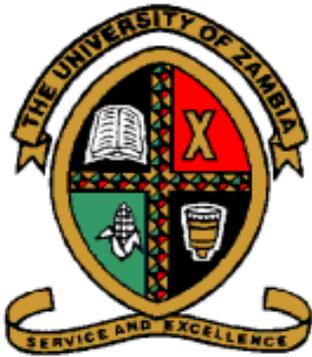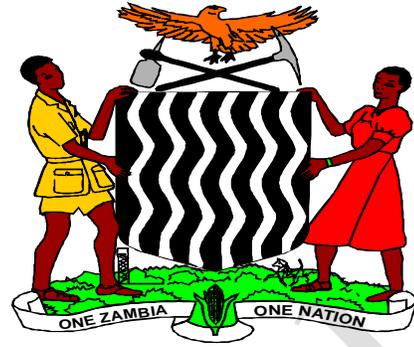**Republic of Zambia**
MINISTRY OF HEALTH

ZAMBIA HOUSEHOLD HEALTH EXPENDITURE AND UTILIZATION SURVEY (ZHHEUS)

FINAL REPORT

MAY 2016

Economics Department

Central Statistical Office

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Acronyms and Abbreviations

MoH	Ministry of Health
DHS	Demographic and Health Survey
LSMS	Living Standards Monitoring Survey
LCMS	Living Conditions Monitoring Survey
GRZ	Government Republic of Zambia
ZHHEUS	Zambia Household Health Expenditure and Utilization Survey
SHI	Social Health Insurance
HIV/AIDS	Human Immunodeficiency Virus Infection and Acquired Immune Deficiency Syndrome
CSO	Central Statistical Office
SEAs	Standard Enumeration Areas
PPES	Probability Proportional to Estimated Size
UHC	Universal Health Coverage
WHO	World Health Organisation
NGO	Non-Governmental Organization
OPD	Outpatient Department
MDGs	Millennium Development Goals
NHSP	National Health's Strategic Plan
THHE	Total Household Health Expenditure
THE	Total Household Expenditure
ANC	Antenatal Care
FANC	Focused Antenatal Care
NHA	National Health Accounts
OOP	Out-Of-Pocket

MNCH	Maternal, Neonatal and Child Health Programme
HCBP	Health Care Benefit Package
WTP	Willingness to Pay
WTA	Willingness to Accept payment
ATP	Ability to Pay

FOREWORD

The Government recognizes that Household Expenditure forms a critical part of health care financing and has an impact on utilization of health services. Therefore, the Ministry of Health, working with the Central Statistical Office and the University of Zambia, with support from Department for International Development and other Cooperating Partners undertook the Zambia Household Health Expenditure and Utilization Survey (ZHHEUS) in order to estimate the Household Health Expenditure and Utilization Levels in the Country. This is meant to fit into the overall policy of Government to achieve Universal Health Coverage.

Policy decisions related to Household Health Expenditure has relied on the National Health Accounts (NHA) which has been used to estimate the amount of resources spent in the health sector over the years. However, the NHA falls short of household expenditure and utilization of health services data, as it is an estimation based on the Living Conditions and Monitoring Survey. This Survey therefore will play a critical role in filling this gap.

I am particularly pleased to note that the Zambia Household Health Expenditure and Utilization Survey is the first to be conducted on a full scale and I hope that the results will go a long way in informing policy decisions in the health sector amidst the various health reforms that the Country is undertaking such as the National Health Insurance Scheme. The results of the survey will also go a long way in the development of the Health Care Financing Strategy, completion of the Mid Term Review of the National Health Strategic Plan, completion of the National Health Accounts among many other policy decisions in the sector.

The successful implementation of recommendations from this survey will require concerted efforts and commitment of stakeholders at all levels. I therefore wish to urge all institutions and officers charged with the responsibility of health financing and utilization of health services to take time and familiarize themselves with the results of this survey.

Honourable Dr. Joseph Kasonde, MP
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Executive summary

Introduction

The data collection for the Zambia Household Health Expenditure and Utilization Survey (ZHHEUS) was conducted between January and February 2014. The main purpose of the survey is to provide current evidence on household health seeking behaviour, utilization and expenditure on health care. The ZHHEUS is intended to fill the evidence gap and simultaneously complement other existing studies such as the Zambia Demographic and Health Surveys (ZDHS) and the Living Conditions and Monitoring Surveys (LCMS)

Therefore ZHHEUS comprehensively looks at health issues including: the health status of the population, the prevalence of chronic diseases and health care need, disease pattern in adults, new born babies and children, factors behind current epidemiological distribution, health care utilization, perceived quality of care, extent of household expenditure on health, extent of impoverishment of health expenditure, coverage of private health insurance and willingness to pay for social health insurance. In order to maintain representativeness both at national and provincial levels, ZHHEUS was conducted in all ten provinces of Zambia. Using the 2010 Population Census Frame, the survey used a two-stage stratified cluster sampling design. Out of a targeted sample of 12,000 households, 11,927 were successfully interviewed representing a 99.4 percent response rate.

Main Findings

Self-reported health status and disease pattern

- Malaria is the leading cause of both facility visitations and admissions in all age groups. Moreover, respiratory disease, diarrhoea, eye disease, skin disease, accidents and injuries, and TB are among the top ten reasons for facility visitations. It was also found that 15 percent of the total population suffered from a chronic illness.

Utilization of health care services

- Overall, 21 percent of the population had an episode of illness during the four weeks prior to the survey. This implies that 210 out of every 1,000 people reported falling ill at some point during the recall period. Rural areas had more incidences of reported illness with 26 percent reporting being ill compared with 15 percent in urban areas. Out of those that reported being ill, only 38 percent sought medical attention.
- The major reasons for the poor people not seeking care include unaffordable health care costs, self-medication, fear of discovering serious illness and long distance to provider. By contrast, the richest are not seeking health care due to poor quality of health services, self-medication, religious or cultural reasons and long distance to health provider.
- The average annual per capita utilization in the country was 1.6. This shows remarkable differences from one province to another. Lusaka and Southern provinces had the least utilization rates at 0.9 and 1.2 respectively while Luapula had the highest at 2.3. Utilization in urban areas was 1.9 compared with 1.1 in rural areas.
- The use of outpatient services is more frequent among poorer households than richer ones. For instance, utilization for the richest 20 percent of the population is 1.1 times per annum per capita compared with 1.9 percent among the poorest 20 percent.
- Admission rates varied across provinces and marital status, age group, employment status among other factors. Overall, there were 30 admissions per 1,000 population in the 12 months prior to the survey. Of this number, women accounted for 57 percent of the admissions compared with 43 percent for men, meaning that women had a higher probability of being hospitalised. Similarly, there were still more women hospitalised as a proportion of their total population compared with men at 3.3 and 2.7 percent respectively.

- Nationally, there is an average of 30 admissions per 1,000 population. Admission rates vary from province to province. Central Province had the least rate at 25 admissions for every 1,000. The highest admission rates were in Luapula and North-Western provinces with each recording 37 admissions per 1,000.

Health care expenditure

- Total health expenditure is estimated at K1.3 billion per year translating into per capita national health expenditure of K77 (US$12.5) per year. This varies widely among the ten provinces, from K34 (US$5.5) in Southern Province to K173 (US$28.4) in Lusaka Province. Mean per capita health expenditure varied substantially between urban and rural areas, with rural residents spending an average of K56 (US$9.2) and urban residents spending an average of K109 (US$18.0).

- The highest mean expenditure per person was on drugs (K258 or US$43.2) and the lowest was on dental expenses (close to zero). The second highest expenditure (K163 or US$27) was on transportation. Among the rural population, 46 percent of health care expenditures went to outpatient services and 42 percent went to supplemental services. Inpatient and MNCH services accounted for smaller fractions, 9 percent and 2 percent respectively of health care expenditures.

Access to health care

- More than 70 percent of the households are within 5 km radius of a health facility. The mean distance travelled by rural and urban households is 7 km and 4 km respectively and almost double to admission facilities.

- The average walking time is 52 minutes while the average travel time by public transport is 62 minutes. The duration taken to visit a health facility is lowest for parastatal and private health facilities, where on average it takes about 25 minutes. Travel time to public health centres and health posts take almost an hour. 49 percent of the urban population are within 30 minutes walking time to a health facility visited as opposed to 28 percent in the rural areas. 45 percent of the rural population take between 30 - 59 minutes to reach a health facility while 15 percent of the urban population do so. The time taken to reach a

tertiary health provider is on average 45 minutes and almost 75 minutes for secondary level services.

- Waiting times show that the private facilities have a mean of about 24 minutes while the public district and mission facilities have 75 minutes and 52 minutes respectively. It takes between 56 and 72 minutes to see a clinician at public health centres and mission health centres respectively.

- The proportion of households who faced catastrophic health care expenses is 6 percent at national level and varies from a low of 2 percent in Lusaka to nearly 10 percent in Western Province. The prevalence of catastrophic health care payments remains high especially in rural and poor parts of the country.

Household health seeking behaviour

- Leading causes for seeking care include malaria, respiratory infections and/or diarrhea. For instance, in urban areas someone with malaria has a probability of 0.108 chance of seeking care as compared with someone without malaria. Similarly, someone with respiratory disease has a probability of 0.13 likelihood of seeking care compared with someone without. A person with diarrhea has even a higher likelihood of seeking care with a probability of 0.176.

- Ninety eight percent of those who visited a public facility for the first time did not go back for the second visit. 94 percent of those individuals that visited a public facility in the first visit did go back to a public facility. There is a 94 percent chance that a person who attended a public facility will choose a public facility if they decide to go for a second visit for the same disease.

Maternal and child health

- 12 percent of women aged between 12 - 49 years had a delivery in the last 12 months prior to the survey with rural areas accounting for 15 percent compared with 9 percent in urban areas. The age groups that reported the highest percentage of deliveries was 20-29 years (19 percent).

- The majority (96 percent) of women who had a live birth in the 12 months preceding the survey received antenatal care from a health professional, but only 56 percent completed all the four required visits. Completion of the four required visits was found to be determined by socioeconomic characteristics such as higher wealth quintiles and education attainment as well as place of residence.

- Travel time to reach the nearest health facility is significantly higher for people in rural areas compared with urban areas. Over 24 percent of the women need more than two hours to reach the nearest health facility in rural areas compared with only three percent of the population for urban areas.

- Overall, 56 percent of mothers received a postnatal check-up for the most recent birth in the twelve months preceding the survey. Those who did not do so cited long distances , lack of awareness and competing activities as reasons.

- Over 85 percent of the women who reported post-delivery complications sought medical care. About 74 percent of women sought medical attention for themselves while 76 percent sought medical attention for complications affecting the babies. The highest proportion of women visited government clinics was 91 percent while only 6 percent visited a private health facility.

Private insurance and prepayment financing

- Only 3.9 percent of the total population has some form of health cover. Insurance coverage is higher (8.8 percent) among urban residents than rural residents (0.5 percent). Health Insurance coverage in both the urban and the rural areas is limited to employees. The most common form of cover is the employer-based scheme (43.8 percent of those covered).

- The formal sector has the highest (37.3 percent) proportion of the insured population compared with the informal sector proportion (1.6 percent). In terms of expenditure quintile, the highest proportion coverage is within the richest 20 percent of population at 14.4 percent and lowest for those in the poorest 20 percent at 0.2 percent.

Social health insurance

- Of all households in Zambia, 97 percent rate the scheme as excellent, very good or good. The majority (80 percent) of Zambian households are willing to pay for the social health insurance scheme. The average social health insurance premium that could be paid monthly is K113. That corresponds to 8 percent of the average monthly income in Zambia (K1,342).

- Twenty percent of all households are unwilling to pay for SHI. The main reason given is lack of affordability of SHI premiums. The majority (66 percent) of these households reside in rural areas

Policy Implications

The Zambian health care system has made strides in improving services to the population. However, it is evident that health outcomes have not improved enough. The population continues to experience avoidable and needless morbidity and mortality. In view of this, the following measures are suggested with the objective of helping policy makers prioritise health issues that may impact on health outcomes and strengthen the health system.

1. Refocus comprehensive primary health care
   The utilization of health care services remains relatively low at the current level. The general utilization level is further demonstrated through the low usage of services such as maternal health (Antenatal) and child health (Immunisation). A key aspect towards improving utilization is to improve public health interventions to ensure that usage of health care services is improved. The current performance, based on primary health, appears not to have been adequately and successfully implemented in view of the epidemiology of the disease burden seen from the extent of self-reported illnesses which are mainly infectious in nature.

   The institutional framework and policies may need to be reviewed in the wider context to ensure that there is a consistent approach towards service delivery both in content and in

form. Given the findings of the survey, the balance between curative interventions, prevention and promotion appears to be contrary to the policy objectives. It is in this perspective that there arise indications on the need to review, re-formulate and design a consistent implementation strategy of the comprehensive approach to Primary Health Care. This survey clearly demonstrates that the leading causes of morbidity are not emerging transitional non-infectious conditions, and the major focus should continue to be on infectious diseases.

This approach should include elements designed to ensure:

1. Traditional and cultural barriers to accessing health care are addressed, such as those that impact maternal and child health. Maternal, adolescent and reproductive health should be supported through priority interventions targeting female education. Measures to ensure that traditional practices, for instance, should be rolled back to facilitate equal opportunity at the household level of improving female education. Similarly, water and sanitation should be equally prioritised to help reduce diarrhoeal infections especially among children. In cases where these issues have been previously undertaken it implies that the programmes have either not been effective and/or continuity has been lacking. This suggests that consideration should be given to the review of the related strategies and implementation plans in order to get these basic but life-saving interventions back on track and towards ensuring that they save lives.

    i.   Community structures and contact are improved to ensure better awareness about timely and immediate reporting to health care services for improved outcomes.
    ii.   A concentration of the public health approach that includes the improvement of the use of information for community mobilisation, education on health prevention and promotion, awareness of basic response and interventions. These interventions should lead towards improvement of areas such as utilization, and to changing the perceptions of the people on health care services.

2. Review resource allocation to alleviate poverty-induced causes of ill health

The proportion of people who reported poor health seems to be concentrated more in rural areas than urban areas. However, comparing the distribution of resources between urban and rural areas shows that the urban areas have up to twice as many resources than the rural areas. Furthermore, the prevalence of impoverishing health expenditure is highly concentrated in rural and remote parts of the country. This restates the significance of the exposure of poverty to ill health and the necessity of ensuring that public health care resources are equitably distributed.

3. Continue to focus on non-financial barriers in order to improve access and utilization. Distance has been particularly highlighted for maternal health care and rural population health care as a major barrier to access. Therefore, expansion of ambulatory care facilities and other inputs is necessary to ensure that the health system is strengthened and capable of mitigating both the preventative and curative responses to health conditions.

4. Strengthen multi-sectoral policy and implementation strategies through a number of measures including the following:
   i.   Strengthening community structures for improved service delivery, access and coverage.
   ii.   Education, as may be expected, is important in accounting for differences in health care outcomes and utilization especially in cases of maternal health and in-patient services.
   iii.   Improvement in quality of health care through: (a) medicines and medical supplies; (b) staff availability; and (c) availability of diagnostic services.

Whereas some of the factors are multi-sectoral and others are internally determined within the health sector, a number of issues arise such as:

i. Improving inter-sectoral communication, programme design and implementation.

i. Advocacy for purposes of ensuring that inter-sectoral policies are consistent or supportive with the health sector.

5. Consider designing a pooling of health care resources for purchasing and service delivery. Key findings from the survey indicate that there is:

i. Limited private health insurance coverage;

ii. A high prevalence of catastrophic health expenditure;

iii. A heavy reliance on out-of-pocket payments.

This arises partly from a fragmented health financing architecture, poor referral systems and poor quality.

It has been noted that one approach towards this is the proposed national health insurance scheme. However, this does not necessarily ensure an equitable distribution of resource allocation, nor a limitation to the risk of household exposure to the financial burden of health care. A consideration of the SHI model should also consider an accountable and more transparent principle-agency operational model while changing the fund-holding model. The survey shows a positive response to introduction of and willingness to pay for the social health insurance scheme. The high demand for social health insurance among the households in the formal sector and the rich implies that the social health insurance benefits could be customized to their needs or further contributions could be collected to ensure sustainability of the social health insurance scheme. On the other hand, the low willingness to pay by households in the informal sector and the poorest indicates the need for cross-subsidization from the rich and healthy people, or subsidization by government, or exemption from contributing.

6. Review of the Planning Framework

The relatively high population growth rate will continue to place pressure on the nation's health services. It is necessary that planning for the country's health services should be made beyond the five year strategic plan. A number of the challenges that characterise the health system will take longer to address.

7. Review service delivery and financing for maternal and child health.

Evidence demonstrates relatively high expenditures on maternal and child health services which are supposed to be free as far as existing policies are concerned. To a certain

extent this demonstrates policy failure. Consequently, there is need to consider priorities placed on the designing of interventions particularly concerning access (transport, medicines and medical investigation)

1 Introduction

1.1 Background

The National Health Strategic Plan 2011-2015 expresses the need for providing relevant, accurate, timely health data and research to support planning, coordination, monitoring and evaluation of health care services. There has been a long-standing need for a detailed health related household survey in Zambia. The previous health related household survey was last undertaken in 1995. This survey, therefore, is aimed at meeting the policy objective of the Ministry of Health to undertake the health expenditure and utilization survey.

The project complements the DHS and LCMS surveys and focuses on health status, health care utilization and health expenditures. The purpose of the study was to provide key evidence to facilitate decision making in a number of key public health areas including: health care financing strategy formulation allowing for a review of the various financing modalities including tax based financing, social insurance, private insurance and out-of-pocket expenditures. In addition, the survey has provided evidence for evaluating other programme areas including maternal, new-born and child health, utilization and health seeking behaviour, expenditure and distribution of self-assessed illness and other areas.

The Zambian government through the Ministry of Health has established the provision of and improved access to quality health services as a key health sector priority. This is in line with the overall goal of improving the health status of the people of Zambia in order to contribute to socioeconomic development. In order to achieve this goal, high quality health services have to be available and accessible to, and utilized by, the majority of citizens in the country. Among the critical determinants of the utilization of available health services is the issue of expenditure on health care which sheds light on the financial burden on the population to pay for health care. Household health expenditure information has also been argued to be essential for the creation of effective health policy. However, policy makers often have little or no data on household health expenditures (Carlson and Douglas, 2009). In the recent past attempts to bridge this information gap have come by way of inclusion of health expenditure questions or modules as part of other

types of household surveys such as Demographic and Health Survey (DHS) and Living Standards Measurement Surveys (LSMS). However, such an approach of including health expenditure questions as a 'by the way' component of other surveys has been argued to be constraining as there is a limit on the number of questions that can be asked. Furthermore this approach does not always capture household out-of-pocket expenditure information as well as household spending on insurance (ibid). In the case of Zambia for instance, the 2007 Zambia Demographic and Health Survey does not explicitly deal with issues of health expenditures. Zambia's Living Conditions and Monitoring Survey (LCMS) attempts to deal with issues concerning household health expenditures.

Table 1.1 below shows the percentage reporting illness or injury as well as their medical consultation status for the years 2006 and 2010. The table reveals that 14.6 percent of respondents reported having been ill or injured in the two weeks prior to the survey, an increase from the 9.2 percent that reported illness or injury in 2006. However, of those reporting illness or injury in 2010, only 68.7 percent reported having consulted or sought medical advice/attention from any health institution/personnel or healer. This reflects an increase from the 57 percent who reported making such consultations in 2006. The table also shows that in 2010, 21.2 percent of respondents reported having only used self-administered medicine, either bought without consultation or available in the home. This reflected a decrease from the 28 percent reported in 2006. The table further reveals that 8.9 percent of respondents reported that they neither consulted a health provider nor used self-administered medication in 2010, reflecting a decrease from the 15 percent reported in 2006.

In order to examine patterns of health seeking behavior as well as available data on health expenditures by household, tables 1.1 and 1.2 below present the percent reporting illness/injury as well as their medical consultation status for the years 2006 and 2010 as well as their mode of payment respectively.

Table 1.1 Percentage reporting illness or injury and medical consultation status, Zambia 2006 and 2010.

Reporting Illness or injury (percent)		Medical consultation status					
		Consulted (percent)		Used self-administered medicine only (percent)		None of the above (percent)	
2010	2006	2010	2006	2010	2006	2010	2006
14.6	9.2	68.7	57.0	21.2	28.0	8.9	15.0

Source: LCMS (2010)

The table shows increasing rates of illnesses over time. However, despite this observation, the proportions consulting health institutions or providers, relying on self-administered medicine only or those not exercising either of these two options is a significant source of health care access barriers. This raises critical questions as regards factors responsible for the observed patterns of utilization of health services. Simply put, there is an information gap as regards the exact factors that are driving the utilization of health services, reflecting an underlying information gap as regards health seeking behavior in Zambia. To shed more light on the observed patterns of health seeking behavior evident from Table 1.1 above, Table 1.2 below shows the mode of payment and the average amount spent on consultation and medicines by those reporting illness or injury.

Table 1.2 Mode of payment and average amount spent for medicines and consultation Zambia 2006 and 2010

*PPS-low cost (percent)		*PPS-high cost (percent)		Employer (percent)		Insurance (percent)		Paid direct (percent)		Did not pay (percent)		Mean amount spent (K)	
2010	2006	2010	2006	2010	2006	2010	2006	2010	2006	20100	2006	2010	2006
4.0	6.0	0.6	3.0	0.66	1	0	0	30.1	34.0	51.3	55.0	20,125	7,926

Source: LCMS (2010)   *PPS= Pre Payment Scheme

The table reveals a reduction in the proportions reporting paying for medication and consultation via both low cost and high cost pre-payment schemes between 2006 and 2010 respectively. Similarly, the proportions reporting paying via employer, direct payments and those that reported not paying at all can be observed to have fallen between 2006 and 2010. Specifically, those reporting direct payment as the mode of payment fell from 34 percent in 2006 to 30 percent in

2010, while those who reported not to have paid for medication and consultation fell from 55 percent to 51 percent over the same period. However, the proportion reporting (private) insurance as the mode of payment remained negligible between 2006 and 2010. The average amount spent on medication and consultation increased from K7,926 in 2006 to K20,125 in 2010.

The inability of (private) insurance to constitute a more significant mode of payment for medication and consultation raises questions concerning factors behind this observation and more critically, may point to greater scope for the provision of public health insurance. The forgoing observations again point to an information gap as regards the factors mainly responsible for the patterns of health seeking behavior observed from Table 1.2 above.

1.2   Policy questions

The Government of the Republic of Zambia (GRZ) through the Ministry of Health and the Ministry of Community Development, Mother and Child Health are responsible for the health of all Zambians, aiming at improved health status, health care utilization and equal access to affordable and efficient quality health care services. ZHHEUS tries to answer several key policy questions that deal with effective health sector management. Some of the policy questions addressed in this study include:

- What is the health status of the people living in Zambia?

- How many are suffering from chronic illnesses and how is their health care need met?

- Are there noticeable changes in the distribution of diseases and if there are what is the extent of the changes in epidemiology?

- What is the burden of disease among maternal, newborn and child cases?

- What are some of the explanatory factors behind current epidemiological distribution of disease in the country? What can be done to improve the health system for mothers, newborns and children?

- Are there differences in utilization by demographic, socioeconomic or type of health care provider?

- How do people rate the quality of care provided?

- What is the extent and distribution of health expenditures and what are the consequences, if any, arising from expenditures on health incurred by the different types of households?

- How do people view participation in GRZ's proposed SHI and how much are they willing to pay for the SHI?

1.3 Objectives

The general objective of ZHHEUS is to provide evidence-based information to be used in health policy decision making, management and monitoring and evaluation in the Zambian health sector. The study aims comprehensively to examine salient aspects on health, health care utilization and health spending. It will also examine related equity and fairness issues with respects to geographic, demographic, and socioeconomic status.

1.4 Methodology and study coverage

ZHHEUS is a nationally representative survey of households. It covered 12,000 households using a two-stage stratified sampling approach. Conducted over a period of one month, ZHHEUS solicited for individual and household information covering household characteristics, disease prevalence and health status, maternal and child health, health seeking behavior, access to health care and coverage of services, public and private health care utilization, perceived quality of care, health care expenditures, out-of-pocket spending, affordability, catastrophic health spending and risk for impoverishment, willingness to pay for health services and social health insurance, and equity and fairness aspects.

1.5 Justification of the study

Household Health Expenditure surveys are undertaken in virtually all developed countries and, of late, in a good number of middle income and low income countries. They are undertaken as specialised surveys, different from other surveys such as general standard of living monitoring surveys which are broad based covering a range of issues that determine "standards of living or quality of life". As one of Zambia's first comprehensive health expenditure survey, ZHHEUS was intended to provide more specific or precise data for policy analysis, formulation and implementation. The immediate fact to establish is that ZHHEUS is more than simply a matter of expenses by households on health. The factors that interact to determine household expenditures on health are quite numerous and wide. The focus on health expenditures by households stems from a number of issues. Firstly there is the solidarity element. This is targeted at helping to achieve the provision of health care services to all households regardless of socio-economic,

demographic or any other factor that may impede or constrain the provision of health care. ZHHEUS serves some of the following purposes:

- It enables determination of household health expenditures.
- It helps assess the levels of health-induced impoverishment.
- It enables determination of the pattern of health care utilization.
- It helps understanding of the options and choices households face in the selection of providers or their health seeking behavior in general.
- It helps understanding of the main factors affecting maternal and child health in Zambia.
- It helps in determining health status and disease patterns.
- It helps assess acceptance of the Social Health Insurance (SHI) in Zambia.

Not only is more precise data on utilization and utilization rates available from ZHHEUS, but additional information is provided by asking and understanding the options and choices households face in the selection of providers or in their general health seeking behavior. This makes analysis of determinants of health seeking behaviour easier to dissect and so frame responses or interventions from a better informed position. Utilization rate estimates enable estimates of use of health care by disease type and frequency and by so doing serves as a more accurate predictor of clinical plans and epidemiology estimates. It also provides household background information on key variables such as education levels and wealth status. These variables are cardinal for purposes of analysis of access and equity by socio-economic classification.

Ordinarily, specialized studies such as National Health Accounts, AIDS Expenditure Tracking, Health Expenditure Tracking, Out-of-Pocket expenditures are undertaken as individualized or stand-alone studies, and also raising the spectre of the efficiency of the value of investments made. However, because they are not comprehensive there is a risk that data generated from such studies will always understate expenditures on health. With ZHHEUS, a complete cross cutting expenditure assessment is made. This may then be used to improve the accuracy or precision of future limited studies, such as those mentioned above, in a way that allows for more efficient use of resources. Also, ZHHEUS provides baseline data to gauge equity analysis integrated within

key information needs such as willingness to pay assessments of specified services, and analysis of household benefits should there be reforms in health care financing from, say, taxation-based financing for social health insurance. Additionally, ZHHEUS facilitates a baseline for a comprehensive health care financing strategy assessment.

In general other surveys cannot be used as alternatives to ZHHEUS as the following aspects are key considerations of such practices. Currently, for instance, the best available data on household health care spending are the Living Conditions and Monitoring Surveys (LCMS). These data are limited in the following way: LCMS do not ask about perceived health status at the household level and if individuals are seeking care for all types of symptoms. In determining health care choices, duration of illness before care is sought is potentially important, in addition to the type of symptoms. LCMS do not ask individuals for the reasons *why* they choose the options they do. LCMS do not ask about quality of care - or level of satisfaction - received. It has been observed in smaller surveys that individuals often move from one provider to another over a single episode of illness. For example, they can move from a private health provider to a public hospital, formal to traditional healers, and vice versa, in seeking cure or treatment. This survey will ask households in formal and informal sectors about willingness to participate in social health insurance and willingness to pay and ability to pay for Social Health Insurance (SHI). Overall the health modules in the LCMS do not contain good quality data on health choices and spending because the surveys are too general.

2 Survey methodology

2.1 Introduction

The ZHHEUS survey was a nationally representative household survey broadly aimed at soliciting information on household disease episodes, health utilization and expenditure. This chapter outlines the methodological approach of the ZHHEUS Survey. It covers sample design and procedures, data collection and processing, and estimation methods used. It also lays out some of the survey limitations encountered.

2.2 Sample design

The target population of ZHHEUS was all households residing in Zambia at the time of the survey, excluding institutionalized population groups and diplomats accredited to Zambia. The survey was conducted in all the ten (10) provinces, namely: Central, Copperbelt, Eastern, Luapula, Lusaka, Muchinga, Northern, North-Western, Southern and Western. The sample frame was the list of standard enumeration areas (SEAs) for the whole country. SEAs were as developed from the 2010 Population Census frame. The list has information on the number of households and population. There are about 25,000 SEAs countrywide.

A sample of 12,000 households with an expected number of 60,000 individual interviews was targeted. This would give reliable estimates at provincial level. The Kish square root allocation method was used to allocate the sample based on the 2010 population sampling frame. This method is a compromise between the equal and proportional allocation methods. Given the variability in terms of size among the strata, this method ensured that large as well as small strata had a fair representation.

Table 2.1 Sample allocation for ZHHEUS, 2014

Province	2010 Population	Sample Allocation	
		PSUs	Households
Central	1,307,111	58	1,160
Copperbelt	1,972,317	76	1,520
Eastern	1,592,661	66	1,320
Luapula	991,927	52	1,040
Lusaka	2,191,225	80	1,600
Muchinga	711,657	48	960
Northern	1,105,824	56	1,120
North-Western	727,044	48	960
Southern	1,589,926	66	1,320
Western	902,974	50	1,000
Zambia	13,092,666	600	12,000

The sampling frame was stratified by province and sub-stratified by urban and rural areas. The total number of strata was 20. With respect to provinces, stratification used the geography and administrative divisions while socio-economic variability was used in the case of rural and urban areas.

The study employed probability sampling procedures. A two-stage stratified cluster sample design was used. In the first stage, SEAs were selected within each stratum using the probability proportional to estimated size (PPES) procedure. During the second stage, 20 households were selected from each SEA using the systematic random sampling method. This method ensured that each household had an equal chance of being selected.

2.2.1   Selection of primary sampling units

For each stratum (province, rural/urban), the list of SEAs was ordered by SEA identification numbers.   The list included, for each SEA, the total number of households and the cumulated measure of size (by adding the number of households down the list). Then, a sampling interval was calculated by dividing the total number of households (final cumulated measure of size), by the number of sample SEAs allocated to the stratum. In addition, a random number between 1 and the sampling interval was picked as the random start for the systematic PPES selection of SEAs. The sample SEA in the stratum is the one with the cumulated measure of size closest to without exceeding it.

2.2.2   Selection of households

Prior to the commencement of data collection, a listing exercise was conducted. This involved the listing of all households residing in the selected SEAs. Each household within a SEA was assigned a sampling serial number. Sampling serial numbers were assigned sequentially. The list of households from this exercise was the basis for second stage sampling. In the selection of sample households, the survey employed a Circular Systematic Sampling procedure. This procedure assumes that households are arranged in a circle and readily permits overlapping sample selection. The following relationship was assumed: $N = nk$, where N is the total number of households that were assigned sampling serial numbers in a Standard Enumeration Area (SEA), and n was the sample size in a given SEA (20), and k was th e sampling interval. Sampling of households was based on random numbers. First, a random start (RS) number was obtained by selecting a random number between 1 and N from the table of random numbers. This became the first household selected. Adding the sampling interval (SI) to the random start (RS) gave the second household to be in the sample. The procedure of adding the SI to each successive sum was continued, until all the 20 households in a SEA were selected.

2.3   Survey data collection instruments

Development of the data collection instruments for the survey was done by a core team of researchers drawn from the three collaborating institutions that included Ministry of Health, Central Statistical Office and the Economics Department of the University of Zambia.

Data collection instruments captured questions on general household attributes, household expenditure including health expenditure, illness experience and health seeking behaviour, maternal and child health private insurance and the willingness to pay for social health insurance. Outpatient questions were based on four week recall period and captured data up to a maximum of four visits. For admissions the recall period was 12 months and similarly captured data up to a maximum of four admissions. Furthermore respondents on maternal and child health were women aged 12 to 49 years. Questions on maternal health captured prenatal and postnatal experiences using a recall period of one year.

2.4 Training, data collection and processing

2.4.1 Training of field staff

Training of field staff was done at two levels. The first was done at national level where researchers trained master trainers. The second was done at provincial level. The training was based on comprehensive training manual. Pretesting was done in Lusaka and Kafue districts for a period of 10 days. At least one master trainer and a researcher were in charge of training data collectors and supervisors in each province. Training involved the use of both electronic and hard copy data collection instruments. The mode of training included classroom sessions, field practice, mock interviews and translations in local languages. Provincial training took 10 days.

2.4.2 Data collection and processing

Data collection was done between January and February 2014. Structured questionnaires consisting of closed and open-ended questions were used. The questionnaires were administered through face-to-face interviews. Main respondents were household heads but in cases where the head was not present, an adult knowledgeable about household expenditure and utilization of health services was interviewed.

Field data was collected using an online data collection application called SurveyToGo developed by Dooblo Limited. This application was installed on Samsung Galaxy tablets. The use of these devices minimized data entry errors and allowed for efficient use of time. Data was uploaded to a remote cloud server (primary server). Data review was done centrally by a team based at CSO in Lusaka. The cleaning was done using edit programmes in SPSS. Following the tabulation plan, SPSS, STATA and SAS software packages were used to generate output tables.

2.5 Data analysis

2.5.1 Sample weights

In order for the survey estimates to be representative at national or any domain level, it was necessary to weight the sample data with appropriate expansion factors. Sampling weights are also needed to compensate for unequal selection probabilities, non-coverage, non-response, and

for known differences between the sample and the reference population. Thus sample weights act as boosting factors to represent the number of units in the survey population that are accounted for by the sample unit to which the weight is assigned. These weights were calculated, included in the data set and used to draw inference to the population.

The weight for each sample unit (household) is equal to the reciprocal/ inverse of its probability of selection. The probability of selecting cluster i was calculated as;

$$P_{hi} = \frac{a_h M_{hi}}{\sum_{i=1}^{N_h} M_{hi}}$$

where: P_{hi} is the first stage sampling probability of (SEA), a_h is the number of SEAs selected in stratum h, M_{hi} is the size (total households listed) of the ith SEA in stratum h, and ΣM_{hi} is the total size of stratum h (e.g. Central Province rural).

The selection probability of the household was calculated as:

$$P_{hij} = \frac{b}{M_{hi}},$$

Where P_{hij} is the probability of selecting a household in the ith SEA in stratum h, b is the number of households selected in the SEA. The weight or boosting factor for a household is, thus, given as

$$W_{hij} = \frac{1}{P_{hi} * P_{hij}}$$

2.5.2   Post stratification adjustments

The survey collected data on all usual household members. The weighted sum of the total number of household members (household size) is supposed to give a fairly good estimate of the current population in a particular stratum such as province, rural/urban and national level for which this survey was designed.

The weighted results generated underestimated the total population when compared with the CSO projected population. This was mainly due to possible under-coverage of households during listing and the lack of updating of the cartographic frame to reflect population growth over time. The frame was based on 2010 population. This necessitated the adjustment of the base-weights to reflect the 2014 population projections. The procedure for adjusting the weights based on population projections is given below:

$$r = \frac{Y_{proj}}{Y_{est}},$$

Where *r* is the adjustment factor, Y_{proj} is the Projected Population of the stratum e.g. Lusaka Province and Y_{est} is the estimated population of the domain from the survey

The final weight is given by:

$W_{adj} = W_{hij} * r$

Where W_{adj} is the adjusted final household weight

2.5.3 Estimation process

Let y_{hij} be an observation on variable Y for the jth household in the ith SEA of stratum h. Then the estimated Total for stratum h is:

$$y_h = \sum_{i=1}^{a_h} \sum_{j=1}^{n_h} w_{hi} y_{hij}$$

where, y_h is the estimated total for stratum h, w_{hi} is the weight for the jth household in the ith SEA of stratum h, j=1-ah is the number of selected clusters in the stratum, j=1-n_h is the number of sample households in the stratum.

2.6   Coverage and response rates

Table 2.2 shows the coverage and response rates for the survey. Overall, a 99.4 response rate was achieved. Three provinces, Luapula, Muchinga and Northern achieved a 100 percent response rate.

Table 2.2   Coverage and response rates for ZHHEUS, 2014

Province	Sample		Coverage	Response Rate
	PSUs	Households		
Central	58	1,160	1,143	98.5
Copperbelt	76	1,520	1,511	99.4
Eastern	66	1,320	1,312	99.4
Luapula	52	1,040	1,040	100.0
Lusaka	80	1,600	1,591	99.4
Muchinga	48	960	960	100.0
Northern	56	1,120	1,120	100.0
North-Western	48	960	948	98.8
Southern	66	1,320	1,314	99.5
Western	50	1,000	988	98.8
Zambia	**600**	**12,000**	**11,927**	**99.4**

2.7   Limitations of the survey

The survey was conducted long after the first, hence the resulting indicators may not be compared directly with other indicators that are mostly compiled through administrative records. In addition, accuracy of income and expenditure data may have been affected by respondents' inability to recall exact values.

3　Demographic and socio-economic characteristics

3.1　Introduction

This chapter focuses on describing characteristics that include population size and distribution, marital status, religious affiliation, level of education, employment status, and income and expenditure quintiles which might be associated to health outcome.

3.2　Demographic characteristics

3.2.1　Population size and distribution

The estimated total population for Zambia in 2014 was 15,019,071. Table 3.1 shows the population distribution by region and province. The most populous province was Lusaka (2,669,249) while Muchinga (857,411) was the least populous.

Of the total population, 58.5 percent reside in rural areas while the remaining 41.5 percent is urban based. Lusaka (85.6 percent) and Copperbelt (82.7 percent) provinces had the highest proportion of the population residing in urban areas while Eastern (87.9 percent), Western (87.3 percent) and Northern (81.1 percent) provinces had the highest proportion of the population residing in rural areas.

Table 3.1　Percentage distribution of population by region and province, 2014

Province	Region		Total
	Rural (percent)	**Urban (percent)**	
All Zambia	58.5	41.5	15,019,071
Central	74.6	25.4	1,473,854
Copper belt	17.3	82.7	2,304,881
Eastern	87.9	12.1	1,766,300
Luapula	79.4	20.6	1,098,912
Lusaka	14.4	85.6	2,669,249
Muchinga	77.4	22.6	857,411
Northern	81.1	18.9	1,263,951
North-Western	73.9	26.1	811,325
Southern	74.4	25.6	1,798,268
Western	87.3	12.7	974,920

3.2.2   Age and sex distribution of the population

Figure 3.1 shows the percentage distribution of the population by age group. Results show that Zambia's population is mostly comprised of youths, with 64.2 percent of the population reported to be below the age of 25 years. Those aged 65 years and older accounted for 3.2 percent of the population. Results also show that the population decreased with increasing age.

Figure 3.1 Percentage distribution of population by age group, 2014
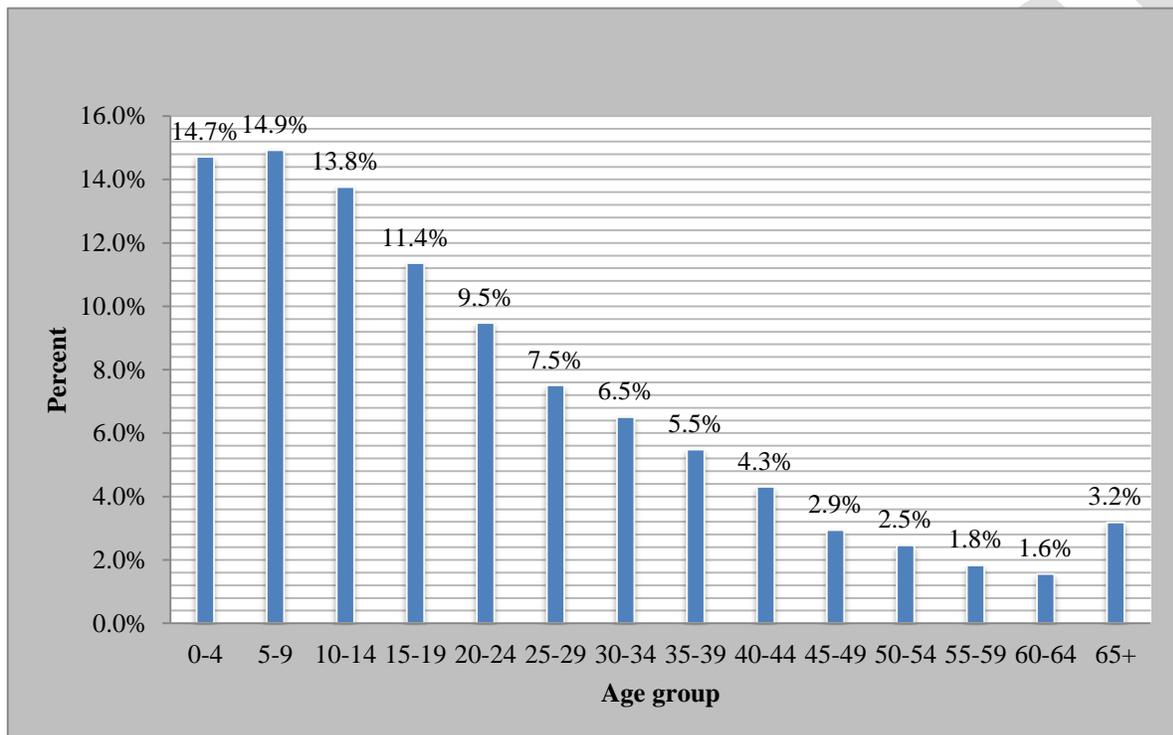
Table 3.2 shows the percentage distribution of the population by sex and region. Of the total population, 7,669,987 are females; accounting for 51.1 percent 7,349,084 are males, accounting for 48.9 percent of the population. Results show no significant difference between the proportion of males and females residing in rural and urban areas.

Table 3.2   Percentage distribution of population by sex and region, 2014

	Male		Female		Total	
	Number	Percent	Number	Percent	Number	Percent
Zambia	7,349,084	48.9	7,669,987	51.1	15,019,071	100
Region						
Rural	4,341,633	59.1	4,442,701	57.9	8,784,334	58.5
Urban	3,007,451	40.9	3,227,286	42.1	6,234,736	41.5

3.2.3   Population distribution by religion

Figure 3.2 show that 97.6 percent of the Zambian population is of Christian faith. Of this proportion, Protestants account for 70.4 percent, while Catholics and Jehovah's Witnesses account for 21 percent and 6.2 percent respectively. Muslims account for 0.5 percent of the population.

Figure 3.2   Percentage distribution of religious affiliation, 2014
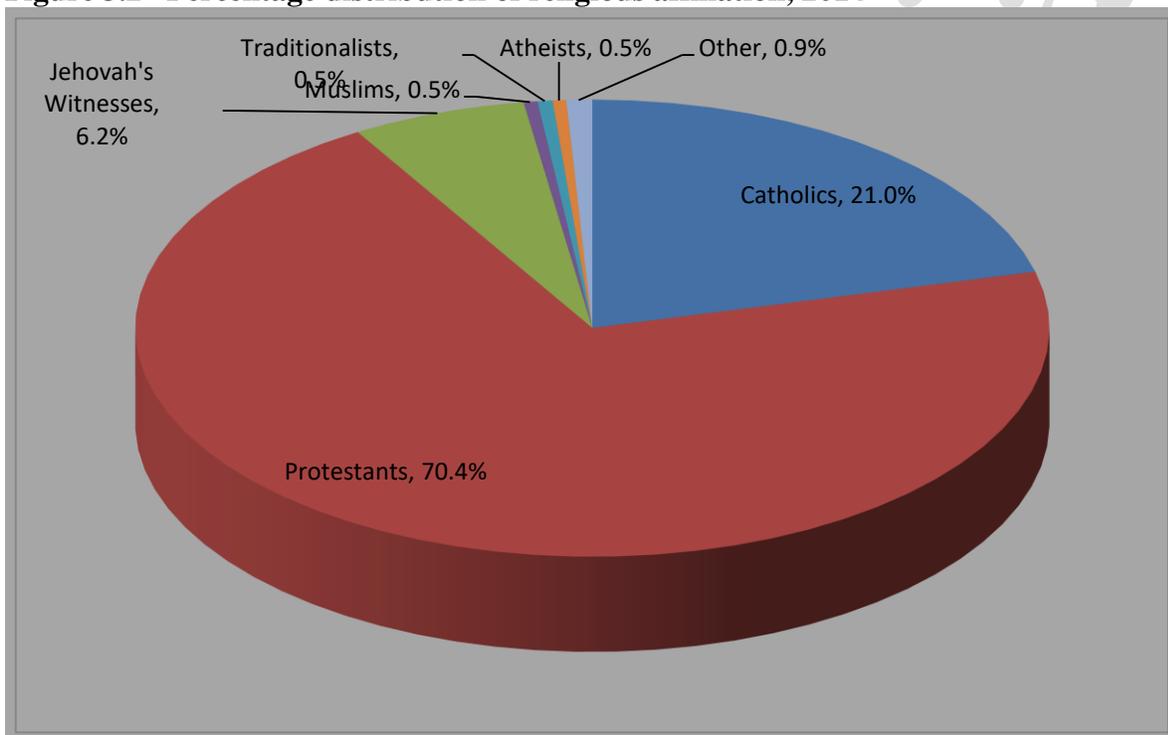
3.2.4 Household distribution by headship

Table 3.3 shows the percentage distribution of sex of household head. Survey results show that the proportion of female headed households in Zambia is 24.2 percent. Analysis by region shows no big difference between the proportion of female headed households in rural (23.3 percent) and in urban areas (25.4 percent).

Western Province had the highest proportion of female headed households, at 36.3 percent, followed by Southern Province at 27.0 percent. Muchinga Province had the lowest proportion of female headed households, at 20.4 percent.

Table 3.3 Distribution of sex of household head by rural/urban and province, 2014

	Male Headed	Female Headed	Total
	percent	percent	Number
Zambia	75.8	24.2	3,027,625
Rural/Urban			
Rural	76.7	23.3	1,702,866
Urban	74.6	25.4	1,324,758
Province			
Central	78.0	22.0	272,900
Copperbelt	75.5	24.5	479,624
Eastern	78.7	21.3	330,386
Luapula	77.4	22.6	205,304
Lusaka	76.4	23.6	577,804
Muchinga	79.6	20.4	180,572
Northern	77.5	22.5	256,569
North-Western	77.3	22.7	159,040
Southern	73.0	27.0	355,682
Western	63.7	36.3	209,746

3.2.5 Relationship to household head

Figure 3.3 shows the population distribution by relationship of the household member to the head of household. The results show that heads of households accounted for 19.8 percent of the population, while spouses accounted for 13.9 percent. At 47.6 percent, biological children accounted for most of the population. Parents living with their children only accounted for 0.7 percent of the population.

Figure 3.3   Percentage distribution of the population by relationship to the household head, 2014
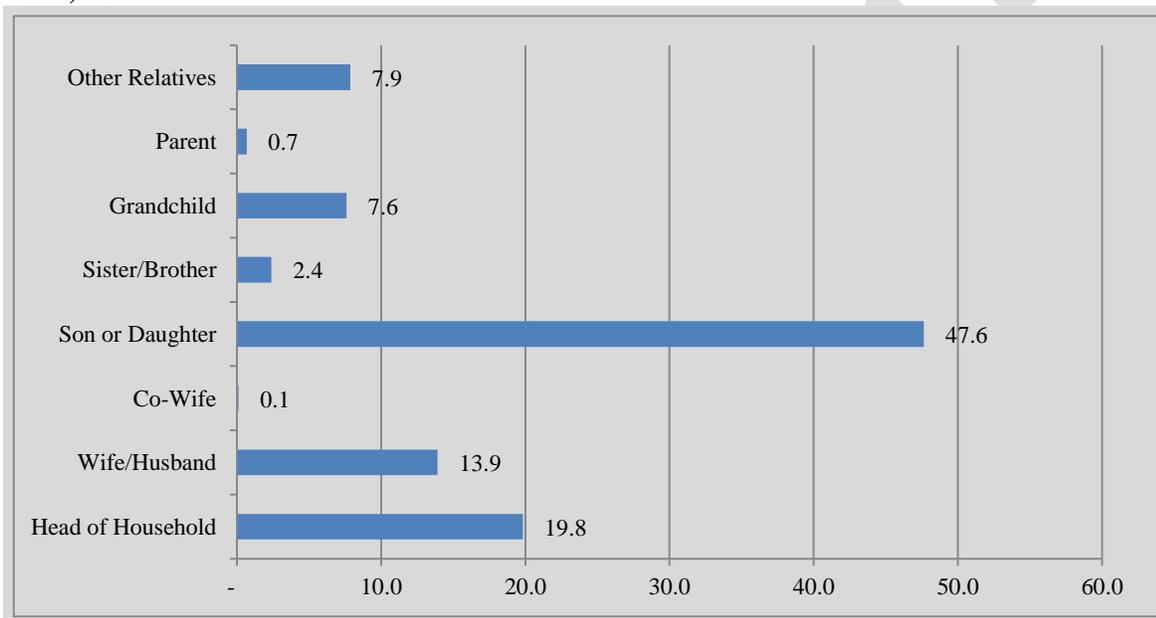
3.2.6   Household Size

Table 3.4 shows the average household size by region and province. The average household size was estimated at 5.0 persons. The average household size was higher in rural areas (5.2 persons) compared with 4.8 persons in urban areas. The minimum household size was 1.0 while the maximum was 27.0.

At provincial level, Central Province had the highest average household size, at 5.4 persons per household, followed by Eastern, Luapula and North-Western provinces at 5.3 persons per household. Western Province had the lowest average household size, estimated at 4.6 persons per household.

Analysis by status of household head showed that the average size of a household whose head is employed in the formal sector is 4.9. For a household whose head is employed in the informal sector, the average household size is 5.1.

Table 3.4   Average household size by region and province, 2014

	Average Household Size
All Zambia	5.0
Region	
Rural	5.2
Urban	4.8
Province	
Central	5.4
Copperbelt	4.8
Eastern	5.3
Luapula	5.3
Lusaka	4.8
Muchinga	4.8
Northern	5.0
North-Western	5.3
Southern	5.1
Western	4.6

Table 3.5 shows the average household size by expenditure quintile. Results show that average household size increases with the decrease in socio-economic grouping. The average household size is higher among the poor (5.5) than it is among the rich (4.4). The middle class had an average household size of 5.0

Table 3.5   Average household size by expenditure quintile 2014

Expenditure Quintile	Average household size
Richest	4.4
Second	4.8
Middle	5.0
Fourth	5.1
Poorest	5.5
Overall	5.0

3.2.7 Marital status

Figure 3.4 shows the percentage distribution of the population aged 12 years and above by marital status. About 46.4 percent of the population was married while 43.2 percent had never been married. Widows and widowers together accounted for 5.3 percent of the population while divorcees accounted for 3.4 percent. Only 0.2 percent of the population reported to be cohabiting.

Figure 3.4   Percentage distribution of marital status, 2014
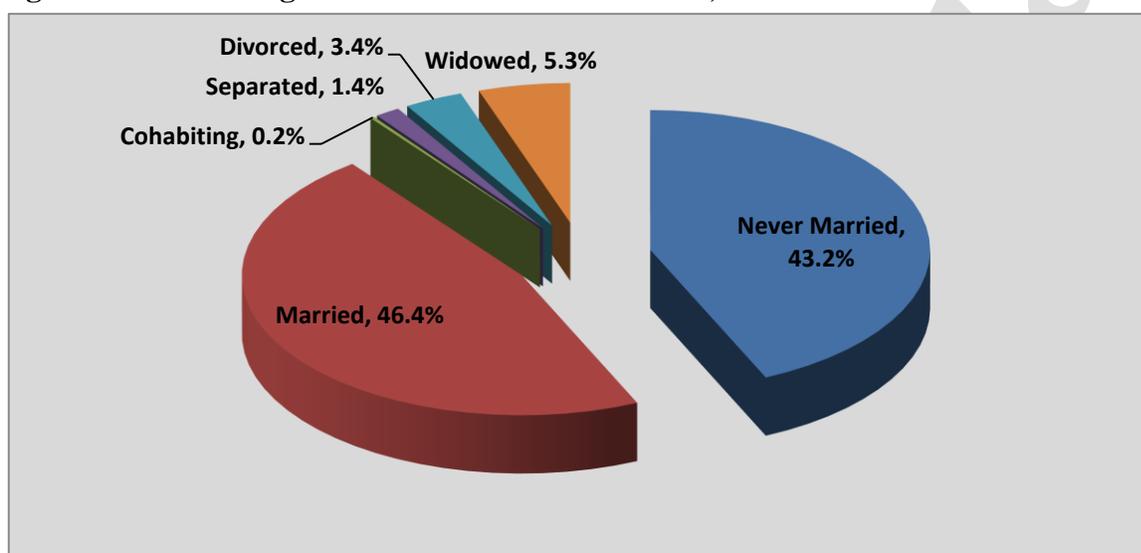
3.3 Socio-Economic characteristics

3.3.1 Level of education

Table 3.6 shows the percentage distribution of level of education by sex and region, for persons aged 3 years and above. For the purpose of this survey, the highest level of education reached referred to the highest level of schooling reached even if a person did not finish that level. For example, Grade 9 dropouts were considered to have reached secondary school education, despite not completing.

At national level, the majority of the population had attained either primary or secondary school education, with 57.9 percent reporting having attained primary school and 32.8 reaching secondary school. Only 6.3 percent had been either to college or university.

Analysis by region shows that the pattern in rural areas follows the national level picture, except that the proportion attaining primary school is much higher (73.2 percent), with only 1.6 percent having been either to college or university. The picture is different in urban areas where the proportion of those in secondary school (44.1 percent) is higher than the proportion of those who have reached primary school (40.2 percent). In addition, nearly 12 percent had been either to college or university.

Analysis by sex shows the proportion of those with either college or university is higher for males (2.0 percent) than for females (1.2 percent). Results show a similar pattern when analyzed by region.

Table 3.6   Percentage distribution of level of education by sex and region, 2014

Education	Zambia			Rural			Urban		
	Both	Male	Female	Both	Male	Female	Both	Male	Female
Pre-school	2.3	2.3	2.3	1.6	1.4	1.8	3.0	3.3	2.8
Primary	57.9	54.3	61.4	73.2	69.7	76.9	40.2	35.9	44.3
Vocational	0.4	0.6	0.3	0.3	0.4	0.3	0.6	0.9	0.3
Secondary	32.8	35.3	30.4	23.0	26.3	19.6	44.1	46.1	42.2
College	5.0	5.5	4.5	1.4	1.7	1.1	9.2	10.1	8.3
University	1.3	1.6	0.9	0.2	0.3	0.1	2.4	3.1	1.8
Don't Know	0.3	0.4	0.3	0.2	0.2	0.2	0.5	0.6	0.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

3.3.2 Employment status

Figure 3.5 shows the percentage distribution of the population by employment status. The self-employed population accounted for 28.8 percent while 12.9 percent were paid employees. Homemakers accounted for 18.4 percent of the population while the proportion of unpaid family workers was 12.9 percent. About 7 percent of the population reported seeking work. The proportion of the employed population, which includes the self-employed and paid employees, was 41.7 percent.

Figure 3.5   Population distribution of employment status, 2014
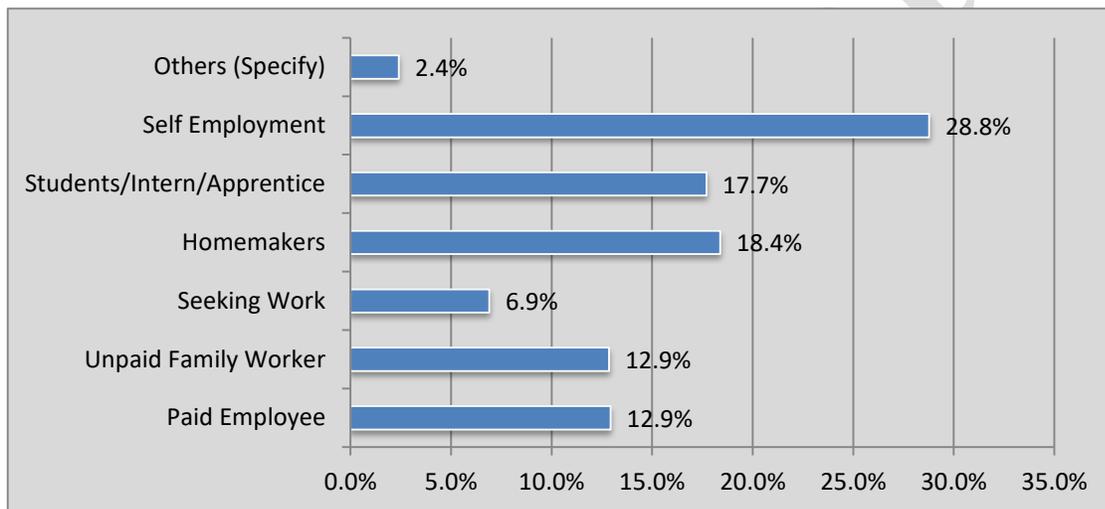
3.3.3 Household assets

Table 3.7 shows the percentage distribution of household assets. Ownership of assets is one of the indicators of household welfare. Survey results show that the most commonly owned asset was a radio, with 60.7 percent of households reporting ownership, followed by a phone at 54.7 percent. The proportion of households in Zambia that owned a motor vehicle was 7.3 percent. As expected, ownership of electrical equipment such as radio, television, phone, fridge and stove was higher in urban than in rural areas. The proportion of households owning agriculture related assets was higher in rural areas. Similarly, livestock ownership was higher in rural areas, with 33.5 percent of households owning livestock, compared with 3.4 percent for urban areas. Overall, 20.3 percent of households in Zambia owned livestock.

Table 3.7   Percentage distribution of household assets by region, 2014

Type of Assets	Total	Rural	Urban
Radio	60.7	50.3	74.0
Television	39.8	15.5	71.0
Bicycle	41.3	52.0	27.5
Motorcycle	1.6	1.7	1.5
Sewing Machine	4.6	2.7	7.0
Phone	54.7	38.5	75.6
Ox Plough	10.2	17.1	1.5
Oxen/donkey drawn Cart	5.7	9.3	1.0
Car/Truck	7.3	2.5	13.6
Motor Boat	0.5	0.6	0.4
Fridge/freezer	21.2	2.4	45.5
Poultry	29.6	46.6	7.8
Livestock	20.3	33.5	3.4
Wheelbarrow	9.9	5.1	16.1
Stove	22.9	2.5	49.2
Other	15.1	20.3	8.4

At provincial level, the asset ownership pattern is similar to that observed at the regional level; the most urbanized provinces, that is, Copperbelt and Lusaka, recorded the highest proportion of households owning assets such as radio, television, phone, fridge and stove. The highest proportion of households owning agriculture related assets was recorded in Eastern and Southern provinces. The proportion of households owning a plough was 33.1 percent and 23.9 percent while that of households owning livestock was 43.8 percent and 45.5 percent in Southern and Eastern provinces respectively. Eastern Province recorded the highest proportion of households with bicycles (61.5 percent).

Table 3.8   Percentage distribution of household assets by province, 2014

Type of Assets	Central	Copper belt	Eastern	Luapula	Lusaka	Muchinga	Northern	North Western	Southern	Western
Radio	63.3	71.9	55.6	45.4	76.7	60.2	49.0	56.1	53.7	39.9
Television	37.1	66.7	18.6	14.7	76.0	19.9	16.0	25.0	29.8	14.8
Bicycle	53.8	33.7	61.5	52.1	23.1	52.0	53.1	44.7	42.6	21.4
Motorcycle	1.7	1.3	1.9	0.9	1.1	1.9	1.3	3.6	2.3	1.2
Sewing Machine	5.6	6.8	4.1	2.3	6.5	3.1	2.1	2.8	4.5	1.7
Phone	64.1	71.2	45.3	36.3	75.9	38.8	34.4	38.9	54.9	29.2
Ox Plough	19.5	1.6	23.9	1.0	2.1	1.3	1.3	1.2	33.1	14.7
Oxen/donkey drawn Cart	9.9	0.9	15.3	0.3	1.0	0.1	0.4	2.2	16.5	9.5
Car/Truck	5.5	12.1	3.5	2.4	15.2	3.2	1.6	5.6	6.0	2.6
Motor Boat	0.2	0.6	0.3	1.2	0.1	0.0	1.6	0.2	0.8	0.2
Fridge/freezer	13.0	41.9	4.9	4.2	47.3	6.3	4.5	9.6	15.8	6.7
Poultry	41.1	11.9	45.2	32.6	9.3	36.8	39.0	13.2	54.1	37.4
Livestock	27.2	6.0	45.5	13.4	5.2	20.1	21.7	8.7	43.8	20.6
Wheelbarrow	11.0	15.9	5.0	7.1	16.0	4.7	4.1	5.3	10.3	3.2
Stove	13.6	41.4	4.9	4.5	57.1	5.3	3.9	9.9	15.4	5.9
Other	25.9	7.0	10.3	27.5	5.0	12.6	24.5	24.3	10.3	34.7

Table 3.9   Household asset ownership by expenditure quintile, 2014

Asset	Expenditure quintiles					
	Poorest	Fourth	Middle	Second	Richest	Total population
Radio	11.9	17.1	20.0	23.4	27.6	1827871
Television	2.3	9.6	16.7	29.1	42.3	1200303
Bicycle	16.9	21.1	21.9	21.1	19.0	1245638
Motorcycle	5.4	9.2	13.2	20.5	51.8	49394
Sewing Machine	2.7	8.2	13.7	25.3	50.1	138305
Mobile/Telephone	6.6	14.3	20.2	26.6	32.4	1650948
Ox Plough	16.5	20.0	21.6	22.9	18.9	309554
Oxen/donkey drawn Cart	15.1	17.9	19.5	24.8	22.6	170974
Car/Truck	1.5	2.2	4.4	13.2	78.7	222964
Motor Boat	12.1	15.7	16.0	30.5	25.7	15055
Refrigerator/freezer	0.3	3.0	10.7	26.5	59.5	639307
Poultry	23.5	23.7	20.9	17.9	13.9	893165
Livestock	22.1	22.8	22.2	19.1	13.8	613713
Wheelbarrow	3.5	8.3	13.4	24.3	50.5	300617
Stove	0.9	4.6	12.2	27.6	54.7	691468
Other asset	38.7	21.7	17.8	12.3	9.5	447338

Table 3.9 shows the distribution of asset ownership by expenditure quintile. There is a concentration of assets owned among households in the richest quintiles. Particularly, more than half of households who reported to have ownership of a motor car, motorcycle, refrigerator and sewing machine belonged to the richest quintile. The poor households seem to invest more in livestock, 44 percent of households who reported ownership of an animal were from the poorest and second quintiles.

3.3.4 Expenditure quintiles

Table 3.9 shows household expenditure by expenditure quintile. The average monthly household expenditure was K1,246.70. The poorest 20 percent of households had an average monthly expenditure of K65.6 per month while the average expenditure for the richest 20 percent was K4,443.70 per month. This is despite the fact that the average household size is higher among the poor (5.5 people) than the rich (4.4 people), see Table 3.5.

The poorest 20 percent of households accounted for 1.1 percent of total expenditure compared with 71.3 percent accounted for by the richest 20 percent of households.

The per capita expenditure was K13.70 per month among the poorest individuals and the richest spent K807.10 per person per month. Individuals in the middle class spent K101.60 per person per month

Table 3.10 Household expenditure by expenditure quintile, 2014

Quintile	Population	Households	Monthly Expenditure			percent share of households	percent share of expenditure
			Average	Total	Per capita		
Poorest	2,897,085	605,518	65.6	39,731,086	13.7	20.0	1.1
Second	2,833,418	605,541	214.2	129,700,012	45.8	20.0	3.4
Middle	2,840,168	605,665	476.7	288,701,060	101.6	20.0	7.6
Fourth	3,115,549	605,551	1,034.6	626,504,476	201.1	20.0	16.6
Richest	3,332,850	605,350	4,443.7	2,689,970,054	807.1	20.0	71.3
Total	**15,019,071**	**3,027,625**	**1,246.7**	**3,774,606,688**	**251.3**	**100.0**	**100.0**

3.4 Summary `

The estimated total population for Zambia in 2014 was 15,019,071. Of the total population, 58.5 percent resided in rural areas while the remaining 41.5 percent were urban based. Zambia's population was comprised mostly of youths, with 64.2 percent of the population reported to be below the age of 25 years. Females accounted for 51.1 percent while males accounted for 48.9 percent. About 46.4 percent of the population was married while 43.2 percent had never been married. Christianity was the most dominant religion with 97.6 percent of the Zambian population being of Christian faith.

Female-headed households accounted for 24.2 percent of households. At 47.6 percent, biological children accounted for most of the population. The average household size was estimated at 5.0 persons, 5.2 for rural and 4.8 for urban areas. The minimum household size was 1.0 while the maximum was 27.0. In terms of education, 90.7 percent of the population had attained either primary or secondary school education. Only 6.3 percent had tertiary education. The proportion of the employed population was 41.7 percent (self-employed and employees); and Survey results show that the most commonly owned asset was a radio, with 60.7 percent of households reporting ownership, followed by a phone at 54.7 percent.

