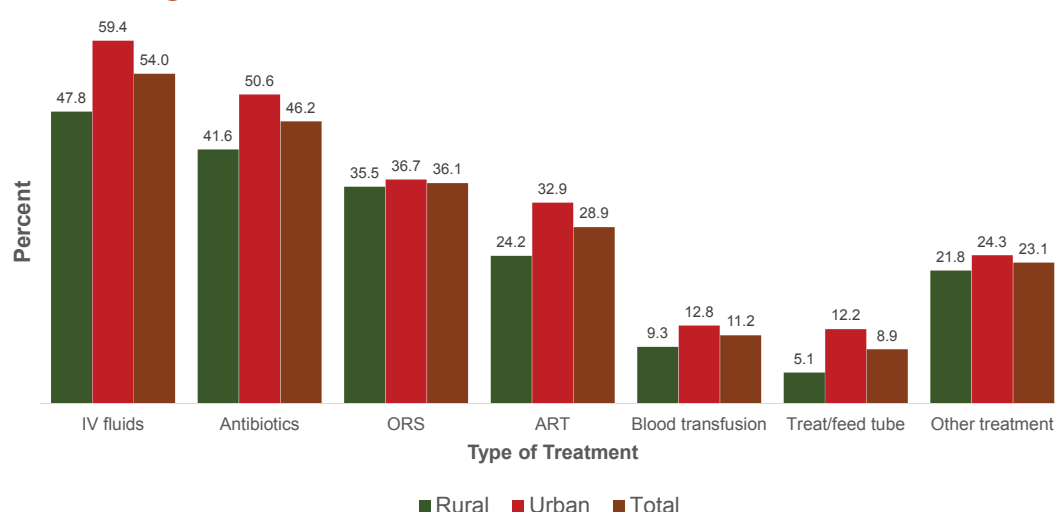
Figure 5.5 shows type of treatment among children aged 0 – 4 years. The data shows that among the under-fives the most administered treatment in the periods leading to death is ORS at 46.4 percent, followed by IV fluids at 41.0 percent. Antibiotics were administered to 40.2 percent. Treat/feed Tube was the least administered treatment at 6.5 percent. These are the most common type of treatment for childhood illnesses including infectious and parasitic illnesses, diarrheal diseases, malaria, and dehydration which were found to be the leading causes of death in children under five in this study.

Figure 5.5: Type of treatment for children aged 0-4 years who received treatment in the period leading to deaths, Zambia 2015/16
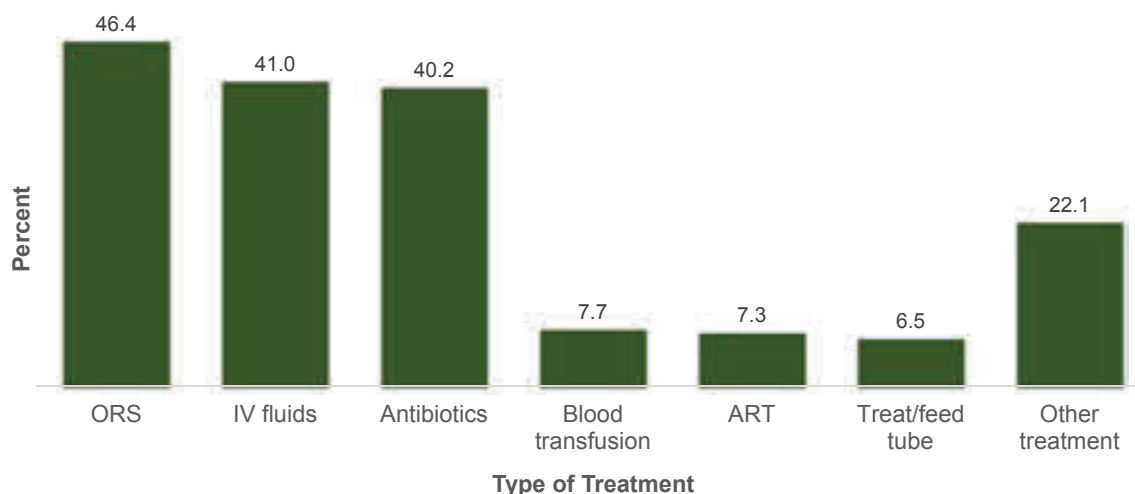
Figure 5.6 shows types of treatment in children aged 5 – 14 years. The type of treatment that was most received was IV fluids (47.5 percent) followed by ORS (42.6 percent) and antibiotics (42.0 percent).

Figure 5.6: Type of treatment for children aged 5-14 years who received treatment in the period leading to deaths, Zambia 2015/16
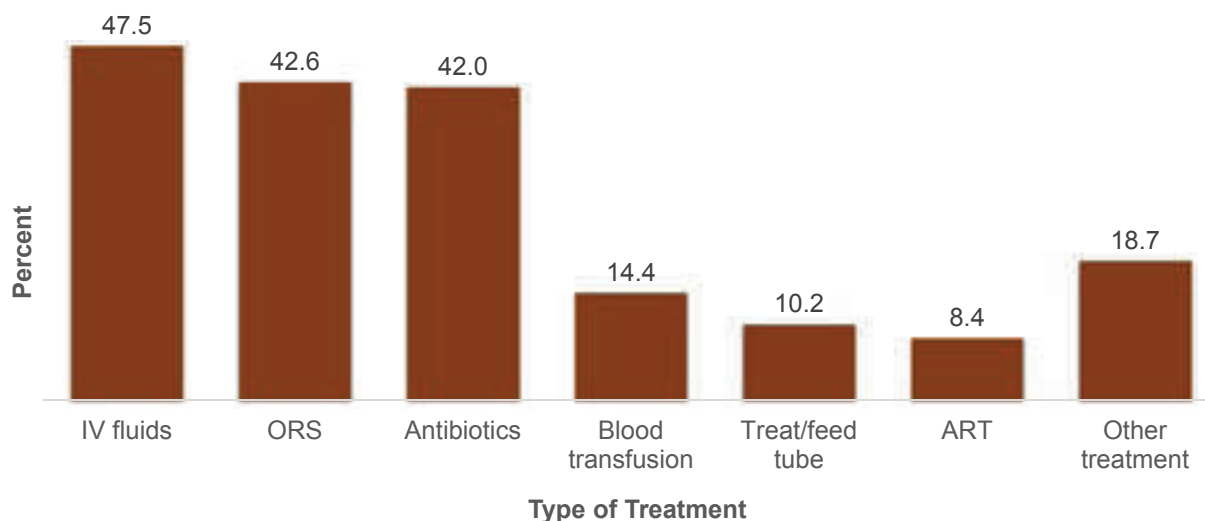
Figure 5.7 shows type of treatment received by adults aged 15 years and older in the period leading to death. IV fluids was the most type of treatment received at 57.3 percent, Antibiotics were administered to 48.8 percent of the deceased and ART were administered to 34.4 percent.

Figure 5.7: Type of treatment for adults aged 15 years and older who received treatment in the period leading to deaths, Zambia 2015/16
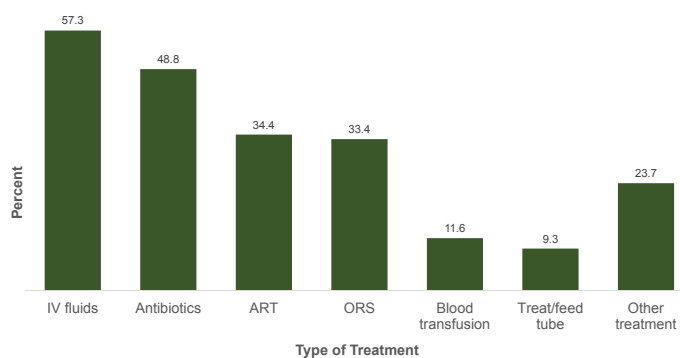
5.4 Place of Death

Place of death refers to the place where the death occurred. The categories include hospital, other health facility, home and other place. Other place include on the way to the health facility, at the scene of accident, or drowning in the river/stream. The demographic characteristics provides differentials that may occur to help understand factors related to place of death.

Figure 5.8 shows the proportion of deaths by place of death. More than half (53.1 percent) of deaths occurred at a hospital or health facility, while a large proportion of deaths still occurred at home (40.4 percent). However, this does not necessarily mean that they have not been to the health facility during the time of illness.

Figure 5.8: Percent distribution of deceased persons by place of Death, Zambia 2015/16.
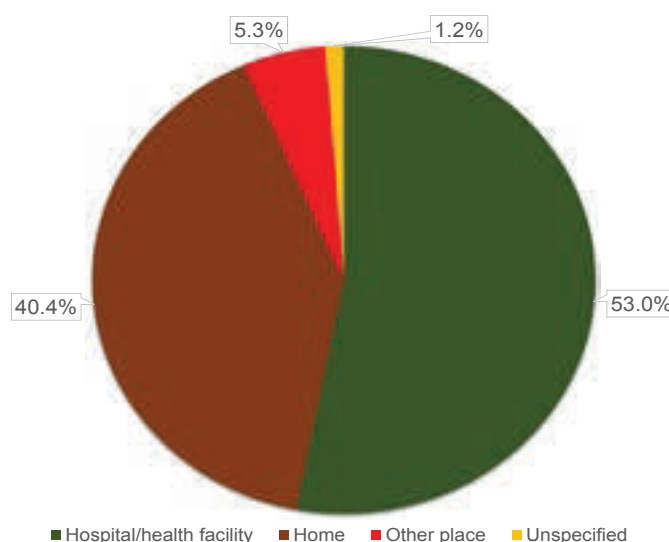
5.5 Place of Death by Region

Figure 5.9 shows the place of death by rural/urban. In urban areas more deaths occurred in hospital or health facilities at 64.7 percent, compared to those occurring at home (28.3 percent). In contrast, in rural areas more deaths occur at home at 53.7 percent, followed by hospital or health facility at 40.3 percent.

Figure 5.9: Percentage distribution of deceased persons by place of death and region, Zambia 2015/16.
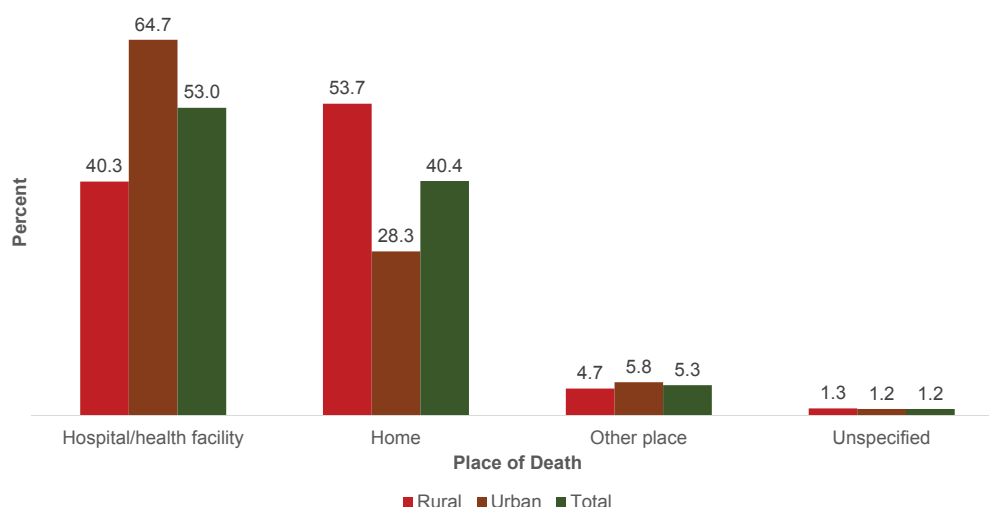
Table 5.2 shows the percentage distribution of place of death by province for those who died. Overall majority of deaths occur in hospital/health centres with the exception of Central, Northern and Western provinces where large proportions of deaths occur at home. Provinces with higher proportions of persons who died in hospital/health centres were Lusaka, Copperbelt, Southern at 62.6, 60.4 and 59.4 percent, respectively. Lusaka province had the lowest proportion of persons dying at home at 28.9 percent. Central and Northern provinces have the highest number of deaths that occur outside the health facility or home. This could be attributed to Road Traffic Accidents. Western and Luapula also have high proportion of deaths occurring outside the health facility or home probably attributed to drowning or other external causes resulting to death on the spot.

Table 5.2: Percentage distribution of deceased persons by place of death and province, Zambia 2015/16

Province	Hospital	Home	Other places	Unspecified
Central	38.8	52.5	7.1	1.6
Copperbelt	60.4	33.7	4.6	1.3
Eastern	51.0	43.7	3.9	1.4
Luapula	53.7	39.1	6.4	0.8
Lusaka	62.6	28.9	6.9	1.6
Muchinga	52.0	42.4	5.1	0.5
Northern	42.3	54.5	2.0	1.2
North Western	54.9	39.4	5.6	0.2
Southern	59.4	34.2	4.8	1.6
Western	44.3	47.8	6.0	1.8

Chapter 6: Discussion

HIV related diseases still remain the main cause of death in Zambia, despite the various interventions undertaken by the health sector which include universal access to treatment, Elimination of Mother to Child Transmission (EMTCT), Voluntary Medical Male Circumcision (VMMC) and Voluntary Counseling and Testing (VCT) services. The focus of government has been to implement the global 90-90-90 treatment target as a way of eliminating HIV and AIDS by 2030. This entails a reduction in new cases of HIV, deaths due to HIV, as well as in stigma and discrimination. These efforts needs to be strengthened in order to achieve the goal of eliminating HIV and AIDS.

Malaria continues to be a major public health concern in Zambia as it remains the second leading cause of death according to this study. Malaria is also the leading cause of death among Children below 15 years. This is despite government efforts put in place to achieve the target of malaria elimination by the year 2020. Some of these interventions include indoor residue spraying, lavisiding, Insecticide Treated Nets (ITNs), and the distribution of Malaria diagnostic materials and provision of anti-malarial drugs at the health facilities. Given the results of 2015/16 SAVVY, more efforts need to be made in scaling up these interventions in order to reach the set targets.

Malaria, malnutrition, Pneumonia/ARI, and diarrheal diseases remain the leading causes of death among children under five. In Zambia management of childhood diseases is guided by WHO program on Integrated Management of Childhood Illnesses (IMCI) targeted at prevention of these childhood illnesses. It is therefore necessary to improve and scale up intervention packages like IMCI that will greatly reduce morbidity and mortality in children under five.

Non Communicable Diseases are an emerging global health concern and similarly, they are also a major concern in Zambia. Our study shows that deaths due to NCDs accounts for 28.8 percent of all deaths among persons aged 15 years and older contributing significantly to the high burden of disease. This study found that the most common NCDs include Diabetes, Cancers, diseases of the circulatory system and chronic respiratory diseases. These findings are similar to the most common NCDs as listed by WHO (Heart disease/cancer, diabetes and chronic lung diseases.) "The rise in NCDs has been driven primarily by four major risk factors "Tobacco use, physical inactivity, harmful use of alcohol and unhealthy diets (WHO, 2015).

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Glossary

Child Mortality Rate (CMR): refers to the number of child (children aged between exact age one and four years) deaths per 1,000 live births occurring during a specified reference period.

Crude Death Rate (CDR): ratio of the number of deaths occurring in a year to the mid-year population expressed per 1,000 population.
Fertility is defined as the occurrence of live births in a population.

Infant Mortality Rate (IMR): refers to the number of infant (children below the age of one year) deaths per 1,000 live births occurring during a specified reference period.

Maternal Death: a death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental causes

Maternal Mortality Ratio; refers to the number of maternal deaths per 100,000 live births.

Pregnancy Related Mortality Rate: refers to the number of pregnancy deaths in a given period per 1,000 woman years of exposure during the same period.

Mortality: refers to the occurrence of deaths in a population.

Under-Five Mortality Rate (UMR): refers to the number of deaths among children aged below the age of five years per 1,000 live births occurring during a specified reference period.

Verbal Autopsy: a questionnaire administered to caregivers or family members of the deceased persons to elicit signs and symptoms and their durations, and other pertinent information about the deceased in the period before death.

Voluntary Medical Male Circumcision (VMMC): refers to the surgical removal of the foreskin.

APPENDICES

Appendix 1: Periodic Life Table and Percentage Distribution of Deaths Tables

Table 1a: Periodic Life table for Zambia: 2015-2016 (Source: DNRPC SAVVY Data)

Age (X)	Pop_size (N)	Deaths (D)	nmx	nax	nqx	npx	lx	ndx	Lx	Tx	ex
0	480,838	16,978	0.03531	0.14	0.03427	0.96573	100,000	3,427	97,052	5,271,158	52.7
1-4	1,870,657	20,005	0.01069	1.55	0.04169	0.95832	96,573	4,026	376,436	5,174,106	53.6
5-9	2,363,402	7,849	0.00332	2.50	0.01647	0.98353	92,548	1,524	458,927	4,797,670	51.8
10-14	2,021,177	5,034	0.00249	3.14	0.01240	0.98760	91,023	1,128	453,022	4,338,743	47.7
15-19	1,820,413	7,180	0.00394	2.72	0.01955	0.98046	89,895	1,757	445,476	3,885,721	43.2
20-24	1,554,940	7,563	0.00486	2.52	0.02403	0.97597	88,138	2,118	435,438	3,440,244	39.0
25-29	1,200,818	10,835	0.00902	2.48	0.04411	0.95589	86,020	3,795	420,542	3,004,807	34.9
30-34	1,062,979	15,211	0.01431	2.60	0.06917	0.93083	82,226	5,688	397,483	2,584,264	31.4
35-39	853,545	14,039	0.01645	2.70	0.07924	0.92076	76,538	6,065	368,745	2,186,782	28.6
40-44	709,210	12,213	0.01722	2.66	0.08277	0.91723	70,473	5,833	338,731	1,818,037	25.8
45-49	493,873	12,842	0.02600	2.70	0.12267	0.87733	64,639	7,929	304,944	1,479,306	22.9
50-54	398,864	8,598	0.02156	2.68	0.10264	0.89736	56,710	5,821	270,023	1,174,361	20.7
55-59	278,521	7,527	0.02703	2.65	0.12704	0.87296	50,889	6,465	239,222	904,338	17.8
60-64	213,739	7,922	0.03706	2.62	0.17032	0.82968	44,424	7,566	204,145	665,116	15.0
65-69	165,245	6,704	0.04057	2.62	0.18498	0.81502	36,858	6,818	168,057	460,971	12.5
70-74	127,604	8,269	0.06480	2.59	0.28029	0.71971	30,040	8,420	129,933	292,914	9.8
75-79	80,367	7,786	0.09688	2.52	0.39050	0.60950	21,620	8,443	87,146	162,981	7.5
80-84	53,185	6,705	0.12607	2.42	0.47578	0.52422	13,177	6,269	49,730	75,835	5.8
85+	40,787	10,793	0.26462	0.00	1	0	6,908	6,908	26,105	26,105	3.8

Table 1b: Percentage distribution of deaths due to specific causes by region and sex

Cause of Death	Total	Rural	Urban	Male	Female
Malaria	12.6	16.1	9.4	11.5	14.1
HIV Related diseases	15.2	11.7	18.4	15.4	14.8
Non-communicable diseases	28.8	26.7	30.4	26.2	32.6
External causes	9.7	9.4	10.0	12.9	5.1
Maternal	9.0	9.6	8.6	N/A	9.0

Note: Percentage for maternal deaths computed out of all deaths to women of reproductive age 12-50 years

Table 1c: Percentage distribution of deaths due malaria by age-group, region and sex

Cause of Death	Total	Rural	Urban	Male	Female
Malaria >5	22.5	27.4	12.9	22.1	23.0
Malaria <5	10.2	12.1	8.8	9.2	11.8

Note: Percentages are computed out of all deaths in that age group

Appendix 2: Key Persons Involved in the 2015/16 SAVVY Survey

Directorate and other Key SAVVY Staff

Name	Organisation	Position
Mathews Nyirongo	DNRPC	Registrar General
John Kalumbi	CSO	Director General
Iven Sikanyiti	CSO	Assistant Director
Dr Bushimbwa Tambatamba	MoH	Deputy Director MCH
Martin Nyahoda	DNRPC	Deputy Registrar General

