STRATEGIES TO ENHANCE ACCESSIBILITY TO HEALTH CARE IN RURAL AREAS OF ZIMBABWE

By

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DEDICATION

I take pride in all those who believed in me.

DECLARATION

I declare that **STRATEGIES TO ENHANCE ACCESSIBILITY TO HEALTH CARE IN RURAL AREAS OF ZIMBABWE** is a result of my own efforts and declare that all the sources that I utilised or quoted have been indicated and acknowledged by means of complete references.

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SIGNATURE **DATE**

(Manenji Mangundu)

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ABSTRACT

Background: Accessibility to health care in rural areas is globally impeded by physical, material, human, financial and managerial resources and societal barriers in the health care system. The Systems Model formed the backbone to developing a strategic action plan to address the challenges experienced by all stakeholders involved.

Purpose: The purpose of this study was to describe accessibility to health care in rural areas to develop a strategic action plan to enhance accessibility to health care in these areas of Zimbabwe.

Methods: A multiple methods approach combining qualitative and quantitative components during 4 phases. Phase 1 collected quantitative data with questionnaires from professional nurses and health care users who were conveniently sampled. Phase 2 collected qualitative data with a nominal group from national health directors who were conveniently sampled. Phase 3 was based on the findings from Phases 1 and 2 with a literature control to develop a draft strategic action plan. During phase 4 the strategic plan was amended and validated with a validation tool by members of the parliamentary portfolio committee on health in Zimbabwe with all-inclusive sampling.

Framework: The Systems Model Framework was adopted for this study as outcomes and impact on people's health is determined by inputs, processes and outputs. This model was relevant and applicable to accessibility to health care.

Research findings: Accessibility to health care in rural areas of Zimbabwe is affected by inadequate distribution of physical resources, shortage of material and human resources, and a lack of financial resources. The strategies identified contributed to the strategic action plan which was amended and validated. The strategic action plan includes improving the health infrastructure, providing appropriate medical drugs, training and retention of health workers, providing medical equipment at the rural health facilities, reviewing the health worker workload and addressing staff shortages, providing free health care services in rural areas, and improving the capacity of the health care system.

Conclusion: The strategic action plan was developed based on the inputs of the relevant stakeholders and the System Model. The inclusion of the parliamentary portfolio committee on health (members of parliament of Zimbabwe) might enhance the possibility for implementation which can enhance the accessibility to health care in rural areas of Zimbabwe.

Key Concepts

Accessibility to health care; health care users; health facility; households; human resources; material resources; physical resources; professional nurses; Systems Model; rural areas.

TABLE OF CONTENTS

CHAPTER 3: PHASE 1 RESEARCH METHODOLOGY, DATA ANALYSIS, PRESENTATION AND INTERPRETATION

CHAPTER 4: PHASE 2 IDENTIFICATION OF STRATEGIES RESEARCH METHODOLOY, DATA PRESENTATION, INTERPRETATION AND LITERATURE CONTROL

CHAPTER 5: THE DEVELOPMENT OF THE DRAFT STRATEGIC ACTION PLAN

CHAPTER 6: PHASE 4: THE VALIDATION PROCESS
METHODOLOGY AND VALIDATION OF THE STRATEGIC ACTION PLAN

CHAPTER 7: CONCLUSIONS AND RECOMMENDATIONS

TABLES

FIGURES

ANNEXURES

ABBREVIATIONS

ZDHS	Zimbabwe Demographic Health Surveys
WHO	World Health Organisation
MMR	Maternal Mortality Ratios
TBA	Traditional birth attendants
PN	Professional Nurses
HCU	Health Care Users
PMTCT	Prevention of mother-to-child transmission
MoHCC	Ministry of Health and Child Care
MoHCW	Ministry of Health and Child Welfare
ZNSA	Zimbabwe National Statistics Agency
LMIC	Low and middle-income countries
MDG	Millennium Development Goal
SDG	Sustainable Development Goal
IOM	International Organisation for Migration
UNICEF	United Nations Children's Education Fund
MP	Member of Parliament
UNISA	University of South Africa
YLL	Years of life lost
ICF	Inner City Funds International
ART	Anti-Retroviral Therapy
HTF	Health Transition Funds
HSB	Health Service Board of Zimbabwe
PHF	Public Health Facilities
SAQ	Self-administered questionnaires
NGK	Nominal Group Technique
CDC	Centre for Disease Control
UNIDO	United Nations Industrial Development Organization
NFPA	National Family Planning Agency
TARSC	Training and Research Support Centre
EHT	Environmental health technicians
IHME	Institute for Health Metrics and Evaluation

CHAPTER 1: ORIENTATION TO THE STUDY

1.1 INTRODUCTION

Improved health and wellbeing is the goal of every health care delivery system in the world (Azétsop & Ochieng 2015:5). Citizens in every country have a right to health care. Allocating resources in a fair manner ensures that citizens can access health care, essential medical drugs, skilled and adequate health care workers, and health facilities (Chandler, Kizito, Taaka, Nabirye, Kayendeke, DiLiberto & Staedke 2013:1). The World Health Organisation (WHO) has set standards that every member country should attain to ensure accessibility to health care. According to WHO standards, every country should have a minimum of 228 health workers for every 100,000 people, maternity and laboratory equipment that facilitate evidence-based diagnosis, and health infrastructures within a walking distance of 5km (Nyandoro, Masanga, Munyoro & Muchopa 2016:27). In order to meet all these minimum requirements, there is a need for government commitment. Despite the efforts of WHO member countries to meet these minimum requirements, there are some health care users for whom health care services are not accessible.

More than 400 million people globally, mainly in low and middle-income countries, are unable to access health care services due to an unavailability of resources that includes physical, material, human and financial resources (WHO & World Bank 2015:20). Most governments assert that their citizens should enjoy widespread and equitable accessibility to health care (Loewenson, Masotya, Mhlanga & Manangazira 2014:27). However, many rural and remote communities worldwide often experience high levels of inaccessibility to health care. Even within the developed world, equitable and accessible health care is difficult to achieve, particularly in the rural populations where accessibility to quality health care can be dictated by the socio-economic status of the families (WHO 2015a:45; Evans, Hsua & Boerma 2013:546).

Shortages of health workers, as well as underdeveloped public and private health care systems and poor coverage of health facilities, contribute to the challenge African countries most frequently face, namely accessibility to health care (Obembe, Osungbade, Olumide, Ibrahim & Fawole 2014:85; Nyandoro et al 2016:27). The challenge of health care

accessibility is greater in rural areas with limited resources, and majority of people (67%) in Sub-Saharan countries, including those in Zimbabwe, live in rural areas (Zimbabwe National Statistics Agency (ZIMSTAT) & Inner City Funds International (CF international) 2012:13-14; United Nations Population Division 2013:11). According to the ZNSA (2012a:14), approximately 7 million Zimbabweans (54%) lack access to health care. Eighty-three (83%) percent of those 7 million people are living in rural areas where professional nurse coverage is merely 38% of the nursing workforce (Ministry of Health and Child Care (MoHCC) 2014:7; ZNSA 2012a:14).

1.2 BACKGROUND TO THE RESEARCH PROBLEM

The Republic of Zimbabwe is a landlocked country in southern Africa, divided into 8 administrative provinces, 2 cities with provincial status, and 59 districts. It is estimated that there are 13,061,239 people living in the country (ZNSA 2012b:11). According to the United Nations, approximately 67% of the population in Africa resides in rural areas, although urbanisation is projected to rise (United Nation World Population Prospect 2014:7). In Zimbabwe, 67.8% of the population live in rural areas (ZNSA 2012b:9). Zimbabwe's population is predominantly young: the median age is 18.8 years and 41% of the population is under the age of 15 (Zimbabwe National Statistics Agency and ICF International 2016:10; ZNSA 2012b:13).

Zimbabwe was severely affected by emigration, resulting in a brain-drain during the economic crisis in Zimbabwe between 2005-2011 (Hlupo & Tsikira 2012:604); an estimated four million of Zimbabwe's total population are currently living outside the country (ZNSA 2012:13; Institute of Medicine (IOM) 2011:3). The brain-drain had an impact on health care and service delivery. The worst affected was the MoHCC, where almost 45% of the employed nurses, and 60% of the physicians in the public health sector, migrated to other countries or joined the private health sector. This left the rural areas with less than 25% of health care worker coverage (Kevany, Murima, Singh, Hlubinka, Kulich, Morin & Sweat 2012:46). The most affected provinces were those close to borders like Matebeleland, Manicaland, and Masvingo. As indicated in Table 1.1, the ratio of physicians to population declined from 16 per 100,000 population in 2004, to 7 per 100,000 population in 2010, rising to 9 per 100,000 in 2015, which is far less than the 228 per 100,000 population recommended

by the WHO (Nyandoro et al 2016:28; Taderera, Hendricks & Pillay 2016:2; WHO 2014a:109). Table 1.1 depicts that the nurses' ratio increased from 72 per 100,000 in 2004, to 138 per 100,000 population in 2010, but again declined to 93 per 100,000 in 2015 due to economic challenges as a result of poor governance in Zimbabwe (Taderera et al 2016:2).

Table 1.1: Primary health care workforce ratio trends in Zimbabwe (personnel per 100,000 population)

Year	**2004**	**2007**	**2008**	**2009**	**2010**	**2011**	**2015**
Physician	16	54.6	59.8	66.9	7	7	8
Nurses/Midwives	72	121	111	135	138	89	93
WHO benchmark	**228 per 100,000 population**						
Source: Zimbabwe Health Professions Authority Data and Statistics, Health Services Board; Taderera et al 2016:2							

There was an increase in nursing schools run by the MoHCC in 2007 as the government set up at least one nursing training institution in each province. The nursing training institutions offered a diploma in nursing, which has remained the first level of nursing training in Zimbabwe (Kevany et al 2012:46; Nyandoro et al 2016:32). There was no expansion on university training of professional nurses or physicians. Only the University of Zimbabwe train physicians in Zimbabwe and no nurses are trained at degree level. More diploma prepared nurses were trained, but the density remained below the WHO standard benchmark of 228 per 100,000 population. The government also froze the employment of professional nurses in 2010 due to financial resource shortages (Taderera et al 2016:3; Nyandoro et al 2016:32). Some of the health facilities had to close due to the lack of professional nurses to man the facilities. The congestion at the few functioning health facilities contributed to long waiting times, delaying diagnosis (Kevany et al 2012:46), and increasing mortality rates that could have been prevented (Nyandoro et al 2016:32). The shortage of professional nurses in the rural areas further contributed to the health care inaccessibility. The ZNSA (2015:19) alarmingly indicated that 61% of mothers in the rural areas failed to take their sick children to the health facilities. Forty-five (45%) percent of the pregnant women delivering in the rural areas were assisted by untrained health workers and 32% delivered at home (ZNSA 2015:18). The unavailability of midwives may be related to midwives resigning from health facilities in rural areas to move to urban areas with improved working conditions. Some access part-time

work for an additional income and others emigrate from the country. The inaccessibility to midwives exposed pregnant women to interrupted services and long distance travelling in search of midwifery services.

Accessibility to health care services is strongly influenced by distance, as people must consider their availability of time, travelling costs, and work-related responsibilities (Loewenson et al 2014:53; Mabvurira, Masuka, Banda & Rangarirai 2012:226). According to the WHO (2015:15), the distance to the nearest health facility should not be more than 5km in order to enhance access to health care. In Zimbabwe, people in the rural areas walk more than 10km and some travel up to 50km to the nearest health facility (Loewenson, Kadungure, Laver, Shamu & Mushayi 2012:36; Loewenson et al 2014:52).

Health care accessibility can be enhanced by an effective infrastructure, including maintained roads, transport, and communication (Broni, Aikins, Asbeyi & Agyemang-Duah, 2014:31). Poor road maintenance and fuel shortages contributed to the unavailability of transport to the health facilities (Manjengwa, Kasirye & Matema 2012:11). In Zimbabwe, bridges that had collapsed due to rain were not repaired, hindering ambulances and other vehicles from collecting patients (Manjengwa et al 2012:11), negatively influencing the population's access to health care services from rural areas.

This deterioration of infrastructure was attributed to the economic crisis of 2007-2009 that lead to a significant reduction in gross domestic income that affected the living standards of the Zimbabwean population (Kevany et al 2012:47). From 2005-2008, unemployment became a structural feature of the economy and the median income levels declined to an average of $0.50 per day, while the income inequality between the executive and blue-collar jobs increased dramatically (Kevany et al 2012:47). The unemployed, therefore, did not have equal access to health care because households were forced to reduce spending on health care services for the family (Taderera et al 2016:3).

The Zimbabwe government introduced health care user fees in the 1990s as a financing system that enhances and improves the functioning of poorly resourced primary health care systems (Buzuzi, Chandiwana, Munyati, Chirwa, Mashange, Chandiwana, Fustukian & McPake 2016:13). The purpose of the health care user fees was to raise revenue to

complement traditional funding sources (public budget), improve professional nurses' motivation, service quality, and equity of health service distribution in the health facilities through the reallocation of resources collected through user fees (Buzuzi et al 2016:13). Instead, the introduction of health care user fees resulted in a drop in the utilisation of health care services and rising household expenditure on health care (Buzuzi et al 2016:31).

The contribution of household and individual expenditure on health increased, ranging between 45.8% in 2010 to 67% in 2015 (WHO & World Bank 2015:40; Buzuzi et al 2016:31). This has led to limited access to health care for those who can afford it, and exposed the poor to increasingly high costs, resulting in them consulting traditional health care services (Poverty Reduction Forum Trust 2011:15; WHO & World Bank 2015:40). Thirty-eight-point-six percent (38.6%) of the population in Chegutu district, and 39.4% of the population in Masvingo district (ZNSA 2012b:114), sought treatment from traditional healers. The ZNSA (2012b:115) found that 34% women gave birth at home with the assistance of a traditional birth attendant. This reduction in the use of health facilities was exacerbated by the lack of medical equipment, trained health personnel, and medical drugs.

Even where health care services were available and affordable, accessibility to medical drugs was limited (Nyazema 2010:246; Kevany et al 2012:46). The economic crisis led to a shortage of medical supplies and equipment in public health facilities (Nyakatawa, Madzimbamuto, Shumbairerwa & Chikumba 2016:3) that left patients with no alternative to treatment. Additionally, no medical drugs were issued despite health care users obtaining prescriptions at health services (Kevany et al 2012:51).

The shortage of medical drugs, vaccines, health care workers, as well as transport problems affected community outreach programmes like the immunisation of the under -5s. Community outreach programmes were cancelled or never carried out (Mhere 2013:61; Musemwa 2010:197). The family planning distribution programme crumbled as family planning distributors could not access family planning drugs to distribute. Antiretroviral drugs were also unavailable at the designated health facilities. Due to the shortages in resources, health care became an expensive commodity that was not accessible or affordable for people living in rural areas with financial challenges (Choguya 2015:4; Chimhowu, Manjengwa & Feresu 2010:90).

In the area of health financing, Zimbabwe's health care system was deeply affected. It failed to meet the minimum 15% annual health budget as indicated in the Abuja Declaration of 2001 where African leaders had agreed to allocate 15% of the country's total fiscal budget to the health sector (Loewenson et al 2014:36). Although some efforts were made by Zimbabwe's government to reverse the significant declines in the health share of the annual budget in 2010 (12.3% of total annual budget), the increase was reversed in subsequent years to 7% in 2012, 8.2% in 2013, 7.3% in 2015, and in 2016 it was 8.3% of the total fiscal budget. Zimbabwe has yet to meet the 15% minimum requirement (Loewenson et al 2014:36; UNICEF 2016:3). According to the WHO (2010a:7 in Maeda, Araujo, Cashin, Harris, Ikegami & Reich 2014:2), high-level political support is crucial to push through health planning and financial management. The balance of political power influences the government's decision to invest in health care (United Nations Economic and Social Affairs 2016:63). Government leaders need to act as advocates to set up a diverse group of stakeholders and uncover the most equitable, viable and sustainable ways to enhance accessibility to health care in rural areas (Maeda et al 2014:27).

Section 76 of the constitution in Zimbabwe has provisions for the right to health (Loewenson et al 2014:7). Therefore, the members of parliament and policymakers should uphold the constitution and enhance accessibility to health care in the rural areas of Zimbabwe.

1.3 STATEMENT OF THE RESEARCH PROBLEM

It became evident from informal inter-collegial discussions with health care policymakers, planners, health administrators, politicians, as well as health care users that health care accessibility in Zimbabwe is a major concern. Evidence of the dire need to address accessibility is the doubling of the mortality rates, the crude death rate which has increased from 949 per 100,000 in 1992 to 1,720 per 100,000 population in 2007, and 2,130 per 100,000 population in 2013, while infant mortality increased from 5,300 per 100,000 in 1992 to 6,800 per 100,000 in 2008 (Chimhowu et al 2010:89; Loewenson et al 2014:21; WHO 2016b:48). Inadequate and limited access to health care during pregnancy and childbirth increases maternal mortality among the population. The maternal mortality rate (MMR) in Zimbabwe rose from 695 per 100,000 in 1999 to 960 per 100,000 in 2011 (ZNSA 2012b:278). The upward trends in maternal mortality were, and remain, alarming, having

more than doubled since 1994. This is contrary to the Millennium Development Goals' (MDGs) target of two-thirds reduction of child mortality and three-quarters reduction in maternal mortality between 2000 and 2015 (Kadobera, Sartorius, Masanja, Mathew & Waiswa 2012:2; Kevany et al 2012:46; Chimhowu et al 2010:89).

The implementation of the land reform programme in Zimbabwe also contributed to an increase in the distance people had to travel to access health care. There were no health facilities in the proximity of the commercial farms in rural areas, and people had to travel distances of 10km or more to access health services because some health facilities had closed due to a shortage of health workers (Kevany et al 2012:47).

The economic crisis in Zimbabwe further contributed to a lack of material resources (medical drugs and medical equipment) and human resources (health workers). Trained health care workers left for greener pastures (Nyandoro et al 2016:28; Loewenson et al 2014:46; Kevany et al 2012:46; Chimhowu et al 2010:90; Todd, Ray, Madzimbamuto & Sanders 2010:606-609), leaving Zimbabwe with 38% vacant physician posts in 2014, and 14% vacant nursing posts in 2014 (Zimbabwe Health Services Board 2015:21). Many of the posts were frozen as the government had no financial capacity to meet the human resources' financial needs (Chimhowu et al 2010:90; Todd et al 2010:606-609 Kevany et al 2012:46; MoHCC & ZNSA 2014:146).

There was no managerial resource capacity at a national level to formulate and set out strategies to ensure that the limited resources available were utilised effectively, as 45% of the top management positions were vacant in 2014 (MoHCC & ZNSA 2014:146). It became critical to develop a strategic action plan in an attempt to facilitate the improvement of accessibility to health care in rural Zimbabwe.

1.4 THE PURPOSE OF THE STUDY

The purpose of this study was to describe the accessibility to health care in rural areas in Masvingo and Chegutu districts in order to develop a strategic action plan that can be used to enhance accessibility to health care in the rural areas of Zimbabwe.

1.5 RESEARCH OBJECTIVES

To achieve the purpose of the study, the following objectives applied:

1. Identify challenges experienced by professional nurses when providing health care at the rural public health facilities in Zimbabwe.

2. Identify opportunities for improving health care accessibility in the rural areas from professional nurses' perspectives.

3. Identify the challenges experienced by health care users to gain access to health care in the rural areas.

4. Identify opportunities to improve health care accessibility in the rural areas from health care users' perspectives.

5. Identify strategies to form the basis for the development of a strategic action plan.

6. Develop and validate a strategic action plan to enhance accessibility to health care in the rural areas of Zimbabwe.

1.6 THE SIGNIFICANCE OF THE STUDY

The intricate environment that the Ministry of Health and Child Care in Zimbabwe is working in, poses challenges that threaten the health of the rural populations. Applicable strategic action planning, and understanding both the capacity and challenges to deliver health care in rural areas, is consequently assumed to be a significant requirement. A strategic action plan is a tool that no health care organisation can afford to avoid if meaningful results are to be obtained. Some experiences drawn from rural areas point to the fact that one of the reasons for failing to demonstrate a positive health impact is due to lack of strategic action planning processes. The study, therefore, aimed to make a contribution towards the development of a strategic action plan.

The other significance of this study was that stakeholders actively involved in the health care system in the rural areas of Zimbabwe, namely the professional nurses as health care providers, health care users, as well as the national health directors as explained by the Systems Model, were involved in developing the strategic action plan. The members of parliament as the policymakers were involved in finalising and validating the strategic action plan. This process enhanced the possibility to implement the agreed upon strategic action plan in Zimbabwe.

1.7 DEFINITIONS OF KEY TERMS

Access to health care: Mosadeghrad (2014:77) defines access as the "degree of fit" between the health system and the population it serves. According to Evans et al (2013:546), access to health care refers to the ability to seek and reach the health care facility safely, and get affordable, necessary health care services including health-related information acceptable by all people.

Accessibility: Health care services are openly accessible with no unwarranted barriers of cost or distance. Health care services are accessible when they are closer to the people and are provided in the home, the community, the workplace, or health facilities as appropriate (Levesque, Harris & Russell 2013:4; Evans et al 2013:546).

Health care: The definition of health care is to prevent, treat, and manage illness and to protect mental and physical wellbeing through the services offered by the health professions and services (Balbus, Berry, Brettle, Jagnarine, Soares, Ugarte, Varangu & Prats 2016:175; WHO 2011:104).

Health Care Users: Individuals and communities who utilise health care services available to them (Baim-Lance, Tietz, Schlefer & Agins 2016:254).

Household refers to all family members living together, including nonrelatives such as domestic workers, in a housing unit (United States, Department of Health and Human Services 2013:16).

A **professional nurse** is a health worker trained as a nurse with a commitment to serve in the interests of health care users in particular, and the health welfare of society in general (Chiovitti 2014:54). A professional nurse has a specialised set of professional nursing skills, practices, and performances unique to the profession (Krautscheid 2014:44).

Rural is a location that is on the periphery of cities and towns with a low population density. The Health Resources and Services Administration of the United States, Department of Health and Human Services (2013:6), define the word "rural" as encompassing all population, housing, and territory not included within an urban area.

1.8 OPERATIONAL DEFINITIONS

Access to health care in this study refers to the distance to a health facility, the availability of transport to and from health facilities, the cost implication for transport, the travel time to the facility, the condition and existence of road networks, fiscal resources to pay for treatment, as well as resources (including physical resources, material resources, human resources, financial and managerial resources) available at the health facility.

Accessibility in this study refers to open access to health care in rural areas with no barriers of cost, distance, lack of professional nurses, and infrastructure.

Health care in this study refers to efforts made to maintain or restore physical, mental, or emotional wellbeing, especially by professional nurses at rural health facilities.

Health Care Users in this study refers to members of the public and communities who reside in rural areas who are prospective consumers of health care services.

Household in this study refers to an adult who is at least 18 years old and living with a family in the Masvingo and Chegutu rural districts.

National Health Coordinators in this study refers to Directors in Ministry of Health and Child Welfare departments at head office level.

Professional nurse in this study refers to a nurse who has completed a programme of basic, generalised nursing education, registered with the nursing council of Zimbabwe, who is authorised by the Zimbabwe Health Profession Council to practice nursing in Zimbabwe's health facilities (Loewenson et al 2014:12).

Remote rural areas in this study refer to an inaccessible community, due to long distances from highly populated settlements associated with a lack of infrastructure like roads, health facilities and communication.

Rural in this study refers to areas outside normal municipally managed towns, where no monthly service charges are paid by the households. In this study, Masvingo and Chegutu rural districts were included.

1.9 META-THEORETICAL/THEORETICAL GROUNDING

1.9.1 Meta-theoretical assumptions

Meta-theory is described as the thinking behind the theory (Musa 2013:43). Meta-theory shapes the actions of the researcher, and guides the researcher in the choice of research design. The understanding of the research is provided by the study of fundamental philosophical assumptions. These assumptions are entrenched in meta-theory, which forms and directs the way researchers appreciate reality (Musa 2013:44). The meta-theory that was used in the research study is constructivism.

Constructivism as meta-theory was applied as it is concerned with the research participant and the explanation of the participant's perspective. Constructivism proposes that everyone logically constructs something out of the world of experience through rational processes. Constructivism assumes that knowledge and reality are created and not ascertained by the mind (Thomas, Menon, Boruff, Rodriguez & Ahmed 2014:3). Constructivism uses the assumption that humans tend to explain their world by attributing meaning when interpreting experiences. Interpretation is done by utilising existing knowledge and creating new knowledge (Dennick 2016:201). The experiences of professional nurses and health care users on the accessibility of health care in rural areas in Phase 1 was instrumental in the

construction of strategies in Phase 2. Meaning was attributed through classifying experiences as challenges and opportunities in the accessibility of health care in a rural area in Zimbabwe. The theoretical framework (Systems Model) was applied as existing knowledge, and linked to the experiences and meaning from Phase 1 of this study. The Systems Model will be discussed in detail under the theoretical grounding. New knowledge was constructed through Phases 2 and 3, as a strategic action plan was developed to enhance the accessibility of health care in rural areas of Zimbabwe.

1.9.2 Theoretical grounding

The theoretical grounding of this study was the Systems Model (refer to Figure 1.1) to enhance access to health care. This is one of the models which originated from the General System Theory, and was developed by Onawa in 1994 (Ravitz, Sapirstein, Pharm & Doyle 2013:355). The choice of Systems Model was based on its constructivist value and it is commonly used in multiple methods research designs. The Systems Model was the basis for the assumption of this study that assumes if health care users and primary health care providers are involved, their world experiences in health care could shape and influence change in the accessibility of health care in rural areas of Zimbabwe.