The average monthly household expenditure was K1, 246.70. The poorest 20 percent of households had an average monthly expenditure of K65.60 while the average expenditure for the richest 20 percent was K4,443.70.

4 Housing characteristics and household amenities

4.1 Introduction

Housing is one of the basic needs of human life and an important indicator of social welfare. Housing characteristics and amenities measure material aspects of socio-economic circumstances that influence health. They are markers of material circumstances that may have health implications. For example, lack of running water and a household toilet may be associated with increased risk of infection. (Shaw, 2004)

One objective of the ZHHEUS survey was to document household characteristics in the country by looking at the types of dwellings in which households live, and access to amenities such as piped water, electricity, and toilet facilities. The housing characteristics included the type of tenure, and type of roof, wall, and floor. Information on main water sources, toilet facilities, and type of fuel used by the households for both lighting and cooking was also collected. Information on these characteristics is useful in that it reflects on the household's socio-economic status from a public health point of view.

4.2 Households occupancy status

Zambia has a total number of 3,027,625 households. Table 4.1 shows the proportions of households by occupancy status. The results show that 70.7 percent of households reported that the dwelling they occupied was either owned by family or by one of its members. Households that reported living in a rented dwelling accounted for 21.1 percent and 2.9 percent of the households occupied an institutional house. There were more households in rural areas living in a dwelling that was owned by family, or one of its members, at 89.2 percent compared with urban areas at 47.0 percent.

Analysis by province shows that Western Province had the highest proportion of households that lived in a dwelling owned by family or one of its members at 90.5 percent, followed by Eastern Province at 87.9 percent. The province with the lowest proportion of households who occupied a dwelling owned by family or one of its members was Lusaka Province at 39.6 percent. Lusaka Province had the highest proportion of households who rented the dwelling they occupied at 50.7

percent, followed by Copperbelt Province at 33.2 percent while the lowest was Western Province at 5.2 percent.

Table 4.1 Percentage distribution of households by occupancy status, region and province 2014

		Family Owned	Rented	Occupied without payment	Institutional House	Other	Total Percent	Total Number of Households
Region	Zambia	70.7	21.1	4.9	2.9	.4	100.0	3,027,625
	Urban	47.0	45.6	4.9	2.1	.4	100.0	1,700,927
	Rural	89.2	1.9	4.9	2.9	.4	100.0	1,326,697
Province	Central	74.9	12.7	6.2	6.1	.2	100.0	272,191
	Copperbelt	59.6	33.2	3.5	2.8	.8	100.0	478,824
	Eastern	87.9	6.5	2.7	2.6	.3	100.0	329,527
	Luapula	83.5	9.3	4.7	1.3	1.1	100.0	207,621
	Lusaka	39.6	50.7	7.2	2.2	.3	100.0	578,804
	Muchinga	86.1	8.6	2.2	2.9	.1	100.0	180,102
	Northern	82.0	6.5	9.6	1.1	.7	100.0	255,898
	North Western	82.7	8.7	5.8	2.4	.4	100.0	159,063
	Southern	76.8	15.0	4.1	4.0	.1	100.0	355,819
	Western	90.5	5.2	.9	3.0	.3	100.0	209,775
	Total							3,027,625

4.3 Construction materials of housing Units

There are different materials used for construction of roofs, walls and floors of housing units. These are described below.

4.3.1   Type of floor

At national level, 47.7 percent of households reported that their housing units were made of earth/sand floor. Housing units that had cement/terrazzo as the type of floor accounted for 39.8 percent and those with mud at 5.4 percent. The lowest main type of floor reported by households was palm/bamboo and vinyl or asphalt strips each registering 0.1 percent.

Analysis at provincial level shows that Luapula Province had the highest proportion of housing units with earth/sand as the type of floor at 75.8 percent while Lusaka Province had the lowest proportion at 11.6 percent. Lusaka Province had the highest proportion of housing units with

cement/terrazzo as the type of floor (74.2 percent) while Western Province had the lowest proportion at 13.3 percent.

Table 4.2   Percentage distribution of households by main type of floor, 2014.

Residence	Earth/sand	Mud	Wood plank	Palm/ bamboo	Parquet Polished wood	Vinyl	Ceramic	Cement /terrazzo	Other	Total Percent	Total
Rural	72.3	8.9	0.7	0.1	0.0	0.0	0.4	15.4	2.2	100.0	1,700,927
Urban	16.1	1.0	0.1	0.0	0.4	0.2	8.4	71.0	2.7	100.0	1,326,697
Total	47.7	5.4	0.5	0.1	0.2	0.1	3.9	39.8	2.4	100.0	3,027,625
Central	53.4	8.7	0.0	0.0	0.2	0.0	2.2	34.6	0.9	100.0	272,191
Copperbelt	25.2	2.5	0.1	0.1	0.6	0.2	7.1	58.8	5.5	100.0	478,824
Eastern	68.9	4.0	0.0	0.2	0.0	0.0	0.7	25.9	0.2	100.0	329,527
Luapula	75.8	6.7	0.0	0.0	0.3	0.0	0.5	16.1	0.5	100.0	207,621
Lusaka	11.6	0.5	0.2	0.0	0.3	0.2	11.1	74.2	1.9	100.0	578,804
Muchinga	63.6	8.7	0.3	0.2	0.0	0.0	0.7	24.1	2.4	100.0	180,102
Northern	63.7	16.4	0.2	0.0	0.1	0.0	0.6	15.0	4.0	100.0	255,898
North western	73.5	0.7	0.1	0.0	0.0	0.1	1.8	22.6	1.1	100.0	159,063
Southern	49.3	10.2	0.2	0.2	0.0	0.0	1.1	37.7	1.2	100.0	355,819
Western	74.33	1.6	4.9	0.0	0.1	0.0	0.3	13.3	5.4	100.0	209,775

4.3.2   Type of wall

In Zambia, a high proportion of households (31.1 percent) reported that their housing units were constructed of cement blocks as the main type of wall, followed by households with housing units made o pan/mud bricks (30.4 percent).

Analysis by residence shows that more households reported having pan/mud bricks as type of wall (39.0 percent), followed by households that reported mud/dung (37.9 percent) and only 6.2 percent of households reported cement blocks as the main type of wall. In urban areas, the majority of households reported the main type of wall used as cement blocks (62.9 percent), followed by households reporting pan/mud bricks (19.5 percent).

Lusaka Province had the highest proportion of households with housing units that had cement blocks as the main type of wall at 77.6 percent, while Northern Province indicated the lowest

proportion of households reporting cement block at 5.0 percent. Luapula Province recorded the highest proportion of households that reported pan/mud bricks at 56.6 percent while Western Province had the lowest proportion of households at 1.0 percent. It is worth noting that Western Province reported the highest proportion of households with housing units that had mud/dung as the main type of wall at 54.4 percent while Lusaka Province had the lowest at 4.8 percent.

Table 4.3   Percentage distribution of households by main type of wall by province, rural/urban 2014.

	No walls	Cane/ palm/ trunk	Mud/ dung	Bamboo /mud	Stone with mud/cement with mud	Stone with lime/ce ment	Mud brick	Cemen t blocks	Othe r	Total Perce nt	Total
Rural	0.6	2.1	37.9	3.9	5.5	0.5	39.0	6.2	4.7	100.0	1,700,927
Urban	0.0	0.1	6.2	0.4	7.2	2.1	19.5	62.9	1.4	100.0	1,326,697
Total	0.4	1.2	24.0	2.4	6.2	1.2	30.4	31.1	3.1	100.0	3,027,625
										100.0	
Central	0.0	0.4	28.3	2.3	5.1	2.9	44.0	16.0	1.3	100.0	272,191
Copperbel t	0.1	0.4	12.6	0.8	9.8	2.4	20.7	51.8	1.4	100.0	478,824
Eastern	0.5	0.6	42.3	2.3	3.6	0.8	40.7	8.3	0.8	100.0	329,527
Luapula	1.7	0.1	25.3	1.4	9.5	0.0	56.6	5.1	0.3	100.0	207,621
Lusaka	0.0	0.2	4.8	0.3	3.8	1.6	9.4	77.6	2.3	100.0	578,804
Muchinga	1.9	0.8	30.5	0.9	7.8	1.3	45.8	10.4	0.6	100.0	180,102
Northern	0.2	0.6	37.0	0.4	5.5	0.2	46.2	5.0	4.8	100.0	255,898
North Western	0.6	0.6	38.6	1.5	5.9	1.0	34.1	11.9	5.8	100.0	159,063
Southern	0.1	3.1	12.8	4.4	8.1	0.2	39.2	26.1	6.0	100.0	355,819
Western	0.1	7.2	54.4	13.7	3.7	0.4	1.0	8.9	10.4	100.0	209,775

4.3.3   Type of roof

Table 4.4 shows the percentage distribution of households by main type of roof.   The results show that 38.9 percent of households in Zambia indicated that the dwelling they occupied had thatched roof, followed by 35.4 percent who reported having corrugated iron. About 21.0 percent

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of households had asbestos as the main type of roof and only 0.1 percent of households indicated not having any roof.

Analysis by residence shows that in rural areas, more households reported having thatched roof at 65.0 percent, followed by those that reported having corrugated iron at 27.4 percent. The lowest proportion of households reported having concrete as the main type of roofing at 0.1 percent. In urban areas, the picture was different. About 46 percent of households in urban areas reported having corrugated iron as the main type of roof, followed by households that reported asbestos sheet at 42.1 percent, while the lowest proportion of households reported having tiles at 1.0. In urban areas no household indicated not having any roof.

Provincial analysis shows that Luapula Province had the highest proportion of households (79.7 percent) with thatch/palm leaf as the main type of roof, followed by Western Province (78.2 percent), Northern Province (75.8 percent). Lusaka Province reported the lowest proportion of households that had thatch/palm leaf at 3.9 percent. In Central Province, almost half of the households (49.4 percent) reported having corrugated iron as the main type of roof, followed by North-Western Province (46.5 percent), Southern Province (44.8 percent), while the lowest proportion was reported in Luapula Province at 16.1 percent. Lusaka Province had the highest proportion of households with asbestos as the main type of roof at 51.8 percent, while Northern Province had the lowest at 2.5 percent.

Table 4.4   Percentage distribution of households by main type of roof by province, 2014

			Main Type of Roof								
	No roof	Thatch	Dung / mud	Corrugated iron	Tin cans	Asbestos sheet	Concrete	Tiles	Other	Total Percent	Total
Rural	0.2	65.0	0.9	27.4	0.2	4.2	0.1	0.0	2.0	100.0	1,700,927
Urban	0.0	5.5	0.2	45.7	0.1	42.1	1.3	1.0	4.0	100.0	1,326,697
Total	0.1	38.9	0.6	35.4	0.2	20.8	0.6	0.5	2.9	100.0	3,027,625
Central	0.1	39.1	0.0	49.4	0.0	10.2	0.2	0.0	1.0	100.0	272,191
Copperbelt	0.2	8.2	0.5	42.1	0.4	40.8	1.4	1.2	5.2	100.0	478,824
Eastern	0.0	53.3	0.3	38.9	0.0	5.9	0.1	0.0	1.5	100.0	329,527
Luapula	0.0	79.7	0.3	16.1	0.0	3.6	0.2	0.0	0.0	100.0	207,621
Lusaka	0.0	3.9	0.1	35.9	0.2	51.8	1.7	1.3	5.1	100.0	578,804
Muchinga	0.0	58.9	1.1	29.1	0.3	6.6	0.3	0.1	3.6	100.0	180,102
Northern	0.1	75.8	3.6	16.9	0.7	2.5	0.0	0.0	0.4	100.0	255,898
North Western	0.1	43.4	0.8	46.5	0.1	7.9	0.1	0.2	0.8	100.0	159,063
Southern	0.2	38.0	0.1	44.8	0.0	12.1	0.1	0.1	4.5	100.0	355,819
Western	0.5	78.2	0.3	17.7	0.0	2.8	0.1	0.1	0.2	100.0	209,775

4.4   Source of cooking energy

The data below shows the percentage distribution of households by source of cooking energy. Half of the households (50.5 percent) in Zambia were using firewood as the main source of cooking energy, 32.8 percent were using charcoal and 16.3 percent were using electricity.

Rural/urban analysis shows that firewood was the most commonly used source of cooking energy in rural areas (85.0 percent). About 13 percent of households were using charcoal and only 1.5 percent of households were using electricity. In urban areas, the main source of cooking energy used by households was charcoal at 57.9 percent. Electricity was used by 35.3 percent of households and only 6.3 percent of households were using firewood.

Figure 4.1 Percentage distribution of households using firewood, charcoal and electricity as main source for cooking energy, rural/urban, Zambia, 2014
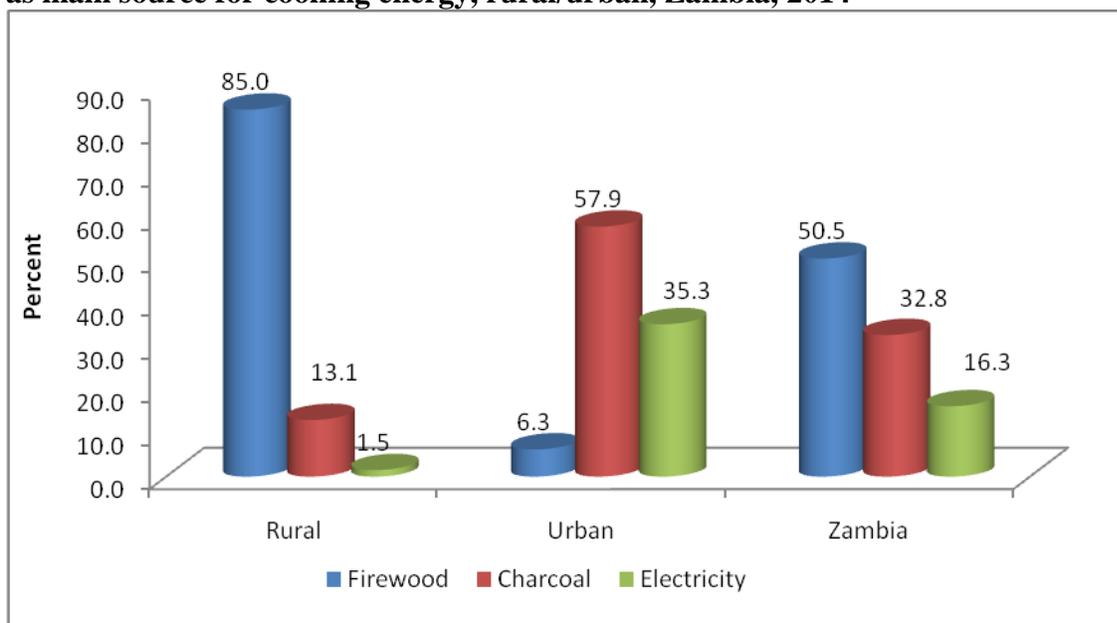
At provincial level, Western Province recorded the highest proportion of households that used firewood as the main source of cooking energy at 86.6 percent while Lusaka Province had the lowest at 10.0 percent. Copperbelt Province had the highest proportion of households that used charcoal (57.1 percent) while Western Province had the lowest (8.9 percent). Electricity was widely used for cooking by households in Lusaka Province at 45.7 percent while Northern Province had the lowest proportion at 1.6 percent.

Table 4.5   Percentage distribution of households by source of cooking energy, 2014

Rural/Urban/Province		Firewood	Charcoal	Kerosene /paraffin	Gas	Electricity	Other	Total Percent	Total Number of Households
Region	Zambia	50.5	32.8	.0	.0	16.3	.3	100.0	3,027,625
	Rural	85.0	13.1	.0	.0	1.5	.3	100.0	1,700,927
	Urban	6.3	57.9	.0	.1	35.3	.3	100.0	1,326,697
Province	Central	57.9	33.5	.2	0.0	8.4	0.0	100.0	272,191
	Copperbelt	14.4	57.1	.1	.1	28.0	.4	100.0	478,824
	Eastern	83.5	13.6	0.0	0.0	2.8	.1	100.0	329,527
	Luapula	47.7	49.8	.1	0.0	1.9	.6	100.0	207,621
	Lusaka	10.0	44.2	0.0	.1	45.7	.1	100.0	578,804
	Muchinga	72.2	24.2	.1	0.0	2.9	.7	100.0	180,102
	Northern	78.6	19.5	0.0	.1	1.6	.3	100.0	255,898
	North Western	68.2	25.8	0.0	0.0	4.9	1.1	100.0	159,063
	Southern	70.2	19.8	.1	.1	9.3	.5	100.0	355,819
	Western	86.6	8.9	0.0	0.0	4.3	.2	100.0	209,775

4.5   Source of lighting energy

Table 4.6 shows the percentage distribution of households by source of lighting energy. In Zambia, a higher percentage of households reported using battery lamp/torch as the main source of lighting at 37.3 percent. Only 30.3 percent of households reported using electricity as the main source of lighting energy, 13.8 percent reported candle as the main source of lighting energy, while 7.6 percent of households were using kerosene.

In rural areas, the highest proportion of households reported using battery lamp/torch as the main source of lighting energy at 59.3 percent, followed by households that reported kerosene at 10.7 percent. About 9.0 percent of households reported using candle while 6.6 percent reported using

solar energy. Only 3.1 percent of households reported using electricity as the main source of lighting energy.

More than half of the households in urban areas (65.2 percent) used electricity as the main source of lighting energy, followed by households that used candle (19.5 percent) while 9.1 percent used battery lamp/torch.

Figure 4.2 Percentage distribution of households by main source of lighting energy, rural Zambia, 2014
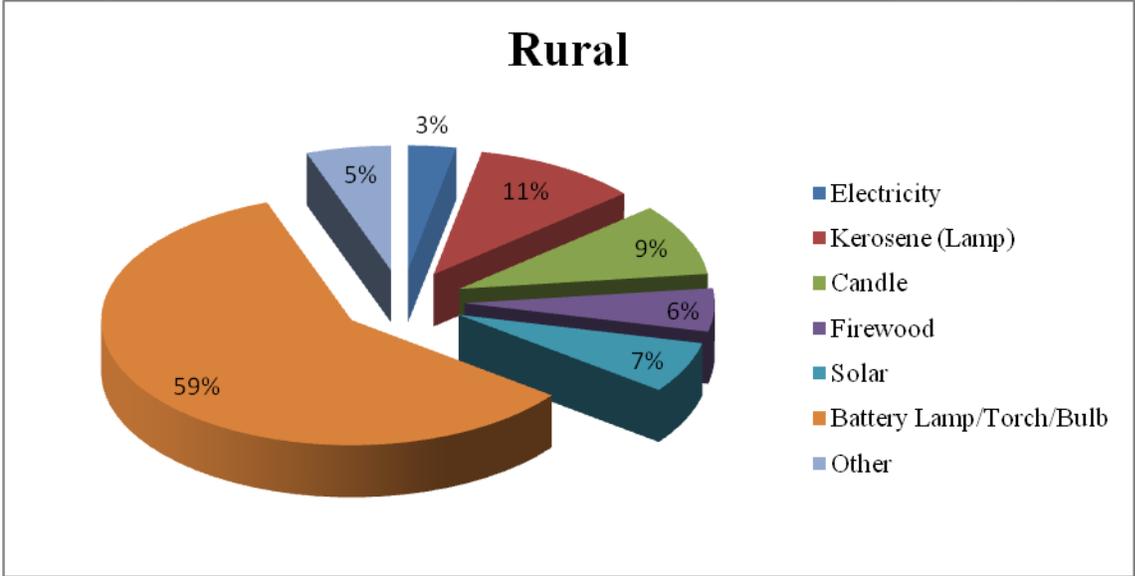
Figure 4.3 Percentage distribution of households by main source of lighting energy, urban Zamba, 2014
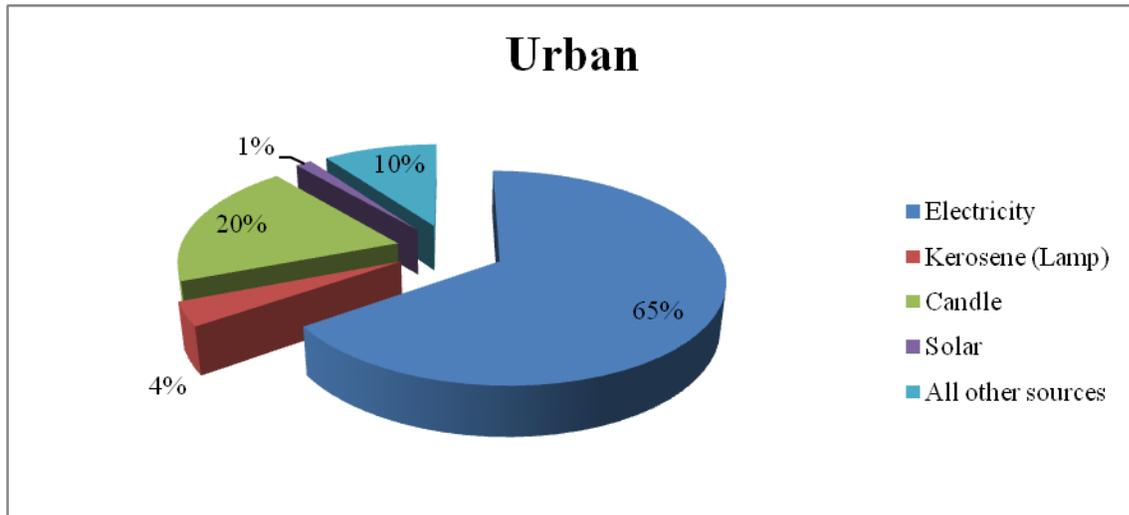
Provincial analysis shows that Lusaka Province had the highest proportion of households that used electricity as the main source of lighting energy (70.9 percent), followed by households on the Copperbelt Province (59.0 percent) and the lowest proportion of households that used electricity was in Northern Province (5.5 percent). Copperbelt Province had the highest proportion of households that used candle for lighting energy (19.7 percent) followed by households in Lusaka Province (18.1 percent) while Northern Province had the lowest proportion (6.1 percent). Kerosene was widely used by households in Northern Province at 18.7 percent, followed by households in Luapula Province at 17.2 percent while Lusaka Province had the lowest proportion of households at 2.7 percent. Eastern Province had the highest percentage of households using battery lamp/torch at 68.2 percent while Lusaka Province had the lowest at 6.7 percent.

Table 4.6   Percentage distribution of households by source of lighting energy, 2014

		Electricity	Kerosene (Lamp)	Gas	Candle	Firewood	Solar	Battery Lamp /Torch/Bulb	Other	Total Percent
Region	Zambia	30.3	7.6	.1	13.8	3.3	4.3	37.3	3.3	100.0
	Rural	3.1	10.7	.1	9.3	5.6	6.6	59.3	5.4	100.0
	Urban	65.2	3.7	.0	19.5	.3	1.4	9.1	.7	100.0
Province	Central	17.8	3.3	0.0	16.5	1.1	5.6	53.5	2.2	100.0
	Copperbelt	59.0	8.1	0.0	19.7	.7	2.0	9.9	.5	100.0
	Eastern	6.6	6.8	0.0	7.1	2.4	7.6	68.2	1.4	100.0
	Luapula	6.8	17.2	0.0	12.2	6.6	2.4	44.1	10.7	100.0
	Lusaka	70.9	2.7	.1	18.1	.4	1.0	6.7	.2	100.0
	Muchinga	10.6	9.3	0.0	9.3	4.8	7.1	52.6	6.2	100.0
	Northern	5.5	18.8	.1	6.1	4.6	5.1	56.5	3.5	100.0
	North Western	11.6	13.8	.1	17.3	6.5	6.2	35.4	9.0	100.0
	Southern	20.2	3.7	.2	13.8	3.7	6.8	49.7	1.8	100.0
	Western	7.9	4.9	0.0	7.4	12.1	4.9	52.0	10.8	100.0

4.6   Main source of drinking water

Among the different water sources, protected wells, boreholes and taps are regarded as safe sources of water supply, whereas unprotected wells, surface water (i.e Rivers, Dams, Lakes, Ponds, Streams and Canals) are considered unsafe sources of water supply. Table 4.7 shows the percentage distribution of households by main source of drinking water. In Zambia, there are more households with access to unsafe water at 55.7 percent, while 44.3 percent had access to safe water. There are more households in urban areas that had access to safe sources of drinking water at 79.8 percent, compared with 16.6 percent of households in rural areas.

At provincial level, Lusaka Province had the highest proportion of households that reported having access to safe water for drinking at 80.1 percent, followed by households in the Copperbelt Province at 76.7 percent. Luapula Province reported the lowest proportion of households with access to safe water for drinking at 11.0 percent,

Table 4.7 Percentage distribution of households by main source of drinking water, rural/urban and province 2014

		Safe	Unsafe	Piped Into Dwelling	Piped To Yard/Plot	Public Tap / Standpipe	Tube well or borehole	Protected Well	Unprotected Well	Unprotected Spring	Water Vendor	Surface Water	Other
Region	**Zambia**	44.3	55.7	10.9	11.5	11.5	21.1	9.8	17.6	2.3	2.2	10.2	3.0
	Rural	16.6	83.4	.5	1.0	2.5	32.7	11.7	26.6	4.0	.1	17.7	3.1
	Urban	79.8	20.2	24.2	24.8	22.9	6.1	7.4	6.2	.2	4.8	.5	2.8
Province	**Central**	46.0	54.0	6.0	5.7	10.1	21.6	23.7	19.6	1.4	2.7	6.1	3.1
	Copperbelt	76.7	23.3	25.4	27.0	8.5	5.2	15.3	10.0	.8	1.9	2.3	3.6
	Eastern	18.7	81.3	2.3	3.0	2.3	49.8	10.8	15.2	3.2	1.8	10.6	1.1
	Luapula	11.0	89.0	.3	1.6	2.6	26.7	6.2	37.3	2.4	0.0	21.8	1.1
	Lusaka	80.1	19.9	24.4	20.2	34.1	10.0	1.4	1.7	.1	5.1	.8	2.2
	Muchinga	26.8	73.2	.8	3.4	6.2	18.9	15.1	22.2	5.8	1.1	24.1	2.5
	Northern	18.3	81.7	2.8	2.0	3.2	13.3	7.5	31.0	6.4	1.5	28.2	4.1
	North Western	27.9	72.1	4.9	6.0	4.2	22.0	12.0	32.4	5.8	2.3	7.7	2.7
	Southern	32.8	67.2	5.3	12.1	8.7	34.7	6.5	13.2	1.2	.9	13.2	4.2
	Western	20.3	79.7	3.8	3.8	5.6	23.9	6.9	37.0	3.1	1.2	9.9	5.0

4.7 Main type of toilet facility

Table 4.8 shows results pertaining to toilet facilities available to households as asked in the questionnaire. The most common type of toilet facility reported in Zambia by 57.0 percent of households was traditional pit latrine. Only 16.2 percent of households in Zambia reported using a flush/pour toilet as the main toilet facility while 15.3 percent of households used pit latrine with a slab. About 9.0 percent of households reported not having a toilet facility, using bush/field.

In rural areas, more households reported using traditional pit latrine (75.6 percent) as the main toilet facility, followed by 15.6 percent of households that reported no toilet/bush/field as the type of toilet facility used. There were more households in urban areas that reported using a

flush/pour toilet as the main toilet facility at 35.8 percent, followed by households using traditional pit latrine at 33.1 percent.

Copperbelt Province had the highest proportion of households using flush/pour toilet at 46.0 percent, followed by Lusaka Province at 29.1 percent. Luapula Province registered the lowest proportion of households using flush/pour toilets at 1.9 percent. There were more households in Northern Province using traditional pit latrine as the main toilet facility at 89.1 percent, followed by Luapula Province at 88.1 percent, with Lusaka Province at 29.2 percent having the lowest proportion of households using traditional pit latrine. Western Province recorded the highest percentage of households at 39.4 percent with no toilet facility/using field/bush, followed by households in Southern Province at 22.9 percent.

Table 4.8 Percentage distribution of households by type of toilet facility, rural/urban and province, 2014
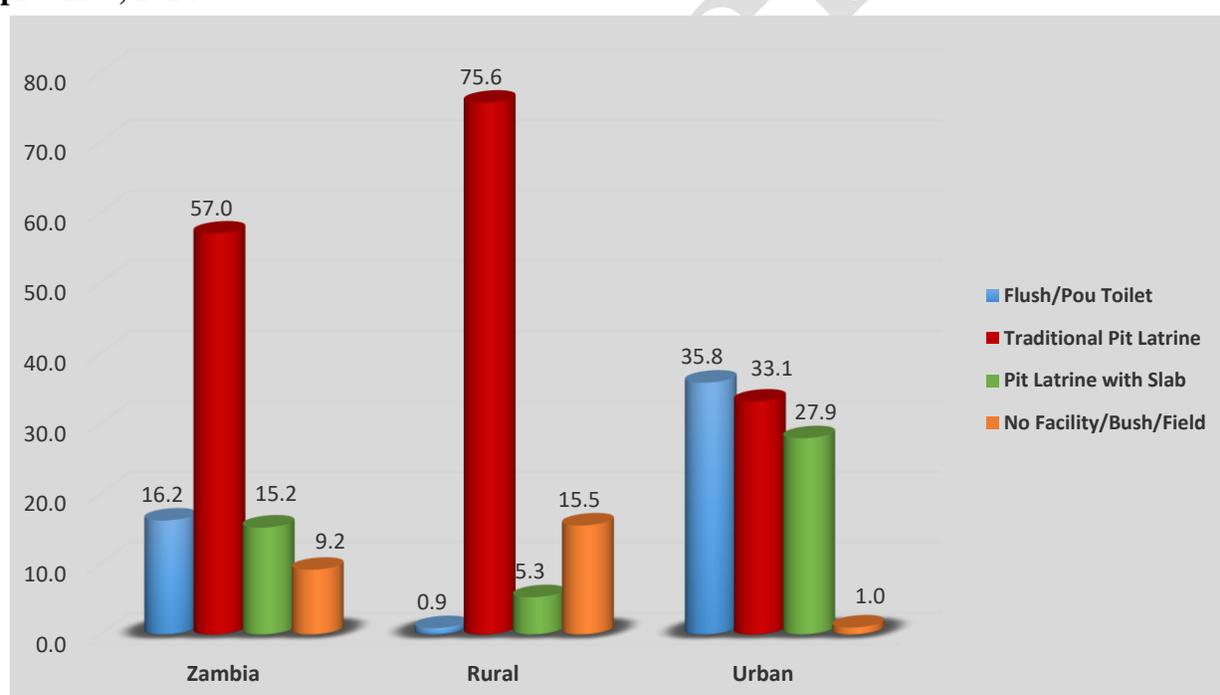
4.8. Summary

The majority of households occupied a dwelling either owned by family, or by one of its members (70.7 percent). Dwelling ownership either by family, or by one of its members, was

higher in rural areas at 89.2 percent, compared with urban areas at 47.0 percent. Renting of houses was most common in urban areas as compared with rural areas. Western Province recorded the highest percentage of households living in a dwelling owned by a family, or one of its members, whilst Lusaka Province had the highest percentage of households living in a rented dwelling.

About 48 percent of households reported that the main floor in their housing unit was made of earth/sand, while 39.8 percent reported having cement/terrazzo as the main type of floor.

A high proportion of households (31.1 percent) reported that their housing units were constructed of cement blocks as the main type of wall, followed by households with housing units made of pan/mud bricks (30.4 percent).

About 39 percent of households indicated that the dwelling they occupied had thatched roof, followed by those reported as having corrugated roof at 35.4 percent, while 21.0 percent of households had asbestos as the main type of roof.

As the main source of cooking energy, firewood was reported by the majority of households at 50.5 percent, whilst charcoal was used by 32.8 percent of the households, and electricity was only used by 16.3 percent. Among 85.0 percent of rural households, firewood was a very common source of cooking, compared with 6.3 percent of the urban households. Charcoal was used by the largest percentage of urban households at 57.9 percent, followed by electricity at 35.3 percent.

A higher proportion of households reported using battery lamp/torch as the main source of energy for lighting at 37.3 percent. This was followed by 30.3 percent of households overall using electricity. By residence, the majority of households in rural areas (59.3 percent) used battery lamp/torch for lighting while in urban areas 65.2 percent of households used electricity as the main source for lighting.

There were more households with access to unsafe water at 55.7 percent, while 44.3 percent had access to safe water. There were more households in urban areas that had access to safe sources of drinking water at 79.8 percent, compared with 16.6 percent of households in rural areas.

The most common type of toilet facility was the traditional pit latrine reported by 57.0 percent of the households. Only 16.2 percent of households reported using a flush/pour toilet as the main toilet facility. About 9.0 percent of households reported that they either had no toilet facility or used bush/field. More households in rural areas (75.6 percent) used traditional pit latrine, while urban areas had more households using flush/pour toilet at 35.8 percent. Copperbelt Province had the highest proportion of households using flush/pour toilet at 46.0 percent, while Northern Province had more households using traditional pit latrines at 89.1 percent. Western Province recorded the highest proportion of households (39.4 percent) having no toilet facility, using field or bush.

5 Self-reported health status and disease pattern

5.1 Introduction

The most common definition of health status includes complete physical, mental and social well-being and not merely the absence of disease or infirmity (WHO, 2005). There is no single standard method of measuring health status for individuals or population groups. An individual's health status may be measured by an observer (e.g. a physician) who performs an examination and rates the individual along any of several dimensions, including presence or absence of life-threatening illness, risk factors for premature death, severity of disease, and overall health. Individual health status may also be assessed by asking the person to report his/her health perceptions in the domains of interest, such as physical functioning, emotional well-being, pain or discomfort, and overall perception of health (Canadian Institute for Health Information, 2001), that is 'Self-reported status'. Self-reported health status in this survey refers to the way an individual perceives their health in comparison to others in the same age group.

Human health and disease is almost always unequally distributed across a given population. The distribution differs according to age among other demographic characteristics, socio-economic characteristics, countries and even provinces. In instances where particular disease types or adverse health outcomes are more prevalent in one population group than others, the questions which logically follow are; who is affected, where and when the disease is occurring? These three questions are answered by describing the disease pattern in a given population.

This chapter is divided into two parts. The first part presents findings on disease patterns, while the second part looks at self-reported health status of household members across key demographic and socio-economic characteristics.

5.2 Disease patterns

The focus of this section is on the distribution of illness episodes, inpatient and outpatient visits, compared by province and region. This includes both those who fell ill or got injured and sought care as well as those who didn't. Further, the main causes of facility visitation and admissions

are discussed. The prevalence of chronic illnesses by sex, education status and expenditure quintile is also presented.

5.2.1 Population distribution of illness episodes

Table 5.1 presents information on the distribution of illness episodes in the last four weeks preceding survey interviews. Comparisons are done by provinces as well as by rural and urban regions. At the national level the percentage of population reporting illness stood at 21.3 percent with 25.5 percent of rural population and 15.4 percent urban population reporting illness. Of the ten provinces, nine had higher percentages of illness reported in rural places at 28.9 percent, except for Luapula which had a higher percentage of illness reported in urban places at 29.1 percent.

Luapula Province had the highest proportion of respondents who reported illness or injury at 28.9 percent, and Northern Province was second at 28.3 percent of the total provincial population. The lowest proportions of reported illness episodes were in Lusaka Province and Southern Province at 12.9 percent and 16.9 percent respectively. It is important to note that the proportion of people who reported being ill in Luapula Province is more than double the proportion in Lusaka Province.

Table 5.1 Percentage distribution of population by Self_reported illness episodes, province and region in previous four weeks , 2014.

Province	Total Population	Total rural population	Total urban population	Percentage of population reporting illness	Percentage of rural population reporting illness	Percentage of urban population reporting illness
Zambia Total	15,019,00	8,784,000	6,235,000	21.3	25.5	15.4
Central	1,474,000	1,020,000	374,000	24.6	26.5	19.0
Copperbelt	2,305,000	398,000	1,907,000	17.5	26.4	15.6
Eastern	1,766,000	1,552,000	214,000	25.8	26.0	24.3
Luapula	1,099,000	872,000	227,000	28.9	28.9	29.1
Lusaka	2,669,000	384,000	2,285,000	12.9	17.6	12.2
Muchinga	857,000	664,000	193,000	23.4	25.0	18.0
Northern	1,264,000	1,025,000	238,000	28.3	30.2	20.1
North Western	811,000	599,000	212,000	23.8	25.0	20.5
Southern	1,798,000	1,338,000	460,000	16.9	19.0	10.5
Western	975,000	851,000	124,000	26.3	27.9	15.1

5.2.2 Top ten causes of facility visitation

Malaria was found to be the leading cause of facility visitation with the number of visits per 1,000 catchment population recorded at 63 visits (Table 5.2). This was followed by headache and fever cases recorded at 26 per 1,000 and 15 per 1,000 visits respectively. In fourth and fifth positions are diarrhoea and disease of the respiratory system (9/1,000 and 7/1,000 visits). Eye infections, accidents and injuries, intestinal worms and TB complete the top ten despite each contributing only 2 visits per 1,000 population.

Overall, the study established that for every 1,000 population, 135 visits were made regardless of the reason for visiting the facility.

Table 5.2 Top Ten reported Reasons of facility visitation (all ages), 2014

Health conditions for visitation	Visits	
	Visits per 1,000 population	Total number of visits
1 Malaria	63	948,000
2 Headaches	26	384,000
3 Fever	15	226,000
4 Diarrhoea	9	140,000
5 Diseases of Respiratory	7	104,000
6 Skin diseases	3	48,000
7 Eye infections	2	34,000
8 Accidents and injuries	2	25,000
9 Intestinal worms	2	25,000
10 TB	2	23,000
Total	135	2,031,000

Figure 5.1 shows that of the 1,981,774 people who visited the facility following an illness, 36 percent mentioned malaria as the reason for the visit. The second most common reason was headache at 15 percent. All the other causes not specifically singled out accounted for an aggregate of 25 percent of the total visits. Among the least single causes of facility visitation were eye infections, accidents and injuries, TB and skin diseases all at 1 percent of the total number of visits.

Figure 5.1 Reasons for facility visitations
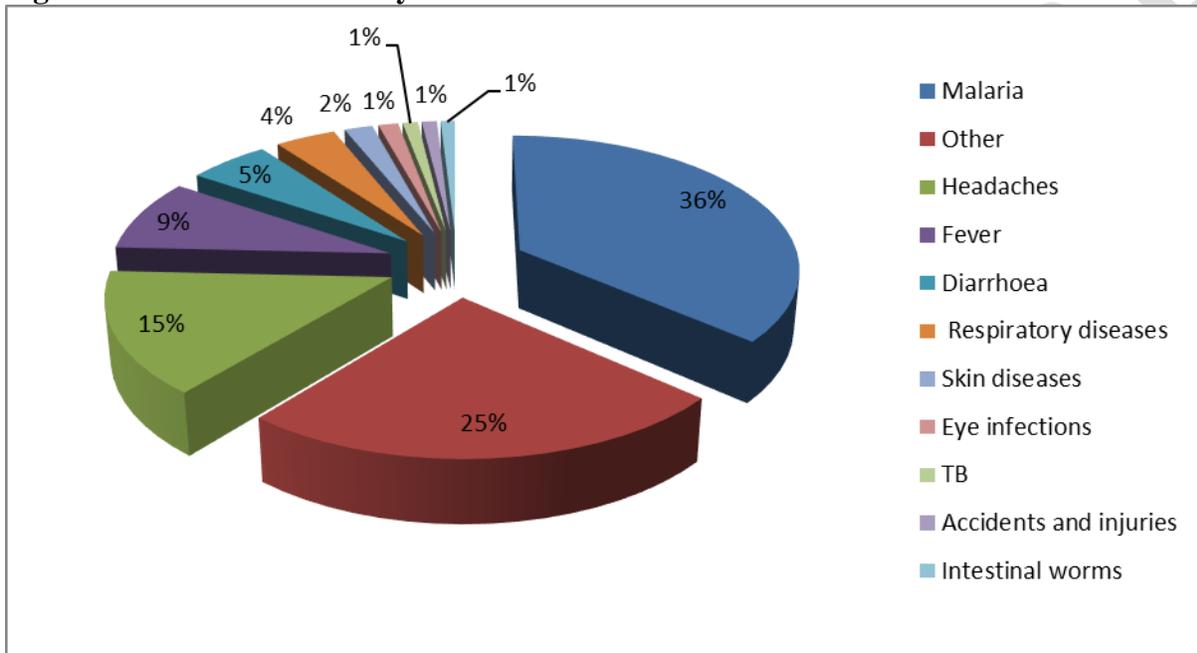
5.2.3 Causes of facility visitation for children aged under five

Among the under-fives, malaria was still ranked as the major reason for facility visitation Table 5.3 shows that 88 out of every 1,000 under-five children visited a health facility with reported malaria. In terms of absolute counts, malaria admission cases were more than twice the number of any other cause of admission. Fever and diarrhoea were the second and third most common causes of under-five admissions with the number of visits per 1,000 catchment population at 31 and 28 respectively. Other causes of admission among the top ten diseases included respiratory diseases such as pneumonia, headaches, skin diseases, intestinal worms, eye infections, accidents and injuries, and epilepsy.

Table 5.3 Top Ten reported causes of facility visitation for under-five, 2014

	Reason for Visitation	Visits	
		Count Per 1,000 population	Total visits
1	Malaria	88	195,000
2	Fever	31	68,000
3	Diarrhoea	28	61,000
4	Headaches	13	29,000
5	Diseases of Respiratory including pneumonia	10	22,000
6	Skin diseases (e.g. boils, lesions)	7	15,000
7	Eye infections	3	7,000
8	Intestinal worms	2	5,000
9	Accidents and injuries	2	3,000
10	Epilepsy	2	3,000
11	Total	221	405 000

5.2.4 Top ten causes of admission

Household members who reported to have been admitted in the last twelve months prior to the survey were asked the reason for being admitted (retained at facility for 24 hours or more). The responses indicate that malaria was the leading cause the first time the patient was admitted. Table 5.4 shows that 29 percent of all admissions were as a result of malaria, followed by headache at 9 percent.

Fever, respiratory diseases including pneumonia, diarrhoea, accidents and injuries, all at 6 percent, were also ranked amongst the top ten causes of admission. TB, skin diseases and diabetes completes the list.

Table 5.4 Top ten causes of admission, 2014

Reasons for admission - first admission	Admissions	
	Proportion (out of admitted)	Count
Malaria	29	132,000
Headaches	9	39,000
Fever	8	37,00
Hypertension	6	29,000
Diseases of Respiratory including pneumonia	6	28,000
Diarrhoea	6	28,000
Accidents and injuries	6	25,000
TB	3	15,000
Skin diseases (e.g. boils, lesions)	3	12,000
Diabetes	1	6,000
Total		451000

5.2.5 Prevalence of chronic illness

The survey found that about 11.3 percent of the total population suffered from a chronic illness (Table 5.5). Of this percentage 4.3 percent of the cases were as a result of hypertension. Arthritis

accounted for 1.8 percent and HIV/AIDS cases were at 1.7 percent. Cancer recorded the lowest proportion at 0.2 percent of the total population.

In terms of gender disaggregation, females were more prone to chronic infections than males. The proportion of each chronic illness among females was either higher or equal to that among men. Hypertension cases in females were more than twice that recorded for men, at 6 percent versus 2.6 percent respectively. A female was just as likely to suffer from cancer as their male counterpart with both at 0.2 percent.

Table 5.5 Prevalence of chronic illness by sex, 2014

Chronic illness	Total		Male		Female	
	Number of people	Proportion of people	Number of people	Proportion of people	Number of people	Proportion of people
Hypertension	651,000	4.3	193,000	2.6	458,000	6.0
Diabetes	112,000	0.7	47,000	0.6	65,000	0.8
Cardiac disorders	203,000	1.4	72,000	1.0	130,000	1.7
Arthritis	268,000	1.8	101,000	1.4	167,000	2.2
HIV/AIDS	260,000	1.7	102,000	1.4	159,000	2.1
Ulcers	169,000	1.1	92,000	1.2	77,000	1.0
Gout	145,000	1.0	56,000	0.8	89,000	1.2
Cancer	23,000	0.2	12,000	0.2	12,000	0.2
Any other chronic health condition	367,000	2.4	181,000	2.5	186,000	2.4
Zambia Total	1,700,000	14.6	750,000	11.7	950,000	17.7

Table 5.6 show that the prevalence of chronic illnesses was found to be highest among the urban residents at 11.8 percent compared to 10.7 percent in rural areas. The population age group 50+ was most vulnerable to chronic illnesses. The proportion of persons in this group with at least one chronic illness is significantly higher at 42.6 percent.

Table xxx: Prevalence of chronic illnesses by age, Province and region

		Total Population	At least one chronic condition	
			Number	Proportion
Zambia		15,019,071	1,696,008	11.3
Age 5 year groups	0-4	2,209,719	47,782	2.2
	5-9	2,242,082	60,784	2.7
	10-14	2,066,204	66,832	3.2
	15-19	1,706,051	83,296	4.9
	20-24	1,422,864	101,691	7.1
	25-29	1,127,070	130,049	11.5
	30-34	977,233	163,092	16.7
	35-39	823,547	173,960	21.1
	40-44	646,722	165,509	25.6
	45-49	441,680	127,263	28.8
	50+	1,355,899	575,749	42.5
Province	Central	1,473,854	186,552	12.7
	Copperbelt	2,304,881	294,625	12.8
	Eastern	1,766,300	177,605	10.1
	Luapula	1,098,912	99,790	9.1
	Lusaka	2,669,249	297,833	11.2
	Muchinga	857,411	112,762	13.2
	Northern	1,263,951	135,764	10.7
	North Western	811,325	95,708	11.8
	Southern	1,798,268	168,668	9.4
	Western	974,920	126,702	13.0
Region	Rural	8,784,334	953,084	10.8
	Urban	6,234,736	742,923	11.9

5.2.6 Prevalence of chronic illness by expenditure quintiles

Table 5.6 shows the distribution of people with at least one chronic illness across different types of expenditure quintiles. Of the total population, 11.3 percent had at least one chronic illness. Chronic illnesses were slightly more prevalent among the richest quintiles with 13 percent of this category reporting having suffered from at least one chronic illness. Overall, prevalence of chronic illnesses seems to be uniformly distributed among the different expenditure quintiles.

Table 5.6 Chronic illness by expenditure quintile, 2014

Expenditure Quintile	At least one chronic condition		
	Total Population	Count	Proportion of chronically ill
Poorest	2,897,085	323,000	11.2
Second	2,833,418	293,000	10 .3
Middle	2,840,168	316,000	11.1
Fourth	3,115,549	343,000	11.0
Richest	3,332,850	422,000	13.7
Total	15,019,071	1,696,000	11.3

5.2.7   Prevalence of chronic illness by education status

Level of education is considered to be one most important determinants of health. Lack of knowledge about prevention and treatment of chronic illnesses among the population could be one of the reasons explaining the prevalence rate of such illnesses. The distribution of people with chronic illnesses in the survey did not however follow any particular pattern with respect to education status of the population.

Table 5.7 Chronic illness by education status, 2014

		Total Population	Pop with at least one condition	Proportion
	Never attended	2,130,057	261,000	12.3
	Pre-school	251,768	7,000	2.7
	Primary	6,443,093	747,000	11.6
Highest level of education	Vocational	48,392	9,000	19.0
	Secondary	3,652,431	486,000	13.3
	College (middle level)	558,141	114,000	20.4
	University	139,150	23,000	16.8
	Don't Know	540,844	25,000	4.6
	Under school age	1,255,195	22,700	1.8
	Total	**15,019,071**	**1,696,000**	**11.3**

Table 5.7 shows that the prevalence rate of chronic illnesses was highest among the people whose highest level of education is college education. The rate is lowest among those who are in the under school age and pre-school categories at 1.8 and 2.7 percent respectively.

5.3 Health Status

This section presents self-reported health status compared by sex, region and employment status. It also discusses the distribution of health status compared by main source of drinking water and type of toilet facility.

5.3.1   Self-reported health status by sex

The majority of household members described their health status as either "good" at 56.4 percent, or "very good" at 30.4 percent (Figure 5.2). Only 4.4 percent of the respondents described their health status as "poor", while 0.2 percent had no idea of their health status compared with that of their peers. The health status of females compared very closely to that of males.

Figure 5.2 Self-reported health status by sex, 2014
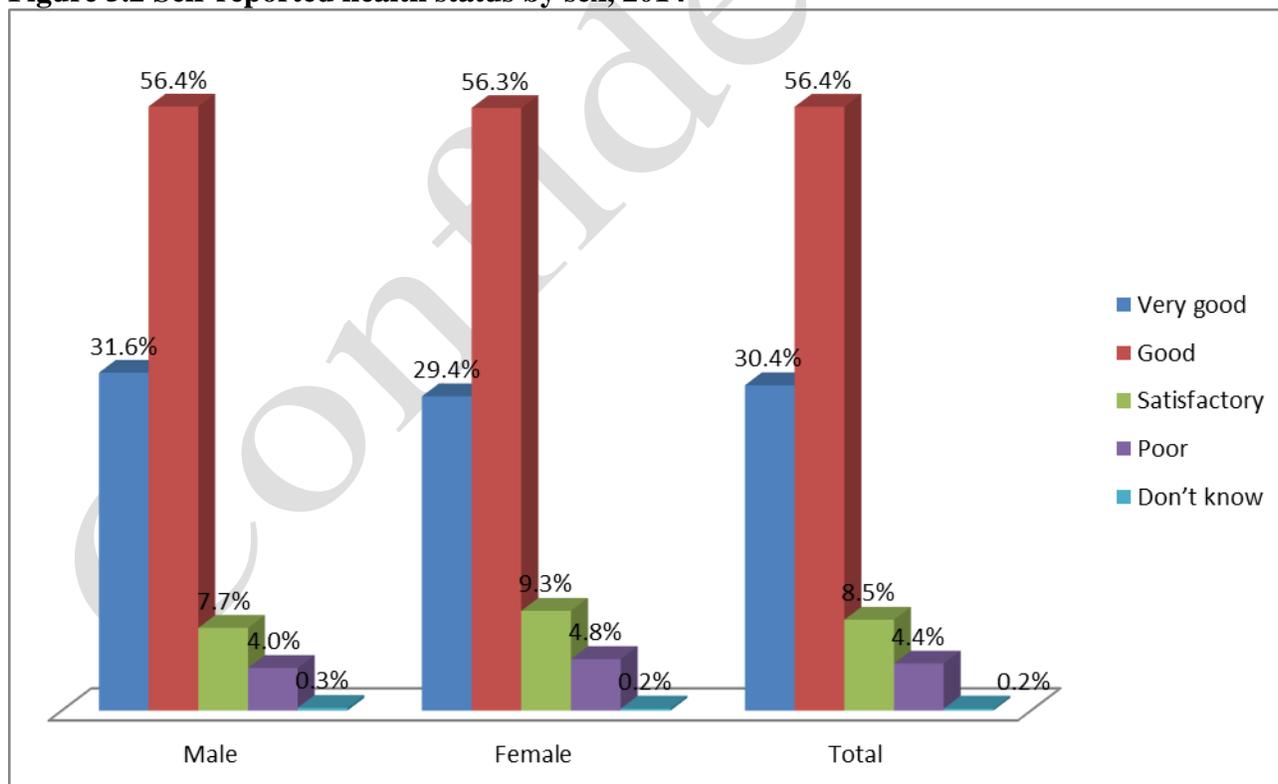
5.3.2 Self–reported health status by region

Figure 5.3 shows that most people in both rural and urban areas described their health status as "good" or "very good". The proportion of people reporting their health status as "very good" was, however, higher in urban areas at 36.6 percent, compared with 26.1 percent in rural areas. Rural areas had a slightly higher percentage of people in the "good" health status category. Overall the proportion of people reporting either "good" or "very good" health status was higher in urban areas at 90.7 percent, compared with 84.1 percent in rural places. An interesting point to note is that the percentage of people who reported to have "poor" health in rural areas was twice the percentage reported in urban areas. An individual in the rural area was more likely to suffer poor health than their urban counterpart.

Figure 5.3 Self-reported health status by region, 2014
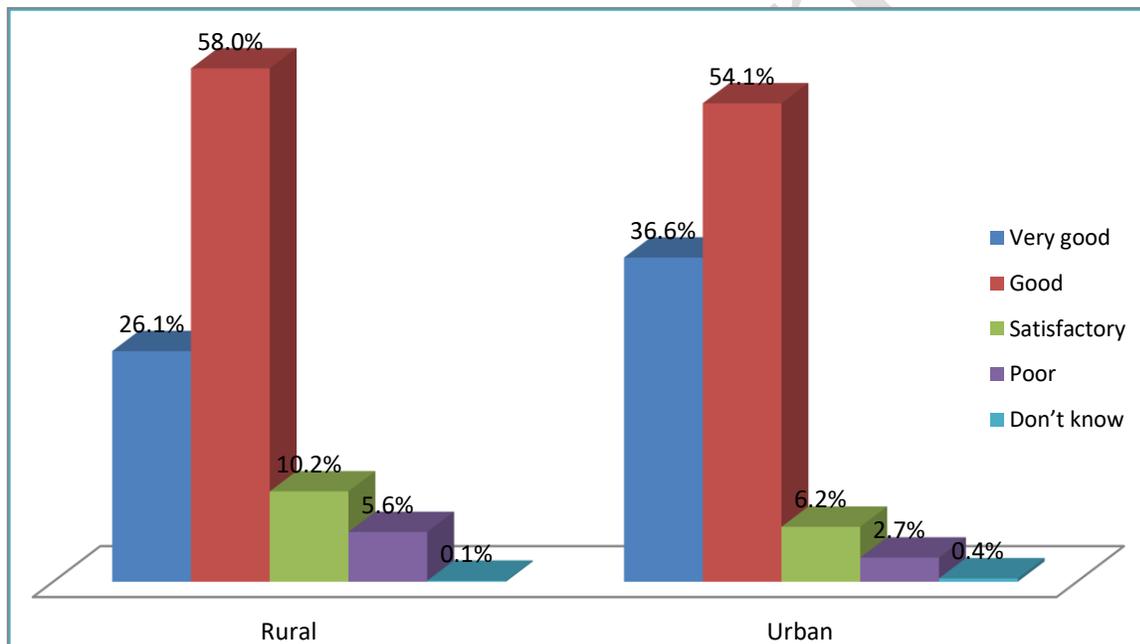
Table 5.7 Self assessed health status compared to others of same age

		Total population	Very good	Good	Satisfactory	Poor	Don't know
	Zambia	15019071	30.4	56.4	8.5	4.4	0.2
Age 5 year groups	0-4	2209719	32.1	59.1	5.9	2.6	0.3
	5-9	2242082	33.4	58.1	5.5	2.9	0.0
	10-14	2066204	34.1	58.6	5.4	2.0	0.0
	15-19	1706051	34.7	57.8	5.5	1.9	0.1
	20-24	1422864	33.7	57.1	6.5	2.5	0.3
	25-29	1127070	31.1	58.6	6.8	3.2	0.4
	30-34	977233.3	30.7	54.7	9.9	4.4	0.3
	35-39	823546.7	28.1	56.4	10.0	5.0	0.5
	40-44	646722.1	26.0	53.1	13.6	6.8	0.5
	45-49	441679.6	22.3	54.2	15.4	7.7	0.4
	50+	1355899	14.1	44.7	23.6	17.3	0.3
Province	Central	1473854	25.7	60.8	9.3	4.0	0.1
	Copperbelt	2304881	36.8	51.8	7.9	3.2	0.2
	Eastern	1766300	26.1	58.9	9.0	6.0	0.0
	Luapula	1098912	25.2	57.2	11.7	5.9	0.1
	Lusaka	2669249	37.9	54.4	4.7	2.5	0.5
	Muchinga	857411	34.4	50.5	10.7	4.3	0.1
	Northern	1263951	26.3	56.6	10.3	6.8	0.1
	North Western	811324.9	26.8	56.1	12.4	4.4	0.3
	Southern	1798268	27.9	60.8	7.5	3.5	0.3
	Western	974920.2	25.5	57.1	9.5	7.6	0.3
Region	Rural	8784334	26.1	58.0	10.2	5.6	0.1
	Urban	6234736	36.6	54.1	6.2	2.7	0.4

The proportion reporting very good health was among the teenagers aged 15 to 19 years old 34.7 percent while the old (50+ years) reported the highest proportion of people who said are in poor state of health. The proportion of people reporting poor health is higher in rural areas (5.6 percent) compare to urban areas (6.2 percent). The proportion of those in very good state of health is higher among the urban residents at 36.6 percent compared to 26.1 percent among the rural population.

5.3.3 Self -reported health status by employment status

Figure 5.4 presents how perceptions on individual health vary across different categories of employment. Only individuals aged 15 years or older were asked this question and of this population, 83 percent reported to have either "very good" or "good" health status. The highest proportion rating their health status as "very good" was among the students/intern/apprentice with 37.9 percent, followed by paid employees at 36.5 percent. The proportions of those with "good" health status were reported within the 54 percent to 56.7 percent range for all employment categories.

Figure 5.4 Health status by employment status, 2014
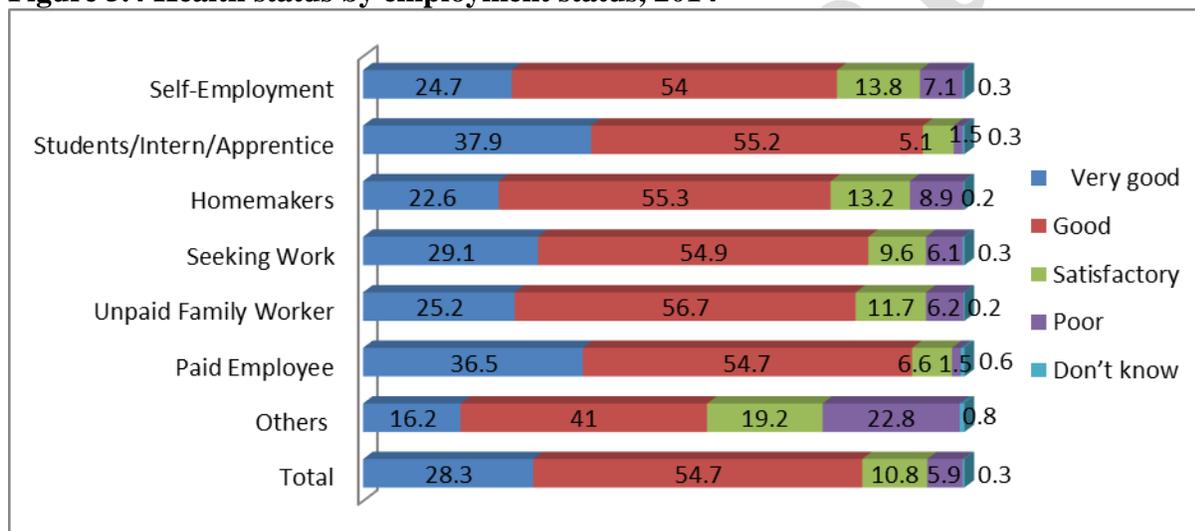
5.3.4   Self-reported health status by wealth

Although there is a difference in reported health status between individuals in the richest and poorest quintiles, it is not substantial. The survey establishes that individuals in poorest quintile are just as likely as those in the richest quintile to report their health as either "very good" or "good" at 91.4 percent versus 88.7 percent (Table 5.8). Those reporting their health status as only "satisfactory" or "poor" were also almost evenly distributed between the richest and poorest quintiles at 8.1 percent and 11.1 percent.

Table 5.8 Percentage distribution of population by household wealth and reported health status, 2014

Wealth quintiles	Health status				
	Very good	Good	Satisfactory	Poor	Don't know
Richest	39.8	51.6	5.9	2.2	0.5
Second	27.8	57.0	9.5	5.6	0.2
Middle	26.0	57.4	10.6	5.9	0.1
Fourth	28.6	57.3	9.0	4.8	0.2
Poorest	30.3	58.4	7.5	3.6	0.2
Total	30.4	56.4	8.5	4.4	02

5.3.5   Self-Reported health status by type of toilet facility

The type of toilet facility a household uses can have a significant impact on the health status of household members. Of the people with very good health status, 51.4 percent of them used a traditional pit latrine, 20.4 percent used a flush toilet and 8.7 percent had no toilet facility, using instead the nearby bush/field. A similar trend was observed for people in other categories of health status; most of them used a traditional pit latrine. The statistics presented in the table below do not show any significant association between perceived health status and the type of toilet facility used in a particular household.

Table 5.9 Self-reported health status by type of toilet facility

	Flush or Pour toilet	Tradition al pit latrine	Pit latrine with swab	Latrine (VIP)	No facility / Bush	Bucket Latrine	Other	Total
Very good	20.4	51.4	17.8	1.4	8.3	.0	.6	4,572,000
Good	15.0	59.9	14.0	1.3	8.7	.1	1.0	8,464,000
Satisfactory	11.7	66.5	9.6	1.4	9.6	.1	1.0	1,284,000
Poor	8.9	65.9	9.9	.5	12.9	.3	1.6	664,000
Don't know	29.4	40.8	17.9	.2	9.8	.6	1.3	34,000
Total Zambia	16.1	58.1	14.6	1.3	8.8	.1	.9	15,019,000

5.3.6   Self-reported health status by source of drinking water

Source of drinking water can be a determining factor of a person's health status. The survey found that most people whose source of drinking water was 'unprotected well' reported having poor health status. Of the population with "poor" health status, 26 percent of them drew their drinking water from unprotected wells, while 5.5 had piped water into dwelling. Reading the table column-wise, the trend is similar for piped water to yard/plot and public tap/stand pipe; most people with these sources of drinking water enjoyed either "good" or "very good" health status. For people who drew drinking water from tube well or borehole, protected well and

unprotected well, a higher percentage reported to have either "poor" or "satisfactory" health status. The figures presented in Table 5.10 below show significant evidence that state of health is associated with source of drinking water.

Table 5.10 Self-reported health status by source of drinking water

	Piped into dwelling	Piped to yard	Public tap/ stand pipe	Tube well or borehole	Protecte d well	Unprotecte d well	River / lake /pond	Othe r	Total
Very good	15.5	11.2	11.5	21.0	8.5	16.4	8.9	6.9	4,572,000
Good	9.0	11.8	10.0	22.0	10.6	17.8	10.8	7.9	8,464,000
Satisfa ctory	7.2	8.6	6.5	24.9	10.0	21.2	14.2	7.5	1,284,000
Poor	5.5	7.6	6.5	23.8	11.1	26.0	13.1	6.5	664,000
Don't know	21.8	22.4	15.8	11.3	4.5	9.9	6.5	7.8	34,000
Total	**10.7**	**11.2**	**10.0**	**22.0**	**9.9**	**18.0**	**10.6**	**7.5**	**15,019,071**

5.4 Summary

Disease distribution is non-uniform across provinces. Luapula Province has the highest percentage of people falling ill, whilst Lusaka Province has the lowest. There is, however, no difference in the distribution of illness episodes between urban and rural areas. Malaria is the leading cause of both facility visitation and admissions in both the under-five and all other age groups. The survey found that about 15 percent of the total population suffered from a chronic illness. The proportion of females suffering from each chronic illness is either higher or equal to that among men.

Of the total population of 3,196,409 reporting illness in the past three weeks prior to the survey, 41.3 percent did not seek care. This is distributed as 42.1 and 39.0 percent between rural and urban areas respectively

The survey also found respiratory disease, diarrhoea, eye disease, skin disease, accidents and injuries, and TB to be among the top ten reasons for facility visitations.

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There is no significant difference in the reported health status between males and females. Neither is an individual in the rural area any more likely to suffer poor health than their urban counterpart. Further the data does not support any specific association between an individual's level of health and their employment or education status. It also does not show positive or negative association between the level of wealth and an individual's reported state of health.

6 Household health seeking behaviour

6.1 Introduction

This chapter looks at key determinants of health seeking based on the ZHHEUS. It includes some of the variables used in the previous studies and also adds more variables.

Health seeking behaviour is the varied response of individuals to either states of ill health, or demand for prevention, or rehabilitation from disability or ill health depending on their knowledge and perceptions of the health, socio-economic constraints, and adequacy of available health services and attitude of health care providers. Understanding the main determinants of health care demand can be important in increasing our knowledge of how health outcomes are impacted. This, in turn, facilitates an understanding of how changes in government policy might impact on individuals and their demand for health care services.

Therefore, in order to build a responsive health system, there is a strong need to understand the health seeking behaviour on the demand side, because that is one way to improve health outcomes. The determinants of health extend beyond health care and can be attributed to social and economic determinants which most health systems have not been able to link with the health of their populations. Health issues are complex and necessitate systematic knowledge that goes well beyond the health sector to address them. In order to understand the key determinants of health seeking behaviour, it is imperative to evaluate how factors such as financial and geographic barriers, ethnicity, education, gender etc. impact on whether one will seek medical care and which facility one would choose.