Analysts

Name	Organisation	Position
Robert Mswia	MEASURE Evaluation	SAVVY Technical Advisor
Stanley Kamocha	CDC Zambia	CoAg Activity Manager
Brivine Sikapande	MOH	Principal M & E Officer
Palver Sikanyiti	CSO	Senior Demographer
Chola N. Daka	CSO	Senior Demographer
Bertha Nachinga	CSO	Senior Systems Analyst
Mildred Tolosi	MOH	Senior M & E Officer
Joshua Siuluta	CSO	Statistician
Lisuba Kabanda	DNRPC	Executive Officer
Sianga M. Mwiya	DNRPC	Assistant Registrar
Janet M. Pinamy	DNRPC	Assistant Registration Officer

CRVS Technical Working Group Members

Name	Organisation	Position
Martin Nyahoda	DNRPC	Deputy Registrar General
Stanley Kamocha	CDC Zambia	CoAg Activity Manager
Brivine Sikapande	MOH	Principal M & E Officer
Peter Moyo	DNRPC	Principal Registrar
Nchimunya Nkombo	CSO	Principal Statistician
Palver Sikanyiti	CSO	Senior Demographer
Chola N. Daka	CSO	Senior Demographer
Bertha Nachinga	CSO	Senior Systems Analyst
Mildred Tolosi	MOH	Senior M & E Officer
Chibesa Musamba	CSO	Senior Statistician
Lisuba Kabanda	DNRPC	Executive Officer
Sianga M. Mwiya	DNRPC	Assistant Registrar
Mwamba B. Mutunga	DNRPC	Assistant Registration Officer
Ikayi Kanyemba	DNRPC	CDC - CoAg Administrator
Steward Muyabe	HARID	IT Officer
Sharon William	ZLDC	SR Research Officer

Editors

Name	Organisation	Position
Iven Sikanyiti	CSO	Assistant Directors
Frank Kakungu	CSO	IT Manager
Nchimunya Nkombo	CSO	Principal Statistician
Palver Sikanyiti	CSO	Senior Demographer
Chola N. Daka	CSO	Senior Demographer
Lisuba Kabanda	DNRPC	Executive Officer
Sikufele Mubita	CSO	Statistician
Matthews M. Sianga	DNRPC	Assistant Registrar
Makoselo Bowa	CSO	Statistical Officer

Provincial Directors of Health and Provincial Registrar

Name	Organisation	Province
Catherine Nyumba	DNRPC	Central Province
Dickson Sakala	DNRPC	Copperbelt Province
Charity Chilembo	DNRPC	Eastern Province
Mirriam Chipili	DNRPC	Lusaka Province
Dorothy Makulusha	DNRPC	Luapula Province
Stephen Mutale	DNRPC	Muchinga Province
Samuel Mukupili	DNRPC	Northern Province
Leevans Seba	DNRPC	North Western Province
Evelyn Shingululu	DNRPC	Southern Province
Kennedy Chisumpa	DNRPC	Western Province
Robson Sinkamba	CSO	Lusaka Province
Charles Mugala	CSO	Copperbelt Province
Boniface Haachoongo	CSO	Southern Province
Janet Zulu	CSO	North-Western Province
Richard Kaela	CSO	Eastern Province
Steven Ngenda	CSO	Central Province
Danny Muchimba	CSO	Northern Province
Alfeyo Chimpunga	CSO	Luapula Province
Zex Siamukompe	CSO	Western Province
Dr Rosemary Mwanza	MOH	Central Province
Dr Consity Mwale	MOH	Copperbelt Province
Dr Abel Kabalo	MOH	Eastern Province
Dr Peter Bwalya	MOH	Luapula Province
Dr Matildah K. Simpungwe	MOH	Lusaka Province
Dr Alison Chibwe	MOH	Northern Province
Dr Andrew Silumesi	MOH	North Western
Dr Jelita Chinyonga	MOH	Southern Province
Dr Neroh Chilembo	MOH	Muchinga Province
Dr Francis Liywalii	MOH	Western Province

Medical Doctors For VA Death Certification

Dr. M.A. Basith	Airport Clinic
Dr. Charles Mutemba	UTH Lusaka
Osiya Musukuma	Chawama
Dr. Lenny Kasanda	Kabwata
Dr. Chioni Siwo	UTH Lusaka
Dr. Charles Mukunta	ZAF Lusaka
Dr. Namakau Singosho M'soka	Lusaka
Dr. Ahmed R. Zillur	Kamwala
Dr. Munalula Mukatimui Kalima	UTH Lusaka
Ms. Lyna Phiri	Choma G. Hospital

Master Trainers for SAVVY

Catherine Nyumba	Central Province
Magoro Chibeza	Central Province
Chibesa Musamba	Copperbelt Province
Yolanda Shangwele	Eastern Province
Harriet Namukoko Zimbizi	Eastern Province
Leonard Kakungu	Luapula Province
Simfukwe Nastwell	Luapula Province
Chola Nakazwe	Lusaka Province
Kennedy Makukula	Northern Province
Batista Chilopa	Northern Province
Palver Sikanyiti	North Western Province
Lisuba Kabanda	North Western Province
Mwaba Kaunda	Muchinga Province
Brivine Sikapande	Southern Province
Faith Kayoba	Southern Province
Sikufele Mubita	Western Province
Mwiya M. Sianga	Western Province

Verbal Autopsy Interviewers

Province	District	Health Facility	VAI Name
Copperbelt	Ndola	Chipulukusu	Mushimwa Chileshe
Copperbelt	Ndola	Chipulukusu	Agness N. Phiri
Copperbelt	Ndola	Pamodzi	Bwalya Mubanga
Copperbelt	Ndola	Main Masala	Mtesso Mandavu Mwaba
Copperbelt	Ndola	Lubuto	Emmah Katongo
Copperbelt	Ndola	Main Masala	Mtesso Mandavu Mwaba
Copperbelt	Ndola	Mushili	Lucy Banda
Copperbelt	Ndola	Nkwazi	Mankinda Harriet
Copperbelt	Ndola	Twapia	Gift Phiri
Copperbelt	Ndola	Twapia	Jonathan Miti
Copperbelt	Luanshya	26 Clinic	Sydney Kabwe
Copperbelt	Chingola	Chiwempala	Mushiba Lembalemba
Copperbelt	Chingola	Kabundi East	Bangwe Eberia
Copperbelt	Luanshya	Mikomfwa	Lesley Simwinga
Copperbelt	Luanshya	Mikomfwa	Lesley Simwinga
Copperbelt	Mufulira	Mupambe Clinic	Joyce Chisanga
Copperbelt	Kitwe	Chamboli	Roy Sinkala
Copperbelt	Chililabombwe	Lubengele	Moses Mulenga
Copperbelt	Chingola	Mutenda	Matulula Christine
Copperbelt	Kalulushi	Twaiteka	Remmy Chipowe
Copperbelt	Kalulushi	Chibuluma	Kachiza Matembo
Copperbelt	Kitwe	Mindolo	Phyllis Mutambo
Copperbelt	Kitwe	Zns	Justine Kalenga
Copperbelt	Kitwe	Garnaton	Godfrey Ngoyi
Copperbelt	Kitwe	Wusakile	Namuyota Nambeye
Copperbelt	Kitwe	Police Clinic	Carol Kasonde Musonda
Copperbelt	Kitwe	Chimwemwe	Lennie Bwalya
Copperbelt	Kitwe	Ndeke	Cecillia Mwila Mwaiba
Copperbelt	Kitwe	Ipusukilo	Ethel Bwalya
Copperbelt	Kitwe	Twatashya	Mwale Nkhwaso
Copperbelt	Luanshya	Chilabula	Lucy Nswana Makalu
Copperbelt	Luanshya	Main	Suleni Mbambara
Copperbelt	Luanshya	26 Clinic	Sydney Kabwe
Copperbelt	Luanshya	Mikomfwa Hc	Pricilla Mweetwa
Copperbelt	Lufwanyama	Mutenda	Ireen Kalima
Copperbelt	Masaiti	Kaloko	Ennie Mwape Kabombeka
Copperbelt	Mpongwe	Nampamba	Crebby Siteta M
Copperbelt	Mpongwe	Ipumbu	Mwango Stephen
Copperbelt	Mpongwe	Mfulabunga	Theresa Mukope
Copperbelt	Mufulira	Murundu	Esnart Phiri
Copperbelt	Mufulira	Surburbs	Abner Anthony Mtonga
Copperbelt	Mufulira	Mutundu	Ngoma Jonas Cole
Copperbelt	Mufulira	Luansobe	Lwamba Mwansa
Copperbelt	Ndola	Ndeke	Getrude Chileshe
Copperbelt	Ndola	Doiminican	Mwewa Ireen

Province	District	Health Facility	VAI Name
Copperbelt	Ndola	Chipokota Mayamba	Siliza Sitwala
Copperbelt	Chililabombwe	Chinfunshi	Edwin Mwansa Kapele
Eastern	Petauke	Petauke Urban Clinic	Joan Msoni
Eastern	Chipata	Mwami Mission Hosp	Agripa Zulu
Eastern	Chipata	Chipata Clinic	Banda Bertha
Eastern	Chipata	Munchini Clinic	Emmanuel Banda
Eastern	Petauke	Petauke Urban Clinic	Webster Simwaka
Eastern	Petauke	Nyampande Clini C	Rachel Milapo
Eastern	Chipata	Rukuzye Rhc	Anock Kalumbi
Eastern	Chipata	East Command Clinic	Mwila Patrick
Eastern	Chipata	Namuseche Rhc	Zingani Jere
Eastern	Petauke	Manyane Rhc	Mike Miyoba
Eastern	Mambwe	Kakumbi Rhc	Emmanuel Chulu
Eastern	Nyimba	Nyimba Zns	Akabana M. Getrude
Eastern	Petauke	Chisenjere Rhc	Wilfred Mwaba Lesa
Eastern	Lundazi	Chanalubwe Rhc	Kachali Kondanani
Eastern	Katete	Chilasa Rhc	Collins Mumba
Eastern	Nyimba	Chinambi Rhc	Daniel Mbulo
Eastern	Nyimba	Chipembe M. Rhc	Joy Sikalumbi
Eastern	Petauke	Kalindawalo	Jacob Mwanza
Eastern	Lundazi	Kapichila Rhc	Willy Buumba
Eastern	Chipata	Kasenengwa Rhc	John Zulu
Eastern	Katete	Katete Boma Clinic	Mayaka Misail Chongo
Eastern	Lundazi	Lumezi Mission	Panji Nyasulu
Eastern	Chadiza	Madzaela Hp	Ganizani Mumba
Eastern	Sinda	Matambazi Rhc	Bruce Musunga
Eastern	Chipata	Mnykwa Rhc	Mulenga Chilambwe
Eastern	Petauke	Mwanika Rhc	Elifala C. Phiri
Eastern	Lundazi	Mwase-Rhc	Brightone Takuya Yombwe
Eastern	Lundazi	Mwase-Mphangwe Zonal	Daliso Ngulube
Eastern	Chadiza	Nsadzu Rhc	Sydney Zulu
Eastern	Nyimba	Nyimba Zns	Mukobe Kanta
Eastern	Chipata	Vizenge Rhc	Nguni John Kennedy
Eastern	Chipata	Kapata Urban	Clara Tembo
Eastern	Petauke	Nyamphande Rhc	Rachel Milapo
Eastern	Chipata	Kasenengwa Rhc	John Zulu
Eastern	Katete	Mindola Rhc	Nyombolo Vinus
Luapula	Samfya	Lubwe Hospital	Kizito Chitondo Mwansa
Luapula	Kawambwa	Kawambwa Central Clinic	Kamondo Mututa Hendrix
Luapula	Chiengi	Sambula Rhc	Kabaso Benard
Luapula	Chiengi	Lambwe Chomba Rhc	Austin M. Chalwe
Luapula	Mwense	Lukwesa Rhc	Zondani Mvula
Luapula	Chienge	Chipungu Rhc	Jacqueline Chisanshi
Luapula	Nchelenge	Kabuta Clinic	Maxwell Muyunda
Luapula	Kawambwa	Mbereshi Rhc	Sialwindi Agness
Luapula	Kawambwa	Mufwaya Rhc	Chilambe Godfridah Chungwe
Luapula	Samfya	Lubwe Hospital	Kundulo Emmanuel

Province	District	Health Facility	VAI Name
Luapula	Chienge	Lunchinda Health Post	Mwaba Webby
Luapula	Chienge	Chipungu Rhc	Bwalya Lazarous
Luapula	Mansa	Central Clinic	Chanda Mulenga
Luapula	Mansa	Butungwa Hc	Paul Malama Chilabi
Luapula	Mansa	Mano Rhc	Kasawa Chola
Luapula	Mansa	Lwamfuma Rhc	Maj. Bizwell Phiri
Luapula	Mansa	Senama Hc	Elizabeth Siwale
Luapula	Samfya	Samfya Hospital	Victor Kulya
Luapula	Samfya	Samfya Health Centre	Elasto Mumbi
Luapula	Mwense	Kashiba Crhc	Kennedy B. Chilufya
Luapula	Chembe	Chembe Clinic	Dorcas Chungu
Luapula	Nchelenge	St Paul's General Hospital	Mwanachibale Mwitwa
Luapula	Nchelenge	Clinic	David Sinkala
Luapula	Chienge	Chipungu Rhc	Jacqueline Chisanshi
Luapula	Samfya	Miponda Rhc	Evans Boso
Luapula	Chienge	Lambwe Chikwama	Mwenya Gersom
Luapula	Mansa	Chisheta	Sydney M. Mwelwa
Lusaka	Lusaka	Mtendere Clinic	Mary Zulu
Lusaka	Lusaka	Chawama Clinic	Lawrence Mbewe
Lusaka	Lusaka	Kanyama Hosp	Kapapi George
Lusaka	Lusaka	George Clinic	Mwila Musonda
Lusaka	Lusaka	George Hc	Barbara Mwale
Lusaka	Lusaka	George Hc	Pamela Mulenga
Lusaka	Lusaka	Matero Clinic	Tomaida Phiri
Lusaka	Lusaka	Mandevu Clinic	Beene Hambayi
Lusaka	Lusaka	Chaisa Uhc	Fred Mfune
Lusaka	Lusaka	Chaisa Uhc	Ernest Tembo
Lusaka	Lusaka	Kabwata Uc	Ellen Imasiku
Lusaka	Lusaka	Chawama Uc	Evans Mwango
Lusaka	Lusaka	Kanyama Uc	Clara Nkandu
Lusaka	Lusaka	Kanyama Uc	Mutale Brian
Lusaka	Lusaka	Kanyama West	Kayombo Melody
Lusaka	Lusaka	Chelstone Clinic	Harriet Ngandu Lungu
Lusaka	Lusaka	Chazanga	Nkumbula Kaoma
Lusaka	Lusaka	Mandevu Clinic	Beenzu Chimuka
Lusaka	Lusaka	Lilayi Clinic	Keith Katyamba
Lusaka	Chongwe	Kampekete Clinic	Emmanuel Mafulauzi
Lusaka	Chongwe	Ngwerere Rhc	Charles.E.Sinkala
Lusaka	Chongwe	Katoba Rhc	Frank Mazani
Lusaka	Chilanga	Mr Makulu Clinic	Musonda Bwalya Sylvia
Lusaka	Chilanga	Mwembeshi Clinic	Albert Msowoya
Lusaka	Kafue	Chikoka Clinic	Catherine Janisibele
Lusaka	Lusaka	Chainda Health Centre	Mwila S. Chipofya
Lusaka	Lusaka	Chawama Health Centre	Julie N.Musonda
Lusaka	Lusaka	Kalingalinga Health Centre	Ignitius Banda
Lusaka	Lusaka	George Health Centre	Barbara Mwale
Lusaka	Lusaka	Chazanga Health Centre	Agness Phiri

Province	District	Health Facility	VAI Name
Lusaka	Lusaka	Kaunda Square Clinic	Veronica Chileshe
Lusaka	Lusaka	Ngombe Health Centre	Phillip Sitanya
Lusaka	Chilanga	Mwembeshi Clinic	Albert Msowoya
Lusaka	Chongwe	Zaf Clinic Lsk	Kamuzyu Siwale
Lusaka	Kafue	Estates Clinic	Elizabeth Chiswala
Lusaka	Lusaka	Chawama Uhc (1)	Osward Chengo
Lusaka	Lusaka	Kanyama West (4)(8)	Chibwe Malanda
Lusaka	Lusaka	Mtendere Uhc (4)	Belinda Kafunya
Lusaka	Lusaka	George Clinic	Mulenga Pamela
Muchinga	Chinsali	Kalela Health Post	Sichone Maybin
Muchinga	Mpika	Tazara Res Clinic	Hamwende Vernon
Muchinga	Mpika	Mpika District Hospital	Martin Kashinge
Muchinga	Mpika	Mpika District Hospital	Virginia Maposa
Muchinga	Isoka	Sansamwenje RHC	Modester Mwansa
Muchinga	Chinsali	Location Urban	Noreen Nsokolo
Muchinga	Chinsali	Location Urban	Matente Margret
Muchinga	Mafinga	Mweniwisi Rhc	Sinkamba Isaac
Muchinga	Nakonde	Ntatumbila Rhc	Chali Rodrick
Muchinga	Mpika	Tazara Res Clinic	Hamwende Vernon
Muchinga	Isoka	Kasoka Urban Clinic	Davie Sinkala
Muchinga	Isoka	Kasoka Urban Clinic	John Mwelwa
Muchinga	Isoka	Kasoka Urban Clinic	Mercy Chendaeka
Muchinga	Nakonde	Nakonde Urban	Mayaba Boniface
Muchinga	Nakonde	Nakonde Urban	Cephas Mwananthesha
Muchinga	Chinsali	Kalwala H.C.	Chiti Lameck
Muchinga	Mafinga	Kalyamani Hp	Robert Mvula
Muchinga	Mpika	Katibunga Rhc	Muwawa Christine
Muchinga	Mpika	Chikwanda Rhp	Sovi Clement
Muchinga	Mpika	Mpumba Rhc	Maseka Kuzanga
Muchinga	Chinsali	Mulilansolo Rhc	Mumba John
Muchinga	Nakonde	Ntatumbila	Sally Chibuye
Muchinga	Mafinga	Mweniwisi	Standwell Sikayinka
Muchinga	Mafinga	Kalwamani Health Post	Clement Sikanyika
Muchinga	Nakonde	Old Fife	Luwisha Muloshi
Muchinga	Nakonde	Nakonde Urban	Kennedy Bupe
Muchinga	Isoka	Kasoka	Goodson Smukoko
Muchinga	Nakonde	Nakonde Clinic	Justin Changwe
Muchinga	Chinsali	Nkwika	Magress Chikwepe
North Western	Mwinilunga	Ntambu Rhc	Kyabakanga Lano
North Western	Mwinilunga	Kanyihampa	Yawombe William
North Western	Manyinga	Loloma Hospital	Sishumba Kapanda
North Western	Manyinga	Kashinakazhi	Tapalu Yowanu
North Western	Kabompo	Kabompo Hospital	Kalaba Titus
North Western	Kabompo	Ndungu Rhc	Muwambo Mundambo
North Western	Chavuma	Chiyeke	Yikona Sahandu
North Western	Chavuma	Nguvu Rhc	Mambwe Micheal
North Western	Mwinilunga	Kakoma Rhc	Madichi S. Sakuwunda