Generally, information on health care systems is required for informed decision-making at national health directorate and political levels. The Systems Model is common in public health as it is used by health care managers to better understand how inputs interact with each other, including the processes involved to produce outputs to establish positive health outcomes (Cordon 2013:20). This approach has also been used by many organisations outside of health care who have adapted it accordingly (Semwanga, Nakubulwa & Adam 2016:3). The researcher used the Systems Model because health care is perceived as a system made up of sub-systems that are interconnected and the components are interdependent to form a holistic system. A system, in this context the health system, refers to a group of diverse elements or components that collectively give results that an individual component cannot produce in isolation (Ravitz et al 2013:355).

A health care delivery system depends on different resources, policies, processes, departments and programmes, and consists of all the administration, institutions, capital and

workers whose primary purpose is to enhance accessibility to health care (WHO 2013b:2). A functioning health care system also consists of well-organised inputs like physical, material, human, financial, and managerial resources. These inputs are transformed into outputs using processes (Cordon 2013:21; WHO 2012:105). The Systems Model and its components fit well in the health care delivery system blocks.

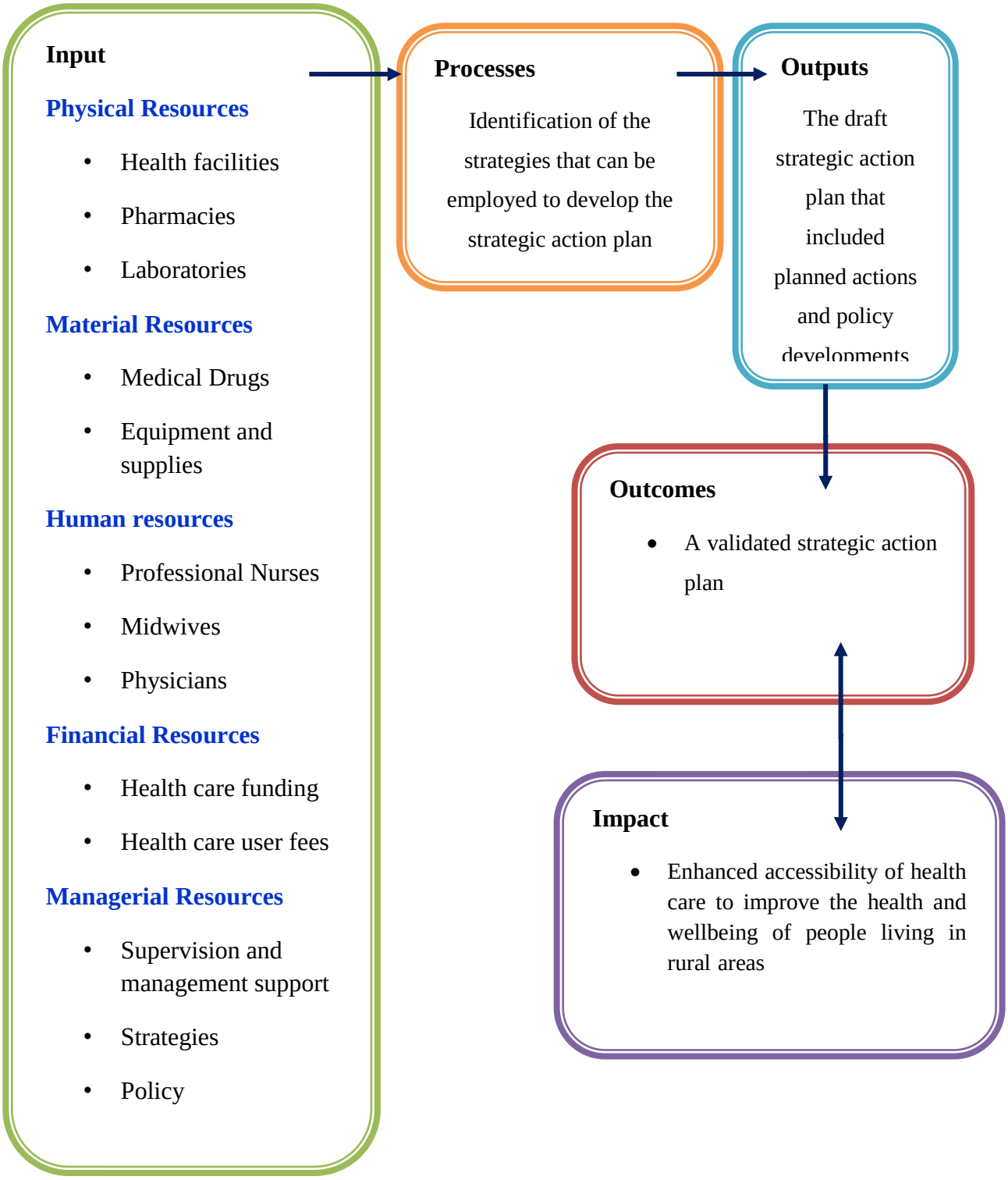

Figure 1.1: Systems Model (Forester 2009:6) as applied in the development of a validated strategic action plan to enhance accessibility to health care in rural areas

The Systems Model can be broken down into five connected parts (Van Olmen, Criel, Bhojani, Marchal, van Belle, Chenge, Hoerée, Pirard, Van Damme & Kegels 2012:5; Meyer & O' Brien-Pallas 2010:2831). Meyer and O'Brien-Pallas (2010:2833) explain the connected parts or components as inputs (materials or financial resources), processes (actions needed to change input to the output), outputs (results from conversion of inputs), and outcomes (association between outputs and the processes). The researcher thus found the Systems Model (refer to Figure 1.1) most appropriate for this study, and the components were applied as follows:

Inputs included resources such as human, material, physical (infrastructure), financial and managerial resources (Van Olmen et al 2012:5; Hayes, Parchman & Howard 2011:2), and were processed to produce the outputs of the health care system. The findings on physical, material, human, financial and managerial resources were seen as inputs (refer to Figure 1.1) from the professional nurses and health care users, and informed the development of strategies to enhance access to health care.

Processes were the strategic actions that facilitated the development of the strategies leading to policy development and enhancing the accessibility to health care (Hayes et al 2011:3). Processes refer to a sequence of actions that are assumed to convey the wanted results or output. In this study, the processes referred to the identification of strategies (based on the inputs) that were employed to develop the strategic action plan (refer to Figure 1.1).

Outputs were the immediate results of the planned activities and processes (Van Olmen et al 2012:5; Hayes et al 2011:4). In this study, output is the draft strategic action plan that included planned actions and policy developments (refer to Figure 1.1).

O**utcome** is the association between the output and the processes carried out. It shows transformation that has taken place, indicating progress in realising the eventual goals and objectives (Hayes et al 2011:4). Outcome, in this study, is referred to as the validated strategic action plan. It is expected to enhance accessibility and coverage, which are important factors that determine the utilisation of health care services (Van Olmen et al 2012:5).

Impact is explained as the durable result of the outcome and, in most instances, is seen over a long period of time (Hayes et al 2011:5). The desired impact of this study is to enhance health care accessibility to improve the health and wellbeing of people living in rural areas of Zimbabwe. Due to the time limitations of this study, the impact was measurable at the end of the research study.

The Systems Model underpins the identification of the strategies as well as the development of the strategic action plan to enhance health care accessibility in rural areas of Zimbabwe. The key stakeholders, namely professional nurses, health care users, national health directors, and members of parliament who are parliamentary portfolio committee on health (PPCH), were consulted to enhance ownership and the possibility of implementation. The development of a strategic action plan was a constructivist paradigm as it promoted meaningful contribution through genuine experiences, leading to the integration of findings from Phase 1 with the prior knowledge of national health directors (Phase 2). It promoted collective analysis of health care delivery systems, focusing on the Systems Model.

1.10 RESEARCH DESIGN

The researcher used a multiple methods research design for this study as explained in greater detail in Chapter 3, Section 3.2.1. The research study was organised into four phases and in each phase a different research method was used, targeting a different population group (refer to Section 3.3). The researcher used a quantitative research method in Phase 1, a qualitative research method in Phase 2, literature control in Phase 3, and qualitative research method in Phase 4 (refer to Table 1.2 for an overview of the phases, research objectives, research design, population, sampling and trustworthiness, validity and reliability aspects in the different phases).

Table 1.2: Illustration of the different phases of the study design

Objectives	Methodology (Multiple method)	Population	Target Population	Sampling	Data Collection Instrument	Data Analysis	Validity, Reliability and Trustworthiness
Phase 1 Identify challenges experienced by professional nurses when providing health care at rural public health facilities in Zimbabwe.	Quantitative Research	Professional nurses in Zimbabwe	120 professional nurses working in rural areas in Masvingo district and Chegutu district	No site sampling - all public health facilities were included Convenient sampling of professional nurses (available and willing to participate)	Self-administered questionnaire	SPSS version 22.0	A literature review guided the development of the self-administered questionnaire for professional nurses and the structured interview questionnaire for health care users. Both questionnaires were reviewed by the Scientific Ethics Review Committee, two supervisors and a statistician to confirm consistency and accuracy to measure errors. An appropriate sample of items were selected for the variables.
Identify opportunities for improving health care							

Objectives	Methodology (Multiple method)	Population	Target Population	Sampling	Data Collection Instrument	Data Analysis	Validity, Reliability and Trustworthiness
accessibility in rural areas from professional nurses' perspectives.							Questionnaire coding was done by the statistician for easy analysis purposes.
Identify the challenges experienced by health care users to gain access to health care in rural areas of Zimbabwe.	Quantitative Research	Health care users living in rural areas of Zimbabwe.	450 Households in catchment areas of the rural health facilities	Cluster sampling Convenience Sampling	Structured interview questionnaire	SPSS version 22.0	

Objectives	Methodology (Multiple method)	Population	Target Population	Sampling	Data Collection Instrument	Data Analysis	Validity, Reliability and Trustworthiness
Phase 2 Identify strategies to form the basis for the development of the strategic action plan.	Qualitative Research	National health directors.	All national health directors	Convenient sampling, available and willing to participate	Nominal Group	Thematic analysis	Trustworthiness was ensured through adhering to the nominal group technique protocol.
Phase 3	The researcher used the results from the nominal group as well as the literature control to develop the draft strategic action plan.						A thorough literature control was conducted to support or contradict the findings from the nominal group.
Phase 4 Validation of the strategic action plan	Qualitative Research	Members of Parliament.	PPCH (5)	All-inclusive sampling;	Validation tool	Participants reach consensus on the strategic action plan	A wealth of valuable information that accurately reflects participants' thoughts was gathered (refer to Section 4.4).

Objectives	Methodology (Multiple method)	Population	Target Population	Sampling	Data Collection Instrument	Data Analysis	Validity, Reliability and Trustworthiness
to enhance accessibility to health care in the rural areas of Zimbabwe.				all 5 members of PPCH available and willing to participate were included			

- **Phase 1**

In Phase 1, the researcher conducted a survey to demonstrate the challenges and opportunities of health care accessibility in rural areas of Zimbabwe from the perspective of professional nurses and health care users.

The sample sites included the rural health facilities in 59 districts of Zimbabwe. The researcher used impartial random sampling to determine the rural health facilities to be included in the study (refer to Section 3.5.2). Two random people were asked to each draw a number from a box. The numbers 1-59 represented the 59 districts, and each numbered piece of paper had the name of a district. The two numbers drawn (districts) were included in the study. In the selected districts, all the rural health facilities were included; thus, 45 rural health facilities were sampled for the study (refer to Section 3.5 for details on site sampling and respondent sampling).

The self-administered questionnaire for professional nurses (refer to Section 3.6.1) and a structured interview questionnaire for health care users were used to collect the data (refer to Section 3.6.2). Ten research assistants collected data from health care users using the structured interview questionnaire. A literature review was conducted to support the development of applicable questionnaires (refer to Annexures L and M), which were used for data collection.

The instrument was pre-tested before the data collection. Four professional nurses and 20 health care users participated in the pre-test (refer to Section 3.7). A total of 120 professional nurses and 450 health care users were sampled to participate in the main study. A detailed description of how the number of professional nurses and health care users were calculated and selected is provided in Chapter 3 (refer to Section 3.5.2.1).

- **Phase 2**

The data gathered during Phase 1 (from professional nurses and health care users) was presented to national health directors in session 1 (refer to Section 4.7.3).

During session 2 of Phase 2, strategies were identified to enhance accessibility to health care in rural areas of Zimbabwe.

The population was the 15 national health directors of the MoHCC. No sampling was done since all willing and available national health directors were invited to participate in the nominal group.

Data were collected through a nominal group technique where an open-ended question was asked (*Please write down the strategies you think can enhance accessibility to health care in rural areas of Zimbabwe?*) (refer to Section 4.7.3). The strategies to enhance accessibility to health care in rural areas of Zimbabwe were identified and prioritised. A literature control was done to support or contradict the findings from the nominal group.

- **Phase 3**

During Phase 3, the researcher used the identified strategies and available literature to draft a strategic action plan (Refer to Table 5.8).

- **Phase 4**

Phase 4 represented the validation process. The population and sample was the PPCH (refer to Section 6.2). All 5 PPCH members were invited, and thus no sampling was done. The draft strategic action plan was presented to these 5 members of the PPCH for review, finalisation and validation.

1.11 ETHICAL CONSIDERATION

All the protocols for ethical consideration were followed, including obtaining ethical approval from the Scientific Research Ethics Committee, Department of Health Studies at the University of South Africa (refer to Annexure A, reference number **HSHDC 240/2013**). Approval to conduct research in Zimbabwe was obtained from the Medical Research Council of Zimbabwe on 3 July 2014 (Approval number: **MRCZ/A/1832**) and from the MoHCC at all levels (refer to Annexures C, D, E, F & G attached).

The researcher sought permission from the administrators of all the health facilities that participated in the study before starting with the data collection process. The researcher respected the Nuremberg Code (WHO 2007:573). Respondents provided voluntary consent before being included in the study (Pollock 2012:4). The purpose of the research was explained to all respondents in Phase 1, and information letters were shared (refer to Annexures O & P). Participants in Phase 2 also received information letters (refer to Annexures N). They were informed that any information gathered will be used to develop a strategic action plan for enhancing accessibility to health care in rural areas of Zimbabwe.

The researcher explained that no remuneration would be provided to respondents and participants. The information letters (refer to Annexures N, O & P) also indicated that there were no foreseen risks in participating in the study, apart from their time to take part in the study.

The researcher advised each participant about their individual rights to preserve their personal dignity during the study, and that participation was voluntary. Each research participant was free to withdraw from the study without any jeopardy to their integrity. The researcher assured the respondents and participants of confidentiality, as no names or personal identification numbers were reflected on the data collection instruments. The researcher ensured that the principles of beneficence (doing good) and non-maleficence (do no harm), were applied throughout the research. In all phases of the study, all ethical considerations were adhered to.

The researcher ensured that informed consent forms were signed by the respondents (professional nurses – Annexure I – health care users – Annexure J) before data collection, and the participants (national health directors – Annexure R) signed informed consent forms before the nominal group technique was conducted (refer to Section 3.3.6).

In Phase 4 of the study, the members of the PPCH signed consent forms before reviewing the strategic action plan (refer to Annexure S).

1.12 SCOPE OF THE STUDY

The research study was conducted in Masvingo in the southern part of Zimbabwe, and Chegutu in the western part of Zimbabwe. Due to limited financial resources, accessibility and affordability, it was not possible to implement the research in other parts of the country. Consequently, the results cannot be generalised beyond the two participating districts.

1.13 STRUCTURE OF THE DISSERTATION

The study is organised into seven chapters as follows:

Chapter 1 contains the overview of the study, and includes the introduction, background, problem statement, purpose and the objectives, data collection and analysis of the study. It also discusses the significance and theoretical framework (Systems Model) of the study, as well as offering definitions of key concepts, including operational definitions.

Chapter 2 represents the literature review on accessibility to health care and the Systems Model (Inputs).

Chapter 3 provides a discussion of Phase 1 on the challenges and opportunities pertaining to accessibility to health care in rural areas. It includes the methodology, data analysis, presentation and interpretation of the findings.

Chapter 4 represents Phase 2, which is the identification of strategies using the nominal group technique. It reflects on the methodology, data analysis, presentation and a literature control that fits with the interpretation of the findings.

Chapter 5 presents Phase 3 and the development of the draft strategic action plan using the Systems Model. It focusses on the process of developing strategies/strategic action plan.

Chapter 6 presents Phase 4 and the validation process of the strategic action plan.

Chapter 7 contains the conclusion and recommendations for implementation of the strategic action plan and further research needed. It also includes the limitations of the study.

In order to provide a clear understanding of how the Systems Model was used as the theoretical method underpinning this study and how it played a vital role in the final strategic action plan, a flow diagram (Figure 1.2) is provided. This flow diagram offers the reader a glance of the entire research process, the application of the Systems Model, and how the model and research process are presented in the various chapters of the thesis.

1.14 SUMMARY

In this chapter, the overview of the research process followed to identify strategies and develop a strategic action plan to enhance accessibility to health care in rural areas of Zimbabwe was presented. Due to the complexity of the various phases and the methodology followed in each phase, a figure (Figure 2.1) will be provide at the beginning of each chapter to guide the reader through the thesis and thus the development of the strategic action plan.

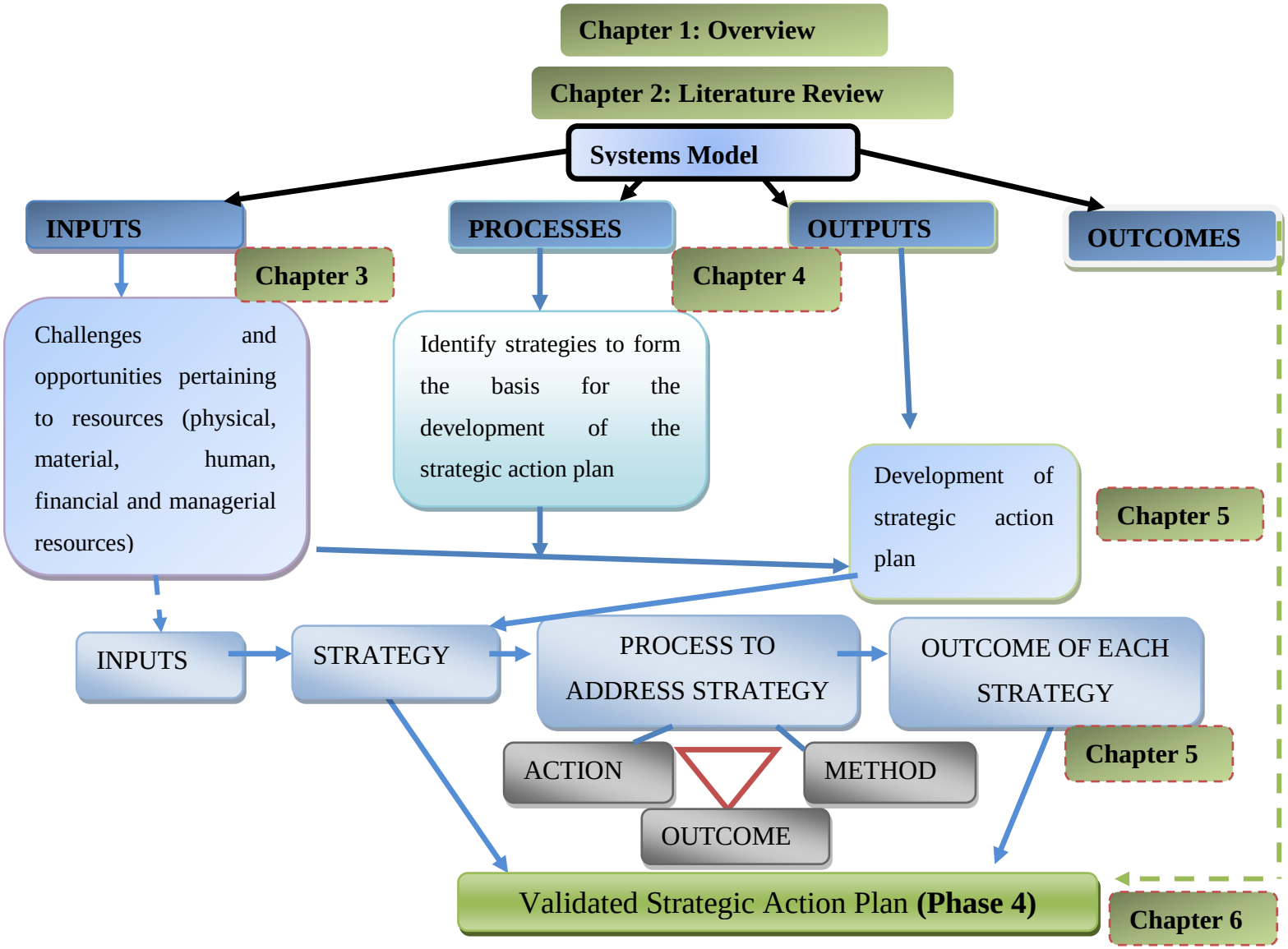

Figure 1.2: The Systems Model as theoretical underpinning of the study

CHAPTER 2: LITERATURE REVIEW ON ACCESSIBILITY TO HEALTH CARE AND THE SYSTEMS MODEL

2.1 INTRODUCTION

Figure 2.1 serves as a diagrammatic presentation of the thesis layout to guide the reader through the thesis.

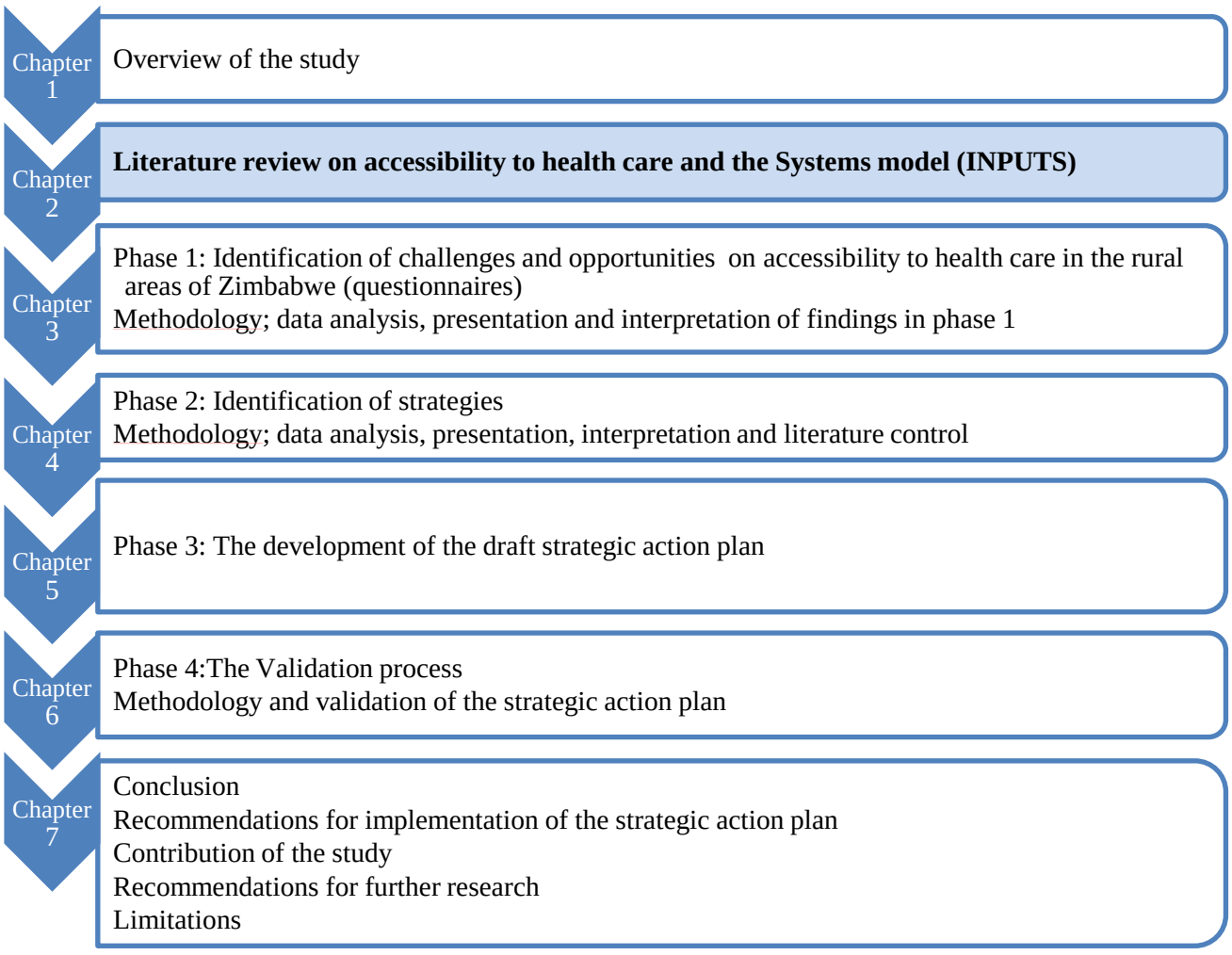

Figure 2.1: Diagrammatic presentation of the thesis layout and progress

The Systems Model as indicated in Chapter 1 (Figure 1.1), will guide the discussion and presentation of the literature in this chapter. Health care services and the challenges pertaining to accessibility in rural areas of Zimbabwe, with a focus on the components of the Systems Model, will be discussed. The researcher reviewed literature related to global and

Zimbabwe's health care system, addressing the components of the Systems Model and how they influence accessibility to health care.

The literature review was conducted using the keywords: *Systems Model, accessibility to health care, accessibility to medical drugs in rural areas, accessibility to health workers in the remote rural areas, availability of health facilities in the rural areas, influence of distance and transport on access to health care*. The researcher also included, *health care services, financial resources for health care in rural areas*, and *supervision of human resources in remote settings*. Journals, books and related research studies were reviewed in order to obtain literature on accessibility to health care globally, with particular focus on rural areas. The researcher consulted a subject librarian and used UNISA's repository and library to access e-journals, e-books, textbooks, WHO reports and research publications to obtain information. The e-journals accessed included African journals on health, American and European journals on health, the International Journal of mixed methods, the International Journal of Multiple Methods, and nursing research journals. Zimbabwe's health policy archives were also reviewed. A total of 394 different data sources, as mentioned, were reviewed; 95 were found not applicable to the study and were read, but not cited. The researcher used English databases only, specifically the UNISA library's access to e-journals, e-books and the repository.