Strategic policy formation in health care systems should be based on information relating to health seeking behavior and utilization and their determinants. All such behaviours occur within some institutional structure such as families or communities. The factors determining the health behaviours may be seen in various contexts: physical, socio-economic, cultural and political. Therefore, the utilization of a health care system, public or private, formal or informal, may depend on socio-demographic factors, social structures, level of education, cultural beliefs and practices, gender discrimination, status of women, economic and political systems,

environmental conditions, disease patterns and the health care system itself (Shaikh and Hatcher, 2004).

Only one study has looked at the key determinants of health seeking at national level in Zambia. Zyaambo, Siziya and Fylkesness (2012) investigated key determinants of health facility utilization in rural and urban Zambia using a survey of adults aged between 15 and 49 years who had had a valid HIV test. Despite their sample limitation in terms of national representativeness, they found that those with higher education level than Grade Seven are more likely to seek care. They also found that those who self-rated health as "poor" were twice as likely to seek care in the last one yearthan those who had self-rated health as "good". Furthermore, the study found that those who had reported an illness were three times more likely to seek care.

6.2   Choice of provider

Figure 6.1 shows the distribution of OPD facility utilization by visits. It shows that nationally 97.3 percent of those who sought outpatient care on the first visit did not go back for a second visit in the four weeks prior to the survey. An additional 2.4 percent went for a second visit. As expected patients who bought drugs at a chemist/drug store did not go for a second visit. This was similar for those who visited a village health worker, nursing home, herbalist or religious healer. All other facility types had a significant proportion for second visits.

Comparing second visit distribution at private clinics and public health centres reveals that 7.3 percent of total OPD visits to private facility were second visits, while only 2.5 percent to a public facility. There is no evidence of switching from public to 'private for-profit' which includes private clinics. But this cannot account for the large discrepancy. The most likely reason could be facility induced demand.

Figure 6.1 Outpatient department Visits by Facility Type

Figure 6.1 Outpatient department Visits by Facility Type
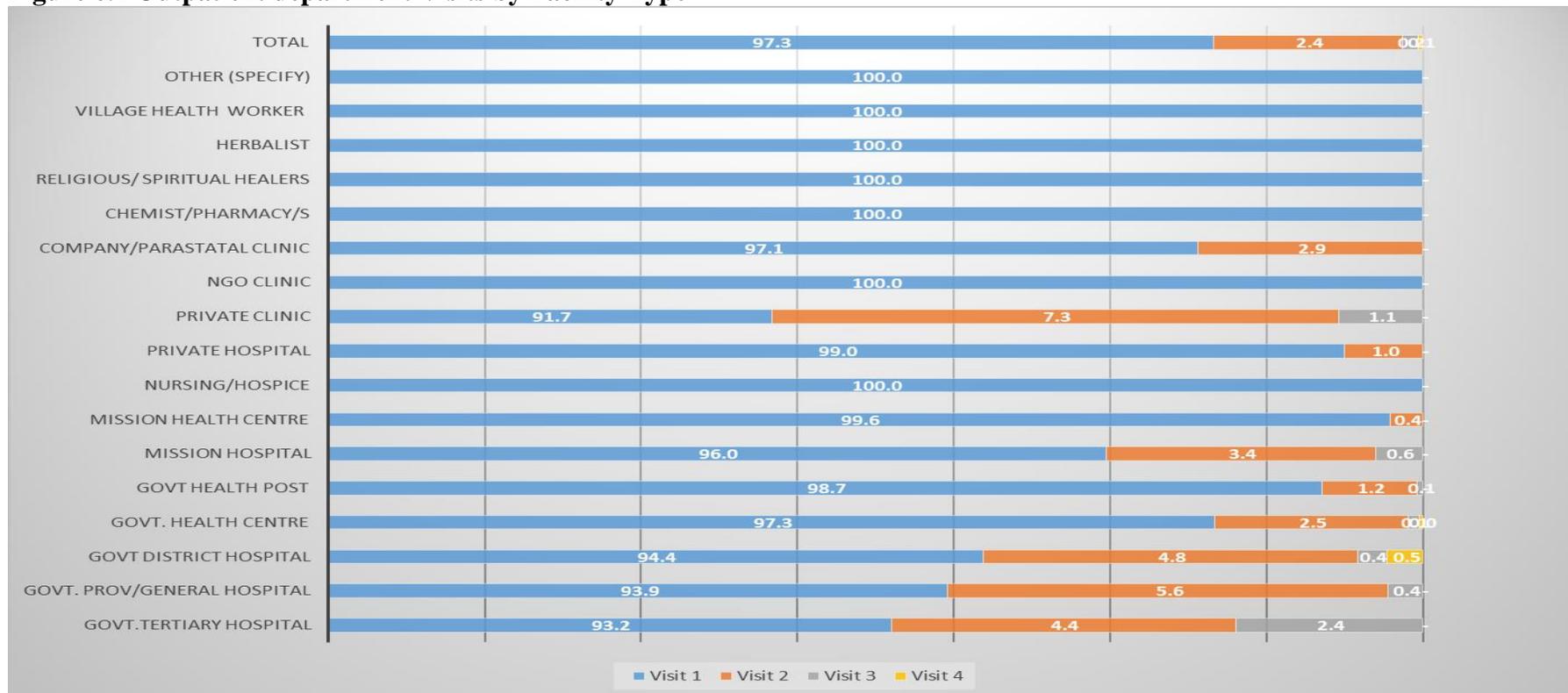
Figure 6.2 shows the distribution of admission by facility type. The figure shows that in most facilities first admissions account for at least 89 percent of admissions to the facility, except for a nursing home and an NGO clinic. Of the total admissions at an NGO clinic 52.6 percent were on a second visit and similarly 38 percent at the nursing homes or hospice. This could be on account of care for chronically ill patients that such facilities may have.

Figure 6.2 Distribution of admissions by facility type

Facility	Admission 1	Admission 2	Admission 3	Admission 4
HERBALIST	100.0	0.0		
RELIGIOUS/ SPIRITUAL HEALERS	100.0	0.0		
PRIVATE HOSPITAL	98.0	2.0	0.0	
MISSION HEALTH CENTRE	94.9	5.1	0.0	
COMPANY/PARASTATAL CLINIC	94.5	5.5	0.0	
GOVT HEALTH POST	93.1	5.7	1.0	0.2
GOVT. HEALTH CENTRE	92.0	6.7	1.0	0.2
PRIVATE CLINIC	91.0	9.0	0.0	
OTHER (SPECIFY)	90.8	4.8	2.2	2.2
GOVT. PROV/GENERAL HOSPITAL	90.7	8.4	0.8	0.0
TOTAL	90.7	7.4	1.6	0.3
GOVT. CENTRAL HOSPITAL	90.4	8.2	1.0	0.4
MISSION HOSPITAL	90.3	7.3	2.2	0.2
GOVT. TERTIARY HOSPITAL	89.7	8.1	2.0	0.2
GOVT DISTRICT HOSPITAL	87.2	8.9	2.8	1.1
NURSING/HOSPICE	62.0	38.0	0.0	
NGO CLINIC	47.4	52.6	0.0	

■ Admission 1   ■ Admission 2   ■ Admission 3   ■ Admission 4

Figure 6.3 shows the distribution of admissions and OPD visits by facility type. As expected facility utilization is highest in health centre and government health post, followed by district hospital signifying the importance of primary health care.

Figure 6.3 Distribution of admissions and outpatient department visits by facility type
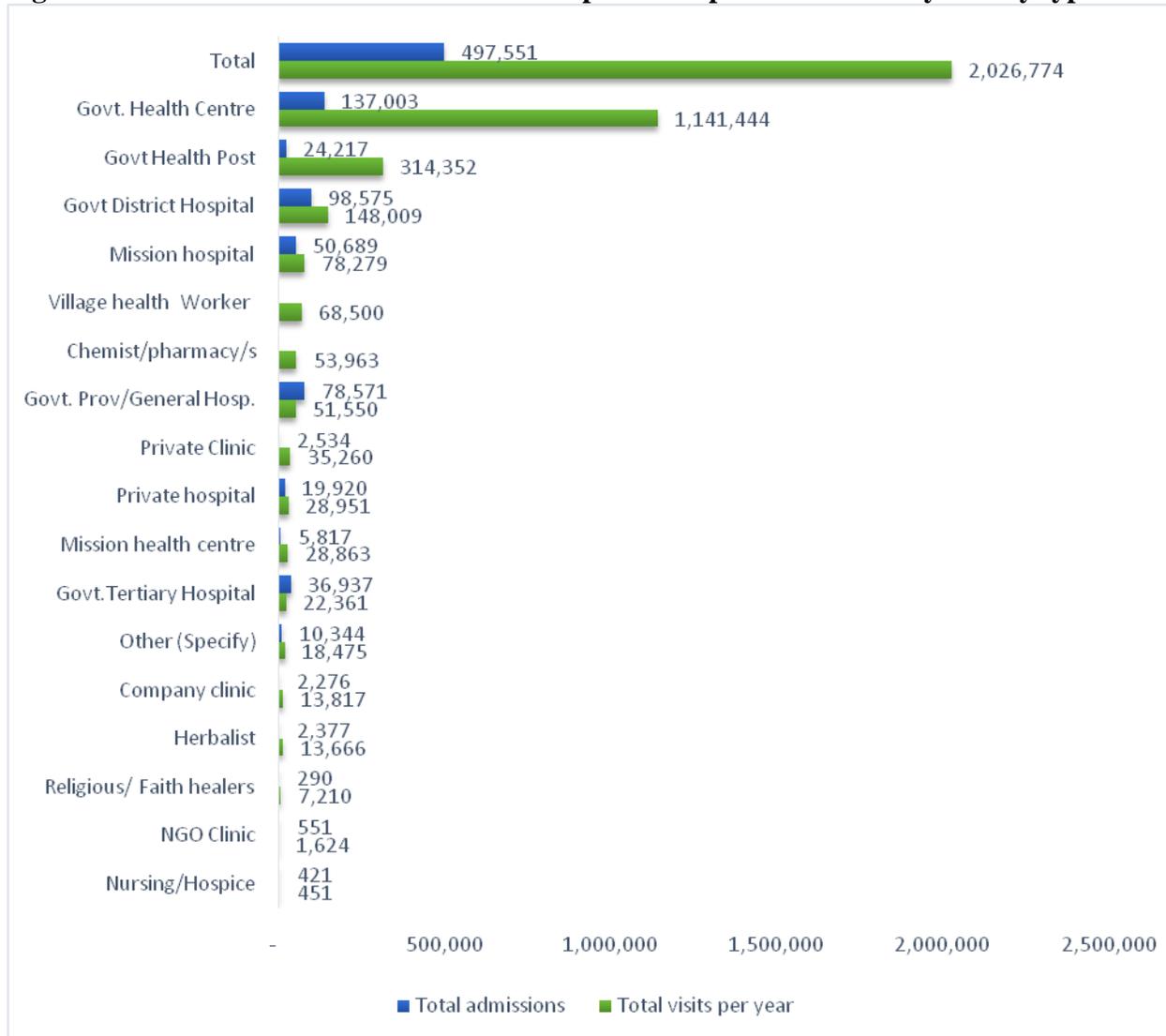
6.3   Switching health care providers

The survey sought to find out the extent to which patients either maintained or changed health care providers. For outpatients, the data was analyzed to find out if there was switching in the choice of health care providers from the first visit until the fourth visit. Similarly, the data was analyzed for switching in facility group from first admission to the last admission. Recognizing the fact that individuals may opt to seek care from different health facilities if they are presented

with different disease situations, health switching in both cases was evaluated on the condition that the person was suffering from the same illness on all visits. For ease of managing the information, facilities were grouped based on ownership type. We ended up with public facility, private for-profit, private not-for-profit that included all NGO facilities, and faith-based facilities.

6.3.1 Outpatients

The data revealed that some patients switched health facility only at second visit as an outpatient. There was no switching observed at third and fourth visits. The graph below reveals there was switching from public facility to private for-profit and private not-for-profit. Panel a) of the figure below shows that 98 percent of those who visited a public facility for the first time did not go back for the second visit. Figure 6.4 also shows that 2 percent (38,706) of those individuals who attended the public facility on the first visit did go for a second visit either at public facility or any other facility. Panel b) of the figure shows that, given that a person was an outpatient at a public facility in the first visit and had the same disease condition in the last one month, the person visited the facilities with chance shown in the pie chart. The chart shows that the majority, 94 percent, of those individuals who visited a public facility in the first visit did go back to a public facility. Put differently, there is a 94 percent chance that a person who attended a public facility will choose a public facility if they decide to go for a second visit for the same disease. These patients did not switch. On switching, we observe that 6 percent of those that went for a second visit, having visited a public facility in the first instance, switched the facility. In fact, Panel b) shows that 4 percent chose a private for-profit facility on the second visit, while 2 percent chose a private not-for-profit. Although the questionnaire did not explicitly solicit for information on why patients switched facilities this could be on account of perceived quality of care or availability issues.

Figure 6.4 Figure Health seeking within Public facilities for outpatients

a) Public Facility 1st OPD Visit Distribution

38,706 , 2%

1,660,074 , 98%

Without Second Visit   With Second Visit

b) of OPD Public Facility 2nd Visit

2%

4%

94%

Public   Private - Not for Profit   Private -For Profit
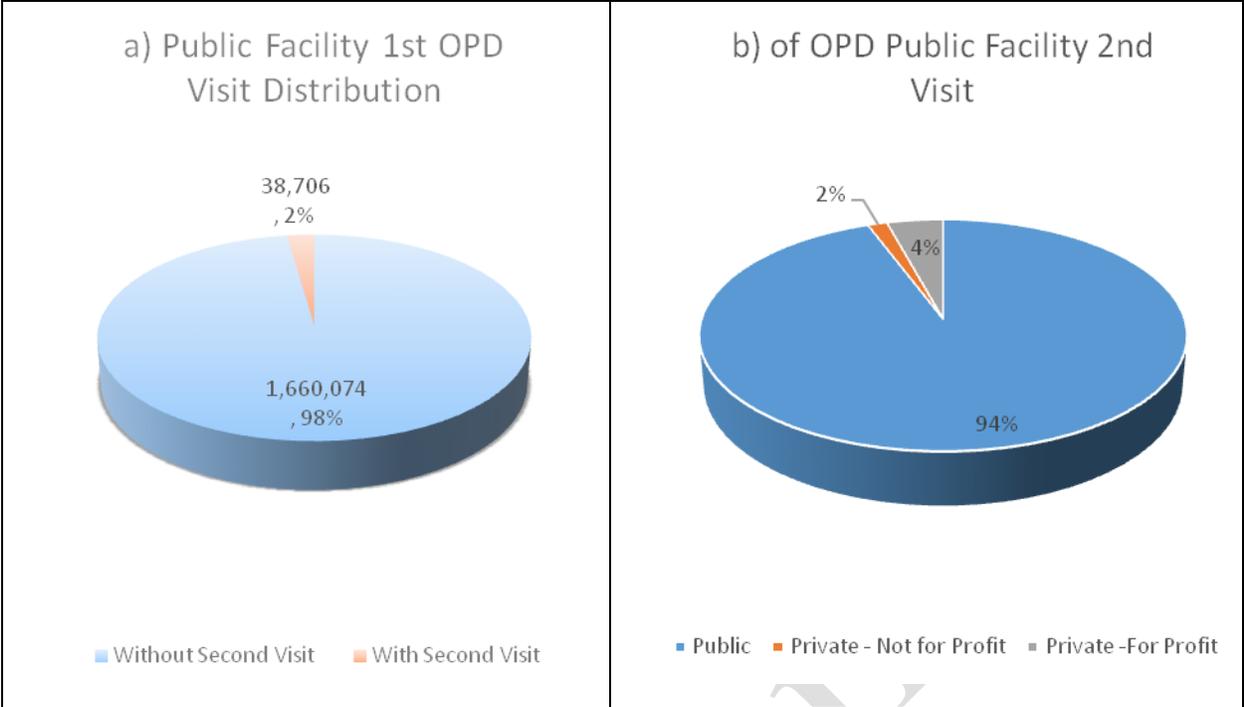
The figure below shows health switching behavior among outpatients who, during their first visit, went to a not-for-profit facility. Panel a) of the figure shows that only 2 percent (2,064) of patients who visited a not-for-profit facility went for a second visit with the same disease condition. Of that 2 percent, it is shown in panel b) that 72 percent did not switch. This means that they went back to a not-for-profit facility. The remaining proportion was split equally between public and private-for-profit, 14 percent each. This establishes the fact that approximately 28 percent of patients who go for a second visit with the same disease condition will choose either a public facility or a private facility.

Figure 6.5 Health seeking within not-for-profit facilities for outpatients
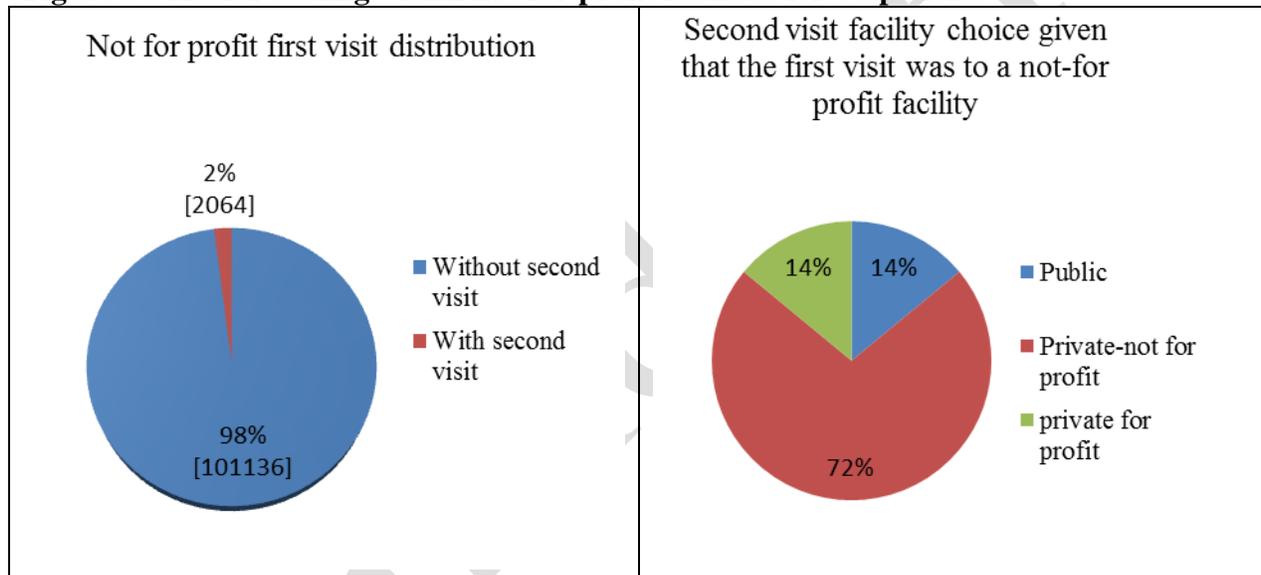
Comparing the two figures above we conclude that switching is higher for those patients who move from not-for-profit facility to other facilities, as compared with those who choose a public facility for the first visit. Beyond these two scenarios no switching was observed for private-for-profit facility on outpatient services.

6.3.2 Inpatients

Survey respondents were asked to indicate how many times they had been admitted in the previous 12 months, up to a maximum of four admissions. Just as under OPD, switching is observed only at second admission. No switching is observed at third and fourth admissions. The

Figure below depicts the extent of switching among those individuals who on the first admission were at a public facility. Panel a) of the figure shows that 7 percent (24,760) of those who were admitted at a public facility went to have a second admission in the same year. Panel b) shows that among the 7 percent (24,760) who were admitted a second time, 96 percent went back to be admitted in a public facility. Only 4 percent switched. Among those, 3 percent opted for a private not-for-profit facility, while the remaining 1 percent of the respondents was admitted at a private for-profit facility.

Figure 6.6 Health seeking within public facilities for inpatients

Public facility distribution of first admissions

- 7% [24760] only 1st admission
- 93% [328954] admitted for 2nd time

Second admission given that first admission was public facility

- 96% Public
- 3% Private-not-for profit
- 1% Private-for-profit
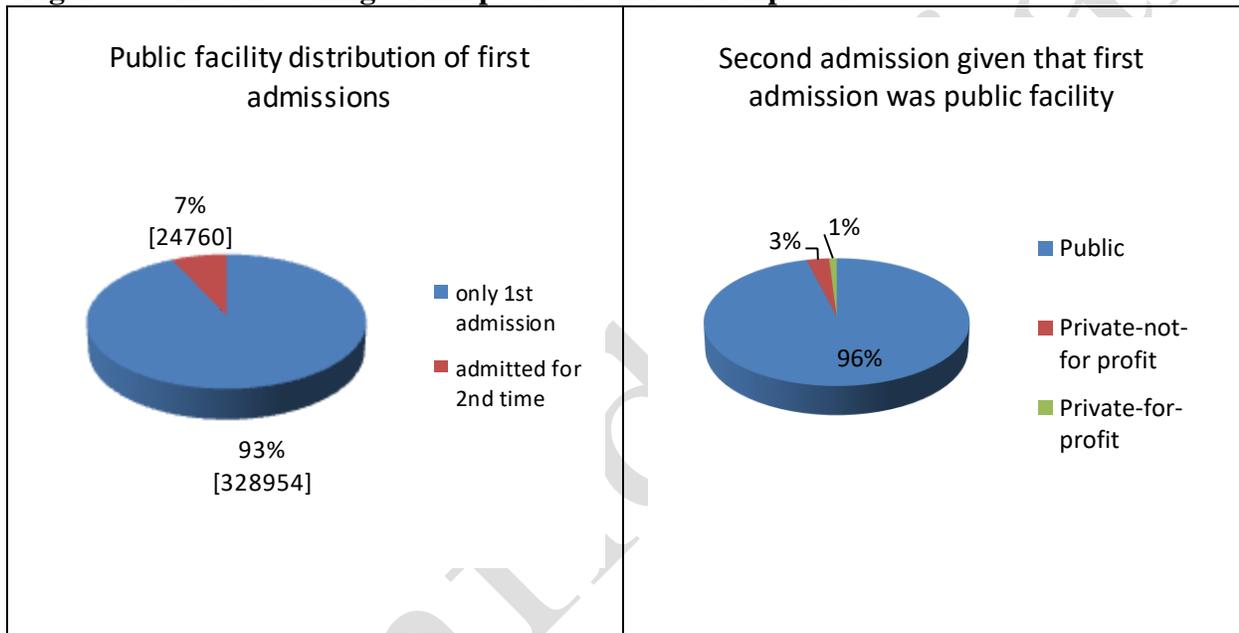
The figure below shows switching from private for-profit facility. Panel a) shows the distribution of respondents who had a first admission in a private facility in the last 12 months. The figure shows that 4 percent (1,044) of those admitted in a private facility went on to be admitted for a second time with the same disease condition within the last 12 months. Panel b) of the figure shows that 51 percent of those who went for a second admission switched from a private facility to either a public facility or a private not-for-profit facility. Of this 51 percent, 13 percent went to a private not-for-profit facility, while 38 percent were admitted at a public facility.

Figure 6.7 Switching from private for-profit facility
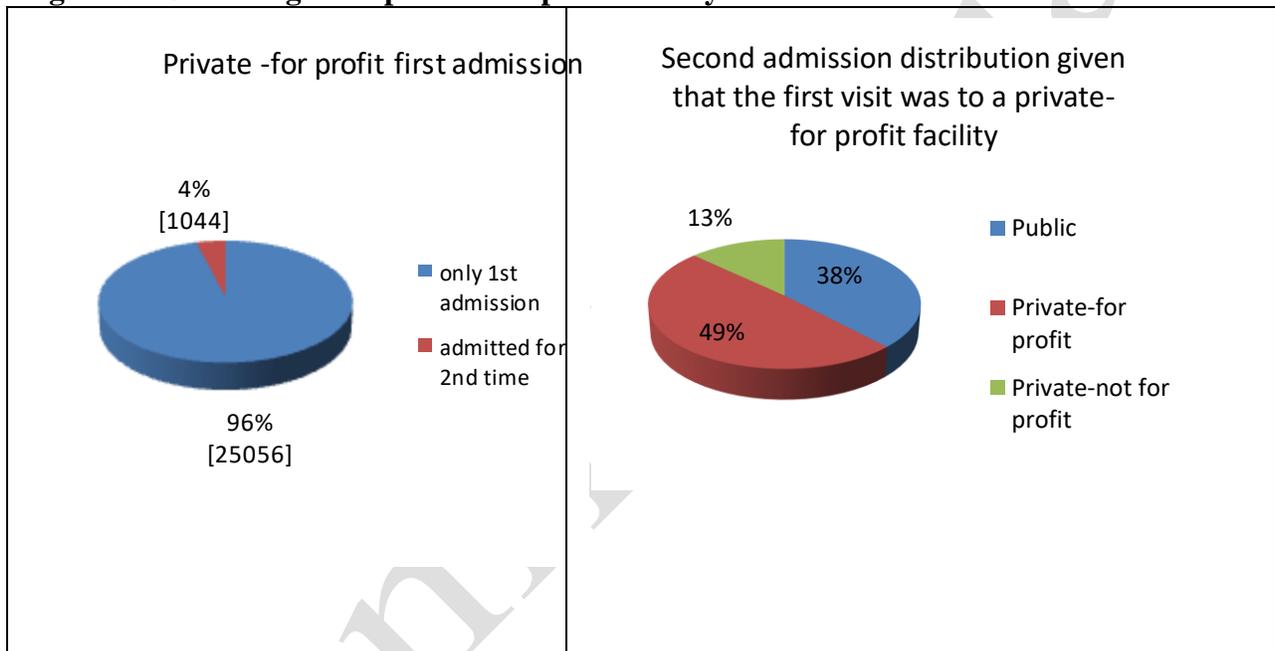
The final switching behavior was observed where patients switched from a private not-for-profit facility to a public facility. Panel b) of the figure below shows that 7 percent (3,521) of the patients who were admitted in a private not-for-profit facility went for a second admission with the same disease in the last twelve months before the survey. Of these 7 percent, 29 percent switched to a public facility on their second admission. This would have been in the quest to seek more advanced care at a tertiary facility. The remainder were still admitted at a private not-for-profit facility.

Figure 6.8 Switching from private not-for-profit facility to a public facility
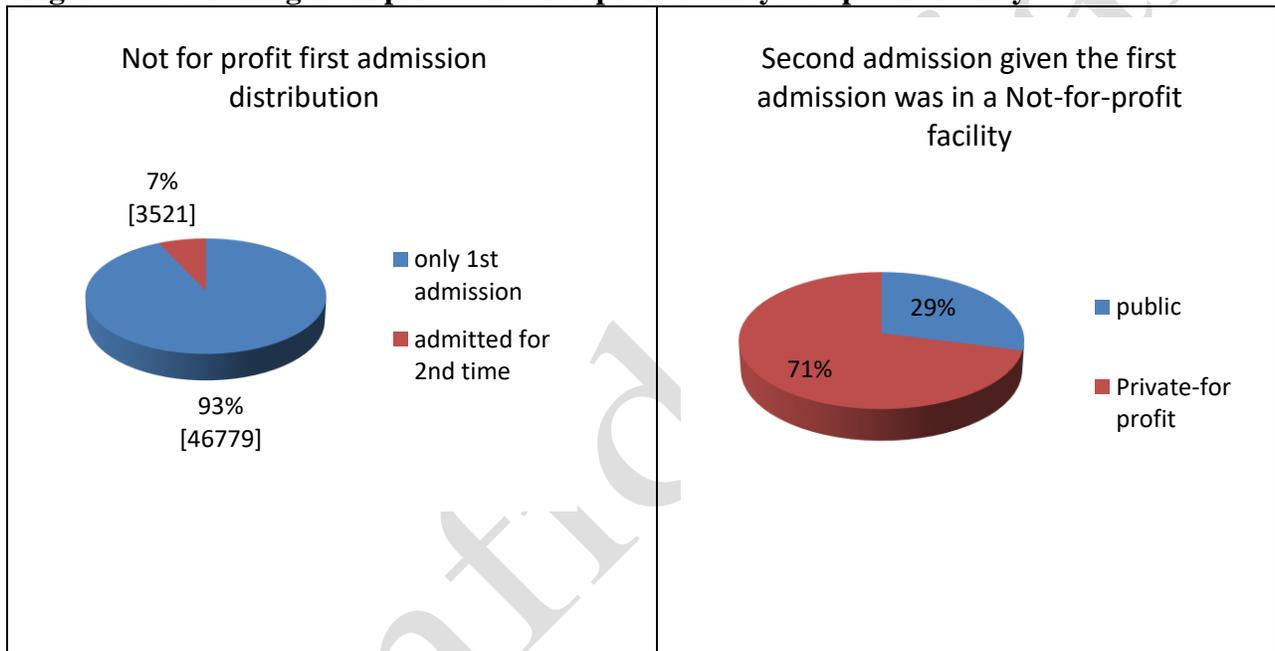
This subsection has demonstrated the health seeking switching behavior among both outpatients and inpatients. The subsection shows that switching is higher among inpatients than among outpatients. This is expected, especially that inpatient care may sometimes call for more specialized health care which may only be available at a public tertiary facility or an advanced private facility. The subsection also shows that switching is only observed at second visit for OPD and second admission for inpatients.

6.4   Factors influencing health seeking behaviour

Table 6.1 below shows various factors that determine whether someone will seek care or not. Elsewhere in this report it has been shown that those who did not seek care were asked why they did not do so. Under the logic framework below, a dependent dummy variable is equal to 1 if someone did seek care and 0 if they did not. Various explanatory variables are included to explain the probability of someone seeking care given that one explanatory variable is changed. The results show some of the key drivers of someone seeking care for an ailment. The results are presented at the national level in the first column. In the second column results are for the urban area, while the third column presents the results for rural areas. Since there are marked differences on factors that may lead to someone seeking care in rural and urban areas, we interpret results of the rural and urban areas only.

In urban areas, the key drivers for seeking care include when someone has malaria, or a respiratory disease or diarrhoea. The results show that in urban areas someone with malaria, as compared with someone without malaria, has a probability of 0.108 chance of seeking care. Similarly, someone with respiratory disease has a probability of 0.13 likelihood of seeking care compared with someone without. A person with diarrhoea has an even higher likelihood of seeking care with a probability of 0.176. Of note is the relationship between the likelihood of seeking care and age, in that if someone is young, or old, they are more likely to seek care than someone between teenage and middle-age.

Just as in urban areas, in rural areas the fact that someone has malaria, diarrhoea or respiratory illness increases the chance that the person will seek care. In rural areas someone with malaria has a 0.099 probability of seeking care, compared with someone without malaria; someone with a respiratory disease has a probability of 0.113 of seeking care; and a person with diarrhoea has an increased likelihood of seeking care with a probability of 0.163. The relationship between the likelihood of someone seeking care and age is similar to that occurring in the urban area. Put simply, and as stated above, the very young and the very old are more likely to seek care, as compared with teenagers through middle-age. In addition, someone from a female-headed household is more likely to seek care compared with a male-headed household. The probability of someone from a female-headed household seeking care is 0.0293. Although this probability is low it is statistically significant. Someone living in an asbestos-roofed house is more likely to

seek care. However these results may not be relied upon especially that in urban areas, where there is a large stock of asbestos-roofed houses, there is no difference in the health seeking behavior of those living in such houses.

Another counter intuitive result is that of the source of water. The omitted category is that of safe water source which includes piped water. Category four is for unprotected water source including wells and river water. Contrary to expectations the results show that someone getting water from the unsafe water source is less likely to seek care. This finding may be attributed to possible correlation between water source for a household and its socio-economic status which influences health seeking behavior. Other results show that someone who rates their health as "poor" has a higher likelihood of seeking care with a probability of .0246. In the rural area the higher the income, the higher the probability that someone will seek care. Again this makes more sense once interacted with disease.

The coefficient of the dummy variable tertiary education is significant under the equation for public or mission health centre. The relative probability of 0.38 implies the relative probability of going to a public or mission health center is 62 percent (100-38) lower for those with tertiary education compared with those who self-medicate. If we suppose that two individuals with the same attributes, but one with tertiary education while the other has none, the person with tertiary education is more likely to choose to go to a public health center or mission facility, whereas the person without tertiary education is more likely to choose self-medication.

Table 6.1 Factors that influence people to seek care

VARIABLES	(1) Marginal effects_ Zambia	(2) Marginal effects_ urban	(3) Marginal effects_ rural
Household head-Secondary education	0.0337***	0.0132	0.0315*
	(0.00757)	(0.0105)	(0.0129)
Household head-tertiary education	0.000325	-0.0282	0.0386***
	(0.0255)	(0.0225)	(0.00816)
Age	-0.00246***	-0.00262***	-0.00244***
	(0.000374)	(0.000636)	(0.000357)
Age2	1.69e-05**	2.19e-05*	1.36e-05**
	(5.92e-06)	(1.01e-05)	(5.46e-06)
Household size	0.00403**	0.00525**	0.00410
	(0.00152)	(0.00135)	(0.00216)
Female	0.00319	0.000103	0.00609
	(0.00434)	(0.00655)	(0.00507)
Female head	0.0146	-0.0162	0.0293***
	(0.00838)	(0.0108)	(0.00605)
Asbestos roof	0.0380**	0.0193	0.0790***
	(0.0151)	(0.0104)	(0.0202)
Piped To Yard/Plot	-0.0383*	-0.0160	-0.0344
	(0.0177)	(0.0208)	(0.0372)
Public Tap/Standpipe	-0.0524*	-0.0303	-0.0487
	(0.0277)	(0.0310)	(0.0398)
Tube well or borehole	-0.0895***	0.0179	-0.0995**
	(0.0205)	(0.0129)	(0.0355)
Other water sources	-0.0981	-0.0401	-0.141
	(0.0611)	(0.0550)	(0.103)
Unpaid Family Worker	-0.0295*	-0.0299	-0.0374**
	(0.0148)	(0.0573)	(0.0111)
Seeking Work	-0.0501*	-0.0120	-0.0830*
	(0.0267)	(0.0291)	(0.0346)
Homemakers	-0.0580**	-0.0233	-0.0872***
	(0.0193)	(0.0331)	(0.0140)
Students/Intern/Apprentice	0.00117	0.0281	-0.0343
	(0.110)	(0.0861)	(0.0823)
Self-employment	-0.0216**	0.00834	-0.0353**
	(0.00929)	(0.00841)	(0.0115)
Other employment types	0.0245	0.00811	0.0546**
	(0.0239)	(0.0288)	(0.0180)
Malaria	0.106***	0.108***	0.0988***
	(0.0118)	(0.0202)	(0.00660)
Respiratory disease	0.118***	0.130***	0.113***

	(0.0104)	(0.0240)	(0.00844)
Diarrhea	0.173***	0.176***	0.163***
	(0.0199)	(0.0174)	(0.0222)
Health status	0.0238**	0.0128	0.0246*
	(0.00885)	(0.0110)	(0.0110)
Household monthly expenditure	8.76e-06	-2.23e-06	0.000147**
	(1.39e-05)	(7.12e-06)	(5.56e-05)
Traditional Pit Latrine	0.0227	0.00304	0.0706
	(0.0394)	(0.0283)	(0.0422)
Pit Latrine with Slab	0.0132	0.0135	-0.00610
	(0.0525)	(0.0355)	(0.0790)
Other toilet types	0.0244	0.0154	0.0797***
	(0.0359)	(0.0237)	(0.0173)
Chronic disease	-0.00844	-0.0206	0.00274
	(0.0128)	(0.0134)	(0.0166)
Observations	28,648	11,371	17,277
Standard errors in parentheses			
*** p<0.01, ** p<0.05, * p<0.1			

6.5   Choice of health facility

After people have chosen to visit a facility they are faced with the decision to choose which facility to go to. The options available are different based on whether someone lives in a rural area or not. Hence we present different models for the rural areas and the urban areas. In the rural areas the choice of facility is such that one is faced with whether to go to a government health center, or a government hospital, or a mission facility. These are the choices we have modelled. It is worth noting that to assume that once a person decides to go to a health facility they may choose to go to a hospital may not necessarily be correct, because the referral system demands that patients start from the lowest levels, thereafter referred to higher level facilities. This may not hold in certain circumstances where one chooses to skip the lower facility. Moreover some hospitals have what is called a 'hospital affiliated health center' which runs autonomously as a hospital OPD.   This therefore led to the assumption of including hospitals in the choice set.

In urban areas, the choice is between going to a government hospital, a health center, a private facility, or self-medicate. Hence the model for the urban center is presented as such. The results on factors driving the facility are presented in the table below. Both in the urban and rural areas the omitted, or base category, is a government health center. Results are as shown in Table 6.2

below. Columns for government hospital and private facility are for urban areas, while the last two columns show results for rural areas. The coefficients shown are relative odds ratios.

In Column One, the results show some of the significant determinants of one choosing to go to a government hospital as opposed to a government health facility. The results suggest that the relative probability of choosing a government hospital, compared with a health centre, is 71.3 percent higher for those that come from a household headed by someone with tertiary education, rather than those with primary education. There is no significant difference among those coming from households that have a head with secondary education and those from households headed by someone with primary or less education. The other factors are to do with the attributes of the facilities as evaluated by respondents. Key factors that make individuals visit government hospital, as opposed to health centre, are availability of health qualified health personnel and diagnostic equipment. The relative probability for choosing a government hospital, compared with a health centre, is 29.7 percent for those individuals who perceive hospitals to have available qualified personnel, as opposed to those who perceive this aspect as poor. The relative probability for choosing a government hospital, compared with a government health centre, is 28.3 percent among those who perceive government hospital to have good diagnostic equipment, as opposed to those who don't have that perception.

In Column Two, the table indicates the factors that cause individuals in urban areas to choose a private facility as opposed to a government health centre. Key factors include level of education, waiting time and staff attitude. The relative probability of choosing a private facility over a government health centre in the urban areas is 59.6 percent for those with secondary education, compared with those with primary education or less. The relative probability of choosing a private facility over a government health centre in the urban areas is double for those with tertiary education, compared with those with primary education or lower. The higher the waiting time at a private facility, the lower the relative probability that one will choose a private facility, compared with a government health centre. The relative probability of choosing a private facility, compared with a government health centre, is twice as much among those who perceive private facilities to have short waiting times, compared with those who don't. The results also show that female-headed households are less likely to use private facilities compared with male-

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headed households. Further, it is found that those who perceive private facilities to have staff with a good attitude have a higher relative probability of using a private facility (53.3 percent) compared with those with a contrary perception.

In rural areas, education, particularly secondary education, is the key determinant to whether one goes to a government hospital, a mission facility, or a health centre. Distance is another factor. The longer the distance the higher the relative probability of choosing either a government hospital, or mission facility, as opposed to a health centre. Although the relative probabilities related to distance are statistically significant their magnitudes are low.

Table 6.2 Factors that determine the choice of Facility

VARIABLES	Urban Sector		Rural Sector	
	Odds ratio	Odds ratio	Odds ratio	Odds ratio
	Government Hospital	Private facility	Government Hospital	Mission Facility
Secondary Education	1.019	1.596*	0.718**	1.229*
	(0.117)	(0.415)	(0.0948)	(0.150)
Tertiary Education	1.713***	2.612***	0.901	0.944
	(0.282)	(0.775)	(0.244)	(0.285)
Female head	1.323**	0.506**	0.724**	0.919
	(0.160)	(0.135)	(0.104)	(0.131)
Distance	1.002	1.000	1.025***	1.020***
	(0.00434)	(0.00897)	(0.00280)	(0.00315)
Waiting time	1.000	0.991***	1.002***	1.001*
	(0.000613)	(0.00220)	(0.000580)	(0.000666)
Health status	0.688***	0.875	0.696***	0.964
	(0.472)	(0.458)		
Household Expenditure	1.000	1.000***	1.001***	1.000
	(0.000106)	(0.000102)	(0.000261)	(0.000362)
Good Drug Availability	1.132	1.293		
	(0.131)	(0.279)		
Qualified Personnel Available	1.297**	0.844		
	(0.160)	(0.193)		
Good Waiting Time	1.098	2.216***		
	(0.128)	(0.480)		
Good Diagnostic Equipment Available	1.283**	1.387		
	(0.148)	(0.302)		
Good Privacy	0.991	0.860		
	(0.127)	(0.211)		
Good Staff Attitude	0.874	1.533*		
	(0.103)	(0.372)		

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Constant	0.0815***	0.0214***	0.0173***	0.0134***
	(0.0564)	(0.0277)	(0.0117)	(0.0102)
Observations	2,401	2,401	5,244	5,244
Standard errors in parentheses				
*** p<0.01, ** p<0.05, * p<0.1				

6.6 Summary

This section has shown that health seeking behaviour is influenced by a host of factors including their knowledge, perceptions of the health, socio-economic constraints, adequacy of available health services and attitude of health care providers. The chapter has also shown that public primary health care facilities are the most important providers of health care services in Zambia. Key drivers for someone seeking care, based on the leading causes of perceived disease conditions, include malaria, respiratory infections and/or diarrhoea. For instance, in urban areas, someone with malaria has a probability of 0.108 chance of seeking care as compared with someone without malaria. Similarly, someone with respiratory disease has a probability of 0.13 likelihood of seeking care compared with someone without. A person with diarrhoea has an even higher likelihood of seeking care with a probability of 0.176.

Facility utilization is highest in health centres, in government health posts, followed by district hospitals signifying the importance of primary health care. The chapter has shown that in urban areas those with tertiary education have a higher relative probability of choosing a private facility compared with those with primary or lower education. Choice of a private facility instead of a government health center is significantly influenced by waiting time which is perceived to be shorter in private facilities. In the case of second admissions however, it was found that more people switched from private facility to public facility, than from public to private facility. This is expected, especially that inpatient care may sometimes call for more specialized health care which may only be available at a public tertiary facility. Ninety-eight percent of those who visited a public facility for the first time did not go back for the second visit. Ninety-four percent of those individuals who visited a public facility in the first visit did go back to a public facility. There is a 94 percent chance that a person who attended a public facility will choose a public facility if they decide to go for a second visit for the same disease.

7 Health care utilization

7.1 Introduction

This chapter addresses the usage patterns of both outpatient and inpatient health care services. The term 'utilization' refers to the use of health care services which may be both outpatient and inpatient (hospitalisation or admission). It is necessary to understand patterns and determinants of utilization, as this ultimately facilitates planning in cases of unmet health care need, leading to the necessary designing and implementing of appropriate interventions. Utilization is usually examined in the context of several factors such as: population status, region of residence, gender, expenditure or wealth quintile, marital status, or age group among other factors.

Determinants of health care utilization include external health system factors such as availability, location and distribution of health care services including human resources, health facilities, medicines, other qualitative factors such as health worker attitude and perceived quality of care. Other factors may be patient related and include socio-economic status, (income, education) culture, traditional values and beliefs. Yet others may be external factors such as environment, safe water and clean air, as well as gender. Alternatively, some of the leading causes of poor utilization of health care services include poor socio-economic status, lack of physical accessibility, cultural beliefs and perceptions, low literacy level of the mothers and large family size. Review of the global literature suggests that these factors can be classified as cultural beliefs, socio-demographic status, women's autonomy, economic conditions, physical and financial accessibility, disease pattern and health service issues (Navaneetham K, Dharmalingam, 2002).

The recall period for utilization of outpatient services was four weeks prior to the survey while admission was twelve months prior to the survey. For admission, respondents were asked if they fell ill during the recall period and if this illness resulted in spending at least one night in a health facility.

7.2 Utilization of health facilities

The average annual per capita utilization in the country was 1.6 as shown in Table 7.1. At provincial level, Lusaka Province and Southern Province had the least annual average per capita

facility visits at 0.9 and 1.2 times, while the highest average visits were recorded in Luapula Province at 2.3 times per year. This was followed by Western Province and North-Western Province at 2.0 times a year each respectively. In terms of residence, utilization in the urban areas was 1.9, while that in rural areas it was 1.1, a 0.8 difference between the areas.

7.3 Population reporting illness by province and residence

As shown in Table 7.1, 21.3 percent of the population or 213 per 1,000 persons reported an episode of illness. In terms of residence, rural areas had more incidences of reported illness with 25.5 percent reporting being ill, compared with 15.4 percent in urban areas.

Table 7.1 Population distribution of reported illness episodes by province and region

Category		Total population	Percent reporting illness	Ill but did not seek care as a percent of sick population	Total visits	Total Admissions in last 12 months	Annual per capita visits
Region							
	Rural	8,784,334	25.5	38.6	1,375,956	267,871	1.9
	Urban	6,234,736	15.4	37.7	596,468	183,340	1.1
	Zambia	15,019,071	21.3	38.3	1,972,424	451,211	1.6
Province							
	Central	1,473,854	24.6	43.3	205,922	36,899	1.7
	Copperbelt	2,304,881	17.5	34.7	262,647	62,231	1.4
	Eastern	1,766,300	25.8	31.6	312,189	60,608	2.1
	Luapula	1,098,912	28.9	34.0	209,731	40,878	2.3
	Lusaka	2,669,249	12.9	39.2	209,915	79,349	0.9
	Muchinga	857,411	23.4	42.1	116,358	28,794	1.6
	Northern	1,263,951	28.3	52.3	170,483	38,805	1.6
	North Western	811,325	23.8	29.7	135,758	29,638	2.0
	Southern	1,798,268	16.9	38.6	186,096	47,925	1.2
	Western	974,920	26.3	36.3	163,325	26,084	2.0
	Total	**15,019,071**	**21.3**	**38.3**	**1,972,424**	**451,211**	**1.6**

There was a difference in incidences of self-reported illness from one province to another with Luapula Province recording the highest proportion at 28.9 percent, followed by North-Western

Province at 28.3 percent. This means 289 and 283 in every 1,000 reported illness during the recall period in Luapula Province and North-Western Province respectively. Notably, Lusaka Province reported the least number of incidences of self-reported illness with 129 for every 1,000 or 12.9 percent. This was followed by Southern Province at 199 for every 1,000 or 19.9 percent.

Figure 7.1 shows the absolute numbers of reported illnesses by individuals, as opposed to proportions of the respective population. Eastern Province had the highest absolute number of cases of reported illness at 456,262, followed by Copperbelt Province at 402,366. The least self-reported illnesses in absolute terms were 193,090 in North-Western Province and 200,922 in Muchinga Province respectively.

Figure 7.1 Numbers of reported illnesses by province
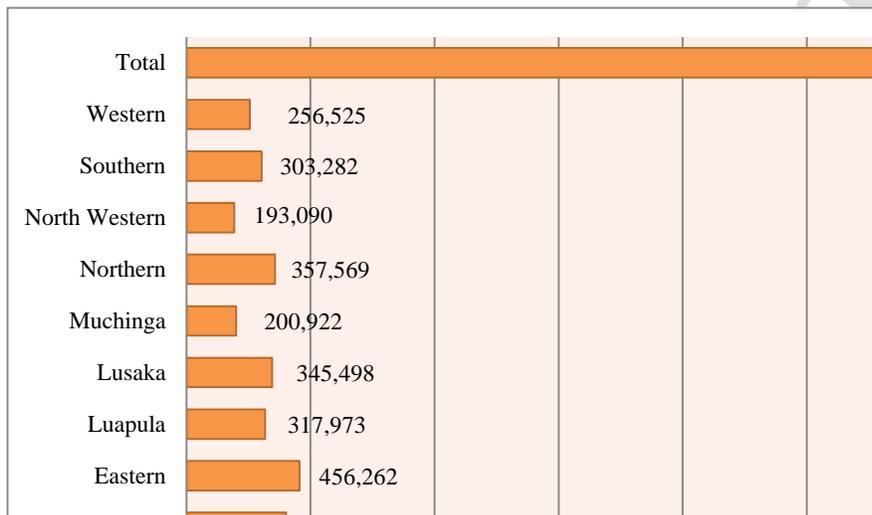
7.4   Population who got sick but did not seek care

Figure 7.2 shows that in the four weeks preceding the survey not all who reported being ill sought health care. At the national level the survey found that 38.3 percent of the population did not seek care. Expressed differently, just over 8% of the surveyed population did not seek treatment during the survey period. The survey revealed that the rural and urban population who did not seek care after falling ill was 39.0 percent and 37.0 percent respectively. At provincial level, there is no consistent pattern in terms of the rural and urban proportions not seeking care.

Figure 7.2 Percentage of population not seeking medical attention by province
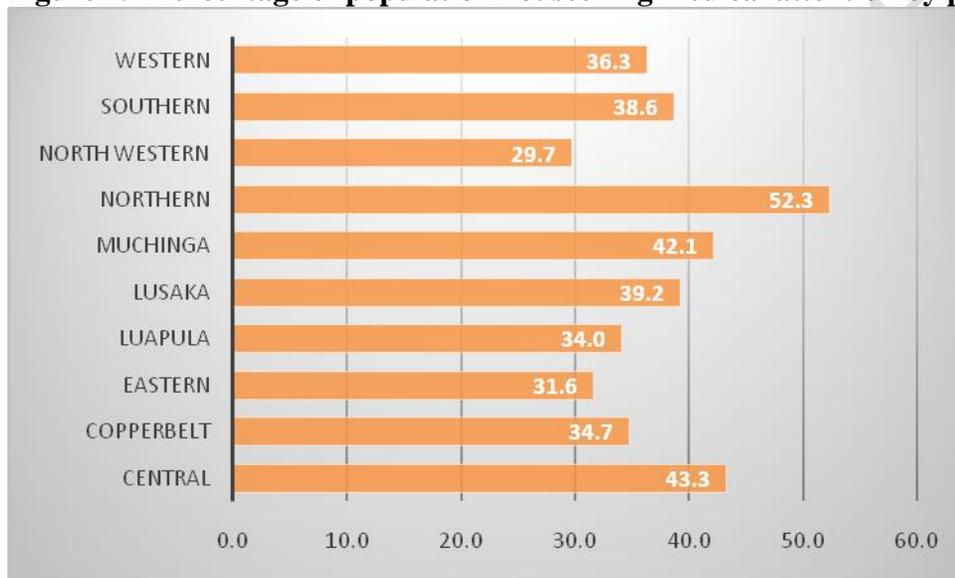
Five of the ten provinces have higher proportions in rural areas, while the other five have higher proportions in urban areas.   North-Western Province at 29.7 percent had the least likelihood of the patient not seeking care. Northern Province had the highest proportion of people not seeking care after falling ill at 52.3 percent, while North-Western Province had the least at only 29.7 percent.

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Table 7.7.2 Population who got sick but did not seek care by province and region,2014

Province	Population with sickness	Percentage of population not seeking care	Rural population reporting illness	Percentage of rural population not seeking care	Urban population reporting illness	Percentage of urban population not seeking care
Zambia Total	3,196,409	38.3	2,239,305	39	957,104	37.7
Central	362,922	43.3	291,905	43.8	71,016	41.2
Copper belt	402,366	34.7	105,211	38.7	297,155	33.3
Eastern	456,262	31.6	404,305	30.9	51,957	37.0
Luapula	317,973	34.0	252,082	34.9	65,891	30.8
Lusaka	345,498	39.2	67,787	30.9	277,711	41.3
Muchinga	200,922	42.1	166,162	41.9	34,760	42.9
Northern	357,569	52.3	309,715	52.7	47,854	49.7
North-Western	193,090	29.7	149,556	28.4	43,534	34.1
Southern	303,282	38.6	254,728	38.7	48,555	38.1
Western	256,525	36.3	237,855	36.6	18,671	33.1

7.5 Utilization of outpatient services by type of facility

The highest utilization was at public health facilities where 86 percent of the population sought care. The next highest utilization was private for-profit health facilities at 7 percent, followed by private not-for-profit health facilities at 5 percent. Notably, only one percent of the respondents indicated that they visited traditional healers as alternative health care providers.

Figure 7.3 Choice of health care provider
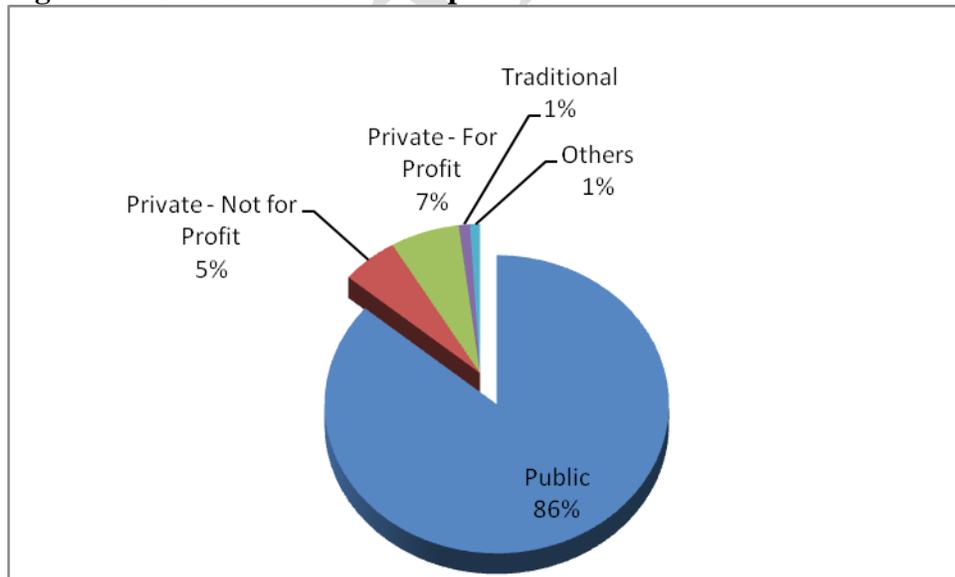
7.6 Utilization of outpatient health services by demographic background

Table 7.3 shows utilization of health facilities varied by sex and age group. As a proportion of the total population 22.6 percent of women, relative to 19.9 percent of men, reported an illness. Similarly, the per capita annual utilization rate of health facilities for women was 1.7, compared with 1.4 percent for men.

Table 7.3 Utilization and admission rates by sex, age group and marital status

Category		Total population	Number reporting illness	Number of sick not seeking care	Percent sick not seeking care	Total number of visitations	Total Admissions	Annual per capita utilization rate
Sex	Male	7,349,084	1,460,015	579,771	39.7	880,244	194,832	1.4
	Female	7,669,987	1,736,394	644,214	37.1	1,092,181	256,379	1.7
	Total	15,019,071	3,196,409	1,223,985	38.3	1,972,424	451,211	1.6
Age group	0 – 4	2,209,719	525,201	157,411	30.0	367,790	74,551	2.0
	5 – 14	4,308,286	743,703	289,262	38.9	454,440	65,581	1.3
	15 - 24	3,128,914	524,331	213,643	40.7	310,688	69,783	1.2
	25 – 49	4,016,252	927,555	373,808	40.3	553,747	166,760	1.7
	50 – 64	877,982	290,140	110,330	38.0	179,810	45,385	2.5
	65+	477,917	185,479	79,531	42.9	105,948	29,151	2.7
	Total	15,019,071	3,196,409	1,223,985	38.3	1,972,424	451,211	1.6
Marital status	Never Married	4,220,381	616,890	271,313	44.0	345,577	68,551	1.0
	Married	4,528,722	1,192,910	471,787	39.5	721,123	195,988	1.9
	Cohabiting	24,366	4,981	2,783	55.9	2,198	156	1.1
	Separated	140,808	36,699	13,705	37.3	22,995	7,211	2.0
	Divorced	328,916	94,145	37,348	39.7	56,797	18,724	2.1
	Widowed	517,425	176,808	69,189	39.1	107,619	33,392	2.5
	Total	9,760,618	2,122,434	866,125	40.8	1,256,309	324,022	1.5

In terms of age groups, not only were older people more likely to fall sick, but they also had a higher probability of utilizing health facilities. In this regard, the over 65 year old category had the highest utilization rate at 2.7 followed by the 50-64 year old category at 2.5, which was far above the annual average per capita utilization rate of health facilities across the country of 1.6.

The least utilization was recorded by the age group in the 15-24 years category which had an average utilization rate of 1.2, followed by the 5-14 years category with 1.3. Overall, there was a higher use of health facilities amongst the older population compared with the younger population. The least use was amongst the middle aged, while the 0-4 years category had a relatively higher utilization rate of 2.0. This is illustrated further by the near U-shaped utilization rate as shown in Figure 7.4.

Figure 7.4 Per capita utilization by age group
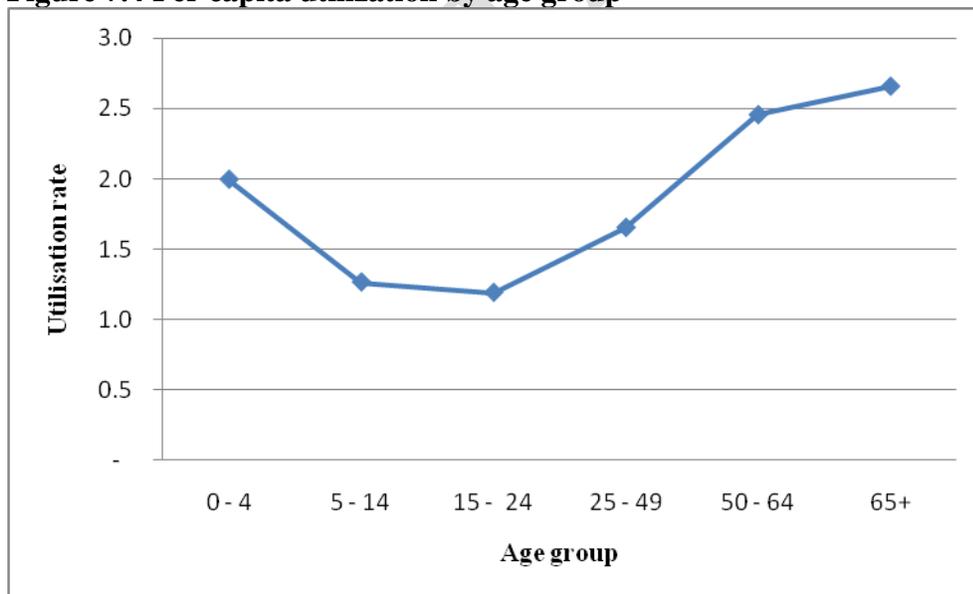
Utilization rates also varied according to marital status. The separated, divorced and widowed respondents had significantly higher utilization of health facilities, with the widowed having the highest usage by an average use rate of 2.5 per annum, followed by the divorced at 2.1 times. The group with the least use of health facility was the 'never married' group at 1.0 times per annum per capita.

7.7   Utilization of outpatient services by socio-economic background

Utilization of health facilities also varies by employment status. The average utilization rate being 1.6 times per annum. The self-employed and home-maker category registered the highest utilization at 1.9 times per annum, followed by the unpaid family worker at 1.8 per annum. The least utilization by employment status was in the 'students, interns and apprentice' category at 0.9 percent. This was followed by those seeking work whose utilization was 1.2 as given in Figure 7.5.

Figure 7.5 Utilization rates by employment status
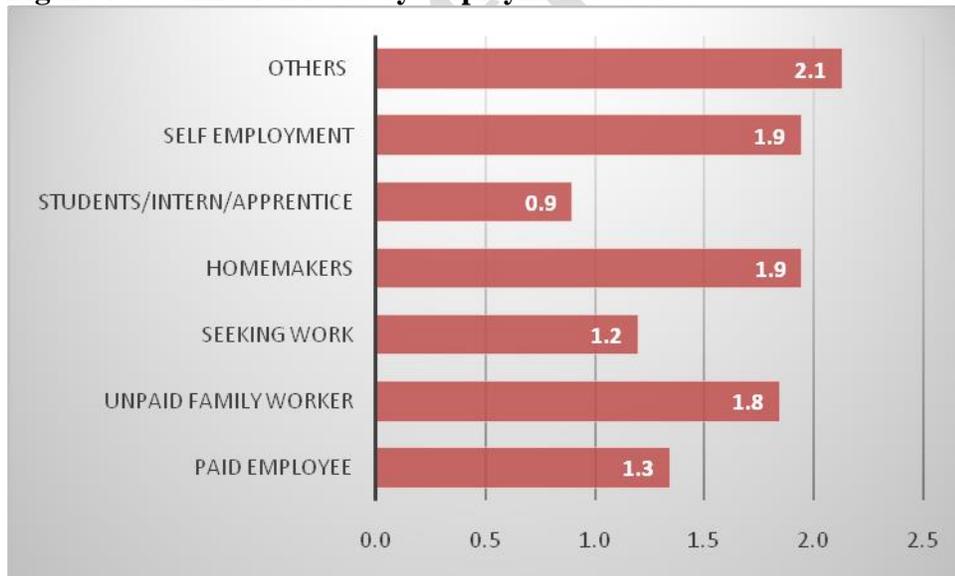
The use of outpatient services is more frequent among poorer households than the richer households. For instance, utilization for the richest quintile is 1.1 times per annum per capita,

while the comparative use among the poorest quintile is 1.9, against an average utilization rate of 1.6 for the country as a whole.

Figure 7.6 Utilization rates per expenditure quintile
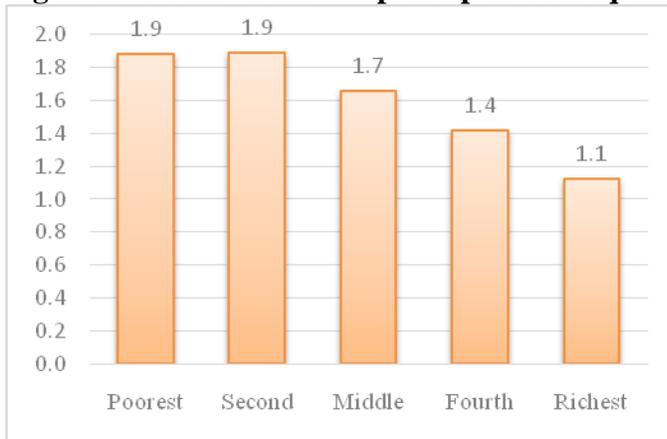
When the population reporting illness was compared with the population actually seeking treatment, the trend was similar. In the poorest quintile, 263 out of a 1,000 population reported illness in the four weeks prior to the survey, and out of these only 106 or 40 percent sought treatment. Among the richest quintile 153 out of 1,000 population or 39 percent sought treatment. Overall, only 38 percent of the respondents that reported illness sought treatment across the quintiles.

Figure 7.7 population reporting illness and not seeking treatment per 1,000 population by expenditure quintile
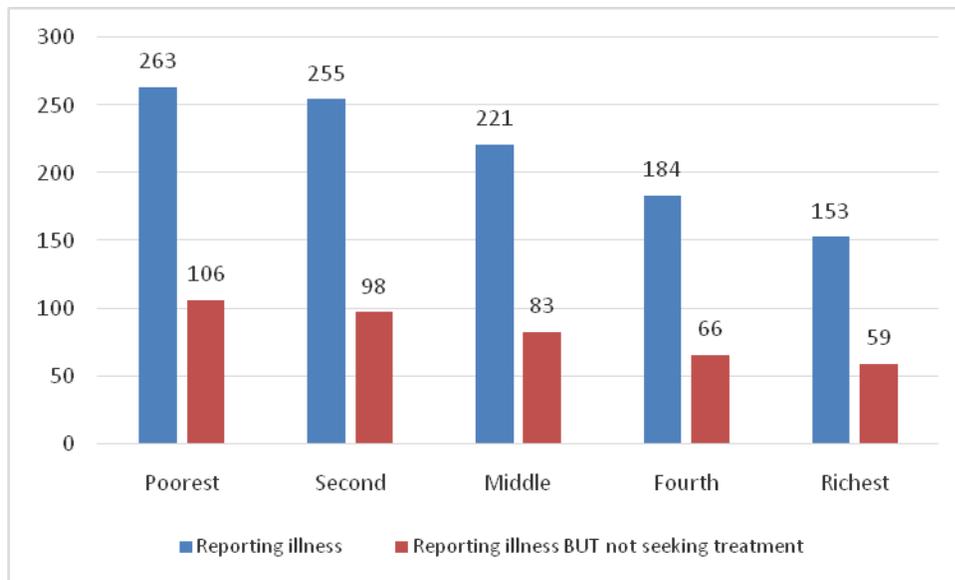
Utilization of outpatient services was characterized by high usage by the less educated and young on one hand, and low usage by the more educated on the other. With an annual utilization rate of 1.6, utilization was lowest among those with the highest qualification.