Province	District	Health Facility	VAI Name
North Western	Solwezi	Zambia Clinic	Mukunta Eddie
North Western	Solwezi	Kimiteto Clinic	Mpolomoka L. Enna
North Western	Solwezi	Kazoma Clinic	Albert Kwibisa
North Western	Solwezi	Mazomba	Annie M. Kasongo
North Western	Solwezi	Mbonge	Kangombe Christabel
North Western	Kalumbila	Lumwana East	Sakapanga Christopher
North Western	Mufumbwe	Boma Clinic	Muntemba Daniel
North Western	Kalumbila	Shilenda	Malunga Kampilimba
North Western	Mufumbwe	Kalengwa Rhc	Bwalya Charles
North Western	Mufumbwe	Mushima	Kutela Edmond
North Western	Solwezi	Lwamala	Mulemba Ruth
North Western	Solwezi	Solwezi Urban	Oscar Mubanga
North Western	Kabompo	Mumbeji Rhc	Chinyama Likomeno
North Western	Solwezi	Kainamfumu	Obed Bekyala
North Western	Zambezi	Chizozu	Chikwanda Kulelwa
Northern	Kasama	Tazara Clinic	Ngulube Cephas
Northern	Kasama	Army Clinic	Siame Mulungwe
Northern	Kasama	Kasama Urban Clinic	Mwaka Lubinda
Northern	Kasama	Kasama Police Clinic	Sarah Mulungu
Northern	Kasama	Location Urban Clinic	Bellington Kangaya
Northern	Chilubi	Chifwengw Rhc	Constance Mubanga
Northern	Luwingu	Luwingu Urban Clinic	Antony Kuyela Mwape
Northern	Mbala	Kaseshya Rhc	Lungu Chidano
Northern	Mbala	Kaka Rhc	Chimuka Chilala
Northern	Mpulungu	Mpulungu Urban Clinic	Lilani Sakala
Northern	Chilubi	Chilubi Rhc	Kennedy Mwansa
Northern	Kaputa	Mukupakatandula Rhc	Grieness Mwila A.
Northern	Kaputa	Lambwe Chomba Rhc	Alick Sikaonga
Northern	Kaputa	Nsama Rhc	Selah Chilembo
Northern	Mporokoso	Mporokoso Urban Clinic	Mwansa Chanda
Northern	Luwingu	Shimumbi Rhc	Chiputa Chinama
Northern	Mbala	Tulemane Urban Clinic	Zombe
Northern	Kasama	Kateshi Rhc	John Chinyama
Northern	Kasama	Tazara Clinic	Ngulube Cephas
Northern	Kasama	Lukashya Clinic	Chimpatani Melody
Northern	Kasama	Chilubula Mission Hospital	Mulasi Sinyenga
Northern	Mbala	Kaka Rhc	Pensulo Mwape
Northern	Mbala	Senga Rhc	Likando Lindunda
Northern	Mpulungu	Chitimbwa Rhc	Chishimba Zachariah
Northern	Mpulungu	Chinakila Rhc	Chipote Edward Mpundu
Northern	Mungwi	Mungwi Baptist H.	Sikwai Kelvin
Northern	Mungwi	Ndasa Rhc	Kalaba Jameson
Northern	Kaputa	Nkosha Hp	Stephen Mowa C.
Northern	Kaputa	Kasongole Rhc	Rosewick Nsama
Southern	Choma	Siamuleya Rhc	Sonia Chilala
Southern	Namwala	Namwala Hahc	Shadreck Mwenya
Southern	Sinazongwe	Chiyabi Rhc	Moses Musonda

Province	District	Health Facility	VAI Name
Southern	Kalomo	Chifusa Rhc	Reynold Kalunga
Southern	Kalomo	Naluja Rhc	Chiluba Musonda
Southern	Choma	Moyo Rhc	Samuel Hamaundu
Southern	Kalomo	Chilala Rhc	Mary Namfukwe
Southern	Choma	Muzoka Rhc	Trywell Michelo
Southern	Kalomo	Muyeke Rhc	Nkandu Chambule
Southern	Namwala	Nakamboma Rhc	Siamufunde Chiyanika
Southern	Choma	Moyo Rhc	Oscar Basila
Southern	Choma	Mang'unza	Reuben Chirwa
Southern	Choma	Pangwe Rhc	Kelvin Simutende
Southern	Choma	Njase Urban Centre	Chiyasa Mutinta
Southern	Namwala	Chitongo Rhc	Fair Munsaka
Southern	Namwala	Moomba Health Post	Nachilongo Mapenzi
Southern	Sinazongwe	Malima Rhc	Jabulani Msiska
Southern	Monze	Hamapande Rhc	Shepherd Gogolola
Southern	Monze	Njola Mwanza Rhc	Emmanuel Miti
Southern	Monze	Manungu Uhc	Prisca Kangwa
Southern	Monze	St Marys Rhc	Martin Banda
Southern	Monze	Nteme Hp	Thomas Kazanda
Southern	Monze	Luyaba Rhc	Penias Mwanza
Southern	Mazabuka	Munenge Rhc	Mate Malala
Southern	Kazungula	Nwawa Rhc	Susan Siatwiko
Southern	Kazungula	Nyawa Rhc	Kelvin Munkombwe
Southern	Kazungula	Nanyati Rhc	Tatenda Basket
Southern	Livingstone	Makululu	Benas Chanza
Southern	Livingstone	Linda Clinic	Zacharia Banda
Southern	Livingstone	Dambwa North Clinic	Palvet Tembo
Southern	Livingstone	Maramba Clinic	Hambulino Chiiya
Southern	Siavonga	Musokwe Clinic	Friday Mungazi
Southern	Mazabuka	Mazabuka GH	Richard Tembo
Southern	Mazabuka	Neganega Rhc	Ndila Nchimunya
Southern	Mazabuka	Chikani Hp	Margaret Sana
Southern	Chikankata	Simwambwa Rhc	Dennis Busiku
Southern	Sinazongwe	Muziyo Health Post	Asam Bbote
Southern	Choma	Popota Health Centre	Tikiva Hakwenda Mainza
Western	Kalabo	Buleya Rhc	Triza Sileo
Western	Lukulu	Lukau Rhc	Ronald Kaonga
Western	Kaoma	Chitwa Rhc	Ululi Marvin
Western	Senanga	Wanyau Rhc	Sianga Munukayumbwa
Western	Kalabo	Namatindi Rhc	Sililo Mundia
Western	Kalabo	Liumbu Rhc	Namushi Kabungo Martha
Western	Kaoma	Mangango Hospital	Makusa Beatrice
Western	Kaoma	Kahare Rhc	Mwangala Mufalo
Western	Senanga	Senanga Uhc	Thandiwe Dube
Western	Mongu	Kulundwana	Mubu Masiye
Western	Kalabo	Sikongo Rhc	Peggy Zulu
Western	Kaoma	Kaoma District Hosp.	Dorica Banda

Province	District	Health Facility	VAI Name
Western	Sesheke	Bwina Rhc	Mwali Hamaleka
Western	Mongu	Mwanawina Rhc	Maikisa Mike Liweleya
Western	Mongu	Iloke Rhc	Kondwani Muwowo
Western	Mongu	Liyoyelo Urban Clinic	Mary A Mungole
Western	Sesheke	Sichili Health Centre	Sitali Mangisha
Western	Mongu	Mulambwa Clinic	Mukelabai Matomola
Western	Lukulu	Lubosi Uhc	Kekelwa Simunji
Western	Mongu	Prisons Clinic	Dorothy Nalishebo Mumeka
Western	Mongu	Prisons Clinic	Mwangala Litebele
Western	Kalabo	Liumba Rhc	Kazhimbala Kayamba Kawumbu
Central	Chibombo	Liteta Hospital	Aaron Zulu
Central	Serenje	Mpelembe Rhc	Alice Mweene
Central	Chibombo	Chitanda Rhc	Andrew Maambo
Central	Serenje	Muchinka Clinic	Bavin Mambwe
Central	Mumbwa	Nampundwe Rhc	Binity G. Hamachila
Central	Serenje	Kaseba Rhc	Brian Mwinde
Central	Kabwe	Chowa Clinic	Catherine Makungu
Central	Kabwe	Nakoli Clinic	Chileshe Piyala
Central	Chibombo	Myooye	Chrispin Situmbeko
Central	Kabwe	Ngungu Clinic	Christabel Makowani
Central	Mumbwa	Kamilambo Rhc	Clement Chishimba
Central	Mumbwa	Lungoobe Rhc	Edith Sosela
Central	Kapirimposhi	Luashimba Com. Hc	Ethel Mumbi
Central	Kapirimposhi	Munkonchi Rhc	Francis Chisanga
Central	Chibombo	Nampundwe Rhc	Francis Mutongwa
Central	Ngabwe	Mukumbwe	George Mwangala
Central	Chibombo	Kayosha Rhc	Jacob Mhone
Central	Ngabwe	Mumbachala	Joshua Kalima
Central	Serenje	Serenje Hospital	Langstad Hamwitala
Central	Kabwe	Bwacha Clinic	Lawrence Hamuganyu
Central	Mkushi	Chibefwe Urban Clinic	Lewis Dube
Central	Chibombo	Shimukuni Rhc	Monde Choongo
Central	Kapiri mponshi	Chibwe	Musonda Michelo
Central	Kabwe	Kasanda Clinic	Mwango Fube
Central	Mkushi	Masansa Clinic	Namutenda Sankanandi
Central	Kabwe	Mahatma Clinic	Naomi Lubala
Central	Kabwe	Makululu Clinic	Nomsa Kaseya
Central	Serenje	Mpelembe Rhc	Norman Mukuma
Central	Serenje	Nchimishi Rhc	Sara Mwansa
Central	Mumbwa	Mumbwa Urban Clinic	Stanley Mununga

Appendix 3: VA Death Certificate and Questionnaires

ID Number: _____

INTERNATIONAL FORM OF MEDICAL CERTIFICATE OF CAUSE OF DEATH

Coding Date: _____

Coder's Name: _____

Deceased Name: _____

Deceased Sex: 1. Male ☐
              2. Female ☐

Deceased Age: _____

ID Information:

Province			
District:			
Consituency:			
Village/Ward:			
CSA:			
CBN Number:			
Deceased #:			

	Cause of death	ICD - 10 Code	Approximate interval between onset and death

PART I

Disease or conditon directly leading to death *

Antecedent causes

Morbid conditons, if any, giving rise to the above cause, stating the underlying conditon last.

(a) .... ☐☐☐ . ☐ ....

Due to (or as a consequence of)

(b) .... ☐☐☐ . ☐ ....

Due to (or as a consequence of)

c) .... ☐☐☐ . ☐ ....

Due to (or as a consequence of)

(d) .... ☐☐☐ . ☐ ....

* This does not mean the mode of dying, e.g heart failure, respiratory failure, it means the disease, injury or complication that caused death.

PART II

Enter <u>other significant conditons contributing to the death</u> but not related to the disease or conditon causing it. (That is, not resulting in the underlying cause given in PART I).

_____ ☐☐☐ . ☐ ....

** If it was a death of a woman aged between 12 and 50 years, was she:

Check one box:

☐ Pregnant at time of death
☐ Not pregnant within one year before death
☐ Not pregnant at time of death, but pregnant in the preceeding 42 days before death
☐ Not pregnant, but pregnant 43 days to 1 year before death
☐ Unknown whether the woman was pregnant within past year

UNDERLYING CAUSE OF DEATH (UCOD): _____ **ICD-10 CODE** ☐☐☐ . ☐

ZAMBIA VERBAL AUTOPSY QUESTIONNAIRE 1
DEATH OF A CHILD AGED UNDER 4 WEEKS
(0 TO 27 DAYS)

ID/CONTROL/REFERENCE NUMBER

SECTION 1.1   INTERVIEWER VISITS

	1	2	3	FINAL VISIT
DATE				DAY
				MONTH
				YEAR 2 0
INTERVIEWER'S NAME				INT. NUMBER
RESULT*	☐	☐	☐	RESULT
NEXT VISIT: DATE				TOTAL NUMBER OF VISITS
TIME				

RESULT CODES:
*RESULT CODES:
1   COMPLETED   2   NOT AT HOME   3   POSTPONED   4   REFUSED
5   PARTLY COMPLETED   6   NO APPROPRIATE RESPONDENT FOUND   7   OTHER _____
(SPECIFY)

PLACE NAME _____

ADDRESS/DIRECTIONS TO HOUSEHOLD _____

SECTION 1.2   ADDITIONAL DEMOGRAPHIC INFORMATION
(FOR USE IN SAMPLE VITAL REGISTRATION OR DEMOGRAPHIC SURVEILLANCE SITE)

PROVINCE _____

DISTRICT _____

CONSTITUENCY _____

WARD _____

REGION   1. RURAL   2. URBAN

CSA   . . . .

SEA   . . . .

CENSUS BUILDING NUMBER (CBN)   . . . .

HOUSING UNIT NUMBER (HUN)   . . . .

HOUSEHOLD NUMBER (HHN)   . . . .

NAME OF HOUSEHOLD HEAD _____

VILLAGE/LOCALITY _____

RESIDENTIAL ADDRESS/VILLAGE NAME _____

CHIEF'S AREA _____

INFORMED CONSENT for Death: Verbal Autopsy Interview

Hello. My name is _____ and I am working with the Central Statistical Office / Department of National Registration, Passport and Citizenship / Ministry of Health. We are conducting a survey on health issues focusing on cause of death among women, men and children in this community. The government wants to learn about the major causes of death among different age groups of people and the impact that health programmes are having in reducing the burden of disease and death in the community. This will help the government plan for health services and programmes to combat various diseases affecting the population in your community.

As part of this effort, we are conducting interviews in households where a death has happened to help determine the cause of death.

The interview usually takes about 20 to 40 minutes.

We understand that talking about the health of the deceased can be a sensitive matter. What you tell us will be kept strictly confidential. No report will include individual names or home locations. Reports will focus on counts of death by type of death.

Your participation in this program is very important and voluntary. You should be aware that your answers about the deceased may say something about your own health. So if we come to a question you don't want to answer, just tell me and I will go on to the next question. You may also stop the interview at any time. We hope that you will participate in this survey because your views are very important.

At this time, do you want to ask me anything about the survey?

May I begin the interview now?

Yes, Consent for participation given (   ):   Interviewer Signature : _____

No, consent for participation not given (   ): Interviewer Signature : _____

Date: _____

If you have any questions about this survey, please contact:

Ms. Nchimunya Nkombo
Principal Investigator
Central Statistical Office
P.O Box 31908
Lusaka
Telephone 260-1-251377

Mr Nyahoda Martin
Principal Investigator
National Registration Passport and Citizenship
P.O. Box 32311
Lusaka
Telephone +260-211-228197

If you ever have questions about your rights or ethics as a research subject, please contact:

Mr Shephard Khondowe
Tropical Diseases Research Centre
P.O. BOX 71769
NDOLA
Telephone 260-212 - 615444

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
SECTION 2. BASIC INFORMATION ABOUT RESPONDENT			
201	RECORD THE TIME AT START OF INTERVIEW	HOUR . . . . ☐☐ MINUTES . . . . ☐☐	
202	NAME OF THE RESPONDENT	_____ (NAME)	
203	What is your relationship to the deceased?	FATHER . . . . 1 MOTHER . . . . 2 SIBLING . . . . 4 OTHER RELATIVE _____ 6 (SPECIFY) NO RELATION 8	
204	Did you live with the deceased in the period leading to her/his death?	YES . . . . 1 NO 2	
SECTION 3. INFORMATION ON THE DECEASED AND DATE/PLACE OF DEATH			
301	What was the name of the deceased?	_____ (NAME)	
302	Was the deceased male or female?	MALE . . . . 1 FEMALE 2	
303	When was the deceased born? RECORD '98' IF DON'T KNOW DAY OR MONTH RECORD '9998' IF DON'T KNOW YEAR	DAY . . . . ☐☐ MONTH . . . . ☐☐ YEAR . . . . ☐☐☐☐	
304	How old was the deceased when s/he died?	AGE IN DAYS . . . . ☐☐	
305	When did s/he die? RECORD '98' IF DON'T KNOW DAY OR MONTH RECORD '9998' IF DON'T KNOW YEAR	DAY . . . . ☐☐ MONTH . . . . ☐☐ YEAR . . . . ☐☐☐☐	
306a	Where did s/he die?	HOSPITAL . . . . 1 OTHER HEALTH FACILITY . . . . 2 HOME . . . . 3 OTHER _____ 6 (SPECIFY) DON'T KNOW 8	→ 307 → 307 → 307
306b	If died in hospital or other health facility. (write name of place)	_____ (SPECIFY)	
307	What is the name of the father ?	_____	
308	What is the name of the mother ?	_____	
309	What was child's citizenship / nationality?	CITIZEN AT BIRTH . . . . 1 CITIZEN BY NATURALIZATION/REGISTRATION . . . . . 2 FOREIGN NATIONAL . . . . 3 CITIZEN BY DESCENT . . . . 4 DON'T KNOW 8	
310	During which season did the baby die?	WET . . . . 1 DRY 2	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
	SECTION 4. RESPONDENT'S ACCOUNT OF ILLNESS/EVENTS LEADING TO DEATH		
401	Could you tell me about the illness/events that led to her/ his death?		
402	FIRST CAUSE OF DEATH ACCORDING TO RESPONDENT		
403	SECOND CAUSE OF THE DEATH ACCORDING TO RESPONDENT		

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP

SECTION 5. PREGNANCY HISTORY

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
501	I would like to ask you some questions concerning the mother and symptoms that the deceased had/showed at birth and shortly after. Some of these questions may not appear to be directly related to the baby's death. Please bear with me and answer all the questions. They will help us to get a clear picture of all possible symptoms that the deceased had.		
502	How many births, including stillbirths, did the mother have before this baby?	NUMBER OF BIRTHS/ STILLBIRTHS .... ☐☐ DON'T KNOW 98	
503	How many weeks was the pregnancy when the baby was born?	NUMBER OF WEEKS .... ☐☐ DON'T KNOW 98	
504	Did the pregnancy end earlier than expected?	YES .... 1 NO .... 2 → 506 DON'T KNOW .... 8 → 506	
505	How many weeks before the expected date of delivery?	NUMBER OF WEEKS .... ☐☐ DON'T KNOW 98	
506	During the pregnancy did the mother suffer from any of the following known illnesses: 1 High blood pressure? 2 Heart disease? 3 Diabetes? 4 Epilepsy/convulsion? 5 Did she suffer from any other medically diagnosed illness?	YES NO DK HIGH BLOOD PRESSURE .... 1 2 8 HEART DISEASE .... 1 2 8 DIABETES .... 1 2 8 EPILEPSY/CONVULSION .... 1 2 8 OTHER .... 1 2 8 ———————————————↵ (SPECIFY)	

507	During the last 3 months of pregnancy did the mother suffer from any of the following illnesses:
	 01 Vaginal bleeding?
	 02 Smelly vaginal discharge?
	 03 Puffy face?
	 04 Headache?
	 05 Blurred vision?
	 06 Convulsion?
	 07 Febrile illness?
	 08 Severe abdominal pain that was not labor pain?
	 09 Pallor and shortness of breath (both present)?
	 10 Did she suffer from any other illness?
		YES NO DK
		 VAGINAL BLEEDING 1 2 8
		 SMELLY VAGINAL DISCHARGE 1 2 8
		 PUFFY FACE 1 2 8
		 HEADACHE 1 2 8
		 BLURRED VISION 1 2 8
		 CONVULSION 1 2 8
		 FEBRILE ILLNESS 1 2 8
		 SEVERE ABDOMINAL PAIN
		   (NOT LABOR PAIN) 1 2 8
		 PALLOR/SHORTNESS
		   OF BREATH (BOTH) 1 2 8
		 OTHER ILLNESS 1 2 8
		 ———————————————↵
		 (SPECIFY)	