2.2 THE SYSTEMS MODEL

The idea of thinking about things in wholes rather than parts was initiated by early philosophers (Cordon 2013:12). Philosophers like Aristotle and Descartes had varying perceptions regarding their view of the world. Aristotle considered the idea of wholeness, viewing the organisation as a whole and not as an individual unit, whereas Descartes supported the notion of breaking down things such as organisations and systems into smaller parts and explaining the interconnectedness of each part in the system.

The health care Systems Model also considers all the components of the system (the whole) within the context of the larger health care service, as suggested by Descartes (Ravitz et al 2013:355). The health care system can best be explained using the Systems Model which is composed of all the components that are mutually dependent, namely the inputs, processes,

outputs, and outcomes. To contribute to good health care delivery, thus accessibility, it is essential to take all the individual components as well as the system as a whole into consideration (Ravitz et al 2013:355).

Taking all the components of the Systems Model, namely inputs, processes, outputs and outcomes into consideration, will influence and determine accessibility to health care in any country (Block, Akosa & Chowdhury 2012:70). In other words, health care service provision depends on the way inputs such as physical, human, material, financial and managerial resources are processed to produce desirable outputs which can contribute to favourable health outcomes (MacKinney, Mueller, Vaughn & Zhu 2014:2). Enhancing accessibility and increasing coverage of health care services, therefore, depends on the management of inputs as well as the transformation process from inputs to outputs (Mills 2014:553). The achievement of the outputs depends on the performance of each component due to their interrelatedness and interdependence (Cordon 2013:20; WHO 2012:105). An alteration or change in one component may influence a change in another component, for example, a lack of financial resources (input) can negatively affect other resources (physical resources, human resources, material resources), contributing to poor outputs and health outcomes, thus negatively affecting accessibility to health care services (WHO 2012:105).

2.3 HEALTH CARE SERVICES

Health care services refer to the assistance provided to both sick and healthy people. It deals with the diagnosis and treatment of ailments and the promotion, protection and preservation of the health of the people (Chapman 2014:123, MacKinney et al 2014:2). It is an essential social service provided to an individual, family or community in order to protect the health of a country (Chapman 2014:126). It requires distinct steps that include gaining entry into the health care system, accessing a health facility (physical resource input), finding a health care provider (human resources input), and accessing medical drugs (material resources input) for the treatment of diseases (Shi 2012:3; Kevany et al 2012:45; MacKinney 2014:3). Effective and accessible health care services are essential in every country around the globe.

Worldwide, health care services include prevention, diagnosis, treatment, and rehabilitation services offered and organised by government, public, and private health organisations, as

well as agencies that finance health care service delivery (WHO 2014b:129). Faith-based organisations also provide health care services (Olafsdottir, Reidpath, Pokhrel & Allotey 2011:2). In Sub-Saharan Africa, the urban areas have the highest coverage of private health facilities compared to rural areas which are covered by public health facilities and faith-based organisations (Olafsdottir et al 2011:2).

The health care services provided in the rural areas include: (1) treatment of injuries and minor illnesses, (2) HIV/AIDS counselling and prevention of mother-to-child transmission (PMTCT), (3) malaria treatment services, (4) tuberculosis treatment services, (5) reproductive health (family planning services), (6) maternal health services (antennal and postnatal care), (7) chronic diseases, for instance, supplying medical drugs to diabetic patients, and (8) immunisation of under five children and preventive health services (Mhere 2013:62; Osika, Altman, Ekbladh, Katz, Nguyen, Williamson & Tapera 2010:70). Primary health care is offered in the rural areas by health providers, mostly professional nurses (Muchekeza, Chimusoro, Gombe, Tshimanga & Shambira 2012:3), and in the majority of the countries in the world, health care services flow from primary health facilities to secondary, tertiary, up to quaternary health facilities (WHO 2015a:11).

Zimbabwe is no different, as health care services are provided at primary, secondary, tertiary, and quaternary levels (Osika et al 2010:11). Clients who need care, other than primary health care, must be referred to the district hospital (secondary health care) (Muchekeza et al 2012:4), while those needing specialised health care services are referred to provincial hospitals (tertiary health care) which are found in each province in Zimbabwe (Muchekeza et al 2012:4). However, complicated health conditions are referred to the quaternary health facilities that receive patients from all regions of Zimbabwe. Secondary health care and specialised health care services are also offered at the missionary health facilities in rural areas in Zimbabwe. These missionary health facilities cover a wide range of health care services that include specialty health care services, disease prevention and control, and treatment of chronic diseases (Osika et al 2010:14).

Adequate access to health care services will contribute to the outputs of the Systems Model. These outputs include sound physical, social and mental health of the population, and the prevention of disability through early detection and treatment of health conditions (Chapman 2014:126; MacKinney et al 2014:3; WHO 2010b:14). Achieving the outputs as per the

Systems Model will assist in enhancing access to health for the general population, thus countries that assist citizens to have a habitual source of health care which is easily accessible, contribute to health care outputs and fewer disparities and costs (Shi 2012:7).

Achieving health outputs contributes to positive health outcomes which include a healthier population, reduced child mortality, reduced MMRs, and increased life expectancy (Shi 2012:5; MacKinney et al 2014:3). When the citizens of a country are healthier, the workforce becomes more effective, thereby positively contributing to the development of the country's economy, productivity, and wellbeing.

While the provision of adequate health care services has desirable health outcomes, many low and middle-income countries struggle to provide health care to its population. In Zimbabwe, the failure to achieve the health-related MDGs was due to weak health care systems (World Bank 2016:29). These weak health care systems contribute to inaccessibility to health care that will, in turn, affect health outputs and outcomes. Strengthening health care services can enhance access to health care (World Bank 2016:30).

2.4 ACCESSIBILITY TO HEALTH CARE

Globally, accessibility to health care relates to the appropriate use of available health care services to attain the best probable health outcomes among the population (MacKinney et al 2014:1; WHO & World Bank 2015:6). Evidence of accessibility is, among others, access to medical drugs, health workers and financial resources (McGrail 2012:1; Van Olmen et al 2012:5; Azétsop & Ochieng 2015:9). According to the WHO and World Bank (2015:20), accessibility to health care is a global issue that affects both developed and developing countries. The United Nations General Assembly set 17 Sustainable Development Goals in 2015 to be achieved by 2030, and good health and wellbeing is one of these goals (Osborn, Cutter & Ullah 2015:13). This goal is to promote healthy lives and wellbeing for everyone from childhood to adulthood. This goal has 13 targets of which universal health care coverage is the one closely linked to enhancing access to health care. The main focus of the universal health coverage is to promote accessibility to essential health care services such as critical medical drugs and vaccines by all the people (WHO & World Bank 2015:20; MacKinney et al 2014:1). The main goal of all countries' health care systems is to ensure that

its citizens can visit a health facility and receive the care they require (Schoeps, Gabrysch, Niamba, Sie & Becher 2011:492).

There is a worldwide challenge regarding access to health care (WHO & World Bank 2015:20). Governments fail to manage the important health care components as stipulated in the Systems Model (refer to Figure 1.1). According to the WHO and World Bank (2015:21), the lack of accessibility to health care continues to be a major concern with at least 400 million people failing to receive essential health care services. Approximately 7 million child deaths are annually recorded worldwide, and 41% of these child deaths occur in Sub-Saharan Africa (Adedini, Odimegwu, Bamiwuye, Fadeyigi & De Wet 2014:1).

Statistics that provide evidence of the influence of inaccessibility to health care in Zimbabwe include a high MMR of 960 per 100,000 in 2011, a child mortality rate of 9000 per 100,000 live births in 2014, tuberculosis at 782 per 100 000 people, and reduced life expectancy at 37 years for men and 34 years for women (Kevany et al 2012:46; ZDHS 2012:278; Murwirapachena 2015:418). Zimbabwe failed to reduce the child mortality rate from 9000 per 100,000 live births to meet the MDG's target of 3400 per 100,000 by 2015 (Loewenson et al 2014:24). The high mortality rates indicate inaccessibility to health care as a result of various factors which will be discussed.

2.5 FACTORS ASSOCIATED WITH ACCESSIBILITY TO HEALTH CARE (INPUTS)

As illustrated by the Systems Model (refer to Section 1.8), inputs are the critical factors that facilitate accessibility to health care. Taken into consideration the Systems Model inputs (refer to sections 2.5.1 – 2.5.6) are critically needed to ensure accessibility to health care services.

2.5.1 Physical resources

Physical resources are among the inputs required to enhance accessibility to health care, as explained by the Systems Model. Physical resources include the health facilities per se, distances to the health facilities, transport, road infrastructure, and communication infrastructure (Goodwin & Tobler 2013:6).

2.5.1.1 Health facilities

The equitable distribution of the health facilities, both private and public, is an essential factor for accessibility to health care services. According to Jacobs, Ir, Bigdeli, Annear and Van Damme (2012:102), improving accessibility to health care services depends, in part, on ensuring that people have a health facility to visit, thus building and providing health facilities where people are living. The availability of the health facilities acts as an incentive to motivate the people to use the health care system, and allows people to access them in times of need (WHO 2013b:546; Kevany et al 2012:47; McGrail 2012:9).

Zimbabwe's health system, as in other countries, have different health facility levels that include primary health facilities (clinics, health centres), secondary health facilities (district hospitals, mission hospitals), tertiary health facilities (provincial hospitals), and quaternary health facilities (central hospitals) (Nyandoro et al 2016:26; Sambo & Kirigia 2014:16). A health clinic is meant to serve a catchment population of 3,000 to 5,000 (Sambo & Kirigia 2014:17), while a health centre should serve a population of 10,000 (MoHCC 2014:10; WHO & World Bank 2015:45).

According to the United Nations Economic Commission for Africa (2014:61), globally the number of health facilities improved from a mere 0.1 per 100,000 population in 1990, to 6 per 100,000 population in 2013. The recommended minimum health facility coverage is 10 health facilities per 100,000 population. This difference between the actual coverage and the recommended minimum health facility coverage remains enormous.

Distance to the nearest health facility is also an important factor associated with accessibility to health care in low and middle-income countries, including Zimbabwe (Institute for Health Metrics and Evaluation (IHME) 2014:14).

2.5.1.2 Distance to the health facility

The WHO has a standard of 5km walking distance which is used to measure progress towards achieving physical accessibility to health facilities in both rural and urban areas (WHO & World Bank 2015:6). The distance to the nearest health facility inversely affects accessibility to health care (Kadobera et al 2012:2). Health care users, globally, walk an average distance

of 10km to the nearest health facility in rural areas, with Sub-Saharan Africa the most affected by these long distances (WHO 2015c:45).

In Zimbabwe, distance is a concern since many people walk more than 10km to the nearest health facility (Kevany et al 2012:47; World Bank 2015:13). Sixty percent (60%) of the people in rural areas of Zimbabwe walk more than 10km to the health facilities, 23% between 6 and 10km, and only 17% walk less than 5km (Loewenson, Kadungure & Shamu 2012:36). People who were resettled on large commercial farms during the fast track land reform in Zimbabwe between 1997 to 2009, mostly walk more than 10km to reach a health facility (Loewenson et al 2014:54). The ZNSA and ICF (2012a:123) also reported that distance to a health facility in Zimbabwe was indicated as a challenge by 34% of women who were seeking maternal health, and 49% of women seeking other health care services in rural areas. These distances to health facilities indicate poor distribution of physical resources as explained in the Systems Model, hence the policy of the MoHCC in Zimbabwe to have a health facility within a distance of 8km, and that of the WHO standard walking distance of 5km that should be respected (MoHCC 2014:41; Matondi 2012:178; World Bank 2015:15).

Distance plays a critical role in decision-making about whether or not to seek health care at the health facility or from traditional healers (Tran, Nguyen, Nong & Nguye 2016:6). In a study conducted in Vietnam (Tran et al 2016:6), it was found that women utilised the traditional healers due to the vast distances from their villages to the nearest health facility. Studies in Tanzania (Kadobera et al 2016:12) and China (Hu, Dong, Zhao, Hu & Li 2013:7), Nigeria (Uchendu, Ilesanmi & Olumide 2013:88) and Burkina Faso (Schoeps et al 2011:492), also provide evidence that the increasing distance to a health facilities was associated with increased child mortality risks, possibly because health facilities were too far, and therefore not utilised.

Due to the great distances to the health facilities, 35% of mothers in Zimbabwe deliver at home (ZNSA and ICF International 2012:123; ZNSA 2015:15), possibly a contributing factor for the high maternal mortality ratio of 450 per 100,000 in Zimbabwe (Murwirapachena 2015:418). Far above the MDGs' targets, which were 175 per 100,000 (WHO 2015c:82). Reducing the distances to the health facilities could facilitate accessibility to health care and improve health outcomes.

Other aspects negatively associated with long distances, thus inaccessibility, include a lack of child vaccinations (Blanford, Kumar, Luo & MacEachren 2012:11), increased child mortality (Blanford et al 2012:12), and high prevalence of malaria and tuberculosis. Children living in rural clusters within one hour of a health facility in Niger had higher chances of being vaccinated by age one year, compared to children living further away (Blanford et al 2012:11). In Burkina Faso, the mortality of children under 5-years was shown to double when the distance to health facilities was greater than a 4-hour walk (Schoeps et al 2011:495).

Distance negatively affects health seeking behaviour. The farther the distance, the more likely the health care users are to delay seeking health care (Kadobera et al 2012:6). This delay has multiple negative effects that include disease complications, hospitalisation, and impoverishment of the patients through payment of hospital admission fees (Nyandoro et al 2016:3; ZNSA & ICF International 2012a:123). Chronic diseases such as heart disease and diabetes require regular check-ups and treatment. Due to excessive distances, delays in reporting to the health facility for review might occur (Munjanja, Magure, & Kandawasvika 2012:140), contributing to treatment interruption that could worsen disease conditions and result in death (WHO & World Bank 2015:20). Hence, the distances that rural populations travel to health facilities generate challenges to accessibility to health care services.

Distance affects people's available time to travel to the nearest health facility. In these circumstances, the availability of transportation services, as supported by the findings in a Vietnam study (Tran et al 2016:5), can enhance accessibility (WHO & World Bank 2015:21; WHO 2010a:18; Levin 2010:24). Transportation to the health facilities, therefore, could bridge the gap of long walking distances to health facilities (Mattson 2011:7).

2.5.1.3 Transport to health facilities

Globally, motorised road transport has been viewed as a key strategy for improving the health and wellbeing of people, especially in remote settings (World Bank 2014:17; Munjanja et al 2012:141). The provision of a reliable transport system links the remote areas with the health facilities and cities (Munjanja et al 2012:141). In Sub-Saharan Africa, the majority of the population living in the rural regions experience an inaccessibility to transport, despite it being a minimum necessity to access health care (World Bank 2014:17). Zimbabwe, just like

other countries in Sub-Saharan Africa, has a weak transportation system, specifically in the rural areas (Chimhowu et al 2010:87; Musemwa 2010:186-87; Munjanja et al 2012:142).

In Zimbabwe, health facilities which were 20km away from villages but connected by good and available transport, were easier to reach than ones which were 7km closer with no transport (Munjanja et al 2012:141), indicating the need for a good transport system.

The unavailability of transport negatively affects the health of the people, as ill health care users living far from the health facilities delay seeking health care, thus contributing to disease complications (Harris, Goudge, Ataguba, McIntyre, Nxumalo, Jikwana & Chersich 2011:113 Nyandoro et al 2016:26), defaulting in medication usage (Govender, Cherisch, Harris, Alaba, Ataguba, Nxumalo & Goudge 2013:115; Syed, Gerber & Sharp 2013:993), and home births or births along roads while waiting for transport (Silal, Penn-Kekana, Harris, Birch & McIntyre 2012:9; Wilunda, Oyerinde, Putoto, Lochoro, Dall'Oglio, Manenti, Segafredo, Atzoril, Criel, Panza & Quiglio 2015:1). These challenges contribute to high maternal and infant mortality rates in Zimbabwe.

While transport infrastructure is important, it is also reliant on the road infrastructure (Makanga, Schuurman, Sacoor, Boene, Vilanculo, Vidler, Magee, Von Dadelszen, Sevene, Munguambe & Firoz 2016:3).

2.5.1.4 Road infrastructure connecting the health facilities

Providing reliable road infrastructure in rural areas connects people with the health facilities (World Bank 2014:17) and form an integral part of the inputs (Systems Model) needed to provide access to health care and improved health outcomes (Broni et al 2014:35; Syed et al 2013:985; World Bank 2014:17). Road infrastructure is essential to enhance accessibility, specifically to enable communities to reach a health facility, to ensure timely transport of patients to and from health facilities, the delivery of medical drugs to the health facility, as well as transportation of health workers from and to health facilities (Alford-Teaster, Lange Hubbard, Lee, Haas, Shi, Carlos, Henderson, Hill, Tosteson & Onegals 2016:7; Silal et al 2012:992).

In Sub-Saharan Africa, the majority of people have no access to road infrastructure, thus impeding on accessibility to health care (Broni et al 2014:37). The few road infrastructures that exist in developing countries, Zimbabwe included, are dry gravel roads (71%) (Blanford et al 2012:3; Faal, Cheetham, Honde, Maquengo, Fikru, Benham & Chorfi 2011:199; Makanga et al 2017:11). The challenges of the gravel roads are their susceptibility to seasonal weather conditions. During the rainy season the roads are impassable (Blanford et al 2012:3; Makanga et al 2017:11). The lack of yearly maintenance to keep them in good condition is an additional challenge. In Zimbabwe only 45% of the gravel roads are in use (Faal et al 2011:199), possibly due to the lack of maintenance.

The period 2005-2010 was characterised by a sharp decline in the state of an already ailing economy and, in general, little was done in terms of road rehabilitation and maintenance, leaving more rural roads in a poor state. The replacement of the road network has been estimated to be US$10 billion, and Zimbabwe currently cannot afford it (Faal et al 2011:206), thus roads are unlikely to be maintained.

This lack of infrastructure and maintenance contribute to poor access to health facilities, a lack of timely delivery of medical drug supplies, and poor movement of health workers (Broni et al 2014:36). The poor road infrastructure also affects the development of other infrastructures like communication systems which is one of the important inputs (Systems Model) to enhance accessibility to health care services

2.5.1.5 Communication infrastructure

Not only does road infrastructure affect accessibility to health care, but the communication infrastructure is also influenced (Munoz & Källestål 2012:10). Communication technologies, like mobile and landline phones, play a vital role in information flow between health care users and health care providers (Hampshire, Porter, Owusu, Mariwah, Abane, Robson, Munthali, DeLannoy, Bango, Gunguluza & Milner 2015:90; MoHCC 2011:34).

Communication by landline or mobile phones is essential to connect the rural health facilities with other higher levels of health care facilities for referral, as well as transferal of patients (DeSouza, Rashmi, Vasanthi, Joseph & Rodrigues 2014:6). Timely communication in cases

of referrals and emergencies ensure that quality care can be provided on the patient's arrival (Holmes & Kennedy, 2010 cited in Munjanja et al 2012:144).

The other advantage of a good communication infrastructure is that assistance can be sought by a physician or professional nurses in cases of emergency via a mobile phone or landline (DeSouza et al 2014:5), thus facilitating timely communication with health care facilities (DeSouza et al 2014:5; Free, Phillips, Watson, Galli, Felix, Edwards, Patel & Haines 2013:2).

In addition, mobile communication between health care providers and clients or patients can contribute to medical drug adherence, as is the case in other countries like India where mobile phone message reminders are used to enhance medical drug adherence for chronic patients (DeSouza et al 2014:5).

In Zimbabwe, not all health facilities are covered by landline phones or mobile networks, making it difficult for health care users and health service providers to communicate. Landline phones are sometimes not maintained, mobile phones have no coverage, or recharge facilities are not available, leaving facilities without any means of communication (Nyandoro et al 2016:2). This negatively affects timely communication (Hampshire et al 2015:96).

Lack of communication inhibits accessibility to health facilities, as well as access to material resources (Munos & Källestål 2012:2; WHO 2013b:546).

2.5.2 Material resources

Material resource is one of the essential inputs (Systems Model) needed to enhance accessibility to health care. These resources include medical drugs, medical accessories such as bandages, surgical razor blades, cotton wool, and other equipment needed to render service at health facilities (Graham 2014:3; WHO 2013b:546). The literature review in this section will focus more on medical drugs as an essential input according to the Systems Model, as most of the other supplies can be provided by the health care users themselves. Medical supplies will briefly be discussed.

2.5.2.1 Medical drugs

Medical drugs are necessary to save lives, prevent disease complications, reduce mortality rates (McKeever, Bloch & Bratic 2013:490), and reduce the length of hospital stays (Gray 2014:3; Alspach 2012:8; Burr 2012:431). The fatality rate for treatable diseases can be significantly reduced. For example, malaria and acute respiratory infection can have a fatality rate of less than 5% with treatment, while without treatment it can have a fatality rate of 30 – 50% (WHO & World Bank 2015:42; Caulder, Mehta, Bookstaver, Sims & Stevenson 2015:279). Another aspect negatively associated with a lack of medical drugs include the increase in preventable diseases like tuberculosis. In Zimbabwe, the tuberculosis prevalence rate increased from 389 per 100,000 population in the year 2000, to 433 per 100,000 in 2012. The lack of vaccines also contributed to the child mortality rate varying from 74 per 1000 population in 1990, to 90 per 1000 population in 2012 (WHO 2014b:132), and 69 per 1000 population in 2015 (ZNSA & ICF International 2016:17).

Medical drugs are associated with a reduction of mortality rates, thus increasing life expectancy and enhancing health outcomes (Wangu & Osuga 2014:439; WHO 2014b:47; McKeever et al 2013:490).

Only one-third of the global population have no access to medical drugs, with the most affected being people from Africa and Asia, where one-half of the population have no access to medical drugs (Graham 2014:3; Wangu & Osuga 2014:439). Health service providers across the globe experience medical drug shortages and Zimbabwe is no exception as 67% of the population lack accessibility to medical drugs (Khuluza, Kadammanja, Simango & Mukhuna 2016:146; Graham 2014:2). Both public health and private health providers are affected (Gobir, Sambo & Idriss 2014:39; Jamison et al 2014:11;) with a 35% medical drugs shortage in the public sector, and 63% in the private sector in Nigeria (Gobir et al 2014:12).

The shortage of anti-retroviral drugs (ARVs) at rural health facilities in Zimbabwe was attributed to a lack of planning by the health workers (Campbell, Scott. Madenhire, Nyamukapa & Gregson 2011:6). Yet, due to the lack of medical drugs, health workers are stressed and frustrated as they are likely to be blamed by some health care users when they fail to get the necessary prescribed medical drugs.

The shortage of medical drugs at the health facilities force the health care users to purchase expensive medical drugs in private health facilities which are unaffordable for poor people (Khuluza et al 2016:146; Osika et al 2010:86). This increases poverty, as well as disease complications (Chimhowu et al 2010:91; McKeever et al 2013:490).

The global shortfall of medical drugs contributed to the recommendation made by the Sustainable Development Goals for supporting research and development in medical drugs and vaccines for prevention and control of infectious diseases (WHO & World Bank 2015:42). Countries should develop and implement policies that contribute to an improvement in accessibility to affordable medical drugs by all populations, in line with the Doha Declaration on TRIPS Agreement of 2001 (WHO & World Bank 2015:42). Accessibility and affordability of medical drugs reduce the global disease burden and high mortality rate, since timely health seeking behaviour contribute to good health outcomes. The policies can focus on reducing the cost of medical drugs and enhancing sustainable access to medical drugs at the health facilities by promoting the development of domestic pharmaceutical industries (Sharma & Chaudhury 2015:1).

It is possible to enhance accessibility to medical drugs through outsourcing companies that have efficient procurement and supply chain systems (Khuluza et al 2016:147). Information and technology for timely communication regarding limited or no stock of medical drugs could be used to improve planning and ordering of medical drugs at health facilities (Sharma & Chaudhury 2015:6). In India, a short messaging system (SMS) through mobile phones is used to inform management to start initiating medical drug procurements when stocks are limited.

2.5.2.2 Medical supplies

Medical supplies for health care at the health facilities refer to consumable items like disposable syringes, needles, cotton wool, razor blades, bandages, sutures, catheters, intravenous fluids and other items like candles (Nyandoro et al 2016:28). In Zimbabwe, health care users have been requested to bring bandages, surgical razor blades, cotton wool and candles with them to the health facility (Nyandoro et al 2016:28; Kevany et al 2012:47). These medical supplies had run out and were not prioritised by the government. The research

studies done in Zimbabwe (Kevany et al 2012:47) confirm that the majority of the rural health facilities were requesting health care users, for example pregnant women coming for delivery at health facilities, to bring intravenous fluids, sutures, candles, cotton wool, gloves and methylated spirits.

The availability of medical drugs and medical supplies in the rural health facilities is also closely associated with the availability of adequate human resources, an important input as per the Systems Model.

2.5.3 Human resources

Human resources in health care include the health workers working at the health facilities who form an essential part of the inputs (Systems Model) required to enhance accessibility to health care (Mkoka et al 2015:2). Availability and accessibility to health workers in rural health facilities are strongly associated with access to health care (WHO 2015c:54). According to the WHO, coverage of 441 professional nurses per 100,000 people is recommended in order to enhance accessibility to health workers in the majority of countries (WHO 2015c:54; Nyandoro et al 2016:28).