Figure 7.8 Annual per capita utilization rate
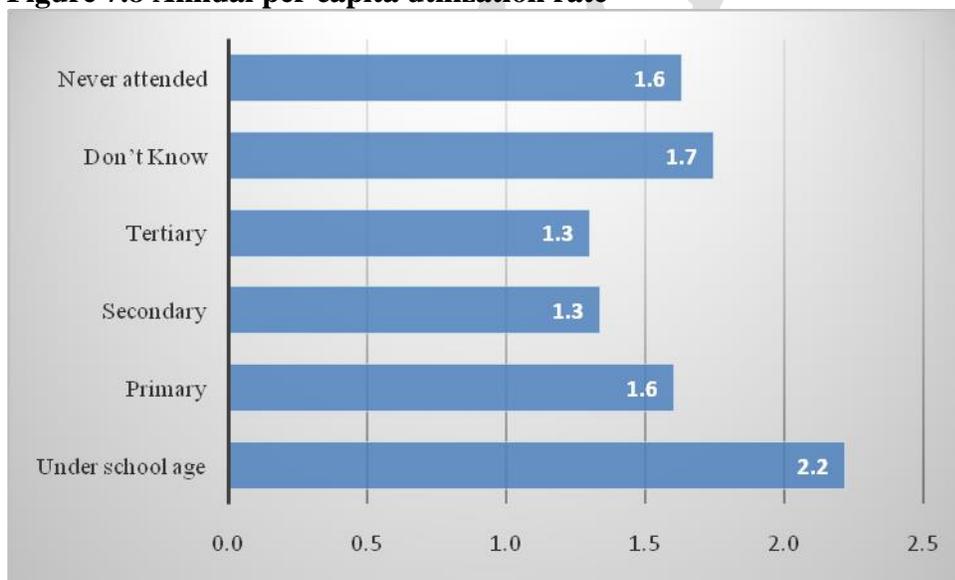
7.8   Admission rate by province and residence

As shown in Figure 7.9, admission rates varied across provinces with an average of 30 admissions per 1,000 population. Central Province had the least admission rates with 25 admissions for every 1,000. This was followed by Western, Southern and Copperbelt with 27 admissions per 1,000 equally. The highest admission rates were in Luapula Province and North-Western Province with 37 admissions per 1,000.

Figure 7.9 Admission rate by province and residence
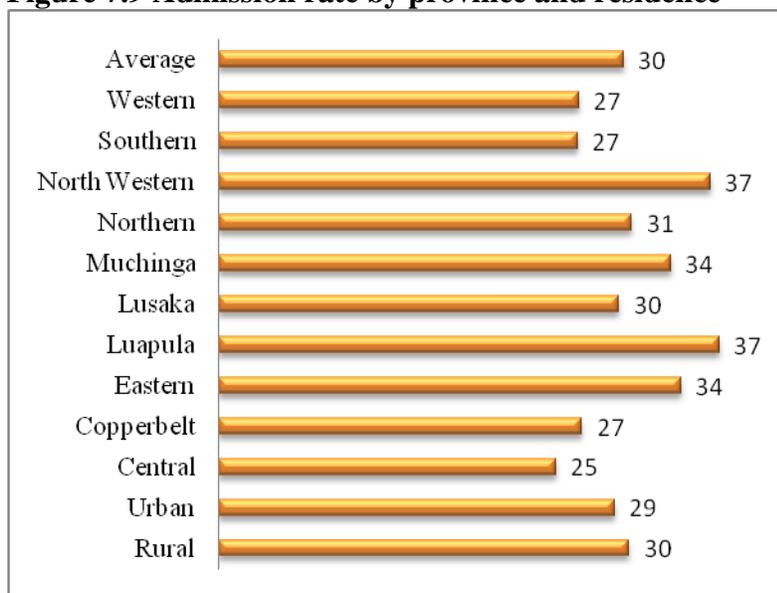
The actual number of people admitted to health facilities is mirrored by the age group population sub-groups within the total population. The highest admissions were in the 25-49 years category which had 166,760 admissions. The least number of admissions was the age group over-65 years that reported 29,151 admissions as shown in Figure 7.10.

It must be noted however that the over-65 years are negligible in numbers and yet, as shown in section 7.9, they still have a higher probability of being admitted. Notably though, the second highest number of admissions were children aged 0-4 years with 74,551 admissions or 3.4 percent of their population.

Figure 7.10 Hospitalisation by age group in absolute numbers
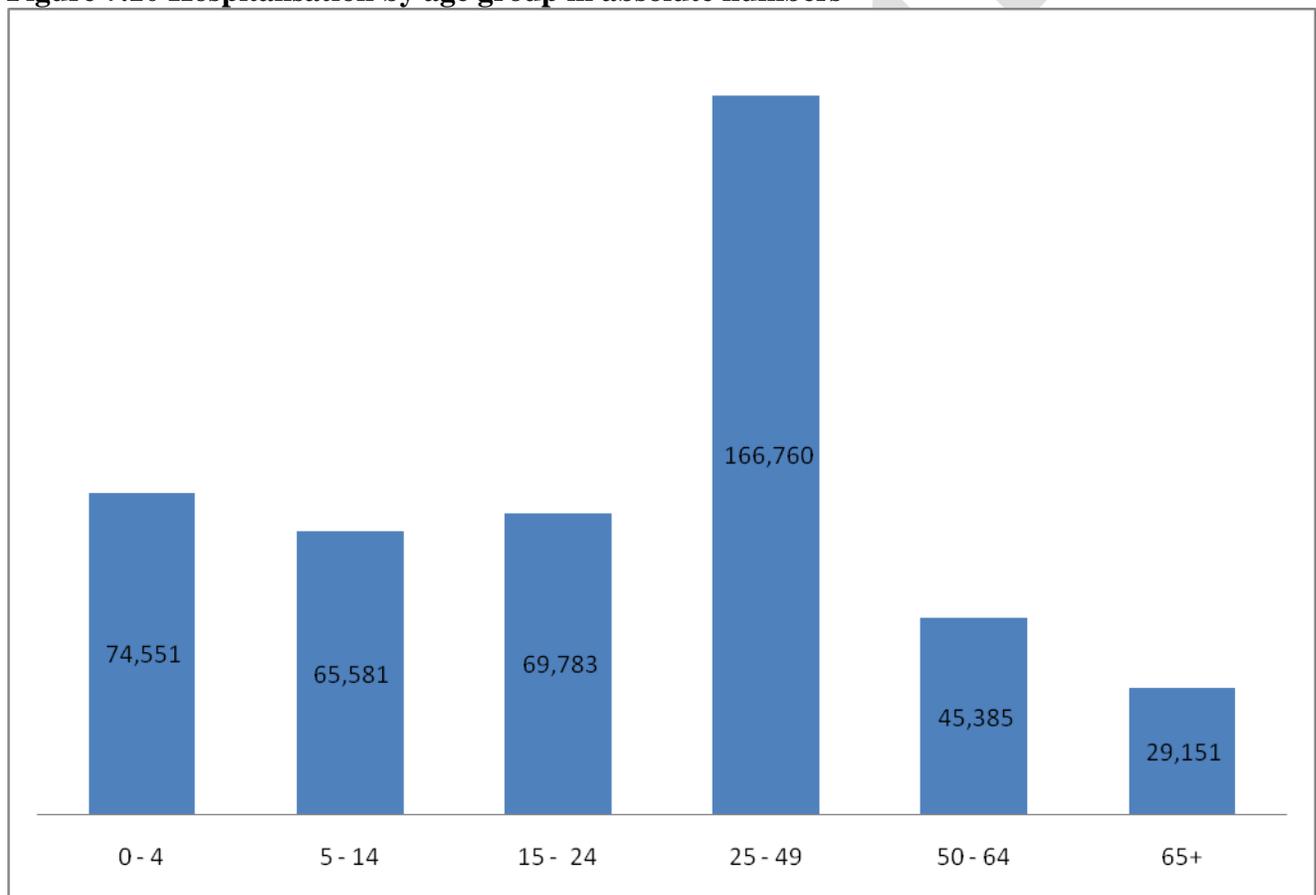
7.9   Hospitalisation by demographic background

The number of admissions by age group showed that there was a higher probability of being admitted to a health facility for the 0-4 years age group and the over-65s. The likelihood of

hospitalisation is associated with an increase in the age. The highest number of hospitalisations occurred in the category of people aged over 65 years (Figure 7.11).

Figure 7.11 Hospitalisation as a percentage of the age group population
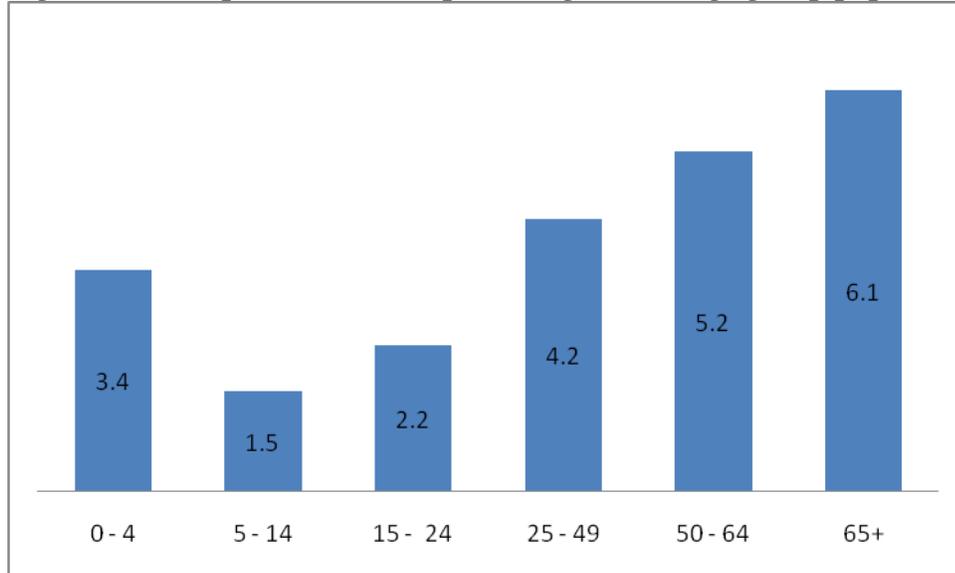
The least hospitalised age group was the 5-14 years with 15 out of every 1,000 population being admitted to a health facility, representing about 1.5 percent of the population group. This was followed by the 15-49 years category where admission rates were 42 out of every 1,000 population. The group next likely to be hospitalised after the over-65s were the 0-4 years category in which out of every 1,000 population, 34 were reported to have been admitted representing approximately 3.4 percent.

As shown in Table 7.4, 30 per 1,000 people reported being admitted, but this varied according to sex status. Of this number, women accounted for 56.8 percent of the admissions, compared with 43.2 percent for men. Similarly, there were still more women hospitalised as a proportion of their total population compared with men at 3.3 and 2.7 percent respectively. Overall, there were 27 cases of admissions per 1,000 population among the males compared with 33 per 1,000 population for women.

Table 7.4 Admission by sex

		Total population	Total admissions	Admissions as percent of total population	Admitted Population per 1,000 population
Sex	Male	7,349,084	194,832	43.2	27
	Female	7,669,987	256,379	56.8	33
	Zambia	15,019,071	451,211	100.0	30

Admission to a health facility varied significantly according to marital status. As shown in Figure 7.12, married people accounted for 60.5 percent of total admissions, followed by the never married and the widowed at 21.2 percent and 10.3 percent respectively. Least admissions were reported by cohabiting and separated at less than 1 percent and 2.2 percent respectively. Overall, the married had the highest admission rates in absolute terms at 605 admissions per 1,000 followed by the never married at 212 admissions per 1,000 population in the 12 months prior to the survey.

Figure 7.12 Admission rate by marital status
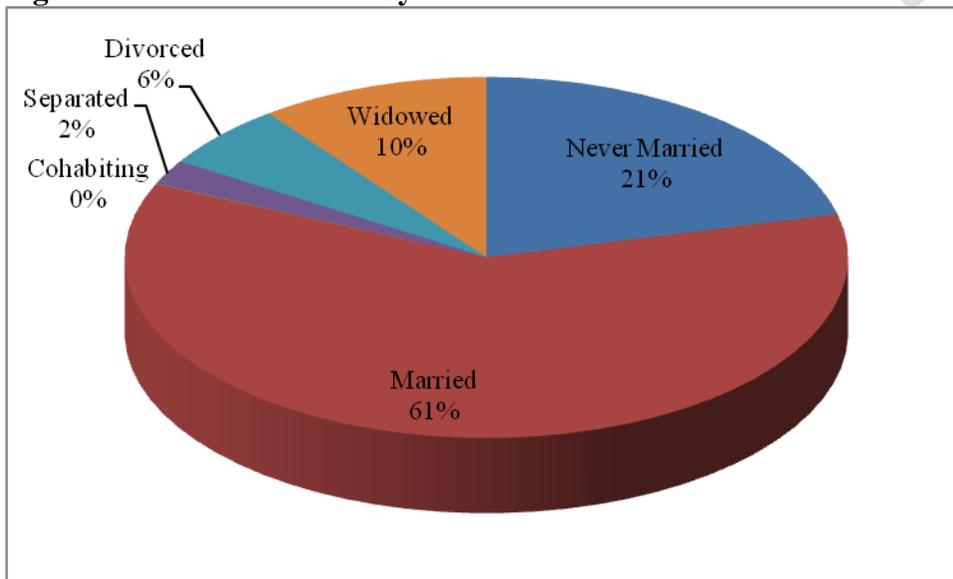
Table 7.5 shows that the probability of being admitted was significantly higher amongst the widowed, divorced and separated compared with the never married. Of the widowed respondents, 65 out of every 1,000 population were admitted 12 months prior to the survey, followed by the divorced and separated at 57 and 51 reporting being admitted out of every 1,000 population. The never married were among the least admitted at 16 admissions out of every 1,000 population.

Table 7.5 Admission rate by marital status of age 12 years and above

Marital Status	Population	Total Admissions	Percent of total admissions	Total Admissions as percent of the marital status	Admissions per 1,000 Population
Never Married	4,220,381	68,551	21.2	1.6	212
Married	4,528,722	195,988	60.5	4.3	605
Cohabiting	24,366	156	0.0	0.6	0
Separated	140,808	7,211	2.2	5.1	22
Divorced	328,916	18,724	5.8	5.7	58
Widowed	517,425	33,392	10.3	6.5	103
Total	**9,760,618**	**324,022**		**3.3**	**3320**

7.10 Admission rate by type of facility

Figure 7.12 shows admission rates by type of facility. As shown, there were more admissions in public facilities compared with private facilities. In this regard, 81 percent of the population reported being admitted to public facilities, compared with 12 percent in private not-for-profit facilities and only 5 percent in private for-profit facilities. The number of people who reported being admitted by traditional healers was negligible at less than 1 percent of the population.

Figure 7.4 Admission rate by type of facility
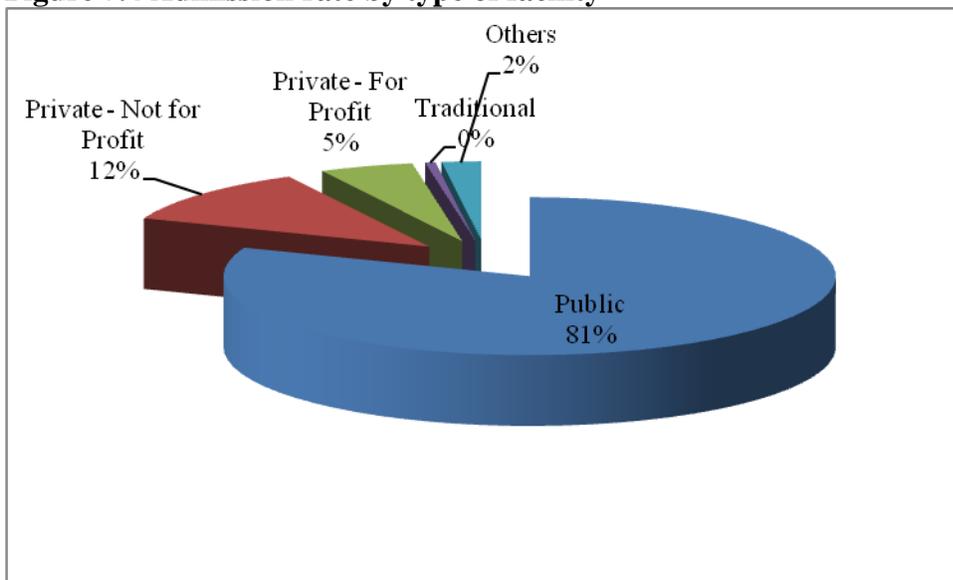
7.11 Admission rate by socio-economic background

Table 7.6 Admission rate by employment status of household head

Employment Status of Household head	Population	Total Admissions	Admissions per 1,000 population	Admission as a proportion of total admissions (percent)
Paid Employee	3,353,187	103,846	31	23
Unpaid Family Worker	911,032	29,504	32	7
Seeking Work	613,444	17,260	28	4
Homemakers	974,819	31,074	32	7
Students/Intern/Apprentice	35,672	1,066	30	0.2
Self-employment	8,666,103	253,125	29	56
Unemployed	5,434	-	-	-
Others	459,380	15,335	33	3
Total	15,019,071	451,211	30	100

Admissions were highest among household heads that are self-employed, this group accounted for 56 percent of total admissions. The numbers of admissions were lowest among the students/interns/apprentices who accounted for only 0.2 percent of the total admission. Looked at in terms of 1000 people, an average of 30 household heads are admitted per 1000 population.

There was a marked difference in admission by highest level of education attained by the respondent. The highest admission rate was amongst the tertiary level (university, college and vocational) at 40 admissions per 1,000 population, followed by the under school age population with 36 admissions per 1,000 population. Respondents who had primary education registered the least admissions in the 12 months prior to the survey with 28 admissions per 1,000 population (Table 7.7).

Table 7.7 Inpatient admission in previous 12 months by education status

	Total population of group	total admissions	Admissions (per 1,000 population)	Admissions as percent of total admissions
Under school age	1,255,195	45,680	36	10.1
Primary	6,443,093	181,204	28	40.2
Secondary	3,652,431	107,150	29	23.7
University/College/Vocational	745,683	29,891	40	6.6
Don't know	540,844	16,347	30	3.6
Never attended	2,381,825	70,938	30	15.7
Total	15,019,071	451,211	30	100

As Figure 7.13 shows, although there was no marked difference in admission rates when the population was classified according to wealth by expenditure in quintiles, the poorest quintile had 30 admissions per 1,000 population, compared with the richest quintile with 33 admissions per 1,000 population. This means that the probability of being hospitalised is higher by 0.3 times if a Zambian is in the richest quintile than in the poorest quintile. This difference could be a reflection of the lower utilization levels by the poor as shown earlier in Table 7.7 and this demonstrates low and inequitable access to health care by the poor majority.

Figure 7.5 Admission rate by expenditure index
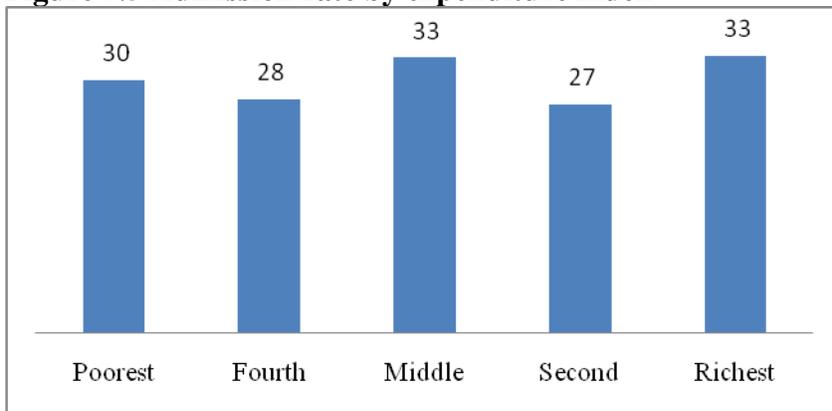
Admission to health facilities in the 12 months prior to the survey varied by type of insurance or medical scheme cover as shown in figure 7.14. The highest admission rates were those that were covered by private insurance schemes and medical schemes. Out of those admitted, this category had 33 per 1,000 population. Of this group, 76 out of a 1,000 population were hospitalised, compared with 48 admissions in 1,000 population in a Government facility high cost scheme. This is in sharp contrast to admission rates per 1,000 population where 81 percent reported using public facilities, compared with a total of 17 percent for private for-profit and private not-for-profit facilities.

Figure 7.6 Admission rate by insurance cover
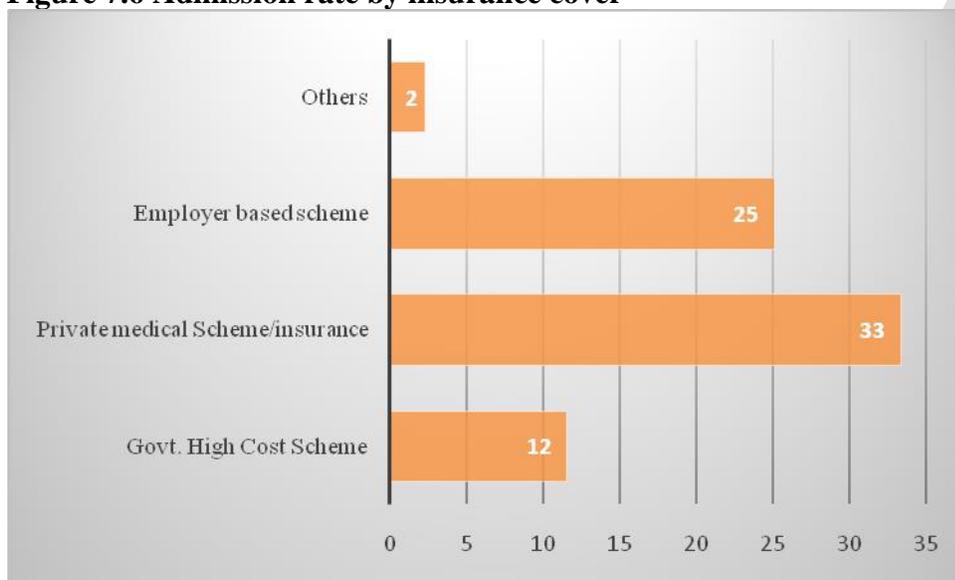
7.12 Summary

Utilization of health care services is dependent on several factors such as cultural beliefs, socio-demographic status, women's autonomy, economic conditions, physical and financial accessibility, disease pattern and health service issues. Overall, 21.3 percent of the population had an episode of illness during the four weeks prior to the survey implying that 213 out of every 1,000 people reported falling ill at some point during the recall period. Out of those who reported being ill, 38.3 percent sought medical attention while 61.7 percent did not. In terms of residence, rural areas had more incidences of reported illness with 25.5 percent reporting being ill, compared with 15.4 percent in urban areas.

Similarly, admission rates varied across provinces and varied according to marital status, age group, employment status, among other factors. Overall, there were 30 admissions per 1,000 population in the 12 months prior to the survey. Of this number, women accounted for 56.8 percent of the admissions, compared with 43.2 percent for men, meaning that women had a higher probability of being hospitalised. Similarly, there were still more women hospitalised as a proportion of their total population compared with men, at 3.3 and 2.7 percent respectively.

8 Access to health care

8.1 Introduction

Coverage and access serve as operational proxies for equity. Equity has been a cardinal objective of the Zambian health system for a long time. As the Millennium Development Goals (MDGs) come to their completion, the consensus in international health is to adopt universal health care (UHC) as an overarching goal. UHC will serve as a key benchmark in evaluating and monitoring health system development and performance.

According to the World Health Organisation (WHO, 2010), UHC is defined as "the provision of quality health care services, which meet the people's needs for all the population, without exposing them to financial (and other) barriers". Alternative definitions of UHC emphasize the aspect of "access" and "coverage" which states as follows: "access to key promotive, preventive, curative and rehabilitative health interventions for all at an affordable cost."

Access refers to the utilization of services, including the eligibility of receiving health care when it is needed. This report to access treats access as the availability and use of health care services or effective utilization to meet health care need. In addition issues affecting access may relate to barriers or other costs associated with coverage of care. The cost may be in forms of physical, financial, transport, social, religious, or other in which the factor in question acts as a barrier to reaching and using health care in a timely and acceptable manner.

8.2   Reasons for not seeking treatment despite reporting illness

The most commonly reported reasons for not seeking health care, despite reported episodes of illnesses, were self-medication, long distance to provider, high cost of care, quality service," "religious or cultural reasons" and "fear of discovering serious illness" (Table 8.1A). Within the expenditure quintiles, respondents chose not to go to formal clinical facilities and rather chose to self-medicate, while distance was the main cause for why care was not sought. This pattern was representative of all expenditure quintiles with variations relating only to the percentage differences.

Table 8.1A Percentage distribution of reasons for not seeking care by socio-economic quintiles and   region

Region and expenditure quintile			Could not afford the cost of care		Self-medication		Poor quality service		Religious/Cultural		Fear of discovering serious illness		Long distance to provider			Other
			Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Region	Zambia	Poorest	13,349	4.5	169,215	56.8	7,191	2.4	1,606	0.5	1,572	0.5	71,087	23.9	33,794	11.3
		Second	6,732	2.7	168,074	68.5	12,235	5.0	2,860	1.2	1,735	0.7	24,662	10.1	28,930	11.8
		Middle	7,519	2.8	180,660	66.8	5,808	2.1	2,734	1.0	629	0.2	42,117	15.6	30,824	11.4
		Fourth	8,107	3.0	180,840	66.2	6,678	2.4	2,605	1.0	1,148	0.4	44,930	16.4	29,068	10.6
		Richest	2,359	1.1	171,852	76.6	4,215	1.9	3,161	1.4	126	0.1	13,738	6.1	28,759	12.8
		Total	38,065	2.9	870,641	66.4	36,128	2.8	12,965	1.0	5,209	0.4	196,535	15.0	151,376	11.5
	Rural	Poorest	11,426	4.1	157,297	56.0	6,832	2.4	1,373	0.5	1,494	0.5	70,861	25.2	31,661	11.3
		Second	3,264	2.5	81,466	61.8	6,311	4.8	1,961	1.5	961	0.7	21,971	16.7	15,962	12.1
		Middle	4,555	2.2	131,208	64.1	4,804	2.3	2,734	1.3	400	0.2	38,668	18.9	22,356	10.9
		Fourth	6,034	2.5	154,515	64.7	5,332	2.2	2,486	1.0	1,011	0.4	43,489	18.2	26,078	10.9
		Richest	1,553	1.8	61,387	71.2	435	0.5	976	1.1	-	0.0	11,468	13.3	10,446	12.1
		Total	26,831	2.8	585,872	62.1	23,713	2.5	9,530	1.0	3,866	0.4	186,457	19.8	106,503	11.3
	Urban	Poorest	1,923	11.4	11,918	70.6	360	2.1	233	1.4	78	0.5	226	1.3	2,133	12.6
		Second	3,468	3.1	86,608	76.4	5,924	5.2	899	0.8	774	0.7	2,692	2.4	12,968	11.4
		Middle	2,964	4.5	49,452	75.4	1,005	1.5	-	0.0	229	0.3	3,449	5.3	8,468	12.9
		Fourth	2,073	6.0	26,325	76.5	1,346	3.9	118	0.3	137	0.4	1,442	4.2	2,991	8.7
		Richest	806	0.6	110,465	80.1	3,781	2.7	2,185	1.6	126	0.1	2,270	1.6	18,314	13.3

| | | Total | 11,234 | 3.1 | 284,769 | 77.4 | 12,415 | 3.4 | 3,435 | 0.9 | 1,343 | 0.4 | 10,078 | 2.7 | 44,873 | 12.2 |

Table 8.1B shows that among the rural populaion 70 per cent of the population could not meet the cost of care, 67 per cent chose to self-medicate, 70 per cent were influenced by religious reasons and 95 per cent were inhibited by distance in relation to the urban areas where the corresponding proportions wre 29, 33, 27 and 5 per cent respectively.

Table 8.2B Percentage distribution of reasons for not seeking care by socio-economic quintiles and region

		Could not afford the cost of care	Self-medication	Poor quality service	Religious /Cultural	Fear of discovering serious illness	Long distance to provider	Other (Specify)
Region	Rural	70.7	67.4	64.2	73.5	74.2	94.7	70.9
	Urban	29.3	32.6	35.8	26.5	25.8	5.3	29.1
		100.0	100.0	100.0	100.0	100.0	100.0	100.0
Province	Central	10.6	13.5	6.4	29.4	0.0	12.2	11.5
	Copperbelt	19.6	11.4	24.4	1.4	21.9	9.0	13.2
	Eastern	5.0	12.8	14.8	5.5	11.5	6.4	9.8
	Luapula	8.4	8.7	6.4	7.4	8.7	6.4	11.7
	Lusaka	13.5	11.8	8.5	17.6	8.5	3.4	10.5
	Muchinga	4.2	7.0	4.7	6.6	2.6	9.3	5.4
	Northern	17.1	15.2	12.8	5.2	20.1	25.3	12.1
	North Western	1.9	4.4	13.4	0.9	9.7	6.8	5.0
	Southern	14.1	9.5	3.8	21.1	15.5	8.5	8.8
	Western	5.5	5.6	4.8	5.0	1.5	12.7	11.9
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

The survey reported a high prevalence of self-medication among the population as a reason for not seeking care despite reported episodes of illness especially among the richer quintiles (42 percent). Self-medication is an option to formal care seeking and it is common for individuals who are ill to buy or use drugs that were prescribed for similar earlier episodes or buy drugs from chemists without a prescription.

8.3   Physical accessibility

The physical barriers related to the ease, or difficulties, of accessing health care are measured by time and distance. These two may subsequently be related to the cost of travel, both in terms of cost of transport and time cost to reach the facilities. The data presented in Figure 8.1 shows the extent to which these factors impact on physical access to health care.

Figure 8.1 Distance to health facility by percentage of population
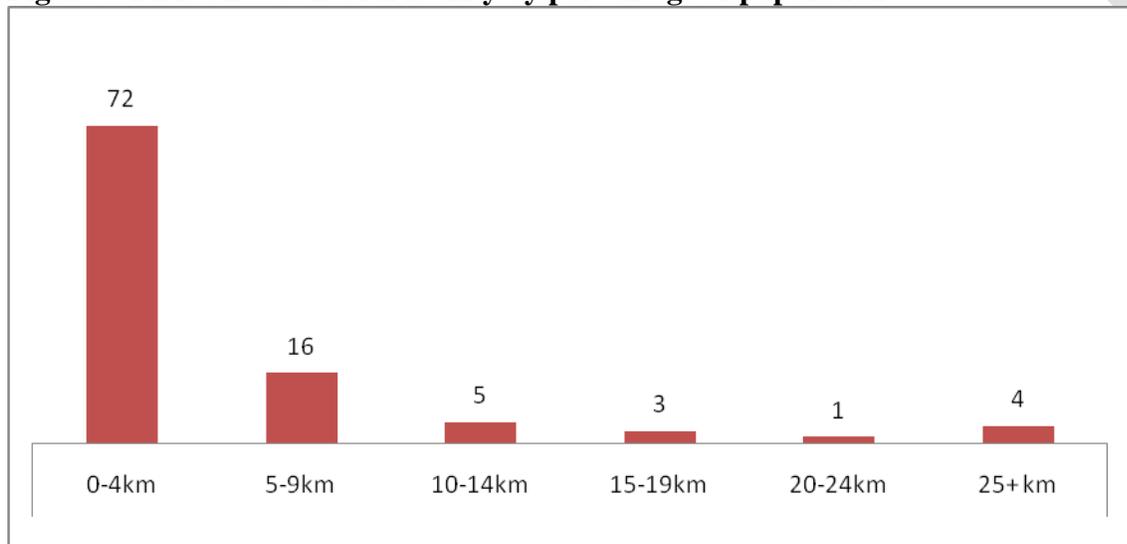
The ease of reaching a health centre is shown by the average distance covered. More than 70 percent of the households are within 5 km of a health facility. The difference in distance between the rural areas and urban areas is almost double. This is the case for not only the outpatient visits but for inpatient services as well. The mean distance travelled by rural and urban households is 6.8 km and 3.6 km respectively.

Luapula Province has the least distance covered by the household at almost 3.4 km, while Northern Province has the most with slightly over 9 km (Table 8.3). In terms of the inpatient services, Southern Province with 16 km covered by household has the longest distance, while Lusaka with 5 km has the least. The average distance covered for purposes of inpatient services is 14.9 km in the rural areas and 5.3 km in the urban areas.

Table 8.3 Distance to health facility visited by region and provinces in km

Province	Region								
	Zambia			Rural			Urban		
	Distance to the health facility visited			Distance to the health facility visited			Distance to the health facility visited		
	Mean	Minimum	Maximum	Mean	Minimum	Maximum	Mean	Min	Max
Zambia	5.8	.01	200	6.8	.01	200	3.6	.03	200
Central	6.9	.10	130	7.6	.10	130	3.9	.30	130
Copperbelt	5.5	.10	200	9.4	.50	200	4.3	.10	200
Eastern	4.9	.05	150	5.1	.05	150	2.8	.08	100
Luapula	3.4	.01	100	3.9	.01	100	1.9	.03	30
Lusaka	3.9	.10	85	6	.10	85	3.3	.50	80
Muchinga	7	.10	90	7.7	.20	80	4	.10	90
Northern	9.1	.01	200	10.4	.01	200	3	.10	50
North Western	7	.10	200	7.6	.10	200	4.9	.50	153
Southern	6.5979	.08	200	7.5	.08	200	2.2	.10	50
Western	6.3707	.10	200	6.6	.10	100	2.8	.10	200

The distances to admission facilities vary among region and provinces. The average distance to an admission facility at national level is 11 km corresponding to 15 km for urban areas and 5.5 km for rural areas (Table 8.4).

Table 8.4 Distance to health facility to which admitted by region and provinces in kilometres

Province	Region								
	Zambia			Rural			Urban		
	Distance to admitting health facility			Distance to admitting health facility			Distance to admitting health facility		
	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max
Zambia	11.05	.01	200	14.9	.01	200	5.5	.03	176
Central	15.90	.20	176	17.3	.20	150	11.2	.50	176
Copperbelt	9.15	.40	200	23.7	1.00	200	6.4	.40	65
Eastern	8.51	.30	75	9.3	.30	75	3.7	.50	35
Luapula	9.02	.01	131	11	.01	131	2.6	.03	30
Lusaka	5.51	.50	110	10.7	1.00	110	4.7	.50	50
Muchinga	13.06	.50	90	14.2	.50	90	6.6	.50	90
Northern	15.95	.20	200	18.6	.50	200	5.5	.20	50
North Western	11.80	.20	153	12.8	.20	120	8.8	.50	153
Southern	16.31	.10	200	19.9	.20	200	4.1	.10	35
Western	14.97	.10	200	16.9	.50	200	1.4	.10	7

The time taken by mode of travel for different health facility types are shown in Figure 8.2. The average walking time is 52 minutes while the average travel time by public transport is 62 minutes. On the other hand the time taken to visit a health facility by type of ownership is lowest for parastatal and private health facilities, where on average it takes about 25 minutes. Travel time to public health centres and health post take almost an hour.

Figure 8.2 Time taken to health facility visited in minutes: Rural - Urban
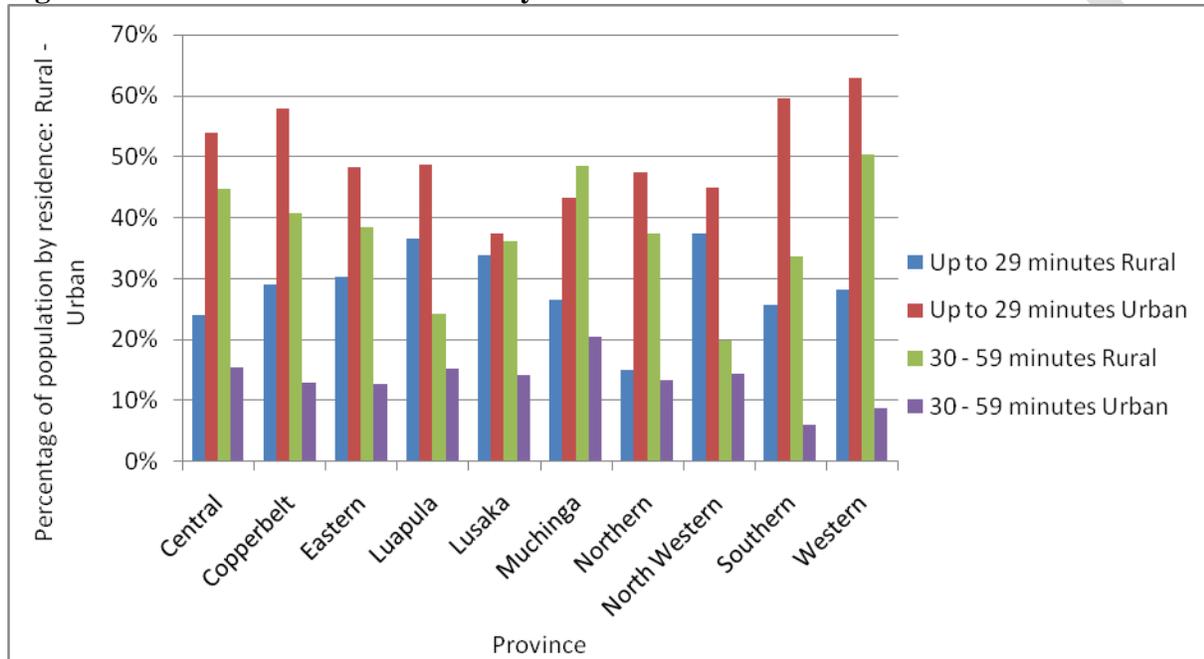
When considering time taken to travel by mode of transport, 49 percent of the urban population are within 30 minutes walking to the health facilities that were visited, as opposed to 28 percent in the rural areas. On the other hand, 45 percent of the rural population take between 30 - 59 minutes to reach a health facility, while 15 percent of the urban population do so. People travelling by private means of transport take an average of 30 minutes (Table 8.5). That can be compared with the 62 minutes taken to travel for health care for those using the public means of transport. The longest travel time is for those using animals and boats as means of travel.

Table 8.5 Time taken to health facility by mode of travel

Region and Mode of Transport			Time to Provider				Distance to Provider			
			Mean	Median	Minimum	Maximum	Mean	Median	Minimum	Maximum
Region	Zambia	Public transport	62.3	30.0	1.0	1000.0	11.8	3.5	0.1	200.0
		Private (own means)	30.6	20.0	1.0	360.0	6.5	3.0	0.2	121.0
		Taxi	36.3	20.0	1.0	428.0	7.6	2.0	0.1	175.0
		Boat/Canoe	75.8	60.0	2.0	300.0	9.2	5.0	1.0	45.0
		Walked	52.7	30.0	0.2	660.0	4.2	1.5	0.0	200.0
		Bicycle	71.3	60.0	0.5	600.0	6.9	4.0	0.0	150.0
		Motor cycle	30.5	20.0	1.0	120.0	6.4	4.0	0.9	35.0
		Animal (e.g. donkey)	140.1	90.0	1.0	420.0	22.1	10.0	1.0	200.0
		Air								
		Other (specify)	152.1	30.0	1.0	1000.0	12.5	6.0	0.3	100.0
		Don't Know	43.9	45.0	10.0	60.0	3.7	1.0	1.0	70.0
	Rural	Public transport	97.0	60.0	1.0	1000.0	21.1	8.0	0.5	200.0
		Private (own means)	50.8	30.0	2.0	300.0	10.2	5.0	0.5	121.0
		Taxi	62.5	40.0	1.0	428.0	15.1	6.0	0.1	175.0
		Boat/Canoe	67.3	60.0	2.0	180.0	9.3	5.0	1.0	45.0
		Walked	62.5	40.0	0.2	660.0	4.8	2.0	0.0	200.0
		Bicycle	73.2	60.0	0.5	600.0	7.1	4.0	0.0	150.0
		Motor cycle	33.4	20.0	1.0	120.0	6.9	4.0	0.9	35.0
		Animal (e.g. donkey)	144.2	90.0	1.0	420.0	22.7	10.0	1.0	200.0
		Air								
		Other (specify)	182.7	60.0	1.0	1000.0	12.0	7.0	0.5	100.0
		Don't Know	43.9	45.0	10.0	60.0	9.3	1.0	1.0	70.0

	Urban	Public transport	35.1	30.0	1.0	720.0	4.4	2.0	0.1	153.0
		Private (own means)	21.6	15.0	1.0	360.0	4.8	3.0	0.2	109.0
		Taxi	26.5	20.0	1.0	183.0	4.6	2.0	0.3	90.0
		Boat/Canoe	233.3	180.0	180.0	300.0	7.1	12.0	1.0	12.0
		Walked	30.1	20.0	0.2	480.0	3.0	1.0	0.0	200.0
		Bicycle	34.8	30.0	2.0	180.0	3.0	2.0	0.2	25.0
		Motor cycle	8.4	5.0	2.0	20.0	2.4	2.0	1.0	4.0
		Animal (e.g. donkey)	15.0	15.0	15.0	15.0	1.0	1.0	1.0	1.0
		Air								
		Other (specify)	23.8	15.0	3.0	90.0	14.8	2.0	0.3	65.0
		Don't Know					1.0	1.0	1.0	1.0

Table 8.6 shows the length of time taken to travel by type of health care providers. The time taken to reach the tertiary health providers is on average 45 minutes, and almost 75 minutes for secondary level services. It takes over an hour to travel to a district hospital, and an hour to travel to a health centre. On average it takes more time to reach mission health facilities, with the travel to a mission hospital and health centre taking well over 80 minutes. The shortest travel time recorded is for privately owned health care providers, which takes an average of 30 minutes. However, as most of the privately owned facilities are urban based, the shorter travel time is not comparable, and also raises a question in terms of the fairness of distribution of the health services or access to health services.

Table 8.6 Time taken to health facility by type of provider

Facility	Length of time to health care provider (minutes)		
	Mean	Minimum	Maximum
Government/tertiary hospital	44.6	1.00	450
Government/general hospital	73.5	1.00	1000
Government district hospital	71.6	1.00	1000
Government health centre	54.8	.20	1000
Government health post	54.9	.20	600
Mission hospital	74.2	1.00	1000
Mission health centre	81	2.00	1000
Nursing/hospice	90	90.00	90
Private hospital	31.4	1.00	390
Private clinic	34.2	1.00	300
NGO clinic	23.1	5.00	80
Company/parastatal clinic	25.3	1.00	180
Total	56.7	.20	1000

8.4 Waiting time

Waiting times show that the private facilities have a mean of about 24 minutes, while the public district and mission facilities have slightly over 75 minutes and 52 minutes respectively of mean waiting time (Table 8.7). To see a clinician it takes on average between 56 and 72 minutes for public health centres and mission health centres respectively. In general waiting times for all facilities are longer in rural areas. However, waiting times are longer in urban areas for government general hospitals, health centres, health posts and NGO clinics.

Table 8.7 Waiting time for health care provider

	Rural			Urban			Total		
	Waiting time for clinician			Waiting time for clinician			Waiting time for clinician		
	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max
Government/ tertiary hospital	57.81	1.00	360	46.56	1.00	200.00	48.75	1.00	360.00
Government/ general hospital	36.78	1.00	420	59.51	1.00	523.00	52.39	1.00	523.00
Government district hospital	78.24	1.00	840	71.32	1.00	840.00	74.75	1.00	840.00
Government health centre	50.49	1.00	998	70.89	1.00	660.00	56.21	1.00	998.00
Government health post	47.16	1.00	480	54.27	1.00	600.00	48.39	1.00	600.00
Mission hospital	52.19	1.00	360	51.35	1.00	300.00	52.06	1.00	360.00
Mission health centre	73.59	1.00	1000	64.71	2.00	180.00	71.96	1.00	1000.00
Nursing/ hospice				20.00	20.00	20.00	20.00	20.00	20.00
Private hospital	39.06	1.00	240	23.15	1.00	240.00	24.60	1.00	240.00
Private clinic	34.49	1.00	180	20.44	1.00	180.00	24.04	1.00	180.00
NGO clinic	18.08	5.00	40.00	76.15	30.00	120.00	53.84	5.00	120.00
Company/ parastatal clinic	5.65	2.00	10	27.11	1.00	180.00	25.88	1.00	180.00
Total	51.56	1.00	10000	62.09	1.00	840.00	54.86	1.00	1000.00

8.5   Affordability

8.5.1   Source of expenditure for out-of-pocket payment (OOPs)

Figure 8.3 below shows the sources of OOPs for household health expenditure. The figure shows that most households had own cash to spend on health care services at the point accessing health services representing 70 percent of total household health expenditure. This was followed by those who were given money, and those that borrowed. These represent 19 percent and 4 percent respectively. The households that had to spend on health services after selling household assets were the lowest with less than 1 percent of total household health expenditure.

Figure 8.3 Source of expenditure for out-of-pocket payments
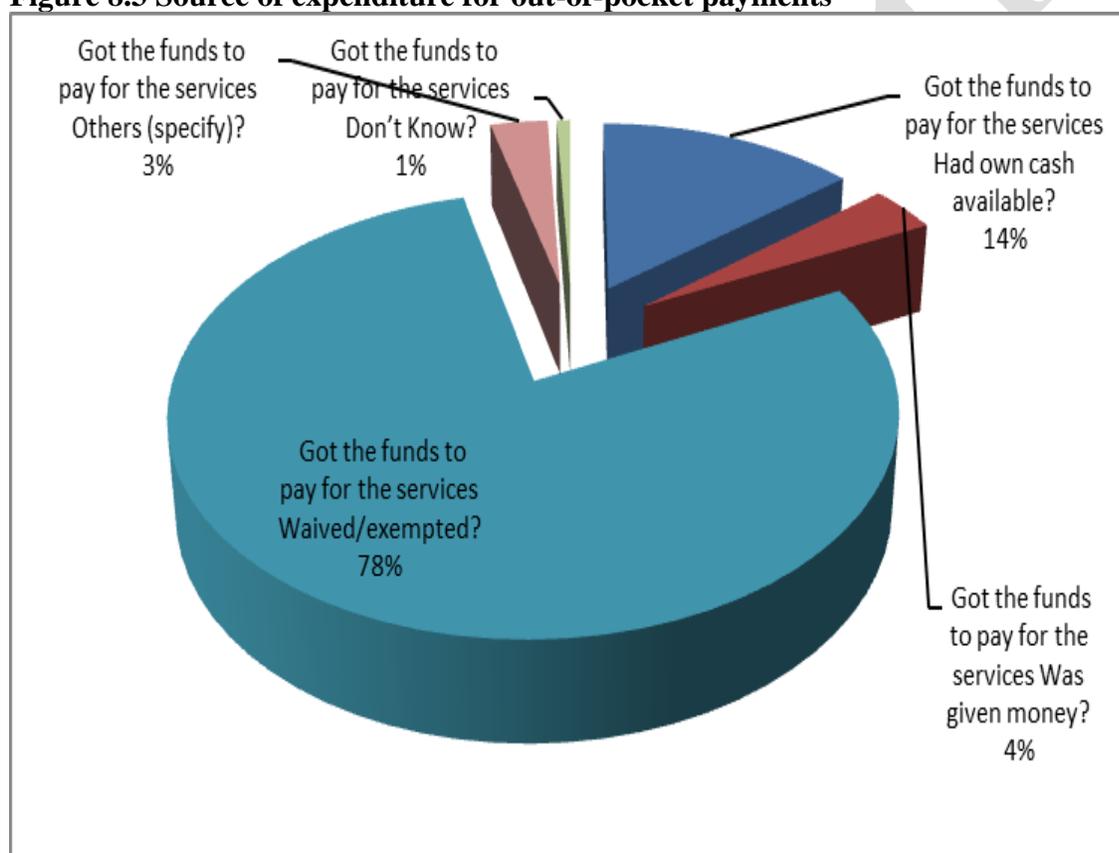
Table 8.8 shows the source of payments for health care expenditures by employment category. It is shown that the formally employed category had the largest share of own resources for payments, varying between 11-33 percent depending on employment status. The second source was those who were given cash, varying between 2-8 percent. No one had sold household assets to finance health care utilization. The waived or exempted varied between 61-83 percent depending on employment status. This can be explained by the data showing that most people enjoyed tax funded health services.

Table 8.8 Source of payment for health care expenditure by employment status

Employment status	Own cash	Was given cash	Borrowed money	Sold household assets	Waived/ exempted	Reim- bursed by well wisher	Not stated	Other
Paid employee	33	2	0	0	61	0	2	4
Unpaid family worker	12	3	0	0	83	0	1	2
Seeking work	19	9	2	0	68	1	0	3
Homemakers	18	5	0	0	75	0	1	3
Students/intern/ apprentice	11	8	0	0	79	0	1	3
Self employment	16	2	0	0	80	0	1	3
Others	15	8	1	0	75	0	1	0

A decomposition of the visits by expenditure quintiles are given in Table 8.9. The total numbers of visits are dominated by the poorest and the total numbers of admissions are dominated by the rich. A comparison of visits between the poorest and the richest quintiles shows that the richer dominates the subsequent visits. The opposite can be seen for admissions where the poor dominates the subsequent admissions.

Table 8.9 Number of visits by health expenditure quintile

	Expenditure quintile					
Health care utilization	Richest	Second	Middle	Fourth	Poorest	Total
Visit 1	251,881	411,787	481,973	434,166	392,617	1,972,424
Visit 2	10,854	10,758	11,896	9,938	8,196	51,642
Visit 3	1,357	1,498	297	467	617	4,236
Visit 4	-	721	-	113	378	1,212

Total outpatient visits	264,091	424,764	494,166	444,683	401,809	2,029,513
Percentage use by quintile	13percent	21percent	24percent	22percent	20percent	
Admission 1	87,921	86,891	95,122	99,771	81,507	451,211
Admission 2	3,718	8,636	9,000	9,333	6,248	36,935
Admission 3	832	1,820	1,432	1,993	1,678	7,755
Admission 4	377	228	572	239	234	1,650
Total admissions inpatient care	92,847	97,575	106,126	111,336	89,667	497,551
Percentage use by quintile	19percent	20percent	21percent	22percent	18percent	

Table 8.10 shows the percentage distribution of follow up visits. As can be seen the richest dominates utilization of health care in terms of the visits and the poorest dominate in terms of the re-admissions.

Table 8.10 Follow up use of health care by expenditure quintile, percent

Percentage of population with follow up visits by expenditure quintile				
Richest	2nd	3rd	4th	Poorest
4	3	2	2	2
1	0	0	0	0
Percentage of population re-admitted by wealth quintile				
Richest	2nd	3rd	4th	Poorest
4	10	9	9	8
1	2	2	2	2

However, even though the wealthiest quintile has greater use of inpatient facilities than the poorest, the share of poorer households being readmitted was higher than the wealthier quintiles, indicative of poorer health outcomes attributable to a variety of reasons.

The utilization of health facilities by socio-economic groups is shown in Figure 8.13. The utilization of public tertiary hospitals is dominated by the richest quintiles. The difference in utilization of government general hospitals by the socio-economic groups is not so polarized. The poorest quintiles dominate the utilization of government district hospitals.

8.6 Summary

The major reason for the poorest people not seeking care in both urban and rural areas is that they cannot afford the costs of care. This can be compared with urban areas where the richest are not seeking health care due to self-medication, poor quality health services, religious or cultural reasons and long distance to the provider. The poorer quintiles are reporting affordability, self-medication, fear of discovering serious illness and long distance to provider as major reasons.

More than 70 per cent of the households sought care within 5 km radius of a health facility. The difference in distance to a facility between the rural areas and urban areas is almost double. The

mean distance travelled by rural and urban households is 6.8 km and 3.6 km respectively and almost double to admission facilities.

The average walking time is 52 minutes while the average travel time by public transport is 62 minutes. The duration taken to visit a health facility is lowest for parastatal and private health facilities, where on average it takes about 25 minutes. Travel time to public health centres and health posts take almost an hour. Close to a majority, 49 per cent of the urban population are within 30 minutes walking to the health facility visited, as opposed to 28 per cent in the rural areas. Forty-five per cent of the rural population take between 30 - 59 minutes to reach a health facility, while 15 per cent of the urban population do so. The time taken to reach tertiary health providers is on average 45 minutes, and almost 75 minutes for secondary level services.

The formally employed category have the largest share of own resources for payments. There is considerable variation, between 11-33 percent depending on employment status. The second source was those who were given cash, varying between 2-8 per cent. No one had sold household assets to finance health care utilization. The waived or exempted varied between 61-80 per cent depending on employment status. This can be explained by the data showing that most people enjoyed tax funded health services.

The largest share of health care utilization however is attributable to the middle socio-economic quintile. The shares of the health care visits by the richest two quintiles are less than the shares of the poorest two quintiles. A comparison of visits between the poorest and the richest quintiles shows that the richer dominates the subsequent visits. The opposite can be seen for admissions where the poor dominate the subsequent admissions.

The factor of affordability of health care was a key reason for the third and fourth quintile while it was least among the poorest and the richest quintile. Self-medication was highest among the middle quintile followed by the fourth and second quintile. The quality of service was most prominent as a factor for not seeking care among the poorest quintile. Distance accounted as a leading cause of not seeking care among the third and fourth quintile.

The utilization of public tertiary hospitals is dominated by the richest quintiles. The difference in utilization of government general hospitals by the socio-economic groups is not so polarized. The poorest quintiles dominate the utilization of government district hospitals.

Waiting times show that the private facilities have a mean of about 24 minutes while the public district and mission facilities have slightly over 75 minutes and 52 minutes respectively of mean waiting time. It takes on average between 56 and 72 minutes to see a clinician for public health centres and mission health centres respectively. In general the waiting times to all facilities are longer in rural areas but are longer in urban areas for government general hospitals, health centres, health posts and NGO clinics.

9   Perceived quality of health care and disease outcomes

9.1   Introduction

Perceived quality may be defined as "the totality of features and characteristics of a product or service that bears on its ability to satisfy the stated or implied need" (Feigenbaum, 1962; Deming, 1986). In health, quality of care is commonly perceived as "the degree to which health services for individuals and populations increase the likelihood of desired health outcomes and are consistent with current professional knowledge" (Institute of Medicine, 1990).

Whilst there are so many dimensions of quality of care, the World Health Organisation's framework defines the dimensions of quality of care as 1) effectiveness, 2) efficiency, 3) accessibility, 4) acceptability/patient centred, 5) equity and 6) safety (WHO, 2006). Numerous attempts to describe dimensions of relevance to a patient's experience of health care have been described. A patient's perspective of quality may include their desired health outcome, their relationship with health care providers, the qualifications and performance of health care providers, and access to and choice of health care. Within the context of primary care, similar patient generated dimensions have also been described as important to the provision of good quality care: fast access; trust in professional providing care; respect for patient preferences; patient involvement; information, education and support for self-care; attention to physical and environmental needs; emotional support; involvement of family and caretakers; continuity of care and smooth transition and coordination of care.

This chapter assesses quality of health services based on the perceptions of all interviewed individuals who sought health care in the last twelve (12) months (both inpatient and outpatient). The 2014 ZHHEUS collected information for various health services on the following service areas:

- Availability of drugs;
- Availability of qualified staff;
- Waiting time;
- Availability of diagnostic capacity;

- Privacy; and

-   Staff attitude.

9.2   Rating of Health Delivery Characteristics

9.2.1   Availability of drugs

Availability of drugs is an important indicator of quality of the health care. In this subsection and
the remaining subsections respondents were asked to rate a particular aspect of health service on
an ordinal scale ranging from "very good" to "very poor". Table 9.1 below shows the rating on
drug availability by facility type.

Table 9.1 Rating on availability of drugs by type of health provider, region and sex

		Rating on Availability of Drugs						Total Population
		Total	Very poor	Poor	Average	Good	Very good	Not Applicable	
Type of health provider	Zambia	100	4	12	2	50	10	1	1,810,610
	Govt.Tertiary Hospital	100	3	17	23	48	7	2	20,840
	Govt. Prov / General Hospital	100	5	9	23	48	14	1	48,418
	Govt District Hospital	100	3	11	22	53	10	1	139,683
	Govt. Health Centre	100	4	13	23	51	8	1	1,111,046
	Govt Health Post	100	4	14	23	48	10	1	310,294
	Mission hospital	100	2	6	20	58	14	0	75,110
	Mission health Centre	100	4	13	22	46	15	-	28,741
	Nursing/Hospice	100	-	-	-	100	-	-	451
	Private hospital	100	7	5	8	47	33	0	28,661
	Private Clinic	100	4	2	12	58	21	3	32,323
	NGO Clinic	100	-	-	-	32	68	-	1,624
	Company / parastatal clinic	100	4	9	19	51	17	-	13,419
Region	Rural	100	3	12	24	51	9	1	1,248,962
	Urban	100	5	12	20	48	13	2	561,648
Gender	Male	100	3	12	22	52	10	1	805,208
	Female	100	4	13	23	49	10	1	1,005,401

Table 9.1 shows that nationally 60 percent of respondents rated drug availability from "good to very good". Only 16 percent rated it from "poor to very poor". The remaining 23 percent rated drug availability as average. The table also shows rating of drug availability by type of facility. Benchmarking these facility ratings to what is seen nationally, it is observed that the proportion that rated drug availability from "good to very good" in government tertiary hospitals and health posts was below the national average of 60 percent. Specifically, 55 percent of those who visited

a government tertiary hospital rated drug availability from "good to very good". Similarly, 58 percent of those who visited health posts rated drug availability from "good to very good". The highest proportion of patients rating drug availability as "very poor" was in private facilities at 7 percent.

Facilities with the highest proportion of patients rating drug availability to be "good to very good" were nursing home or hospice and NGO clinic. All the patients who visited a nursing home or hospice rated drug availability to be "good". Similarly, all (100 percent) those who attended an NGO clinic rated drug availability to be "good to very good". This was followed by private hospitals where 80 percent of those who visited rated drug availability from "good to very good". This was followed by private clinic at 79 percent. Comparing public and private for-profit or private not-for-profit facility type, we see that the perceived rating of drug availability is lower for publicly-owned facilities compared with the other types of facilities.

There is no difference in the proportions rating drug availability from "good to very good" in rural areas as compared with urban areas. In both rural and urban areas, 61 percent of the population seeking care rated availability of drugs from "good to very good". In contrast 15 percent of those seeking care in rural areas rated availability of drugs to be "poor" or "very poor", while in urban areas the percent was slightly higher at 17 percent.

From a provincial perspective there are no marked differences in the rating of drug availability, as indicated in Table 9.2. The province with the highest percentage of patients rating availability of drugs from "poor to very poor" is North-Western Province at 19.4 percent. Predominantly urban provinces have ratings that are high and very similar as indicated in the table.

Table 9.2 below presents the rating of drug availability by socio-economic groupings. The table reveals that it is the poorest 20 percent who have the highest percentage of people rating drug availability to be "poor" or "very poor". Among those who visited a health facility four weeks prior to the survey and who were from the poorest 20 percent of the population of Zambia, 17.9 percent perceived drug availability to have been "poor" or "very poor". This can be contrasted

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with the view among the richest 20 percent where only 14.2 felt that drug availability was "poor" or "very poor".

Table 9.2 Perceived rating on availability of drugs by province and expenditure quintiles

		Rating on Availability of Drugs								Total Population
		Total	Very poor	Poor	Average	Good	Very good	Don't Know	Not Applicable	
Province	Total	100.0	2.7	11.9	23.3	47.2	8.3	4.1	2.4	1,810,610
	Central	100.0	1.0	12.3	23.8	47.7	7.2	5.8	2.2	196,119
	Copperbelt	100.0	3.1	9.7	23.3	48.7	9.6	3.3	2.2	255,469
	Eastern	100.0	1.0	16.6	20.8	46.7	8.5	3.3	3.1	303,521
	Luapula	100.0	3.2	11.3	22.9	48.7	7.1	3.3	3.6	176,448
	Lusaka	100.0	4.1	8.7	24.2	46.8	11.4	2.9	1.9	190,771
	Muchinga	100.0	2.0	10.7	26.5	47.4	12.1	.7	.6	107,489
	Northern	100.0	6.0	11.1	24.1	40.2	10.1	4.2	4.2	133,130
	N Western	100.0	2.4	17.0	35.5	34.9	4.4	3.2	2.7	126,869
	Southern	100.0	3.0	8.9	21.4	51.7	8.1	5.7	1.2	162,947
	Western	100.0	3.0	11.2	16.0	54.7	4.2	9.0	1.9	157,847
Quintiles	Poorest	100.0	2.4	15.5	22.8	45.3	7.4	4.5	2.1	411,237
	Second	100.0	2.4	10.5	22.8	47.6	9.7	4.2	2.9	399,353
	Middle	100.0	2.1	11.4	24.7	49.3	6.2	3.9	2.2	364,803
	Fourth	100.0	3.0	11.4	23.2	48.9	7.5	4.0	2.0	345,603
	Richest	100.0	4.1	10.1	23.0	44.4	11.5	3.9	2.9	289,614

9.2.2 Availability of qualified staff

Effective delivery of health services hinges not only on availability of drugs but also on availability of qualified health personnel. It is with this in mind that the survey sought to find out the perceptions of those who had visited a health facility on availability of qualified health personnel. Table 9.3 shows the rating of availability of qualified health personnel by facility type, region and gender.

Table 9.3 Perceived rating on availability of qualified staff by type of health provider, region and sex

	Rating on Availability of Qualified Staff	Total

		Total	Very poor	Poor	Average	Good	Very good	Not Applicable	**Population**
Type of health provider	Zambia	100	3.1	11.9	23.0	52.3	8.9	.8	1,810,610
	Govt.Tertiary Hospital	100	1.6	2.5	21.2	68.9	5.7	0.0	20,840
	Govt. Prov/ General Hospital	100	3.8	5.4	18.5	56.8	15.4	.2	48,418
	Govt District Hospital	100	1.6	7.2	20.7	58.7	10.2	1.7	139,683
	Govt. Health Centre	100	3.0	13.2	23.7	52.5	6.7	.8	1,111,046
	Govt Health Post	100	4.1	14.8	25.4	45.5	9.4	.8	310,294
	Mission hospital	100	.4	3.4	17.5	62.5	15.8	.3	75,110
	Mission health Centre	100	3.2	8.5	22.3	52.8	13.2	0.0	28,741
	Nursing/Hospice	100	0.0	0.0	0.0	100.0	0.0	0.0	451
	Private hospital	100	5.8	7.3	7.0	48.6	31.0	.3	28,661
	Private Clinic	100	6.8	2.1	15.4	52.3	21.9	1.4	32,323
	NGO Clinic	100	0.0	26.2	0.0	46.1	27.8	0.0	1,624
	Company/parastatal clinic	100	4.9	2.8	36.1	37.8	18.4	0.0	13,419
Region	Rural	100	3.2	13.3	22.7	52.5	7.7	.5	1,248,962
	Urban	100	2.9	8.7	23.6	51.9	11.5	1.4	561,648
Gender	Male	100	3.2	11.4	23.2	52.8	8.4	.9	805,208
	Female	100	3.1	12.2	22.8	52.0	9.3	.7	1,005,401

Table 9.3 shows that at the national level 61.2 percent of those who visited a health facility rated availability of qualified health personnel from "good to very good". Using this national picture as a benchmark for specific facility types we come up with several observations.

The first notable aspect is that there is a very low percentage who rated government health posts and health facility from "good to very good". Of those who visited health posts 54.9 percent rated availability of qualified personnel from "good to very good". Slightly higher was the proportion for health centres at 59.2 percent. This can be compared with other types of government-owned facilities where availability of qualified staff is rated above average. For instance, in government tertiary hospitals availability of qualified staff was rated from "good to very good" by 75 percent of those who visited such facilities. Similarly, government provincial hospitals and general hospitals were rated from "good to very good" by 72 percent of those who visited such a facility, and district hospitals stood at 69 percent. Although these ratings have a subjective element inherent in them it is not impossible to deduce that within the government

facilities it is the health posts and health centres that seem to have problems with available qualified staff.

On the other hand private hospitals seem to have a fairly good availability of qualified staff. Of those who attended private hospitals, 80 percent rated availability of qualified staff "good" or "very good", while the proportion for private clinics and NGO clinics was at 74 percent each. Another indicator is that Company/parastatal clinics seem not to have sufficient qualified staff as only 56 percent of those who had attended such a facility had rated availability of qualified staff from "good to very good".

Table 9.4 Perceived rating on availability of qualified staff by province and expenditure quintiles

		Rating on Availability of Qualified Staff							Total Population
		Total	Very poor	Poor	Average	Good	Very good	Not Applicable	
Province	Total	100.0	3.1	11.9	23.0	52.3	8.9	.8	1,810,610
	Central	100.0	2.5	9.1	21.8	55.4	9.7	1.4	196,119
	Copperbelt	100.0	2.4	10.0	27.4	48.5	10.2	1.6	255,469
	Eastern	100.0	1.8	16.4	22.0	52.0	7.2	.6	303,521
	Luapula	100.0	3.8	15.8	21.9	49.8	8.5	.1	176,448
	Lusaka	100.0	6.6	10.7	16.7	53.4	11.7	.9	190,771
	Muchinga	100.0	.9	9.8	27.7	48.2	13.4	0.0	107,489
	Northern	100.0	1.7	13.9	25.9	46.1	11.4	1.0	133,130
	North-Western	100.0	4.7	15.0	32.8	42.6	4.5	.4	126,869
	Southern	100.0	2.4	6.7	23.3	59.7	7.5	.3	162,947
	Western	100.0	4.7	9.2	14.0	65.1	6.2	.8	157,847
Quintiles	Poorest	100.0	2.8	13.1	24.7	51.3	7.6	.5	411,237
	Second	100.0	3.2	11.3	20.4	54.8	9.8	.6	399,353
	Middle	100.0	2.8	12.7	22.5	54.1	7.6	.3	364,803
	Fourth	100.0	2.4	11.4	24.8	53.1	7.1	1.2	345,603
	Richest	100.0	4.7	10.4	22.6	47.4	13.3	1.6	289,614

There were not marked differences in the proportions rating availability of qualified staff from "good to very good" between rural and urban areas, nor between male and females. The same trend is reflected in provincial distribution. Whereas most provinces had similar proportions of patients rating from "good to very good" of available qualified staff, North-Western was an outlier with only 47 percent of those who had sought care at any facility rating availability of

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qualified health personnel from "good to very good". This shows that availability of qualified staff might be a key constraint in this province.