508	Were there any complications during labour or delivery?	YES .... 1 NO .... 2 DON'T KNOW 8	
509	Was the child a single or multiple birth?	SINGLETON .... 1 → 601 TWIN .... 2 TRIPLET OR MORE .... 3 DON'T KNOW .... 8 → 601	
510	What was the birth order of the child that died?	FIRST .... 1 SECOND .... 2 THIRD OR HIGHER .... 3 DON'T KNOW 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
SECTION 6. DELIVERY HISTORY			
601.0	Where was the child born?	HOSPITAL .... 1 OTHER HEALTH FACILITY .... 2 HOME... 3 OTHER _____ 6 (SPECIFY) DON'T KNOW 8	
602.00	Who assisted with the delivery?	DOCTOR .... 1 NURSE/MIDWIFE .... 2 TRADITIONAL BIRTH ATTENDANT .... 3 RELATIVE .... 4 MOTHER BY HERSELF .... 5 OTHER _____ 6 (SPECIFY) DON'T KNOW 8	
603.00	When did the water break?	BEFORE LABOR STARTED .... 1 DURING LABOR .... 2 DON'T KNOW 8	→ 606
604.00	How many hours after the water broke was the baby born?	LESS THAN 24 HOURS .... 1 24 HOURS OR MORE .... 2 DON'T KNOW 8	
605.00	Was the water foul smelling?	YES .... 1 NO .... 2 DON'T KNOW 8	
606.00	Did the baby stop moving in the womb?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 608 → 608
607.00	When did the baby stop moving in the womb?	BEFORE LABOR STARTED .... 1 DURING LABOR .... 2 DON'T KNOW 8	
608.00	Did a birth attendant listen for fetal heart sounds during labor?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 610 → 610
609.00	Were fetal heart sounds present?	YES .... 1 NO .... 2 DON'T KNOW 8	
610.00	Was there excess bleeding on the day labor started?	YES .... 1 NO .... 2 DON'T KNOW 8	
611.00	Did the mother have a fever on the day labor started?	YES .... 1 NO .... 2 DON'T KNOW 8	
612.00	How long did the labor pains last?	LESS THAN 12 HOURS .... 1 12-23 HOURS .... 2 24 HOURS OR MORE .... 3 DON'T KNOW 8	
613.00	Was it a normal vaginal delivery?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 615 → 615
614.00	What type of delivery was it?	FORCEPS/VACUUM .... 1 CAESAREAN SECTION .... 2 OTHER _____ 6 (SPECIFY) DON'T KNOW 8	
615.00	Which part of the baby came first?	HEAD .... 1 BOTTOM .... 2 FEET .... 3 ARM/HAND .... 4 OTHER _____ 6 (SPECIFY) DON'T KNOW 8	
616.00	Did the umbilical cord come out before the baby was born?	YES .... 1 NO .... 2 DON'T KNOW 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
SECTION 7. CONDITION OF THE BABY SOON AFTER BIRTH			
701.00	At birth what was the size of the baby?	SMALLER THAN NORMAL (<2.5KG) .... 1 NORMAL .... 2 LARGER THAN NORMAL (>4KG) .... 3 DON'T KNOW 8	
702.00	Was the baby premature?	YES .... 1 NO .... 2 DON'T KNOW 8	→704 →704
703.00	How many months or weeks was the pregnancy? INDICATE PERIOD OF PREGNANCY	MONTHS .... 1 WEEKS .... 2 DON'T KNOW 9 9 8	
704.00	What was the birth weight of the baby?	KILOGRAMS .... ☐.☐ DON'T KNOW 9 8	
705	Was anything applied to the umbilical cord stump after birth?	YES .... 1 NO .... 2 DON'T KNOW 8	→707 →707
706	What was it?	_____ _____ (SPECIFY)	
707	Were there any signs of injury or broken bones?	YES .... 1 NO .... 2 DON'T KNOW 8	→709 →709
708	Where were the marks or signs of injury?	_____ _____ (SPECIFY)	
709	Was there any sign of paralysis?	YES .... 1 NO .... 2 DON'T KNOW 8	
710	Did the baby have any malformation?	YES .... 1 NO .... 2 DON'T KNOW 8	→712 →712
711	What kind of malformation did the baby have?	SWELLING/DEFECT ON THE BACK .... 1 VERY LARGE HEAD .... 2 VERY SMALL HEAD .... 3 DEFECT OF LIP AND/OR PALATE .... 4 OTHER MALFORMATION_____ 6 (SPECIFY) DON'T KNOW 8	
712	What was the color of the baby at birth?	NORMAL .... 1 PALE .... 2 BLUE .... 3 DON'T KNOW 8	
713	Did the baby breathe after birth, even a little?	YES .... 1 NO .... 2 DON'T KNOW 8	
714	Was the baby given assistance to breathe?	YES .... 1 NO .... 2 DON'T KNOW 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
715	Did the baby ever cry after birth, even a little?	YES .... 1 NO .... 2 DON'T KNOW 8	
716	Did the baby ever move, even a little?	YES .... 1 NO .... 2 DON'T KNOW 8	
717	CHECK 713, 715, AND 716 FOR CODES 'NO': ALL THREE CODES 'NO': THE BABY DIDN'T BREATH, OTHER: ☐ THE BABY DIDN'T CRY, THE BABY DIDN'T MOVE		→ 801
718	If the baby did not cry, breathe or move, was it born dead?	YES .... 1 NO .... 2 → 801 DON'T KNOW .... 8 → 801	
719	Was the baby macerated, that is, showed signs of decay?	YES .... 1 → 1001 NO .... 2 → 1001 DON'T KNOW 8 1001	
SECTION 8. HISTORY OF INJURIES/ACCIDENTS		**(FOR BABIES BORN ALIVE)**	
801	Did the baby suffer from any injury or accident that led to her/his death?	YES .... 1 NO .... 2 → 901 DON'T KNOW .... 8 → 901	
802	Was the injury or accident intentionally inflicted by someone else?	YES .... 1 NO .... 2 → 808 DON'T KNOW .... 8 → 808	
803	Was s/he injured by a firearm?	YES .... 1 NO .... 2 DON'T KNOW 8	
804	Was s/he stabbed, cut or pierced?	YES .... 1 NO .... 2 DON'T KNOW 8	
805	Was s/he strangled?	YES .... 1 NO .... 2 DON'T KNOW 8	
806	Was s/he injured by a blunt force?	YES .... 1 NO .... 2 DON'T KNOW 8	
807	Was s/he injured by burns?	YES .... 1 NO .... 2 DON'T KNOW 8	
808	Was it a road traffic accident?	YES .... 1 NO .... 2 → 811 DON'T KNOW .... 8 → 811	
809	What was her / his role in the road traffic accident?	PEDESTRIAN .... 01 IN CAR OR LIGHT VEHICLE .... 02 IN BUS OR HEAVY VEHICLE . ... 03 ON A MOTORCYCLE .... 04 ON A PEDAL CYCLE .... 05 OTHER _____ 96 (SPECIFY) DON'T KNOW 98	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
810	What was the counterpart that was hit during the road traffic accident?	PEDESTRIAN .... 01 STATIONARY OBJECT .... 02 CAR OR LIGHT VEHICLE .... 03 BUS OR HEAVY VEHICLE . ... 04 MOTORCYCLE .... 05 PEDAL CYCLE .... 06 OTHER _____ 96 (SPECIFY) DON'T KNOW 98	
811	Was s/he injured in a fall?	YES .... 1 NO .... 2 DON'T KNOW 8	
812	Did s/he die of drowning?	YES .... 1 NO .... 2 DON'T KNOW 8	
813	Did s/he suffer from accidental burns?	YES .... 1 NO .... 2 DON'T KNOW 8	
814	Was s/he accidentally injured by a blunt force?	YES .... 1 NO .... 2 DON'T KNOW 8	
815	Was she accidentally injured by a plant/animal/insect that led to her/his death?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 817 → 817
816	What type of plant/animal/insect?	DOG .... 1 SNAKE .... 2 INSECT OR SCORPION .... 3 OTHER _____ 6 (SPECIFY) DON'T KNOW 8	
817	Was s/he injured by a force of nature?	YES .... 1 NO .... 2 DON'T KNOW 8	
818	Was there any poisoning?	YES .... 1 NO .... 2 DON'T KNOW 8	
819	Was s/he subject to violence / assault?	YES .... 1 NO .... 2 DON'T KNOW 8	
820	Was it electrocution?	YES .... 1 NO .... 2 DON'T KNOW 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
SECTION 9. NEONATAL ILLNESS HISTORY			
901.00	Was the baby ever able to suckle or bottle-feed?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 906 → 906
902	How soon after birth did the baby suckle or bottle-feed?	HOURS .... 1 DAYS .... 2 DON'T KNOW 9 9 8	
903	Did the baby stop suckling or bottle-feeding?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 905 → 905
904	How many days after birth did the baby stop suckling or bottle-feeding?	DAYS .... DON'T KNOW 9 8	
905	Was the breastfeeding exclusive?	YES .... 1 NO .... 2 DON'T KNOW 8	
906	Did the baby have convulsions?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 908 → 908
907	How soon after birth did the convulsions start?	HOURS .... 1 DAYS .... 2 DON'T KNOW 9 9 8	
908	Did the baby become stiff and arched backwards?	YES .... 1 NO .... 2 DON'T KNOW 8	
909a	During the illness that led to death, did the baby have a bulging or raised fontanelle?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 910a → 910a
909b	How many days did the baby have the bulging fontanelle?	DAYS .... DON'T KNOW 9 8	
910a	During the illness that led to death, did the baby have a sunken fontanelle?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 911 → 911
910b	How many days did the baby have the sunken fontanelle?	DAYS .... DON'T KNOW 9 8	
911	Did the baby become unresponsive or unconscious?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 913 → 913
912	How many days after birth did the baby become unresponsive or unconscious?	HOURS .... 1 DAYS .... 2 DON'T KNOW 9 9 8	
913	Did the baby have a fever?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 915 → 915
914	How many days did the fever last?	DAYS .... DON'T KNOW 9 8	
915	During the illness that led to death, did the baby become cold to touch?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 917 → 917

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
916	How many days before death did the baby become cold to touch?	DAYS . . . . [ ][ ] DON'T KNOW 9 8	
917	Did the baby have a cough?	YES . . . . 1 NO . . . . 2 DON'T KNOW 8	→ 919 → 919
918	How many days after birth did the baby start to cough?	DAYS . . . . [ ][ ] DON'T KNOW 9 8	
919	During the illness that led to death, did the baby have fast breathing?	YES . . . . 1 NO . . . . 2 DON'T KNOW 8	→ 921 → 921
920	For how many days did the fast breathing last?	DAYS . . . . [ ][ ] DON'T KNOW 9 8	
921	During the illness that led to death, did the baby have difficulty breathing?	YES . . . . 1 NO . . . . 2 DON'T KNOW 8	→ 923 → 923
922	For how many days did the difficulty breathing last?	DAYS . . . . [ ][ ] DON'T KNOW 9 8	
923	Did the baby have chest indrawing? (Lower chest wall / ribs being pulled in as the baby breathed)	YES . . . . 1 NO . . . . 2 DON'T KNOW 8	
924	Did the baby have wheezing or grunting? DEMONSTRATE	YES . . . . 1 NO . . . . 2 DON'T KNOW 8	
925	Did the baby have flaring of the nostrils?	YES . . . . 1 NO . . . . 2 DON'T KNOW 8	
926	Did the baby have diarrhea?	YES . . . . 1 NO . . . . 2 DON'T KNOW 8	→ 930a → 930a
927	How many days did the baby have diarrhea?	DAYS . . . . [ ][ ] DON'T KNOW 9 8	
928	When the diarrhea was most severe, how many times did the baby pass stool in a day?	NUMBER OF TIMES [ ][ ] DON'T KNOW 9 8	
929	At any time during the final illness, was there blood in the stool?	YES . . . . 1 NO . . . . 2 DON'T KNOW 8	
930a	Did the baby vomit?	YES . . . . 1 NO . . . . 2 DON'T KNOW 8	→ 933 → 933
930b	How many days before death did s/he vomit?	DAYS . . . . [ ][ ] DON'T KNOW 9 8	
931	When the vomiting was most severe, how many times did the baby vomit in a day?	NUMBER OF TIMES A DAY . . . . [ ][ ] DON'T KNOW 9 8	
932	Did s/he vomit blood?	YES . . . . 1 NO . . . . 2 DON'T KNOW 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
933	Did the baby have abdominal distension? (More than usually protruding abdomen)	YES .... 1 NO .... 2 DON'T KNOW 8	→ 935 → 935
934	How many days after birth did the baby have abdominal distension?	DAYS .... DON'T KNOW 9 8	
935	Did the baby have redness or discharge from the umbilical cord stump?	YES .... 1 NO .... 2 DON'T KNOW 8	
936	Did the baby have a pustular skin rash?	YES .... 1 NO .... 2 DON'T KNOW 8	
937	Did the baby have yellow palms or soles?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 940 → 940
938	How many days after birth did the yellow palms or soles begin?	DAYS .... DON'T KNOW 9 8	
939	For how many days did the baby have yellow palms or soles?	DAYS .... DON'T KNOW 9 8	
940	Did the baby appear to be healthy and then just died suddenly?	YES .... 1 NO .... 2 DON'T KNOW 8	

SECTION 10. MOTHER'S HEALTH AND CONTEXTUAL FACTORS

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
1001	What was the age of the mother at the time the baby died?	YEARS .... DON'T KNOW 9 8	
1002	Did the mother receive antenatal care?	YES .... 1 NO .... 2 DON'T KNOW 8	
1003	Did the mother receive tetanus toxoid (TT) vaccine?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 1005 → 1005
1004	How many doses?	NUMBER OF DOSES .... DON'T KNOW 9 8	
1005	Is the mother of the baby still alive?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 1008 → 1008
1006	Did the mother die during or after the delivery?	DURING DELIVERY .... 1 AFTER DELIVERY .... 2 DON'T KNOW 8	→ 1008 → 1008
1007	How many days or months after delivery did the mother die?	DAYS .... 1 MONTHS .... 2 DON'T KNOW 9 8	
1008	Has the baby's mother ever been tested for HIV?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 1010 → 1010
1009	Was the HIV test ever positive?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 1101
1010	Was the baby's mother ever been told she had HIV/AIDS by a health worker?	YES .... 1 NO .... 2 DON'T KNOW 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIPS
SECTION 11: TREATMENT AND HEALTH SERVICE USE FOR THE FINAL ILLNESS			
1101 3G100	Was the baby adequately vaccinated?	YES .... 1 NO .... 2 DON'T KNOW 8	
1102 3G110	Did the baby receive any treatment for the illness that led to death?	YES .... 1 NO .... 2 → **1111** DON'T KNOW .... 8 → **1111**	
1103 3GS110	Can you please list the treatments the baby was given for the illness that led to death? COPY FROM PRESCRIPTION/DISCHARGE NOTES, IF AVAILABLE		
1104 3G120	Did the baby receive (or need) oral rehydration salts (ORS)?	YES .... 1 NO .... 2 DON'T KNOW 8	
1105 3G130	Did the baby receive (or need) intravenous fluids (drip) treatment?	YES .... 1 NO .... 2 DON'T KNOW 8	
1106 3G140	Did the baby receive (or need) a blood transfusion?	YES .... 1 NO .... 2 DON'T KNOW 8	
1107 3G150	Did the baby receive (or need) treatment/food through a tube passed through the nose?	YES .... 1 NO .... 2 DON'T KNOW 8	
1108 3G160	Did the baby receive (or need) injectable antibiotics?	YES .... 1 NO .... 2 DON'T KNOW 8	
1109 3GS130	Did the baby receive any other treatment? If yes, specify.	YES .... 1 SPECIFY _____ NO .... 2 DON'T KNOW 98	
1110 3GS150	Where did the baby receive treatment? MULTIPLE RESPONSE POSSIBLE, CIRCLE ALL RESPONSES MENTIONED	HOME .... 11 TRADITIONAL HEALER .... 12 GOVERNMENT CLINIC .... 13 GOVERNMENT HOSPITAL .... 14 PRIVATE CLINIC .... 15 PRIVATE HOSPITAL .... 16 PHARMACY/DRUG SELLER/STORE .... 17 FAITH BASED FACILITIES.......................... 18 HOSPICE... 19 OTHER (Specify) _____ 96 DON'T KNOW 98	
1111 3G170	Did the baby have (or need) an operation for the illness?	YES .... 1 NO .... 2 → **1113** DON'T KNOW .... 8 → **1113**	
1112 3GS230	What type of operation was performed?	ABDOMEN .... 1 CHEST .... 2 HEAD .... 3 OTHER (Specify) _____ 6 DON'T KNOW 8	
1113 3G190	Was the baby discharged from the hospital very ill?	YES .... 1 NO .... 2 DON'T KNOW 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIPS
1114 3GS270	In the month before death, how many contacts with formal health services did the baby have?	NUMBER OF CONTACTS . . . . ☐☐ DON'T KNOW …………………………………… 98	
1115 3GS280	Did a health care worker tell you the cause of death?	YES …………………………………………… 1 NO …………………………………………… 2 → **1117** DON'T KNOW …………………………… 8 → **1117**	
1116 3GS290	What did the health care worker say?	_____ _____ _____ _____	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
	SECTION 12. DATA ABSTRACTED FROM OFFICIAL DEATH CERTIFICATE OR MEDICAL CERTIFICATION OF CAUSE OF DEATH		
1201a	Was the official death certificate or medical certification of cause of death issued for the deceased?	YES SEEN .... 1 YES NOT SEEN .... 2 NO .... 3 DON'T KNOW 8	→1301 →1301 →1301
1201b	Please specify which one was issued. IF BOTH WERE ISSUED, USE THE OFFICIAL DEATH CERTIFICATE FOR QUESTIONS BELOW. OTHERWISE USE WHAT IS AVAILABLE.	OFFICAL DEATH CERTIFICATE .... 1 MEDICAL CERTIFICATE OF CAUSE OF DEATH... 2	
1202	Can I see the death certificate / medical certification of cause of death? COPY DAY, MONTH AND YEAR OF DEATH FROM THE DEATH CERTIFICATE.	**DAY MONTH YEAR**	
1203	COPY DAY, MONTH AND YEAR OF ISSUE OF DEATH CERTIFICATE.	**DAY MONTH YEAR**	
1204	RECORD THE IMMEDIATE CAUSE OF DEATH FROM THE FIRST (TOP) LINE OF THE DEATH CERTIFICATE:		
1205	RECORD THE FIRST ANTECEDENT CAUSE OF DEATH FROM THE SECOND LINE OF THE DEATH CERTIFICATE (IF ANY):		
1206	RECORD THE SECOND ANTECEDENT CAUSE OF DEATH FROM THE THIRD LINE OF THE DEATH CERTIFICATE (IF ANY):		
1207	RECORD THE THIRD ANTECEDENT CAUSE OF DEATH FROM THE FOURTH LINE OF THE DEATH CERTIFICATE (IF ANY):		
1208	RECORD THE CONTRIBUTING CAUSES OF DEATH FROM THE CERTIFICATE (PART 2)		