2.5.3.1 Professional nurses

Health workers, such as professional nurses who are the frontline in the health system in rural areas, play an influential role to the health care users that they interact with, persuading them to attain positive health outcomes (Mkoka et al 2015:5; WHO 2013d:10). Professional nurses offer a wide range of health care services that include (1) managing minor ailments, (2) providing health education, (3) counselling patients and families, (4) providing follow-up care to chronic patients, (5) referring patients, (6) administrating vaccines, and (7) maternal health care (WHO 2013d:12).

Although human resource is crucial to provide access to health care in developing countries like Zimbabwe, the health sector is challenged by shortages. The global median for professional nurses stands at 284 per 100,000 population against the recommended 441 per 100,000 population (WHO & World Bank 2015:6). Therefore, the WHO estimates a shortfall

of 4.3 million health workers in all countries (WHO 2015b:3, WHO & World Bank 2015:5). The majority of countries in Africa and Asia are under the critical minimum required ratio of 441 professional nurses per 100,000 people (WHO & World Bank 2015:6). Sub-Saharan Africa has only 2.8% of the required professional nurses, with the highest global disease burden of 33% (Nyandoro et al 2016:31; O'Brien & Gostin 2011:14-15).

In Zimbabwe, the ratio of professional nurses to the population is 140 per 100,000, thus it is merely impossible to provide access to health care (Nyandoro et al 2016:28, Loewenson et al 2014:47; WHO 2014b:132) with this proven lack of human resources. If Zimbabwe had filled all vacant positions for professional nurses and midwives in 2012, the professional nurse ratio could have increased to 165 per 100,000 population – still short of the required WHO standard of 441 per 100,000 population (MacKinnon & MacLaren 2012:9, Nayandoro et al 2016:28) – but the posts were not filled. In Masvingo province, the approximate ratio of professional nurses is a very alarming 21 professional nurses per 100,000 people (including midwives) (Nyandoro et al 2016:31). It is troubling that rural areas in Zimbabwe have coverage of only 38% of the total professional nurses, although 67% of the population live in the rural areas in Zimbabwe (Nyandoro et al 2016:31). It is thus clear that in Zimbabwe accessibility to health care services is a challenge as there are too few professional nurses to provide the health care services (MacKinnon & MacLaren 2012:10).

The lack of professional nurses has contributed to the lack of essential skills and competencies needed to provide primary health care services such as prevention, early diagnoses, and control of diseases in the rural areas (Uys & Klopper 2013:3). The availability of adequate numbers of professional nurses (441 professional nurses per 100,000 people) offers the possiblity to have a combination of diverse nursing skills at the health facility, thereby improving accessibility to health care (MacKinnon & MacLaren 2012:12). Thus, a so-called skill mix is needed to ensure that health facilities have the most cost-effective combination of roles and professional nurses to meet the health care users' needs. According to the WHO (2013d:8), professional nurses need to be comprehensively trained to achieve the skills and competencies required to manage and provide health care at the health facilities.

The professional nurse training that has been focused on basic nursing skills like bio-psychosocial sciences of humans, art and science of nursing, and principles of illness

management (curative, prevention, promotion and rehabilitation methods) should include research training to facilitate professional nurses to put evidence-based treatment into practice (WHO 2013d:8).

Inadequate numbers of trained professional nurses at the health facilities contribute to work overload, demotivation and stress, thus inhibiting meaningful patient care (Grignon, Ledikwe, Makati, Nyangah, Sento & Semo 2014:92). The absence of trained professional nurses also contributes to a lack of adequate time to attend to patient consultations, and less contact time with patients when dispensing medical drugs and conducting maternal health services (Smith et al 2015:279). One-on-one nursing care is merely impossible (Govule et al 2015:261). There is also high professional nurse turnover (Kambarami, Mbuya, Pelletier, Fundira, Tavenga & Stoltzfus 2016:238) due to work overload affecting the retention of existing professional nurses at the rural health facilities.

The shortage of professional nurses in Zimbabwe was attributed to the freezing of professional nurses' posts by the MoHCC (Nyandoro et al 2016:29), the ageing nursing population with no replacement plan in place, as well as the migration of professional nurses to private companies with better remuneration and conditions of service than the government facilities (Govule et al 2015:255). Both the freezing of posts and the failure to employ qualified professional nurses were caused by a lack of financial resources (MacKinnon & MacLaren 2012:9).

In rural areas of Zimbabwe, the government removed incentives like free transport and night shift allowances, despite evidence of the positive impact thereof on the retention of professional nurses (Nyandoro et al 2016:29; UNICEF 2016:5), further impacting on the professional nurses' shortage. In addition to the removal of incentives, the professional nurses' salaries in Zimbabwe remained stagnant for years, adding to the demotivation of professional nurses (Nyandoro et al 2016:32) which led to resignations by professional nurses employed at the health facilities (MacKinnon & MacLaren 2012:10). Opportunities for further education was also limited due to financial constraints (Kevany et al 2012:48), despite evidence that career development and training opportunities improve job satisfaction and enhance the retention of professional nurses in rural areas (Nyandoro et al 2016:30).

In order to address the shortage of professional nurses, various measures can be taken by governments, like unfreezing all vacant posts at the rural health facilities and providing rural allowance incentives as motivations for working in those remote areas (WHO 2013b:16). There is a need to implement strategies that address employee career advancement and promotion. In some regions, like the WHO Region of the Americans, professional nurses and midwives have opportunities to advance their education through undergraduate and postgraduate bridging courses (WHO 2013d:60). The WHO African region, of which Zimbabwe forms part, still falls behind as professional nursing institutions are not being upgraded to graduate level; they are still only offering a diploma in general nursing (Chirwa, Mashange, Chandiwana, Buzuzi, Munyati, Chandiwana & Witter 2014:18). This, despite the WHO's (2013d:10) resolutions at the World Health Assembly 62.12 and the World Health Assembly 64.7 that called for the training and retention of adequately trained professional nurses. First degrees and postgraduate degrees by professional nurses (WHO 2013d:12) will prepare nurses with the competencies to offer quality care in health facilities. However, in Zimbabwe, the MoHCC is still training professional nurses with diplomas and not degrees (MoHCC 2014:16), hence Zimbabwe should work towards the World Health Assembly resolution 64.7 to upgrade nurses' qualification to degree level.

Other measures that can be taken by government include allocating financial resources for the recruitment of professional nurses to cover all posts that were frozen to address the challenges of shortages in the rural areas (Dieleman, Watson & Sisimayi 2012:13; Chirwa et al 2014:18). The health workers should be equitably distributed in all areas regardless of the location. This is based on the fact that the effective distribution of professional nurses contributes more to the quality of health care in rural areas than merely the numbers. Equitable distribution of professional nurses prevents understaffing, which is the leading obstacle to accessibility to health care services in rural areas (Tao, Huang, Long, Tolhurst & Raven 2011:7010). The MoHCC can address the poor distribution of professional nurses by enforcing retention policies that favour students from rural areas for training as health workers (Tao et al 2011:7011). According to Goodwin and Tobler (2013:6), professional nurses from rural areas are likely to remain and work in those rural areas.

2.5.3.2 Managerial resources

Although professional nurses form an integral part of the health care delivery system as frontline workers, managerial resources are also strongly associated with access to inputs to enhance accessibility to health care for better health outcomes (WHO 2014a:4). Managerial resources entail health care managers that can manage financial resources, assets, materials and health workers (Aguenza & Som 2012:91). Managerial resources influence the processes that transform inputs into outputs for positive health outcomes. A strong managerial component can aid the process of retaining and attracting professional nurses and contribute to better health care services in the rural areas (Aguenza & Som 2012:89), which is accessible to the community.

The availability of health care managers also influences the formulation of favourable health policies that enhance access to health care. Hence, the health care sector requires managerial resources for improving accessibility to health care services (Aguenza & Som 2012:91).

One of the indicators of good management of the health care systems is the progressiveness or despair with which individuals can access health care in rural areas (WHO 2014:4) and is normally influenced by supportive supervision. Management refers to the way a manager works with and through others to attain organisational objectives in a well-organised manner (Aguenza & Som 2012:91), in this case health managers supervising the professional nurses.

Supervising professional nurses in rural areas is critical for health care accessibility and for improving health worker performance to enhance health outcomes (Systems Model) (Institute for Health Monitoring and Evaluation (IHME) 2014:16). By district and provincial health managers supervising health workers at rural health facilities, an opportunity for the professional nurses to improve health care service delivery can be created. If district and provincial health managers conduct monthly visits, and provide opportunities for lateral exchange of experiences, the traditional professional isolation of health workers in rural areas can be eliminated (WHO 2016a:18). The supervisions visit should cover all aspects of the rural health facility's functioning, including financial management, drug management, monitoring of prices and treatments, flow chart use, expanded programmes on immunisation coverage, and mother and child health issues (IHME 2014:16). Supportive supervisory

practices, rather than controlling or instructive attitudes, have motivated and reinforced the skills of health workers at the health facilities, thereby enhancing positive health outputs (WHO 2013a:19).

In rural areas, supervision is critical as the transformation of health facilities (inputs) to strengthen the health systems (outputs) require creative and spirited health care managers who can emphasise the need for strong organisation skills and networking with others, shared learning, and collaborating with external donors and experts, building a strong health care system.

Health care managers, who are focused on promoting the empowerment of professional nurses through supervisory visits and in-service training on leadership roles at every level of the health system, contribute to quality health care (WHO 2013:23).

Quality health care services are more than mere clinical expertise, but also involve supervisory support, teamwork and interpersonal relations with management (WHO & World Bank 2015:21). Informed choices pertaining to financial resource allocations, especially in poor resource countries like Zimbabwe, need health care managers who can advocate for cost effective options to transform inputs into outputs, and in so doing, provide quality health care and positive health outcomes (Aguenza & Som 2012:91). The professional nurse leaders are vital for the management and processes of formulating and enforcing favourable health policies that enhance accessibility to quality health care, mostly observed in waiting times (Swanson et al 2015:5).

2.5.4 Waiting time

Waiting time is the time the health care user spends before being attended to by health workers when seeking health care (Monstad, Engesaeter & Espehaug 2013:1). According to Oche and Adamu (2013:589), the recommended waiting time for health care users before being attended to at the health facility should be within 30 minutes; however, people frequently wait much longer (Pizer & Prentice 2011:576; Munjanja et al 2012:143; Oche & Adamu 2013:589; WHO 2014b:23). In Boston (USA), health care users wait 60 minutes on

average (Pizer & Prentice 2011:576), in Nigeria 173 minutes (Oche & Adamu 2013:589), and in Zimbabwe waiting time varies from 60 to 180 minutes (Munjanja et al 2012:143).

Timely attending to sick health care users is essential to achieve better health outcomes, specifically attending to emergency conditions such as heart attacks and strokes where every second is critical to the health care user's survival and chance of recovery (Munjanja et al 2012:143; Oche & Adamu 2013:589). Waiting time is viewed as a resource investment for health care users' health and wellbeing, hence it is crucial to health care users when consulting the professional nurse or physician (Oche & Adamu 2013:589). The shorter the waiting time, the more health care users are satisfied with their access to health care (Viberga, Forsberga, Borowitz & Moline 2013:53; Pizer & Prentice 2011:677).

Long waiting times have negative consequences such as a loss of income (Pizer & Prentice 2011:677). Health care users who spend most of their time seeking health care fail to attend to work, which generates an income for their families. Additionally, the longer the health care users wait to be attended to, the riskier the disease progress into complications leading to poor health outcomes, as in Nigeria, with an average waiting time of 173 minutes (Oche & Adamu 2013:589) and in Zimbabwe, 180 minutes (Munjanja et al 2012:143). Thus, diseases progress into complications which contribute to high mortality rates. For example, diabetic patients end up with gangrene or lower-extremity amputations due to toe ulcers (Viberg et al 2013:54; Kaarboe & Carlsen 2013:2; Pizer & Prentice 2011:677). The problem has occasionally resulted in the collapse and/or death of sick health care users while waiting at the health facility. Additionally, it has battered the confidence in public health facilities that are at times poorly managed, leading to health care users absconding and defaulting on their treatment, especially chronic patients suffering from diabetes, tuberculosis and HIV/AIDS.

Also, health care users see long waiting times as an obstacle to obtaining health care and a source of stress for both health care users and professional nurses (Mohebbifar, Hasanpoor, Mohseni, Sokhanvar, Khosravizadeh & Isfahani 2014:173). Waiting time contributes to health care users' frustration in queues at the health facilities, or waiting for their turn to be attended by the professional nurses for those waiting at home, and increases the likelihood of missing the next appointment with the professional nurse. The professional nurses are also negatively affected by the long waiting time as they are forced to work longer hours, causing

them stress and contributing to poor quality health care (Kamil & Lyan 2013:56); particularly in health facilities where long waiting times at the health facility are caused by various factors (Masango-Makgobela et al 2013:2).

Causes of long waiting times vary by health facility and depend on the number of sick health care users attended to, the efficient handling of attendance, procedures, or the availability of health workers (O'Neill, Edim & Obarein 2014:16). Several authors (Nyandoro et al 2016:27) who conducted a study in Zimbabwe, found that poor management of health care services, lack of professional nurses, lack of teamwork, and shortage of health facilities contribute to long waiting times at health facilities. Also, the Zimbabwe health care system is in a deprived state and this is mainly noticeable by the serious under-funding of the health care system (UNICEF 2016:3). Addressing long waiting times is significantly associated with the allocation of adequate financial resources to the health sector.

2.5.5 Financial resources (Systems Model input)

Financial resources refer to the funding required to finance health care system activities and entail health care assets and money which form an integral part of inputs needed to provide access to health care (Asante, Price, Hayen, Jan & Wiseman 2016:8). The formal, informal and indirect costs of health care services should not surpass the health care users' capacity or impoverish them (Abdou-Illou, Haddad, Agier & Ridde 2015:2; Lagarde & Palmer 2011:5). When this happens, it signifies inaccessibility to financial resources.

The health care system functions when financial resources, such as money, are available to pay salaries, medical drugs, ambulance operations, and other logistics expenditure (Asante et al 2016:8). Financial resources have a direct influence on accessibility to health care, as does other Systems Model components, including human resources, material resources, and physical resources that depend on the availability of money (Asante et al 2016:13; Uzochukwu, Ughasoro, Etiaba, Okwuosa, Envuladu & Onwujekwe 2015:438).

Sub-Saharan Africa is facing financial challenges as evidenced by the allocation of only 11.1% of the total government's annual budget to health care (UNICEF 2016:3; WHO & World Bank 2015:41), which is below the Abuja Declaration target of at least 15% of total

government annual budget expenditure agreed on by Africa governments (WHO & World Bank 2015:41). In Zimbabwe, the annual health care budget allocation of 8.3% in 2016, was far below both the 11.3% Sub-Saharan Africa average health care annual expenditure and Abuja Declaration target of 15% (UNICEF 2016:3). Zimbabwe spent an average of US$24.34 health capita in 2016, which is lower than the recommended WHO target of US$34, and the Southern Africa Development Community (SADC) average of US$145.29 (UNICEF 2016:3).

The inadequate funding of inputs such as health facility infrastructure, human resources (Systems Model) and essential medical supplies (material resources), negatively impact on outputs like reductions of morbidity and mortality rates (UNICEF 2016:3), thus negatively affecting health outcomes (Masiye, Kaonga & Kirigia 2016:3).

The insufficient provision of financial resources by the Zimbabwe MoHCC contributed to the failure to employ more professional nurses and retain the experienced professional nurses already in posts (Masiye et al 2016:2; Nyandoro et al 2016:28, UNICEF 2016:3), thus failing to meet the minimum required professional nurse to population ratio.

The poor allocation of financial resources led to the introduction of health care user fees, which created a barrier to accessibility to health care services, especially by the poor communities who cannot afford to meet the costs at point of entry into the health care system (Abdou-Illou et al 2015:3; World Bank 2015:41; Phiri & Ataguba 2014:3). Health care has been restricted to those who can afford to pay (World Bank 2015:41; Kambarami et al 2016:239). However, in Zimbabwe, ZNSA (2012:123) found that only 50% of women who can afford to pay health care user fees access health care services in the rural areas (Kambarami et al 2016:240).

Some of the negative implications associated with the lack of financial resources are self-diagnoses by health care users, and seeking alternative sources of treatment like traditional healers (Masiye et al 2016:2; ZNSA & ICF International 2016:35; Chatt & Roberts 2013:15). The use of traditional health service providers often occurs in the rural areas where residents are in poorer health than urban residents (WHO 2013b:547). This was also noted in Zambia, where the implementation of a health care user fee policy at health facilities was eliminated

after realising that the poor were failing to access health care services, and ended up buying medical drugs from pharmacies without prescriptions (Masiye et al 2016:3; Chatt & Roberts 2013:15).

The impact of the lack of financial resources on accessibility to health care is worse in areas where poor people are selling their livelihoods in order to afford the health care user fees and obtain access to health care (WHO & World Bank 2015:41). User fees' spending is also a challenge to the health care users as it increases disparity and contributes to poorer health outcomes (Masiye et al 2016:2).

Despite the challenges in accessibility to health care, there are measures that can address these challenges. Various forms of prepayment of user fees for services, or subsidised communal insurance systems through pooling of funds (WHO 2013b:7, Ridde, Robert & Meessen 2012:4), can provide financial risk protection. Pooling funds can be through taxation, other government levies, or health insurance, and is commonly derived from a mixture of sources. These include the Zimbabwe AIDS levy, which was introduced as part of the monthly tax contribution by civil servants (WHO 2013b:7). Using pooled funds can enhance accessibility and harmony among the rich and the poor (Atun, Aydın, Chakraborty, Sumer, Aran, Gurol, Nazlıoğlu, Ozgulcu, Aydoğan, Ayar, Dilmen & Akdağ 2013:65). The pooling system offers a means to re-plough financial resources into the health system, contributing to the availability of a wide range of health care services and improving the quality of health care services (WHO 2013b:7; Atun et al 2013:67). It is also important that the resources are well managed by senior health workers who ensure equitable distribution among all health facilities (WHO 2013b:10).

2.6 PROCESS

Process refers to a sequence or means of actions that are used to transform inputs into outputs (Hayes et al 2011:3). In this study, the processes refer to the use of a nominal group technique to identify and develop strategies that were carried out in Phase 2 of the study. These strategies were developed based on the findings from the Systems Model components from Phase 1. This process will be presented in Chapter 4.

2.7 OUTPUTS

Outputs entail the immediate results of planned activities after going through the process of transformation (Van Olmen et al 2012:5; Hayes et al 2011:4). This Systems Model component is applied in Chapter 5, where the strategic action plan is developed (in Phase 3) by using the data from Phases 1 and 2, as well as a literature control. Output, in the form of the draft strategic action plan, is presented in Table 5.8.

2.8 OUTCOMES

Van Olmen et al (2012:5) define outcomes as the association between the output and the processes carried out. The Systems Model outcome was applied during Phase 4, and the process is discussed in Chapter 6 of the study. The outcome is the validation of the strategic action plan (refer to Table 6.4).

2.9 SUMMARY

This chapter provided a review of literature on accessibility to health care using the Systems Model as a point of departure. The main factors associated with accessibility to health care, namely the inputs of the Systems Model, including physical resources, material resources, human resources and financial resources, were reviewed. The literature was used to ensure that the questionnaire used for data gathering in Phase 1, was scientifically sound. The processes, outputs and outcomes as per the Systems Model were mentioned, but is presented in Chapters 3, 4, 5 and 6 (see flow of chapters in Figure 3.1).

CHAPTER 3: PHASE 1 RESEARCH METHODOLOGY, DATA ANALYSIS, PRESENTATION AND INTERPRETATION

3.1 INTRODUCTION

In this chapter, the processes applicable to Phase 1 are presented, as indicated in the coloured section in Figure 3.1. The research design, sampling methods, data collection instruments, and data analysis, presentation and interpretations, are presented. This chapter therefore focusses on the processes followed to gather and present data required as inputs according to the Systems Model (refer to Section 1.8) and inform Phase 2 of the study.

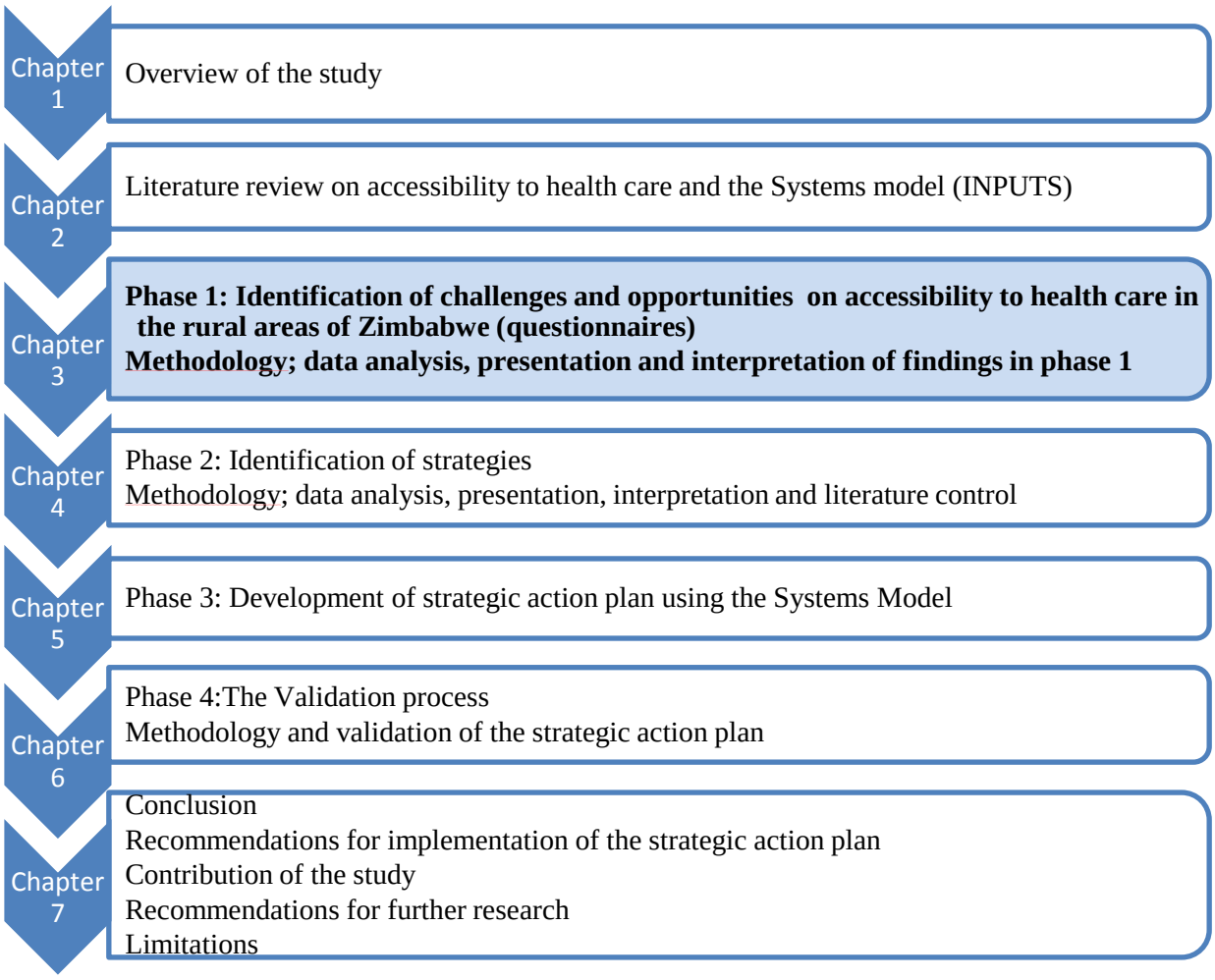

Figure 3.1: Diagrammatic representation of the thesis progress

3.2 RESEARCH DESIGN

The research design is the general or specific set of coherent steps or the plan taken by the researcher for dealing with research questions, including conditions for enhancing the study's integrity (Polit & Beck 2012:17). Research designs determine the general approach adopted for a study, and involve the development of data collection instruments, the data collection process, as well as data analysis (Grove, Burns & Gray 2013:195). The researcher used a multiple methods research approach. Decisions in the multiple methods approach were based on the Systems Model and the different phases of the research study that suited the approach.

3.2.1 Multiple methods approach

A multiple methods approach involves the use of two or more methods using varied approaches, which deal with the same study question or different components of the same research question (Cameron 2011:248; Gerrish & Lacey 2010:331; Tashakkori & Teddlie, 2010:340). This type of approach to research emanated from an overarching goal to achieve both discovery and verification (Johnson & Christensen 2012:445). The main advantage of the multiple methods is triangulation that involves data authentication and using results to stimulate further discussion and expansion (Johnson 2015:334). The collection of data by different methods from different sources provided a wider range of coverage that resulted in a clear picture of the unit under study that would not have been achieved otherwise (Johnson 2015:334; Teye 2012:380). This approach (multiple methods) provided a wider and more realistic understanding of the research problem than a standalone qualitative/quantitative approach could have done (Teye 2012:380). In this research study, the information that was collected during Phase 1 using quantitative methods was used in Phase 2 during qualitative data collection, and some information was triangulated during the process. The researcher used quantitative facts on Systems Model inputs (questionnaires for professional nurses and health care users) to develop a strategic action plan using qualitative methods; the nominal group technique (Teye 2012:381). The researcher noted that neither a qualitative nor quantitative approach could stand alone if the research objective of developing a strategic action plan was to be achieved, as the involvement of the two approaches contributed to understanding the richness of the phenomenon which was studied (Zhang 2014:24). Therefore, the researcher applied qualitative and quantitative research approaches to address

and enhance the depth of the complex phenomenon, and to draw on the strength of both methods (Zhang 2014:24). The research study's series of phases were interconnected within a wide theme and intended to provide strategies based on evidence in order to solve the general research problem (Teye 2012:380).