9.2.3 Waiting time

Table 9.5 shows the distribution of the rating of waiting time. To analyse whether waiting time is a constraint to health delivery, we look at both the proportion who rate waiting time from "poor to very poor" and contrast this to the proportion rating it from "good to very good". The table shows that at national level 46 percent of the people who had sought health care rated waiting time from "good to very good", compared with the 30 percent who rated it from "poor to very poor".

Looking at facility distribution, waiting time is worst at tertiary hospitals and provincial or general hospitals. Of those who had sought health care at government tertiary hospitals, 40 percent rated waiting time from "good to very good" and 41 percent from "poor to very poor". Similarly, 37 percent of those who sought health care at a government district hospital rated waiting time from "good to very good", while 36 percent rated it from "poor to very poor". In provincial or general hospitals, 55 percent of those who had sought care rated waiting time from "good to very good", compared with 23 percent who rated it from "poor to very poor". On the contrary, the proportion rating waiting time to be "good to very good" are far higher in private facilities as compared with government-owned facilities. Of those who had visited a private hospital, 78 percent rated waiting time from "good to very good", while only 13 percent rated it from "poor to very poor". Over 66 percent of those who sought care at private clinics rated waiting time from "good to very good", compared with 12 percent who rated it from "poor to very poor". Based on this, we can deduce that the better rating of waiting time for private facilities is the major driver of the demand for services by such facilities.

Table 9.5 Perceived rating on availability of waiting time by type of health provider, region and sex

		Rating on Availability of Waiting Time								Total Population
		Total	Very poor	Poor	Average	Good	Very good	Don't Know	Not Applicable	
Type of health provider	Zambia	100	7.4	22.5	22.5	38.3	7.6	1.1	.7	1,810,610
	Govt.Tertiary Hospital	100	10.1	31.3	18.9	39.8	0.0	0.0	0.0	20,840

		Total	Very poor	Poor	Average	Good	Very good	Don't Know	Not Applicable	Total Population
	Govt. Prov / General Hospital	100	3.7	19.1	19.8	43.7	11.7	2.1	0.0	48,418
	Govt District Hospital	100	7.0	29.3	24.6	31.5	5.5	1.1	1.0	139,683
	Govt. Health Centre	100	8.2	23.8	23.1	38.1	5.2	1.0	.7	1,111,046
	Govt Health Post	100	5.9	19.7	23.1	39.0	10.4	1.2	.8	310,294
	Mission hospital	100	4.7	16.6	19.1	44.3	13.0	2.0	.3	75,110
	Mission health Centre	100	13.3	18.4	17.6	43.4	6.0	1.3	0.0	28,741
	Nursing/Hospice	100	0.0	0.0	0.0	100.0	0.0	0.0	0.0	451
	Private hospital	100	5.8	7.2	6.8	45.1	32.8	2.2	0.0	28,661
	Private Clinic	100	3.5	8.2	20.0	34.9	30.8	0.0	2.6	32,323
	NGO Clinic	100	0.0	0.0	0.0	43.0	57.0	0.0	0.0	1,624
	Company/parastatal clinic	100	2.2	12.5	24.5	36.3	24.6	0.0	0.0	13,419
Region	Rural	100	6.1	22.4	22.7	40.3	7.0	1.0	.5	1,248,962
	Urban	100	10.2	22.6	21.9	33.8	9.1	1.2	1.1	561,648
Sex	Male	100	7.5	21.3	22.8	38.5	7.7	1.5	.7	805,208
	Female	100	7.3	23.4	22.2	38.2	7.6	.7	.7	1,005,401

Although no marked differences are noticed by rural or urban divide, or by gender, there are differences in the provincial distribution and socio-economic grouping as shown in the table below. Southern Province and Western Province have the best ratings regarding waiting time. Of those who had sought care, 51 percent rated waiting time from "good to very good" in both provinces. On the other hand 23 percent and 29 percent of those who had sought health care rated waiting time from "poor to very poor" in Southern Province and Western Province respectively. The other ratings are similar across provinces. The table also shows no marked differences in the ratings across socio-economic groupings as shown in the ratings by quintiles.

Table 9.6 Perceived rating on availability of waiting time by province and expenditure quintiles

		Rating on Availability of Waiting Time								Total Population
		Total	Very poor	Poor	Average	Good	Very good	Don't Know	Not Applicable	
Province	Total	100.0	7.4	22.5	22.5	38.3	7.6	1.1	.7	1,810,610
	Central	100.0	5.1	23.5	27.3	37.8	4.9	.1	1.2	196,119
	Copperbelt	100.0	7.5	19.6	25.6	37.1	7.6	1.0	1.6	255,469
	Eastern	100.0	5.0	23.3	20.7	39.8	9.1	1.7	.4	303,521
	Luapula	100.0	7.6	25.4	20.4	38.8	6.6	1.0	.2	176,448
	Lusaka	100.0	13.6	21.0	14.9	36.4	12.3	1.4	.5	190,771

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	Muchinga	100.0	6.9	27.5	23.7	29.8	11.4	.5	.2	107,489
	Northern	100.0	7.3	26.4	22.3	35.5	6.4	1.2	.9	133,130
	N Western	100.0	9.3	21.4	29.2	33.5	5.5	.7	.5	126,869
	Southern	100.0	6.6	16.8	24.1	44.0	6.9	1.2	.3	162,947
	Western	100.0	6.7	22.5	18.3	45.9	4.7	1.2	.7	157,847
Quintile's	Poorest	100.0	5.3	23.5	23.2	39.3	7.3	1.1	.4	411,237
	Second	100.0	6.0	20.9	22.7	41.0	8.1	.6	.7	399,353
	Middle	100.0	7.1	23.7	23.9	38.5	5.6	.9	.4	364,803
	Fourth	100.0	8.5	22.6	21.8	38.2	6.9	1.0	1.1	345,603
	Richest	100.0	11.3	21.4	20.1	33.2	11.0	2.0	1.1	289,614

9.2.4   Availability of diagnostic capacity

Timely and correct diagnosis of disease depends to a large extent on the diagnostic capacity at a particular facility. Tertiary health facilities would be associated with high level of diagnostic capacity because they deal with complicated disease cases, while primary facilities demand basic diagnostic facilities in line with the level of illness that they deal with. Since the correct and timely diagnosis of disease is a critical component of health care, respondents were asked to rate facility availability of diagnostic capacity. Table 9.6 shows the results for the rating. According to the national picture, 55.5 percent of those who had visited a health facility rated availability of diagnostic capacity from "good to very good", while 14.7 rated it from "poor to very poor". Facilities with the highest proportion of clients rating availability of diagnostic capacity from "good to very good" include private hospital at 73.8 percent, private clinic at 72 percent and mission hospital at 72.7 percent. This could be contrasted with proportions for government tertiary hospital at 59.5 percent, provincial or general hospital at 64.8 percent and government district hospital at 51.4 percent. It is clear that government district hospital faired lower than the national average.

Although there are no significant gender differences in this rating there are marked differences by rural/urban divide. In rural areas 54.3 percent of those who had sought care felt that availability of diagnostic capacity was "good" or "very good", while in urban areas it was 58.1 percent. On the other hand, a higher proportion of rural clients (15.7 percent) felt availability of diagnostic capacity was "poor to very poor". In urban areas the proportion stood at 12.3 percent. This is an

indication that rural areas do not have sufficient diagnostic capacity as compared with urban areas.

Table 9.7 Perceived rating on availability of diagnostic capacity by type of health provider, region and sex

		Rating on Availability of Diagnostic Capacity								Total Population
		Total	Very poor	Poor	Average	Good	Very good	Don't Know	Not Applicable	
Type of health provider	Zambia	100.0	2.7	11.9	23.3	47.2	8.3	4.1	2.4	1,810,610
	Govt.Tertiary Hospital	100.0	.8	8.4	27.5	54.5	5.0	3.9	0.0	20,840
	Govt. Prov / General Hospital	100.0	2.9	6.6	20.0	48.7	16.1	3.3	2.3	48,418
	Govt District Hospital	100.0	1.7	8.0	20.8	52.9	11.1	3.8	1.5	139,683
	Govt. Health Centre	100.0	3.0	12.9	24.2	46.6	6.1	4.4	2.8	1,111,046
	Govt Health Post	100.0	2.5	14.9	24.8	43.2	8.2	4.3	2.0	310,294
	Mission hospital	100.0	.2	7.1	16.7	57.0	15.7	2.9	.3	75,110
	Mission health Centre	100.0	2.0	10.5	21.8	50.3	10.4	1.4	3.5	28,741
	Nursing/Hospice	100.0	0.0	0.0	0.0	100.0	0.0	0.0	0.0	451
	Private hospital	100.0	6.6	2.9	10.7	44.5	29.2	6.0	0.0	28,661
	Private Clinic	100.0	3.5	3.2	15.1	52.4	19.6	.8	5.5	32,323
	NGO Clinic	100.0	0.0	0.0	0.0	31.6	57.0	0.0	11.4	1,624
	Company / parastatal clinic	100.0	3.9	1.0	33.0	40.2	20.9	.9	0.0	13,419
Region	Rural	100.0	2.7	13.1	23.1	47.0	7.3	4.5	2.4	1,248,962
	Urban	100.0	2.9	9.4	23.7	47.6	10.5	3.4	2.4	561,648
Sex	Male	100.0	2.8	11.6	22.7	47.7	8.4	4.2	2.7	805,208
	Female	100.0	2.7	12.2	23.8	46.8	8.3	4.1	2.2	1,005,401

Once it is identified that there is a rural/urban divide it follows that those provinces having a higher rural population will have a higher proportion of the clients to health facilities indicating poor rating of diagnostic capacity availability. The table below gives the distribution of the rating of diagnostic capacity by provinces and also by socio-economic groupings. The table reveals that generally the rating is not different among provinces except for North- Western. North-Western Province not only had the highest proportion of those seeking care rating availability of diagnostic capacity from "poor to very poor" (19.4 percent), but also had the smallest proportion of those saying diagnostic capacity was "good" or "very good" (39.3 percent).

The distribution socio-economic groupings reveals that the poor are the larger proportion saying availability of diagnostic capacity is "poor" or "very poor" (17.9 percent), and the lowest proportion saying it is "good" or "very good" (52.7 percent). Although not objective it is possible to deduce that availability of diagnostic capacity is a major constraint in rural areas and among the poor.

Table 9.8 Perceived rating on availability of diagnostic capacity by province and expenditure quintiles

		Rating on Availability of Diagnostic Capacity								Total Population
		Total	Very poor	Poor	Average	Good	Very good	Don't Know	Not Applicable	
Province	Total	100.0	2.7	11.9	23.3	47.2	8.3	4.1	2.4	1,810,610
	Central	100.0	1.0	12.3	23.8	47.7	7.2	5.8	2.2	196,119
	Copperbelt	100.0	3.1	9.7	23.3	48.7	9.6	3.3	2.2	255,469
	Eastern	100.0	1.0	16.6	20.8	46.7	8.5	3.3	3.1	303,521
	Luapula	100.0	3.2	11.3	22.9	48.7	7.1	3.3	3.6	176,448
	Lusaka	100.0	4.1	8.7	24.2	46.8	11.4	2.9	1.9	190,771
	Muchinga	100.0	2.0	10.7	26.5	47.4	12.1	.7	.6	107,489
	Northern	100.0	6.0	11.1	24.1	40.2	10.1	4.2	4.2	133,130
	N Western	100.0	2.4	17.0	35.5	34.9	4.4	3.2	2.7	126,869
	Southern	100.0	3.0	8.9	21.4	51.7	8.1	5.7	1.2	162,947
	Western	100.0	3.0	11.2	16.0	54.7	4.2	9.0	1.9	157,847
Quintiles	Poorest	100.0	2.4	15.5	22.8	45.3	7.4	4.5	2.1	411,237
	Second	100.0	2.4	10.5	22.8	47.6	9.7	4.2	2.9	399,353
	Middle	100.0	2.1	11.4	24.7	49.3	6.2	3.9	2.2	364,803
	Fourth	100.0	3.0	11.4	23.2	48.9	7.5	4.0	2.0	345,603
	Richest	100.0	4.1	10.1	23.0	44.4	11.5	3.9	2.9	289,614

9.2.5   Privacy

Privacy becomes a critical factor especially in cases of diseases that attract stigma once the society gets to know that one has been diagnosed with such a disease. This may be the reason why in some cases certain individuals may be discouraged to seek care. A specific example is that of people going for HIV/AIDS testing and treatment.

It is, therefore, important that health facilities uphold the highest level of privacy to encourage as many people as possible to seek care once they are sick, or go for a test to know their status and get timely medical attention if there is need. Table 9.9 shows that the proportion rating privacy to

be "good" and "very good" stood at 74.2 percent nationally, while the proportion rating it as "poor" or "very poor" stood at 6.8 percent. Top on the list of the proportion rating a facility of having "good" or "very good" privacy is private hospital with 87.3 percent, followed by mission hospital at 85.6 percent, followed by mission health centre at 81.9 percent and government tertiary hospital at 81.2 percent. The remaining facilities also had a fairly high rating except company or parastatal facilities with a rating of 65.6 percent. Moreover there are very small differences between male and females and between rural and urban areas.

Table 9.9 Perceived rating on availability of privacy by type of health provider, region and gender

		Rating on Availability of Privacy							Total Population
		Total	Very poor	Poor	Average	Good	Very good	Not Applicable	
Type of health provider	Zambia	100	1.6	5.2	16.9	61.5	12.7	2.1	1,810,610
	Govt.Tertiary Hospital	100	.8	2.3	15.8	75.4	5.8	0.0	20,840
	Govt. Prov / General Hospital	100	1.2	1.7	18.2	59.1	18.9	1.0	48,418
	Govt District Hospital	100	1.8	6.8	15.2	61.4	13.3	1.4	139,683
	Govt. Health Centre	100	1.5	4.6	18.1	63.1	11.0	1.7	1,111,046
	Govt Health Post	100	1.5	8.7	17.3	54.9	13.4	4.2	310,294
	Mission hospital	100	1.2	3.9	7.8	69.1	16.5	1.4	75,110
	Mission health centre	100	1.6	5.0	11.5	65.7	16.2	0.0	28,741
	Nursing/Hospice	100	0.0	0.0	0.0	100.0	0.0	0.0	451
	Private hospital	100	4.2	1.5	5.6	53.2	34.0	1.4	28,661
	Private Clinic	100	7.3	1.3	9.9	58.3	20.5	2.7	32,323
	NGO Clinic	100	0.0	0.0	0.0	31.6	68.4	0.0	1,624
	Company / parastatal clinic	100	3.8	0.0	30.6	44.3	21.3	0.0	13,419
Region	Rural	100	1.2	6.0	16.9	61.9	11.9	2.1	1,248,962
	Urban	100	2.6	3.4	17.0	60.4	14.7	2.0	561,648
Gender	Male	100	1.8	5.0	17.0	61.1	12.7	2.3	805,208
	Female	100	1.5	5.4	16.8	61.8	12.7	1.9	1,005,401

Looking at the distribution of the rating by province, only North-Western Province (56.3 percent) and Northern Province (67.9 percent) have the least proportion rating privacy from "good to very good". From a socio-economic perspective it is the poorest 20 percent category where we find the largest proportion (8.7 percent) rating privacy as "poor" or "very poor". On the other hand, 70 percent of those who had sought care and belonged to the poorest 20 percent rated privacy to be "good" or "very good". These findings reveal that generally privacy is a characteristic that is well kept in most facilities and this is generally the case across regions, gender and socio-economic groups.

Table 9.10 Rating on privacy by province and expenditure quintiles

		Rating							Total Population
		Total	Very poor	Poor	Average	Good	Very good	Not Applicable	
Province	Total	100.0	1.6	5.2	16.9	61.5	12.7	2.1	1,810,610
	Central	100.0	.7	4.2	15.7	61.6	15.9	1.9	196,119
	Copperbelt	100.0	2.9	3.7	15.7	64.5	11.5	1.7	255,469
	Eastern	100.0	1.3	7.1	16.9	58.7	13.9	2.1	303,521
	Luapula	100.0	1.7	6.0	14.1	64.5	13.3	.3	176,448
	Lusaka	100.0	3.7	3.2	14.9	61.5	15.4	1.3	190,771
	Muchinga	100.0	1.1	2.1	18.9	60.5	17.4	0.0	107,489
	Northern	100.0	1.2	7.4	21.0	55.0	12.9	2.5	133,130
	N Western	100.0	.8	7.8	31.7	50.8	5.6	3.3	126,869
	Southern	100.0	.7	4.3	13.8	65.9	14.1	1.2	162,947
	Western	100.0	1.3	5.6	12.3	68.6	5.7	6.5	157,847
Quintiles	Poorest	100.0	.7	7.9	18.0	60.2	10.4	2.7	411,237
	Second	100.0	1.9	4.5	15.9	61.4	14.0	2.3	399,353
	Middle	100.0	1.6	4.7	16.9	65.7	10.0	1.2	364,803
	Fourth	100.0	1.2	4.7	17.4	62.8	12.1	1.8	345,603
	Richest	100.0	3.3	3.4	16.0	56.4	18.6	2.3	289,614

9.2.6   Staff attitude

It is not uncommon to receive information about patients being mistreated by health personnel. Staff attitude, if very negative, may negate the very purpose of persuading as many as possible to seek care. To address this concern the survey asked respondents to rate staff attitude. The table below shows the rating of staff attitude by facility type, region and gender. Table 9.11 reveals that staff attitude is better in private facilities compared with public or mission facilities. The

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proportion of those who had sought care and rated staff attitude to be "good" or "very good" was 88.2 percent in private hospital, 80.3 percent in private clinic, 100 percent in NGO clinic and 76.1 in mission hospital. In all government facilities the proportion was below 70 percent.

From a regional perspective a higher proportion rated staff attitude to be "good" or "very good" in rural areas (66.6 percent) than in urban areas (64.3 percent). Again there was no significant difference in the rating across gender.

Table 9.11 Rating on staff attitude by type of health provider, region and gender

		Rating							Total Population
		Total	Very poor	Poor	Average	Good	Very good	Not Applicable	
Type of health provider	Zambia	100	3.9	9.1	20.2	54.8	11.1	.9	1,810,610
	Govt.Tertiary Hospital	100	1.6	10.6	25.2	54.8	7.8	0.0	20,840
	Govt. Prov/ General Hospital	100	6.3	4.9	20.1	53.8	14.2	.7	48,418
	Govt District Hospital	100	2.1	8.3	24.7	54.7	9.2	1.0	139,683
	Govt. Health Centre	100	4.2	9.8	20.2	55.2	9.7	1.0	1,111,046
	Govt Health Post	100	3.7	10.5	21.0	52.3	11.6	.8	310,294
	Mission hospital	100	2.4	4.9	16.0	60.5	15.5	.6	75,110
	Mission health Centre	100	6.8	6.3	21.4	50.2	15.3	0.0	28,741
	Nursing/Hospice	100	0.0	0.0	0.0	100.0	0.0	0.0	451
	Private hospital	100	4.7	1.5	3.2	60.0	28.2	2.4	28,661
	Private Clinic	100	4.2	2.1	12.0	55.7	24.6	1.4	32,323
	NGO Clinic	100	0.0	0.0	0.0	22.2	77.8	0.0	1,624
	Company / parastatal clinic	100	3.9	2.0	24.7	48.2	21.2	0.0	13,419
Region	Rural	100	3.7	9.4	19.8	55.6	10.9	.6	1,248,962
	Urban	100	4.6	8.5	21.1	52.8	11.5	1.6	561,648
Gender	Male	100	4.0	9.1	19.6	55.0	11.2	1.1	805,208
	Female	100	3.9	9.1	20.6	54.6	11.0	.8	1,005,401

Table 9.12 shows the rating of staff attitude across provinces and socio-economic groups. The provinces with the highest proportion rating staff attitude to be "good" or "very good" were Southern Province (71.4 percent), Western Province (71.2 percent) and Lusaka Province (71 percent). The province with the least proportion with positive rating on staff attitude is North-Western with 52.8 percent. The pattern of rating staff attitude is not systematic across socio-economic groups. For example among the poorest 20 percent who had sought care, 64.6 percent felt that staff attitude was "good" or "very good", while for the median 20 percent the proportion was 62.9 percent.

Table 9.12 Rating on staff attitude by province and expenditure quintiles

					Rating				Total
		Total	Very poor	Poor	Average	Good	Very good	Not Applicable	Population
Province	Total	100.0	3.9	9.1	20.2	54.8	11.1	.9	1,810,610
	Central	100.0	2.2	8.9	20.2	56.1	11.0	1.7	196,119
	Copperbelt	100.0	4.2	6.4	21.6	56.1	9.9	1.9	255,469
	Eastern	100.0	4.3	10.8	20.9	52.7	10.8	.4	303,521
	Luapula	100.0	4.5	11.7	20.8	52.3	10.5	.2	176,448
	Lusaka	100.0	5.9	7.5	14.8	57.3	13.7	.8	190,771
	Muchinga	100.0	3.1	9.3	19.3	49.3	18.7	.4	107,489
	Northern	100.0	2.8	12.1	20.4	49.8	13.5	1.4	133,130
	N Western	100.0	5.4	10.7	30.6	46.7	6.1	.5	126,869
	Southern	100.0	2.4	6.0	19.6	59.8	11.6	.6	162,947
	Western	100.0	4.3	8.7	14.9	63.7	7.5	.9	157,847
Quintiles	Poorest	100.0	2.9	10.2	21.6	53.4	11.2	.6	411,237
	Second	100.0	3.7	7.4	18.4	58.0	11.8	.6	399,353
	Middle	100.0	4.6	11.1	21.0	54.5	8.4	.4	364,803
	Fourth	100.0	4.0	8.4	19.5	55.7	10.9	1.5	345,603
	Richest	100.0	4.9	8.2	20.3	51.4	13.5	1.6	289,614

9.3   Disease Outcomes

In the survey, health outcome was also used as a proxy for measurement of the quality of health care. Respondents were asked questions about whether the visit they made to the facilities improved their conditions or not. Overall, 87 percent of the people who visited a facility reported having had a positive health outcome, whereas the remaining 13 percent did not report any improvement. Disaggregation by illness shows that 92 percent of the people who reported having had malaria had their condition improved after visiting a health facility. On the other hand, eye infections recorded the most negative health outcomes with 32 percent of respondent having reported that their conditions had not improved after visiting a health facility.

Table 9.139.6 Percentage distribution of health outcomes by type of illness/disease, Zambia, 2014

Illnesses/diseases					
	Zambia				
	Improved	percent	Not Improved	percent	Total
Malaria	797,318	92	68,875	8	866,193
Respiratory including pneumonia	82,753	84	16,188	16	98,941
TB	17,185	77	5,146	23	22,331
HIV/AIDS	9,256	70	4,041	30	13,297
Diabetes	10,734	88	1,426	12	12,160
Diarrhoea	114,442	91	11,915	9	126,356
Intestinal worms	18,322	79	4,954	21	23,276
Accidents and injuries	18,407	77	5,584	23	23,991
STD (Syphilis etc.)	3,429	83	708	17	4,136
Eye infections	22,365	68	10,302	32	32,667
Gender Based Violence related injuries	1,856	78	529	22	2,385
Headaches	302,148	89	38,097	11	340,245
Fever	190,327	90	20,858	10	211,184
Mental Illness	4,462	72	1,723	28	6,185
Cancer	6,328	78	1,735	22	8,064
Other	416,727	81	94,944	19	511,671
Total	1,577,835	87	232,775	13	1,810,610

Figure 9.1 shows the percentage distribution of improved health outcome for different types of illnesses/diseases by residence. Overall, there seems to be no major differences between rural and urban areas on how the visit improved health outcome, except for Gender Based Violence related injuries, cancers and tuberculosis where significant differences were observed.

Figure 9.1 Percentage distribution of improved health outcomes of different type of illness/disease by Residence, 2014
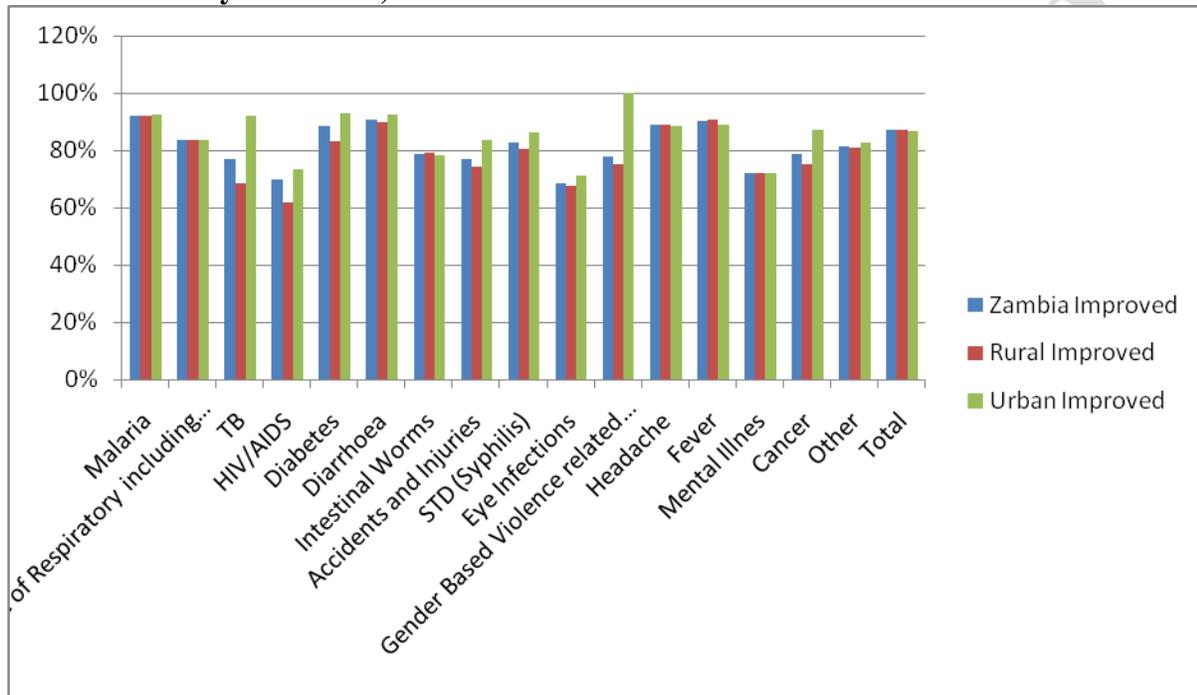
9.4 Summary

In summary, the study found that the rating for drug availability, availability of qualified personnel and staff attitude was very high across all facilities. It also revealed that availability of qualified personnel was a problem in health centres and health posts, especially those in rural areas. Waiting time seemed to be the main problem at government facilities, but it was not such a problem in private or NGO facilities. Reduced waiting times at private facilities is probably one key driver of the demand for health from private providers.

Privacy was generally highly rated across all facilities except in parastatal/company clinics where a larger proportion felt that privacy was not well kept. Another divide was found on availability of diagnostic capacity where it was generally found that in rural areas diagnostic capacity is low.

It is, however, important to underscore the limitation of rating supply side aspects of quality of care by perceptions of recipients. Generally this rating carries with it a subjective aspect that sometimes may be at variance with findings from objective facility-based surveys.

10 Maternal health

10.1 Introduction

In the National Health Strategic Plan 2011-2015, maternal health has been identified as a key intervention in ensuring safe delivery for expectant mothers (MOH 2011). The conceptual framework and guidelines for maternal, new born and child health developed by the World Health Organization has been used for the data collection (WHO 2013a, 2013b, 2013c). In this chapter, the report presents findings from core programmes in maternal health ranging from antenatal, delivery, post-partum care and household expenditure on maternal health services.

With maternal mortality rates reported at around 591 per 100,000 live births, Zambia needs to improve health care services that a mother receives during pregnancy, at the time of delivery, and soon after delivery to ensure the survival and well-being of both the mother and her child. The survey obtained information on the extent to which women in Zambia receive care during pregnancy, delivery, and in the period after the baby is born. Further, information was collected on how much households spend on different maternal health services including antenatal, delivery and postnatal, as well as on different inputs including consultation, drugs and medical investigations.

In all the households visited during the survey, respondents were asked to state if any member of their household had had a delivery in the last 12 months. Table 10.1 indicates that there are variations by province in the proportion of women reporting having delivered. The proportion of women reporting to have delivered in the last 12 months prior to the survey is higher in rural areas at 14.4 percent, compared with urban areas at 8.3 percent. Across provinces, the pattern is the same, with predominantly urban provinces, Copperbelt Province and Lusaka Province showing lower proportions at 8.2 and 8.8 percent respectively. The highest proportion is seen in Western Province (15.2), followed by Northern Province and Luapula Province with 13.6 and 14.2 percent respectively.

Table 10.1 Women between 12-49 years who delivered in last 12 months by region and provinces

		Number who delivered	**Percentage of population who delivered**	**Population of females aged 12-49**
Region	Rural	331,671	14.4	2,295,938
	Urban	169,808	8.3	2,043,757
Province	Central	53,811	13.3	404,845
	Copperbelt	60,151	8.2	731,304
	Eastern	64,142	13.5	475,235
	Luapula	40,735	14.2	287,749
	Lusaka	76,654	8.8	874,779
	Muchinga	28,206	12.0	235,922
	Northern	45,761	13.6	337,163
	North-Western	28,471	12.2	233,081
	Southern	63,311	12.8	494,488
	Western	40,237	15.2	265,128
	Zambia	**501,479**	**11.6**	**4,339,694**

Table 10.2 shows that 35 percent of women aged between 20 and 39 years reported having had a delivery in the past 12 months. Women with primary and vocational educations have the most frequent deliveries. Information on the proportions of women reporting a delivery by age can give some indication of child bearing tendency among older women who are nearing the end of their reproductive period. This may also serve as an indicator for the average number of children women may have over their reproductive lifespan. Of the women in the age category 12-19, 4.6 percent had experienced a delivery. Corresponding numbers for those below 15 years and those between 15-19 years are 0.3 and 8.0 percent respectively. As one might expect, the proportion of women giving birth is highest for those in 20-29 category at almost 18.8 percent, followed by the 30-39 age group at 15.7 percent, and lowest for those below 19 and above 39 at around 5.3 percent.

Table 10.2 Women between 12-49 years who delivered in last 12 months by demographic background

		Number who delivered	Percentage of population who delivered	Population of females aged 12-49
		Count	Count	Count
Age group	12 - 19	68,319	4.6	1,501,259
	20 - 29	263,074	18.8	1,396,924
	30 - 39	141,252	15.7	902,414
	40 - 49	28,834	5.3	539,098
	Zambia	**501,479**	**11.6**	**4,339,694**

Table 10.3 indicates that there are variations in the proportion of women reporting having delivered by, education, income and employment status. The proportion reporting deliveries seems not to accord with the general belief that fertility rates are lower for more educated women, compared with less educated ones. The lowest rates are reported for women with only pre-school education and highest for women with vocational level training. This finding may be attributed to the fact that the question on women who delivered in the previous 12 months was not restricted to women currently out of school, hence the low rates observed for women with only primary level education. It is also shown that the likelihood that women had a delivery in the past 12 months decreases with increasing level of wealth index, with the richest rate being only at 8.9 percent, compared with more than 13.2 percent for the third and fourth quintile.

Table 10.3 Women between 12-49 years who delivered in last 12 month by socio-economic background

		Number who delivered	Percentage of population who delivered	Population of females aged 12-49
Education status	Pre-school	311	7.2	4,323
	Primary	253,713	12.4	2,052,688
	Vocational	1,776	13.4	13,236
	Secondary	153,721	9.6	1,602,541
	College (middle level)	20,322	9.0	225,047
	University	5,075	10.8	46,873
	Don't Know	284	4.1	6,890
Employment status	Paid Employee	26,207	8.2	320,319
	Unpaid Family Worker	97,409	17.1	568,746
	Seeking Work	27,198	11.4	237,738
	Homemakers	226,698	19.7	1,153,071
	Students/Intern/Apprentice	18,796	2.7	693,139
	Self -employment	100,793	14.5	694,109
	Others	3,221	10.5	30,638
Expenditure Quintile	Poorest	100,220	15.0	667,476
	Fourth	100,226	13.2	756,867
	Middle	101,974	12.2	834,854
	Second	99,490	10.3	968,867
	Richest	96,390	8.9	1,088,192

10.2 Antenatal care

The antenatal care intervention plays a vital role in early detection of complications and prompt management, prevention of diseases through immunization and micronutrient supplementation, birth preparedness and complication readiness. Early detection of problems in pregnancy leads to more timely treatment and referrals in the case of complications. This is of particular importance in Zambia, which is a large and sparsely populated country where physical barriers are a challenge to the health care delivery system. Women who do not receive antenatal care during pregnancy are at higher risk of obstetric emergencies and adverse outcomes.

Zambia follows the WHO approach (ibid) to promoting safe pregnancies, which recommends that a woman without complications makes at least four ANC visits. The first visit should occur by the end of 16 weeks of pregnancy; the second visit is between 24 and 28 weeks of pregnancy; the third visit is scheduled at 32 weeks; and the fourth visit is at 36 weeks. However, women with common discomforts, special needs, or conditions beyond the scope of basic care (or other problems) may require additional visits. This is an updated approach called Focused Antenatal Care (FANC), which emphasizes quality of care during the visits over the quantity of visits.

Figure 10.1 shows that 96 percent of women who had a live birth in the 12 months preceding the survey had made at least one antenatal care visit. While first antenatal care attendance is very good in Zambia only 56 percent of pregnant women completed all the required four visits.

Figure 10.1 Antenatal care visits by province
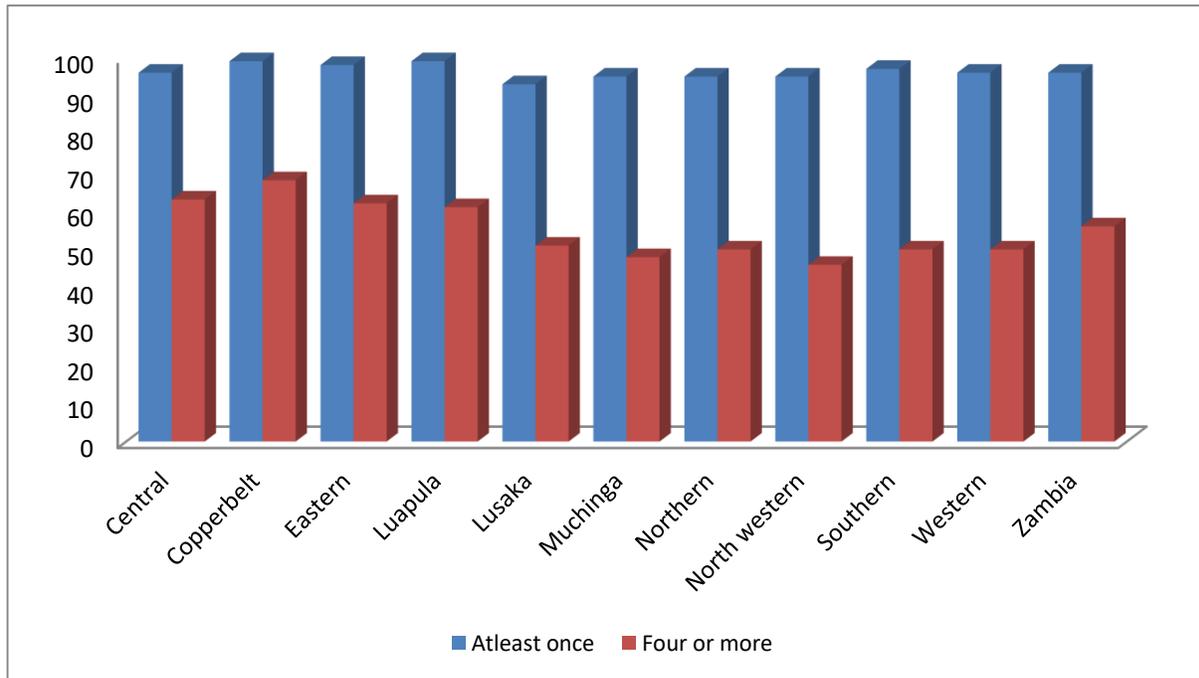
Table 10.4 shows the variation in women's attendance to antenatal clinics by region and province. Women in urban areas are more likely to attend the clinics four or more times. There are significant variations between provinces.

Table 10.4 Percentage distribution of attendance of antenatal clinics

		None	Once	Twice	Three times	Four times	Other	Population of females aged 12-49
Region	Rural	2.7	7.1	7.4	27.9	40.1	14.8	2,295,938
	Urban	2.6	5.6	8.0	23.1	43.5	17.2	2,043,757
Province	Central	2.8	4.1	4.5	24.5	44.6	19.5	404,845
	Copperbelt	1.2	4.4	6.3	20.0	52.2	15.9	731,304
	Eastern	2.0	4.1	5.6	25.6	45.7	17.0	475,235
	Luapula	0.0	1.4	7.1	30.0	43.1	18.4	287,749
	Lusaka	3.8	6.5	11.0	24.9	36.3	17.6	874,779
	Muchinga	3.8	9.8	9.2	28.1	36.8	12.3	235,922
	Northern	4.9	6.1	11.7	27.1	35.0	15.2	337,163
	N Western	4.3	19.1	6.1	24.1	40.6	5.8	233,081
	Southern	2.6	8.3	6.2	32.0	36.7	14.2	494,488
	Western	1.8	9.4	8.5	28.8	38.6	12.8	265,128
	Zambia	**2.7**	**6.6**	**7.6**	**26.3**	**41.3**	**15.6**	**4,339,694**

Time taken to reach a health facility always has an important effect on utilization of health services, both for general medical services in general, and maternal health services in particular. Table 10.5 shows a percentage distribution of time taken to antenatal facility by region and province. The results reveal that on average people living in rural areas take longer to reach the nearest antenatal facility compared with urban counterparts. More than 23 percent of the rural women take more than two hours to reach the nearest facility, compared with only 3 percent for urban women. On the other hand, only 26 percent of rural households will reach an antenatal facility within 30 minutes, compared with 56 percent for the urban population. This pattern is also evident when comparison is made between predominantly rural provinces and predominantly urban provinces.

Mothers residing in Lusaka Province and Copperbelt Province, which are predominantly urban, are closer to antenatal care facilities, compared with rural provinces like Western Province and

Northern Province. Over 34 percent of pregnant women living in Western Province will travel for more than two hours, compared with only 3.9 percent of pregnant women in Lusaka Province. Similarly, only 17.1 percent of the women in Western Province will reach a health facility within 30 minutes, compared with 49.4 percent for pregnant women living in Lusaka Province.

Table 10.5 Percentage Distribution of Travel Time to Antenatal Facility by Region and Province, Zambia, 2014

		Total women who delivered	Not stated	> 0 but < 30 min	30 min but < 1 hr	1 hr but < 2 hrs	2 hrs or more	Population of females aged 12-49
Region	Rural	100	2.7	25.7	23.4	25.0	23.2	2,295,938
	Urban	100	2.6	55.9	26.8	11.8	2.9	2,043,757
Province	Central	100	2.8	34.1	24.6	21.5	17.0	404,845
	Copperbelt	100	1.2	53.3	26.1	12.8	6.6	731,304
	Eastern	100	2.0	34.6	26.4	22.1	14.8	475,235
	Luapula	100	0.0	36.2	29.7	17.8	16.4	287,749
	Lusaka	100	3.8	49.4	26.9	16.0	3.9	874,779
	Muchinga	100	3.8	26.1	21.6	21.3	27.2	235,922
	Northern	100	4.9	25.5	22.5	22.2	24.9	337,163
	N Western	100	4.3	45.3	18.0	14.6	17.8	233,081
	Southern	100	2.6	25.7	24.9	28.7	18.1	494,488
	Western	100	1.8	17.1	17.8	28.8	34.5	265,128
	Total	100	2.7	35.9	24.5	20.5	16.3	4,339,694

Table 10.6 reveals that attendance at antennal care clinics is influenced by a number of demographic and socio-economic characteristics. Although the result show minor variations with respect to age groups, the younger mothers show higher likelihood of completing all four visits, compared with the older mothers. At the same time, the youngest age group, 12- 19 years are more likely to fail to attend all visits with 3.8 percent, compared with their older counterparts. Mothers' education is directly associated with increased likelihood of completing the required four antenatal visits.

Table 10.6 Percentage distribution of attendance at antenatal clinics by mother's age and education

		None	One	Two	Three	Four	More than four	Population of females aged 12-49
Age group	12 - 19	3.8	6.2	8.5	27.9	41.5	12.1	1,501,259
	20 - 29	2.2	6.2	8.5	27.2	41.5	14.4	1,396,924
	30 - 39	2.8	6.7	5.4	24.6	41.2	19.2	902,414
	40 - 49	3.5	10.3	8.7	22.4	38.4	16.8	539,098
Level of education	Pre-school	0.0	0.0	0.0	38.1	61.9	0.0	4,323
	Primary	2.4	6.8	8.2	28.0	41.4	13.2	2,052,688
	Vocational	0.0	0.0	12.9	24.7	8.6	53.9	13,236
	Secondary	2.6	5.6	6.1	26.2	44.5	15.0	1,602,541
	College	0.0	6.7	7.1	13.4	47.1	25.7	225,047
	University	0.0	3.9	0.0	0.0	13.1	83.0	46,873
	Don't Know	0.0	0.0	0.0	0.0	100.0	0.0	6,890
	Total	2.3	6.3	7.3	26.3	42.3	15.4	3,951,598

More than 96 percent of mothers with university level education completed their visits, compared with only about 54 percent and 62 percent for mothers with primary and secondary education level respectively.

Wealth is one of the factors influencing attendance at antenatal care. Table 10.7 shows that mothers belonging to the richest wealth quintile are more likely to complete the four scheduled visits (67.1 percent), compared with mothers in the poorest wealth quintile (51.6 percent). It can also be seen that women who are paid employees are much more likely to complete the four scheduled visits than those who are self-employed or home makers. The table reveals that 76.2 percent of mothers who are paid employees completed all the required four antenatal visits, compared with 59.9 percent or less for mothers who are students, self-employed or home makers.

Table 10.7 Attendance at antenatal clinics by income and employment status, percent

		None	One	Two	Three	Four	More than four	Population of females aged 12-49
Expenditure Quintile	Poorest	4.4	7.8	9.4	26.8	38.0	13.6	667,476
	Fourth	3.8	5.9	9.3	28.2	39.0	13.8	756,867
	Middle	1.2	4.5	6.4	32.6	42.4	12.9	834,854
	Second	1.6	8.3	7.9	24.5	44.8	12.9	968,867
	Richest	2.0	6.4	5.2	19.4	41.5	25.6	1,088,192
Employment status	Paid Employee	1.9	5.5	3.0	13.6	42.9	33.3	320,319
	Unpaid Family Worker	2.8	6.6	6.2	29.1	45.6	9.7	568,746
	Seeking Work	3.5	3.3	7.6	26.3	39.2	20.1	237,738
	Homemakers	2.7	7.8	7.8	28.8	38.3	14.6	1,153,071
	Students/Intern/ Apprentice	1.0	7.9	11.0	20.3	47.7	12.2	693,139
	Self -employment	2.7	4.7	9.4	22.9	42.9	17.4	694,109
	Others	0.0	8.8	0.0	26.8	20.4	44.0	30,638

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From Table 10.8 it is clear that public facilities are the most popular providers of antenatal care services in the country. Over 85 percent of women who had a delivery 12 months prior to the survey visited a public hospital or health centre, both in rural and urban areas. However, as can be observed from the table, private facilities are more utilized by the urban population for antenatal visits, compared with their rural counterparts. On the other side, the rural population is more likely to visit mission hospitals, compared with the urban population.

Table 10.8 Percentage distribution of provider of antenatal care services by region and provinces

		Company	Government	Mission	NGO	Private	Not stated	Population of females aged 12-49
Region	Rural	0.1	88.5	5.5	1.8	1.4	2.7	2,295,938
	Urban	0.4	88.6	2.0	1.3	5.1	2.6	2,043,757
Province	Central	0.0	91.1	2.2	2.6	1.3	2.8	404,845
	Copperbelt	1.3	86.3	5.6	1.0	4.7	1.2	731,304
	Eastern	0.0	93.3	4.2	0.5	.0	2.0	475,235
	Luapula	0.0	92.1	6.1	0.0	1.8	0.0	287,749
	Lusaka	0.6	86.8	.2	2.2	6.5	3.8	874,779
	Muchinga	0.0	87.5	5.8	2.2	0.8	3.8	235,922
	Northern	0.0	89.6	.9	3.5	1.1	4.9	337,163
	N Western	0.0	76.5	14.6	2.3	2.3	4.3	233,081
	Southern	0.0	86.8	7.9	0.9	1.7	2.6	494,488
	Western	0.0	91.1	1.8	1.4	3.8	1.8	265,128
	Zambia	**0.2**	**88.5**	**4.4**	**1.6**	**2.6**	**2.7**	**4,339,694**

The same pattern that shows that public facilities dominate can also be seen for different age groups (Table 10.9). It is notable that women with pre-school as highest education level prefer to attend mission facilities.

Table 10.9 Percentage distribution of provider of antenatal care services by age and education

		Company	Govt	Mission	NGO	Private	Not stated	Population of females aged 12-49
Age	12 - 19	.2	89.9	4.4	.4	1.3	3.8	1,501,259
	20 - 29	.4	88.3	4.7	1.6	2.8	2.2	1,396,924
	30 - 39	0.0	88.7	3.5	1.7	3.3	2.8	902,414
	40 - 49	0.0	85.8	5.3	3.7	1.7	3.5	539,098
Education	Pre-school	0.0	38.1	61.9	0.0	0.0	0.0	4,323
	Primary	.1	89.3	5.5	1.7	1.1	2.4	2,052,688
	Vocational	0.0	100.0	0.0	0.0	0.0	0.0	13,236
	Secondary	.3	90.1	3.5	1.0	2.6	2.6	1,602,541
	College	1.9	80.3	1.0	2.2	14.6	0.0	225,047
	University	0.0	25.8	2.7	0.0	71.5	0.0	46,873
	Don't Know	0.0	100.0	0.0	0.0	0.0	0.0	6,890
	Zambia	**.2**	**88.5**	**4.5**	**1.4**	**3.0**	**2.3**	**3,951,598**

Non-government health facilities play some role in providing antenatal services especially in urban areas where private health facilities are more common (Table 10.10). Further analysis on the utilization of private health facilities shows more likelihood of their being used by pregnant women in the higher wealth quintile and associated higher education levels.

Table 10.10 Percentage distribution of provider of antenatal care services by income and employment status

		Company	Govt	Mission	NGO	Private	Not stated	Population of females aged 12-49
Expenditure Quintile	Poorest	0.0	86.8	5.9	1.9	1.0	4.4	667,476
	Fourth	.2	87.7	4.9	1.5	1.9	3.8	756,867
	Middle	.3	90.8	4.5	2.2	1.0	1.2	834,854
	Second	.4	92.8	3.1	.9	1.2	1.6	968,867
	Richest	.4	84.3	3.5	1.5	8.4	2.0	1,088,192
Employment status	Paid Employee	0.0	78.2	1.8	1.7	16.4	1.9	320,319
	Unpaid Family Worker	0.0	89.9	5.0	2.0	.2	2.8	568,746
	Seeking Work	.6	84.5	2.8	.6	8.1	3.5	237,738
	Homemakers	.4	88.8	4.6	1.7	1.8	2.7	1,153,071
	Students	.8	93.1	2.3	0.0	2.8	1.0	693,139
	Self-Employment	0.0	89.3	4.7	1.5	1.7	2.7	694,109
	Others	0.0	100.0	0.0	0.0	0.0	0.0	30,638

10.3 Delivery

A large number of maternal deaths occurring in low income countries are due to the low proportion of deliveries supervised by appropriately skilled workers with capacity to manage pregnancies with complications. Thus, increasing the number of births delivered in health facilities where skilled personnel are situated is an important factor in reducing deaths arising from the complications of pregnancy. The expectation is that if a complication arises during delivery, a skilled health worker can manage the complication or refer the mother to the next appropriate level of care.

Table 10.11 shows the percentage distribution of place of delivery, by region and provinces, for all live births in the 12 months preceding the survey. The most common places for delivery are government facilities and homes. Home deliveries in rural areas account for 24.7 percent as opposed to only 4.6 percent in urban areas. The survey further reveals that 18 percent of mothers were reported to have delivered at home. With regards to the type of facility accessed, 73.0 percent of deliveries occur in public sector facilities, compared with 4.0 percent occurring in private sector facilities.

Table 10.11 Place of delivery by region and provinces, percent

		Govt	Home	Mission	Private	Company	NGO	Population of females aged 12-49
Region	Rural	67.0	24.7	7.3	.9	.0	0.1	2,295,938
	Urban	86.8	4.6	2.9	4.9	.9	0.0	2,043,757
Province	Central	64.0	31.6	2.6	1.3	0.0	0.4	404,845
	Copperbelt	79.1	10.0	3.7	4.7	2.5	0.0	731,304
	Eastern	76.8	12.6	10.7	0.0	0.0	0.0	475,235
	Luapula	78.6	11.5	8.7	1.2	0.0	0.0	287,749
	Lusaka	86.8	5.7	0.8	6.5	.2	0.0	874,779
	Muchinga	65.8	29.2	4.3	0.8	0.0	0.0	235,922
	Northern	61.1	36.9	1.5	0.6	0.0	0.0	337,163
	N Western	70.2	8.7	19.2	1.8	0.0	0.0	233,081
	Southern	67.5	22.2	9.9	0.4	0.0	0.0	494,488
	Western	75.6	19.4	1.8	3.2	0.0	0.0	265,128
	Total	73.7	17.9	5.8	2.3	.3	0.0	4,339,694

Women in urban areas are more likely to deliver in public sector facilities than their rural counterparts (86.8 and 67.0 percent respectively). Lusaka Province has the highest proportion of deliveries in public sector facilities (86.8 percent), while Northern Province has the lowest (61.1 percent).

It can be seen from Table 10.12 that there is a slight difference in choice of delivery between groups. Younger women (12-19) are more likely to deliver in health institutions (81.8 percent), while women above 40 years are more likely to deliver at home. Women with higher education have a much higher probability of delivering in a health facility than uneducated women or those with a lower education level. Women with more than a secondary education are less likely to deliver at home (less than 10 percent) compared with women with pre-school (61.9 percent).

Table 10.12 Percentage distribution of place of delivery by mother's age and education status

		Govt	Home	Mission	Prvt	Company	NGO	Population of females aged 12-49
Age	12 - 19	81.8	10.6	6.7	.7	.2	0.0	1,501,259
	20 - 29	73.1	18.4	5.7	2.1	.6	0.0	1,396,924
	30 - 39	71.4	20.0	4.8	3.7	0.0	.2	902,414
	40 - 49	70.8	19.5	8.8	.9	0.0	0.0	539,098
Education	Pre-school	38.1	61.9	0.0	0.0	0.0	0.0	4,323
	Primary	70.1	22.2	6.7	1.0	.1	0.0	2,052,688
	Vocational	88.0	12.0	0.0	0.0	0.0	0.0	13,236
	Secondary	85.1	7.4	5.3	1.6	.5	.1	1,602,541
	College	77.6	3.6	2.7	12.3	3.7	0.0	225,047
	University	16.9	0.0	2.7	80.4	0.0	0.0	46,873
	Don't Know	100.0	0.0	0.0	0.0	0.0	0.0	6,890
	Zambia	**75.2**	**15.8**	**5.9**	**2.6**	**.4**	**.1**	**3,951,598**

Table 10.13 shows that 28.8 percent of the poorest women deliver at home, compared with the richest women at 8.6 percent. The same holds for family workers, self-employed and those not working.

Table 10.13 Percentage distribution of place of delivery by income and employment status

		Govt	Home	Mission	Private	Company	NGO	Population of females aged 12-49
Expenditure Quintile	Poorest	65.0	28.2	6.6	.3	0.0	0.0	667,476
	Fourth	70.1	22.2	6.6	1.0	.2	0.0	756,867
	Middle	73.8	18.3	6.0	1.6	0.0	.2	834,854
	Second	82.2	11.4	4.9	.8	.8	0.0	968,867
	Richest	77.6	8.6	4.9	8.2	.8	0.0	1,088,192
Employment status	Paid Employee	71.8	5.2	4.3	17.2	1.4	0.0	320,319
	Unpaid Family Worker	65.8	26.0	7.7	.5	0.0	0.0	568,746
	Seeking Work	74.0	17.9	3.1	5.0	0.0	0.0	237,738
	Homemakers	76.4	15.9	5.7	1.4	.5	.1	1,153,071
	Students/Intern	88.6	2.2	8.4	0.0	.8	0.0	693,139
	Self-employment	73.1	20.4	4.8	1.7	0.0	0.0	694,109
	Others	69.6	30.4	0.0	0.0	0.0	0.0	30,638

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Information was also sought on whether women who delivered in the 12 months prior to the survey did so at the same facility where they attended antenatal clinics. About 42.0 percent of the women were reported to have delivered at a different facility from where they received antenatal services. Figure 10.2 shows the reasons cited by respondents for delivering at a different facility.

As the graph shows, the most commonly cited reason for switching the provider at the time of delivery was purely preference by the client. As important reasons for change of provider, respondents also cited transportation time, lack of skilled staff at antenatal facility, need for special care and referrals due to pregnancy complications.

Figure 10.2 Reasons for delivery at a different facility from the antenatal clinic attended
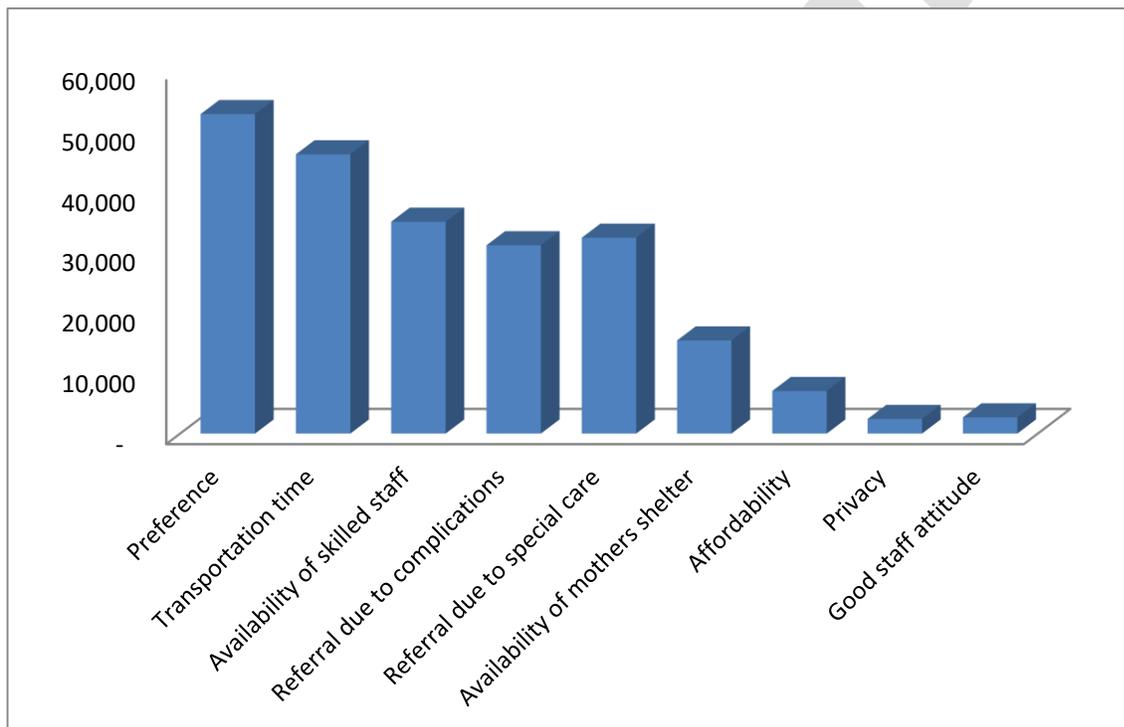
In Table 10.14 it is shown that close to 90 percent of all deliveries were reported to be normal. Births by older women (age group 40 - 49) resulted in more still births (8.9 percent) than any other age group. In addition to this, the older women also had the highest rate of caesarean births at 4.9 percent, compared with women of other age groups. Women above the age of 29 years were reported to be more likely to receive assistance during childbirth from a skilled provider.

Table 10.14 Percentage distribution of type of delivery by age group of the mother

	Age group				
Delivery type	**12-19**	**20-29**	**30-39**	**40-49**	**Total**
Normal delivery live birth	89.45	90.35	89.97	85.57	89.84
Normal delivery still birth	4.6	3.47	2.51	7.09	3.56
Assisted delivery live birth	1.33	1.46	1.74	1.66	1.53
Assisted delivery still birth	0	1.15	1.06	0.78	0.95
Caesarean live birth	3.73	3.31	3.35	3.86	3.41
Caesarean still birth	0.9	0.26	1.37	1.04	0.71
Total	**100**	**100**	**100**	**100**	**100**

10.4 Postnatal care

Prompt postnatal care is important for both the mother and the child to avert maternal and neonatal deaths which tend to occur during the first 24 hours after delivery. Postnatal care services facilitate early treatment of complications arising from the delivery and also provide an opportunity to provide the mother with important information on how to care for herself and her child. In Zambia the postnatal services are recommended to be provided within six days of delivery.

According to the results shown by table 10.15, close to two thirds (71.9 percent) received postnatal care, as opposed to a third of the women (28.1 percent) who did not receive any postnatal care. Women in rural areas are more likely not to have a postnatal check-up than women in urban areas (30.7 and 21.3 percent, respectively). Lusaka Province, which has a predominantly urban population, reported above 77.2 percent postnatal attendance compared with only 53.2 percent for Northern Province.

Table 10.15 Distribution of women who received postnatal care by region and provinces

		Total women who delivered	Percent (out of women who delivered)	Population of females aged 12-49
Region	Rural	331,671	69.3	2,295,938
	Urban	169,808	78.6	2,043,757
Province	Central	53,811	77.1	404,845
	Copperbelt	60,151	74.1	731,304
	Eastern	64,142	81.6	475,235
	Luapula	40,735	68.2	287,749
	Lusaka	76,654	77.2	874,779
	Muchinga	28,206	65.5	235,922
	Northern	45,761	53.2	337,163
	North-Western	28,471	61.6	233,081
	Southern	63,311	76.9	494,488
	Western	40,237	71.9	265,128
	Zambia	**501,479**	**72.5**	**4,339,694**

Table 10.16 shows that better educated and wealthier mothers are more likely to go for a postnatal check-up after delivery than poorer or less educated women. Women with higher education are more likely to attend postnatal care than those with lower education levels. There is some variation in receiving postnatal care between age groups ranging from 68 to 75 percent.

Table 10.16 Proportion of women who received postnatal care by mother's age and education status

		Total women who delivered	Received postnatal care	Percent (out of women who delivered)	Population of females aged 12-49
Age group	12 - 19	68,319	47,378	69.3	1,501,259
	20 - 29	263,074	196,909	74.8	1,396,924
	30 - 39	141,252	99,515	70.5	902,414
	40 - 49	28,834	19,592	67.9	539,098
education	Pre-school	311	311	100.0	4,323
	Primary	253,713	176,130	69.4	2,052,688
	Vocational	1,776	1,170	65.9	13,236
	Secondary	153,721	118,219	76.9	1,602,541
	College (middle level)	20,322	18,480	90.9	225,047
	University	5,075	4,405	86.8	46,873
	Don't Know	284	284	100.0	6,890

Table 10.17 shows that more rich women attend postnatal care than poor women. Women who are paid employees attend postnatal care with a frequency of 78.3 percent, compared with those not working at 75.7 percent.

Table 10.17 Proportion of women who received postnatal care by income and employment status

		Total	Received postnatal care	Percent (out of women who delivered)	Population of females aged 12-49
Expenditure Quintile	Poorest	100,220	63,192	63.1	667,476
	Fourth	100,226	66,974	66.8	756,867
	Middle	101,974	77,535	76.0	834,854
	Second	99,490	75,315	75.7	968,867
	Richest	96,390	78,003	80.9	1,088,192
Employment	Paid Employee	26,207	20,530	78.3	320,319
	Unpaid Family Worker	97,409	65,882	67.6	568,746
	Seeking Work	27,198	20,513	75.4	237,738
	Homemakers	226,698	165,932	73.2	1,153,071
	Students	18,796	13,061	69.5	693,139
	Self-Employment	100,793	74,604	74.0	694,109
	Others	3,221	2,004	62.2	30,638

Many factors can prevent women from getting medical advice or treatment for themselves when they are sick. Information on such factors is particularly important in understanding and addressing the barriers women may face in seeking care during pregnancy, at the time of delivery and after delivery.

There are no big variations in age groups attending postnatal care for mother-related or baby-related health problems (Table 10.19). The same holds for level of education.

Table 10.18 Postnatal visits by mother's age and educational status

	Mothers					Babies				
Mother's age	Govt	Mission	Private	Comp	Total	Govt	Mission	Private	Relig	Total
12-19	97.3	3.6	0.0	0.0	4,549	89.8	0.0	0.0	11.2	5,882
20-29	84.6	10	4.0	2.3	19,103	94.1	2.0	3.7	2.6	12,207
30-39	100.0.0	0.0	0.0	0.0	11,496	91.1	6.8	0.3	3.4	9,078
40-49	90.1	10.4	0.0	0.0	4,731	85.9	0.0	15	0.0	1,750
Mother's education										
Pre-school	100	0.0	0.0	0.0	118		0.2	0.0	0.0	0
Primary	91.2	8.9	1	0.0	21,479	90.1	5.8	2.1	3.1	15,447
Secondary	88.5	5.5	3	4	11,062	87.5	0.0	5.7	8.3	7,576
College	100.9	0.0	0.0	0.0	1,434	100	0.0	0.0	0.0	1,028

There are minimal variations between income groups for those women attending public care for mother and baby health problems (Table 10.20). However, the same pattern, as above, has been observed for the richer quintiles dominating access to private facilities.

Table 10.20 Postnatal visits by income and employment status, percent

	Mothers					Babies				
Income quintile	Govt	Miss ion	Private	Comp	Total	Govt	Mission	Private	Relig	Total
Richest	86	0	6	7	6,097	84	0	4	12	3,803
Second	97	3	0	0	9,323	89	3	4	4	5,415
Middle	92	8	0	0	7,634	95	5	0	0	5,293
Fourth	84	12	3	0	8,660	92	2	3	3	8,227
Poorest	94	6	0	0	8,165	94	3	0	3	6,179
Employme nt status										
Paid employee	100	0	0	0	1,205	100	0	0	0	383
Unpaid family worker	93	7	0	0	7,981	91	0	0	9	4,741
Seeking work	94	6	0	0	2,097	55	0	0	45	996
Homemak	86	7	4	3	16,973	94	4	0	2	13,248
Student/int	95	5	0	0	2,362	92	0	8	0	1,851
Self-employm	95	5	0	0	9,261	91	2	6	0	7,698

In general the same pattern can be seen for education level. The exception is women seeking work attending religious facilities for baby-related health problems (45 percent).

Figure 10.3 presents information on the extent to which women reported that each of these factors was a serious problem for them in accessing postnatal care. About 27 percent of the respondents reported that distance to health facilities was the most important barrier to accessing services, while 22 percent of the respondents indicated that they were too busy. A further 20 percent of the respondents indicated that they did not see the need for postnatal care, or simply provided no reason for omitting postnatal attendance. Eight percent of respondents indicated that they depended on tradition, and only 2 percent cited affordability as a factor affecting access.