SECTION 13. DATA ABSTRACTED FROM OTHER HEALTH RECORDS		
1301	DO YOU HAVE ANY OTHER HEALTH RECORDS AVAILABLE THAT BELONGED TO THE DECEASED CHILD ?	YES . . . . 1 NO . . . . 2 → 1401
1302	ASK TO SEE THEM. AND FOR EACH TYPE OF HEALTH RECORD SUMMARIZE DETAILS FOR LAST 2 VISITS (IF MORE THAN 2) AND RECORD DATE OF ISSUE. (RECORD INFORMATION ABOUT MOTHER AND STILLBORN DECEASED CHILD)	
1303	CERTIFICATE OF CAUSE OF DEATH	
1304	POST MORTEM RESULTS (CAUSE OF DEATH)	
1305	MCH/ANC AND UNDER FIVE CARD (RELEVANT INFORMATION)	
1306	HOSPITAL PRESCRIPTION / MEDICINE PACKAGE OR BOTTLES (RELEVANT INFORMATION)	
1307	TREATMENT CARDS (RELEVANT INFORMATION)	
1308	HOSPITAL DISCHARGE (RELEVANT INFORMATION)	
1309	LABORATORY RESULTS (RELEVANT INFORMATION)	
1310	OTHER HOSPITAL DOCUMENTS SPECIFY:	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIPS
SECTION 14: BACKGROUND AND CONTEXT			
1401 4A100	In the final days, did the baby travel to a hospital or health facility?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 1406 → 1406
1402 4A110	Did s/he use motorised transport to get to the hospital or health facility?	YES .... 1 NO .... 2 DON'T KNOW 8	
1403 4A120	Were there any problems during admission to the hospital or health facility?	YES .... 1 NO .... 2 DON'T KNOW 8	
1404 4A130	Were there any problems with the way that s/he was treated (medical treatment, procedures, interpersonal attitudes, respect, dignity) in the hospital or health facility?	YES .... 1 NO .... 2 DON'T KNOW 8	
1405 4A140	Were there any problems getting medications, or diagnostic tests in the hospital or health facility?	YES .... 1 NO .... 2 DON'T KNOW 8	
1406 4A150	Does it take more than 2 hours to get to the nearest hospital or health facility from the deceased's household?	YES .... 1 NO .... 2 DON'T KNOW 8	
1407 4A160	In the final days before death, were there any doubts about whether medical care was needed?	YES .... 1 NO .... 2 DON'T KNOW 8	
1408 4A170	In the final days before death, was traditional medicine used?	YES .... 1 NO .... 2 DON'T KNOW 8	
1409 4A180	In the final days before death, did anyone use a telephone or cell phone to call for help?	YES .... 1 NO .... 2 DON'T KNOW 8	
1410 4A190	Over the course of illness, did the total costs of care and treatment prohibit other household	YES .... 1 NO .... 2 DON'T KNOW 8	
SECTION 15: DEATH REGISTRATION AND CERTIFICATION			
1501	Was the death of the deceased registered with National Registration	YES .... 1 NO .... 2 DON'T KNOW 8	→ 1506 → 1506
1502	Child's Death Registration / Certificate Number	_____	
1503	Date of Registration COPY DAY, MONTH AND YEAR OF DEATH	DAY ☐☐ MONTH ☐☐ YEAR ☐☐☐☐	
1504	PLACE OF REGISTRATION	_____	
1505	NATIONAL IDENTIFICATION NUMBER OF THE DECEASED	_____	
1506	RECORD THE TIME AT THE END OF INTERVIEW	HOURS .... ☐☐ MINUTES .... ☐☐	

INTERVIEWER'S OBSERVATIONS

TO BE FILLED IN AFTER COMPLETING INTERVIEW

_____
_____
_____
_____
_____
_____

COMMENTS ON SPECIFIC QUESTIONS:

_____
_____
_____
_____
_____

ANY OTHER COMMENTS:

_____
_____
_____
_____
_____

SUPERVISOR'S OBSERVATIONS

_____
_____
_____
_____
_____
_____
_____

NAME OF THE SUPERVISOR: _____   DATE: _____

ZAMBIA VERBAL AUTOPSY QUESTIONNAIRE **2**
DEATH OF A CHILD AGED 4 WEEKS TO 14 YEARS

ID/CONTROL/REFERENCE NUMBER ☐☐☐☐☐☐

SECTION 1.1 INTERVIEWER VISITS				
	1	2	3	FINAL VISIT
DATE	_____	_____	_____	DAY ☐☐
				MONTH ☐☐
				YEAR **2 0** ☐☐
INTERVIEWER'S NAME	_____	_____	_____	INT. NUMBER ☐☐
RESULT*	☐	☐	☐	RESULT ☐
NEXT VISIT: DATE	_____	_____		TOTAL NUMBER OF VISITS ☐
TIME	_____	_____		

1 COMPLETED	2 NOT AT HOME	3 POSTPONED	4 REFUSED
5 PARTLY COMPLETED	6 NO APPROPRIATE RESPONDENT FOUND	7 OTHER _____	

(SPECIFY)

PLACE NAME _____

ADDRESS/DIRECTIONS TO HOUSEHOLD _____

SECTION 1.2   ADDITIONAL DEMOGRAPHIC INFORMATION
(FOR USE IN SAMPLE VITAL REGISTRATION OR DEMOGRAPHIC SURVEILLANCE SITE)

PROVINCE _____

DISTRICT _____

CONSTITUENCY _____

WARD _____

REGION   1. RURAL   2. URBAN

CSA . . . .

SEA . . . .

CENSUS BUILDING NUMBER (CBN) . . . .

HOUSING UNIT NUMBER (HUN) . . . .

HOUSEHOLD NUMBER (HHN . . . .

NAME OF HOUSEHOLD HEAD _____

VILLAGE/LOCALITY _____

RESIDENTIAL ADDRESS/VILLAGE NAME _____

CHIEF'S AREA _____

INFORMED CONSENT for Death Verbal Autopsy Interview

Hello. My name is _____ and I am working with the Central Statistical Office / Department of National Registration, Passport and Citizenship / Ministry of Health. We are conducting a survey on health issues focusing on cause of death among women, men and children in this community. The government wants to learnabout the major causes of death among different age groups of people and the impact that health programmes are having in reducing the burden of disease and death in the community. This will help the government plan for health services and programmes to combat various diseases affecting the population in your community.

As part of this effort, we are doing interviews in households where a death has happened to help determine the cause of death.

The interview usually takes about 20 to 40 minutes.

We understand that talking about the health of the deceased can be a sensitive matter. What you tell us will be kept strictly confidential and only the few carefully trained people on the survey team will have access to it. No report will include individual names or home locations. Reports will focus on counts of death by type of death.

Your participation in this survey is very important and voluntary. You should be aware that your answers about the deceased may say something about your own health. So if we come to a question you don't want to answer, just tell me and I will go on to the next question. You may also stop the interview at any time. We hope that you will participate in this survey because your views are very important.

At this time, do you want to ask me anything about the survey?

May I begin the interview now?

Yes, Consent for participation given ( ):   Interviewer Signature : _____

No, consent for participation not given ( ): Interviewer Signature : _____

Date: _____

If you have any questions about this survey, please contact:

Ms. Nchimunya Nkombo   Mr Nyahoda Martin
Principal Investigator   Principal Investigator
Central Statistical Office   National Registration Passport and Citizenship
P.O Box 31908   P.O. Box 32311
Lusaka   Lusaka
Telephone 260-1-251377   Telephone +260-211-228197

If you ever have questions about your rights or ethics as a research subject, please contact:

Mr Shephard Khondowe
Tropical Diseases Research Centre
P.O. BOX 71769
NDOLA
Telephone 260-212 - 615444

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
SECTION 2. BASIC INFORMATION ABOUT RESPONDENT			
201	RECORD THE TIME AT THE START OF THE INTERVIEW	HOUR . . . . ☐☐ MINUTES . . . . ☐☐	
202	NAME OF THE RESPONDENT	_____ (NAME)	
203	What is your relationship to the deceased?	FATHER . . . . 1 MOTHER . . . . 2 SPOUSE . . . . 3 SIBLING . . . . 4 OTHER RELATIVE _____ 6 (SPECIFY) NO RELATION 8	
204	Did you live with the deceased in the period leading to her/his death?	YES . . . . 1 NO 2	
DECEASED AND DATE/PLACE OF DEATH			
301	What was the name of the deceased?	_____ (NAME)	
302	Was the deceased male or female?	MALE . . . . 1 FEMALE 2	
303	When was the deceased born? RECORD '98' IF DON'T KNOW DAY OR MONTH RECORD '9998' IF DON'T KNOW YEAR	DAY . . . . ☐☐ MONTH . . . . ☐☐ YEAR . . . . ☐☐☐☐	
304	How old was the deceased when s/he died? (ENTER OO FOR UNDER A YEAR)	AGE IN YEARS . . . . ☐☐	
305	What was her/his occupation, that is, what kind of work did s/he mainly do?	_____ ☐☐☐ _____ _____	
306	What was the highest level of formal education the deceased attended?	NONE . . . . 1 PRIMARY . . . . 2 SECONDARY . . . . 3 DON'T KNOW 8	
307	What was her/his marital status?	NEVER MARRIED . . . . 1 MARRIED/LIVING WITH A PARTNER . . . . 2 WIDOWED . . . . 3 DIVORCED . . . . 4 SEPARATED . . . . 5 DON'T KNOW 8	
308	When did s/he die? RECORD '98' IF DON'T KNOW DAY OR MONTH RECORD '9998' IF DON'T KNOW YEAR	DAY . . . . ☐☐ MONTH . . . . ☐☐ YEAR . . . . ☐☐☐☐	
309	Where did s/he die?	HOSPITAL . . . . 1 OTHER HEALTH FACILITY . . . . 2 HOME . . . . 3 OTHER _____ 6 (SPECIFY) DON'T KNOW 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
309b	If s/he died in hospital or other health facility , WRITE NAME OF HEALTH FACILITY	_____ (NAME OF FACILITY)	
310	What is the name of the father ?	_____	
311	What is the name of the mother ?	_____	
312	What was child's citizenship / nationality?	CITIZEN AT BIRTH .... 1 CITIZEN BY NATURALIZATION/REGISTRATION ... 2 FOREIGN NATIONAL .... 3 CITIZEN BY DESCENT .... 4 DON'T KNOW 8	
313	During which season did the child die?	WET .... 1 DRY 2	

SECTION 4. RESPONDENT'S ACCOUNT OF ILLNESS/EVENTS LEADING TO DEATH

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
401	Could you tell me about the illness/events that led to her his/death? 		
402	FIRST CAUSE OF DEATH ACCORDING TO RESPONDENT		
403	SECOND CAUSE OF DEATH ACCORDING TO RESPONDENT		

SECTION 5. HISTORY OF PREVIOUSLY KNOWN MEDICAL CONDITIONS

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
501	I would like to ask you some questions concerning previously known medical conditions the deceased had; injuries and accidents that the deceased suffered; and signs and symptoms that the deceased had/showed when s/he was ill. Some of these questions may not appear to be directly related to his/her death. Please bear with me and answer all the questions. They will help us to get a clear picture of all possible symptoms that the deceased had. Please tell me if the deceased suffered from any of the following illnesses diagnosed by a physician or a health worker:		
502	Heart disease?	YES .... 1 NO .... 2 DON'T KNOW 8	
503	Diabetes?	YES .... 1 NO .... 2 DON'T KNOW 8	
504	Asthma?	YES .... 1 NO .... 2 DON'T KNOW 8	
505	Epilepsy?	YES .... 1 NO .... 2 DON'T KNOW 8	
506	Malnutrition?	YES .... 1 NO .... 2 DON'T KNOW 8	
507	Cancer?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 509 → 509

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
508	Can you specify the type or site of cancer?	TYPE/SITE _____	
509	Tuberculosis?	YES .... 1 NO .... 2 DON'T KNOW 8	
510	HIV/AIDS?	YES .... 1 NO .... 2 DON'T KNOW 8	
511	High blood pressure ?	YES .... 1 NO .... 2 DON'T KNOW 8	
512	Measles?	YES .... 1 NO .... 2 DON'T KNOW 8	
513	Chronic Obstructive Pulmonary Disease (COPD) ?	YES .... 1 NO .... 2 DON'T KNOW 8	
514	Stroke ?	YES .... 1 NO .... 2 DON'T KNOW 8	
515	Sickle Cell disease?	YES .... 1 NO .... 2 DON'T KNOW 8	
516	Liver disease ?	YES .... 1 NO .... 2 DON'T KNOW 8	
517	Kidney disease ?	YES .... 1 NO .... 2 DON'T KNOW 8	
518	Dementia ?	YES .... 1 NO .... 2 DON'T KNOW 8	
519	Depression ?	YES .... 1 NO .... 2 DON'T KNOW 8	
520	Dengue fever ?	YES .... 1 NO .... 2 DON'T KNOW 8	
521	Did s/he have a recent positive test for malaria?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 523 → 523
522	Did s/he have a recent negative test for malaria?	YES .... 1 NO .... 2 DON'T KNOW 8	
523	Did s/he suffer from any other medically diagnosed illness?	YES .... 1 NO .... 2 DON'T KNOW 8	 → 601 → 601
524	Can you specify the illness?	ILLNESS _____	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
	SECTION 6. HISTORY OF INJURIES/ACCIDENTS		
601	Did the child suffer from any injury or accident that led to her/his death?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 701 → 701
602	Was the injury or accident intentionally inflicted by someone else?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 606 → 606
603	Was s/he injured by a firearm?	YES .... 1 NO .... 2 DON'T KNOW 8	
604	Was s/he stabbed, cut or pierced?	YES .... 1 NO .... 2 DON'T KNOW 8	
605	Was s/he strangled?	YES .... 1 NO .... 2 DON'T KNOW 8	
606	Was s/he injured by a blunt force?	YES .... 1 NO .... 2 DON'T KNOW 8	
607	Was s/he injured by burns?	YES .... 1 NO .... 2 DON'T KNOW 8	
608	Was it a road traffic accident?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 611 → 611
609	What was her / his role in the road traffic accident?	PEDESTRIAN .... 01 IN CAR OR LIGHT VEHICLE .... 02 IN BUS OR HEAVY VEHICLE . ... 03 ON A MOTORCYCLE .... 04 ON A PEDAL CYCLE .... 05 OTHER _____ 96 (SPECIFY) DON'T KNOW 98	
610	What was the counterpart that was hit during the road traffic accident?	PEDESTRIAN .... 01 STATIONARY OBJECT .... 02 CAR OR LIGHT VEHICLE .... 03 BUS OR HEAVY VEHICLE . ... 04 MOTORCYCLE .... 05 PEDAL CYCLE .... 06 OTHER _____ 96 (SPECIFY) DON'T KNOW 98	
611	Was s/he injured in a fall?	YES .... 1 NO .... 2 DON'T KNOW 8	
612	Did s/he die of drowning?	YES .... 1 NO .... 2 DON'T KNOW 8	
613	Did s/he suffer from accidental burns?	YES .... 1 NO .... 2 DON'T KNOW 8	
614	Was s/he accidentally injured by a blunt force?	YES .... 1 NO .... 2 DON'T KNOW 8	
615	Was she accidentally injured by a plant/animal/insect that led to her/his death?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 617 → 617

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
616	What type of plant/animal/insect?	DOG .... 1 SNAKE .... 2 INSECT OR SCORPION .... 3 OTHER _____ 6 (SPECIFY) DON'T KNOW 8	
617	Was s/he injured by a foce of nature?	YES .... 1 NO .... 2 DON'T KNOW 8	
618	Was there any poisoning?	YES .... 1 NO .... 2 DON'T KNOW 8	
619	Was s/he subjected to violence / assault?	YES .... 1 NO .... 2 DON'T KNOW 8	
620	Was it electrocution?	YES .... 1 NO .... 2 DON'T KNOW 8	
621	Do you think s/he committed suicide ? (ASK ONLY IF THE DECEASED IS AGED 10 OR ABOVE)	YES .... 1 NO .... 2 DON'T KNOW 8	