The researcher also used multiple methods as the research was a multiphase approach. The research topic was a step-by-step process of linking quantitative and qualitative methods that were sequentially followed, with each new method building on what was collected previously to address the research objectives (Creswell & Plano Clark 2011:100; Johnson 2015:335). The sequential process permitted the researcher to assist national health directors to identify strategies based on Phase 1 findings from professional nurses and health care users by using a nominal group (qualitative method in Phase 2). The researcher presented the findings of Phase 1 to Phase 2 participants (national health directors) to understand and incorporate their perspectives through qualitative data analysis to develop draft strategies. The researcher then developed a draft strategic action plan in Phase 3 based on the identified draft strategies from the national health directors and a literature control. The members of parliament (PPCH) validated the strategic action plan in Phase 4. Therefore, by using quantitative approach in Phase 1, and qualitative approach in Phases 2 and 3 facilitated the researcher to be more confident of the research results as it enhanced validity (Johnson 2015:334; Teye 2012:384; Polit & Beck 2012:340).

The weakness of the multiple methods approach is that it is costly and time-consuming (Johnson & Christensen 2012:51). The researcher sought to explore views from various sources linked to the inputs (data from professional nurses and health care users) and processes (data from national health directors and PPCH) of the Systems Model inputs (refer to Figure 1.1). This took a lot of time. However, the researcher was well prepared and had planned for this research, which allowed flexibility in executing all procedures that were scheduled for data collection.

3.2.1.1 Justifications for selecting quantitative – qualitative research method sequence

The Systems Model made it easier to link the quantitative and qualitative research methods in the different phases of the study. Quantitative research was used to collect data on the

Systems Model inputs, while qualitative research was used during the process of developing outputs and outcomes. Data collection (Systems Model processes) was sequential, that is, quantitative to qualitative research methods. The researcher capitalised on the strengths of both quantitative and qualitative methods to ensure the scientific firmness of the study (Barbour 2014:15) as the national health directors used information from the inputs (Systems Model) as per the data from the professional nurses and health care users to develop strategies.

The researcher used quantitative and qualitative research methods to enhance validity, reliability and generalisation (Petros 2012:279). The process of the Systems Model included the presentation of the draft strategic action plan to be validated by the PPCH who are members of parliament. The procedures and protocols (outputs) contributed to the outcome (Systems Model) of the validated strategic action plan.

The selection of multiple methods was adopted for this study due to the need for triangulation, offsetting, expanding and complementing the quantitative and qualitative research methods (Johnson & Christensen 2012:439). Firstly, the researcher triangulated data from professional nurses and health care users, and the same data were used by nominal group technique participants to develop draft strategies. The process enabled blending and verification of results from various methods and data sources, while investigating the same event (Johnson & Christensen 2012:439). The nominal group participants during Phase 2 (qualitative) could use the findings in Phase 1 (quantitative) and give inputs to critical issues affecting accessibility to health care in rural areas. This facilitated the development of the draft strategies.

The Phase 1 findings (field based) informed data collection in Phase 2, which influenced the researcher to select the quantitative-qualitative information gathering and analysis sequence (Teye 2012:383; Polit & Beck 2012:342). Thus, the quantitative data and its findings in this study provided a general understanding of the factors contributing to challenges and opportunities of accessibility to health care in rural areas of Zimbabwe.

Another element analysed by other authors, was that of the paradigm focus, which considers whether the two approaches used have the same weighting, equal importance or status

without one dominating the other (De Lisle 2011:90). Therefore, as per the principle of multiple methods design, the researcher had to deal with the issues of precedence, implementation, and integration of the quantitative and qualitative methods. In this study, neither quantitative nor qualitative methods had more importance in the study design, as qualitative research was informed by the quantitative research results. Therefore, the sequence of the quantitative and qualitative data collection was influenced by the sequence of the objectives, where information on inputs (Systems Model) informed the process (nominal group technique) during qualitative data collection. The discussion of Phase 1 is the focus of this chapter, and will follow next.

3.3 QUANTITATIVE RESEARCH (Phase 1)

Quantitative research was utilised in the first phase of the study, targeting quantitative data from the inputs (professional nurses and health care users) as per the Systems Model. Quantitative research involves the investigation of phenomena in a vigorous and controlled design using precise measurements (Burns & Grove 2011:171). In the first phase, the researcher gathered data on the Systems Model inputs that paved the way for statistical analysis in line with quantitative research methods. The goal of quantitative research was to produce data that was numerically scrutinised using statistical techniques (SPSS version 22) for each input (Systems Model). The advantage of quantitative research was that it was driven by a positivist approach where understanding of each input was based on perceptible facts that led to the generation of scientific knowledge from verifiable facts (Polit & Beck 2012:340).

The researcher collected data using questionnaires that considered physical resources, material resources, human resources, financial resources, and managerial resources. The data on inputs was analysed as quantitative (numeric) data after Phase 1, to inform data collection in Phase 2 (refer to Chapter 4). The inputs of the Systems Model were explored through the quantitative data collection process.

3.4 POPULATION

Population in this research study has been defined as the whole group of persons or objects that are of interest to the researcher or that meets the parameters the researcher is interested in

studying (Parahoo 2014:411; Grove et al 2013:351). The population will be discussed in terms of the site and study population.

3.4.1 Site population

The study was conducted in Zimbabwe which is divided into 8 provinces and 2 cities (Harare and Bulawayo) with political province status, further divided into 59 districts. In this study, the site population was the rural health facilities in Zimbabwe. There were 1170 public health facilities in the 59 districts of Zimbabwe, out of the 1697 total health facilities (MoHCC 2014:138, Osika et al 2010:14), comprising 69% of all the health facilities in Zimbabwe. A total of 997 public health facilities were in the rural areas (Osika et al 2010:16). The focus area for this study was the rural areas in Chegutu district and Masvingo district. The sampling process is explained in Section 3.5.

3.4.2 Study population

The study population comprised of professional nurses and health care users (Table 1.2) as discussed next.

a) Professional Nurses

According to the Health Service Board of Zimbabwe (HSB), all 59 districts in Zimbabwe had an establishment of 20,481 professional nurses of which 11,054 professional nurses were working in the rural health facilities and 120 professional nurses were working in the rural public health facilities in Masvingo and Chegutu districts (ZNSA and ICF International 2015:24; MoCHW 2012:5).

b) Health Care Users - Households

Zimbabwe had a household population of 3,059,016 in all 59 districts (ZNSA 2012b:13). A total of 8,777,094 people lived in the rural area, which was 67% of the total population of Zimbabwe (ZNSA 2012b:13). The population living in the rural areas in Masvingo district

(211,732 people) and Chegutu district (149,025 people) (ZNSA 2012b:99) were the target population.

The health care user population included all 49,911 Masvingo rural household population (ZNSA 2012b:138) and the 37,586 Chegutu rural household population (ZNSA 2012b:136).

3.5 SAMPLING

Sampling is the process of selecting a portion of the population to represent the entire population, as it is sometimes impossible to study an entire population (Grove et al 2013:352; Polit & Beck 2012:275). This implies that sampling is part of the research design, which is concerned with the selection of research participants. The researcher used probability sampling to select the site sample, and non-probability sampling to select the target population sample (professional nurses and households for health care users) in Phase 1.

3.5.1 Site sampling

The site sample for this study was limited to 2 districts out of the 59 districts in Zimbabwe due to the limitation of financial resources to cover the whole country. The researcher used simple random selection to choose the site sample of the districts. Simple random sampling is the basic sampling technique used to select a group of subjects for a study from a larger group (Grove et al 2013:354). Each district was chosen entirely by chance, and each district had an equal chance of being included in the sample. The two districts were randomly selected by two conveniently chosen persons using a raffle system to remove bias in the site sample selection. The names of 59 districts were written on separate pieces of paper and were put in a hat. The papers were shuffled and the first person picked Chegutu district. The papers were reshuffled and the second person picked Masvingo district. Masvingo district had 23 public health facilities out of 42 total health facilities, including private health facilities. Chegutu district had 22 public health facilities (PHFs) out of 35 total existing health facilities (MoHCC 2015:11). The PHFs were those owned by government and rural district councils, while private health facilities were owned by mining companies, individuals, and mission health facilities. Only PHFs were included.

3.5.2 Public Health Facility (PHF) sampling

The sampling of PHFs depended on the total number of existing PHFs in the rural areas of the two districts that were chosen. Therefore, after the selection of the two districts, the researcher purposefully selected all PHFs in the two districts as site samples. Masvingo district had a total of 23 PHFs, and Chegutu district had 22 PHFs (MoHCC 2015:11). No sampling was conducted as all 45 PHFs in Masvingo and Chegutu rural districts were included in the study.

3.5.3 Target population sampling

The study sample was professional nurses working in Chegutu and Masvingo's rural PHFs, and the health care users living in the catchment areas of the PHFs. The target population was selected in accordance to the Systems Model, where inputs included the human resources and health service consumers (Ravitz et al 2013:355).

3.5.3.1 Sampling of professional nurses (inputs)

Convenience sampling was utilised, as all available professional nurses working in PHFs in Masvingo and Chegutu districts who were willing to participate during the time of data collection, were included. Convenience sampling refers to the selection of available research participants who are willing to participate in the study (Johnson & Christensen 2012:231). The sample size for professional nurses depended on the number of available professional nurses who were willing to participate in the study. There were ninety (90) professional nurses (N=90) from the total of 120 who were available and willing to participate, and this was not necessarily 2 at each PHF. Professional nurses who were not available were reported as being on leave, with some attending training during the time of data collection. It was important to include professional nurses as they form part of the human resources as per Systems Model inputs.

3.5.3.2 Sampling of health care users within households - (inputs)

The health care users were sampled from the households in the catchment areas of the PHFs in the two identified districts. A multistage sampling technique was used, starting with cluster sampling of households in the catchment area based on distance to the health facilities. This was followed by convenience sampling of the health care users based on the availability and willingness of the respondents aged 18 years and older to participate in the study. The health care users were included in the research to obtain their opinions on the Systems Model inputs and how it affects accessibility to health care in rural areas of Zimbabwe.

- **Cluster sampling of households in catchment area**

The research assistants visited each of the 45 PHF and requested a catchment area map from the nurse in charge. The map of the catchment area of each PHF was used to cluster households in the catchment area into two clusters of **≤5km** and **>5km** radius. There were 45 clusters of **≤5km** radius, and 45 clusters of **>5km** radius from each PHF. After the households were clustered, the research assistants divided into two teams of 5 members per team, and went into their cluster allocations.

Convenience sampling was utilised to select households identified through clustering. Convenience sampling was done because of the nature of the settlements, which is scattered (villages, farms, and resettlements). There are challenges with conducting systematic sampling in a scattered settlement, especially the long distances between households (Aune-Lundberg & Strand 2014:3). The 5 research assistants in the **≤5km** radius cluster had to go in 5 different directions from the PHF on foot, while those in **>5km** radiuses were transported by vehicle in different directions from the PHF. Each research assistant had to select only 1 household per cluster, implying that 5 households had to be selected per cluster. The selection of the household was based on the availability of somebody aged **18 years** or older at the dwelling.

- **Convenience sampling of health care users from households**

It was not possible to do systematic or simple random sampling because people were unavailable at their houses since it was past the agricultural season and some people were with their families in the cities. For this reason, convenience sampling was done by the

research assistants to sample the health care users. During data collection from health care users, in the case of the availability of two or more respondents of 18 years or older in the household, the research assistant conveniently selected the respondent based on willingness to participate. In case of both being willing to participate in the research, the assistant explained the protocol of the research and the need for only one person to participate per household. Therefore, the two had to choose among themselves who would participate. The researcher selected 10 research assistants through interviews to assist with data collection. The research assistants were trained by the researcher for 3 days on using the data collection instrument. During pre-testing of the instrument, the researcher used research assistants to collect data as part of their practical training (refer to Section 3.7 pre-testing of the data collection instruments).

The sample size for health care users was determined with the assistance of a statistician based on Dobson's formula for descriptive studies. The researcher selected this formula to calculate the sample as the study population was above 50,000 (population above 50,000 is regarded as infinite). The researcher used Godden's (2004) formula as follows:

$$\mathbf{SS} = \frac{\boldsymbol{Z^2 \mathrm{x}\ P(1-P)}}{\boldsymbol{D^2}}.$$

Where:
SS= Desired sample size (if target population is unknown)
Z= Standard normal deviation at the required confidence interval
P= Proportion in the target population estimated to have characteristics to be measured q= 1-p
d= Level of precision set at 0.05
N= more than 50,000 people in Masvingo rural district and Chegutu rural district (ZNSA 2012b:136)
P= 0.5 (proportion of health care users using rural health facilities)
Z= 1.96
d= 0.05

Z represented the value for confidence interval. The researcher and statistician were of the opinion that the health care users to be included in the sample had to have used the health

facility at some point, therefore 95% was used for the confidence interval (value of 1.96). The proportion (***p***) of the health care users who had fallen ill and reported at the health facility was not known, therefore the researcher used the value p = 0.5 (50%) to get a larger sample size. The research was based on the experiences of health care users when accessing health care services. Therefore, the selection wanted to target health care users who would have visited the health facilities before. The selection of a value for ***d*** (the desired absolute precision) usually depends on the expected proportion (***p***). Since the researcher had used estimated proportions in the range of 20-80%, the value for ***d*** was determined to be around +5% for desired absolute precision.

After determining the proportion and values for ***d***, the minimum sample size was calculated as $(1.96^2 \times 0.5^2)/0.05^2 = 384$ (Godden 2004:2; Dobson, Kuulasmaa, Eberle & Scherer 1991). The sample size was 384, but the researcher decided to use 450 households to have a fair representative figure across all 45 health facilities, that is, 10 households per health facility, and increase the statistical power for the purposes of generalisation.

3.6 DATA COLLECTION INSTRUMENTS

Data collection is defined as the distinct, systematic gathering of information relevant to the research purpose or to the specific objectives and questions of a study (Burns & Grove 2011:536). During the quantitative research, the data collection instrument referred to a self-administered questionnaire (SAQ) for professional nurses and a structured interview questionnaire for health care users. The research assistant assisted the health care users (especially when illiterate) in completing the structured interview questionnaires.

3.6.1 Self-Administered Questionnaire

According to Louw (2013:15), SAQs have been designed particularly to be completed by a respondent without the intervention of the researcher (interviewer) during data collection. A questionnaire is a list of questions which are answered by the respondents and gives indirect measures of the variables under investigation (Dulle 2010:120; Gerrish & Lacey 2010:378). It involves the use of questions, tests and/or scales which are presented to respondents in the same way, with no variation in question wording, and with mainly pre-coded response choices (Gerrish & Lacey 2010:378). The questionnaire was developed after a thorough

literature review (refer to Chapter 2), also taking the elements indicated in the Systems Model into consideration. The questionnaire was assessed for validity by the two supervisors, the statistician, as well as the appointed scientific review committee.

The strength of the structured questionnaire is its ability to collect unambiguous and easy to count answers, leading to quantitative data for analysis. The SAQ is relatively economical and therefore, large samples of people can be included (Dulle 2010:122). The researcher used the SAQ as it was less expensive and saved the researcher time, compared to data collection that is done through an interview. The SAQ was left with the professional nurses and collected at a later date, instead of the researcher being involved in actual data collection through interviews. This implies that the SAQ compelled the respondents to complete the questionnaire themselves, without the researcher's assistance.

SAQs also allow for participants to respond at their own, most convenient, time (Lozano, Lobos, March, Carrasco, Barros & González-Porras 2014:64). In order to facilitate this process, the researcher distributed the SAQs and gave the professional nurses 2 weeks to complete it. Some professional nurses took 3 weeks to respond, and reminders had to be given in person by visiting the PHFs and reminding professional nurses to complete the SAQ and deposit it into the designated sealed box for retrieval by the researcher.

Questionnaires also have disadvantages, but the researcher tried to limit the impact of the disadvantages. The main disadvantages of SAQs are that no opportunity exists to ask respondents to clarify, elaborate or expand their responses (Lozano et al 2014:64). Respondents also do not have an opportunity to ask for clarification from the researcher. Therefore, the researcher pre-tested 4 SAQs and all the professional nurse respondents during pre-testing found the questions to be self-explanatory (refer to Section 3.7). This ensured that respondents were unlikely to face many challenges in responding to the questionnaire. The researcher did not include the data collected in pre-testing in this study.

Another disadvantage is that the response rate for SAQs may be low (Lozano et al 2014:65). In the case of this study, the researcher gave respondents 2 weeks to complete the questionnaire and visited the PHFs, while reminding professional nurses to voluntarily complete the questionnaires. The researcher motivated and again requested participants to

complete questionnaires. There was a high response rate, since all 90 questionnaires distributed were completed, thus an excellent response rate of 100% was obtained.

Overall, the SAQ was an effective data collection instrument for this study, as accessibility to health care issues are sensitive and need anonymity for professional nurses to protect their identity.

3.6.2 Structured interview questionnaire (health care users)

The structured interview questionnaire for health care users was developed after conducting a thorough literature review, including the application of the Systems Model (refer to Chapter 2). The structured interview questionnaire was assessed for validity and reliability by the two supervisors, the statistician, as well as the appointed scientific review committee.

Respondents voluntarily took part in this study after the information on an information leaflet and consent form was explained. The research assistant started with data collection once the health care user had given informed consent by signing the consent form (refer to Annexure J).

Data collection from 445 health care user respondents took place through a structured interview questionnaire. In this study, questions were read out and responses were filled in by the research assistant. This approach allowed the research assistants to elaborate and help respondents understand the questions, especially the illiterate respondents in this study (Johnson & Christensen 2012:239). Zimbabwe's population living in rural areas have an illiteracy rate of 28.1% (ZNSA 2015:8). Therefore, the researcher recruited 10 research assistants to assist with data collection using a structured interview questionnaire. The research assistants were from districts that excluded Masvingo and Chegutu. This was done to prevent bias and ensure anonymity during data collection. The recruited research assistants had experience in field research to assist with data collection. Three-day training was organised by the researcher before pre-testing the instruments. The training focused on understanding the questionnaire, the questions, the sampling method, and informed consent. The 10 recruited research assistants were trained to put an interviewee at ease and manage an interview in a diplomatic manner to collect data which truly reflect the interviewee's

perspectives. The training was facilitated by the researcher and the statistician to enhance consistency during data collection. After the training, the data collection instruments were pre-tested to ensure the questions were clear and easy to understand. Pre-testing the instruments revealed questions where changes were needed (refer to Section 3.7).

During data collection, a quiet, comfortable location was chosen at the respondent's dwelling, and the interviewer gave consideration to how s/he presented her/himself in terms of dress code to make the interviewee comfortable.

The researcher preferred using the structured interview questionnaire (face-to-face interviews) because of the high response rate achieved (Bowden & Galindo-Gonzalez 2015:82). However, the disadvantage of the structured interview questionnaire was that some interviewees felt uncomfortable responding to some issues, as reported by some of the research assistants. Therefore, in this research study, the research assistant assured the respondent that the name of the household or his or her name would not be recorded on the questionnaire or communicated to the researcher to ensure confidentiality. Why the respondent's name would not appear anywhere in the data collected was elaborated on during the explanation of the consent form. The research assistants were trained to ensure the interviewee felt relaxed and to create a friendly atmosphere as a way of encouraging respondents to freely respond and share their views.

3.7 PRE-TESTING OF THE DATA COLLECTION INSTRUMENTS

A pre-test is a process of administering a questionnaire on a small sample of respondents before a full-scale study is conducted, to identify problems like unclear wording, repetitive questions, and/or the time taken to administer the questionnaire (Moxham 2012:35). The pre-test entails collecting data on a restricted number of respondents who will not be incorporated in the primary study. The researcher conducted a pre-test for the following reasons as indicated by O'Cathain, Hoddinott, Lewin, Thomas, Young, Adamson, Jansen, Mills, Moore and Donovan (2015:2-3) and Moxham (2012:37):

- To formulate and test the questionnaires before data were collected in the primary study.
- To determine if the sampling outline and method used for data collection were beneficial to reach the objectives of the study.
- To ascertain logistical issues that impact on the available resources to carry out the study.
- To provide the researcher with a fair idea whether all the respondents understood the questions in the same way, whether they comprehend the information, how applicable the questions were, and to discover whether the structure and length of the questionnaire was likely to affect the answers.

Pre-testing the data collection instruments was also conducted to establish its feasibility and validity (Thabane, Ma, Chu, Ceng, Ismaila, Rios, Robson, Thabane, Giangregorio & Goldsmith 2010:3). Validity refers to the extent to which an instrument measures what it is intended to measure (Johnson & Christensen 2012:256). The pre-testing of data collection was done in September 2014 in Zvimba district, which was not part of the research study area.

After getting approval to conduct the research by the Research Ethics Committee of the Department of Health Studies, UNISA, the Medical Research Council of Zimbabwe as well as the MoHCC (refer to Section 3.9), the researcher purposefully selected Zvimba district as a pre-test site. The researcher listed 25 rural PHFs in Zvimba district on pieces of paper and mixed the papers in a basket. The researcher requested two conveniently chosen persons to each randomly pick a piece of paper. The two PHFs which were selected, were included in the pre-testing. This included the professional nurses and health care users in the catchment area of the two PHFs.

A SAQ was distributed to the professional nurse respondents, and the structured interview questionnaire was administered by research assistants with the health care user respondents from households within a 5km and 10km radius in the catchment area of the identified PHFs. The households were conveniently chosen based on the availability of a person 18 years or older, living at the household during the time of pre-testing. Four professional nurses and 20 health care users participated in the pre-testing in accordance with the study's inclusion criteria. At the end of the pre-testing, a one-day review session was organised to review the data collection process. This was done with the research assistants regarding issues and

challenges they had faced during the data collection. The review process recommended adjustments to two questions on the structured interview questionnaire with health care users which had proven difficult to understand and seemed to be providing similar data but were phrased differently. The questions were regarding the number of professional nurses who attend to health care users, and if they are always available and accessible. The questions were adapted as follows: "How many nurses are at your health facility?" was rephrased to "Is there always a professional nurse available at the health facility?" All ambiguous questions on the questionnaires were edited to make them more clear and understandable.

3.8 RELIABILITY AND VALIDITY OF DATA GATHERING INSTRUMENTS

According to Johnson and Christensen (2012:245), in order for the information collected to be useful to policymakers, researchers and practitioners, the instruments should generate reliable and valid data. The validity and reliability of data collection instruments (questionnaires) are critical in any study.

3.8.1 Reliability

Reliability is the uniformity or stability of the measurement instrument, therefore, implying that if an evaluation gives reliable outcomes, the scores will be similar on every occasion (Johnson & Christensen 2012:138; Wood & Ross-Kerr 2011:209). A literature review was conducted to develop the questionnaire. The reliability of the questionnaire was enhanced as it was reviewed by two supervisors, the statistician, and the scientific review committee (UNISA) to validate its consistency and accuracy, and to check for measurement errors. The questionnaire was pre-tested by respondents similar to the population under study, who did not take part in the actual research study (refer to Section 3.7).

The research assistants were trained for uniformity in using the questionnaire (health care users' interview questionnaire) and a robust schedule was agreed on to ensure standardised practice across all research assistants, which was checked by the researcher during data collection. See more details under pre-testing of data collection instruments under Section 3.7.

3.8.2 Validity

Validity refers to the extent to which an instrument measures what it is intended to measure (Johnson & Christensen 2012:256). The researcher made sure that the data collection instrument had an appropriate sample of items for the variables that were measured. For example, questions on challenges were able to capture possible constructs related to challenges in accessing health care in rural Zimbabwe. The scientific review committee and the supervisors reviewed and validated the content validity of the questionnaire. The supervisors reviewed the literature review (refer to Chapter 2) and guided the alignment of the questions as per the literature review. The statistician coded the questions for easy recording by the research assistants, and for analysis purposes.

Validity was increased by the researcher conducting a thorough literature review to ensure that the content domain was fully captured. The researcher ensured that there were standardised protocols for data collection that included the training of research assistants to minimise inter-observer inconsistency since several individuals were gathering data. The researcher and statistician trained the research assistants to ensure that the data collection process was understood before actual data collection started (refer to Section 3.7). Research assistants ensured that the views of the participants were recorded on the questionnaire. The use of the structured interview questionnaire assisted in guarding against bias as the research assistants were trained not to react and probe when the respondent answered the questions. Pre-testing was performed to identify areas of weaknesses which needed improvement. The process of data collection in the pre-testing was the same as the data collection process during the research study.

3.9 ETHICAL CONSIDERATIONS

Streubert and Carpenter (2011:62) states that there are significant ethical issues to be observed by researchers when conducting research. Researchers safeguard participants' rights during research and the principles of beneficence (doing good), non-maleficence (doing no harm), autonomy (freedom of choice), confidentiality (safeguard of information), and justice (impartiality) are crucial in protecting peoples' dignity (Streubert & Carpenter 2011:62).

The researcher attained ethical approval from the Research Ethics Committee, Department of Health Studies at the University of South Africa (reference number HSHDC/240/2013, Annexure A). The ethical clearance certificate was used to obtain approval from the Medical Research Council of Zimbabwe, MoHCC at all levels (refer to Annexures A and B).

Permission for accessing the community of Chegutu and Masvingo districts was granted by both Provincial Medical Directorates in Chegutu and Masvingo district after receiving authorisation from the Principal Director of Curatives Services in the MoHCC (refer to attached Annexure C, D and E). Permission and approval were further obtained from Chegutu and Masvingo district medical officers while at each rural health facility permission was obtained from the nurse in charge (refer to attached Annexure F and G). Permission was obtained from village heads (Annexure H) before research assistants started selecting households and conducting interviews.

3.9.1 Voluntary participation (autonomy)

People have an option and a right to choose whether or not to participate in a research study (Johnson & Christensen 2012:107). Any type of force should be prevented. In case of providing incentives, the researcher should take all necessary precautions and follow procedures that ensure the study protocol are followed when selecting research participants. Voluntary participation is crucial to the discovery of relevant and factual information from the study participants, including the management of risks and benefits. In order to ensure voluntary participation in this study, an information letter explaining the purpose of the study and procedure for data collection was provided to all prospective respondents. The information letter containing the purpose and other relevant information about the research (refer to Annexure O & P) was shared with all quantitative research respondents (professional nurses and health care users) as well as with the qualitative research participants (national health directors; refer to Annexure N). This was done to ensure that information was shared consistently with all possible research respondents and participants. The research respondents (quantitative) and participants (qualitative) were notified of the purpose of the study and its consequence. All were granted a choice to participate or to decline participation in the study without any harm or loss of privileges.