Figure 10.3 Reasons for not attending postnatal clinic
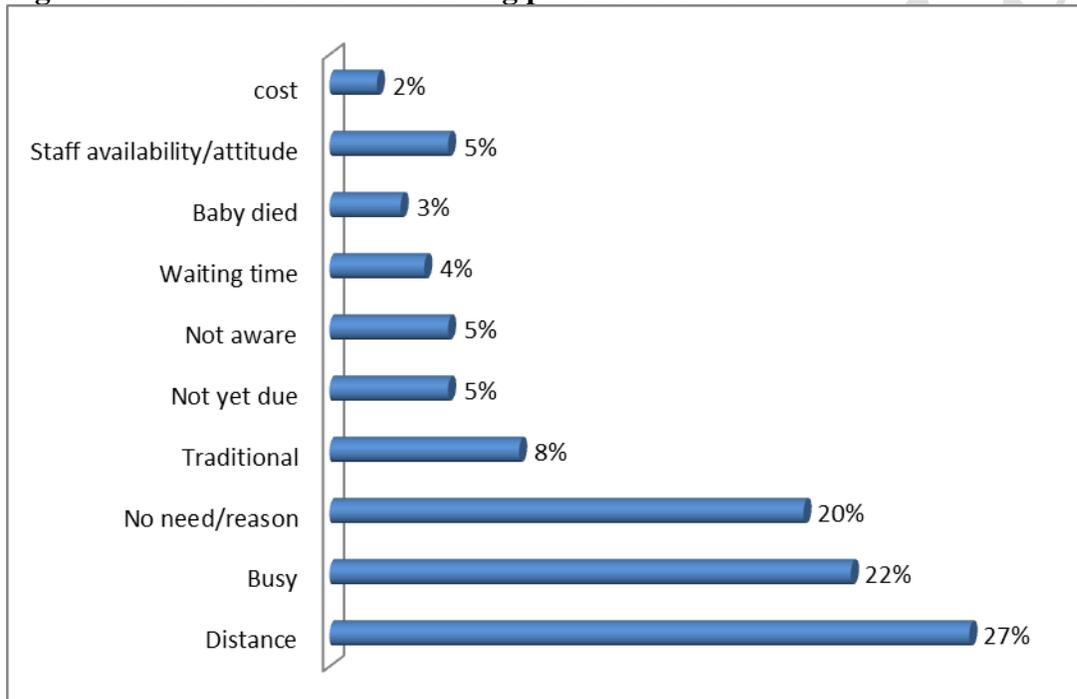
10.5 Risk of pregnancy complications

Pregnancy complications occur due to a variety of reasons. Complications in pregnancy can occur before and after delivery and there is need for pregnant women to have information on possible danger signs. In the survey, information was collected from respondents about the incidence of complication, whether those mothers affected sought medical care, and the type of providers they visited to get medical attention.

As part of antenatal services, health providers are expected to educate mothers about danger signs during pregnancy. Such information is critical to make it possible for mothers to visit a health facility when such signs are observed to get medical attention. In the survey, respondents were asked whether women in the household who delivered in the 12 months prior to the survey were told about complications during antenatal care visits.

Figure 10.4 Percentage distribution of women informed about the signs of pregnancy complications by type of Facility visited
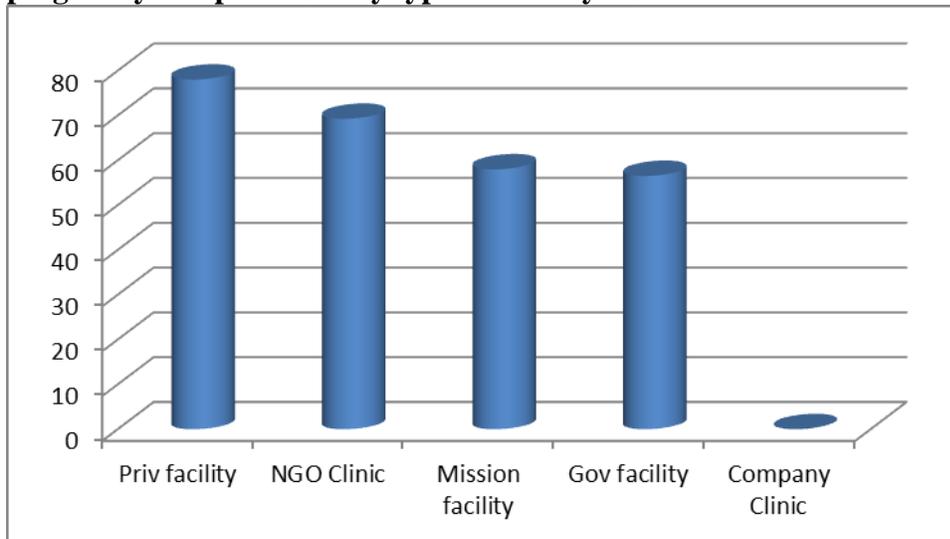
Over 57 percent of women reported to have been told about pregnancy signs. Figure 10.4 shows that women who attend private antenatal facilities were more likely to be told about danger signs in pregnancy compared with other providers. The results also show that most of the women who receive antenatal services from company do not get information about danger signs in pregnancy.

An assessment of the relationship between the age of the pregnant women and occurrence of pregnancy complications was made. The proportion of women reporting complications by age group are shown in Table 10.21 below. The result shows that pregnancy complications are more likely to occur in older women compared with younger women.

Table 10.21 Proportion of women reporting complication

		Mother		Baby		
		Yes	No	Yes	No	Population of females aged 12-49
Mother's age group	12 - 19	9.6	90.4	10.2	89.8	1,501,259
	20 - 29	9.0	91.0	6.0	94.0	1,396,924
	30 - 39	10.9	89.1	9.7	90.3	902,414
	40 - 49	19.8	80.2	12.7	87.3	539,098
Education	Pre-school	38.1	61.9	0.0	100.0	4,323
	Primary	10.4	89.6	8.6	91.4	2,052,688
	Vocational	0.0	100.0	0.0	100.0	13,236
	Secondary	9.8	90.2	6.9	93.1	1,602,541
	College	8.7	91.3	5.1	94.9	225,047
	University	0.0	100.0	0.0	100.0	46,873
	Don't Know	0.0	100.0	0.0	100.0	6,890

10.6 Reasons for not seeking health care for complications

Delay or lack of seeking care for complications is one of the most common causes of maternal deaths. The vast majority of people (87 percent) with pregnancy related complications during antenatal sought medical attention. For complications occurring after delivery, 74 percent of women sought medical attention for themselves, while 76 percent sought medical attention for complications affecting the babies. As in the case of postnatal care, those who did not seek care cited various reasons including distance to facilities, being busy with other duties and lack of money as the reason for not seeking care.

In Table 10.22 it can be seen that there are almost no differences between rural and urban areas for women seeking care for themselves or their babies. However, there is considerable variation between the provinces.

Table 10.22 Women who did not seek care after complication by region and provinces

		percent Women with Complications	Number of Women with complications	percent babies with Complications	Number of Babies with complications	Population of females aged 12-49
Region	Rural	25.6	33,901	23.6	26,607	2,295,938
	Urban	25.3	17,475	24.1	11,306	2,043,757
Province	Central	33.9	7,577	21.8	4,383	404,845
	Copperbelt	22.8	8,781	10.4	3,618	731,304
	Eastern	22.3	9,646	17.2	3,191	475,235
	Luapula	30.0	3,549	19.7	5,960	287,749
	Lusaka	20.3	5,316	27.9	5,666	874,779
	Muchinga	29.6	1,907	30.1	1,420	235,922
	Northern	27.4	3,409	32.8	5,309	337,163
	N Western	16.4	2,704	17.3	1,073	233,081
	Southern	28.8	4,819	9.1	3,170	494,488
	Western	25.0	3,669	41.7	4,123	265,128
	Total	25.5	51,375	23.7	37,913	4,339,694

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Young mothers are most frequently seeking care for mother-related complications (Table 10.23). The table also shows that older women are seeking more care for complications with babies.

Table 10.23 Percentage of women who did not seek care after complication by mother's age and education status

		percent mothers not seeking care	percent babies not seeking care	Population of females aged 12-49
Mother's Age group	10-19	36.7	10.2	1,501,259
	20 - 29	24.1	18.6	1,396,924
	30 - 39	23.2	30.3	902,414
	40 - 49	24.7	47.6	539,098
Mother's education	Pre-school	0	0	4,323
	Primary	24.7	25.2	2,052,688
	Vocational	0	0	13,236
	Secondary	26.8	24	1,602,541
	College	18.8	0	225,047
	University	0	0	46,873
	Don't Know	0	0	6,890

Those women who are not married but cohabiting have the highest likelihood of not seeking care (Table 10.24). They did not seek care at all for the complications encountered during and/or after delivery. The results further reveal that women who have never been married had the second highest percentage for not seeking care for mother-related complications. Separated women attended care most frequently for complications related to the babies.

Table 10.24 Women who did not seek care after complication by marital status

	Mothers with complications			Babies with complications			total
	Percentage	Did not seek care	Total complications	Percentage	Did not seek care	Total complications	Population of females aged 12-49
Never Married	42.0	2,319	5,521	19.4	1,077	5,551	1,920,476
Married	24.5	10,211	41,721	23.8	6,584	27,636	1,968,771
Cohabiting	100.0	132	132	-	-	169	14,705
Separated	16.0	152	952	33.8	489	1,447	87,573
Divorced	13.7	299	2,181	23.0	545	2,368	192,224
Widowed	-	-	869	40.3	299	742	155,945
Total	25.5	13,114	51,375	23.7	8,994	37,913	4,339,694

Figure 10.5 shows that most of the women not seeking care are those in the middle income quintile, seeking work and family workers, with primary and secondary education as highest level of education.

Figure 10.5 Proportion not seeking care for complications before delivery

		percent not seeking care	# of people not seeking care	Population aged 12-49 years old
Region	Rural	18.5	40,584	2,295,938
	Urban	13.1	25,990	2,043,757
Province	Central	13.6	7,031	404,845
	Copperbelt	9.7	9,615	731,304
	Eastern	22.3	8,935	475,235
	Luapula	23.4	4,038	287,749
	Lusaka	10.4	13,009	874,779
	Muchinga	40.0	4,378	235,922
	Northern	20.1	6,444	337,163
	N Western	20.9	4,044	233,081
	Southern	5.1	5,722	494,488
	Western	16.9	3,358	265,128
	Zambia	**16.4**	**66,574**	**4,339,694**

It can be seen that women with tertiary education and women in the richest wealth quintile are more likely to seek medical attention for complications compared with less educated and poorer women.

As expected, rural women are marginally less likely to seek care either for themselves or their babies. As was the case for antenatal complications, women with tertiary education and those in paid employment and the richest wealth quintile are more likely to seek medical attention for postnatal complications compared with women in other categories

10.7 Outcome of interventions for post-delivery complications

Table 10.25 presents information on the outcomes of seeking medical attention for post-delivery complications for mother and child. Outcomes of seeking medical attention can be related to the quality of health services by the given provider. The results also shows that all the complications managed in private and company facilities fully recovered, compared with less than 90 percent for government and mission.

Table 10.25 Outcomes of intervention for post-delivery complications by facility, percent

Provider	Fully recovered	Still Ill	Impaired or Disability	Other	Total	Population of females aged 12-49
Government	86.8	7.6	0.0	5.5	100.0	36282
Mission	87.6	12.4	0.0	0.0	100.0	2458
Private	100.0	0.0	0.0	0.0	100.0	676
NGO	0.0	0.0	0.0	0.0	0.0	0
Company/Parastatal	100.0	0.0	0.0	0.0	100.0	451

The majority of complications are managed by public facilities. There is need to improve the quality of services provided in public facilities. The results in the table also show that most of the infant deaths occur in the early weeks of life, as almost 17 percent of babies born with complications were reported to have died.

10.8 Summary

Results show that 12 percent of women in the age group 12 -49 had a delivery within 12 months prior to the survey. In rural areas, 15 percent of the women in this age group reported having had a delivery, compared with 9 percent of their urban counterparts. As expected the age groups that reported a higher percentage of deliveries were 20-29 years (19 percent) and 30 -39 years (15 percent).

Almost all women who had a live birth in the 12 months preceding the survey received antenatal care from a health professional (96 percent), though only 56 percent of women finished all the four required visits. Completion of the four required visits was found to be determined by socio-economic characteristics such as higher wealth quintiles and education attainment, as well as place of residence.

Travel time to reach the nearest health facility is significantly higher for people in rural areas compared with urban areas. Over 24 percent of the women need more than two hours to reach the nearest health facility in rural areas, compared with only three percent of the population for urban areas. This could explain why home deliveries are more common in rural areas compared with urban areas.

Less than three quarters of births in the five years before the survey were delivered in a health facility. Seventy four percent of births occurred in public health facilities and 6 percent occurred in private health facilities. Close to 20 percent of births occurred at home. Three percent of births were delivered by a Caesarean section.

Overall, 56 percent of mothers received a postnatal check-up for the most recent birth in the twelve months preceding the survey. Those who did not seek postnatal care cited distance to nearest health facility, lack of awareness and competing activities as the most important factors.

Over 85 percent of the women who reported post-delivery complications sought medical care. About 74 percent of women sought medical attention for themselves, while 76 percent sought medical attention for complications affecting the babies. Those who visited a medical institution mostly visited government-owned institutions. The highest proportion of women visited government clinics at 91 percent, while only 6 percent visited a private health facility.

11 Health care expenditure

11.1 Introduction

This chapter discusses household health expenditure for Zambia. Expenditure studies and analysis continue to receive attention due to the role that health care financing reforms play in the design and development of efficient and responsive systems that would assist countries towards self-attainment of universal health access (WHO 2010). Specifically, household health care expenditure has economic effects on households, which may lead to financial ruin and consequences of impoverishing households (Wagstaff and van Doorslaer, 2003).

The report provides aggregate estimates of household health care expenditure on inpatient services, outpatient services, prescription medicines, dental services and other medical expenditures on health. Health expenditure includes total health care expenditure, average health care expenditure and per capita health care expenditures.

In addition, distribution of health care expenditure and sources of payment are shown by selected demographic, socio-economic, and geographic characteristics and by health status. The report also shows sources of health care expenditures and the proportion of households whose expenses were classified as catastrophic health expenditure. Expenditures are categorized as being catastrophic if total household expenditures on health are at least 40 percent of non-food expenditures, i.e. of total expenditures after adjusting for expenditures on food.

Health care expenses were defined as direct payments for health care services, and these expenses include out-of-pocket payments made by individuals to public and private health providers, over-the-counter medications from pharmacies, dental care, diagnostic care expenses, alternative care services, routine medications not associated with a visit to a health facility, and similar categories. Such expenses would also include costs such as those of transportation, boarding, food, and other costs related to health care visits.

The household expenditure data collection was classified into episodes of four visits which the respondent made, using a recall period of one month for outpatients, six months for

inpatient admissions and one year for supplementary expenditure. In order to determine expenses incurred by household on health, each household member was asked questions on how much they spent on consultation, drugs, medical investigation (e.g. Lab tests, X-ray, etc.), transportation costs and any other costs that they incurred at the health facility or elsewhere.

11.2 Total household annual out-of-pocket health expenditures

Figure 11.1 below presents total annual household health expenditure nationally and by rural/urban areas. Total household health spending in Zambia neared K1.2 billion in 2014. This amount represents total spending among households on health care services across the country. Urban households spent K790,530,874 representing about 67.0 percent of total household health expenditure and K389,550,433 was spent by rural households.

Figure 11.1 Total annual household health out-of-pocket expenditure by rural – urban areas
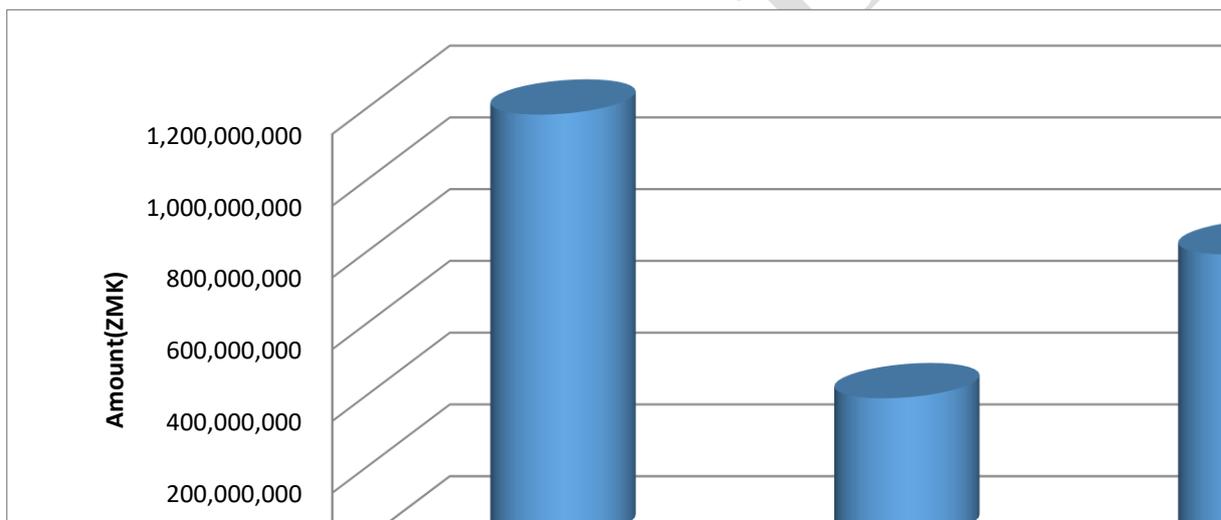

Figure 11.2 below shows proportional of household health expenditure by province. The figure shows that there is substantial difference in out-of-pocket (OOP) expenditure by province. Lusaka Province and Copperbelt Province accounted for 39 percent and 24 percent of total Household Health OOP expenditure respectively. Muchinga Province and North-Western Province were the least in terms of Household Health –OOP expenditures, accounting for about 2 and 3 percent respectively.

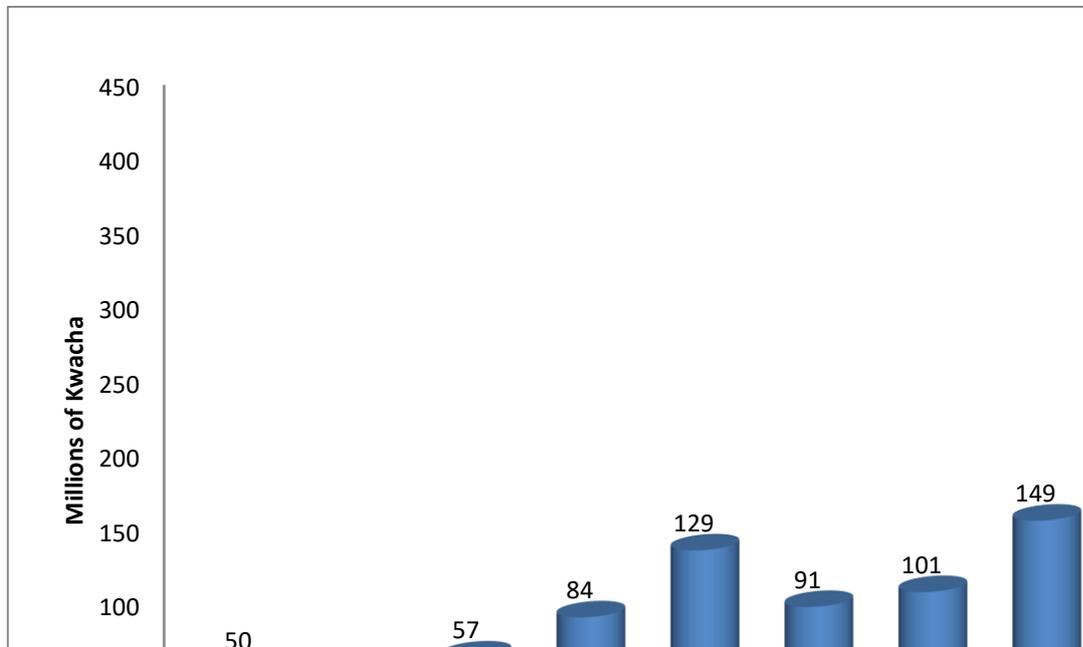**Figure 11.2 Proportion of household health expenditure by province**
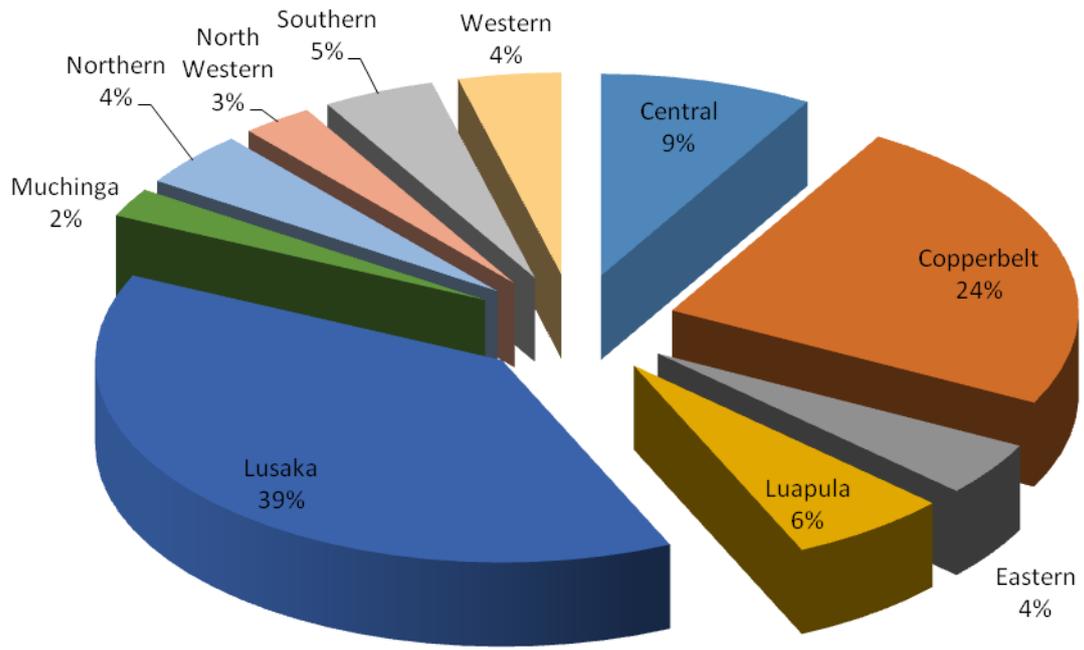
Figure 11.3 below shows that health care expenditure is positively correlated to wealth. The wealthiest 10 percent spent a total of K438 million out of a national total of K1283.66 million, about a third of the total national spending. The poorest decile spent 8 times less.

Figure 11.3 Total household health expenditure by wealth deciles

11.3 Household health expenditures by expenditure category.

Figure 11.4 shows that 43 percent of household health expenditure was spent on supplementary health care. Supplementary expenditure was on prescription drugs, herbal medication, vitamin supplements, dental care and other medical services. The next largest share was for outpatient services (42 percent). Hospital inpatient care expenditure accounted for about 11 percent of total expenses. The lowest percentage of expenditures was on MNCH which was at 4 percent.

Figure 11.4 Expenditure by type of service
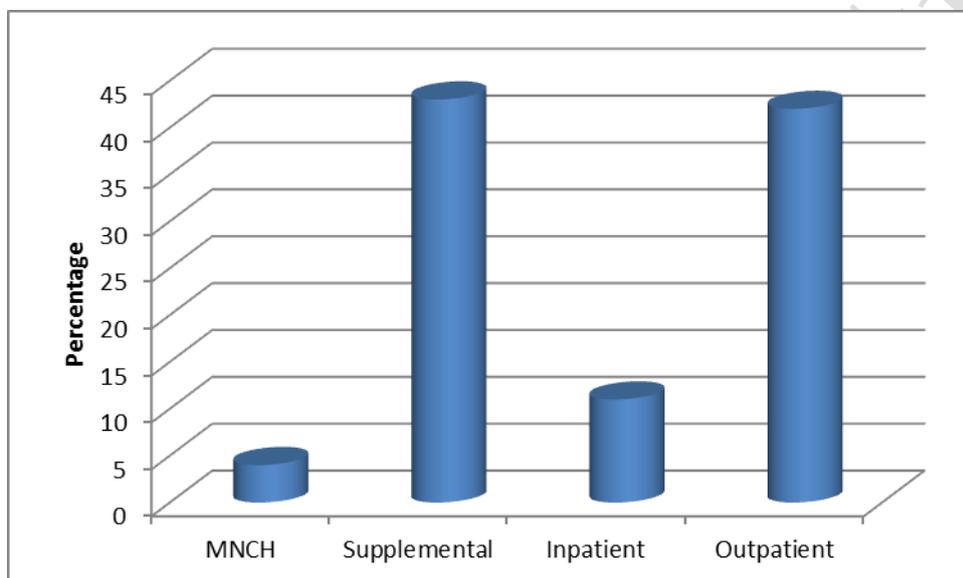
Figure 11.5 shows that for the population who reported having health expenditure and within each category of health expenditure, the highest mean expenditure per person was on drugs (K258). This was followed by transportation which was the second highest expenditure with a mean of K163. The lowest mean expenditure was on dental expenses which were close to zero.

Figure 11.5 Mean expenditure per person with expenses, by type of service
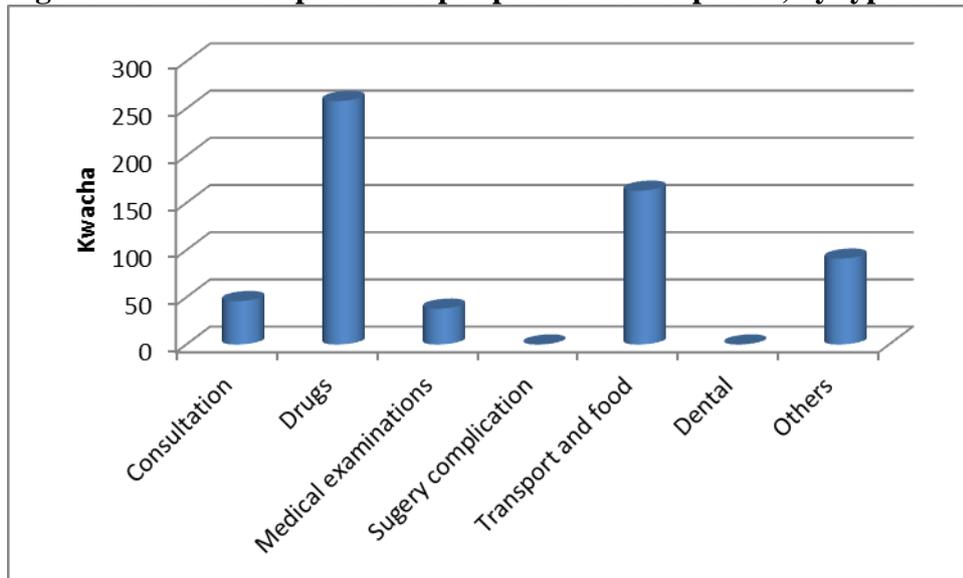
Figure 11.6 below illustrates expenditure on aggregated population. The results indicate that expenditure on drugs had the largest percentage, representing 42 percent of total health care spending. The next largest proportion went to consultations (26 percent), followed by others (17 percent), then transport/food, medical examinations, and surgery/complications representing about a combined 14 percent of total aggregated expenditure.

Figure 11.6 Ranking of expenditure items by total amount of expenditures
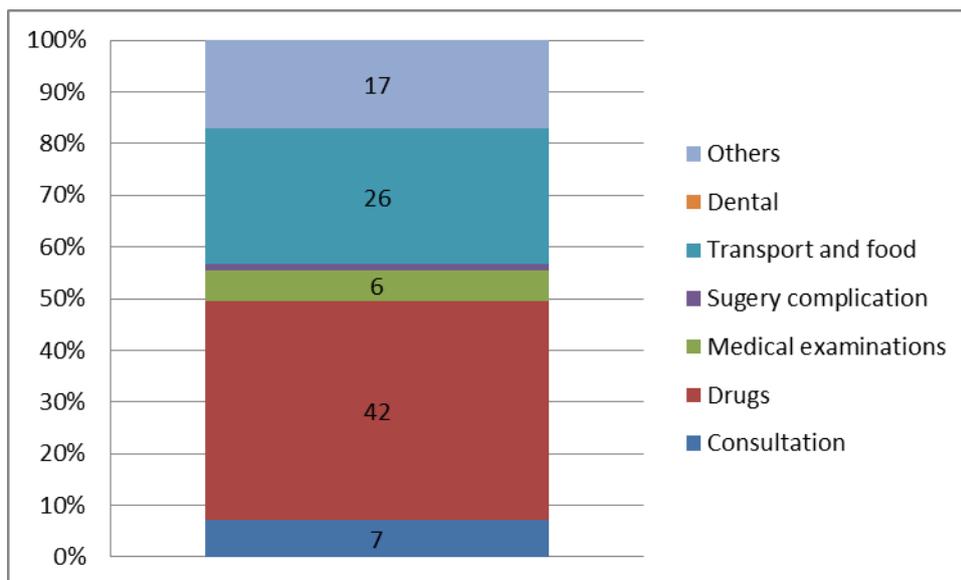
11.4 Type of service distribution for health care spending, by demographic characteristics

Figure 11.7 below demonstrates distribution of expenditure by type of services and age groups. For children under 5 years, the largest percentage of health expenditures (56 percent) was spent on outpatient services, and the smallest (less than 1 percent) was spent on MNCH. For individuals aged 5 to 18 years, the largest percentage (53 percent) was spent on outpatient services and the smallest (2 percent) was spent on MNCH. For those aged 19 to 34 years, the largest percentage (47 percent) was spent on supplemental services and the smallest (8 percent) was spent on inpatient services. For those aged 35 to 64 years, the largest percentage (46 percent) was spent on supplemental services and the smallest (2 percent) was spent on MNCH. Finally, for those aged 65 years and older, the largest percentage (55 percent) was spent on outpatient services, and the smallest (less than 1 percent) was spent on MNCH.

Figure 11.7 Distribution of expenditure by type of service and age group
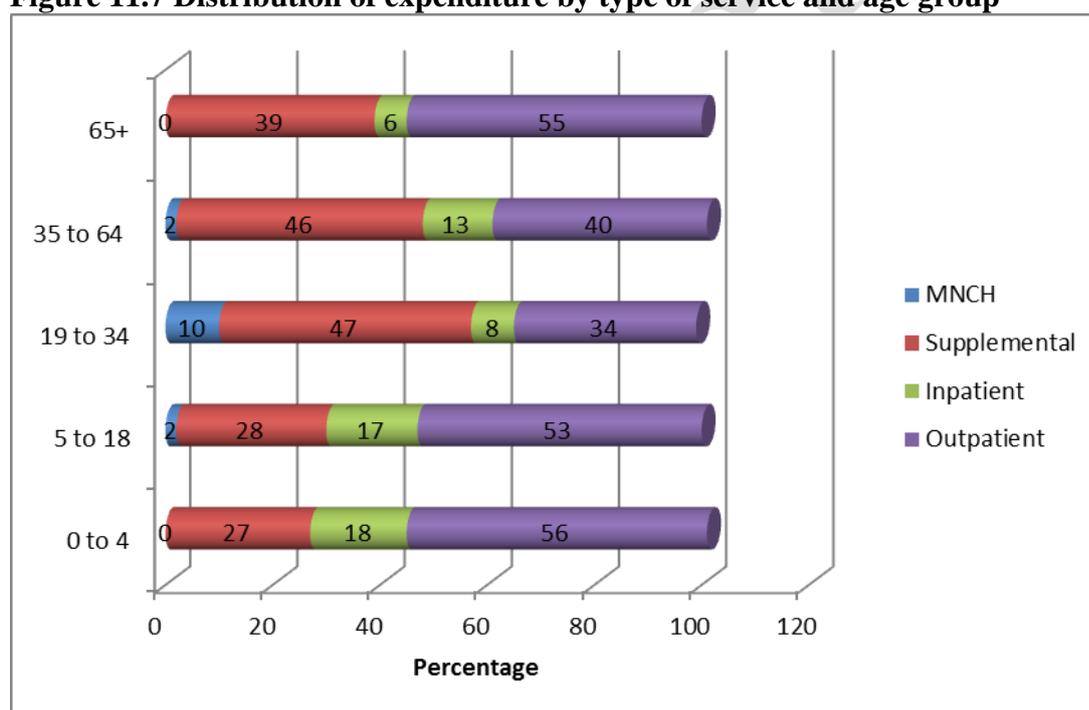
Figure 11.8 below illustrates that when compared with the rest of the sample, senior citizens (65+) spend a disproportionate amount on drugs compared with other services. Expenditure on drugs represented the highest expenditure item for all age categories except for the age group of 5-18 years. This same age group spend almost twice as much as other groups on consultation as a percentage of their total spending.

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Figure 11.8 Expenditure by type of service by age category
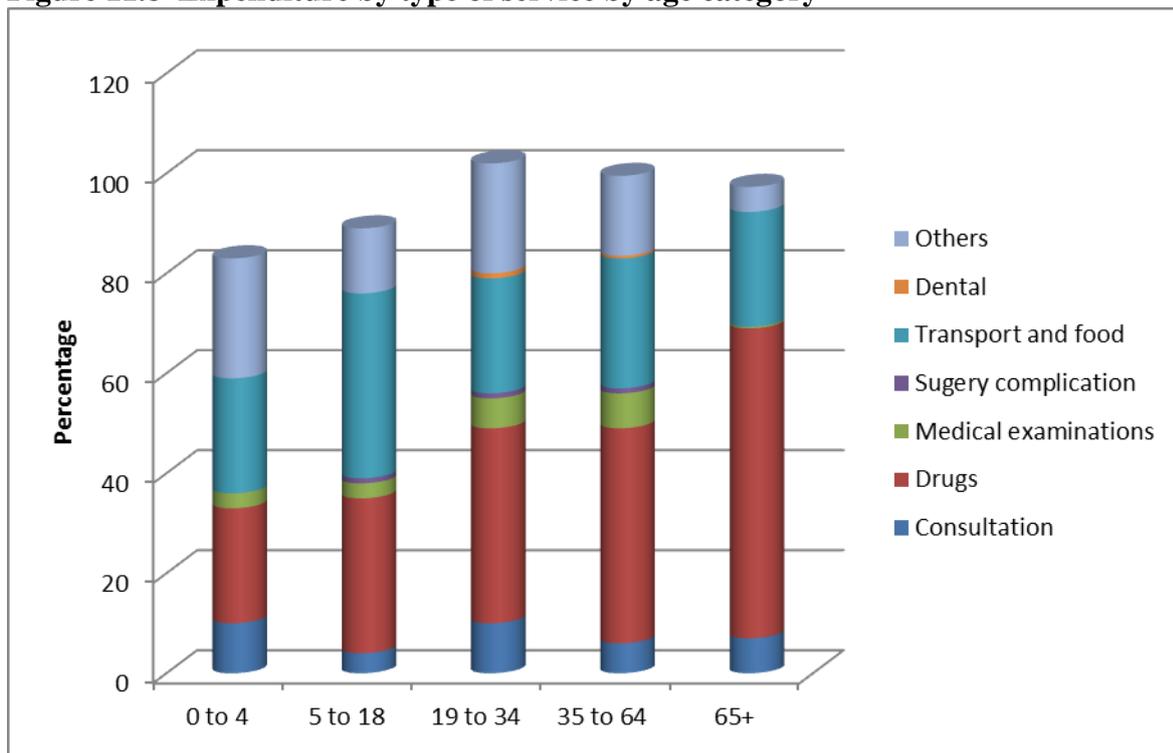
11.5 Household health inpatient and outpatient expenditure by provider

This section illustrates household out-of-pocket expenditures that were incurred at the different health providers across the country. These include government health facilities disaggregated by different levels of health care provision, private and mission facilities.

Figure 11.9 Inpatient out-of-pocket expenditure by health care provider
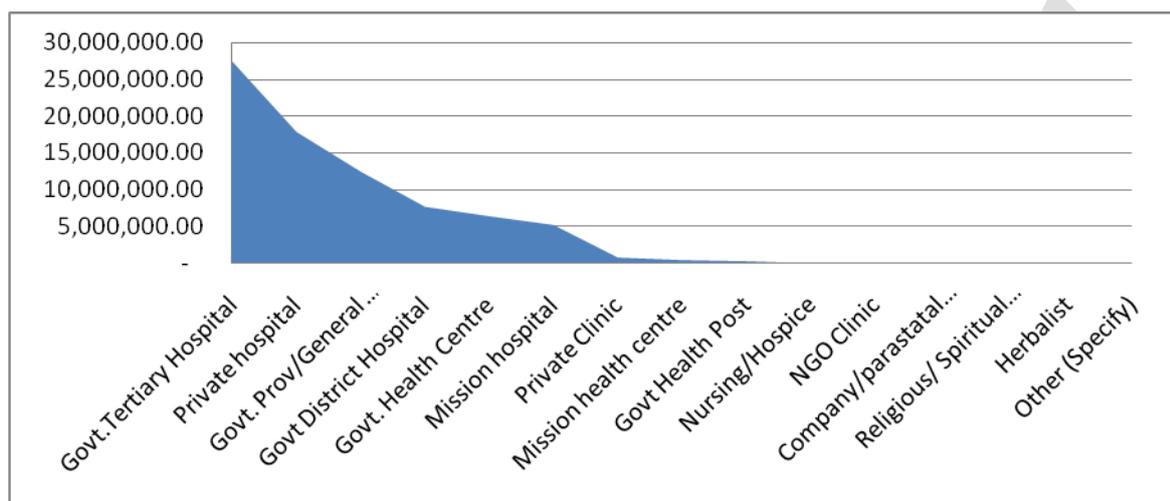
The results on figure 11.9 above show that most of the inpatient out-of-pocket health expenditures were spent on Government Tertiary Hospital, Private Hospital, General Hospital and District Hospital. Other notable out-of-pocket expenditures were incurred on Government District Hospital, Government Health Centre, Mission Hospital and Private clinic respectively.

11.6 Type of service distribution for health care spending, by region

Amongst the rural population, the results indicate that 46 percent of health care expenditures went to outpatient services and 42 percent went to supplemental services. Inpatient and MNCH services accounted for smaller fractions of 9 percent and 2 percent respectively, of health care expenditures in this population. On the other hand, amongst the urban population about 43 percent of health care expenditures went to supplemental services and 38 percent went to outpatient services. Inpatient and MNCH services accounted for smaller fractions, 13 percent and 6 percent respectively, of health care expenditures in this population.

Figure 11.10 Distribution of expenditures by inpatient and outpatient service : rural/urban
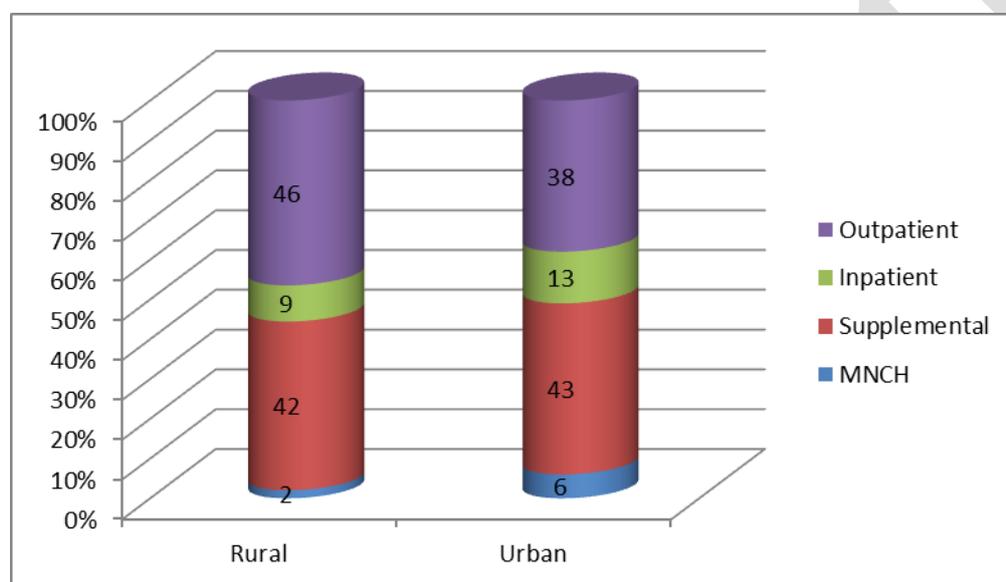
Figure 11.11 shows that both rural and urban populations spend almost half of their health care expenditure on drugs. Rural households spend slightly more of their share of health expenses on transport (30 percent) as compared with 24 percent in urban areas, but much less on consultation.

Figure 11.11 Comparative ranking of health care expenditures by service, segregated by rural/urban
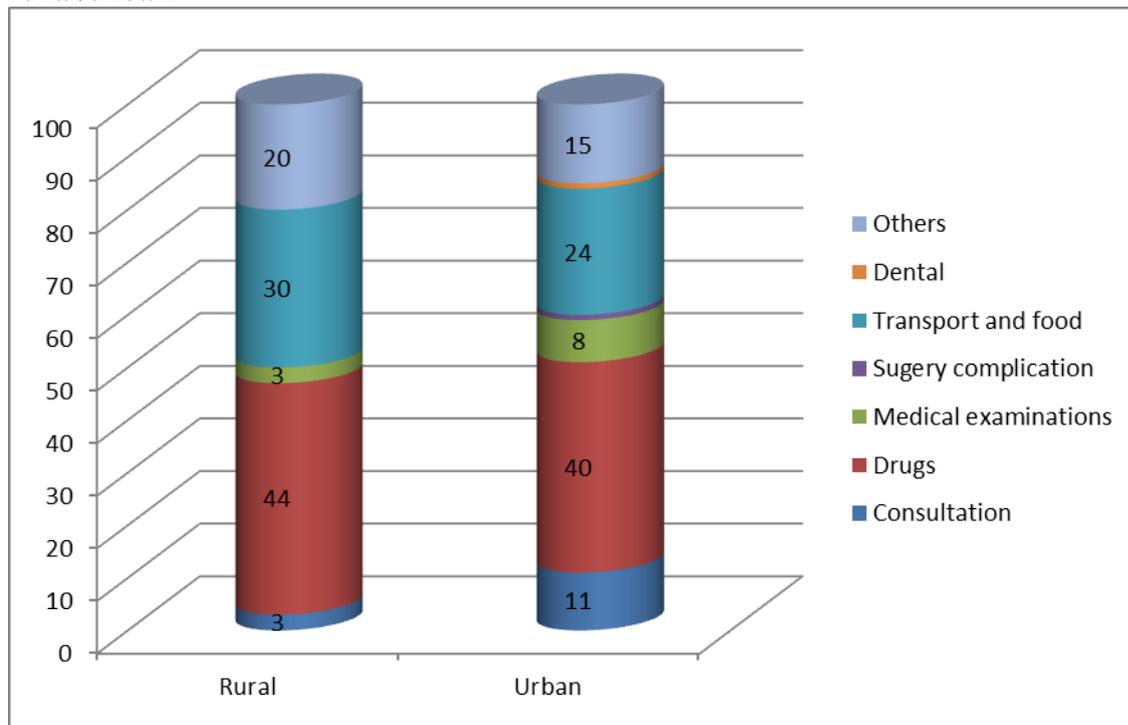
11.7 Type of service distribution for health care spending, by household expenditure decile

The service distribution for health care spending varied modestly across household expenditure decile (Figure 11.12). There are no clear trends across the deciles, however, other than those in lower deciles spending a smaller proportion of their health expenditures on outpatient services, perhaps due to the availability of free services in public clinics.

Figure 11.12 Distribution of expenditures by inpatient and outpatient, 2014
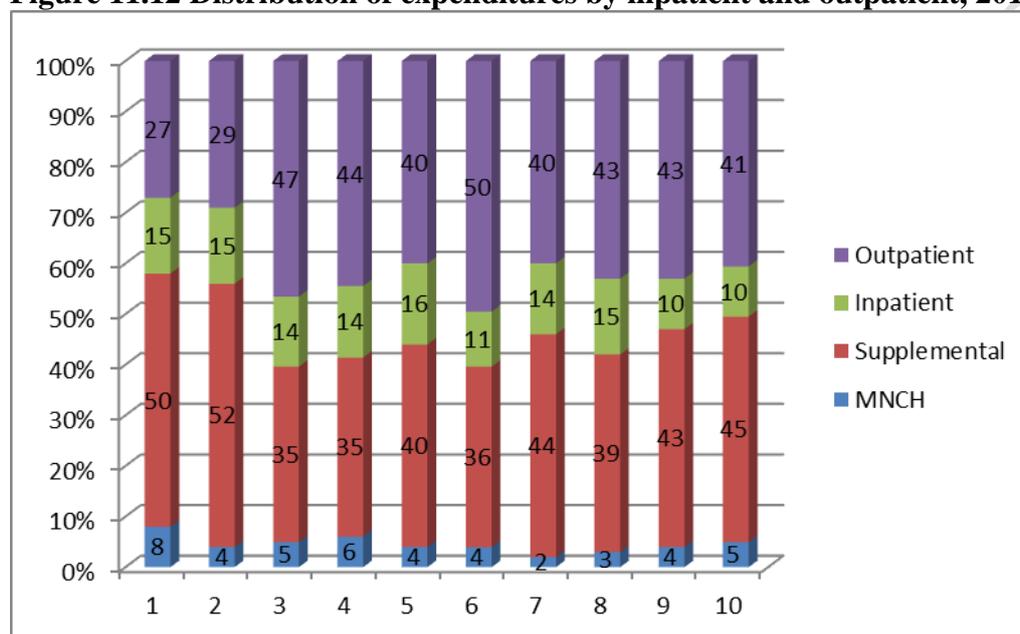
11.8 Household health expenditure on supplementary services

This section narrates some of the supplementary expenditures that households spent on, apart from those that were direct health care interventions. These expenditures include dental care, food and herbal supplements, family planning commodities and services, vitamins and other supplementary expenditures as shown on Table 11.1 below.

Table 11.1 Household supplementary out-of-pocket health expenditure by health care intervention

	Individuals	Total supplementary expenditure	Percent
Routine medication	525,827	256,564,691	52
Dental care	13,828	5,678,161	1
Food and herbal supplements	30,075	20,863,462	4
Family planning commodities & services	201,413	71,334,238	14
Dewormer	16,404	2,055,186	0
Vitamin supplements	59,855	49,200,943	10
Vaccines	20,418	6,027,862	1
Bed nets	8,998	2,692,679	1
Other	207,629	79,747,080	16
Total	1,013,285	494,164,303	100

The results show that most of the expenditure, representing about 52 percent of total supplementary expenditure, was spent on routine medication. This was followed by expenditure on family planning commodities and vitamin supplements, with 14 percent and 10 percent respectively.

Table 11.2 Household health out-of-pocket supplementary expenditure by rural/urban, formal/informal, 2014

		Supplementary monthly expenditure		
		Population	Amount (ZMK)	Percent
Region	Zambia	1,013,285	494,164,302.6	100.0
	Rural	545,695	159,977,772.5	32.4
	Urban	467,590	334,186,530.1	67.6p
Province	Central	121,875	32,730,849.5	6.6
	Copperbelt	117,892	95,108,870.9	19.2
	Eastern	143,531	21,214,574.0	4.3
	Luapula	117,615	49,512,211.3	10.0
	Lusaka	213,451	202,576,972.7	41.0
	Muchinga	77,139	14,096,778.8	2.9
	Northern	74,500	15,922,159.4	3.2
	North-Western	65,514	16,326,366.6	3.3
	Southern	38,988	22,643,203.5	4.6
	Western	42,780	24,032,315.9	4.9
Formal or Informal Employment	Formal	77,152	95,727,941.0	19.4
	Informal	416,026	157,363,131.7	31.8
	Neither	520,108	241,073,229.9	48.8

When classified by rural/urban, province and type of employment, the results indicate that most supplementary expenditure was spent in urban areas, with 68 percent, compared with the 32 percent in the rural areas. The results further reveal that in terms of provinces, Lusaka Province had the highest expenditure of 41 percent and these expenditures were mostly spent in the informal sector.

Table 11.3 Household health outpatient by health care intervention

Intervention	Population with expenditure	Mean for those reporting expenditure	Total household health outpatient expenditure	Percent
Consultation	185,487	31.8	70,861,736.65	13.2
Drugs/herbs	346,226	44.3	184,128,418.54	34.3
Medical investigations	261,703	24.4	76,688,446.01	14.3
Transport costs	427,739	32.7	167,840,255.91	31.3
Other costs	68,416	44.9	36,855,847.05	6.9
Total (K)	668,147	66.9	536,374,704.16	100.0

Table 11.3 above shows that when household OOPs are broken down into the interventions, the results show that most of the expenditures were incurred on drugs/herbs, followed by transport costs, representing 34 percent and 31 percent respectively.

Table 11.4 Out-of-pocket expenditure on inpatient by health care intervention

	Population who spent during admission	Mean (considering only those reporting an expenditure)	Total Inpatient Expenditure	Percent
Consultation	84,582	8.7	8,784,194.8	11
Medical investigations	111,609	10.0	13,436,564.2	17
Drugs/herbs	116,246	8.5	11,793,606.7	15
Surgery	78,657	5.0	4,742,436.2	6
Referrals	81,084	1.4	1,336,210.9	2
Lodging, Transport costs	226,323	13.9	37,682,765.7	48
Other costs	13,707	8.7	1,431,881.9	2
Total	273,343	24.1	79,207,660.4	100

The table above shows that most of the expenses on inpatient household expenditure were on lodging and transport costs, representing 48 percent of the expenditure. This was followed by medical investigations and drugs with 17 percent and 15 percent respectively.

11.9 Household health outpatient and inpatient expenditure by socio-economic characteristics

This section provides information on household health expenditure by socio-economic characteristics in form of quintiles. Table 11.5 indicates that when household health expenditure is classified into expenditure quintile by total outpatient and inpatient

expenditure, the results show that most of the expenditure on health was incurred by the richest quintile for both the outpatient and the inpatient expenditure.

Table 11.5 Out-of-pocket spending on health care services by socio-economic characteristics

		Total outpatient expenditure	Percent	Population	Total inpatient expenditure	Percent
Expenditure Quintile	Poorest	56,595,028	11	2,618,178	2,865,404	4
	Fourth	87,197,702	16	2,803,508	3,710,060	5
	Middle	53,303,815	10	2,978,979	9,049,021	11
	Second	69,212,684	13	3,157,392	13,530,618	17
	Richest	268,426,225	50	3,370,505	49,954,364	63
	Total	536,374,704	100	15,019,071	79,207,660	100

When household health expenditure is classified by highest level of education, the results indicate that the highest out-of-pocket expenditure was spent by those who have attained at least secondary level of education, followed by those with primary education level (Table 11.6). The results were consistence for both the inpatient and outpatient expenditure.

Table 11.6 Out-of-pocket spending of health care services by education

		Total category pop	Outpatient Expenditure	Percent	Inpatient Expenditure	Percent
Highest Level of Education	Never	2,381,825	31,295,271	6.1	6,741,110	8.9
	Don't know	540,844	5,252,830	1.0	719,112	0.9
	Pre-school	251,768	6,041,983	1.2	1,419,744	1.9
	Primary	6,443,093	187,114,020	36.5	25,037,111	33.0
	Vocational	48,392	9,842,901	1.9	136,041	0.2
	Secondary	3,652,431	190,304,832	37.2	31,977,062	42.2
	College	558,141	69,931,105	13.7	3,650,884	4.8
	University	139,150	12,399,498	2.4	6,146,035	8.1
	Total	14,015,644	512,182,440	100.0	75,827,098	100.0

When the data were segregated by age groups and gender, the results indicate that most expenditure was incurred by the age group above 50 years of age and women respectively as shown in Table 11.7 below.

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Table 11.7 Household out-of-pocket health expenditure on health care services by demographic characteristics

		Percent	Total Annual Outpatient Expenditure	Total Annual Inpatient Expenditure
Age (5 year groups)	0-4	14.7	33,057,577.3	5,727,312.2
	5-9	14.9	27,010,667.2	4,541,573.5
	10-14	13.8	15,330,918.0	2,370,752.1
	15-19	11.4	26,560,605.5	3,093,367.2
	20-24	9.5	44,803,182.0	3,839,815.1
	25-29	7.5	35,545,732.4	2,666,269.4
	30-34	6.5	50,263,223.4	10,991,845.4
	35-39	5.5	47,139,293.2	7,942,084.6
	40-44	4.3	27,245,745.3	5,398,631.0
	45-49	2.9	56,166,718.3	7,146,067.2
	50+	9.0	173,251,041.5	25,489,942.8
Sex	Male	48.9	223,369,139.7	39,421,070.3
	Female	51.1	313,005,564.5	39,786,590.1
	Total	100.0	536,374,704.2	79,207,660.4

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11.10 Per capita and mean health expenditure

Total health expenditure is estimated at about K1.3 billion per year. Per capita national health expenditure was K77 per year, but this number varies widely among the 10 provinces, from K34 in Southern Province to K173 in Lusaka Province.

Figure 11.13 Per capita health expenditure by province
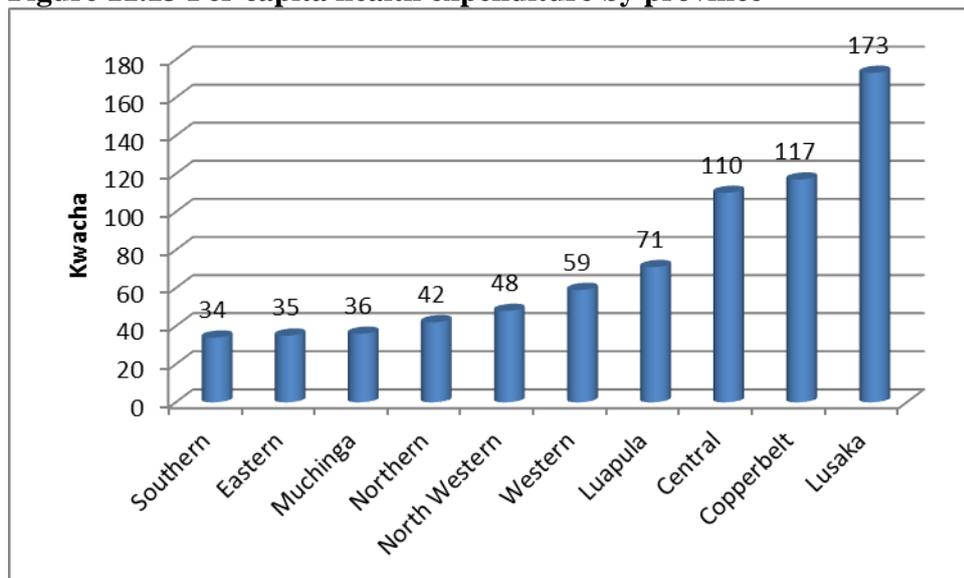
Regional per capita health expenditure varied substantially between urban and rural areas, with rural residents spending an average of K56 and urban residents spending an average of K109.

Figure 11.14 Per capita health expenditure by region
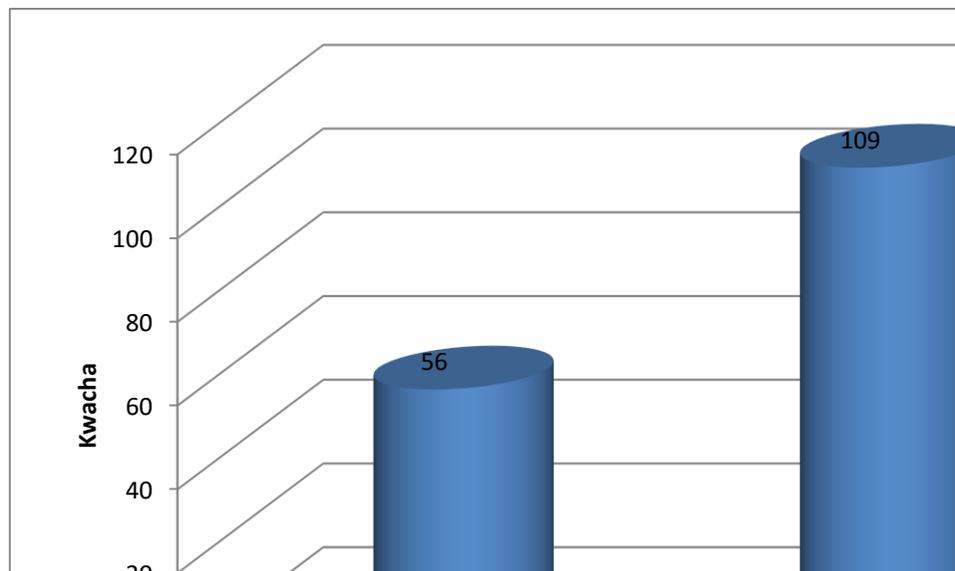
Amongst those with any health expenditures, per capita health expenditures varied widely across districts, from K259 in Eastern Province to K1,266 in Lusaka Province. The national average yearly health expenditure for those with any health expenses was K595.

Figure 11.15 Mean health expenditures by province among population with health expenditures

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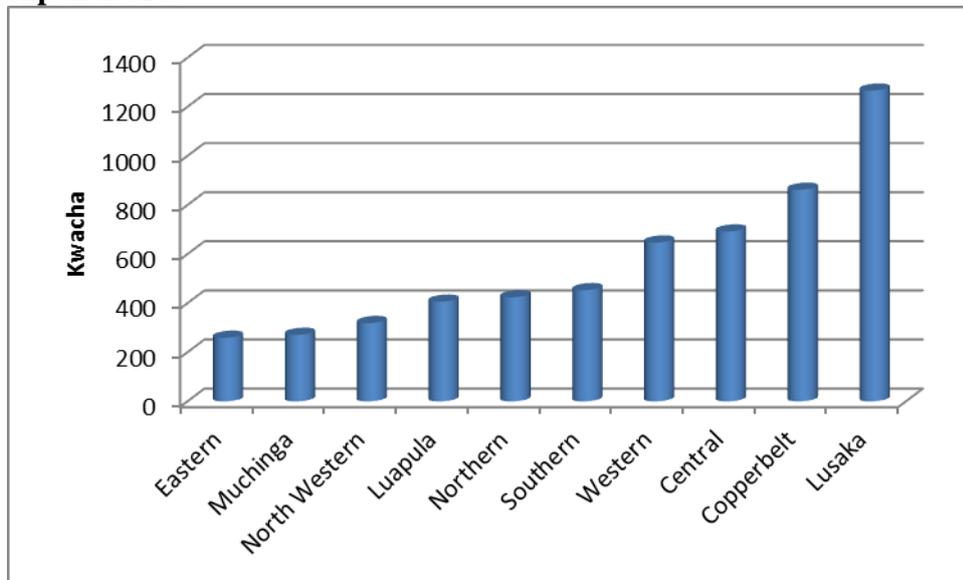
Amongst those with any health expenditures, per capita health expenditures ranged from 473 in rural areas to K746 in urban areas.

Figure 11.16   Mean expenditures by region among population with health expenses
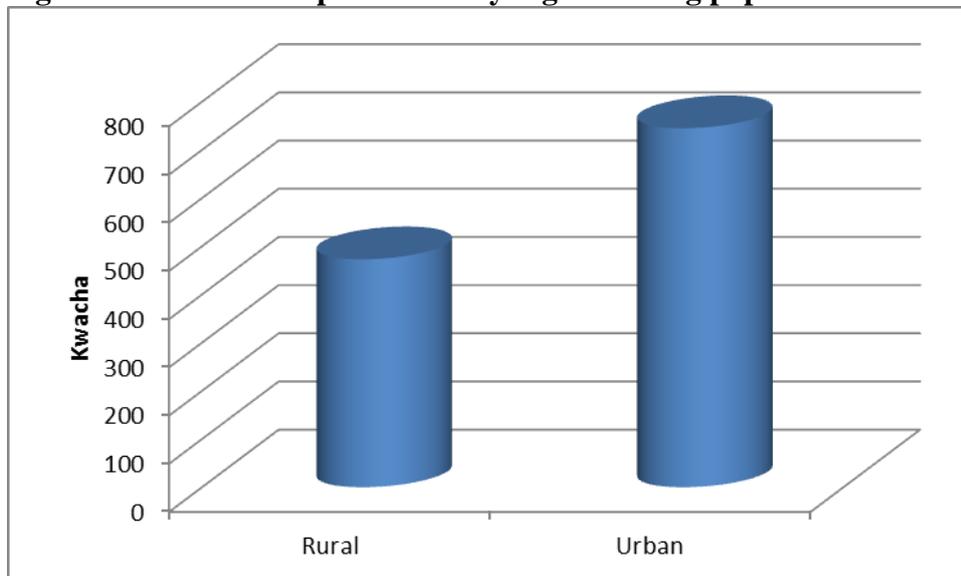
Among those in the sample with any health expenditure, the annual health expenditure per capita varies widely, ranging from K69 in the lowest expenditure decile to K2,498 in the highest expenditure decile, with an average per capita expenditure of K595. A clear income gradient is exhibited, with the top 10 percent income earners spending an average of K24,000 compared with K69 among the bottom 10 percent, in 2014.

Figure 11.17 Mean expenditure among the population experiencing health care expenses by decile
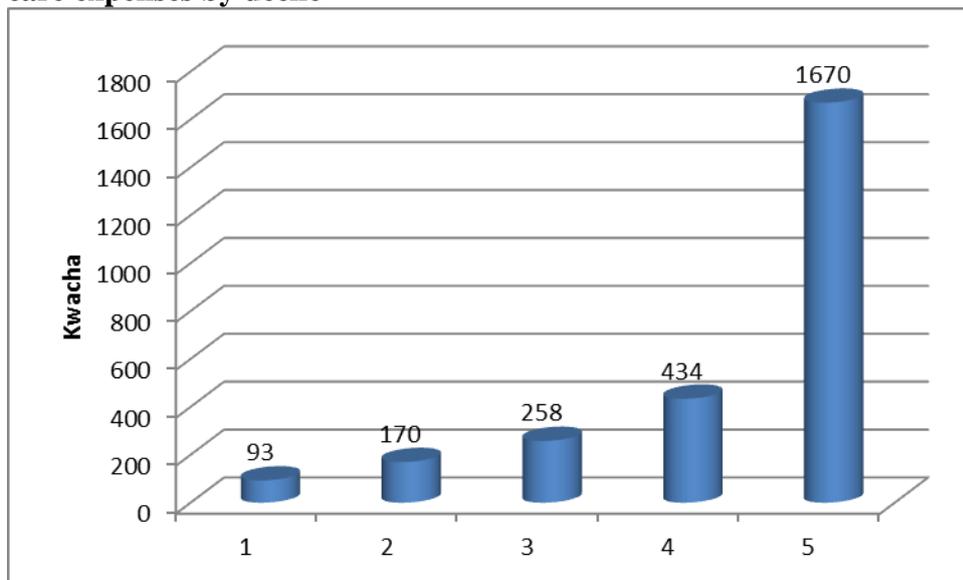
Dividing households into deciles instead of quintiles we see an even sharper income gradient, indicating the wealthier households spending far more on health care.

11.11 Maternal health expenditure

This section looks at expenditure that was incurred by those spending on Maternal Health. The data are segregated by region, expenditure quintiles, province, and inpatient/outpatient expenditure.

Figure 11.18 Household out-of-pocket Maternal Health Expenditure, Province
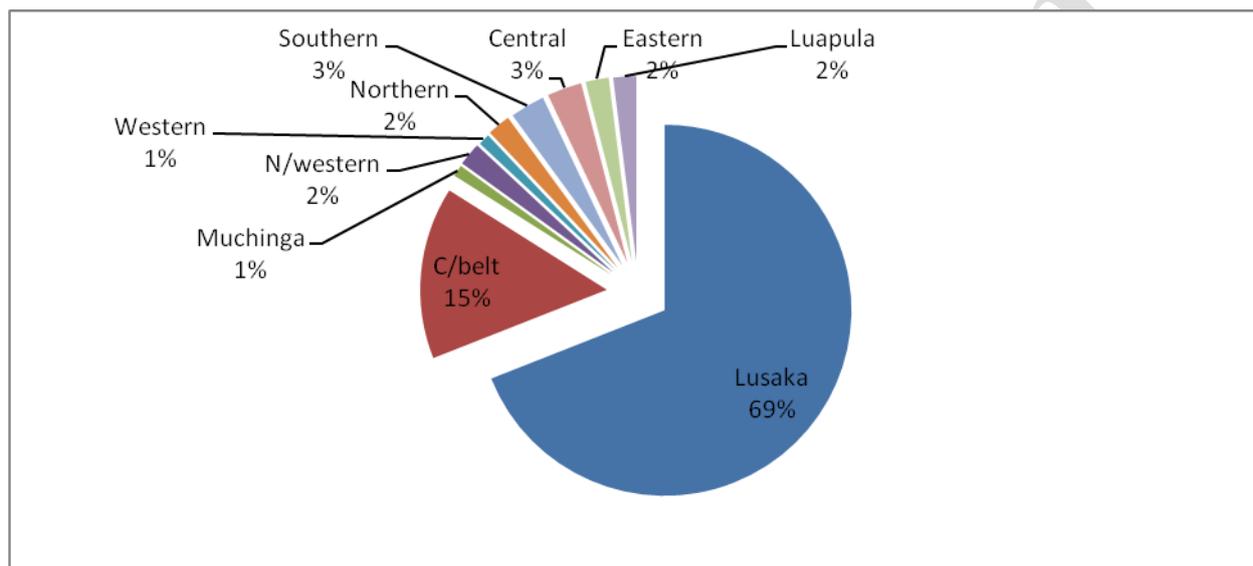
 The results show that most of the expenditures on maternal health were incurred in Lusaka Province which has a share of 69 percent, followed by Copperbelt Province which reported 15 percent. Muchinga Province was lowest with about 1 percent of expenditure on maternal health.