| 616 | What type of plant/animal/insect? | DOG .... 1 | |

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
	SECTION 7. SYMPTOMS AND SIGNS NOTED DURING THE FINAL ILLNESS OF INFANTS **[FOR INFANTS UNDER 1 YEAR]**		
701	Was the child born smaller than normal, weighing under 2.5 Kg ?	YES .... 1 NO .... 2 DON'T KNOW 8	
702	How many weeks was the pregnancy when the child was born ?	WEEKS ....☐☐	
703	During the illness that led to death, did the child have a bulging or raised fontanelle?	YES .... 1 NO .... 2 → 705 DON'T KNOW .... 8 → 705	
704	For how many days before death did s/he have the bulging fontanelle?	DAYS ....☐☐ DON'T KNOW 9 8	
705	During the illness that led to death, did the child have a sunken fontanelle?	YES .... 1 NO .... 2 DON'T KNOW 8	
706	For how many days before death did the child have the sunken fontanelle?	DAYS ....☐☐ DON'T KNOW 9 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
	SECTION 8. STATUS OF MOTHER AND GENERAL SIGNS AND SYMPTOMS NOTED DURING THE FINAL ILLNESS FOR ALL CHILDREN		
801	How is the mother's health now?	HEALTHY .... 1 ILL .... 2 NOT ALIVE .... 3 DON'T KNOW 8	
802	For how long was the child ill before s/he died?	DAYS .... 1 MONTHS .... 2 DON'T KNOW 9 9 8	
803	Did s/he have a fever?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 808 → 808
804	For how long did s/he have a fever?	DAYS .... 1 MONTHS .... 2 DON'T KNOW 9 9 8	
805	Was the fever severe?	YES .... 1 NO .... 2 DON'T KNOW 8	
806	Was the fever continuous or on and off?	CONTINUOUS .... 1 ON AND OFF .... 2 DON'T KNOW 8	
807	Did s/he have chills/rigor?	YES .... 1 NO .... 2 DON'T KNOW 8	
808	Did s/he have a cough?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 812 → 812
809	For how long did s/he have a cough?	DAYS .... 1 MONTHS .... 2 DON'T KNOW 9 9 8	
810	Was the cough severe?	YES .... 1 NO .... 2 DON'T KNOW 8	
811a	Was the cough productive, with sputum ?	YES .... 1 NO .... 2 DON'T KNOW 8	
811b	Did s/he cough up blood ?	YES .... 1 NO .... 2 DON'T KNOW 8	
811c	Did the child vomit after he/she coughed?	YES .... 1 NO .... 2 DON'T KNOW 8	
811d	Did s/he make a whooping sound when coughing?	YES .... 1 NO .... 2 DON'T KNOW 8	
812	Did s/he have any breathing problem?	YES .... 1 NO .... 2 DON'T KNOW 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
813a	Did s/he have fast breathing?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 814a → 814a
813b	For how long did s/he have fast breathing?	DAYS .... [ ] [ ] DON'T KNOW 9 8	
814a	Did s/he have difficulty in breathing?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 815a → 815a
814b	For how long did s/he have difficulty in breathing?	DAYS .... [ ] [ ] DON'T KNOW 9 8	
815a	Did s/he have breathlessness ?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 816a → 816a
815b	For how long did s/he have breathlessness?	NUMBER OF DAYS .... [ ] [ ] NUMBER OF WEEKS .... [ ] [ ] DON'T KNOW 9 8	
815c	Was s/he unable to carry out daily routines due to breathlessness?	YES .... 1 NO .... 2 DON'T KNOW 8	
815d	Was s/he breathless while lying flat ?	YES .... 1 NO .... 2 DON'T KNOW 8	
816a	Did s/he have chest indrawing? (Chest walls / ribs being pulled in as the child breathed)	YES .... 1 NO .... 2 DON'T KNOW 8	→ 817 → 817
816b	For how long did s/he have chest indrawing?	DAYS .... [ ] [ ] DON'T KNOW 9 8	
817	During the illness that led to death, did s/he have noisy breathing (grunting or wheezing)? DEMONSTRATE	YES .... 1 NO .... 2 DON'T KNOW 8	
818	Did s/he have flaring of the nostrils?	YES .... 1 NO .... 2 DON'T KNOW 8	
819a	Did s/he have severe chest pain ?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 820 → 820
819b	How many days before death did s/he have severe chest pain?	DAYS .... [ ] [ ] DON'T KNOW 9 8	
820	Did s/he have diarrhea?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 824 → 824
821	For how long did s/he have diarrhea?	DAYS .... [ ] [ ] DON'T KNOW 9 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
822	When the diarrhea was most severe, how many times did s/he pass stool in a day?	NUMBER . . . . ☐☐ DON'T KNOW 9 8	
823	At any time during the final illness was there blood in the stool?	YES . . . . 1 NO . . . . 2 DON'T KNOW 8	
824	Did s/he vomit?	YES . . . . 1 NO . . . . 2 DON'T KNOW 8	➝ 827 ➝ 827
825	For how long did s/he vomit?	DAYS . . . . ☐☐ DON'T KNOW 9 8	
826a	When the vomiting was most severe, how many times did s/he vomit in a day?	NUMBER OF TIMES ☐☐ DON'T KNOW 9 8	
826b	Did s/he vomit blood?	YES . . . . 1 NO . . . . 2 DON'T KNOW 8	
827	Did s/he have abdominal pain?	YES . . . . 1 NO . . . . 2 DON'T KNOW 8	➝ 830 ➝ 830
828	For how long did s/he have abdominal pain?	DAYS . . . . 1 ☐☐ MONTHS . . . . 2 DON'T KNOW 9 9 8	
829a	Was the abdominal pain severe?	YES . . . . 1 NO . . . . 2 DON'T KNOW 8	
829b	Was the pain in the upper or lower abdomen?	UPPER . . . . 1 LOWER . . . . 2 DON'T KNOW 8	
830	Did s/he have abdominal distension? (More than usually protruding abdomen)	YES . . . . 1 NO . . . . 2 DON'T KNOW 8	➝ 833 ➝ 833
831	For how long did s/he have abdominal distension?	DAYS . . . . 1 ☐☐ MONTHS . . . . 2 DON'T KNOW 9 9 8	
832	Did the distension develop rapidly within days or gradually over months?	RAPIDLY WITHIN DAYS . . . . 1 GRADUALLY OVER MONTHS . . . . 2 DON'T KNOW 8	
833	Was there a period of a day or longer during which s/he did not pass any stool?	YES . . . . 1 NO . . . . 2 DON'T KNOW 8	
834	Did s/he have any mass in the abdomen?	YES . . . . 1 NO . . . . 2 DON'T KNOW 8	➝ 836 ➝ 836
835	For how long did s/he have the mass in the abdomen?	DAYS . . . . 1 ☐☐ MONTHS . . . . 2 DON'T KNOW 9 9 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
836	Did s/he have headache?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 839 → 839
837	For how long did s/he have headache?	DAYS .... 1 MONTHS .... 2 DON'T KNOW 9 9 8	
838	Was the headache severe?	YES .... 1 NO .... 2 DON'T KNOW 8	
839	Did s/he have a stiff or painful neck?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 841a → 841a
840	For how long did s/he have a stiff or painful neck?	DAYS .... DON'T KNOW 9 8	
841a	Did s/he have mental confusion?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 842 → 842
841b	For how long did s/he have mental confusion?	DAYS .... 1 MONTHS .... 2 DON'T KNOW 9 9 8	
842	Did s/he become unconscious?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 844 → 844
843a	For how long was s/he unconscious?	DAYS .... DON'T KNOW 9 8	
843b	Did the unconsciousness start suddenly, quickly within a single day, or slowly over many days?	SUDDENLY .... 1 FAST (IN A DAY) .... 2 SLOWLY (MANY DAYS) .... 3 DON'T KNOW 8	
844	Did s/he have convulsions?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 846 → 846
845a	For how long did s/he have convulsions?	DAYS .... 1 MONTHS .... 2 DON'T KNOW 9 9 8	
845b	Did s/he become unconscious immediately after the convulsions?	YES .... 1 NO .... 2 DON'T KNOW 8	
846	Did s/he have paralysis of the lower limbs?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 849 → 849
847	How long did s/he have paralysis of the lower limbs?	DAYS .... 1 MONTHS .... 2 DON'T KNOW 9 9 8	
848	Did the paralysis of the lower limbs start suddenly, quickly within a single day, or slowly over many days?	SUDDENLY .... 1 FAST (IN A DAY) .... 2 SLOWLY (MANY DAYS) .... 3 DON'T KNOW 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
849	Did s/he have any urine problems?	YES .... 1 NO .... 2 DON'T KNOW 8	
850a	Was there any change in the amount of urine s/he passed daily?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 851 → 851
850b	For how long did s/he have the change in the amount of urine s/he passed daily?	DAYS .... 1 MONTHS .... 2 DON'T KNOW 9 9 8	
850c	How much urine did s/he pass? (READ OUT ANSWERS)	TOO MUCH .... 1 TOO LITTLE .... 2 NO URINE AT ALL .... 3 DON'T KNOW 8	
851	Did s/he go to urinate more often than usual?	YES .... 1 NO .... 2 DON'T KNOW 8	
852	During the final illness did s/he ever pass blood in urine?	YES .... 1 NO .... 2 DON'T KNOW 8	
853a	During the illness that led to death, did s/he have any skin rash?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 854 → 854
853b	For how long did s/he have the skin rash?	DAYS .... DON'T KNOW 9 8	
853c	Was the rash located on: 1 The face? 2 The trunk? 3 On the arms and legs?	YES NO DK FACE .... 1 2 8 TRUNK .... 1 2 8 ARMS AND LEGS 1 2 8	
853d	What did the rash look like?	MEASLES RASH .... 1 RASH WITH CLEAR FLUID .... 2 RASH WITH PUS .... 3 DON'T KNOW 8	
854	Did s/he have shingles or herpes zoster?	YES .... 1 NO .... 2 DON'T KNOW 8	
855	During the illness that led to death, did his/her skin flake off in patches?	YES .... 1 NO .... 2 DON'T KNOW 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
856	Did s/he have red eyes?	YES .... 1 NO .... 2 DON'T KNOW 8	
857	Did s/he have bleeding from the nose, mouth, or anus?	YES .... 1 NO .... 2 DON'T KNOW 8	
858	Did s/he have noticeable weight loss?	YES .... 1 NO .... 2 → 861 DON'T KNOW .... 8 → 861	
859	For how long before death did s/he have the weight loss?	DAYS .... 1 MONTHS .... 2 DON'T KNOW 9 9 8	
860	Did s/he look very thin and wasted?	YES .... 1 NO .... 2 DON'T KNOW 8	
861	Did s/he have mouth sores or white patches in the mouth or on the tongue?	YES .... 1 NO .... 2 → 863 DON'T KNOW .... 8 → 863	
862	For how long did s/he have mouth sores or white patches in the mouth or on the tongue?	DAYS .... DON'T KNOW 9 8	
863	Did s/he have any swelling?	YES .... 1 NO .... 2 → 866 DON'T KNOW .... 8 → 866	
864	For how long did s/he have the swelling?	DAYS .... 1 MONTHS .... 2 DON'T KNOW 9 9 8	
865	Was the swelling on: 1 The face? 2 The joints? 3 The ankles? 4 The whole body? 5 Any other place?	YES NO DK FACE . ... 1 2 8 JOINTS .... 1 2 8 ANKLES .... 1 2 8 WHOLE BODY .... 1 2 8 OTHER PLACE .... 1 2 8 SPECIFY:_____	
866	Did s/he have any lumps?	YES .... 1 NO .... 2 → 869 DON'T KNOW .... 8 → 869	
867	For how long did s/he have the lumps?	DAYS .... 1 MONTHS .... 2 DON'T KNOW 9 9 8	
868	Were the lumps on: 1 The neck? 2 The armpit? 3 The groin? 4 Any other place?	YES NO DK NECK .... 1 2 8 ARMPIT .... 1 2 8 GROIN .... 1 2 8 OTHER PLACE .... 1 2 8 SPECIFY:_____	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
869	Did s/he have yellow discoloration of the eyes?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 871 → 871
870	For how long did s/he have the yellow discoloration of the eyes?	DAYS .... 1 MONTHS .... 2 DON'T KNOW 9 9 8	
871	Did her/his hair color change to reddish or yellowish?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 873 → 873
872	For how long did s/he have reddish/yellowish hair?	DAYS .... 1 MONTHS .... 2 DON'T KNOW 9 9 8	
873	Did s/he look pale (thinning/lack of blood) or have pale palms, eyes or nail beds?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 875 → 875
874	For how long did s/he look pale (thinning/lack of blood) or have pale palms, eyes, or nail beds?	DAYS .... DON'T KNOW 9 8	
875	Did s/he have sunken eyes?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 877 → 877
876	For how long did s/he have sunken eyes?	DAYS .... DON'T KNOW 9 8	
877	Did s/he have difficulty swallowing?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 901 → 901
878	For how many days before death did s/he have difficulty swallowing?	DAYS .... DON'T KNOW 9 8	
879	Was the difficulty swallowing with solids, liquids, or both?	SOLIDS .... 1 LIQUIDS .... 2 BOTH 3	
880	Did s/he have pain upon swallowing?	YES .... 1 NO .... 2 DON'T KNOW 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
SECTION 9: TREATMENT AND HEALTH SERVICE USE FOR THE FINAL ILLNESS			
901 3G110	Did the child receive any treatment for the illness that led to death?	YES .... 1 NO .... 2 DON'T KNOW 8	→**911** →**911**
902 3G115	Can you please list the treatments the child was given for the illness that led to death? COPY FROM PRESCRIPTION/DISCHARGE NOTES, IF AVAILABLE	_____ _____ _____	
903 3G120	Did the child receive (or need) oral rehydration salts (ORS)?	YES .... 1 NO .... 2 DON'T KNOW 8	
904 3G130	Did the child receive (or need) intravenous fluids (drip) treatment?	YES .... 1 NO .... 2 DON'T KNOW 8	
905 3G140	Did the child receive (or need) a blood transfusion?	YES .... 1 NO .... 2 DON'T KNOW 8	
906 3G150	Did the child receive (or need) treatment/food through a tube passed through the nose?	YES .... 1 NO .... 2 DON'T KNOW 8	
907 3G160	Did the child receive (or need) injectable antibiotics?	YES .... 1 NO .... 2 DON'T KNOW 8	
908 3G165	Did s/he receive (or need) antiretroviral therapy (ART) ?	YES .... 1 NO .... 2 DON'T KNOW 8	
909 3GS130	Did the child receive any other treatment? If yes, specify.	YES .... 1 SPECIFY _____ _____ NO .... 2 DON'T KNOW 8	
910 3H140	Where did the child receive treatment? MULTIPLE RESPONSE POSSIBLE, CIRCLE ALL RESPONSES MENTIONED	HOME .... 11 TRADITIONAL HEALER .... 12 GOVERNMENT CLINIC .... 13 GOVERNMENT HOSPITAL .... 14 PRIVATE CLINIC .... 15 PRIVATE HOSPITAL .... 16 PHARMACY/DRUG SELLER/STORE .... 17 FAITH BASED FACILITIES .... 18 HOSPICE .... 19 OTHER (Specify) _____ 96 DON'T KNOW 98	
911 3G170	Did the child have (or need) an operation for the illness?	YES .... 1 NO .... 2 DON'T KNOW 8	→**914** →**914**
912 3G175	What type of operation was performed?	ABDOMEN .... 1 CHEST .... 2 HEAD .... 3 OTHER (Specify) _____ 6 DON'T KNOW 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
913 3G180	Did s/he have the operation within 1 month before death ?	YES .... 1 NO .... 2 DON'T KNOW 8	
914 3G190	Was the child discharged from the hospital very ill?	YES .... 1 NO .... 2 DON'T KNOW 8	
915 3H100	Had s/he received immunization?	YES .... 1 NO .... 2 DON'T KNOW 8	→ **917** → **917**
916a 3H110	Do you have the child's vaccination card?	YES .... 1 NO .... 2 DON'T KNOW 8	→ **917** → **917**
916b 3H120	Can I see the child's vaccination card? NOTE THE VACCINES THE CHILD RECEIVED BELOW)	YES .... 1 NO / DON'T HAVE IT .... 2 DON'T KNOW 8	
916c 3H125	NOTE VACCINES HERE _____ _____		
917 3GS270	In the month before death, how many contacts with formal health services did the child have?	NUMBER OF CONTACTS [ ][ ] DON'T KNOW 98	
918 3H160	Did a health care worker tell you the cause of death?	YES .... 1 NO .... 2 DON'T KNOW 8	→ **920** → **920**
919 3GS290	What did the health care worker say?	_____ _____ _____	
920 3H330	Has the deceased's (biological) mother ever been tested for HIV?	YES .... 1 NO .... 2 DON'T KNOW 8	→ **922** → **922**
921 3H340	Was the HIV test positive?	YES .... 1 NO .... 2 DON'T KNOW 8	
922 3H350	Has the deceased's (biological) mother ever been told she had HIV/AIDS by a health worker?	YES .... 1 NO .... 2 DON'T KNOW 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
	SECTION 10. DATA ABSTRACTED FROM OFFICIAL DEATH CERTIFICATE OR MEDICAL CERTIFICATION OF CAUSE OF DEATH		
1001a	Was the official death certificate or medical certification of cause of death issued for the deceased?	YES SEEN .... 1 YES NOT SEEN .... 2 NO .... 3 DON'T KNOW 8	→ 1101 → 1101 → 1101
1001b	Please specify which one is issued. IF BOTH WERE ISSUED, USE THE OFFICIAL DEATH CERTIFICATE FOR QUESTIONS BELOW. OTHERWISE USE WHAT IS AVAILABLE.	OFFICIAL DEATH CERTIFICATE .... 1 MEDICAL CERTIFICATE OF CAUSE OF DEATH... 2	
1002	Can I see the death certificate / medical certification of cause of death? COPY DAY, MONTH AND YEAR OF DEATH FROM THE DEATH CERTIFICATE.	**DAY** **MONTH** **YEAR** ☐☐ ☐☐ ☐☐☐☐	
1003	COPY DAY, MONTH AND YEAR OF ISSUE OF DEATH CERTIFICATE.	**DAY** **MONTH** **YEAR** ☐☐ ☐☐ ☐☐☐☐	
1004	RECORD THE IMMEDIATE CAUSE OF DEATH FROM THE FIRST (TOP) LINE OF THE DEATH CERTIFICATE:		
1005	RECORD THE FIRST ANTECEDENT CAUSE OF DEATH FROM THE SECOND LINE OF THE DEATH CERTIFICATE (IF ANY):		
1006	RECORD THE SECOND ANTECEDENT CAUSE OF DEATH FROM THE THIRD LINE OF THE DEATH CERTIFICATE (IF ANY):		
1007	RECORD THE THIRD ANTECEDENT CAUSE OF DEATH FROM THE FOURTH LINE OF THE DEATH CERTIFICATE (IF ANY):		
1008	RECORD THE CONTRIBUTING CAUSES OF DEATH FROM THE CERTIFICATE (PART 2)		

SECTION 11. DATA ABSTRACTED FROM OTHER HEALTH RECORDS		
1101	DO YOU HAVE ANY OTHER HEALTH RECORDS AVAILABLE THAT BELONGED TO THE DECEASED ?	YES .... 1 NO .... 2 → 1201
1102	ASK TO SEE THEM. AND FOR EACH TYPE OF HEALTH RECORD SUMMARIZE THE DETAILS FOR LAST 2 VISITS (IF MORE THAN 2) AND RECORD DATE OF ISSUE. (RECORD INFORMATION ABOUT MOTHER AND STILLBORN DECEASED CHILD)	
1103	CERTIFICATE OF CAUSE OF DEATH	
1104	POST MORTEM RESULTS (CAUSE OF DEATH)	
1105	MCH/ANC UNDER FIVE CARDS (RELEVANT INFORMATION)	
1106	HOSPITAL PRESCRIPTION/ MEDICINE PACKAGE OR BOTTLES (RELEVANT INFORMATION)	
1107	TREATMENT CARDS (RELEVANT INFORMATION)	
1108	HOSPITAL DISCHARGE (RELEVANT INFORMATION)	
1109	LABORATORY RESULTS (RELEVANT INFORMATION)	
1110	OTHER HOSPITAL DOCUMENTS SPECIFY:	

NO.	QUESTIONS AND FILTERS		SKIP
SECTION 12: BACKGROUND AND CONTEXT			
1201 4A100	In the final days, did the child travel to a hospital or health facility?	YES .... 1 NO .... 2 DON'T KNOW 8	→**1206** →**1206**
1202 4A110	Did s/he use motorised transport to get to the hospital or health facility?	YES .... 1 NO .... 2 DON'T KNOW 8	
1203 4A120	Were there any problems during admission to the hospital or health facility?	YES .... 1 NO .... 2 DON'T KNOW 8	
1204 4A130	Were there any problems with the way that s/he was treated (medical treatment, procedures, interpersonal attitudes, respect, dignity) in the hospital or health facility?	YES .... 1 NO .... 2 DON'T KNOW 8	
1205 4A140	Were there any problems getting medications, or diagnostic tests in the hospital or health facility?	YES .... 1 NO .... 2 DON'T KNOW 8	
1206 4A150	Does it take more than 2 hours to get to the nearest hospital or health facility from the deceased's household?	YES .... 1 NO .... 2 DON'T KNOW 8	
1207 4A160	In the final days before death, were there any doubts about whether medical care was needed?	YES .... 1 NO .... 2 DON'T KNOW 8	
1208 4A170	In the final days before death, was traditional medicine used?	YES .... 1 NO .... 2 DON'T KNOW 8	
1209 4A180	In the final days before death, did anyone use a telephone or cell phone to call for help?	YES .... 1 NO .... 2 DON'T KNOW 8	
1210 4A190	Over the course of illness, did the total costs of care and treatment prohibit other household payments?	YES .... 1 NO .... 2 DON'T KNOW 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
	SECTION 13: DEATH REGISTRATION AND CERTIFICATION		
1301	Was the death of the deceased registered with National Registration	YES .... 1 NO .... 2 DON'T KNOW 8	→ 1306 → 1306
1302	Child's Death Registration / Certificate Number		
1303	Date of Registration COPY DAY, MONTH AND YEAR OF DEATH	**DAY** **MONTH** **YEAR**	
1304	PLACE OF REGISTRATION		
1305	NATIONAL IDENTIFICATION NUMBER OF THE DECEASED		
1306	RECORD THE TIME AT THE END OF INTERVIEW	HOURS .... MINUTES	

INTERVIEWER'S OBSERVATIONS

TO BE FILLED IN AFTER COMPLETING INTERVIEW

_____

_____

_____

_____

_____

_____

COMMENTS ON SPECIFIC QUESTIONS:

_____

_____

_____

_____

_____

ANY OTHER COMMENTS:

_____

_____

_____

_____

_____

SUPERVISOR'S OBSERVATIONS

_____

_____

_____

_____

_____

_____

_____

NAME OF THE SUPERVISOR: _____   DATE: _____

ZAMBIA VERBAL AUTOPSY QUESTIONNAIRE **3**
DEATH OF A PERSON AGED 15 YEARS AND ABOVE

ID/CONTROL/REFERENCE NUMBER

SECTION 1.1 INTERVIEWER VISITS

	1	2	3	FINAL VISIT
DATE				DAY
				MONTH
INTERVIEWER'S NAME				YEAR 2 0
				INT. NUMBER
RESULT*	☐	☐	☐	RESULT
NEXT VISIT: DATE				TOTAL NUMBER
TIME				OF VISITS

*RESULT CODES:
1   COMPLETED   2   NOT AT HOME   3   POSTPONED   4   REFUSED
5   PARTLY COMPLETED   6   NO APPROPRIATE RESPONDENT FOUND   7   OTHER _____
                                                                                    (SPECIFY)

PLACE NAME _____
ADDRESS/DIRECTIONS TO HOUSEHOLD _____

SECTION 1.2 ADDITIONAL DEMOGRAPHIC INFORMATION
(FOR USE IN SAMPLE VITAL REGISTRATION OR DEMOGRAPHIC SURVEILLANCE SITE)

PROVINCE _____

DISTRICT _____

CONSTITUENCY _____

WARD _____

REGION   1. RURAL   2. URBAN

CSA . . . .

SEA . . . .

CENSUS BUILDING NUMBER (CBN) . . . .

HOUSING UNIT NUMBER (HUN) . . . .

HOUSEHOLD NUMBER (HHN) . . . .

NAME OF HOUSEHOLD HEAD _____

VILLAGE/LOCALITY _____

RESIDENTIAL ADDRESS/VILLAGE NAME _____

CHIEF'S AREA _____

INFORMED CONSENT for Death Verbal Autopsy Interview (ENGLISH)

Hello. My name is _____ and I am working with the Central Statistical Office / Department of National Registration, Passport and Citizenship / Ministry of Health. We are conducting a survey on health issues focusing on cause of death among women, men and children in this community. The government wants to learnabout the major causes of death among different age groups of people and the impact that health programmes are having in reducing the burden of disease and death in the community. This will help the government plan for health services and programmes to combat various diseases affecting the population in your community.