3.9.2 Informed consent

Sufficient information is needed for informed decision-making by the research respondents and participants before signing informed consent (Moule & Goodman 2014:63). According to Johnson and Christensen (2012:107), informed consent refers to accepting to take part in a study after being provided with the right information on the study's purpose, process, threats, advantages and levels of confidentiality. Participants should be informed about their rights to withdraw from the study. The researcher ensured that a clause was included in this study to emphasise that professional nurses and health care user respondents who chose to withdraw from the study would not be penalised on future accessibility to health care (Bordens & Abbott 2013:200).

The professional nurses were given the informed consent form and information letters, and had an opportunity to ask questions for clarification before signing the consent. The process of informed consent with professional nurses was done by the researcher before the professional nurses completed the questionnaires. Each participating professional nurses signed the consent form (refer to Annexure I).

The research assistants ensured that health care user respondents signed the consent form before they answered the questions. The rationale of the academic study was clarified to the respondents in a way that they were able to value how highly their participation would be regarded in the research study. This was done by research assistants reading the information letter and clarifying where needed. The consent form was translated into Shona and read out to illiterate respondents (Annexure J). Health care users who volunteered to participate signed the consent form before responding to the interview questionnaire and those who were illiterate gave verbal consent. The time and venue suited the respondents to make them feel comfortable. Some of the respondents agreed to participate immediately, while others requested some time to finalise what they were doing. This method established an environment of trust between the researcher and respondents and made it possible to collect valuable data.

3.9.3 Confidentiality (non-maleficence) and privacy

Confidentiality refers to making the respondent's identity anonymous to anyone other than the researcher or research assistant (Johnson & Christensen 2012:116). No names were written on the completed questionnaires. The researcher kept the anonymity of the respondents, in accordance with accepted standards of the research protocols (Gerrish & Lacy 2010:356; Grove et al 2013:169). The researcher used information gathered from respondents as per the agreement in the consent form, and did not include the names of participants in the report or on any completed questionnaire.

3.9.4 Publication of results

Data gathered were reported without any identifiable information that could link respondents to specific data.

3.9.5 Cultural sensitivity during data collection

Cultural expectations include dress, personal presentation and language, and were taken into consideration for acceptability of research assistants by the respondents. The research assistants and the researcher were dressed in a culturally acceptable manner as far as the cultural practices were concerned. The research assistants used respectful language and showed respect for the respondents including the authorities, thereby demonstrating respect for the cultural environment during data collection.

3.10 DATA COLLECTION PROCESS

Data were gathered between August and September 2014 by the researcher and research assistants (refer to Section 3.6). Gathering data from professional nurses and health care users took place during the same period focusing on the inputs required to ensure accessibility to health care as per the Systems Model (refer to Section 1.9).

3.10.1 Professional nurses

After approval and permission was obtained from all relevant stakeholders, as indicated in Section 3.9, the principal researcher hand delivered the SAQs (Annexure L) to each professional nurse who was available and willing to participate at each targeted rural PHF in both Masvingo and Chegutu districts.

The researcher explained the purpose of the research and gave the information sheet explaining the respondents' rights as well as explaining the informed consent to the professional nurses (refer to Annexure I). The research respondents were requested to give consent by signing the consent form before participating in the study (Johnson & Christensen 2012:107). After signing the informed consent form, the professional nurses completed the questionnaire. A minimum of 2 weeks to complete the questionnaire was first agreed with the professional nurse respondents. After completing the questionnaire, the professional nurses were advised to seal the completed questionnaire in a provided envelope and to drop it in a safe box easily accessible in the office at the health facility (sealed cardboard box). After 2 weeks, the researcher followed up to collect the completed questionnaires at each health facility from the sealed box. A total of 15 health facilities had pending questionnaires to be completed and these had an extension of 1 week to complete the questionnaires. The researcher collected all the completed questionnaires in person from each rural PHF from the sealed box. Ninety (90) completed questionnaires were collected by the researcher out of possible 120.

3.10.2 Health care users

A structured interview using the developed questionnaire (refer to Annexure M) was used to collect data from the health care users who were 18 years and older on the inputs required to enhance accessibility to health care as per Systems Model. The structured interviews were conducted by 10 trained research assistants (refer to Section 3.5.2). The research assistants collected data from an individual in the household through interviews using the questionnaire, following this process:

After a household was selected by the research assistant, the research assistant introduced him/herself and presented the purpose of the study, including the time the structured interview questionnaire will take to complete. The research assistants read the questions to the respondents, and explained the questions if the respondents needed more explanation. The respondents' answers were then written down in the spaces provided on the structured interview questionnaire. After the structured interview questionnaire was completed, the research assistant placed it in the envelope provided and sealed it.

All completed structured interview questionnaires were delivered to the researcher in person by the research assistants. A total of 445 structured interview questionnaires were administered out of a possible 450 as 5 participants withdrew in the middle of the interviews and did not want to continue participating.

3.11 DATA ENTRY AND ANALYSIS

The completeness of the data was verified during the data cleaning exercise after the completion of field work. The cleaning exercise was done by going through every questionnaire with the research assistants, and checking for misspellings that may contribute to the wrong interpretation of information when entered into Census and Survey Processing System (CSPro) Version 4. The completed questionnaires were reviewed to verify missing values and information. Data collected from professional nurses using the SAQ was verified for completeness by the researcher and statistician during data entry. All data that was collected through the structured interview questionnaires with health care users and SAQs with professional nurses (quantitative data) was collated and entered into CSPro Version 4, and exported to the Statistical Package for Social Sciences (SPSS) Version 22 for analysis. Descriptive statistics, showing frequencies and cross-tabulation was used to present the data gathered in Phase 1. Some questions were analysed using t-tests as part of data analysis. Comparisons were made to search for patterns, themes and trends between the professional nurses and health care users.

3.12 DATA PRESENTATION ANALYSIS AND INTERPRETATION

This section presents the data analysis and findings from Phase 1 of the study as indicated in Table 1.1 (refer to Chapter 1). The findings were aimed at addressing the objectives for Phase

1 and for informing data collection in Phase 2 (refer to Chapter 4). The findings were supported, presented, interpreted and integrated with literature.

Phase 1's objectives were to identify the challenges experienced by professional nurses providing health care and health care users accessing health care at rural health facilities in Zimbabwe, and to identify the opportunities for improving health care accessibility in rural areas of Zimbabwe. The findings were drawn from SAQs with 90 professional nurses (N=90) and structured interview questionnaires with 445 health care users (N=445). Data was collected from professional nurses on challenges regarding Systems Model inputs (physical resources, material resources, human resources, financial resources and managerial resources). The health care users were included in the study to relay their experiences of accessibility to the health care system, especially their experiences and challenges of the Systems Model inputs (physical resources, material resources, human resources and financial resources). The data from the respondents were important for the researcher and informed the data collection process in Phase 2 of the study. The data entry and analysis was done together with a biostatistician with a Master's degree in Biostatistics who is a lecturer at the University of Zimbabwe. Data was entered into CSPro Version 4 by the biostatistician, uploaded and analysed using SPSS Version 22. The findings are presented in graphs, tables and figures.

3.12.1 Demographic findings from Professional Nurses and Health Care Users

A total of 90 professional nurses (N=90) and 445 health care users (N=445) volunteered to participate in the study. Section 3.5 has a detailed description of the target sample of the study.

3.12.1.1 Gender, age, educational level and income of professional nurses

As illustrated in Table 3.1, 69 out of 90 (76.66%; *f*=69) professional nurses taking part in this study were females. This finding reflects nursing as a female profession as it has been viewed historically since the time of Florence Nightingale who believed nursing was a natural extension of women's care giving roles (Adu-Gyamfi & Brenya 2016:2; Frello & Carraro 2013:578; Cook-Krieg 2011:25). Globally, 10% of professional nurses are male, and 90% of

professional nurses are female (WHO 2016a:23; Adu-Gyamfi & Brenya 2016:5). Forty-one (41) out of 90 (45.55%; *f*=41) professional nurses were between 26-35 years old, while 39 out of 90 (43.33%; *f*=39) professional nurse respondents were between 36-50 years old. Only 3 out of 90 (3.33%; *f*=3) professional nurse respondents fell in the age range of 18-25 years. The study findings indicated a mean age for professional nurse respondents of 37.6 years with a median of 36 years. The mean age indicates an ageing health workforce similar to South Africa and the global picture (WHO 2015d:9). The freezing of recruitments and filling in vacant posts in the civil service by the government of Zimbabwe due to funding constraints might have contributed to less representation of the18-25 age groups in nursing practice in health facilities in the rural areas (Todd et al 2010:606; Chirwa et al 2013:2). Young professional nurses in Zimbabwe prefer to work in urban areas rather than rural areas to enhance educational opportunities to further their education (Nyandoro et al 2016:30; Chimhowu 2010:32). The government of Zimbabwe, furthermore froze the recruitment of professional nurses so the young professional nurses who were graduating migrated to other countries like South Africa, Namibia and the United Kingdom (Kevany et al 2012:46; Chimhowu 2010:32; Todd et al 2010:606).

Data in Figure 3.2 shows that the rural health facilities in Zimbabwe have 3 categories of professional nurses. Thirty (30) out of 90 (33.33%; *f*=30) professional nurse respondents were registered general nurses (RGN), 51 out of 90 (56.66%; *f*=51) were primary health care nurses (PHCN), and 9 out of 90 (10.01%; *f*=9) were state certified nurses (SCN). The findings are in line with the category of professional nurses recognised by the Ministry of Health in Zimbabwe (MoHCC 2012:138). Among the 3 categories of professional nurses working at the rural health facilities, 60 out of 90 (66.66%; *f*=60) professional nurse respondents had certificates (PHCNs and SCNs) while 30 out of 90 (33.33%; *f*=30) had diplomas (RGNs). The SCNs were trained for 2 years and graduated with a certificate in nursing, PHCNs were trained for 18 months and were awarded a certificate, and RGNs who had gone through 3-year nursing training graduated with a diploma. There were no professional nurses with degrees among the respondents in the rural health facilities.

The rural health settings in Zimbabwe are predominantly manned by professional nurses with certificates and diplomas, consistent with other studies in Zimbabwe conducted by Kevany et al (2012:67), and MacKinnon and MacLaren (2012:9). The findings of Kevany et al (2012),

and MacKinnon and MacLaren (2012), are that Zimbabwe has no first-degree graduate professional nurses working in rural health facilities.

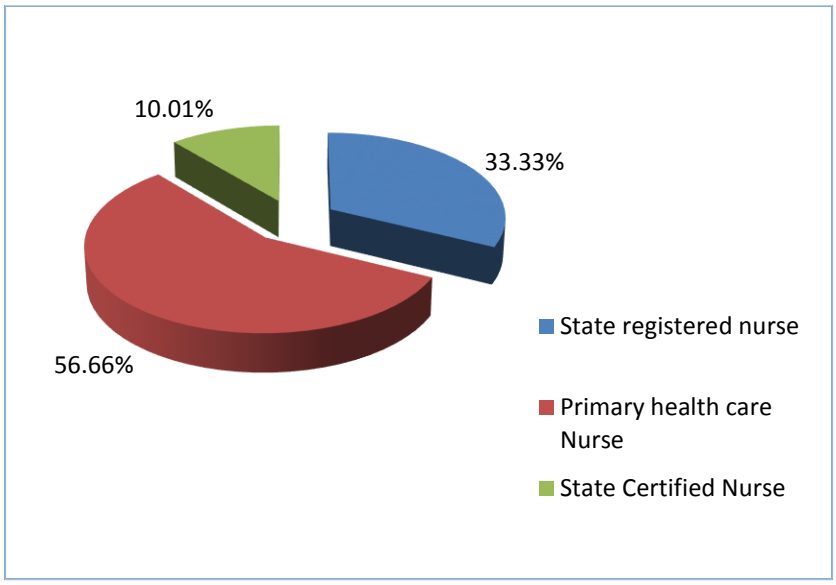

Figure 3.2: Categories of professional nurses working at the rural health facilities (N=90)

Fifty-seven (57) out of 90 (63.33%; *f*=57) professional nurse respondents earn wages ranging between US$251 - $500 per month while 32 out of 90 (35.55%; *f*=32) professional nurse respondents earn between US$501 - $750 per month (refer to Table 3.1). This means that the greater proportion of the professional nurses survive on earning US$8 per day for their families. Therefore, professional nurses with a family of 5 members survive on less than US$2 per day in Zimbabwe. This study's findings are supported by Tawodzera, Zanamwe and Crush (2012:13) who reported that the majority of the public service workers earn less than US$2 per day in Zimbabwe. After analysing the demographic characteristics of professional nurse respondents, the researcher looked at the demographic characteristics of health care users.

3.12.1.2 Gender, age, educational level and income of health care users

Two hundred and ninety-eight (298) of the 445 (66.96%; *f*=298) health care users taking part in this study were females, and 147 (33.03%; *f*=147) were males (refer to Table 3.1). This biased gender distribution is not rare in research conducted in Zimbabwe because most of the men were either seeking employment or working on the day that data was gathered (ZNSA &

ICF International 2012:22). According to ZNSA and ICF International (2012:22), rural unemployed women are the custodians of the household chores, children and overseeing of farming activities; hence they were found at home and participated in the study.

The data indicated that 149 out of the 445 (33.48%; *f*=149) health care user respondents were in the age range of 51 years and above, while 121 out of the 445 (27.19%; *f*=121) health care user respondents fell in the age range between 36-50 years (Table 3.1). One hundred and two (102) out of 445 (22.92%; *f*=102) health care user respondents were between 26-35 years old, while 73 out of the 445 (16.40%; *f*=73) health care user respondents were young adults between 18-25 years old (refer to Table 3.1). The 18-25 age group is an active (workforce) group, hence they are normally not present in the rural areas (ZNSA 2016:34). They are mainly found in the urban areas or mines looking for employment.

Zimbabwe has a literacy rate of 94%, indicating that 78% of men and 70% of women have attained secondary education (ZNSA & ICF International 2012:51). Three hundred and thirty-three (333) out of 445 (74.83%; *f*=333) health care users in this study had attained secondary school level, 72 out of 445 (16.17%; *f*=72) attained primary education. Only 13 out of 445 (2.92%; *f*=13) health care user respondents had acquired a university degree (refer to Table 3.1). Professional nurses mostly had certificates and diplomas, lacking degrees in nursing, while some health care users (13 out of 445; 2.92%; *f*=13) had degrees (refer to Table 3.1). In order to make quality health care socially relevant, professional nurses should be educated at levels matching the general educational pattern of the society which they serve (Institute of Medicine 2011:73). Since the society is educated and highly informed about the quality of nursing care they deserve, so should the professional nurses be.

This study showed that 298 out of 445 (66.96%; *f*=298) health care user respondents were females and 147 (33.03%; *f*=147) were males (Table 3.1). In terms of the educational level, 226 out of the 298 (75.83%; *f*=226) female health care user respondents (refer to Figure 3.3) had attained secondary education and 107 out of 149 (71.81%) male health care user respondents attained secondary education. The findings are consistent with the ZDHS report of 2012 on the overall literacy rate in Zimbabwe between 2002 and 2011.

Table 3.1: Frequency distribution: Demographic characteristics of the study respondents

Demographic characteristics	Professional nurse respondents N=90		Health care user respondents N=445	
	Frequency	Percent	Frequency	Percent
Gender				
Male	21	23.33	147	33.03
Female	69	76.66	298	66.96
Age				
18 – 25	3	3.33	73	16.40
26 – 35	41	45.55	102	22.92
36 – 50	39	43.33	121	27.19
51+	7	7.77	149	33.48
Education Level				
Primary School			72	16.17
Secondary School			333	74.83
College Certificate	60	66.66	12	2.69
College Diploma	30	33.33	15	3.37
Degree	0	0	13	2.92
Average monthly income				
Less than US100			271	60.89
US100 – 250			128	28.76
US251 – 500	57	63.33	34	7.64
US501 – 750	32	35.55	7	1.57
US751 – 1000	1	1.11	4	0.89
US1000+			1	0.22
Sources of Income (N=442)				
Self-Employment			224	50.67
Full-time employment			116	26.24
Part-time employment			35	7.91
Remittances			67	15.15

Two hundred and seventy-one (271) out of 445 (60.89%; *f*=271) health care user respondents had an income of less than US$100 per month; this includes health care users who were employed full-time, part-time and self-employed, as well as those receiving remittances.

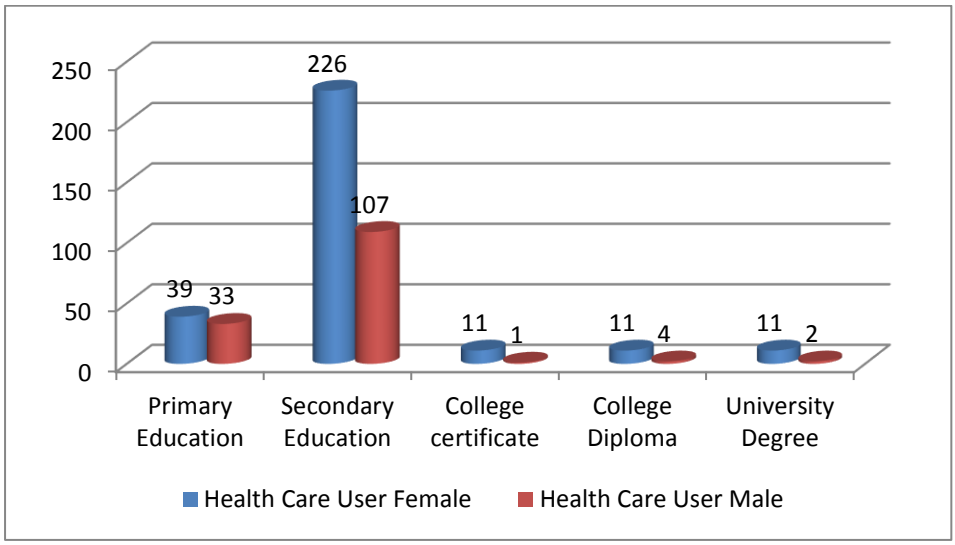

Figure 3.3: Educational level for health care user respondents (N=445)

One hundred and twenty-eight (128) out of 445 (28.76%; *f*=128) health care user respondents reported an income between US$100 and US$250, and 7 out of 445 (1.57%; *f*=7) health care user respondents earn between US$501 and US$750 (refer to Table 3.1). Based on the data from health care user respondents, 249 out of 445 (55.95%; *f*=249) reported that their family has an average of 6 household members while 147 out of 445 (33.03%; *f*=147) health care user respondents reported an average of 7 household members. Based on the findings presented in Table 3.1, 60.89% of the households survive with less than US$1 per day, since the average family size was 6. This US$1 per day has to cater for food, school fees, and health care user fees among all other expenses. The average income of US$100 per family per month as indicated by 271 out of 445 (60.89%; *f*=271) health care user respondents will not be enough to provide food for a family of 6, as the cost of living for an average family of 6 is US$562 per month; far above the average income of the households in rural areas of Zimbabwe (Consumer Council of Zimbabwe report 2015:3).

Four hundred and forty-two (442) out of 445 (99.32%; *f*=442) health care user respondents answered the question on sources of income (refer to Table 3.1). The sources of income indicated self-employment [224 out of 442 (50.67%; *f*=224)], income from full-time employment [116 out of 442 (26.24%: *f*=116)], part-time employment [35 out of 442 (7.91%;

f=35)], and income from remittances from the diasporas [67 out of 442 (15.15%; *f*=67)]. The 224 out of 442 health care user respondents who were self-employed depended on income-generating activities in their villages like market gardening, poultry, fishing, farming and welding projects. The self-employed are facing challenges as their indigenous businesses are falling apart due to economic hardships facing the people. This further eroded health care user respondents' monthly household expenditure.

According to the Consumer Council of Zimbabwe report (2015:3), the estimated average monthly household expenditure for a family of 6 is US$562 (poverty datum line). Comparatively, the health care users have a disposable income of less than the poverty datum line of $562 per month (refer to Table 3.1). According to Jamison et al (2013:1930), disposable income has an influence on accessibility to health care services since the economic status of households and remuneration of health care providers is correlated to accessibility to health care. If the disposable income is low, there will be fewer resources for out-of-pocket (OOP) expenditure for the health care users, thereby presenting a challenge on accessibility to health care. Therefore, moving towards universal health care coverage may reduce OOP expenses for health interventions, thereby preventing health care users falling into poverty. The World Bank has set an objective for governments which states that by 2030, no one should be exposed to poverty because of OOP health care expenses (Jamison et al 2013:1930).

Since the disposable income influences the type of health facility frequently accessed by the health care users, the researcher looked at the physical resources (health facilities) accessible to health care users in the rural areas.

3.13 PHYSICAL RESOURCES (SYSTEMS MODEL INPUT)

Physical resource input in this study refers primarily to health facilities and included pharmacies and laboratory services. This section provides a discussion on the findings regarding accessibility to available rural health facilities preferred and visited by health care users.

3.13.1 Health facilities in rural areas

All 45 health care user respondents answered the question on the type of health facilities in rural areas of Zimbabwe. The health facilities in the rural areas mainly consist of PHFs, that is, rural health centres [252 out of 445 (56.62%; *f*=252)], hospitals [140 out of 445 (31.46%; *f*=140)], mission health facilities [50 out of 445 (11.23%; *f*=50)], and traditional healers [3 out of 445 (0.67%; *f*=3) health care user respondents] (refer to Table 3.2). These health facilities provide primary health care services (Osika et al 2010:14, MoHCW 2014b:11). Traditional health care (traditional healers) is actively involved in the rural areas and offers treatment for a range of illnesses.

Two hundred and fifty-five (255) out of 445 (57.30%; *f*=255) health care users prefer accessing health care services at the rural health centre, 140 out of 445 (31.46%; *f*=140) health care user respondents access health care at hospitals, and 50 out of 445 (11.23%; *f*=50) health care user respondents access mission health facilities. The findings on the choice of health facility preferred by health care users were similar to findings in a study conducted in Zimbabwe by Osika et al (2010:14) and ZNSA (2011:13), who found that 50% of the health care users were accessing rural health centres, 32% were accessing hospitals, and 10% were accessing mission health facilities.

Four hundred and forty-three (443) out of 445 health care user respondents answered the question on ownership of health facilities in the rural areas. Four hundred and twenty-one (421) out of 443 (95.03%; *f*=421) health care user respondents reported that the government (MoHCC and rural district council health facilities) own the rural health facilities, and 6 out of 443 (1.35%; *f*=6) health care user respondents indicated that some health facilities are privately owned (refer to Table 3.2). Missionaries were reported to own some of the rural health facilities as indicated by 16 out of 443 (3.61%; *f*=16) health care user respondents. Therefore, the government plays a significant role in the provision of health care in rural areas as indicated by 421 out of 443 (95.03%; *f*=421) health care user respondents. Due to the greater government ownership of the health facilities in the rural areas, the government should adequately distribute fiscal resources to facilitate easy accessibility to health care services. Although ownership of health facilities by missionaries is a mere 3.61% (16 out of

443 health care user respondents) in the studies conducted by Loewenson et al (2014:21) in Zimbabwe, missionaries also play an important role in health care provision in the rural areas. The nearest health facility is consulted first as indicated by 418 out of 445 (93.93%; *f*=418) health care user respondents, before seeking health care services from other health facilities (refer to Table 3.2). This is despite 140 out of 445 (31.46%; *f*=140) health care user respondents indicating a preference for the district hospital. The preference for using health facilities is influenced by its physical accessibility (Nyandoro et al 2016:21).

Table 3.2: Frequency distribution of rural health facilities accessible to health care users (N=445)

Health Facilities	Frequency	Percent (%)
Health facility common in rural areas, normally visited (N= 445)		
Hospital	140	31.46
Mission Hospital	50	11.23
Health centre	252	56.62
Traditional healer	3	0.67
Health facility preference (consulted first) (N=445)		
Health clinic	255	57.30
District Hospital	140	31.46
Mission health facilities	50	11.23
Health facility ownership (N=443)		
Private	6	1.35
Public(government)	421	95.03
Mission	16	3.61
Nearest rural health care facility is visited (N=445)		
Yes	418	93.93
No	25	5.61

3.13.2 Physical accessibility to the physical resources (Rural Health Facilities)

Physical resources are one of the inputs that influence accessibility to health care as per Systems Model (Goodwin & Tobler 2013:6; Kadobera et al 2012:2). The physical accessibility depends on the distribution of the physical resources in the rural areas. Therefore, the distances that exist between the households and the physical resources (health

facilities) play an important role in accessibility to health care. The farther the distance to health facilities, the less likely the health care users are to seek health care services (WHO & World Bank 2015:20). The challenge of accessibility of physical resources is presented looking at factors such as distance, means of transport, travelling time and road infrastructure. The factors that impact the ability of health care users to overcome the physical distances to physical resources (health facilities), are also discussed.

3.13.2.1 Distance to the rural health facility

Sixteen (16) out of 90 (17.77%; *f*=16) professional nurses reported that health care users are within a walking distance of <5km in the catchment area of the health facilities, correlating with information from 226 out of 445 (50.78%; *f*=226) health care user respondents who indicated the same (refer to Figure 3.4). The findings from 226 out of 445 (50.78%; *f*=226) health care user respondents conform with the findings from a study conducted in Zimbabwe by Chirwa et al (2014:2), where a significant number of people were found to be living within a 5km walking distance to rural health facilities. Considerable difference in opinions of professional nurse respondents and health care user respondents were noted as 226 out of 445 (50.78%; *f*=226) health care user respondents confirmed living within a 5km radius of rural health facilities, while 53 out of 90 (58.88%; *f*=53) professional nurse respondents reported a distance of 6-10km in the catchment area. The difference might be associated with the number of health care users attended to by professional nurses at the rural health facility, living within a 6-10km radius as compared to health care user respondents' experience of walking those distances. The opinions of 226 out of 445 (50.78%; *f*=226) health care user respondents was based on their own experience, especially when travelling to the rural health facility.