11.12 Maternal health expenditure by region

The regional expenditures for maternal health are disaggregated by area of residence in terms of rural – urban. The total expenditures in the tables comprise the expenditures of the sub-totals for consultation on ANC and PNC categories. The subtotals are undertaken for all the other items based on this approach.

The table and graph below show that on average over 90 percent of expenditures on consultation, medicines and supplies, and medical investigations are experienced in the urban areas. Transportation is a relatively large share of rural expenditures and comprises 27 percent. Other expenditures are significantly greater in the rural areas, accounting for 80

percent of the relative share compared with the urban areas. Overall rural maternal expenditures are 13 percent of total maternal expenditures.

Table 11.8 Outpatient maternal costs by rural/urban residence

	REGION				
Expenditure item	Rural	Percentage	Urban	Percentage	Total
Consultation	2063698.4	7.6	25234872.9	92.4	27298571.3
Drugs	361169.5	3.5	9944593.1	96.5	10305762.6
Medical investigations	276438.6	6.3	4137385.0	93.7	4413823.7
Complications	130150.4	7.3	1653053.8	92.7	1783204.3
Transportation	3108799.7	27.0	8393118.3	73.0	11501918.1
Other Costs	1435320.8	80.4	349379.8	19.6	1784700.7
Total	**7375577.5**	**12.9**	**49712403.1**	**87.1**	**57087980.5**

Figure 11.19 Outpatient maternal expenditures by rural/urban residence
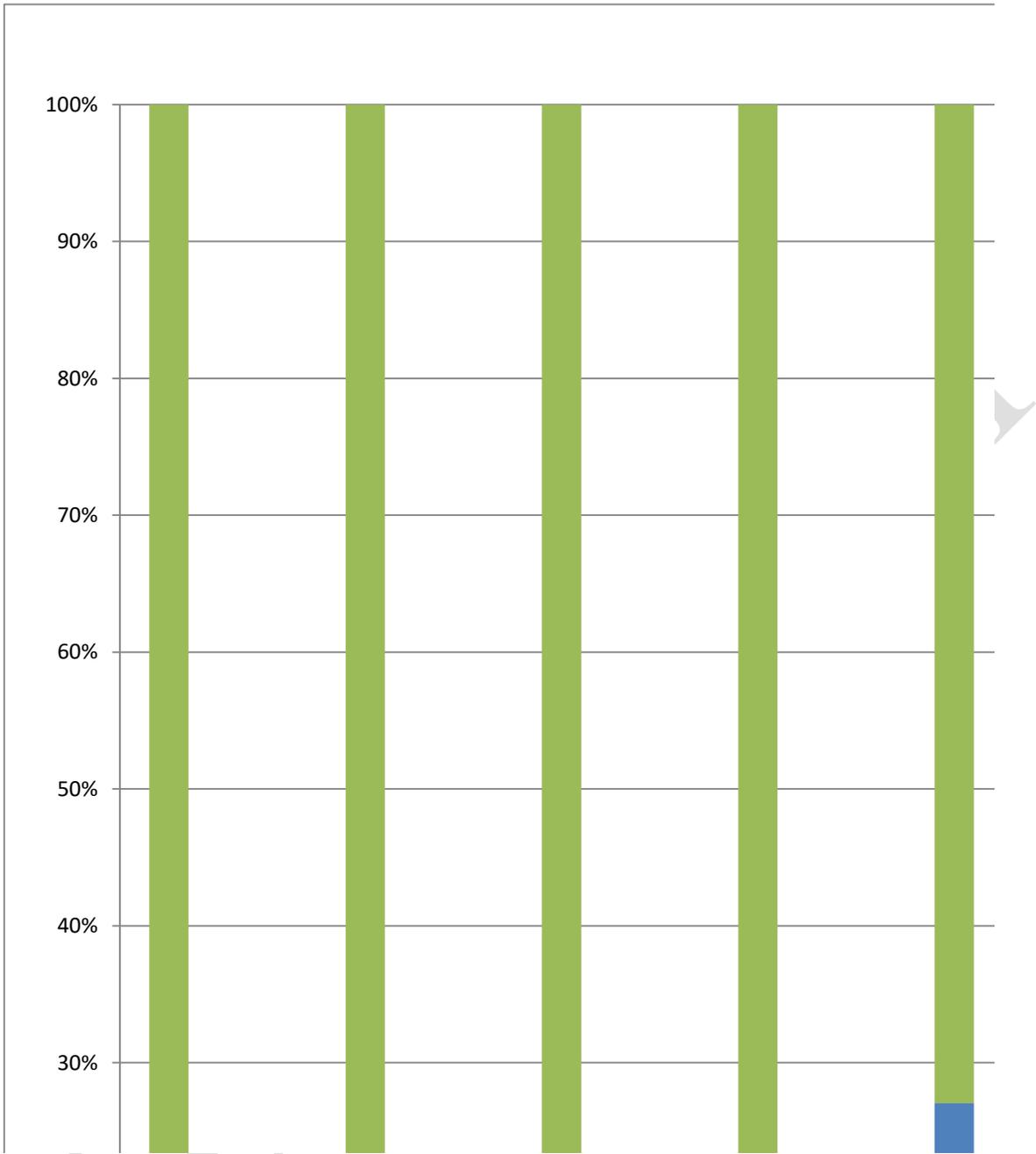
The inpatient expenditures demonstrate that rural areas spend almost 25 percent of total maternal expenditures. Urban areas spent over 85 percent on almost all categories of expenditure items other than for transport. Urban areas have a relatively lower share at 5 percent of other costs. Outpatient costs are almost fourfold the inpatient costs for maternal care.

Table 11.9 Inpatient maternal costs by rural/urban residence

	REGION				
Expenditure item	Rural	Percentage	Urban	Percentage	Total
Consultation	509,864.7	12.8	3,468,877.0	87.2	3,978,741.6
Drugs	105,418.8	4.8	2,068,627.1	95.2	2,174,045.9
Medical investigations	66,552.8	12.7	457,099.6	87.3	523,652.5
Complications	109,694.3	13.4	707,469.3	86.6	817,163.6
Transportation	1,983,497.2	38.0	3,233,228.7	62.0	5,216,725.9
Other Costs	506,218.8	94.4	30,111.3	5.6	536,330.1
Total	**3,281,246.6**	**24.8**	**996,5412.9**	**75.2**	**13,246,659.4**

Figure 11.20   Inpatient costs by rural/urban residence

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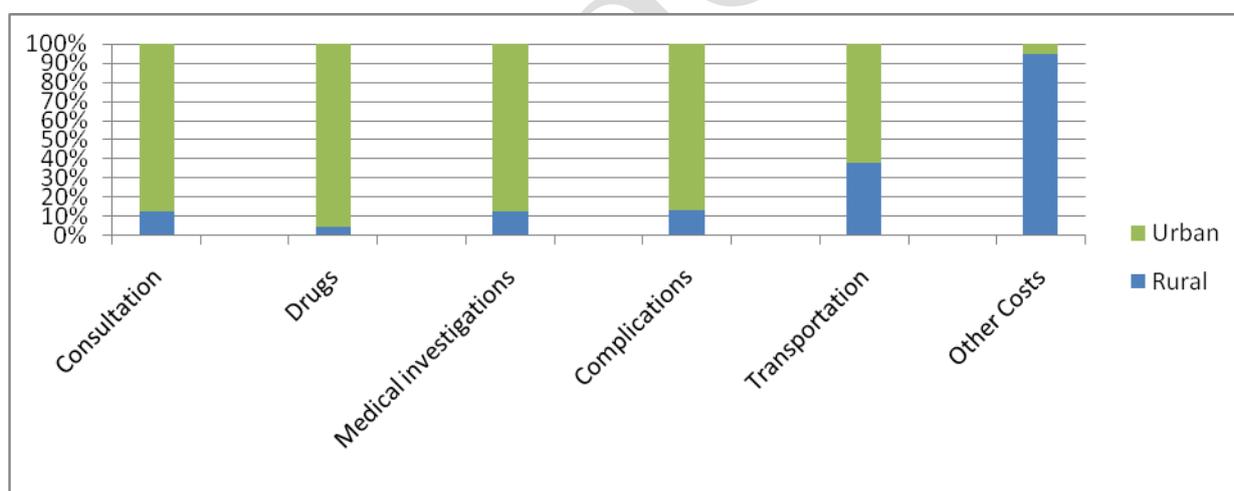
The relative expenditures by rural/urban residence for inpatient and outpatient services are shown below. The urban areas account for 90 percent or more of expenditures on consultation, medicines and medical supplies, medical investigations and complications in pregnancy including after-birth care.

Table 11.10 Inpatient and outpatient expenditures by rural/urban residence

Expenditure items	REGION				
	Rural	Percentage	Urban	Percentage	Total
Consultation	2,573,563	8.2	28,703,750	91.7	31,277,313
Drugs	466,588.2	3.7	12,013,220	96.2	12,479,808
Medical investigations	342,991.5	6.9	4,594,484	93.0	4,937,476
Complications	239,844.6	9.2	2,360,523	90.7	2,600,368
Transportation	5,092,297	30.4	11,626,347	69.5	16,718,644
Other Costs	1941540	83.6	379491	16.3	2321030
Total	10,656,824		59,677,816		70,334,640

Figure 11.21 Inpatient and outpatient expenditures by rural/urban residence
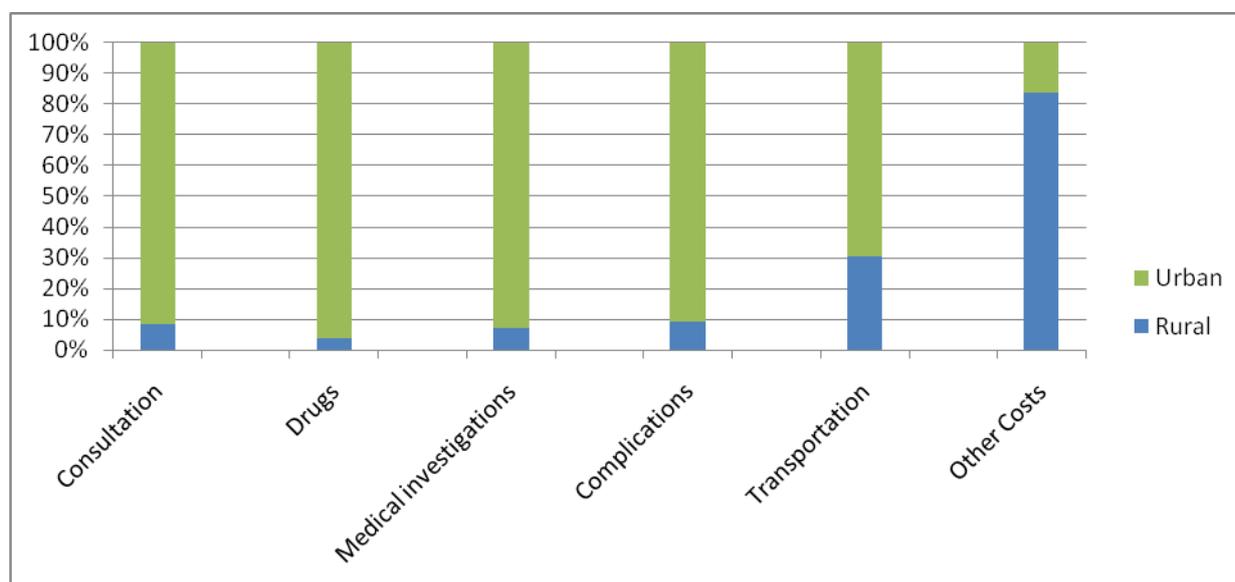
The comparable expenditures by residence in the table below show that the most important expenditures for the rural population are firstly on transport, followed by consultation. By comparison, the urban population spends mostly on consultation, followed by expenses on medicines and transport in that order.

Table 11.11 Rural/urban share of total maternal expenditures for inpatient and outpatient services

EXPENDITURE ITEM	PERCENTAGE EXPENDITURES AS A SHARE OF RURAL EXPENDITURES	PERCENTAGE EXPENDITURES AS A SHARE OF URBAN EXPENDITURES
Consultation	24.1	48.1
Drugs	4.4	20.1
Medical investigations	3.2	7.7
Complications	2.3	4.0
Transportation	47.8	19.5
Other Costs	18.2	0.6

11.13 Maternal Expenditure by age group

The expenditures by age category show that the age group experiencing the highest proportion of maternal expenses was in the 30-34 age category. The sources of main expenditures incurred were on consultations, medications and laboratory investigations, as well as transportation.

Figure 11.22 Total Maternal Expenditure by Age Group
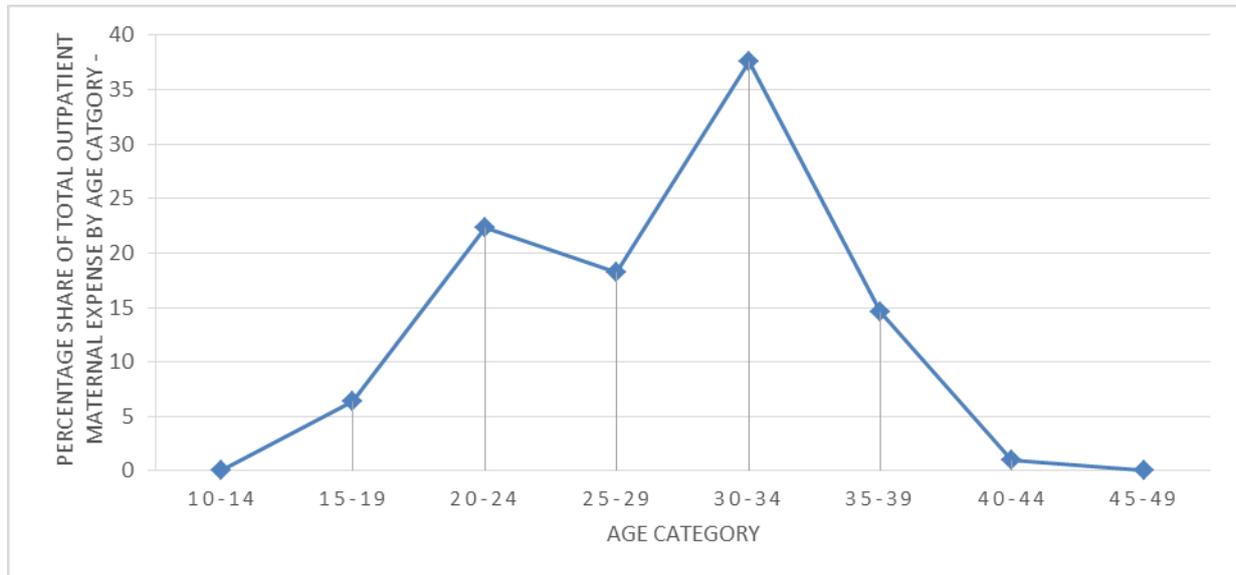
Figures 11.23 and 11.24 show the composition across the age groups of maternal health expenditures for inpatient and outpatient respectively. Notably, the amount spent on inpatient complications is highest in early pregnancy age group of 10-14 years. The amount spent on inpatient consultation is highest in the 40-49 age group. For all age groups, a significant proportion of maternal expenditure is incurred on transportation for both inpatient and outpatient.

Figure 11.23 Inpatient Maternal expenditure categories by age group
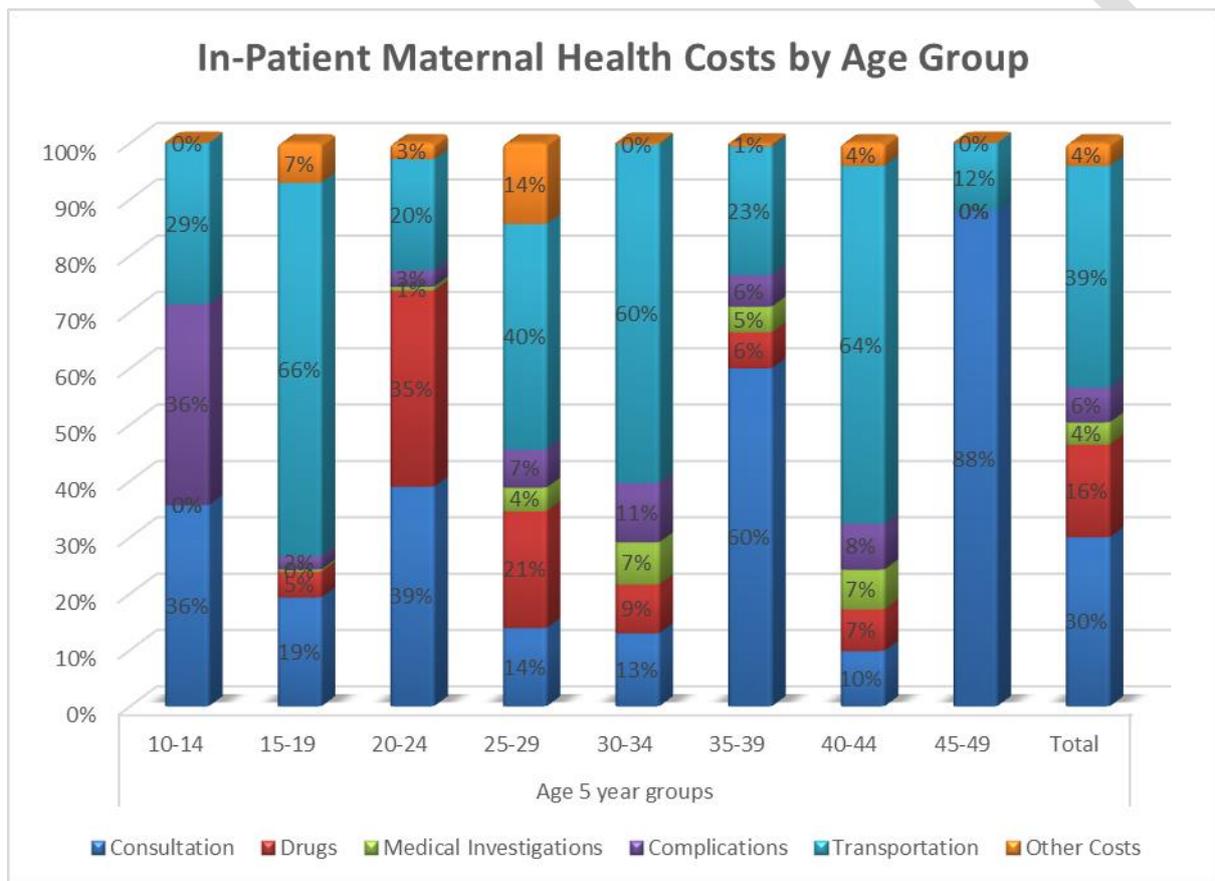
Figure 11.24 Outpatient maternal expenditure by region
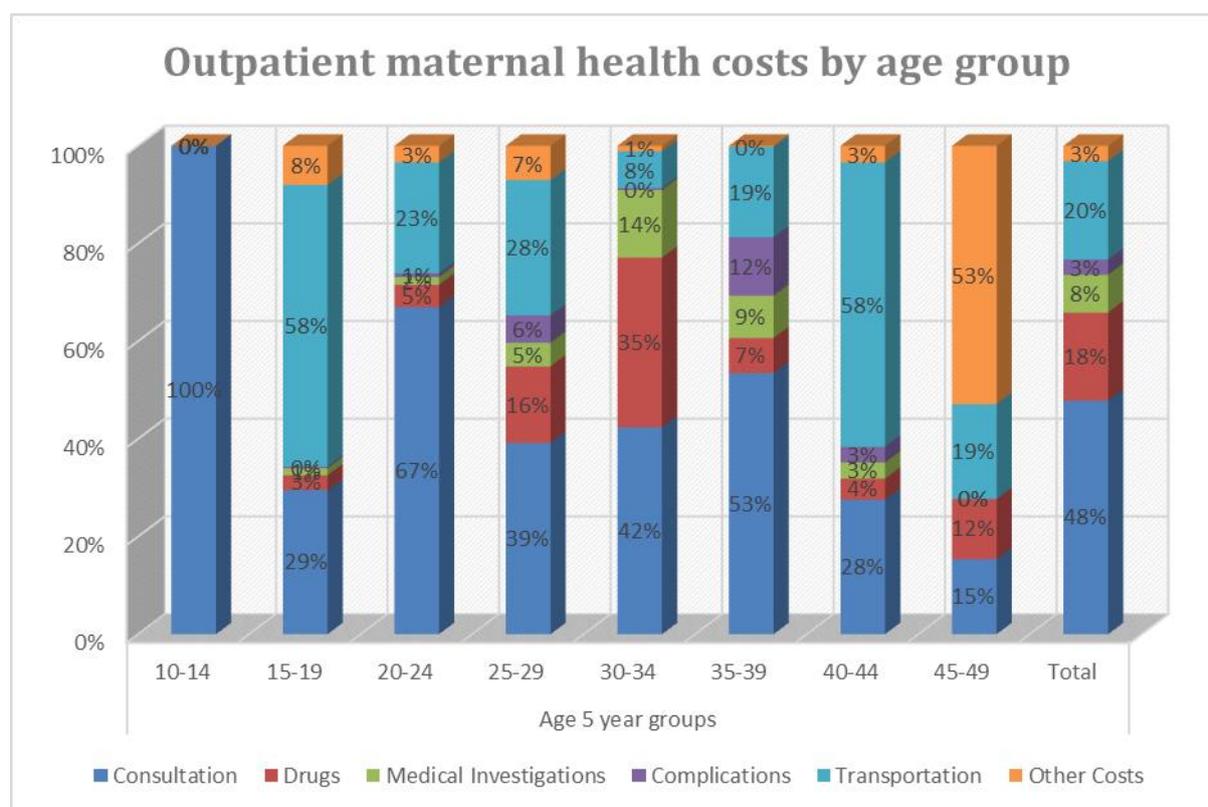
11.14 Maternal health expenditure by expenditure quintiles

Outpatient expenditures by quintile show that the richest quintile spends above 80 percent on consultation, drugs, medical investigation and complications, while the poorest two quintiles account for less than 2 percent across the various expenditure items.

Table 11.12 Outpatient Maternal Expenditure by expenditure quintile

	Expenditure Quintile					
Expenditure item	Poorest(%)	Fourth(%)	Middle (%)	Second (%)	Richest (%)	Total
Consultation	1.32	2.78	4.09	5.69	86.12	27,206,544
Drugs	0.54	1.99	1.32	4.23	91.92	11,210,066
Medical Investigation	0.19	3.11	3.11	13.03	81.27	4,412,471
Complications	1.35	3.08	1.73	12.85	80.99	1,781,401
Transportation	4.58	6.56	22.06	20.25	46.55	11,498,763
Other costs	11.77	15.03	15.72	46.6	10.88	1,784,701

Breaking down the expenditure into antenatal, delivery and postnatal, the richest quintile spent almost 80 percent on consultation, while the poorest two quintiles accounted for only 5

percent for ANC. In general the maternal expenditures are all extensively incurred by the richest quintile group.

Table 11.13 Inpatient Maternal Expenditure by expenditure quintile

	Expenditure Quintile					
Expenditure item	Poorest(%)	Fourth(%)	Middle(%)	Second(%)	Richest(%)	Total
Consultation	5.1	2.13	10.71	10.71	75.22	3,977,840
Drugs	0.73	2.16	2.44	15.27	79.41	2,170,422
Medical investigation	2.16	4.39	8.09	61.89	23.46	522,300.3
Complications	1.68	7.11	4.89	59.37	26.95	815,360.6
Transportation	4.61	10.22	14.95	18.39	51.83	5,215,374
Other Costs	10.89	63.66	9.51	14.52	1.43	536330.1

Maternal expenditure for inpatients on consultation and drugs is highly concentrated among the richest quintile. More than 50 percent of this expenditure is incurred during the antenatal stage. Expenditure on transportation follows a similar pattern with 52 percent of the total expenditure being incurred by the richest group.

11.14.1   Payment used for health care by households

Of the total population, 20 percent are waived. Of those who paid, 40 percent is in form of cash while a small (less than 5 percent) amount of the total expenditure is paid for by various insurance schemes.

Figure 11.4 Mode of payments used for health care

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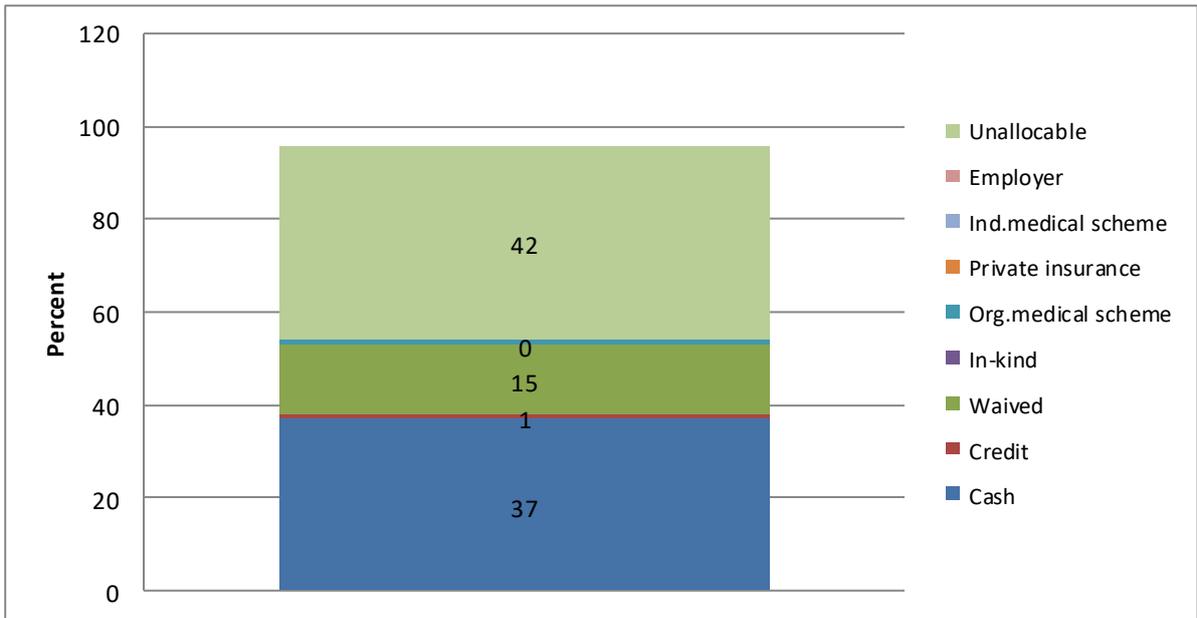
11.14.2 Payments for health care by region

Urban respondents used a wider variety of payment modes (Figure 8.5). Residents of urban areas paid for their health care with private insurance slightly more often, and had their health care expenses waived slightly less often than rural residents. Urban residents were also slightly more likely to pay in cash than rural residents.

Figure 11.5 Mode of payment for health care by region
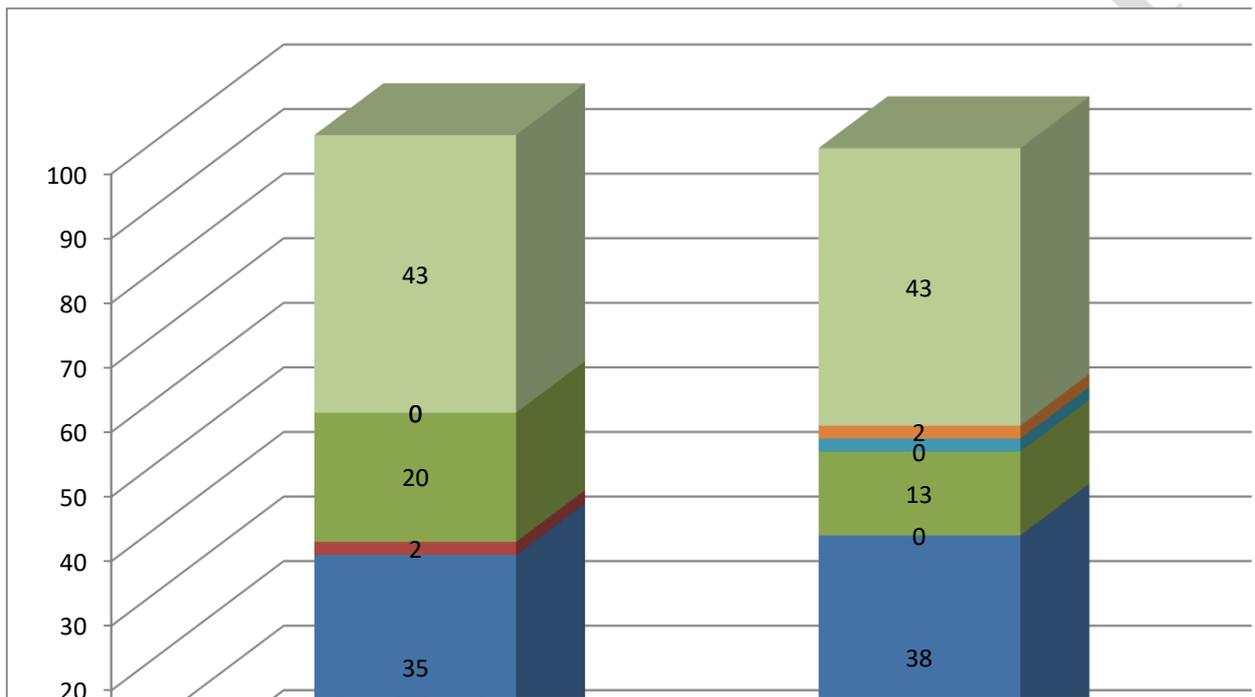
11.14.3 Payments for health care by health expenditure deciles

The lowest several deciles have much more of their expenditure waived than the rest of the population (Figure 8.6). This is almost half of the expenditure for the very lowest decile. The wealthier income groups tend to have higher expenditures.

Figure 11.6 Mode of payment for health care by health expenditure deciles
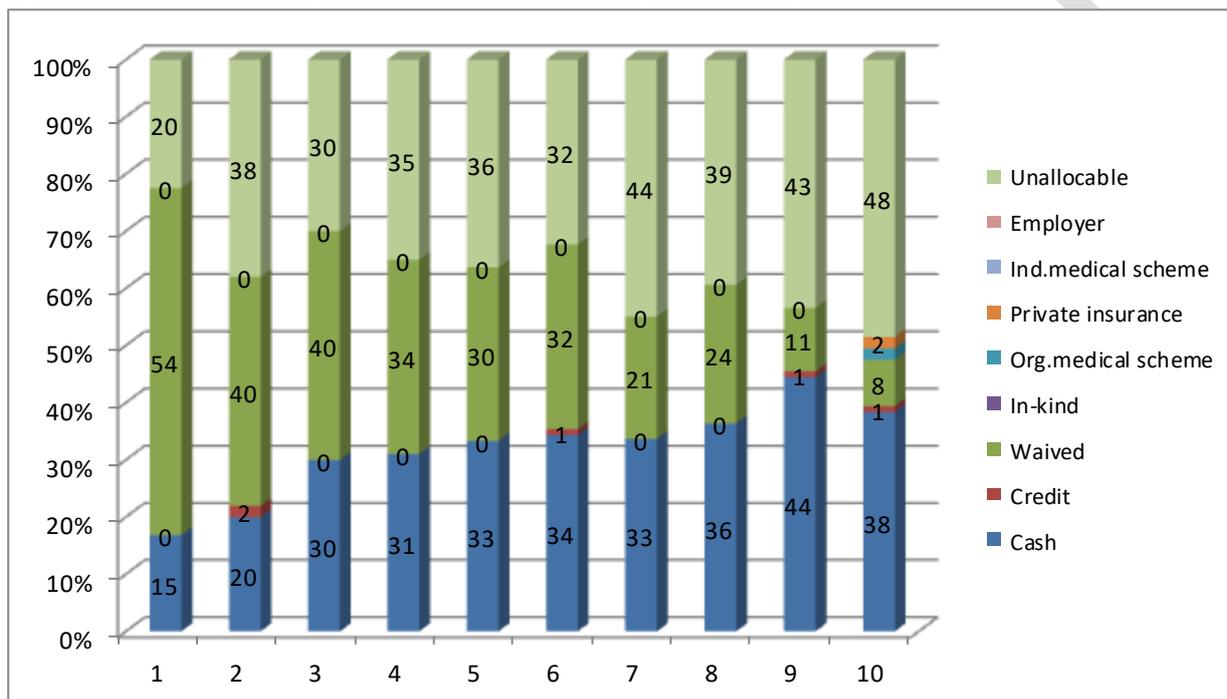
11.14.4 Payments for health care by age

Children and senior citizens have a higher percentage of their total health care expenditure waived compared with adults of working age (Figure 8.7). Private insurance is higher for infants but relatively negligible except for a small percentage of young adults.

Figure 11.7 Mode of payments for health care by age
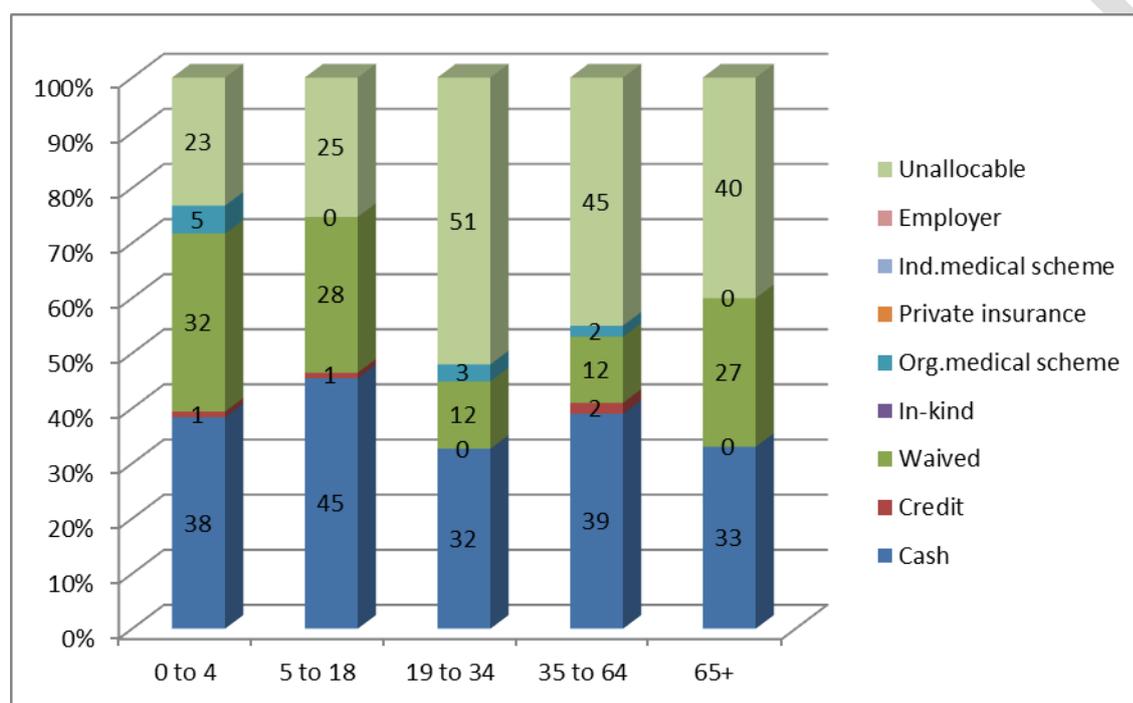
11.15 Financial accessibility

This indicator serves to highlight the exposure of households to health expenditure induced impoverishment.

11.15.1 Health expenditure as proportion of income

Figure 8.8 below shows the share of health expenditures as a share of total households. The largest share of exposure is experienced by Luapula and Lusaka Provinces in which the rural based households face over 7 percent of expenditures on health as a share of total household expenditures.

Figure 11.8 Share of health expenditure to total expenditure at household level
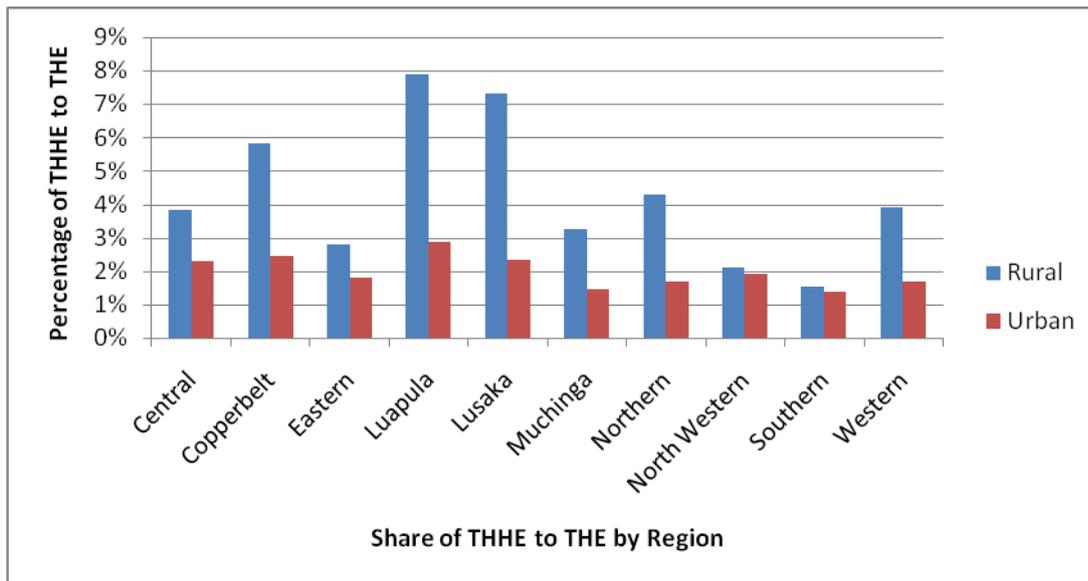
Note: THHE = Total Household Health Expenditure; THE = Total Household Expenditure

The next in this regard are Copperbelt and Northern Provinces in which the rural households face over 4 percent. The urban areas which are relatively better insulated face a maximum of about 3 percent in all provinces.

Figure 8.9 Percentage of expenditure on health by Household expenditure quintile
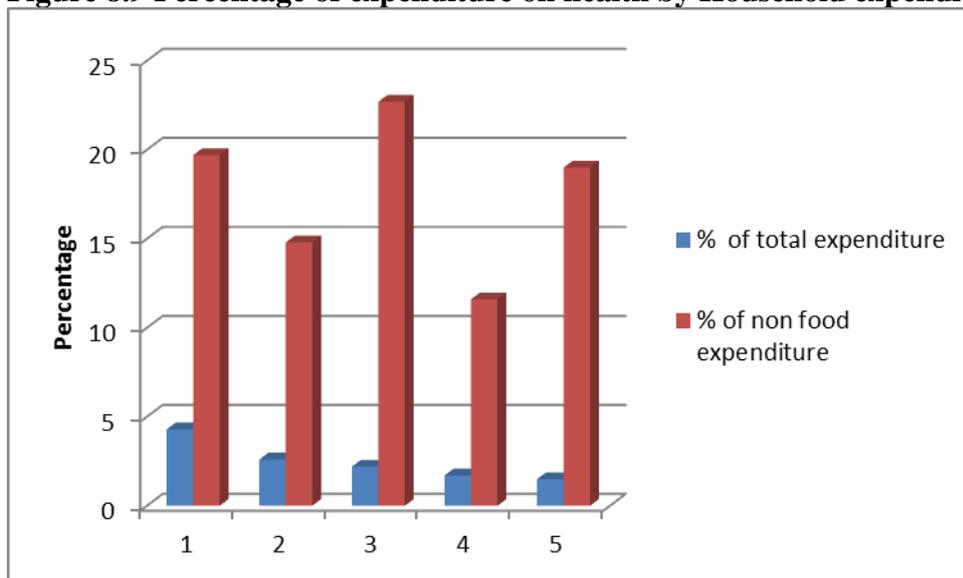
The mean percentage of non-food household expenditure on health was much higher in rural areas (25.0 percent) than in urban areas (8.0 percent).

Figure 8.10 Percentage of health expenditure by rural – urban residence
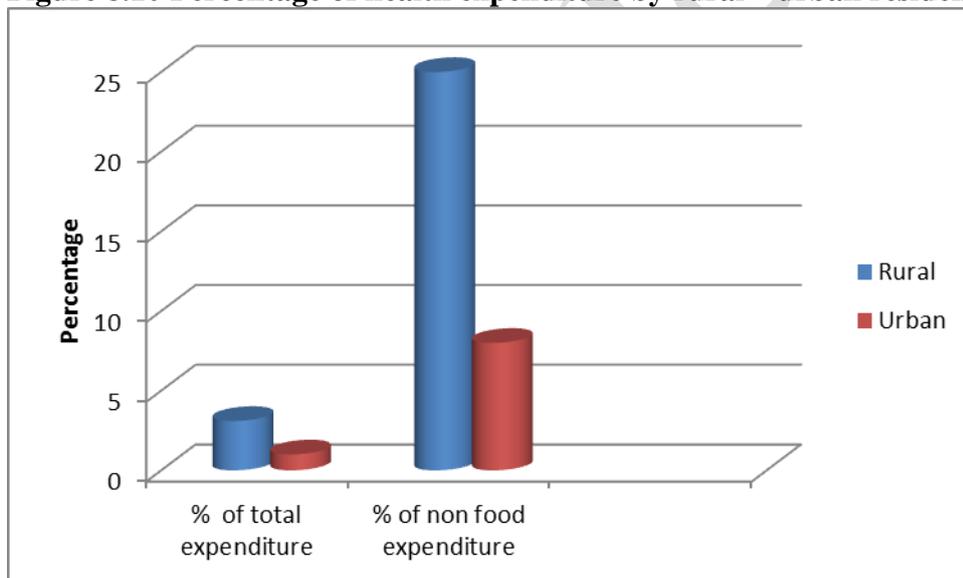
11.15.2 Percentage of household expenditure spend on health, by household expenditure decile

The mean percentage of non-food household expenditure varied substantially by household expenditure decile from 5.7 percent in the 8th decile to 26.8 percent in the 6th decile. There was no clear relationship between increasing decile and mean percentage of non-food household expenditure. However, there was a clear relationship between increasing

expenditure decile and decreasing mean percentage of total household expenditure, from 5.4 percent in the 1st decile to 1.6 percent in the 10th decile.

Figure 11.11 Expenditures on health by expenditure decile
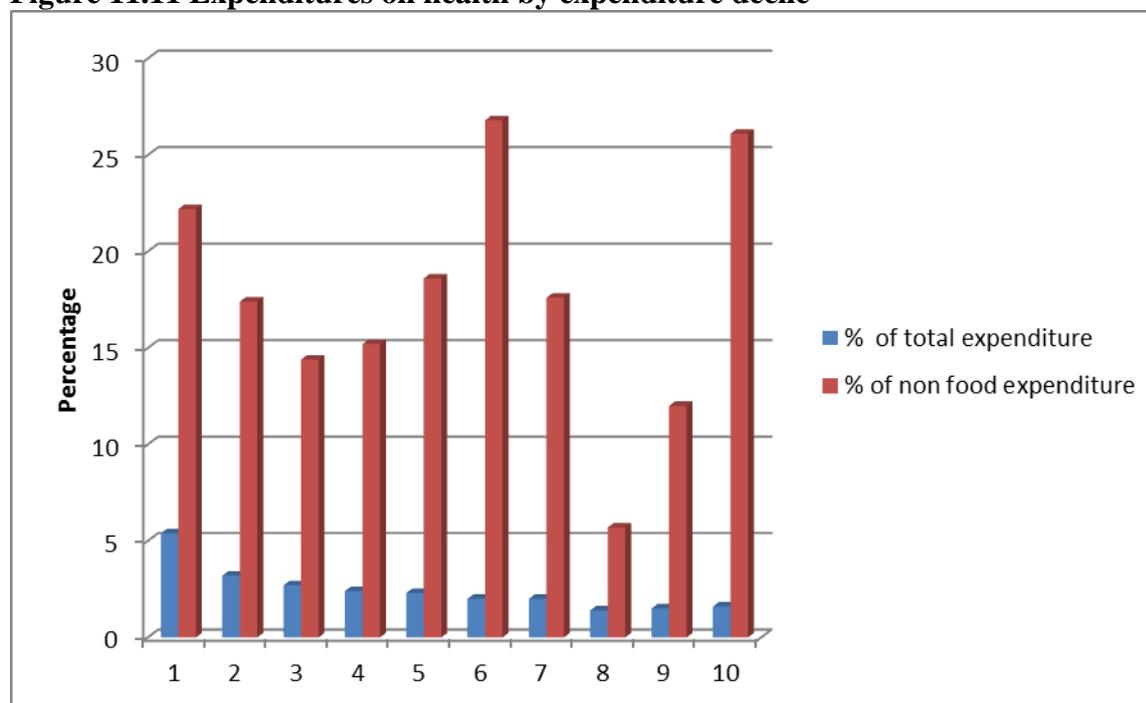
11.16 Catastrophic health spending

Part of the overall objective of universal health coverage (UHC) is to minimise and eliminate the risk of financial ruin by providing financial risk protection. Exposure to financial ruin, or lack of access to health care due to financial cost, is a key determinant in constraining universal access. This subsection highlights indications of the financial risks households face in seeking health care and accessing health care. Following the World Health Organisation (WHO, 2005), catastrophic payments for health is defined as health expenditure exceeding 40 percent of the household's non-food expenditures, i.e. of total expenditures after adjusting for expenditures on food.

11.16.1   Households with catastrophic payments by province

In 2014, the percentage of households experiencing catastrophic health payments ranged from 3.6 percent in Lusaka Province to 9.3 percent in Western Province (Figure 8.14). This percentage was over 2 percent higher in Western Province than in the next highest ranking provinces, Northern and Eastern (both 7.2 percent). The provinces with the lowest rates of

these events were Lusaka, Copperbelt, and Southern (3.6 percent, 3.9 percent, and 4.1 percent, respectively). At the national level, 5.7 percent of households were met with a catastrophic payment in the last year.

Figure 11.14 Households with catastrophic payments by province
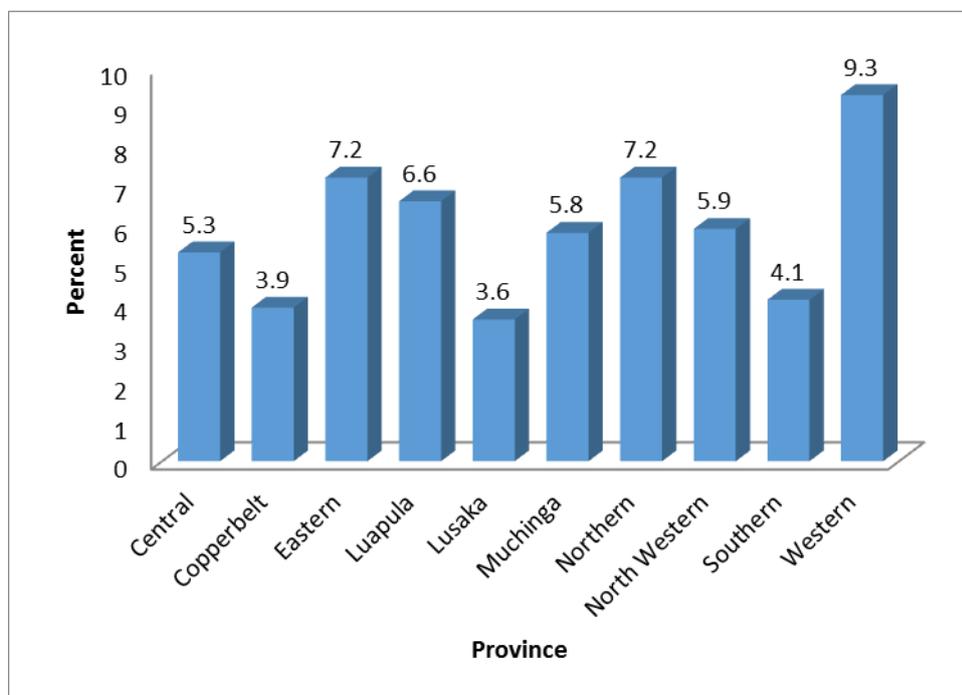
The proportion of households that faced catastrophic health care expenses varies from a low of 2.3 percent in Lusaka Province to nearly 10 percent in Western Province. The prevalence of catastrophic health care payments remains high especially in rural and poor parts of the country.

11.16.2   Households with catastrophic payments by region

Proportionately more households in urban areas experienced significantly lower (3.0 percent) rates of catastrophic health payments in 2014 than households in rural areas (7.7 percent).

Figure 11.15 Households with catastrophic payments by rural/urban area
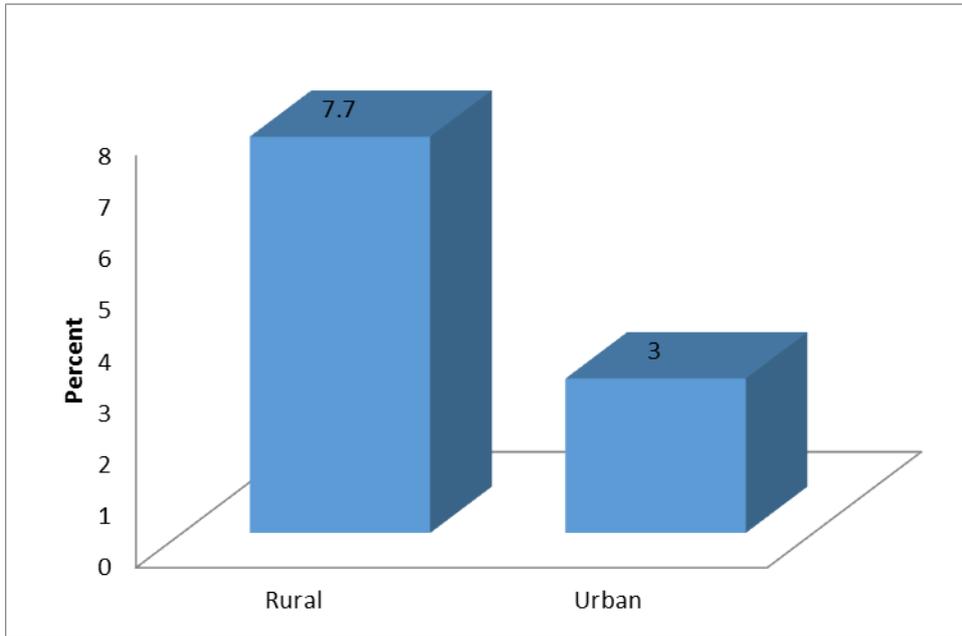
11.16.3 Households with catastrophic payments by household expenditure

In Figure 8.16, the national average prevalence of catastrophic payments is 5.6 percent. Further, the figure shows the prevalence of catastrophic health expenditure by various expenditure groups by dividing the entire household sample into 5 quintiles based on their annual total expenditure.

Figure 11.16 Households with catastrophic payments by quintile
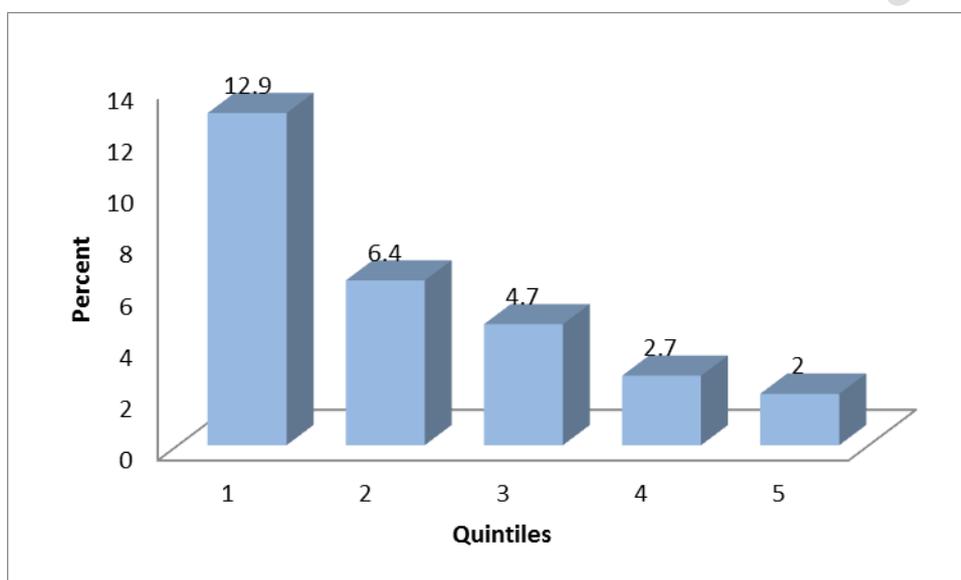
The poorest two quintiles suffer catastrophic health expenditures of about 20 percent compared with richest quintiles at almost 5 percent.

11.17 Summary

This chapter presents comprehensive data on household out-of-pocket health expenditure. During the year 2014, the total population of Zambia of approximately 15 million people spent an aggregate of K1.2 billion on health care related services and products. Out of the ten provinces, Lusaka Province and Copperbelt Province together accounted for about 64 percent of total household health care spending, showing that a small proportion of the population accounted for a disproportionate share of total health care expenses.

The mean expense per person with an expense was K545 in 2014. The median expense was much lower at K321, which suggests a highly skewed distribution of health care expenditure. Hospital inpatient care accounted for the largest share of total health care expenses (36.7 percent), and another 20.1 percent of the total was for office-based medical provider services.

Nearly K500 million was spent on supplemental health care which represents a range of health expenditures typically including over-the-counter medicines, dental care, home-based herbal medications, vitamin supplements, bed nets, and so on. Expenditure on outpatient health care accounted for 42 percent of the total while inpatient care (admissions) expenditure accounted for about 11 percent of total expenses. The lowest percentage of expenditures (4 percent) went to MNCH.

Comparisons with other previous surveys are limited by the greater scope by which health expenditure was captured in this survey. In summary, the health expenditure data from the Zambian 2014 Health Expenditure and Utilization Survey indicate that the levels of health expenditure, proportions of people with health expenses, and sources of payment vary by type of service and by socio-demographic, geographic, employment status, and health status characteristics.

12 Private Insurance and Prepayment Financing Schemes

12.1 Introduction

Health Care Financing (HCF) traditionally refers to four basic functions. These are resource mobilisation, pooling of resources, purchasing of health care services and service delivery. The first three functions are organised in order to fulfil the final and fourth function which consists of service provision. HCF is associated with having a multi-dimensional effect in determining the performance of the health system. It should be noted that insurance serves as one potential source of funding for health systems.

The National Health Strategic Plan 2011-2015 (NHSP 2011-2015) developed by the Ministry of Health provides the strategic framework for ensuring the efficient and effective organisation, coordination and management of the health sector in Zambia. The NHSP 2011-2015 identifies inadequate funding as one of the major challenges the health sector is facing. And not surprisingly, one of the key objectives of the NHSP 211-2015 is 'to mobilise resources through sustainable means and to ensure efficient use of those resources to facilitate the provision of quality health services' with a key strategy of 'exploring ways of raising health finances including private public partnerships (PPP), private and social health insurance'.

The 2012 global national health accounts of the WHO, reveals that funding health expenditure at a global level is characterised by the following global patterns:

- Government contributed 58 percent of the Global Health Expenditure (GHE)
- Social health insurance schemes covered 25 percent of Global Health Expenditure
- Private health expenditures as share of total health expenditures (THE) accounted for 51.7 percent; and
- Out-of-pocket (OOP) expenditure as part of private health care expenditures accounted for 49.7 percent.

In Zambia, the health sector has, over the years, been financed mainly through public finance, donors, household out-of-pocket and employers as seen in Figure 12.1. The government as a source of funding constitutes the greatest proportion of total expenditure on health, with an

average contribution of 48.5 percent over the period 2003 to 2010. Donors and households are in second and third place, accounting for averages of 39.5 percent and 8.8 percent respectively. The 2010 World Health Report (p. 42) indicated, "It is only when the reliance of direct payments (OOP) falls to less than 15-20 percent of the health expenditures that the incidence of financial catastrophe routinely falls to negligible levels. Over the years, there has been a steady increase in government health expenditure and decline in household health expenditure. (National Health Accounts 2007 – 2010).

Figure 12.1 Percentage distribution of real national health expenditure by financing sources, 2003 - 2010
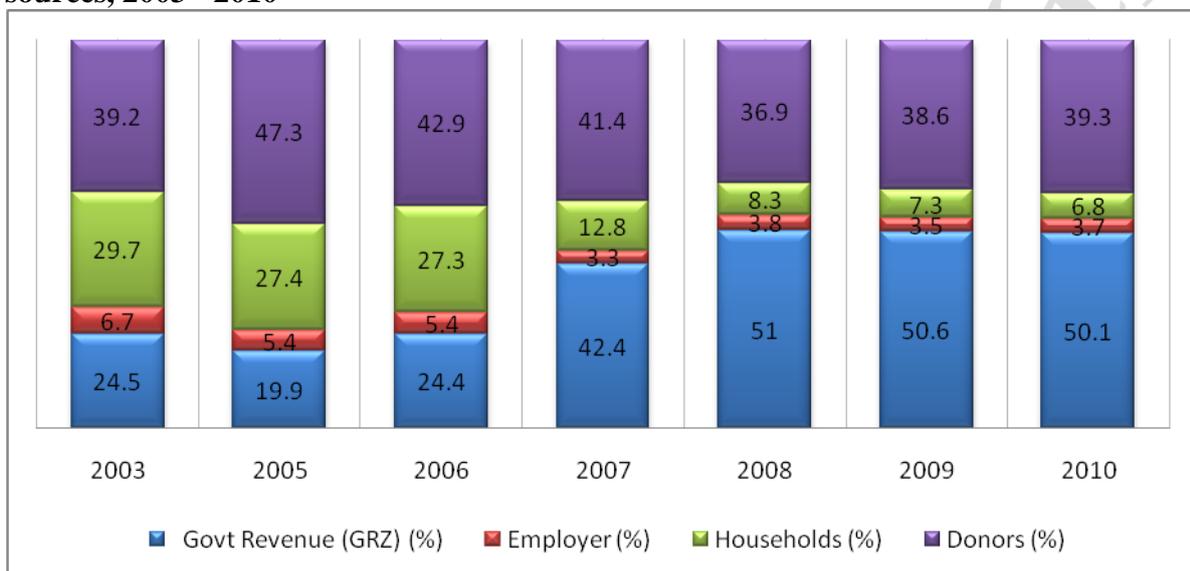
Source: 2007-2010 NHA survey data

Zambia has no compulsory health *insurance* as a source of funding for the health sector, however there are private health insurance firms that offer insurance to individuals and companies. This insurance cover is more or less voluntary for both the formal and informal sectors.

This chapter presents results on health insurance coverage in Zambia by social and demographic characteristics of the insured and the uninsured population. This is to help identify whether the insurance coverage can be linked to these characteristics. By simple definition, health insurance is insurance against the risk of incurring medical expenses among individuals

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The survey asked respondents to provide information on whether they are covered by any form of insurance or prepayment scheme, the number of beneficiaries under these schemes and the type of services are being covered.

There are four prepayment methods that are discussed in this chapter as being the most prevalent in Zambia. These are government facility high cost scheme, private facility medical scheme, private health insurance and employer based scheme as shown in Table 12.1.

Table 12.1 Prepayment and Insurance Schemes, 2014

Type of Scheme	Description	Funding Source	Management
Government facility high cost scheme	A voluntary medical scheme that is available at government run health facilities for individuals and employees	Premium payment from individuals or employers	Public Hospital Management Board
Private facility medical scheme	A voluntary medical scheme that is available at privately run health facilities for individuals and employees	Premium payment from individuals	Private Hospital Management Board
Private Health Insurance	Insurance schemes where a policy holder agrees to make payments for coverage under a given insurance policy.	Premium payment from individuals	Commercial company
Employer Based Scheme	Any group scheme managed and operated by an employer other than a government or private for-profit company.	Premium payment from employer and employees	Employer

12.1 Insurance and Prepayment Scheme coverage by region and province

Table 12.2 shows that only about 3.9 percent (591,558 individuals) of the total population of 15,019,071 has some form of health cover. A larger proportion, 96.1 percent of the population, is without any form of insurance cover. Results show that insurance coverage is higher (8.8 percent) among urban residents, as opposed to rural residents at 0.5 percent.

Table 12.2 Percentage Distribution of Health Cover by Region, 2014

Region	Covered		Not Covered		Total	
	Number	Percent	Number	Percent	Number	Percent
Zambia	591,558	3.9	14,427,512	96.1	15,019,071	100.0
Rural	45,912	0.5	8,738,422	99.5	8,784,334	100.0
Urban	545,647	8.8	5,689,090	91.2	6,234,736	100.0

Figure 12.2 shows that Lusaka Province has the highest coverage with nearly one in ten individuals (9.4 percent of the population) covered, while the lowest coverage is in Eastern Province and Western Province where only 0.5 percent of the population have some form of insurance cover.

Figure 12.2 Percentage distribution of covered population by region and province, 2014

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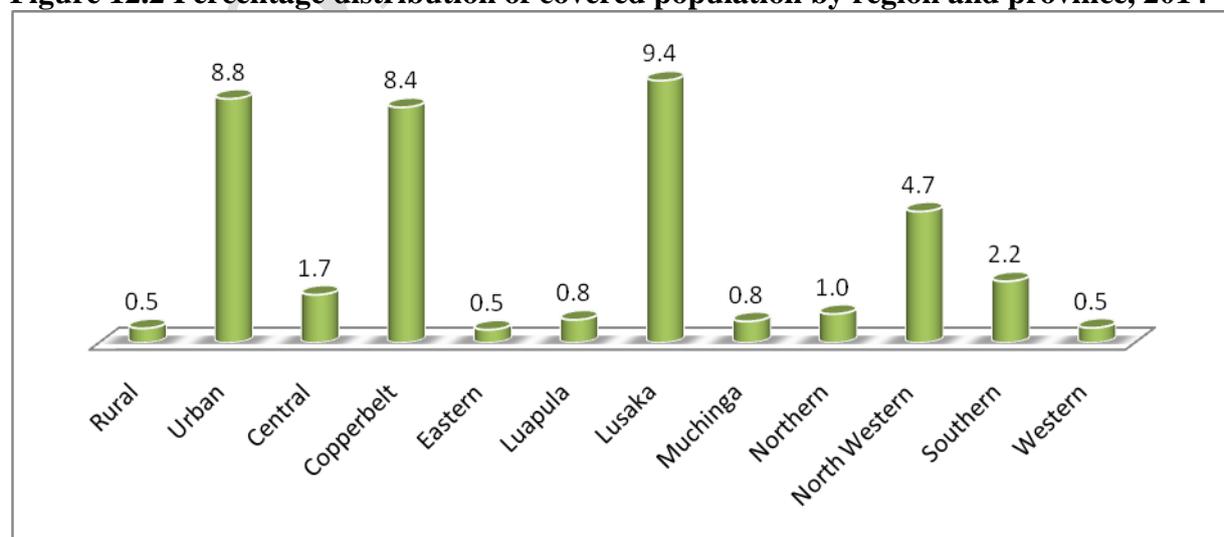
There are cases where the covered population has more than one form of cover. Figure 12.3 shows that the most common form of cover is the employer based scheme which represents 43.8 percent of the total responses of the covered population. This form of cover is higher in Lusaka Province, North-Western Province and Southern Province at 42.5 percent, 51.8 percent and 60.9 percent respectively. However, for Luapula Province the most common form of cover is government high cost scheme at 39.3 percent. For Eastern Province and Western Province the most common form of cover is private facility medical scheme, at 44.6 percent and 35.6 percent respectively.