As part of this effort, we are doing interviews in households where a death has happened to help determine the cause of death.

The interview usually takes about 20 to 40 minutes.

We understand that talking about the health of the deceased can be a sensitive matter. What you tell us will be kept strictly confidential and only the few carefully trained people on the survey team will have access to it. No report will include individual names or home locations. Reports will focus on counts of death by type of death.

Your participation in this survey is very important and voluntary. You should be aware that your answers about the deceased may say something about your own health. So if we come to a question you don't want to answer, just tell me and I will go on to the next question. You may also stop the interview at any time.

hope that you will participate in this survey because your views are very important.

At this time, do you want to ask me anything about the survey?

May I begin the interview now?

No, consent for participation not given (   ): Interviewer Signature : _____

Yes, Consent for participation given (   ):   Interviewer Signature : _____

Date: _____

If you have any questions about this survey, please contact:

Ms. Nchimunya Nkombo   Mr Nyahoda Martin
Principal Investigator   Principal Investigator
Central Statistical Office   National Registration Passport and Citizenship
P.O Box 31908   P.O. Box 32311
Lusaka   Lusaka
Telephone 260-1-251377   Telephone +260-211-228197

If you ever have questions about your rights or ethics as a research subject, please contact:

Mr Shephard Khondowe
Tropical Diseases Research Centre
P.O. BOX 71769
NDOLA
Telephone 260-212 - 615444

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
SECTION 2. BASIC INFORMATION ABOUT RESPONDENT			
201	RECORD THE TIME AT START OF INTERVIEW	HOUR . . . . □□ MINUTES . . . . □□	
202	NAME OF THE RESPONDENT	_____ (NAME)	
203	What is your relationship to the deceased?	FATHER . . . . 1 MOTHER . . . . 2 SPOUSE . . . . 3 SIBLING . . . . 4 CHILD . . . . 5 OTHER RELATIVE _____ 6 (SPECIFY) NO RELATION 8	
204	Did you live with the deceased in the period leading to her/his death?	YES . . . . 1 NO 2	
SECTION 3. INFORMATION ON THE DECEASED AND DATE/PLACE OF DEATH			
301	What was the name of the deceased?	_____ (NAME)	
302	Was the deceased male or female?	MALE . . . . 1 FEMALE 2	
303	When was the deceased born? RECORD '98' IF DON'T KNOW DAY OR MONTH RECORD '9998' IF DON'T KNOW YEAR	DAY . . . . □□ MONTH . . . . □□ YEAR . . . . □□□□	
304	How old was the deceased when s/he died?	AGE IN YEARS . . . . □□□	
305	What was her/his occupation, that is, what kind of work did s/he mainly do?	_____ □□□□ _____ _____	
306	What was the highest level of formal education the deceased attended?	NONE . . . . 1 PRIMARY . . . . 2 SECONDARY . . . . 3 HIGHER . . . . 4 DON'T KNOW 8	
307	What was her/his marital status?	NEVER MARRIED . . . . 1 MARRIED/LIVING WITH A PARTNER . . . . . 2 WIDOWED . . . . 3 DIVORCED . . . . 4 SEPARATED . . . . 5 DON'T KNOW 8	
308	When did s/he die? RECORD '98' IF DON'T KNOW DAY OR MONTH RECORD '9998' IF DON'T KNOW YEAR	DAY . . . . □□ MONTH . . . . □□ YEAR . . . . □□□□	
309a	Where did s/he die?	HOSPITAL . . . . 1 OTHER HEALTH FACILITY . . . . 2 HOME . . . . 3 OTHER _____ 6 (SPECIFY) DON'T KNOW 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
309b	If s/he died in hospital or health facility WRITE NAME OF HEALTH FACILITY	 (NAME OF FACILITY)	
310	What was the name of the biological father ? Ask if the deceased is under 18 years of age		
311	What was the name of the biological mother ? Ask if the deceased is under 18 years of age		
312	What was her/his citizenship / nationality?	CITIZEN AT BIRTH .... 1 CITIZEN BY NATURALIZATION/REGISTRATION .. 2 FOREIGN NATIONAL .... 3 CITIZEN BY DESCENT .... 4 DON'T KNOW 8	
313	During which season did the person die?	WET .... 1 DRY 2	

SECTION 4. RESPONDENT'S ACCOUNT OF ILLNESS/EVENTS LEADING TO DEATH

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
401	Could you tell me about the illness/events that led to her/his death? 		
402	FIRST CAUSE OF DEATH ACCORDING TO RESPONDENT		
403	SECOND CAUSE OF DEATH ACCORDING TO RESPONDENT		

SECTION 5. HISTORY OF PREVIOUSLY KNOWN MEDICAL CONDITIONS

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
501	I would like to ask you some questions concerning previously known medical conditions the deceased had; injuries and accidents that the deceased suffered; and signs and symptoms that the deceased had/showed when s/he was ill. Some of these questions may not appear to be directly related to his/her death. Please bear with me and answer all the questions. They will help us to get a clear picture of all possible symptoms that the deceased had. Please tell me if the deceased suffered from any of the following illnesses diagnosed by a physician or a health worker:		
502	Heart disease?	YES .... 1 NO .... 2 DON'T KNOW 8	
503	Diabetes?	YES .... 1 NO .... 2 DON'T KNOW 8	
504	Asthma?	YES .... 1 NO .... 2 DON'T KNOW 8	
505	Epilepsy?	YES .... 1 NO .... 2 DON'T KNOW 8	
506	Malnutrition?	YES .... 1 NO .... 2 DON'T KNOW 8	
507	Cancer?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 509 → 509

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
508	Can you specify the type or site of cancer?	TYPE/SITE _____ _____	
509	Tuberculosis?	YES .... 1 NO .... 2 DON'T KNOW 8	
510	HIV/AIDS?	YES .... 1 NO .... 2 DON'T KNOW 8	
511	High blood pressure ?	YES .... 1 NO .... 2 DON'T KNOW 8	
512	Measles?	YES .... 1 NO .... 2 DON'T KNOW 8	
513	Chronic Obstructive Pulmonary Disease (COPD) ?	YES .... 1 NO .... 2 DON'T KNOW 8	
514	Stroke ?	YES .... 1 NO .... 2 DON'T KNOW 8	
515	Sickle Cell disease ?	YES .... 1 NO .... 2 DON'T KNOW 8	
516	Liver disease ?	YES .... 1 NO .... 2 DON'T KNOW 8	
517	Kidney disease ?	YES .... 1 NO .... 2 DON'T KNOW 8	
518	Dementia ?	YES .... 1 NO .... 2 DON'T KNOW 8	
519	Depression ?	YES .... 1 NO .... 2 DON'T KNOW 8	
520	Dengue fever ?	YES .... 1 NO .... 2 DON'T KNOW 8	
521	Did s/he have a recent positive test for malaria?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 523 → 523
522	Did s/he have a recent negative test for malaria?	YES .... 1 NO .... 2 DON'T KNOW 8	
523	Did s/he suffer from any other medically diagnosed illness?	YES .... 1 NO .... 2 DON'T KNOW 8	 → 601 → 601
524	Can you specify the illness?	ILLNESS _____ _____	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
	SECTION 6. HISTORY OF INJURIES/ACCIDENTS		
601	Did the deceased suffer from any injury or accident that led to her/his death?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 701 → 701
602	Was the injury or accident intentionally inflicted by someone else?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 608 → 608
603	Was s/he injured by a firearm?	YES .... 1 NO .... 2 DON'T KNOW 8	
604	Was s/he stabbed, cut or pierced?	YES .... 1 NO .... 2 DON'T KNOW 8	
605	Was s/he strangled?	YES .... 1 NO .... 2 DON'T KNOW 8	
606	Was s/he injured by a blunt force?	YES .... 1 NO .... 2 DON'T KNOW 8	
607	Was s/he injured by burns?	YES .... 1 NO .... 2 DON'T KNOW 8	
608	Was it a road traffic accident?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 611 → 611
609	What was her / his role in the road traffic accident?	PEDESTRIAN .... 01 IN CAR OR LIGHT VEHICLE .... 02 IN BUS OR HEAVY VEHICLE . ... 03 ON A MOTORCYCLE .... 04 ON A PEDAL CYCLE .... 05 OTHER _____ 96 (SPECIFY) DON'T KNOW 98	
610	What was the counterpart that was hit during the road traffic accident?	PEDESTRIAN .... 01 STATIONARY OBJECT .... 02 CAR OR LIGHT VEHICLE .... 03 BUS OR HEAVY VEHICLE . ... 04 MOTORCYCLE .... 05 PEDAL CYCLE .... 06 OTHER _____ 96 (SPECIFY) DON'T KNOW 98	→ 621 → 621 → 621 → 621 → 621 → 621 → 621 → 621
611	Was s/he injured in a fall?	YES .... 1 NO .... 2 DON'T KNOW 8	
612	Did s/he die of drowning?	YES .... 1 NO .... 2 DON'T KNOW 8	
613	Did s/he suffer from accidental burns?	YES .... 1 NO .... 2 DON'T KNOW 8	
614	Was s/he accidentally injured by a blunt force?	YES .... 1 NO .... 2 DON'T KNOW 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES		SKIP
615	Was she accidentally injured by a plant/animal/insect that led to her/his death?	YES .... NO .... DON'T KNOW	1 2 8	→ 617 → 617
616	What type of plant/animal/insect?	DOG .... SNAKE .... INSECT OR SCORPION .... OTHER _____ (SPECIFY) DON'T KNOW	1 2 3 6 8	
617	Was s/he injured by a force of nature?	YES .... NO .... DON'T KNOW	1 2 8	
616	Was there any poisoning?	YES .... NO .... DON'T KNOW	1 2 8	
619	Was s/he subjected to violence / assault?	YES .... NO .... DON'T KNOW	1 2 8	
620	Was it electrocution?	YES .... NO .... DON'T KNOW	1 2 8	
621	Do you think s/he committed suicide ?	YES .... NO .... DON'T KNOW	1 2 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
	SECTION 7. SYMPTOMS AND SIGNS ASSOCIATED WITH ILLNESS OF WOMEN		
701a	Did she have an ulcer or swelling in the breast?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 702 → 702
701b	For how long did she have an ulcer or swelling in the breast?	DAYS .... 1 MONTHS .... 2 DON'T KNOW 9 9 8	
702	Did she ever have a period or menstruate?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 707 → 707
703	Did she have excessive vaginal bleeding during menstrual periods?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 705a → 705a
704	For how long did she have the excessive vaginal bleeding during menstrual periods?	DAYS .... 1 MONTHS .... 2 DON'T KNOW 9 9 8	
705a	Did she have vaginal bleeding in between menstrual periods?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 706 → 706
705b	For how long did she have vaginal bleeding in between menstrual periods?	DAYS .... 1 MONTHS .... 2 DON'T KNOW 9 9 8	
706	Did she have vaginal bleeding after cessation of menstruation?	YES .... 1 NO .... 2 DON'T KNOW 8	
707	Did she have abnormal vaginal discharge?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 801 → 801
708	For how long did she have abnormal vaginal discharge?	DAYS .... 1 MONTHS .... 2 DON'T KNOW 9 9 8	
	SECTION 8. SYMPTOMS AND SIGNS ASSOCIATED WITH PREGNANCY		
801	Was she pregnant at the time of death?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 806 → 806
802	How long was she pregnant?	WEEKS .... 1 MONTHS .... 2 DON'T KNOW 9 9 8	
803	How many pregnancies had she had, including this one?	PREGNANCIES .... DON'T KNOW 9 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP

804	During the last 3 months of pregnancy, did she suffer from any of the following illnesses:
	
	01 Vaginal bleeding?
	02 Smelly vaginal discharge?
	03 Puffy face?
	04 Headache?
	05 Blurred vision?
	06 Convulsion?
	07 Febrile illness?
	08 Severe abdominal pain that was not labor pain?
	
	09 Pallor and shortness of breath (both present)?
	
	10 Did she suffer from any other illness?
		YES NO DK
		VAGINAL BLEEDING 1 2 8
		SMELLY VAGINAL DISCHARGE ... 1 2 8
		PUFFY FACE 1 2 8
		HEADACHE 1 2 8
		BLURRED VISION 1 2 8
		CONVULSION 1 2 8
		FEBRILE ILLNESS 1 2 8
		SEVERE ABDOMINAL PAIN
		  (NOT LABOR PAIN) 1 2 8
		PALLOR/SHORTNESS
		  OF BREATH (BOTH) 1 2 8
		OTHER ILLNESS 1 2 8
		    SPECIFY: _____	

805a	Did she die during labor, but before delivery?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 808
805b	Did she die within 24 hours after delivery ?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 808
806	Did she give birth recently?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 818 → 818
807	How many days after giving birth did she die?	DAYS .... ☐☐ DON'T KNOW 9 8	
808	Was there excessive bleeding on the day labor started?	YES .... 1 NO .... 2 DON'T KNOW 8	
809	Was there excessive bleeding during labor before delivering the baby?	YES .... 1 NO .... 2 DON'T KNOW 8	
810	Was there excessive bleeding after delivering the baby?	YES .... 1 NO .... 2 DON'T KNOW 8	
811	Did she have difficulty in delivering the placenta?	YES .... 1 NO .... 2 DON'T KNOW 8	
812	Was she in labor for unusually long (more than 24 hours)?	YES .... 1 NO .... 2 DON'T KNOW 8	
813	Was it a normal vaginal delivery?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 815 → 815
814	What type of delivery was it?	FORCEPS/VACUUM .... 1 CAESAREAN SECTION .... 2 OTHER _____ 6 (SPECIFY) DON'T KNOW 8	
815	Did she have foul smelling vaginal discharge?	YES .... 1 NO .... 2 DON'T KNOW 8	
816	Where did she give birth?	HOSPITAL .... 1 OTHER HEALTH FACILITY .... 2 HOME .... 3 OTHER _____ 6 (SPECIFY) DON'T KNOW 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
817	Who conducted the delivery?	DOCTOR .... 1 NURSE/MIDWIFE .... 2 TRADITIONAL BIRTH ATTENDANT .... 3 RELATIVE .... 4 MOTHER BY HERSELF .... 5 OTHER _____ 6 (SPECIFY) DON'T KNOW 8	
818	Did she experience an abortion recently?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 901 → 901
819	Did she die during the abortion?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 821 → 821
820	How many days before death did she have the abortion?	DAYS .... ☐☐ DON'T KNOW 9 8	
821	How many months pregnant was she when she had the abortion?	MONTHS .... ☐☐ DON'T KNOW 9 8	
822	Did she have heavy bleeding after the abortion?	YES .... 1 NO .... 2 DON'T KNOW 8	
823	Did the abortion occur by itself, spontaneously?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 901 → 901
824	Did she take medicine or treatment to induce abortion?	YES .... 1 NO .... 2 DON'T KNOW 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
SECTION 9. SIGNS AND SYMPTOMS NOTED DURING THE FINAL ILLNESS			
901	For how long was s/he ill before s/he died?	DAYS .... 1 MONTHS .... 2 DON'T KNOW 9 9 8	
902	Did s/he have a fever?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 907 → 907
903	For how long did s/he have a fever?	DAYS .... 1 MONTHS .... 2 DON'T KNOW 9 9 8	
904	Was the fever continuous or on and off?	CONTINUOUS .... 1 ON AND OFF .... 2 DON'T KNOW 8	
905	Did s/he have fever only at night?	YES .... 1 NO .... 2 DON'T KNOW 8	
906	Did s/he have chills/rigor?	YES .... 1 NO .... 2 DON'T KNOW 8	
907	Did s/he have a cough?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 913 → 913
908	For how long did s/he have a cough?	DAYS .... 1 MONTHS .... 2 DON'T KNOW 9 9 8	
909	Was the cough severe?	YES .... 1 NO .... 2 DON'T KNOW 8	
910	Was the cough productive with sputum?	YES .... 1 NO .... 2 DON'T KNOW 8	
911	Did s/he cough out blood?	YES .... 1 NO .... 2 DON'T KNOW 8	
912	Did s/he have night sweats?	YES .... 1 NO .... 2 DON'T KNOW 8	
913	Did s/he have any breathing problem?	YES .... 1 NO .... 2 DON'T KNOW 8	
914a	Did s/he have breathlessness?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 915a → 915a
914b	For how long did s/he have breathlessness?	DAYS .... 1 MONTHS .... 2 DON'T KNOW 9 9 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
914c	Was s/he unable to carry out daily routines due to breathlessness?	YES .... 1 NO .... 2 DON'T KNOW 8	
914d	Was s/he breathless while lying flat?	YES .... 1 NO .... 2 DON'T KNOW 8	
915a	During the illness that led to death, did s/he have fast breathing?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 916a → 916a
915b	For how many days did the fast breathing last?	DAYS .... ☐☐ DON'T KNOW 9 8	
916a	During illness that led to death, did s/he have difficulty breathing ?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 917 → 917
916b	Was the difficulty breathing continuous or on-and-off?	CONTINUOUS .... 1 ON-AND-OFF .... 2 DON'T KNOW 8	
917	During illness that led to death, did her/his breathing sound like any of the following Stridor / Grunting / wheezing?	YES .... 1 NO .... 2 DON'T KNOW 8	
918	Did s/he have chest pain?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 928 → 928
919	For how long did s/he have chest pain?	DAYS .... 1 ☐☐ MONTHS .... 2 DON'T KNOW 9 9 8	
920	Did chest pain start suddenly or gradually?	SUDDENLY .... 1 GRADUALLY .... 2 DON'T KNOW 8	
921	When s/he had severe chest pain, how long did it last?	LESS THAN HALF AN HOUR .... 1 HALF AN HOUR TO 24 HOURS .... 2 LONGER THAN 24 HOURS . ... 3 DON'T KNOW 8	
922	Was the chest pain located below the breastbone (sternum)?	YES .... 1 NO .... 2 DON'T KNOW 8	
923	Was the chest pain located over the heart and did it spread to the left arm?	YES .... 1 NO .... 2 DON'T KNOW 8	
924	Was the chest pain located over the ribs (sides)?	YES .... 1 NO .... 2 DON'T KNOW 8	
925	Was the chest pain continuous or on and off?	CONTINUOUS .... 1 ON AND OFF .... 2 DON'T KNOW 8	
926	Did the chest pain get worse while coughing?	YES .... 1 NO .... 2 DON'T KNOW 8	
927	Did s/he have palpitations?	YES .... 1 NO .... 2 DON'T KNOW 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
928	Did s/he have diarrhea?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 933 → 933
929	For how long did s/he have diarrhea?	DAYS .... 1 MONTHS .... 2 DON'T KNOW 9 9 8	
930	Was the diarrhea continuous or on and off?	CONTINUOUS .... 1 ON AND OFF .... 2 DON'T KNOW 8	
931	At any time during the final illness was there blood in the stool?	YES .... 1 NO .... 2 DON'T KNOW 8	
932	When the diarrhea was most severe, how many times did s/he pass stools in a day?	NUMBER OF TIMES DON'T KNOW 9 8	
933	Did s/he vomit?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 937 → 937 937
934	For how long did s/he vomit?	DAYS .... 1 MONTHS .... 2 DON'T KNOW 9 9 8	
935	Did the vomit look like a coffee-colored fluid or bright red/blood red or some other?	COFFEE-COLORED FLUID .... 1 BRIGHT RED/BLOOD RED .... 2 OTHER _____ 6 (SPECIFY) DON'T KNOW 8	
936	When the vomiting was most severe, how many times did s/he vomit in a day?	NUMBER OF TIMES DON'T KNOW 9 8	
937	CHECK QUESTION 302 FOR SEX OF THE DECEASED: FEMALE ☐ MALE ☐ ──────────────→		939a
938	CHECK QUESTIONS 801, 805, 806, 819 TO SEE IF SHE DIED DURING PREGNANCY, LABOR, ABORTION OR POSTPARTUM: NO ☐ YES ☐ ──────────────→		948a
939a	Did s/he have abdominal pain?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 941 → 941
939b	For how long did s/he have abdominal pain?	DAYS .... 1 MONTHS .... 2 DON'T KNOW 9 9 8	
940a	Was the abdominal pain severe?	YES .... 1 NO .... 2 DON'T KNOW 8	
940b	Was the pain in the upper or lower abdomen?	UPPER .... 1 LOWER .... 2 DON'T KNOW 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
941	Did s/he have abdominal distension? (More than usually protruding abdomen)	YES .... 1 NO .... 2 DON'T KNOW 8	→ 944 → 944
942	For how long did s/he have abdominal distension?	DAYS .... 1 MONTHS .... 2 DON'T KNOW 9 9 8	
943	Did the distension develop rapidly within days or gradually over months?	RAPIDLY WITHIN DAYS .... 1 GRADUALLY OVER MONTHS .... 2 DON'T KNOW 8	
944	Was there a period of a day or longer during which s/he did not pass any stool?	YES .... 1 NO .... 2 DON'T KNOW 8	
945	Did s/he have any mass in the abdomen?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 948a → 948a
946	For how long did s/he have the mass in the abdomen?	DAYS .... 1 MONTHS .... 2 DON'T KNOW 9 9 8	
947	Where in the abdomen was the mass located?	RIGHT UPPER ABDOMEN .... 1 LEFT UPPER ABDOMEN .... 2 LOWER ABDOMEN .... 3 ALL OVER ABDOMEN .... 4 DON'T KNOW 8	
948a	Did s/he have difficulty swallowing?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 952 → 952
948b	Did s/he have difficulty or pain while swallowing solids?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 950 → 950
949	For how long did s/he have difficulty or pain while swallowing solids?	DAYS .... 1 MONTHS .... 2 DON'T KNOW 9 9 8	
950	Did s/he have difficulty or pain while swallowing liquids?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 952 → 952
951	For how long did s/he have difficulty or pain while swallowing liquids?	DAYS .... 1 MONTHS .... 2 DON'T KNOW 9 9 8	
952	Did s/he have headache?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 955 → 955
953	For how long did s/he have the headache?	DAYS .... 1 MONTHS .... 2 DON'T KNOW 9 9 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
954	Was the headache severe?	YES .... 1 NO .... 2 DON'T KNOW 8	
955	Did s/he have a stiff or painful neck?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 957 → 957
956	For how long did s/he have a stiff or painful neck?	DAYS .... ☐☐ DON'T KNOW 9 8	
957	Did s/he have mental confusion?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 960 → 960
958	For how long did s/he have mental confusion?	DAYS .... 1 ☐☐ MONTHS .... 2 DON'T KNOW 9 9 8	
959	Did the mental confusion start suddenly, quickly within a single day, or slowly over many days?	SUDDENLY .... 1 WITHIN A DAY (FAST) .... 2 SLOWLY (MANY DAYS) .... 3 DON'T KNOW 8	
960	Did s/he become unconscious?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 963 → 963
961	For how long was s/he unconscious?	DAYS .... 1 ☐☐ MONTHS .... 2 DON'T KNOW 9 9 8	
962	Did the unconsciousness start suddenly, quickly within a single day, or slowly over many days?	SUDDENLY .... 1 WITHIN A DAY (FAST) .... 2 SLOWLY (MANY DAYS) .... 3 DON'T KNOW 8	
963	Did s/he have convulsions?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 965 → 965
964a	For how long did s/he have convulsions?	DAYS .... 1 ☐☐ MONTHS .... 2 DON'T KNOW 9 9 8	
964b	Did s/he become unconscious immediately after the convulsions?	YES .... 1 NO .... 2 DON'T KNOW 8	
965	Was s/he unable to open the mouth?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 967 → 967
966	For how long was s/he unable to open the mouth?	DAYS .... ☐☐ DON'T KNOW 9 8	
967	Did s/he have stiffness of the whole body?	YES .... 1 NO .... 2 DON'T KNOW 8	→ → 969 969