One hundred and fifty-six (156) out of 445 (35.05%; *f*=156) health care users stay within a radius of 6-10km from the rural health facility and 63 out of 445 (14.15%; *f*=63) health care user respondents live within a radius greater than 10km (>10km) (refer to Figure 3.4). The findings are in agreement with studies conducted in Zimbabwe by Chimhowu et al (2010:93) and Chirwa et al (2015:5), who reported that 20% of health care users in rural areas walk more than 10km to the health facilities. The population who walk more than 10km were resettled in large commercial farms during the fast track land reform during 1997 to 2009 in

Zimbabwe, and were accessing satellite health facilities (MoHCC 2015:23). The health care users walk long distances to health facilities despite the Zimbabwe MoHCC policy of less than 8km walking distance and the WHO's recommended standard walking distance of 5km (WHO 2015a:42).

The researcher further analysed the quantitative data retrieved from professional nurses and health care user respondents through calculating the mean distance from various estimated distances in kilometres.

The estimated distances indicated by both professional nurses and health care user respondents within the catchment areas of the health facilities were used to calculate the mean distance. The mean distance based on the data obtained from the professional nurses and health care user respondents was 9km, which is above both the Zimbabwe MoHCC and the WHO standard of 8km and 5km walking distances respectively. The data was skewed to above 8km. Based on the findings, it showed that Zimbabwe had not met the standard walking distance to health facilities, which should be between 5-8km.

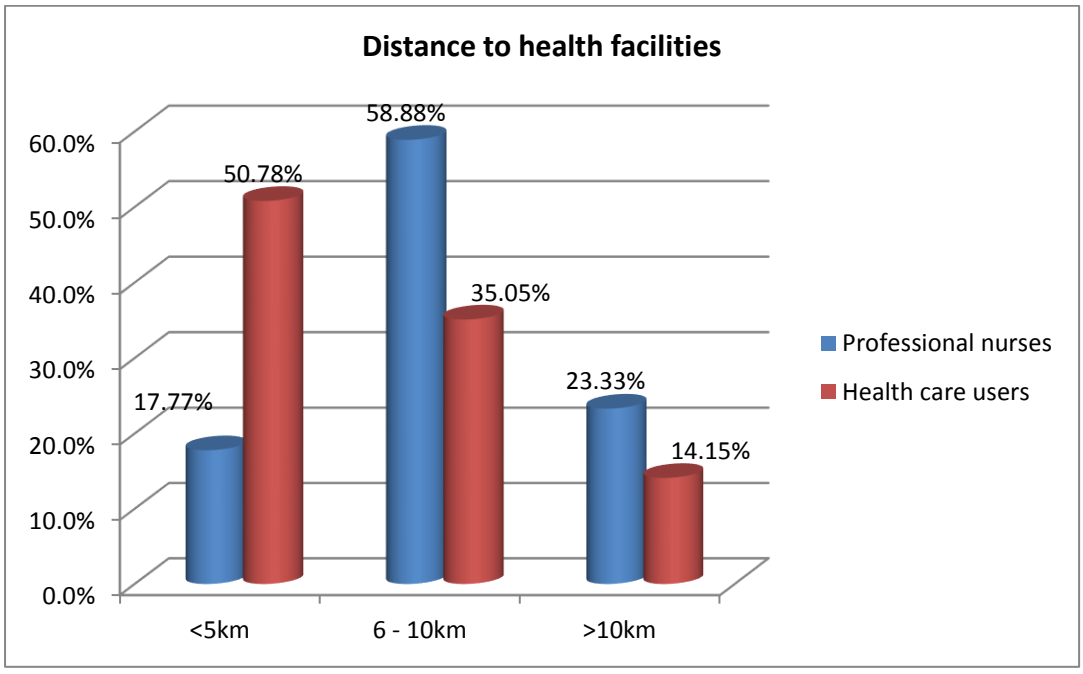

Figure 3.4: Distance to health facility (professional nurses N=90; health care users N=445)

Using health facilities is influenced by the distances travelled as was indicated by 418 out of 445 (93.93%; *f*=418) health care user respondents who prefer to use the health care facilities nearest to their villages (refer to Table 3.2). This finding concurs with the study done in India by Patel and Ladusingh (2015:5) and another study done in China by Hu et al (2013:2), that demonstrated the significance of the presence of a health facility closer to where people live, which acted as an incentive for people to utilise the health facilities. In a study conducted in Kenya by O'Meara, Noor, Gatakaa, Tsofa, McKenzie and Marsh (2009:492), distance had an influence on morbidity and mortality. For example high mortality due to malaria were recorded in distant villages as compared to those close to the health facility. Also, Blanford et al (2012:11) in Niger showed that the use of health facilities decreased with distances of more than one hour to a health facility. Blanford et al (2012:11) found that children living in rural clusters within one hour of a health facility in Niger had higher chances of being vaccinated by age one (1) year compared to children living far from the health facilities. Therefore, further distances reduce the chance of sick health care users seeking help, therefore, the 20% living within 11-20km radius in health facility catchment areas might not be visiting the health facilities when they need care. Based on the findings on distance to the rural health facility in Zimbabwe, this might be a contributing factor to high mortality rates among infants, which stands at 690 per 100,000 population (WHO 2014c:13). The high morbidity and mortality rate is associated with delays in seeking treatment caused by health care users who are unwilling to travel long distances. A study conducted in South Africa by Sharkey et al (2011:382) (Umzimkhulu) reported that caregivers were delaying taking children to health facilities because of the vast distances. The caregivers provide home care or traditional health services as indicated by 200 out of 445 (44.94%; *f*=200) health care user respondents that only seek health care services when children are in a serious condition, especially when transport is not available.

3.13.2.2 Means of transport in rural areas

Due to the distances between the households and the health facilities, health care user respondents end up using public and private transport for travelling to the health facilities. The main means of travelling to the rural health facility is walking for 61 out of 90 (67.77%; *f*=61) professional nurse respondents, and 293 out of 445 (65.84%; *f*=293) health care user respondents (refer to Figure 3.5). Eighteen (18) out of 90 (20.0%; *f*=18) professional nurses,

and 22 out of 445 (4.94%; *f*=22) health care user respondents travel using bicycles to the nearest health facility (refer to Figure 3.5). Apart from walking and using bicycles, health care users use ox-drawn carts according to 41 out of 445 (9.21%; *f*=41) health care user respondents and 6 out of 90 (6.66%; *f*=6) professional nurse respondents. Public transport is used by 76 out of 445 (17.07%; *f*=76) health care user respondents and 5 out of 90 (5.55%; *f*=5) professional nurse respondents, which includes buses and mini-buses (refer to Figure 3.5). Very few, 13 out of 445 (2.92%; *f=13*) health care user respondents use their own private cars (refer to Figure 3.5).

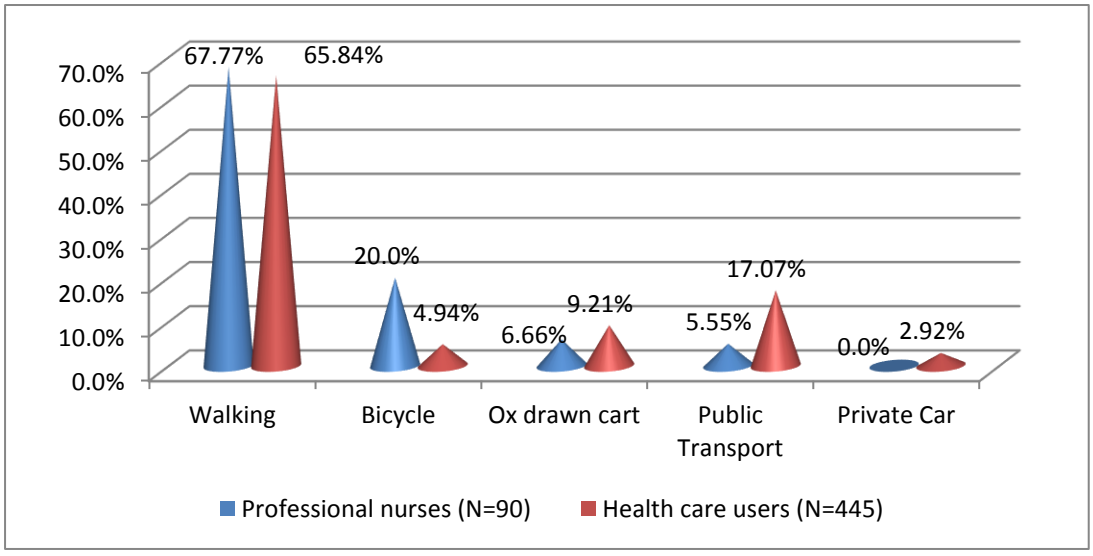

Figure 3.5: Means of transport to the health facility (professional nurses N=90; health care users N=445)

The delay in seeking health care at the rural health facility due to great distances (>10km) is understandable since walking is the primary means of travelling from home to the health facilities. It is merely impossible to walk more than 10km to the health facility during the night if an emergency arises. Therefore, equitable distribution of health facilities needs attention in Zimbabwe. The closer the health facility in the rural areas, the easier it will be for health care users to access the facilities by walking. The distances involved and walking as the means of travelling tends to discourage health care users from seeking health care in times of need (Blanford et al 2012:9). The high mortality rate in a country cannot be ruled out if health care users delay seeking health care due to distances involved. The findings are in accordance with studies in Zimbabwe by Kevaney et al (2012:47) and in Burkina Faso by Blanford et al (2012:9) who reported that travelling vast distances may affect a person's

ability to seek early treatment, especially those who need special care. The findings also agree with a study done in Niger by Blanford et al (2012:2) where walking to seek treatment was the most common means of transport in the rural areas. Similar findings have been documented in other African countries, for example, in Bukina Faso where the population walk in excess of an hour to the closest health facility (Schoeps et al 2011:495). In these situations where long distances are involved, walking to health facilities delay health care users seeking health care and this can be addressed by enhancing accessibility to public transport.

Public transport can assist in bridging the gap between the health care user's home and the health facility, but in this study very few, 76 out of 445 (17.07%; *f*=76) health care user respondents indicated the use of public transport. This may be an indication of a lack of accessibility to transport, making accessibility to health care impossible during times of need. Some researchers found that the use of health care facilities diminishes with distance, but where public transport is used it improves accessibility to the health facilities (Schoeps et al 2011:494; Blanford et al 2012:7).

Four hundred and seventeen (417) out of 445 (93.7%; *f*=417) health care user respondents responded to the question on accessibility to public transport (refer to Table 3.3). Accessibility to public transport is a challenge in the rural areas as indicated by 270 out of the 417 (64.74%; *f*=270) health care user respondents. Contrary, 147 out of 417 (35.26%; *f*=147) health care user respondents reported that it is easy to get public transport (refer to Table 3.3). There were various reasons mentioned by 270 out of the 417 (64.74%) health care user respondents with regards to challenges related to transport in rural areas. The challenges included lack of affordability to pay transport fees, long waiting times at the bus station, and lack of good road infrastructure [169 out of 270 (62.59%; *f*=169) health care user respondents] (refer to Table 3.3). Due to these challenges associated with accessibility to public transport, 293 out of 445 (65.84%; *f*=293) health care user respondents use walking as their primary means of travelling to the health facilities (refer to Figure 3.5).

The findings on accessibility to transport is in accordance with the study conducted in South Africa by Sharkey, Chopra, Jackson, Winchy and Minkovtv (2011:383) where accessibility to transport was found to be challenging and difficult; even hiring private cars can take a couple

of hours in the rural areas. This affects accessibility to health care as some children end up dying before reaching the health facilities. Another study conducted in Japan by Hamano et al (2015:7200) discovered that transport in rural areas was limited, thereby reducing accessibility to health facilities for the health care users 10-20km away from the health facilities. In Burkina Faso, Schoeps et al (2011:496) found that the lack of accessibility to transport in rural areas reduced health care utilisation among children, elders, low-income people, and people with disabilities.

Table 3.3: Challenges of accessibility to public transport in rural areas by health care users

	Frequency	Percent
Public transport is easily accessible (N=417)		
Yes	147	35.26
No	270	64.74
Affordability to pay public transport fees (N=155)		
Yes	101	65.16
No	54	34.84

Although 270 out of the 417 (64.74%) health care user respondents indicated challenges in accessing public transport in the rural areas, 155 out of 270 (57.40%; *f*=155) health care user respondents confirmed the follow-up question on affordability to pay transport fees (refer to Table 3.3) as one of the challenges. One hundred and one (101) out of 155 (65.16%; *f*=101) health care user respondents indicated that they can afford to pay for public transport fares (refer to Table 3.3). In contrast, 88 out of 90 (97.77%; *f*=88) professional nurse respondents reported that health care users struggle to pay transport costs, hence mainly walking as a means of travelling [61 out of 90 (67.77%; *f*=61) professional nurse respondents] (refer to Figure 3.5). Fifty-four (54) out of 155 (34.84%; *f*=54) health care user respondents indicated unaffordability to pay the cost of public transport. Based on the findings, public transport costs a minimum of US$0.50 and a maximum of US$20 to travel to the rural health facilities.

The mean cost of public transport as per data from the professional nurse respondents is US$2.97. One hundred and fifty-three (153) out of 445 (34.38%; *f*=153) health care user respondents who answered this question differed from the professional nurse respondents, by indicating that bus fare ranges between US$0.50 and US$10 to the health facility depending

on the distance from their households. The researcher compared the mean of professional nurse respondents' given cost of bus fares and that of health care user respondents. The mean cost of transport according to data from professional nurse respondents was US$2.97 (refer to Table 3.4). The mean bus fare according to health care user respondents was US$1.43. There was a difference in the mean cost of public transport from professional nurses and health care user respondents due to many outliers which were noted in professional nurse respondents' data set. It is impossible to travel to the health facility with public transport without the ability to meet the cost of transport (Munjanja, Magure & Kandawasvika 2012:139). Harris et al's (2011:113) findings on causes of delaying treatment due to unaffordable transport costs by rural populations in the research conducted in South Africa agreed with the findings of this research. According to Harris et al's (2011:113) study, disastrous transport costs were incurred in 15.3% of those living in rural areas and 14.7% of the unemployed. Therefore, the distances involved in reaching health facilities, the costs of public transport and unaffordability to pay for transport are key factors that affect rural populations' decision-making. These factors influence timely accessibility to health care (Munjanja et al 2012:140).

Table 3.4: Mean cost of transport (descriptive statistics) health facility

	Frequency	Minimum	Maximum	Mean	Std. Deviation
Average cost of transport paid by health care users (professional nurses N=88)	88	$0.50	$20	$2.97	$3.920
The cost of transport from health care users' home (health care users N=153)	153	$0.50	$10.00	$1.4281	1.46721

Not only is accessibility to public transport and affordability to pay a challenge for health care users, but also the inaccessibility to ambulance services at the rural health facilities (Munjanja et al 2012:139). Four hundred and forty-three (443) out of 445 (99.55%; *f*=443) health care user respondents answered the question on accessibility to ambulances. Accessibility to an ambulance is simply impossible as indicated by 403 out of 443 (90.97%; *f*=403) health care user respondents (refer to Table 3.5).

Table 3.5: Accessibility to ambulance in rural areas

Accessibility to ambulances at the rural health facility (N=443)		
	Frequency	**Percentage**
Yes	40	9.03%
No	403	90.97%

Calling the professional nurses during an emergency for assistance with an ambulance is impossible due to the unavailability of ambulances at the rural health facility. Even though vehicle ambulances have been the most effective method to transport patients between health facilities, the primary problem in rural areas is accessibility and affordability. It is impossible to access ambulances stationed at the district hospitals as those few ambulances available are extremely busy (Munjanja et al 2012:145). The positive reports on the impact of using ambulances are few. In Sri Lanka, the government equipped every district hospital with between three and five ambulances, which significantly reduced delays in transporting patients (Munjanja et al 2012:145). In rural areas, due to the cost of managing a public sector ambulance service, health care users have to rely on walking, or using public or private transport for the few who can afford it.

The use of public transport, walking to health facilities, and using private vehicles are not the only challenges faced by health care users. Travelling time is another difficulty. The further the distance, the more travelling time one takes to reach the health facility, thereby delaying treatment (Schoeps et al 2011:494, Blanford et al 2012:7).

The travelling time spent by health care users travelling to the health facilities varies by means of travel and season. Travelling to the health facilities during the rainy season has been shown to increase the travel time compared to the dry season (refer to Table 3.6). During the dry season, health care user respondents spent a mean of 87 minutes walking, whereas during the wet season health care users spent a mean of 108 minutes walking to the rural health facilities. The shortest time taken travelling is by means of bicycle for both dry and wet seasons (mean of 41 minutes), as well as public transport (mean of 41 minutes), even though health care users reported challenges associated with accessibility to bicycles and public transport (refer to Figure 3.5). The health care user respondents indicated that the shorter routes are avoided due to flooding of rivers during the rainy season. The findings are in accordance with studies done in Niger by Blanford et al (2012:7) and in Bukina Faso by

Schoeps et al (2011:495), who discovered that travelling times in rural areas vary with seasonal changes, and in the rainy season more time is spent travelling to the health facilities.

Table 3.6: Time taken during travelling

Health care user respondents	Frequency	Minimum (Minutes)	Maximum (Minutes)	Mean (minutes)	Std. Deviation	Std. Error Mean
Walking in Dry season	424	2	300	87	53.87441	2.61637
Walking in Rainy season	254	2	300	108	56.97844	3.57515
Bicycle in Dry season	15	2	300	43	22.41874	5.78849
Bicycle in Rainy season	6	5	60	41	20.00000	8.16497
Car in Dry season	9	15	30	56	34.16301	11.38767
Car in rainy season	4	18	36	47	12.58306	6.29153
Public transport in dry season	62	5	120	41	25.51428	3.24032
Public transport in rainy season	52	5	180	60	31.59386	4.38128
Animal drawn cart in dry season	75	5	240	76	44.30056	5.11539
Animal drawn cart in rainy season	57	9	240	90	44.53802	5.89921

The transportation situation is worsened by the unsafe condition of the roads in rural areas as indicated by 80 out of 90 (88.88%; *f*=80) professional nurses and 439 out of 445 (98.65%; *f*=439) health care user respondents who answered the question on challenges associated with the use of public transport (refer to Table 3.7). Two hundred and sixty-six (266) out of 439

(60.59%; *f*=266) health care user respondents reported that the roads have potholes and are never repaired (refer to Table 3.7). Due to the potholes on the roads, no one wants to use their vehicles or buses to provide transport to the rural areas. One hundred and sixty-five (165) out of 439 (37.58%; *f*=165) health care user respondents indicated that roads were washed away, including bridges, by running water during the rainy seasons and have not been repaired over the past 4-5 years, and some are entirely cut off. While 5 out of 439 (1.13%; *f*=5) health care user respondents reported that there are no roads, 3 out of 439 (0.68%; *f*=3) health care user respondents reported that there are no bridges.

Table 3.7: Challenges faced by health care users associated with the road infrastructure

Road infrastructure health care user opinions (N=439)		
	Frequency	Percentage
No road	5	1.13
Gravel paved road with potholes	266	60.59
No Bridge	3	0.68
Road washed away never repaired	165	37.58
Waiting time for public transport (N=150)		
less than 1 hour	107	71.33
1 hour – 2 hours	24	16.0
More than 2 hours	19	12.66

One hundred and fifty (150) out of 445 (33.7%; *f*=150) health care user responded to the question on waiting time for the public transport (refer to Table 3.7). One hundred and seven (107) out of 150 (71.33%; *f*=107) health care users indicated a waiting time of less than one hour for transport, 24 out of 150 (16%; *f*=24) health care users wait between one to two hours, and 19 out of 150 (12.66%; *f*=19) health care users s reported waiting times of more than two hours (refer to Table 3.7).

Not only is the waiting time for transport a challenge, but also the condition of the public transport that uses the secondary gravel roads in rural areas which are unsafe. Two hundred and sixty-three (263) out of 445 (59.1%; *f*=263) health care user respondents reported that the bodyworks of the public transport in rural areas are in unacceptable condition and were lacking maintenance. While travelling, the public buses accumulate dust inside, and if one is sick it worsens the condition due to inhaling the dust as was indicated by 79 out of 445

(17.75%; *f=79*) health care user respondents. Very few, 22 out of 445 (4.94%; *f=22*) health care user respondents reported that the public transport is comfortable to travel in.

In summary, the findings from this theme indicated that distances to health facilities have been closely linked to inaccessibility to health care services, in particular for health care users who stay far from the health facilities. The accessibility challenges have been further worsened by a lack of transport, a lack of affordability of public transport fares, the bad conditions of the roads, and limited means of public transport.

Although distance to the health facilities plays an important role in influencing accessibility to health care services, communication also has an impact on access to health care services. Therefore, the researcher will present findings on the means of communication available in the rural areas as one of the essential inputs as per the Systems Model.

3.13.2.3 Means of Communication between Health Care Users and Professional Nurses

The main means of communication during an emergency with the professional nurses is to report at the health facility in person [340 out of 445 (76.40%; *f*=340) health care users]. Due to the availability of mobile network [105 out of 445 (23.59%; *f*=105) health care user respondents] some health care users communicate by mobile phone to inform the health care workers if there is an emergency. However, mobile phones are used by few health care users due to challenges of affordability to pay for mobile phone credits [340 out of 445 (76.4%; *f*=340) health care user respondents]. Only a few, 105 out of 445 (23.59%; *f*=105), health care users reported being able to pay for credit for the mobile phones (refer to Table 3.8).

Table 3.8: Health care users' ways of communication with professional nurses (N=445)

Means of communication (N=445)	Frequency	Percent
Report in person	340	76.40
Use mobile phone	105	23.59
Affordability to call the health workers during emergency (N=445)		
Yes	105	23.59
No	340	76.40

Due to the communication challenges in the rural areas, sick health care users cannot call for an appointment but have to report in person at the health facility. These results correlate with findings in a study conducted in Zimbabwe by the MoHCC (2012:8) which discovered that an estimated 5 million (12% of the population) people had access to mobile phones and internet.

The health care users are faced with many challenges to access health care. Some of these challenges include distance, transport and road infrastructure as discussed earlier. When the health care user is able to overcome these challenges, he or she is faced with different challenges at the health facility. These challenges include the availability of material resources that form part of the inputs of the Systems Model.

3.14 MATERIAL RESOURCES INPUTS – ACCESSIBILITY TO MEDICAL SUPPLIERS

The material resource inputs as reflected in the findings of the study were medical drugs and other medical supplies like sutures, cotton wool, razor blades, methylated spirits, and thermometers, to mention a few. These are basic material resource inputs needed according to the Systems Model to enhance accessibility to health care at rural health facilities.

3.14.1 Medical drugs

Medical drugs play an important role in saving the lives of affected people by treating the ailment, thereby reducing chances of hospitalisation and mortality (WHO 2014c:49). Accessibility to medical drugs enhances access to treatment, it improves the health status of the population, and thereby improves the life expectancy of the population (WHO 2014c:49; Caulder et al 2015:282). The researcher collected data from both professional nurses and health care user respondents on the accessibility to medical drugs at the rural health facilities in Zimbabwe.

Eighty-seven (87) out of the 90 (96.66%; *f*=87) professional nurse respondents reported that medical drugs were being delivered and received on a quarterly basis at the rural health facilities (refer to Figure 3.6). Although the medical drugs were delivered on a quarterly basis, the deliveries were less than the quantities ordered, and some were not available for

delivery as indicated by 48 out of 86 (55.81%; *f*=48) professional nurse respondents (refer to Figure 3.6). The lack of consistency in the supply of medical drugs is an indication of the challenges associated with accessibility of the required medical drugs after consultation with the professional nurses. These findings are similar to a study done by Kevany et al (2012:47) in Zimbabwe, which observed that most of the health facilities had difficulties in getting the full amount of requested medical drugs, or maintaining levels of essential medical drugs above the consumption rates. This fact is also supported by the Centre for Disease Control (CDC) as a health travel warning on its website (CDC 2015).