Figure 12.3 Percentage distribution of insured population by type of health coverage, region and province
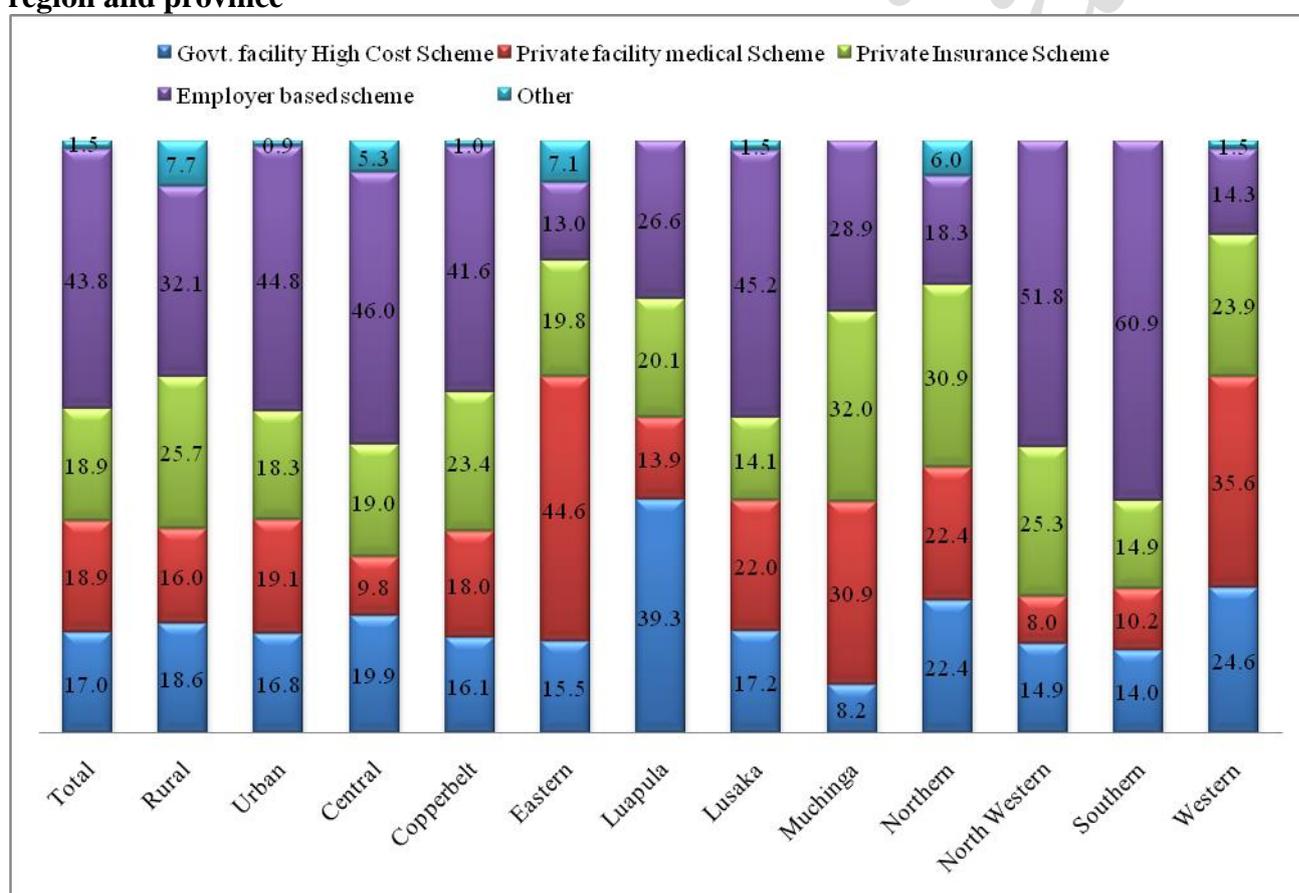
12.2 Payments of contributions for insurance and medical schemes

The mode of contributions that the covered population makes as prepayment for insurance cover is shown in Table 12.3. This shows that 49.8 percent of the total contributions are made through the household head, or spouse, followed by employers at 24.0 percent, and the least

being through out-of-pocket at 3.5 percent. The survey also shows that contributions through household head or spouse in most provinces is all above 50 percent.

Table 12.3 Percentage Distribution of mode of contribution for the Prepayment Medical Scheme for individuals covered.

Region / Province	Household head/spouse	Employer only	Employer and self	Self Out-of-pocket	Self through employer deduction	Other
Zambia	49.8	24.0	4.1	3.5	6.5	12.1
Rural	59.6	6.5	3.8	6.7	10.5	12.8
Urban	49.0	25.5	4.1	3.2	6.2	12.1
Central	69.0	11.9	3.7	2.7	7.3	5.4
Copperbelt	47.5	29.5	3.3	3.9	6.7	9.1
Eastern	43.5	15.6	3.6	16.9	10.3	10.2
Luapula	61.1	9.1	6.5	2.6	0.0	20.7
Lusaka	43.3	27.2	5.5	2.1	5.1	16.8
Muchinga	46.0	33.9	0.0	8.3	11.8	0.0
Northern	56.4	16.6	3.1	2.3	9.4	12.2
North-Western	65.7	7.0	2.4	2.5	17.1	5.4
Southern	70.9	7.3	1.7	7.2	3.6	9.4
Western	52.8	22.1	1.5	13.7	3.0	6.9

12.3 Service coverage by type of insurance/medical scheme

Each scheme covers a range of services for its members which may vary depending on the type of scheme. These services include inpatient, outpatient, maternity, referral, ambulatory services, treatment abroad and others. Respondents were requested to provide information on the service coverage for the type of prepayment scheme that they belong to.

Results in Figure 12.4 show that inpatient service is the most common service in Government facility high cost, while the rest of the schemes have outpatient service as the most common, with an exception of Employer based scheme which has outpatient higher at 27.8 percent. The third most common service offered by all the scheme types is maternity, followed by referral, with the least being treatment abroad/others, except for Private facility medical scheme and Government facility high cost scheme which had transport as the least service covered.

Figure 12.4 Percentage Distribution of Service Coverage by Type of Insurance/medical scheme, 2014
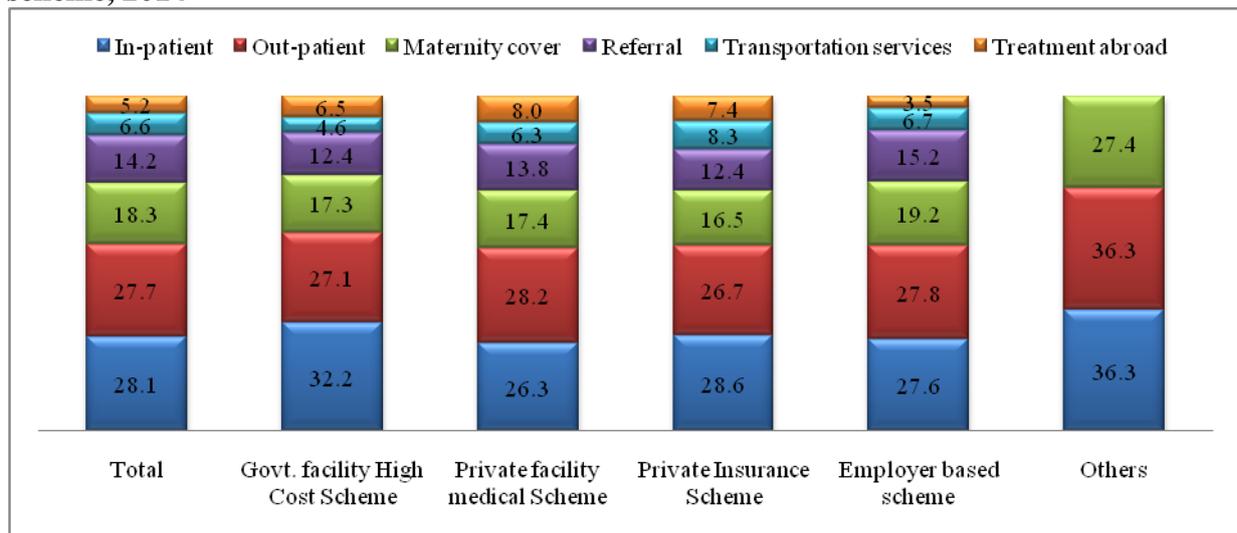
12.4 Health Insurance by health status, demographic and socio-economic characteristics

Survey results in Table 12.4 present the health insurance coverage by demographic characteristics. Proportion of insurance coverage is higher among the 25-49 age group and 50-64 age group, at 5.8 percent and 4.3 percent respectively, and is lowest among the 65 years and above age group, at 2.1 percent. Coverage for males is slightly higher than for females, at 4.0 percent and 3.8 percent respectively. In terms of marital status, a larger proportion of the cohabiting population have some form of insurance cover at 8.3 percent.

Table 12.4 Insurance coverage by demographic characteristics, 2014

Characteristics of household head		Total Population	Insured Population	Population Insured
Age group of head	All Heads	15,019,071	591,558	3.9
	0-4	391	-	0.0
	5-9	1,297	-	0.0
	10-14	3,747	-	0.0
	15-19	30,082	-	0.0
	20-24	495,017	5,175	1.0
	25-29	1,384,164	36,258	2.6
	30-34	2,132,062	107,022	5.0
	35-39	2,327,636	101,998	4.4
	40-44	2,270,154	128,946	5.7
	45-49	1,609,510	80,766	5.0
	50-54	1,390,592	64,994	4.7
	55-59	1,028,725	29,625	2.9
	60+	2,345,692	36,775	1.6
Sex of head	Male	11,862,749	521,687	4.4
	Female	3,156,322	69,871	2.2
Marital Status of head	Never Married	431,661	23,306	5.4
	Married	11,983,136	520,685	4.3
	Cohabiting	28,841	451	1.6
	Separated	245,120	5,646	2.3
	Divorced	736,773	12,323	1.7
	Widowed	1,591,697	29,149	1.8

As the education level increases, the percentage of insurance coverage also increases, with the population with post-secondary education highest (nearly 70 percent) and lowest among those who had only primary level education (2.0 percent). Results also show that 18.4 percent of the fully employed had some form of health insurance coverage. However, although the

self-employed population is highest at 2,445,117 only about 1.3 percent had some form of insurance cover. Under formal or informal employment, the formal sector has the highest proportion of the insured population at 37.3 percent, with the informal sector proportion at only 1.6 percent. In terms of expenditure quintile, the highest proportion coverage is within the richest quintile at 14.4 percent, and lowest for those in the poorest quintile at 0.2 percent.

Table 12.5 Insurance coverage by socio-economic characteristics, 2014

Characteristics of household head		Total Population	Insured Population	Population Insured
Head ever been to school	Total	15,019,070.50	591,558.44	3.9
	Yes	13,563,338.25	586,020.02	4.3
	No	1,389,108.28	4,909.95	0.4
	Not stated	66,623.97	628.47	0.9
Head's highest level of formal education	Pre-school	11,085.59	-	0.0
	Primary	6,556,911.85	39,222.00	0.6
	Vocational	133,235.84	10,233.27	7.7
	Secondary	5,073,983.31	200,024.41	3.9
	College (middle level)	1,261,371.02	197,227.14	15.6
	University	388,442.12	127,841.07	32.9
	Don't Know	138,308.52	11,472.13	8.3
Head's main employment status (last 12 months)	Paid Employee	3,353,187.31	503,227.84	15.0
	Unpaid Family Worker	911,031.68	2,532.48	0.3
	Seeking Work	613,443.51	5,886.96	1.0
	Homemakers	974,818.72	13,170.03	1.4
	Students/Intern/Apprentice	35,671.70	1,958.21	5.5
	Self Employment	8,666,103.07	51,783.42	0.6
	Others (Specify)	459,380.00	12,999.50	2.8
Sector	Formal	2,234,708.10	443,915.04	19.9
	Informal	10,695,613.97	113,628.70	1.1
	Not employed	2,088,748.43	34,014.71	1.6
Expenditure Quintile	Poorest	2,618,177.67	12,338.15	0.5
	Fourth	2,803,507.76	7,609.02	0.3
	Middle	2,978,979.24	31,911.36	1.1
	Second	3,157,391.80	91,404.33	2.9
	Richest	3,370,505.21	448,295.59	13.3

The results further show that the proportion of insurance coverage is highest, at 5.2 percent, among those who perceived their healthy status as "very good". Analysis also shows that about 84,041 of the insured population of 591,558 (i.e. 14.2 percent) had some form of chronic illness. Furthermore, the data show that there is a larger proportion of the population with chronic illness with insurance coverage (5.0 percent) compared with those without any chronic illness at 3.8 percent.

Table 12.6 Insurance coverage by health status, 2014

Characteristic		Total Population	Insured population	Percent of insured population
Chronic illness	Have a Chronic condition	1,696,008	84,041	5
	Have no Chronic condition	13,323,063	507,517	3.8
	Total	15,019,071	591,558	3.9
Perceived health status	Very good	4,572,158	238,169	5.2
	Good	8,464,234	307,455	3.6
	Satisfactory	1,283,799	36,124	2.8
	Poor	664,371	8,499	1.3
	Don't know	34,508	1,313	3.8
	Total	15,019,071	591,558	3.9

12.5 Prepayments for private health insurance

Prepayment in terms of premiums paid to different private health insurance schemes amount to K32 million per year. The biggest private insurance scheme is the private facility medical scheme, followed by the private health insurance scheme, the employer based medical scheme and the government facility high cost scheme. The average premiums paid vary from K45 for the government facility high cost scheme, to K90 for the private facility medical scheme per annum.

Table 12.7 Prepayments for private health insurance by type of scheme, region and socio-economic groups, K1,000 per year

Region	Govt. facility high cost scheme	Private facility medical scheme	Private health insurance scheme	Employer based medical scheme	Other	Total
Zambia	4 738.5	10 471.9	9 232.2	7 268.3	0.5	31 711.5
Rural	159.5	182.1	2 070.7	370.0	0.0	2 782.2
Urban	4 579.1	10 289.8	7 161.5	6 898.3	0.5	28 929.2
Expenditure quintiles						
Poorest	13.3	1.7	0.5	0.0	0.0	15.4
Second	5.0	0.0	5.9	15.2	0.0	26.1
Middle	20.6	1.5	166.9	101.6	0.0	290.6
Fourth	2 179.3	94.1	228.1	483.1	0.0	2 984.6
Richest	2 520.4	10 374.6	8 830.8	6 668.4	0.5	28 394.7

The table also shows that people in the urban areas are paying almost ten times more than people in the rural areas. It can also be seen that the use of private health insurance is dominated by richer people. The poorest people are paying K15,000 per year compared with the richest paying K28 million

12.6 Summary

There is clearly a low insurance coverage in Zambia with only 3.9 percent of the total population covered. The results show that the urban population has a higher proportion of coverage with the city of Lusaka being the highest among all the urban towns. Looking at age group, the 65 years and above age group has the least proportion of insurance coverage, while the highest is the 25-49 years age bracket.

The proportion of insurance coverage tends to be higher among people who have had some form of education, as opposed to those without. It is also higher among those who are in the formal sector than in the informal sector, as well the highest proportion for those who are in the richest quintile. Also, the population with chronic illness has a larger proportion covered by some form of insurance, as opposed to those without any form of chronic illness.

13 Social Health Insurance

13.1 Introduction

In recognition of the need to move toward Universal Health Coverage and develop a sound and sustainable health care financing strategy, the Government plans to introduce a comprehensive National Social Health Insurance (SHI) in Zambia. The proposed National Social Health Insurance Scheme will pursue the following objectives:

I. To provide improved access to quality health services to all Citizens of Zambia in a timely manner and without financial hardship at the time of illness;
II. To mobilize equitable, efficient and sustainable financial resources that complement existing tax and external funding sources for improving health systems performance;
III. To pool risks and funds through creation of a single fund, contribute to reducing inequities, sustain social cohesion and build a healthy workforce thus leading to improved economic growth, reduced poverty and the prosperity of the nation.

The proposed National SHI scheme contributes to the Universal Health Coverage (UHC) goals of creating an entitlement for everyone to be protected against the costs of health services and to assure access to needed health services of sufficient quality to be effective. The National SHI scheme will rely on the values of universality and social solidarity. From a universality perspective everyone should have the same entitlements in relation to financial protection and access to needed health services (i.e. that the entitlement is to the same range and quality of health services). Social solidarity requires that there are both income cross-subsidies (from the rich to the poor) so that payments towards financing health services are based on the ability to pay, and risk cross-subsidies (from the healthy to the ill) to ensure that everyone is able to access health services based on need and not ability to pay.

Achieving universal health coverage requires a broad membership base that will make it possible for everyone to contribute according to their ability to pay thus ensuring fairness in financing. Thus membership must be mandatory for all citizens and legal residents in the country and efforts must be made to include the vulnerable groups, such as those currently receiving social cash transfers through MCDMCH, who may not have the ability to contribute towards the pooled fund through government subsides. The vulnerable will need to be covered to the fund by government subsidies. The National SHI Scheme will be managed and publicly administered by a semi-autonomous government-owned entity which would be

established by an act of parliament. The National SHI scheme and managing entity will be governed by the relevant statutes and supporting regulations. It will be a single payer entity with sub-national offices to manage negotiated contracts with all appropriately accredited and contracted health care providers. The National SHI scheme will not directly manage health care providers, but rather contract with both accredited public and private facilities in urban and rural areas, to provide a defined quality comprehensive health care benefit package (HCBP) to all members of the National SHI scheme. The HCBP includes promotive, preventive, curative, rehabilitative, outpatient and inpatient care such as consultations, emergency medical services, diagnostic procedures (including Imaging and Investigations), drugs, full reproductive, maternal, neonatal and child package, mental health, dental care, vision care, annual screenings and physical check-ups, air and ground ambulance services, referrals, hospitalisation, surgery and anesthesia. Unregistered medicines, non-standard medical procedures, treatment by unregistered personnel, cosmetic surgery, transgender surgery and treatment abroad are not included in the HCBP. However procedures carried out by specialists from other countries brought to Zambia through an allocation of National SHI funds will be covered. To ensure the appropriate use of this benefit, quality care and cost control, the Ministry of Health will continue to fund treatment aboard.

The benefits funded under the National Social Health Insurance Scheme shall be accessed on a household basis by a contributing member, spouse; all children below the age of 21 years (biological and adopted) and 4 other dependents (this number may include additional spouses in the case of traditional polygamous marriages). When family members become ill they don't have to pay anything; all insured services are provided free at the health facility. The contributing member of a SHI scheme has to pay a contribution in advance to get free access to the high quality comprehensive health care benefit package at the time of illness. The contribution would be subsided by Government or other funding sources in the case of vulnerable households.

In order to ensure effective cost-containment, efficient strategic purchasing of services, and future sustainability of the National SHI scheme, existing provider payment mechanisms and associated accountability processes will be changed. At primary care level, accredited providers will be reimbursed using a uniform capitation system complemented by performance-based payment mechanism. The health care providers will be monitored to

ensure adherence to the National standard treatment guidelines and quality assurance standards for all conditions covered under the defined package of insured services. This will be necessary to ensure the appropriate level of service provision and avoid under-servicing which is a common characteristic of many capitation-based systems. At secondary and tertiary hospital level, accredited and contracted facilities will be reimbursed using capitation for outpatient services and global budgets for inpatient services in the initial phases of implementation, with gradual migration towards capitation for outpatient and diagnosis related groups (DRGs) for inpatient services, with a strong emphasis on performance and quality. The provider payment mechanisms will provide incentives for improving quality and motivating staff for performance.

In summary, the benefits of the proposed National SHI scheme will include:

1. Improved financial risk protection from catastrophic health care costs due to illness by reducing out-of-pocket spending, replacing that with regular prepayment and risk pooling mechanisms into a single National SHI fund with an emphasis on vulnerable populations

2. Increased utilizations of services, improved health outcomes and sustained economic growth of the Nation

3. Creation of a more sustainable and reliable system for equitable financing of health services to Zambian citizens

4. Mobilization of resources from SHI members through prepayments, rather than out-of-pocket expenditures at the time of illness, to raise revenue for health care in *addition* to current tax and donor funding.

5. Provision of additional resources for investments in accessibility, quantity and quality of health services

6. Introduction of organizational change to improve the efficiency of the health system, e.g. purchaser provide split, new provider payment mechanisms and strategic purchasing of services by the SHI managing entity

The household survey sought to provide indications on perceptions of the proposed scheme, how much money different groups are willing to pay, or are able to pay for engaging in the proposed social health insurance scheme.

13.2   Household's perceptions on social health insurance

13.2.1   Household's view of the proposed social health insurance scheme

In Zambia   96.5 % of respondent households rated the proposed social health insurance scheme as excellent, very good or good, compared with 3.5 percent of households believing it is bad (Table 13.1). Only 4.2% and 2.6% of households surveyed in rural and urban areas rated the scheme as bad. The households in the provinces are in general very positive to the scheme but North-Western, Central and Eastern are critical.

Table 13.1 Household's view of proposed social health insurance scheme by region, province and sector 2014

Region, province and sector		Rating				
		Total population willing to pay	Excellent Percent	Very Good Percent	Good Percent	Bad Percent
Region	**Zambia**	2 438 108	11.2	34.8	50.5	3.5
	Rural	1 311 955	10.2	36.2	49.3	4.2
	Urban	1 126 154	12.3	33.1	51.9	2.6
Province	**Central**	244 251	7.3	36	51.8	4.9
	Copperbelt	395 719	16.6	27.6	52.5	3.2
	Eastern	290 564	8.2	34.6	52.4	4.9
	Luapula	163 101	16.4	40.3	40.7	2.6
	Lusaka	504 139	9	36.5	51.5	3
	Muchinga	139 013	17.6	36.5	43.4	2.5
	Northern	204 451	12.1	47.4	37.2	3.2
	N Western	89 748	3.8	18.9	69.3	8.1
	Southern	276 072	12.4	28.6	56.9	2.2
	Western	131 050	5.4	43.5	48.2	2.9
Sector	**Formal**	400 511	10.4	32.9	53.8	3
	Informal	1 723 600	11.7	35.7	49.1	3.5
	Not employed	313 997	9.6	32	54.2	4.3

13.2.2   Household's perceptions on expected benefits from the proposed social health insurance scheme

Of those households appreciating the Social Health Insurance scheme a majority 55 percent think the SHI will make health affordable (Table 13.2). Approximately 25 percent of them express protection against high health expenditure, while another 19 percent state improved standard of living as a reason for the positive rating of the proposed SHI scheme. These ranking of views are almost the same for rural and urban areas, as well as formally and informally employed. The provinces show almost the same ranking with exceptions for Copperbelt Province, Muchinga Province, North-Western Province and Western Province that rank improved standard of living higher than protection against high health expenditure.

Table 13.2 Household's reasons for those who appreciate the social health insurance scheme by region, province and sector 2014

Region, province and sector		Expected benefits				
		Total population	Makes health care affordable Percent	Improves standard of living Percent	Protects against high health expenditures Percent	Other Percent
Region	Zambia	2 794 818	54,5	19,0	22,4	4,2
	Rural	1 562 120	53,9	19,7	23,2	3,1
	Urban	1 232 698	55,1	18,0	21,4	5,5
Province	Central	252 705	55,8	11,1	27,3	5,8
	Copperbelt	440 026	48,5	23,3	21,7	6,6
	Eastern	308 942	54,2	17,7	24,0	4,1
	Luapula	196 419	62,7	15,7	17,7	3,9
	Lusaka	536 071	61,8	14,6	18,6	5,0
	Muchinga	174 126	49,0	29,6	20,0	1,5
	Northern	240 643	46,4	22,1	29,2	2,3
	N Western	113 221	44,0	25,5	28,6	1,9
	Southern	334 199	64,6	12,7	19,3	3,4
	Western	198 467	41,9	30,4	25,4	2,3
Sector	Formal	432 854	53,9	16,0	23,7	6,5
	Informal	1 960 949	55,2	19,4	22,0	3,5
	Not employed	401 015	51,6	20,2	22,9	5,3

13.3 Willingness to pay for social health insurance

13.3.1   Introduction

In economics, the willingness to pay (WTP) is the monthly maximum amount in Kwacha a person would be willing to pay, sacrifice or exchange for a good or service, in this case social health insurance services. When experimental design for demand estimation is not feasible because of implementation challenges or ethical considerations, researchers can resort to the contingent valuation (CV) method (also referred to as CVM), which elicits valuation and preferences through a hypothetical case in a simulated market scenario. This approach consists of asking the respondent whether they would be willing to pay a particular price for the good/service in question. Contingent valuation methods have been extensively used in public decision making, especially in environmental and trade economics. The advantage of this approach is that it mimics the decision that individuals face in everyday life; to buy or not to buy (Carlsson and Johansson-Stenman, 2000). The application of CV in health economics and health insurance started in the 1970s and has increased in recent years. (Gustafsson-Wright, and van der Gaag 2009; Asgary et al. 2004; Velenyi 2011)

Willingness to Pay (WTP) stands in contrast to willingness to accept payment (WTA), which is the minimum amount an individual is willing to receive to give up a good or service. Several methods have been developed to measure willingness to pay for health care services. These methods can be differentiated whether they measure the hypothetical or actual willingness to pay and whether they measure willingness to pay directly or indirectly. A commonly used technique is choice models where the respondents have to make a decision to pay for health services given different options in a specific context. (Cookson 2003, Dror et al. 2006, Asfaw et al. 2009, Masanjala and Phiri 2010)

In big surveys, a simple WTP technique reflecting the choice situation is used. The respondents are presented with a hypothetical health care benefit package, information about payment conditions and other relevant information and different options to pay. This technique is used in this survey to investigate the WTP for contribution levels for the social health insurance. The WTP for SHI reflects the individual's preference, the value placed on the benefits contained in the HCBP subject to ability to pay (ATP), which captures the individual's wealth context (measured either in income, expenditure, or consumption)

The respondents in this survey are given a systematic and comprehensive description and meaning of the proposed social health insurance scheme that the Government of the Republic of Zambia is considering to implement. After clarifications of questions, the respondents are asked how much they are willing to pay, in advance, per month, to access free quality health services paid by the social health insurance scheme, at no cost at point of service delivery. Specifically, the respondents are asked if they are willing to pay the first bid on a descending scale. If the answer is 'yes' additional questions follow. If they say 'no' to the initial bid, a second lower bid is provided and so on. If they say 'no' to all bids then they are asked to mention any amount they are willing to pay. In economic terms, this is the elicited reservation price - the value where the individual is willing to settle to benefit from the service.

Household expenditure data is used as a proxy for household income. Data validation of these approaches shows that the expenditure measure is the most reliable proxy measure of income.

13.3.2   Distribution of household's willingness to pay for social health insurance

As many as 80 percent of all households, are willing to contribute to the proposed social health insurance scheme (Table 13.3). The households in urban areas are more willing to pay for the scheme compared with households in rural areas. Households in the formal sector are more willing to pay for the scheme compared with those in the informal sector. In this survey, a household is categorized as being in the formal sector, informal sector, or unemployed depending on whether the household head is employed in formal, informal sector or unemployed.

The number of households who don't want to pay for social health insurance is 589,516 corresponding to 20 percent of all households. Of these households, 76 percent express that they cannot afford to pay the premiums for the social health insurance scheme. Sixty-six percent of those households are located in rural areas.

For provinces, the willingness not to pay varies between provinces where North-Western Province and Western Province are outstanding, with 44 percent and 37 percent respectively.

Of the formally employed, 13 percent are not willing to pay for the scheme compared with the informally employed where 19 percent are not willing to pay. Of the households with no employment at all, 29 percent are not willing to pay for the scheme.

Table 13.3 Number of households willing to pay and not willing to pay for social health insurance by region, province and employment sector, 2014

Region, province and sector		Willingness to pay			Total Percent
		Number of households	Willing to pay Percent	Not willing to pay Percent	
Region	Zambia	3 027 625	80.5	19.5	100.0
	Rural	1 700 927	77.1	22.9	100.0
	Urban	1 326 697	84.9	15.1	100.0
Province	Central	272 191	89.7	10.3	100.0
	Copperbelt	478 824	82.6	17.4	100.0
	Eastern	329 527	88.2	11.8	100.0
	Luapula	207 621	78.6	21.4	100.0
	Lusaka	578 804	87.1	12.9	100.0
	Muchinga	180 102	77.2	22.8	100.0
	Northern	255 898	79.9	20.1	100.0
	N Western	159 063	56.4	43.6	100.0
	Southern	355 819	77.6	22.4	100.0
	Western	209 775	62.5	37.5	100.0
	Total	3 027 625	80.5	19.5	100.0
Sector	Formal	461 718	86.7	13.3	100.0
	Informal	2 126 889	81.0	19.0	100.0
	Not employed	439 018	71.5	28.5	100.0

13.3.3 Number of households willing to pay and amounts to be paid

The demand for social health insurance in terms of willingness to pay is depicted in Figure 13.1 below. It can be seen that willingness to pay for social health insurance decreases by the level of the amount to be paid on a monthly basis. Over 40,000 households are willing to pay K2,000 or more per month, and a half million households are willing to pay less than K10. Around 2 million households are willing to pay less than K100 per month.

Figure 13.1 Willingness to pay for social health insurance, kwacha/month
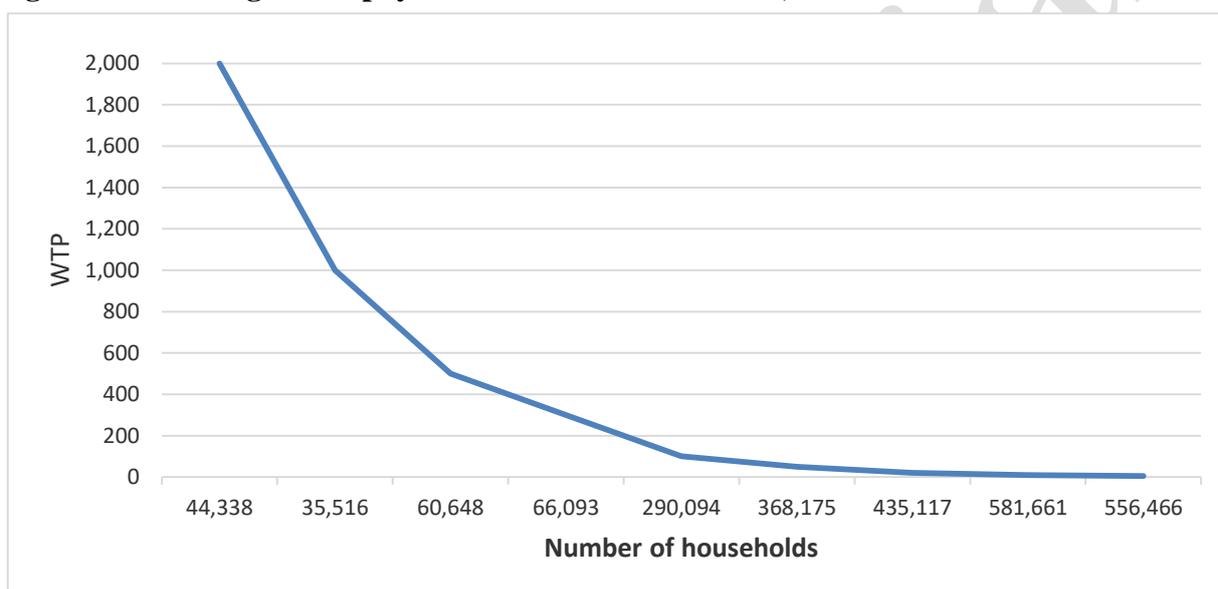
Low income households are willing to pay less than high income households. Table 13.4 shows that the median amount to be paid is quite low when the households not willing to pay are included, around K10 per month. The average household size is positively correlated to monthly income and willingness to pay higher amounts.

Table 13.4 Monthly amounts households are willing to pay for social Health insurance by household size and monthly income 2014

Monthly amounts households are willing to pay K	Number of households	Household Cumulative percent	Average household size	Monthly average household income Mean
Total	3 027 625		5.0	1 246.7
Not willing to pay	589 516	19.5	4.6	853.7
Willing to pay < 10	556 466	37.9	5.0	522.3
10	581 661	57.1	5.0	750.5
20	435 117	71.4	5.1	994.4
50	368 175	83.6	5.3	1 595.0
100	290 094	93.2	5.2	2 419.6
300	66 093	95.4	5.2	3 575.1
500	60 648	97.4	5.4	4 133.6
1 000	35 516	98.5	5.1	3 985.5
> 2 000	44 338	100.0	4.8	5 023.3

The average social health insurance contribution to be paid monthly in Zambia amounts to K113 (Table 13.5). That amount corresponds to 8 percent of the average monthly income for Zambia (K1,342). Households in urban areas are willing to pay more than households in rural areas, K148 and K83 respectively. There is considerable variation between the provinces.

The formally employed are willing to pay K223, more than twice the informally employed at K93. It can be noted that household size is lower in the urban areas and the formal sector compared with rural areas and the informally employed respectively.

Table 13.5 Number of household's willingness to pay for social health insurance
by Household size, monthly income, region, province and sector 2014

Region, province and sector		Number of households willing to pay	Households willing to pay Percent	Average household size	Household monthly income Mean	Monthly amount willing to pay Mean
Region	Zambia	3 027 625	80.5	5.0	1 341.7	113.1
	Rural	1 700 927	77.1	5.2	549.0	83.4
	Urban	1 326 697	84.9	4.7	2 265.3	147.7
Province	Central	272 191	89.7	5.4	984.2	66.9
	Copperbelt	478 824	82.6	4.8	1 883.6	107.5
	Eastern	329 527	88.2	5.4	551.7	168.9
	Luapula	207 621	78.6	5.4	634.3	40.4
	Lusaka	578 804	87.1	4.6	2 654.3	195.0
	Muchinga	180 102	77.2	4.8	654.1	51.0
	Northern	255 898	79.9	5.0	581.6	36.4
	N Western	159 063	56.4	5.3	1 218.0	110.9
	Southern	355 819	77.6	5.1	921.8	61.0
	Western	209 775	62.5	4.7	839.9	164.4
Sector	Formal	461 718	86.7	4.9	1 341.7	221.4
	Informal	2 126 889	81.0	5.1	3 530.9	92.5
	Not employed	439 018	71.52	4.8	881.9	88.1

13.3.4 Willingness to pay for social health insurance by demographic background

The age groups between 15-64 years are most willing to pay for social health insurance (Table 13.6). Male household heads are more willing to pay than females, and the amounts are also significantly higher. The same holds for the formally and informally employed.

Table 13.6 Household's willingness to pay for social health insurance by age and gender 2014

Age and sex		Number of households	Percentage willing to pay	Household size Mean	Monthly average income Mean	Monthly average amount WTP formal sector Mean	Monthly average amount WTP informal sector Mean	Monthly average amount WTP formal and informal sector Mean
Both sex	Total	3 027 625	80.5	5.1	1 341.1	221.4	92.5	116.8
	0 - 4	206	100.0	2.0	1 052.0	-	-	-
	4 - 15	1 970	58.1	3.3	728.3	-	-	-
	15 - 24	172 302	78.1	3.1	575.0	167.7	58.6	71.2
	25 - 49	1 939 029	84.0	5.1	1 405.1	222.8	95.1	122.2
	50 - 64	577 117	80.0	5.8	1 510.8	215.9	89.2	109.2
	65+	337 001	62.7	5.0	969.1	266.6	102.2	116.2
Male	Total	2 279 995	83.2	5.3	1 388.7	215.8	93.5	118.1
	0 - 4	206	100.0	2.0	1 052.0	-	-	-
	5 - 14	1 437	79.7	3.3	728.3	-	-	-
	15 - 24	138 946	80.6	3.1	522.6	170.2	56.1	69.2
	25 - 49	1 539 442	85.5	5.3	1 418.0	210.0	94.4	119.8
	50 - 64	393 274	83.0	6.2	1 719.4	243.7	102.7	128.4
	65+	206 689	68.0	5.2	1 041.7	266.6	96.1	116.0
Female	Total	747 630	72.4	4.4	1 174.7	255.0	88.8	111.6
	0 - 4	0	0.0	-	0.0	-	-	-
	5 - 14	533	0.0	-	0.0	-	-	-
	15 - 24	33 355	67.7	2.9	834.8	151.1	75.9	85.1
	25 - 49	399 588	78.1	4.4	1 350.5	296.9	98.2	133.7
	50 - 64	183 842	73.8	4.6	1 009.5	61.0	55.8	56.3
	65+	130 312	54.4	4.6	825.4	-	116.8	116.8

The average household size is 5.1 members in Zambia and the most frequent household is four members (Table 13.7). Household size is positively correlated to the willingness to pay and monthly income; bigger households are more willing to pay for social health insurance. However the average monthly amounts to be paid vary significantly. Households with five and six members are willing to pay more than average, K139 and K128 respectively.

Table 13.6 Willingness to pay for social health insurance by household size 2014

Household size		Number of households	Percentage willing to pay	Monthly average income Mean	Monthly average amount WTP Mean
Household size	One	197 791	68.3	775.6	87.3
	Two	272 038	73.0	1 155.2	98.4
	Three	424 406	79.8	1 248.4	117.4
	Four	507 347	80.4	1 283.1	108.6
	Five	470 871	83.5	1 354.1	139.4
	Six	406 844	84.2	1 538.1	127.7
	Seven	292 817	83.8	1 319.4	103.8
	Eight	199 488	82.2	1 585.3	108.0
	Nine	107 175	82.8	1 609.3	83.3
	Ten or more	148 849	83.3	1 642.7	90.3
	Total	3 027 625	80.5	1 341.1	113.1

13.3.5 Willingness to pay for social health insurance by socio-economic background

There are positive correlations between socio-economic background, household size and amounts of willingness to pay (Table 13.8). Household heads being paid employees and are most willing to pay for social health insurance, 86 percent and have an average income of K2,540 per month. They also have the lowest household size, 4.7 members. They are willing to pay in average K173 per month. The households in the two poorest quintiles are willing to pay less than K66 compared with the richer households who are willing to pay more than K 100 per month. The formally employed are willing to pay almost twice the amount (K209) compared with the informally employed (K116).

Table 13.7 Household's willingness to pay for social health insurance by employment status and income quintiles 2014

Employment status and income quintiles		Number of households	Percent willing to pay	Household size Mean	Monthly average income Mean	Monthly average amount WTP formal sector Mean	Monthly average amount WTP informal sector Mean	Monthly average amount WTP formal and informal sector Mean
Main employment status	Paid Employee	715 221	86.1	4.7	2 540.4	209.4	116.3	172.6
	Unpaid Family Worker	181 986	73.3	5.1	479.9	-	58.6	58.6
	Seeking Work	132 094	72.0	4.7	959.5	-	-	-
	Homemakers	199 280	70.8	5.2	829.9	-	-	-
	Students/Intern/Apprentice	11 014	84.9	3.5	2 619.7	-	-	-
	Self Employment	1 691 400	81.3	5.3	948.8	381.8	91.5	97.4
	Other	94 453	71.1	5.3	1 535.6	-	-	-
	Total	3 025 449	80.5	5.1	1 341.4	221.4	92.5	116.8
Income Quintile	Poorest	605 518.3	64.6	4.7	71.5	137.9	48.6	49.5
	Second	605 540.7	78.4	4.9	214.9	147.3	64.0	66.1
	Middle	605 664.5	84.0	5.1	478.3	96.6	91.1	91.6
	Fourth	605 551.1	86.8	5.2	1 036.0	82.6	108.3	102.8
	Richest	605 350.0	88.8	5.5	4 372.7	300.0	183.5	244.1
	Total	3 027 624.6	80.5	5.1	1 341.1	221.4	92.5	116.8

Figure 13.2 shows the demand for social health insurance in terms of monthly amounts to be paid by income quintiles. It can be seen that poorest households are willing to pay an average K40, much less than K245 for the richest group. The households in the formal sector, including the two poorest quintiles, are willing to pay more than those in the informal sector.

The high demand among the rich and formal sector means that either benefits could be customized to their needs or further contributions could be collected to ensure sustainability.

Figure 13.2 Willingness to pay for social health insurance by socio-economic status and sectors, Kwacha/month
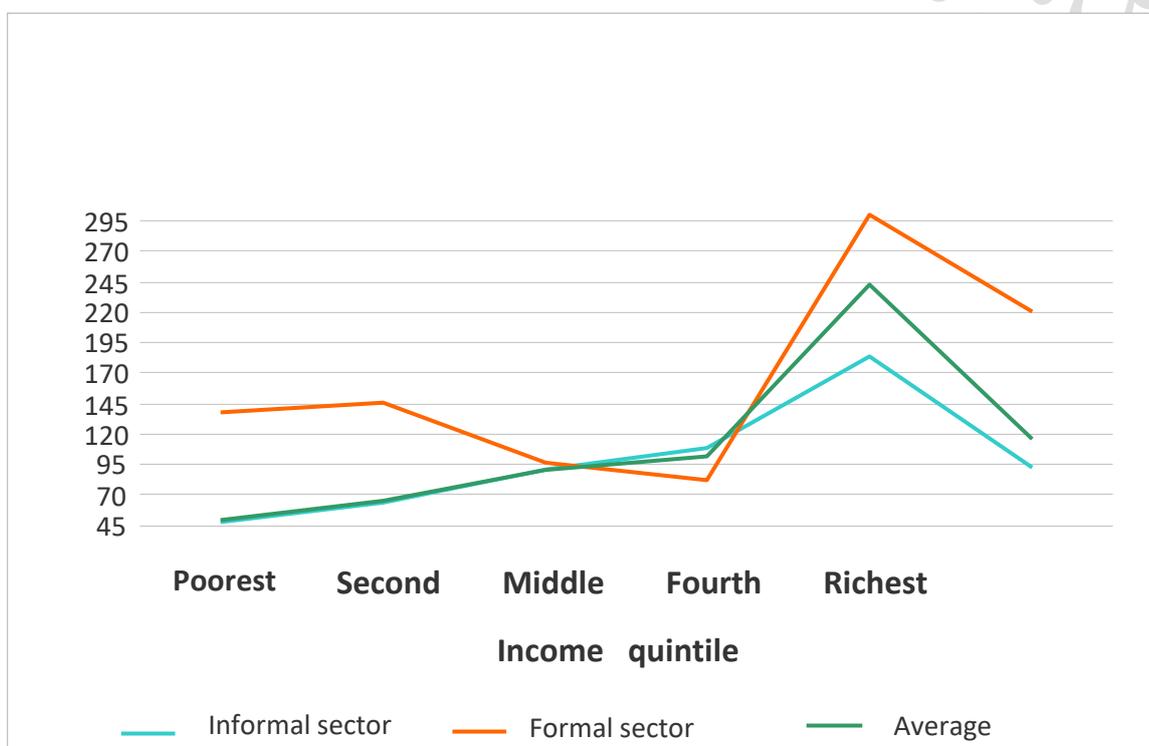
There is a big difference in income between household heads with schooling and those without schooling (Table 13.9). The same holds for the willingness to pay for the scheme, 82 percent for households with schooling and 66 percent for those without schooling. The difference in the amount of willingness to pay with respect to schooling is biggest in the formal sector, K223 and K34.

The willingness to pay also varies with respect to the level of education. The willingness to pay for the scheme is highest for household heads with college as highest education. There is a positive correlation between education, monthly income and willingness to pay amount. The willingness to pay amounts range from K13 for pre-school level to K596 for university level.

Table 13.8 Household's willingness to pay for social health insurance by education 2014

Education		Number of households	Percent willing to pay	Household size Mean	Monthly average income Mean	Monthly average amount WTP formal sector Mean	Monthly average amount WTP informal sector Mean	Monthly average amount WTP formal and informal sector Mean
Household head ever been to school	Yes	2 716 676	82.1	5.1	1 421.03	223.1	95.2	121.1
	No	297 596	66.4	5.1	451.53	33.7	61.0	60.4
	Not stated	13 147	76.9	5.1	1 101.04	-	156.7	156.7
	Total	3 027 419	80.5	5.1	1 341.16	221.4	92.5	116.8
Level of education	Pre-school	1 865	87.1	6.6	320.25	-	13.3	13.3
	Primary	1 281 726	77.5	5.3	569.01	57.3	78.3	77.4
	Vocational	27 694	84.3	4.9	1 731.10	125.8	114.8	118.8
	Secondary	1 030 724	86.2	5.0	1 305.46	122.7	96.1	101.7
	College	266 664	87.5	4.8	3 522.61	246.7	198.6	229.9
	University	83 049	84.2	4.7	7 952.53	617.0	524.4	595.8
	Not stated	24 955	80.3	5.7	1 235.37	214.2	42.1	67.7
	Total	2 716 676	82.1	5.1	1 421.03	223.1	95.2	121.1

There are positive correlations between socio-economic quintiles, household size and willingness to pay amounts (Table 13.10). 86 percent household heads, who are paid employees earning an average of K2,540 per month, are most willing to pay an average of K173 per month for social health insurance.

The households in the two poorest quintiles are willing to pay less than K66 per month compared with the richer households who are willing to pay more than K100 per month. The formally employed are willing to pay almost twice the amount (K209) compared with the informally employed (K116).

Table 13.9 Household's willingness to pay for social health insurance by employment status and income quintiles 2014

Employment status and income quintiles		Number of households	Percent willing to pay	Household size Mean	Monthly average income Mean	Monthly average amount WTP formal sector Mean	Monthly average amount WTP informal sector Mean	Monthly average amount WTP formal and informal sector Mean
Main employment status	Paid Employee	715 221	86.1	4.7	2 540.4	209.4	116.3	172.6
	Unpaid Family Worker	181 986	73.3	5.1	479.9	-	58.6	58.6
	Seeking Work	132 094	72.0	4.7	959.5	-	-	-
	Homemakers	199 280	70.8	5.2	829.9	-	-	-
	Students/Intern/Apprentice	11 014	84.9	3.5	2 619.7	-	-	-
	Self Employment	1 691 400	81.3	5.3	948.8	381.8	91.5	97.4
	Other	94 453	71.1	5.3	1 535.6	-	-	-
	Total	3 025 449	80.5	5.1	1 341.4	221.4	92.5	116.8
Income Quintile	Poorest	605 518.3	64.6	4.7	71.5	137.9	48.6	49.5
	Second	605 540.7	78.4	4.9	214.9	147.3	64.0	66.1
	Middle	605 664.5	84.0	5.1	478.3	96.6	91.1	91.6
	Fourth	605 551.1	86.8	5.2	1 036.0	82.6	108.3	102.8
	Richest	605 350.0	88.8	5.5	4 372.7	300.0	183.5	244.1
	Total	3 027 624.6	80.5	5.1	1 341.1	221.4	92.5	116.8

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13.3.6 Willingness to pay for social health insurance by chronic illness

It is expected that frequently sick people are more willing to pay for the social health insurance scheme than more healthy people. Adverse selection arises when one party has more information on a parameter that is relevant for the contract, most typically on the level of risk (Chiappori 2000). That is, the consumer is assumed to know better the probability of sickness and the conditional distribution of loss accruing from it.

Since adverse selection reduces risk diversification, this market failure affects the scheme's financial sustainability (Atim 1998). There are two principal alternatives to addressing this problem in developed countries: (i) make insurance mandatory; or (ii) design insurance where the contribution is based on expected costs.

In Table 13.11 it is shown that the willingness to pay does not differ much between households with and without chronic illnesses, at 80.7 and 80.4 percent respectively. There are some differences in household size and monthly income.

Households with at least one member having a chronic illness are willing to pay K131, compared with K108 for households with no chronic condition. The difference is 21%, indicating the need of health care for chronically ill. Households with cancer are willing to pay the highest amount, K317, followed by diabetes, hypertension and cardiac disorders.

Table 13.10 Household's willingness to pay for social health insurance by chronical illness 2014

Chronic illness		Number of households	Percent willing to pay	Household size Mean	Monthly average income Mean	Monthly average amount WTP formal sector Mean	Monthly average amount WTP informal sector Mean	Monthly average amount WTP formal and informal sector Mean
At least one chronic condition	Chronic condition	1 196 957	80.7	5.6	1 554.8	248.9	103.1	130.5
	No chronic conditon	1 830 667	80.4	4.8	1 201.1	204.3	85.9	108.3
	Total	3 027 625	80.5	5.1	1 341.1	221.4	92.5	116.8
Chronic condition	Hypertension	197 123	79.8	5.2	2 076.7	376.1	106.1	179.7
	Diabetes	41 835	80.1	5.5	2 697.4	339.4	140.5	191.4
	Cardiac disorder	57 075	73.2	5.1	822.0	115.6	134.0	132.6
	Arthritis	109 912	74.9	5.3	844.0	97.8	58.2	62.6
	HIV/AIDS	120 336	86.5	5.0	1 360.3	52.1	97.7	90.2
	Ulcer	70 747	81.5	5.4	1 578.5	154.4	82.9	98.7
	Gout	75 244	73.9	4.9	1 132.6	82.0	102.2	100.2
	Cancer	10 016	78.3	5.2	1 751.9	357.5	290.6	316.6
	Other	75 775	83.0	5.1	964.8	363.9	100.7	131.1
	None	2 027 093	81.3	5.1	1 319.6	208.2	88.2	111.6
	Not stated	242 470	77.1	4.9	1 091.9	278.6	106.9	134.3
	Total	3 027 625	80.5	5.1	1 341.1	221.4	92.5	116.8

13.4 Household's ability to pay for social health insurance

13.4.1   Introduction

The WTP results are compared with estimates of Ability to Pay (ATP). The ATP is a monthly average amount in Kwacha estimated as a selected percentage of observed average monthly household income. The selection of percentage levels is based on discussions about feasible social health insurance contribution levels to be used in Zambia. The percentage levels are 2.0 percent, 2.5 percent and 3.0 percent and 3.5 percent of average monthly income. Household expenditure data is used as a proxy for household income. Data validation of these approaches shows that the expenditure measure is the most reliable measure of income in places where people have multiple jobs and/or informal jobs.

13.4.2   Distribution of ability to pay for social health insurance

In Zambia 2,438,108 households (80 percent of all households) are willing to pay contributions for the proposed social health insurance scheme (Table 13.12). By definition, the ability to pay for the scheme is positively correlated with monthly income. The ability to pay at national level, for the 2.0 percent to 3.5 percent contribution options of monthly income, ranges from K20 to K 44. The ability to pay estimated for the medium option at 2.5 percent is K34.

Table 13.11 Household's ability to pay for social health insurance per month as percent of average monthly income by region, province and sector 2014

Region, Province and sector		All	Household willing to pay (%)	Average income(K)	Ability to pay 1.5 K	Ability to pay 2.0 K	Ability to pay 2.5 K	Ability to pay 3.0 K	Ability to pay 3.5 K
Region	**Zambia**	3027625	80.5	1341.1	57.8	57.4	57.0	56.7	56.5
	Rural	1700927	771.1	548.5	30.3	26.5	26.4	26.2	26.2
	Urban	1326697	84.9	2264.5	31.8	31.8	31.6	31.6	30.3
Province	**Central**	272191	89.7	983.0	6.3	6.2	6.2	6.2	6.1
	Copperbelt	478824	82.6	1883.2	11.1	11.1	11.1	11.0	11.0
	Eastern	329527	88.2	551.3	5.2	5.2	5.2	5.2	5.2
	Luapula	207621	78.6	633.5	3.7	3.7	3.7	3.7	3.6
	Lusaka	578804	87.1	2653.2	13.6	13.6	13.6	13.6	13.5
	Muchinga	180102	77.2	654	2.9	2.9	2.9	2.9	2.8
	Northen	255898	79.9	580.6	4.8	4.8	4.8	4.7	4.6
	N Western	159063	56.4	1217.0	1.9	1.9	1.9	1.9	1.9
	Southern	355819	77.6	921.7	2.0	1.9	1.9	1.9	1.9
	Western	209775	62.5	839.7	5.8	5.7	5.7	5.6	5.6
	Total	3027625	80.5	1341.1	3.1	3.0	3.0	3.0	2.9
sector	**Formal**	461718	86.7	3530.3	8.6	8.6	8.6	8.6	8.6
	Informal	2126889	81.0	881.3	40.5	40.3	39.8	39.6	39.3
	Not Employed	439018	71.5	1073.1	0.0	0.0	0.0	0.0	0.0

The ability to pay for households in urban areas is much higher than for those in rural areas, K37 and K14 respectively. Among the provinces, the ability to pay is highest for Lusaka Province and Copperbelt Province. Households in the formal sector are more able to pay for the scheme compared with those in the informal sector.

For those households that are not willing to pay for the proposed social health insurance scheme, the ability to pay for the scheme is positively correlated with monthly income. The

ability to pay at national level, for the 2.0 percent and to 3.5 percent options of monthly income, ranges from K13 to K30. The ability to pay estimated for the medium contribution option at 2.5 percent is K21. The amounts are significantly lower for this group compared with those who are willing to pay for social health insurance, K34.

The ability to pay for households in urban areas is much higher than for those in rural areas, K38 and K6 respectively. Among the provinces, the ability to pay is highest for Lusaka Province and Copperbelt Province. Households in the formal sector are more able to pay for the scheme compared with those in the informal sector.

13.4.3   Ability to pay for social health insurance by demographic background

The age groups between 25-64 years have the highest ability to pay for social health insurance, around 29 percent (Table 13.13). Males are more able to pay than females but it is a small difference in amounts. For the medium contribution option at 2.5 percent of monthly income males are able to pay K28 and females K24.

Table 13.12 Household's ability to pay for social health insurance per month by age and sex, 2014

Age and Sex		All House holds	Household willing to pay (%)	Average income (K)	Ability to pay 1.5 K	Ability to pay 2.0 K	Ability to pay 2.5 K	Ability to pay 3.0 K	Ability to pay 3.5 K
Both	**Total**	302765	80.5	1341.1	57.8	57.4	57.0	56.7	56.5
	0-4	206	100.0	1052.0	0.0	0.0	0.0	0.0	0.0
	4-15	1970	58.1	728.3	0.0	0.0	0.0	0.0	0.0
	15-24	172302	78.1	575.0	3.1	3.1	3.1	3.0	3.0
	25-49	1939029	84.0	1405.1	39.1	39.0	38.7	38.6	38.5
	50-64	577117	80.0	1510.8	11.0	10.7	10.7	10.7	10.4
	65+	377001	62.7	969.1	4.7	4.7	4.6	4.5	4.5
Male	**Total**	2279995	83.2	1388.7	0.0	0.0	0.0	0.0	0.0
	0-4	206	100.0	1052.0	0.0	0.0	0.0	0.0	0.0
	5-14	1437	79.7	728.3	0.0	0.0	0.0	0.0	0.0
	15-24	138946	80.6	522.6	2.6	2.5	2.5	2.5	2.5
	25-49	1539442	85.5	1418.0	31.6	31.5	31.3	31.1	31.
	50-64	393274	83.0	1719.4	7.8	7.7	7.7	7.5	7.5
	65+	206689	68.0	1041.7	3.1	3.1	3.1	3.1	3.0
Female	**Total**	747630	72.4	1174.7	0.0	0.0	0.0	0.0	0.0
	0-4	0	0.0	0	0.0	0.0	0.0	0.0	0.0
	5-14	533	0.0	0	0.0	0.0	0.0	0.0	0.0
	15-24	33355	67.7	834.8	0.6	0.6	0.5	0.5	0.5
	25-49	399588	78.1	1350.5	7.5	7.5	7.4	7.4	7.4
	50-64	183842	73.8	1009.5	3.1	3.1	3.1	3.0	3.0
	65+	130312	54.4	825.4	1.6	1.6	1.5	1.5	1.5

The results for those households not willing to pay for social health insurance shows that males are quite similar to the males who are willing to pay for social health insurance. However, females are able to pay less compared with those who were willing to pay for the scheme.

13.4.4   Ability to pay for social health insurance by socio-economic background

There is a difference in income between household heads with schooling and those without schooling (Table 13.14). Their ability to pay for the medium contribution option at 2.5 percent of monthly income are K36 and K11 respectively.

The ability to pay for social health insurance is highest for household heads with university and college as highest education, K199 and K88.

Table 13.13 Household's ability to pay for social health insurance by education 2014

Education		Number of house holds	percent willing to pay	Average income(K)	Ability to pay 1.5 K	Ability to pay 2.0 K	Ability to pay 2.5 K	Ability to pay 3.0 K	Ability to pay 3.5 K
Household Head ever been to school	Yes	2716676	82.1	1421.0	53.8	53.5	53.1	52.8	52.7
	No	297596	66.4	451.5	4.0	3.8	3.8	3.8	0.03.8
	Not Stated	13147	76.9	1101.0	0.3	0.3	0.3	0.3	0.3
	Total	3027419	80.5	1341.1	57.8	57.4	57.0	56.7	56.5
Level of education	Pre-school	1865	87.1	320.2	0.0	0.0	0.0	0.0	0.0
	Primary	1281726	77.5	569.0	21.5	21.2	21.1	21.0	21.0
	Vocational	27694	84.3	1731.1	0..6	0.6	0.6	0.6	0.6
	secondary	1030724	86.2	1305.5	23.2	23.0	23.0	22.9	22.8
	College	266664	87.5	3522.6	6.9	6.9	6.86.8	6.8	6.8
	University	83049	84.2	7952.5	2.0	2.0	2.0	2.0	2.0
	Not stated	24955	80.3	1235.4	0.5	0.5	0.5	0.5	0.5

Household heads being paid employees are able to pay K64 for social health insurance compared with unpaid family workers who are able to pay K12 for the medium contribution option at 2.5 percent of monthly income (Table 13.15).

The middle quintile is able to pay K12 per month corresponding to 2.5 percent of their average monthly income. The two poorest quintiles are able to pay K2 and K5 per month and the two richest quintiles are able to pay K26 and K109.

It is almost the same pattern for those households that are not willing to pay for social health insurance, but the ability to pay amounts are lower.

Table 13.14 Household's ability to pay for social health insurance per month by income quintiles 2014

Employment status and quintiles		All House holds	Household willing to pay (%)	Average income (K)	Ability to pay 1.5 K	Ability to pay 2.0 K	Ability to pay 2.5 K	Ability to pay 3.0 K	Ability to pay 3.5 K
	Paid Employee	715221	86.1	2540.4	18.5	18.5	18.5	18.5	18.4
Employment status	**unpaid family worker**	181986	73.3	479.9	2.6	2.5	2.5	2.5	2.4
	Seeking work	132094	72.0	959.5	2.2	2.1	2.1	2.1	2.1
	Homemakers	199280	70.8	829.9	2.9	2.9	2.8	2.8	2.8
	Students/intern/ apprentice	11014	84.9	2619.7	0.2	0.2	0.2	0.2	0.2
	Self Employed	1691400	81.3	948.8	30.4	30.3	29.8	29.6	29.3
	other	94453	71.1	1535.6	1.7	1.7	1.7	1.7	1.6
	Total	3025449	80.5	1341.1	57.8	57.4	56.8	56.7	56.5
Income Quintile	**Poorest**	605518	64.6	71.5	6.8	6.8	6.8	6.8	6.8
	Second	605541	78.4	214.9	10.8	10.8	10.7	10.7	10.6
	Middle	605665	84.0	478.3	12.6	12.4	12.3	12.3	12.3
	Fourth	605551	86.8	1036.0	14.0	14.0	14.0	13.9	13.9
	Richest	605350	88.8	4372.7	15.5	15.4	15.3	15.2	15.2
	Total	3027625	80.5	1341.1	57.8	57.4	56.8	56.7	56.5

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13.4.5 Household's ability to pay for social health insurance per month by chronic illness

In Table 13.16 it is shown that households with chronic diseases are able to pay more compared with households without any chronic condition. For these groups the ability to pay are K39 and K30 respectively for the medium contribution option at 2.5 percent of monthly income.

The households with diabetes, hypertension and cancer are able to pay the highest amounts, K67, K52 and K44 respectively. The households that are not willing to pay for social health insurance have almost the same characteristics but the ability to pay amounts are a bit lower.

Table 13.15 Household's ability to pay for social health insurance by chronic illnesses

Chronic Illness		All Households	House hold willing to pay (%)	Average income(K)	Ability to pay 1.5 K	Ability to pay 2.0 K	Ability to pay 2.5 K	Ability to pay 3.0 K	Ability to pay 3.5 K
At least one Chronis Condition	Zambia	3,027,625	80.5	1341.1	57.8	57.4	57.0	56.7	56.5
	Chronic Condition	1,196,957	80.7	1,554.8	24.5	24.1	24.0	23.9	23.3
	No Chronic Condition	1,830,667	80.4	1,201.1	33.7	33.2	32.9	32.8	32.7
Chronic Conditions	Hypertension	197,123	79.8	2,076.7	6.0	5.9	5.8	5.7	5.7
	Diabetes	41,835	80.1	2,697.4	1.2	1.2	1.2	1.2	1.2
	Cardiac disorder	57,075	73.2	822.0	2.0	2.0	1.9	1.9	1.9
	Arthritis	109,912	74.9	844.0	2.7	2.7	2.7	2.7	2.7
	HIV/AIDS	120,336	86.5	1,360.3	3.9	3.9	3.9	3.9	3.9
	Ulcer	70,747	81.5	1,578.5	2.8	2.8	2.8	2.8	2.7
	Gout	75,244	73.9	1,132.6	2.4	2.3	2.3	2.2	2.2
	Cancer	10,016	78.3	1,751.9	0.0	0.0	0.0	0.0	0.0
	Other	75,775	83.0	964.8	2.5	2.5	2.5	2.5	2.5
	None	2,027,093	81.3	1,319.6	33.7	33.1	32.9	32.8	32.6
	Not Stated	242,470	77.1	1,091.9	0.0	0.0	0.0	0.0	0.0
	Total	3,027,625	80.5	1341.1	57.8	57.4	57.0	56.7	56.5

The mean income among those with at least one household member with a chronic disease has a higher mean income than those households without someone with a chronic illness. Putting the threshold for anility to pay at 1.5 percent of the average household mean income would imply that the proportion of households with at least one member with a chronic disease that are willing and able to pay for social health insurance would account for 24.5 percent of the total populations. This portion declines marginally when the threshold is increased to 3.5 percent of mean income to 23.3 percent. Although households with no episode of chronic disease have a lower mean income, a higher proportion would be willing and able to pay for social health insurance. The rest of the table shows the distribution of ability to pay proportions with respect to various disease conditions.

13.5 Summary

13.5.1   Household perceptions of the proposed social health insurance scheme

There is overwhelming support for the social health insurance scheme proposed by the Government of the Republic of Zambia. Of all households in Zambia, 97 percent rate the

scheme as excellent, very good or good. Households in urban areas are the most positive. There is no big difference in ratings between the households in the formal and the informal sectors. The households think the scheme will make health care affordable and protect them against high health expenditure.

13.5.2   Willingness to pay for social health insurance

The majority (80 percent) of Zambian households are willing to pay for a social health insurance scheme. The average social health insurance contribution to be paid monthly in Zambia is K113, corresponding to 8 percent of the average monthly income for Zambia (K1,342).

The number of households not willing to pay for social health insurance is 589,516 corresponding to 20 percent of all households. Of these households 76 percent express that they cannot afford paying the contributions for the scheme; 66 percent of those households are located in rural areas. Most of these households need to benefit from cross-subsidization from the rich and healthy people, or be subsidized by government, or be exempt from contributing.

Households in urban areas are willing to pay more than households in rural areas, K148 and K83 respectively. The formally employed are willing to pay K223, more than twice the informally employed (K93). As expected, the low income households are willing to pay less than high income households. The median amount at national level, including the households not willing to pay, is K10 per month.

The age groups between 15-64 years are most willing to pay for social health insurance. Males are willing to pay more than females, and the amounts are significantly higher. The same holds for both the formally and informally employed. Households with five and six members are willing to pay more than other households.

Household's willingness to pay with respect to highest education attained ranges from K13 for pre-school level to K596 for university level. Household heads with no schooling are willing to pay less than those with schooling. Household heads who are paid employees are most willing to pay for social health insurance (86 percent), and they have an average income of K2,540 per month.

There are significant differences in willingness to pay between the socio-economic groups. The willingness to pay is lowest for the two poorest quintiles with 1.2 million households ranging from 65 percent to 78 percent. The households in the poorest two quintiles are willing to pay less than K50 per month compared with the richest 20 percent of households who are willing to pay K244 per month. The formally employed are willing to pay much more than the informally employed.

Households with chronic illnesses are willing to pay K131 compared with K108 for households with no chronic condition. The difference is 21%, indicating a higher willingness to pay, probably due to bigger need of health care. Households with cancer are willing to pay the highest amount, K317, followed by diabetes, hypertension and cardiac disorders.

The high demand for social health insurance among the households in the formal sector and the rich implies that the social health insurance benefits could be customized to their needs, or further contributions could be collected, to ensure sustainability of the social health insurance scheme. On the other hand, the low willingness to pay for households in the informal sector and the poorest indicates the need of cross-subsidization from the rich and healthy people, or being subsidized by government, or being exempt from contributing.

13.5.3   Ability to pay for social health insurance

The ability to pay is measured as a percentage of a household's average monthly income. The willingness to pay at national level for the contribution options 2.0 percent to 3.5 percent of monthly income ranges from K20 to K44. The ability to pay estimated for the medium at 2.5 percent is K34. It is significantly lower than the estimated average willingness to pay amount at K113.

The age groups between 25-64 years have the highest ability to pay for social health insurance, around 29 percent. For the medium contribution option, at 2.5 percent of monthly income, males are able to pay K28 and females K24.

The ability to pay for household heads with schooling and no schooling for the medium contribution option, at 2.5 percent of monthly income, are K36 and K11 respectively. There are significant differences in ability to pay between different socio-economic groups. The middle socio-economic quintile is able to pay K12 per month corresponding to 2.5 percent of their average monthly income. The two poorest quintiles are able to pay K2 and K5 respectively per month, and the two richest quintiles are able to pay K26 and K109.

Households with chronic diseases are able to pay a bit more than households without any chronic condition. The ability to pay for these groups is K39 and K30 for the medium option at 2.5 percent of monthly income.

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