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
968	For how long did s/he have stiffness of the whole body?	DAYS .... ☐☐ DON'T KNOW 9 8	
969	Did s/he have paralysis of one side of the body?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 972 → 972
970	For how long did s/he have paralysis of one side of the body?	DAYS .... 1 ☐☐ MONTHS .... 2 DON'T KNOW 9 9 8	
971	Did the paralysis of one side of the body start suddenly, quickly within a single day, or slowly over many days?	SUDDENLY .... 1 WITHIN A DAY (FAST) .... 2 SLOWLY (MANY DAYS) .... 3 DON'T KNOW 8	
972	Did s/he have paralysis of the lower limbs?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 975a → 975a
973	How long did s/he have paralysis of the lower limbs?	DAYS .... 1 ☐☐ MONTHS .... 2 DON'T KNOW 9 9 8	
974	Did the paralysis of the lower limbs start suddenly, quickly within a single day, or slowly over many days?	SUDDENLY .... 1 WITHIN A DAY (FAST) .... 2 SLOWLY (MANY DAYS) .... 3 DON'T KNOW 8	
975a	Did s/he have any urine problem?	YES .... 1 NO .... 2 DON'T KNOW 8	
975b	Was there any change in color of urine?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 977 → 977
976	For how long did s/he have the change in color of urine?	DAYS .... 1 ☐☐ MONTHS .... 2 DON'T KNOW 9 9 8	
977	During the final illness did s/he ever pass blood in the urine?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 979 → 979
978	For how long did s/he pass blood in the urine?	DAYS .... 1 ☐☐ MONTHS .... 2 DON'T KNOW 9 9 8	
979	Was there any change in the amount of urine s/he passed daily?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 982a → 982a
980	For how long did s/he have the change in the amount of urine passed daily?	DAYS .... 1 ☐☐ MONTHS .... 2 DON'T KNOW 9 9 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
981	Did s/he pass too much urine, too little urine, or no urine at all?	TOO MUCH .... 1 TOO LITTLE...................................... 2 NO URINE AT ALL .... 3 DON'T KNOW 8	
982a	During the illness that led to death, did s/he have any skin rash?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 985 → 985
982b	For how long did s/he have the skin rash?	DAYS .... ☐☐ DON'T KNOW 9 8	
983	Was the rash on: 1 The face? 2 The trunk? 3 The arms and legs? 4 Any other place?	YES NO DK FACE .... 1 2 8 TRUNK .... 1 2 8 ARMS AND LEGS .... 1 2 8 OTHER PLACE .... 1 2 8 SPECIFY:_____ ↵	
984	What did the rash look like?	MEASLES RASH .... 1 RASH WITH CLEAR FLUID .... 2 RASH WITH PUS .... 3 DON'T KNOW 8	
985	During the illness that led to death, did his/her skin flake off in patches?	YES .... 1 NO .... 2 DON'T KNOW 8	
986	Did s/he have red eyes?	YES .... 1 NO .... 2 DON'T KNOW 8	
987	Did s/he have bleeding from the nose, mouth, or anus?	YES .... 1 NO .... 2 DON'T KNOW 8	
988	Did s/he ever have shingles/herpes zoster?	YES .... 1 NO .... 2 DON'T KNOW 8	
989a	Did s/he have noticeable weight loss?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 990a → 990a
989b	For how long did s/he have weight loss?	DAYS .... 1 ☐☐ MONTHS .... 2 DON'T KNOW 9 9 8	
989c	Did s/he look very thin and wasted?	YES .... 1 NO .... 2 DON'T KNOW 8	
990a	Did s/he have mouth sores or white patches in the mouth or on the tongue?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 991a → 991a
990b	For how long did s/he have mouth sores or white patches in the mouth or on the tongue?	DAYS .... ☐☐ DON'T KNOW 9 8	
991a	Did s/he have any swelling?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 992a → 992a

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
991b	For how long did s/he have the swelling?	DAYS . . . . 1 MONTHS . . . . 2 DON'T KNOW 9 9 8	
991c	Was the swelling on: 1 The face? 2 The joints? 3 The ankles? 4 The whole body? 5 Any other place?	**YES NO DK** FACE 1 2 8 JOINTS . . . . 1 2 8 ANKLES . . . . 1 2 8 WHOLE BODY 1 2 8 OTHER PLACE . . . . 1 2 8 SPECIFY:_____	
992a	Did s/he have any lumps?	YES . . . . 1 NO . . . . 2 DON'T KNOW 8	→ 993a → 993a
992b	For how long did s/he have the lumps?	DAYS . . . . 1 MONTHS . . . . 2 DON'T KNOW 9 9 8	
992c	Were the lumps on: 1 The neck? 2 The armpit? 3 The groin? 4 Any other place?	**YES NO DK** NECK . . . . 1 2 8 ARMPIT . . . . 1 2 8 GROIN . . . . 1 2 8 OTHER PLACE . . . . 1 2 8 SPECIFY:_____	
993a	Did s/he have yellow discoloration of the eyes?	YES . . . . 1 NO . . . . 2 DON'T KNOW 8	→ 994a → 994a
993b	For how long did s/he have yellow discoloration of the eyes?	DAYS . . . . 1 MONTHS . . . . 2 DON'T KNOW 9 9 8	
994a	Did s/he look pale (thinning/lack of blood) or have pale palms, eyes or nail beds?	YES . . . . 1 NO . . . . 2 DON'T KNOW 8	→ 995a → 995a
994b	For how long did s/he look pale or have pale palms, eyes or nail beds?	DAYS . . . . DON'T KNOW 9 8	
995a	Did s/he have an ulcer, abscess, or sore anywhere on the body?	YES . . . . 1 NO . . . . 2 DON'T KNOW 8	→ 1001 → 1001
995b	For how long did s/he have the ulcer, abscess, or sore?	DAYS . . . . DON'T KNOW 9 8	
995c	What was the location of the ulcer, abscess, or sore?	_____ _____ (SPECIFY)	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
	SECTION 10: TREATMENT AND HEALTH SERVICE USE FOR THE FINAL ILLNESS		
1001 3G110	Did the deceased person receive any treatment for the illness that led to death?	YES .... 1 NO .... 2 DON'T KNOW 8	→ **1011** → **1011**
1002 3G115	Can you please list the treatments the deceased person was given for the illness that led to death? COPY FROM PRESCRIPTION/DISCHARGE NOTES, IF AVAILABLE		
1003 3G120	Did the deceased receive (or need) oral rehydration salts (ORS)?	YES .... 1 NO ....2 DON'T KNOW 8	
1004 3G130	Did the deceased receive (or need) intravenous fluids (drip) treatment?	YES .... 1 NO ....2 DON'T KNOW 8	
1005 3G140	Did the deceased receive (or need) a blood transfusion?	YES .... 1 NO ....2 DON'T KNOW 8	
1006 3G150	treatment/food through a tube passed through the nose?	YES .... 1 NO ....2 DON'T KNOW 8	
1007 3G160	Did the deceased receive (or need) injectable antibiotics?	YES .... 1 NO ....2 DON'T KNOW 8	
1008 3G165	Did s/he receive (or need) antiretroviral therapy (ART) ?	YES .... 1 NO ....2 DON'T KNOW 8	
1009 3GS130	Did the deceased receive any other treatment? Specify.	SPECIFY DON'T KNOW 98	
1010 3H140	Where did the deceased receive treatment before death? MULTIPLE RESPONSE POSSIBLE, CIRCLE ALL RESPONSES MENTIONED	HOME .... 11 TRADITIONAL HEALER ....12 GOVERNMENT CLINIC .... 13 GOVERNMENT HOSPITAL .... 14 PRIVATE CLINIC ....15 PRIVATE HOSPITAL .... 16 PHARMACY/DRUG SELLER/STORE .... 17 FAITH BASED FACILITIES. . . . . 18 HOSPICE . . . . 19 OTHER (Specify) _____ 96 DON'T KNOW 98	
1011 3G170	Did the deceased have (or need) an operation for the illness?	YES .... 1 NO ....2 DON'T KNOW 8	→ **1014** → **1014**
1012 3G175	What type of operation was performed?	ABDOMEN .... 1 CHEST ....2 HEAD ....3 OTHER (Specify) _____ 6 DON'T KNOW 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
1013 3G180	Did s/he have the operation within 1 month before death ?	YES .... 1 NO ....2 DON'T KNOW 8	
1014 3G190	Was s/he discharged from the hospital very ill?	YES .... 1 NO ....2 DON'T KNOW 8	
1015 3GS270	In the month before death, how many contacts with formal health services did the deceased person have?	NUMBER OF CONTACTS ☐☐ DON'T KNOW 98	
1016 3H160	Did a health care worker tell you the cause of death?	YES .... 1 NO ....2 → **1101** DON'T KNOW ....8 → **1101**	
1017 3GS290	What did the health care worker say?	_____ _____ _____	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
SECTION 11. RISK FACTORS			
1101	Did s/he drink alcohol?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 1106 → 1106
1102	How long had s/he been drinking? RECORD '00' IF LESS THAN ONE YEAR	YEARS .... ☐☐ DON'T KNOW 9 8	
1103	How often did s/he drink alcohol?	DAILY .... 1 FREQUENTLY (WEEKLY) .... 2 ONCE IN A WHILE .... 3 DON'T KNOW 8	
1104	Did s/he stop drinking?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 1106 → 1106
1105	How long before death did s/he stop drinking? RECORD '00' IF LESS THAN ONE MONTH	MONTHS .... ☐☐ DON'T KNOW 9 8	
1106	Did s/he smoke tobacco (cigarette, cigar, pipe, etc.)?	YES . ... 1 NO .... 2 DON'T KNOW 8	→ 1201 → 1201
1107	How long had s/he been smoking? RECORD '00' IF LESS THAN ONE YEAR	YEARS .... ☐☐ DON'T KNOW 9 8	
1108	How often did s/he smoke?	DAILY .... 1 FREQUENTLY (WEEKLY) .... 2 ONCE IN A WHILE .... 3 DON'T KNOW 8	→ 1110
1109	How many cigarettes did s/he smoke daily?	NUMBER OF CIGARETTES .... ☐☐ DON'T KNOW 9 8	
1110	Did s/he stop smoking before death?	YES .... 1 NO .... 2 DON'T KNOW 8	→ 1201 → 1201
1111	How long before death did s/he stop smoking? RECORD '00' IF LESS THAN ONE MONTH	MONTHS ... . ☐☐ DON'T KNOW 9 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP

SECTION 12. DATA ABSTRACTED FROM OFFICIAL DEATH CERTIFICATE OR MEDICAL CERTIFICATION OF CAUSE OF DEATH

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
1201a	Was the official death certificate or medical certification of cause of death issued for the deceased?	YES SEEN .... 1 YES NOT SEEN .... 2 NO .... 3 DON'T KNOW 8	→ 1301 → 1301 → 1301
1201b	Please specify which one is issued. IF BOTH WERE ISSUED, USE THE OFFICIAL DEATH CERTIFICATE FOR QUESTIONS BELOW. OTHERWISE USE WHAT IS AVAILABLE.	OFFICAL DEATH CERTIFICATE .... 1 MEDICAL CERTIFICATE OF CAUSE OF DEATH… 2	
1202	Can I see the death certificate / medical certification of cause of death? COPY DAY, MONTH AND YEAR OF DEATH FROM THE DEATH CERTIFICATE.	**DAY** **MONTH** **YEAR**	
1203	COPY DAY, MONTH AND YEAR OF ISSUE OF DEATH CERTIFICATE.	**DAY** **MONTH** **YEAR**	
1204	RECORD THE IMMEDIATE CAUSE OF DEATH FROM THE FIRST (TOP) LINE OF THE DEATH CERTIFICATE:		
1205	RECORD THE FIRST ANTECEDENT CAUSE OF DEATH FROM THE SECOND LINE OF THE DEATH CERTIFICATE (IF ANY):		
1206	RECORD THE SECOND ANTECEDENT CAUSE OF DEATH FROM THE THIRD LINE OF THE DEATH CERTIFICATE (IF ANY):		
1207	RECORD THE THIRD ANTECEDENT CAUSE OF DEATH FROM THE FOURTH LINE OF THE DEATH CERTIFICATE (IF ANY):		
1208	RECORD THE CONTRIBUTING CAUSES OF DEATH FROM THE CERTIFICATE (PART 2)		

SECTION 13. DATA ABSTRACTED FROM OTHER HEALTH RECORDS			
1301	OTHER HEALTH RECORDS AVAILABLE	YES . . . . 1 NO 2	→ 1311
1302	FOR EACH TYPE OF HEALTH RECORD SUMMARIZE DETAILS FOR LAST 2 VISITS (IF MORE THAN 2) AND RECORD DATE OF ISSUE		
1303	CERTIFICATE OF CAUSE OF DEATH		
1304	POST MORTEM RESULTS (CAUSE OF DEATH)		
1305	HOSPITAL PRESCRIPTION / MEDICINE PACKAGES OR BOTTLES (RELEVANT INFORMATION)		
1306	TREATMENT CARDS (RELEVANT INFORMATION)		
1307	HOSPITAL DISCHARGE (RELEVANT INFORMATION)		
1308	LABORATORY RESULTS (RELEVANT INFORMATION)		
1309	OTHER HOSPITAL DOCUMENTS SPECIFY:		

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES		SKIP
SECTION 14: BACKGROUND AND CONTEXT				
1401 4A100	In the final days before death, did the deceased person travel to a hospital or health facility?	YES .... NO .... DON'T KNOW	1 2 8	→ **1406** → **1406**
1402 4A110	Did s/he use motorised transport to get to the hospital or health facility?	YES .... NO .... DON'T KNOW	1 2 8	
1403 4A120	Were there any problems during admission to the hospital or health facility?	YES .... NO .... DON'T KNOW	1 2 8	
1404 4A130	Were there any problems with the way that s/he was treated (medical treatment, procedures, interpersonal attitudes, respect, dignity) in the	YES .... NO .... DON'T KNOW	1 2 8	
1405 4A140	Were there any problems getting medications, or diagnostic tests in the hospital or health facility?	YES .... NO .... DON'T KNOW	1 2 8	
1406 4A150	Does it take more than 2 hours to get to the nearest hospital or health facility from the deceased's	YES .... NO .... DON'T KNOW	1 2 8	
1407 4A160	In the final days before death, were there any doubts about whether medical care was needed?	YES .... NO .... DON'T KNOW	1 2 8	
1408 4A170	In the final days before death, was traditional medicine used?	YES .... NO .... DON'T KNOW	1 2 8	
1409 4A180	In the final days before death, did anyone use a telephone or cell phone to call for help?	YES .... NO .... DON'T KNOW	1 2 8	
1410 4A190	Over the course of illness, did the total costs of care and treatment prohibit other household payments?	YES .... NO .... DON'T KNOW	1 2 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP

SECTION 15: DEATH REGISTRATION AND CERTIFICATION

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
1501	Was the death of the deceased registered with National Registration?	YES .... 1 NO .... 2 → 1506 DON'T KNOW .... 8 → 1506	
1502	Child's Death Registration Number / Certificate		
1503	Date of Registration COPY DAY, MONTH AND YEAR OF DEATH	DAY MONTH YEAR	
1504	PLACE OF REGISTRATION		
1505	NATIONAL IDENTIFICATION NUMBER OF THE DECEASED		
1506	RECORD THE TIME AT THE END OF INTERVIEW	HOURS .... MINUTES	

INTERVIEWER'S OBSERVATIONS

TO BE FILLED IN AFTER COMPLETING INTERVIEW

_____
_____
_____
_____
_____
_____

COMMENTS ON SPECIFIC QUESTIONS:

_____
_____
_____
_____
_____

ANY OTHER COMMENTS:

_____
_____
_____
_____
_____

SUPERVISOR'S OBSERVATIONS

_____
_____
_____
_____
_____
_____
_____

NAME OF THE SUPERVISOR: _____   DATE: _____