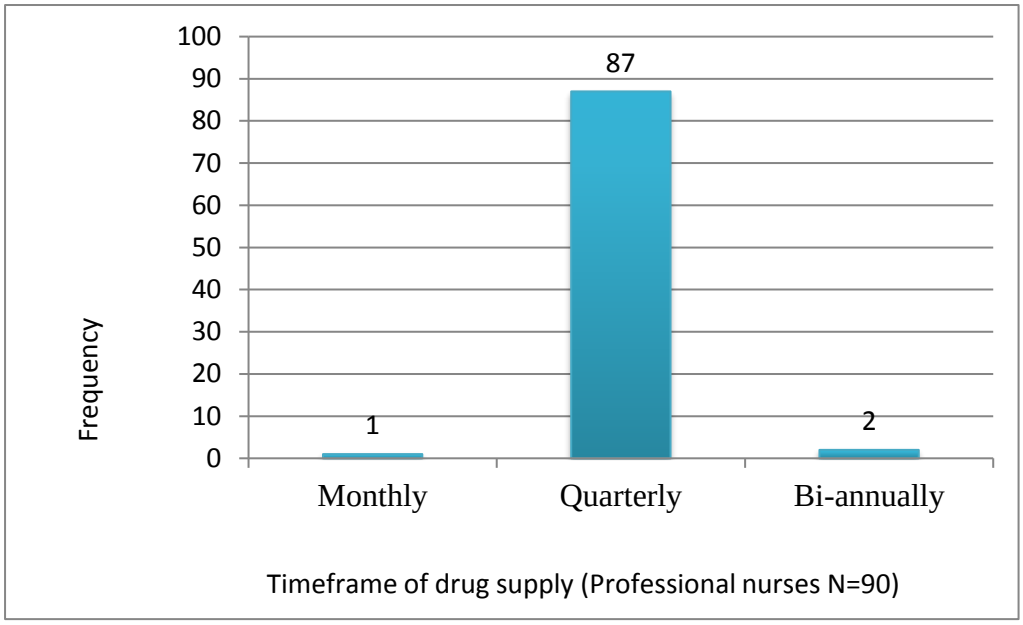

Figure 3.6: Frequency of supply and availability of medical drugs at the rural health facilities (Professional nurses N=90)

Eight-six (86) out of 90 (95.55%; *f*=86) professional nurse respondents and all 445 health care user respondents answered the question on availability of medical drugs at the health facilities. The researcher was curious about this but did not have an explanation for it. Fifty (50) out of 86 (43.02%; *f=37*) professional nurses and 196 out of 445 (44.04%; *f*=196) health care users indicated that medical drugs are always available at the rural health facilities (refer to Figure 3.6). While 48 out of 86 (55.81%; *f*=48) professional nurses indicated that medical drugs are sometimes available, not a single health care user responded that drugs were sometimes available, as 249 out of 445 (55.95%; *f*=249) health care user respondents indicated that medical drugs were not available at the rural health facilities. Since medical drugs are supplied on a quarterly basis [87 out of the 90 (96.66%; *f*=87) professional nurse

respondents], the health care user respondents might have visited the health facility after the medical drugs were depleted, thereby contributing to 249 out of 445 (55.95%; *f*=249) health care user respondents indicating an unavailability of medical drugs.

The difference in opinions on availability and accessibility of medical drugs at the rural health facilities, might well be attributed to the number of visits by the health care users to the health facility and those accessing the mission hospitals and some of the rural health facilities where drugs are sometimes available, as indicated by 48 out of 86 (55.81%; *f*=48) professional nurse respondents. The studies in Zimbabwe by Osika et al (2010:86) on Zimbabwe's Health Assessment as cited in Chirwa et al's (2015:45) study on health care delivery in Zimbabwe, reported the availability of essential medical drugs at only 20% of the rural health facilities. The shortage of medical drugs might be influenced by the economic hardships which contributed to importing most of the essential medical drugs in Zimbabwe (United Nations Industrial Development Organisation (UNIDO) 2011:34).

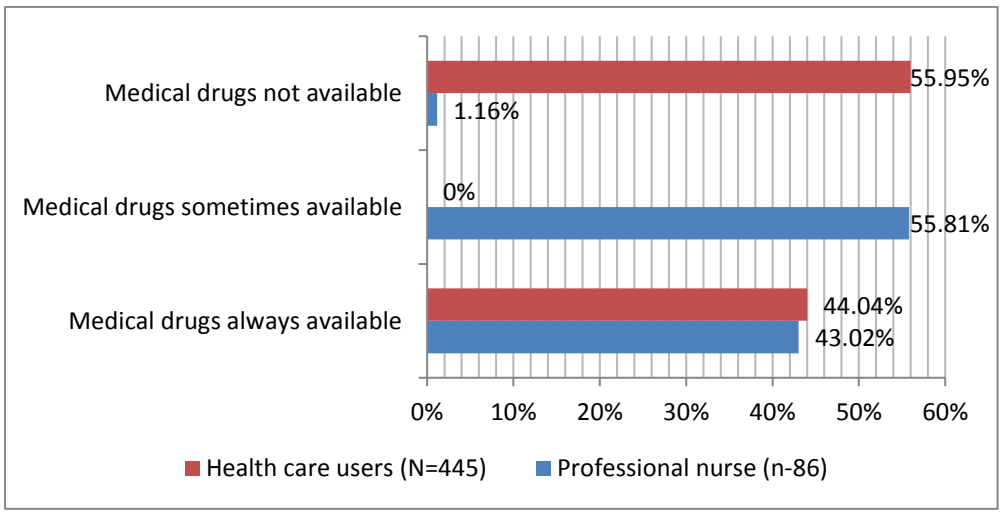

Figure 3.7: Medical drugs availability at the rural health facility (Professional nurses N=86 and Health Care Users N=445)

Due to a shortage of medical drugs at some rural health facilities, 34 out of 90 (37.77%; *f*=34) professional nurse respondents prescribe medical drugs and refer health care users to pharmacies which are not accessible to the health care users in the rural areas. This resulted in 148 out of 445 (33.25%; *f*=148) health care users preferring to stay at home as it is impractical to refer patients to pharmacies more than 15km away and mostly in towns, as indicated by both professional nurses [33 out of 90 (36.66%; *f*=33)] and health care users

[356 out of 445 (80%; *f*=356)] (refer to Figure 3.10). Pharmacies are available at district centres, towns and cities which are far from the rural health facilities. Medical drugs were also reported to be available at the mission health facilities as indicated by 39 out of 90 (43.33%; *f*=39) professional nurses who refer health care users to these facilities. Mission health facilities are perceived to have other financial resources from donors to buy medical drugs (Osika et al 2010:86), which might be why 50 out 445 (11.23%; *f*=50) health care users prefer mission health facilities rather than the rural PHFs. The unavailability of medical drugs contributes to dissatisfaction among health care users with the rural health facilities as indicated by 241 out of 445 (54.15%; *f*=241) health care user respondents (refer to Figure 3.16). It might also contribute to the use of tradition health care services like traditional healers as indicated by 200 out of 445 (44.94%; *f*=200) health care user respondents (refer to Section 3.19).

According to a study by Osika et al (2010:86), the lack of financial resources by the government of Zimbabwe is a challenge for the accessibility of medical drugs from the national pharmaceutical company in Zimbabwe (NatPharm). The findings on shortages of medical drugs at the rural health facilities is consistent with a study done by Munjanja et al (2012:141) in Zimbabwe, and a study by Caulder et al (2015:282) in the USA, who found that shortages of medical supplies increased significantly, not only in Zimbabwe but also in other countries like the USA. It is difficult for patients to access medical drugs at the health facilities, in particular, those in remote rural areas. These shortages of medical drugs place the greatest burden on health care users, caregivers, and professional nurses. The caregivers have to travel vast distances seeking medical drugs to treat their sick family member (refer to Figure 3.10). Sixty-eight (68) out of 90 (75.55%; *f*=68) professional nurses in this study indicated that essential drugs for treating patients known to be suffering from chronic diseases like hypertension, diabetes, heart diseases and HIV/AIDS were not available or consistently supplied at the rural health facilities. The inconsistent supply of medical drugs leads to adherence problems and complications, deferment of treatment, and contribute to high costs incurred by patients when seeking medical drugs in pharmacies (Goldsack, Reilly, Bush, McElligot, Bristol, Motanya, Field, Vozniak, Wong, Schwartz & Domchek 2014:572; Gatesman & Smith 2011:1654).

Due to the lack of medical drugs, professional nurses only provide diagnostic services and leave health care users to look for pharmaceutical services from other sources (Caulder et al

2015:285). This challenge, together with the fact that most rural people are poor, enhances their chance to deteriorated health and death. In addition to the lack of medical drugs in health facilities, there are no adequate medical supplies to carry out evidence-based diagnoses on health care users.

3.14.2 Medical supplies

Medical supplies for health care at the health facilities refer to consumable items like disposable syringes, needles, cotton wool, razor blades, sutures, catheters, intravenous fluids and other items like candles. All professional nurses and 311 out 445 (69.88%; *f*=311) health care user respondents answered the question on health care users being requested to bring their own medical supplies to the rural health facilities. Due to the unavailability of essential medical supplies, 65 out of 90 (72.22%; *f*=65) professional nurses requested health care users [133 out of 311 (42.76%; *f*=133)] to bring their medical supplies (refer to Figure 3.8). However, 25 out of 90 (27.77%; *f*=25) professional nurse respondents and 125 out of 311 (40.19%; *f*=125) health care user respondents indicated that no one was requested to bring their own medical supplies at the rural health facilities, with 53 out of 311 (17.04%; *f*=53) health care users not knowing whether they were requested to bring their own medical supplies.

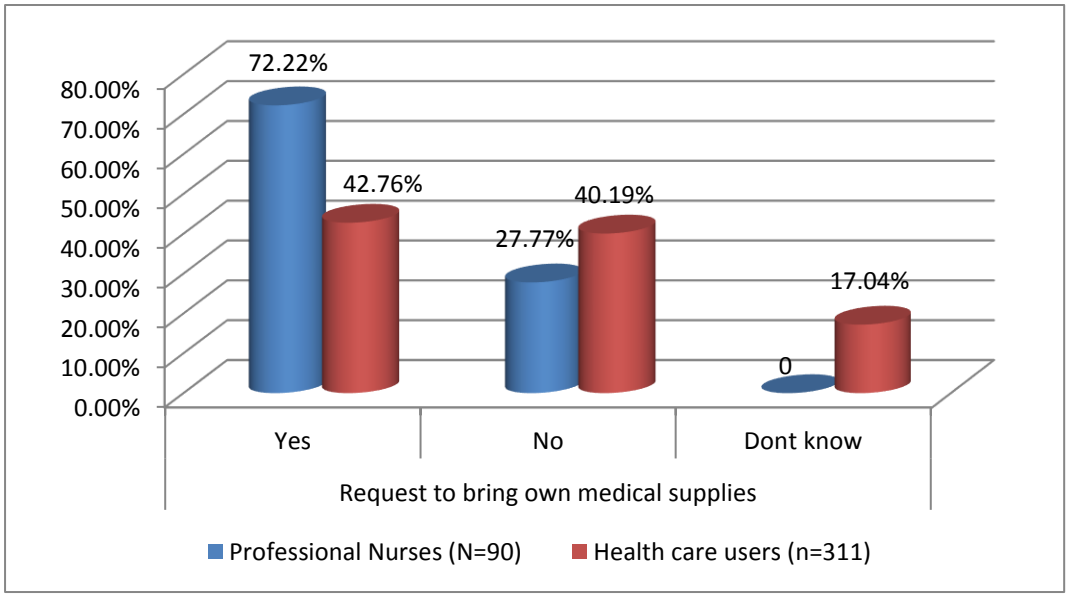

Figure 3.8: Health care users bring own medical supplies to health facilities (Health care users N=445)

The findings from both professional nurses [65 out of 90 (72.22%; *f=65*)] and health care users [133 out of 311 (42.76%; *f*=133) health care user respondents] concur with some of the research studies done in Zimbabwe (Chinhowu et al 2010:91; Osika et al 2010:86; Kevany et al 2012:47) which confirm that the majority of rural health facilities were requesting expecting mothers to bring their own intravenous fluids, sutures, candles, cotton wool, gloves and methylated spirits to give birth at the health facilities. These medical supplies had to be purchased from pharmacies.

3.14.3 Pharmacies in rural areas

Pharmacies play a significant role in ensuring accessibility to health care, in particular accessibility to medical drugs (MoHCC, NFPA & WHO 2013b:2). Since medical drugs are unavailable at the health facility, accessibility to pharmacies presented a real challenge as 409 out of 445 (91.91%; *f*=409) health care users indicated that there are no pharmacies in the rural areas. The pharmacies are only found at the growth points (district centres), towns and cities which are more than 15km away as indicated by 356 out of 445 (80%; *f*=356) health care user respondents (refer to Figure 3.10). Since pharmacies are not available in the rural areas, 72 out of 90 (80%; *f*=72) professional nurses give prescriptions and refer health care users to the nearest pharmacy, district hospital, mission health facilities, and private health facilities. After obtaining the prescription from professional nurses, health care users [315 out of 445 (70.78%; *f*=315)] travel to the nearest source to obtain medical drugs from a pharmacy, district hospital or mission health facility. All professional nurses and 315 out of 445 (70.78%; *f*=315) health care user respondents answered the question on sources of medical drug purchase points.

Both professional nurses [33 out of 90 (36.66%; *f=33*)] and health care users [254 out of 315 (80.63%; *f*=254)] indicated that medical drugs are purchased from pharmacies in towns. Thirty-nie (39) out of 90 (43.33%; *f*=39) professional nurses and 50 out of 315 (15.87%; *f*=50) health care user respondents reported accessing medical drugs at the mission hospitals (refer to Figure 3.9). This fact is supported by a national medicines survey in Zimbabwe conducted by MoHCC, UNFPA and WHO (2013:9), which indicated that there was a shortage of medical drug supplies from NatPharm due to inadequate financial resources for the procurement of essential medical drugs, which affected delivery to rural health facilities.

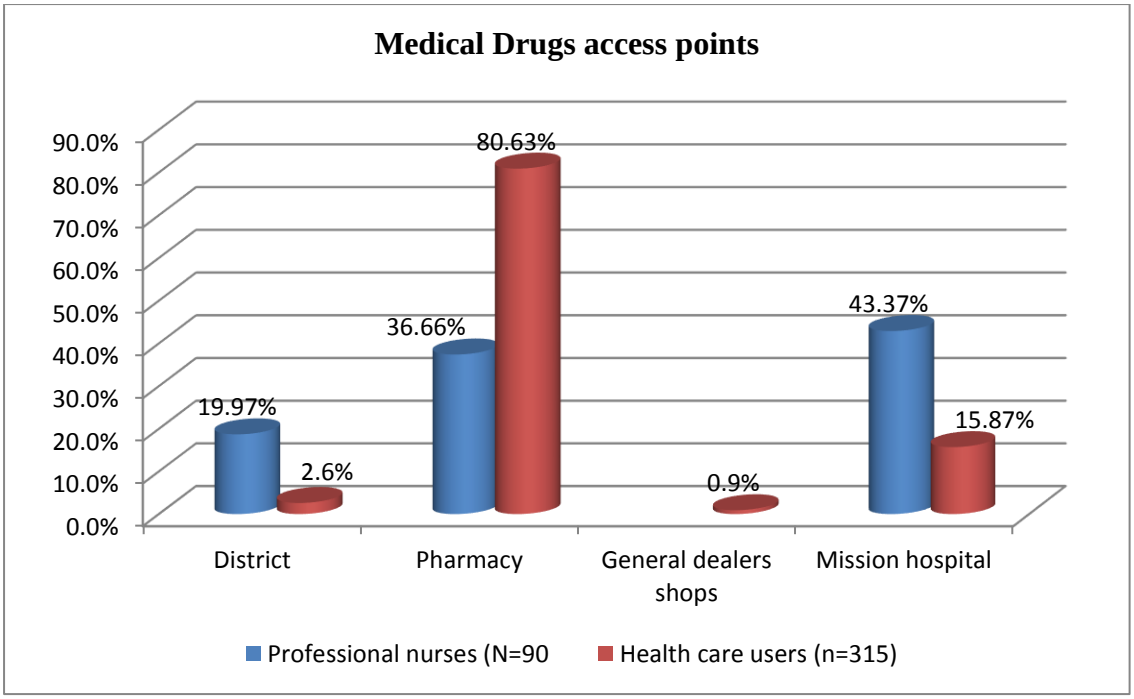

Figure 3.9: Alternative medical drug supply sources when medical drugs are out of stock at health facility (professional nurses N=90; health care users N=315)

The shortage of medical drugs at the rural health facilities contribute to health care users [356 out of 445 (80%; *f*=356)] travelling more than 15km to purchase medical drugs after getting the prescriptions from professional nurses (refer to Figure 3.10). Thirteen (13) out of 445 (2.92%; *f*=13) health care user respondents travel between 11-14km to the nearest medical drug purchase point, 54 out of 445 (12.13%; *f*=54) travel between 6-10km, while 22 out of 445 (4.94%; *f*=22) travel between 0-5km. The combined travelling time to consult the professional nurses, to look for medical drugs and to travel back home all contributes to delayed treatment of the sick health care user. Therefore, if the private pharmacies bring medical drugs closer to the people and compliment the pharmacies at hospitals, this will reduce the loss of time, costs related to travelling, and delayed treatment of sick health care users. This would create easy accessibility to medical supplies by those who can afford to buy from private pharmacies.

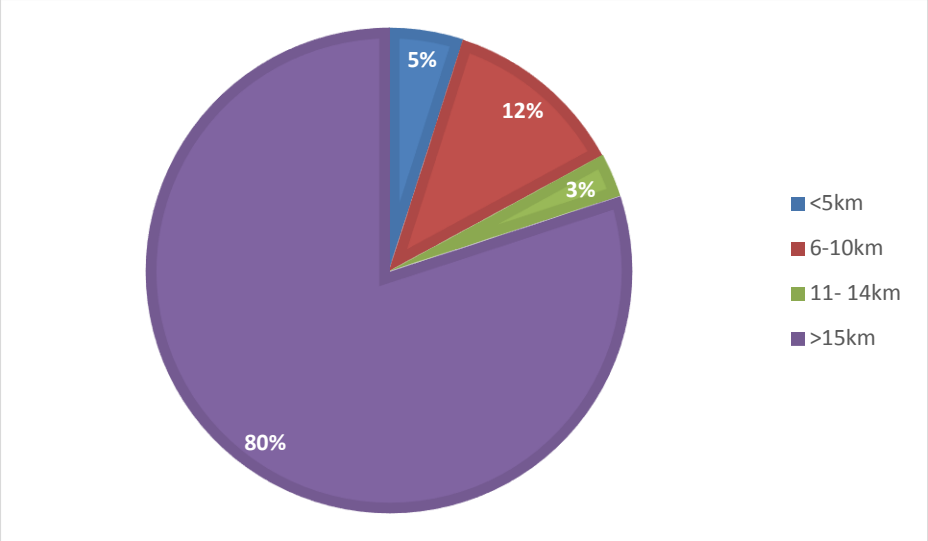

Figure 3.10: Distance to nearest source of medical drugs (health care users N=445)

The challenges associated with a shortage of medical drugs at the rural health facilities [250 out of 445 (56.17%; *f*=250) health care user respondents] was attributed to poor financing of the health care sector by the government of Zimbabwe. This is might be true as the annual budget for MoHCC was below the 15% target set by African governments in 2001 (Abuja Declaration of 2001); thus associated with accessibility challenges as experienced by health care users (UNICEF 2016:7). In a study conducted in Zimbabwe by Nyandoro et al (2016:27), it was indicated that the failure of the MoHCC to make payments to the NatPharm for medical drug supplies was due to financial constraints. The late payments contributed to delayed delivery of medical drugs and supplies to the rural health facilities, thereby limiting accessibility to health care by the rural population.

Health care users reported more challenges related to the availability of health care workers at the rural health facilities, especially the professional nurses and midwives.

3.15 HUMAN RESOURCES (Systems Model input)

Human resource input in this study refers to professional nurses, midwives and physicians responsible for providing health care at the health facilities in the rural areas of Zimbabwe. Accessibility to health care, therefore, is linked to the human resources available to provide health care. Human resources as per the Systems Model inputs are one of the critical inputs required to enhance accessibility to health care. In order to keep the health system

functioning, Systems Model inputs should be well organised and coordinated as the mere availability of human resources is not sufficient if they are not accessible by the health care users.

3.15.1 Professional nurses

One of the key factors of accessibility to health care services is ensuring people living in rural areas have access to trained health workers like professional nurses. The global median for professional nurses stood at 2.84 per 1,000 population in 2014, and Zimbabwe was not even at half that mark as it has 1.25 nurses per 1,000 population (Farahani, Price, El-Halabi, Mlaudzi, Keapoletswe, Leelonyane, Fetogang, Chebani, Kebaabetswe, Masupe, Gabaake, Auld, Nkomazana & Marlink 2016:2; WHO 2014a:133). According to the WHO, at least 2.84 nurses/midwives per 1000 population are needed to enhance accessibility to professional nurses (WHO 2016b:15). In Zimbabwe, if all vacant nursing posts are filled, it will only achieve 1.65 per 1000 population (MoHCC 2014:31; Zimbabwe Health Workforce Observatory 20013:22). The professional nurses should be capable and motivated, available in adequate proportions, at the right place and time as these factors are essential to accessibility to health services and improvement of health outcomes. Accessibility to professional nursing care in the rural areas can be guaranteed by the provision of appropriate numbers of nurses as needed (2.84 nurses per 1000 people) with a necessary skill mix and educated for the roles to be assigned.

Both professional nurses [54 out of 90 (60%; *f*=54)] and health care users [200 out of 445 (44.94%; *f*=200)] reported the presence of at least 3 professional nurses who were employed at the health facility (refer to Figure 3.11). The health facilities with at least 3 professional nurses were in line with Zimbabwe's MoHCC policy that a minimum of 3 professional nurses should be employed at rural health facilities (Zimbabwe Health Workforce Observatory 2013:22). There is an apparent contradiction between Zimbabwe's MoHCC policy and the practical demands of professional nurses in the rural areas, and their comparatively low coverage as some rural health facilities cover 6,000 people. This suggests that 1 professional nurse per 2000 people was below the minimum 2.84 professional nurses per 1000 people needed to ensure people's accessibility to professional nurses. There were some in worst situations as the health facilities were manned by only 2 professional nurses as was indicated

by both professional nurses [13 out of 90 (14.44%; *f*=13)] and health care users [134 out of 445 (30.11%; *f*=134)]. Some rural health facilities were manned by only 1 professional nurse [5 out of 90 (5.55%; *f*=5) professional nurses and 31 out of 445 (6.96%; *f*=31) health care users] indicating the critical shortage of professional nurses (refer to Figure 3.11). People obtaining health care at these health facilities have challenges to gain access to professional nurses, as the professional nurse ratio to population is much lower than the global average (WHO 2014:132).

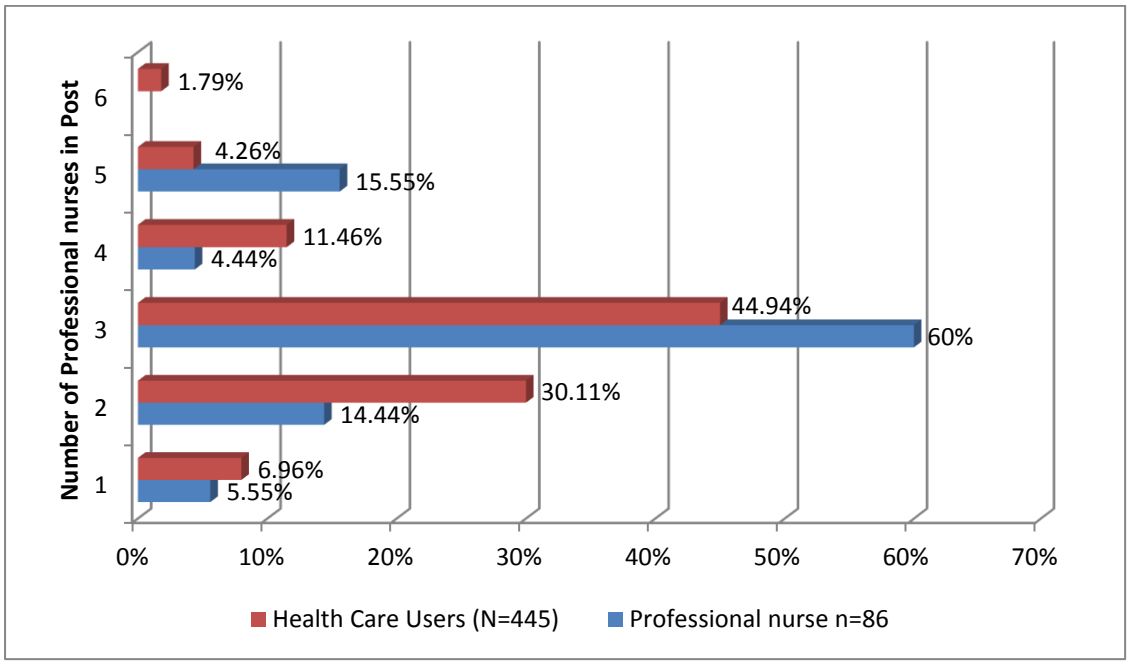

Figure 3.11: Number of professional nurses available at the health facility (professional nurses N=90 and health care users N=445)

There were some rural health facilities with 4 professional nurses as indicated by 4 out of 90 (4.44%; *f*=4) professional nurses and 51 out of 445 (11.46%; *f*=51) health care user respondents, while 14 out of 90 (15.55%; *f*=14) professional nurse respondents, and 19 out of 445 (4.26%; *f*=19) health care user respondents respondents reported at least 5 professional nurses employed at a few rural health facilities (refer to Figure 3.11). This type of distribution may be due to preference by professional nurses to work at health facilities that are connected to infrastructures like roads, electricity and water, and some prefer to work close to their families. This type of distribution indicated an inequality in professional nurse deployments. It can also be seen as unequal distribution of professional nurses where underserved areas

continue to have shortages as professional nurses transfer to other health facilities, leaving underserved areas with unfilled posts.

Three hundred and sixty-five (365) out of 445 (82.02%; *f*=365) health care user respondents answered the question on accessibility to professional nurses. Two hundred and eighty-five (285) out of 365 (78.08%; *f*=285) health care users reported accessibility to professional nurses at the health facilities, while 76 out of 365 (20.82%; *f*=76) health care users reported inaccessibility to professional nurses during times of need (refer to Figure 3.12). These finding agree with 334 out of 445 (75.05%; *f*=334) health care users who indicated the availability of 2 to 3 professional nurses at each health facility, while 111 out of 445 (24.95%; *f*=111) health care users reported that 1 professional nurse was available at the health facility. The data from the health care users raise some concerns regarding accessibility to professional nurses during times when 1 professional nurse will be absent, attending training, workshops and meetings, which contributes to work overload for the available professional nurse at the health facility, especially where only 2 professional nurses are available. The work overload of the available professional nurse might add to long queues at the health facilities and delays in being attended to, and might have contributed to 76 out of 365 (20.82%; *f*=76) health care users indicating inaccessibility to professional nurses.

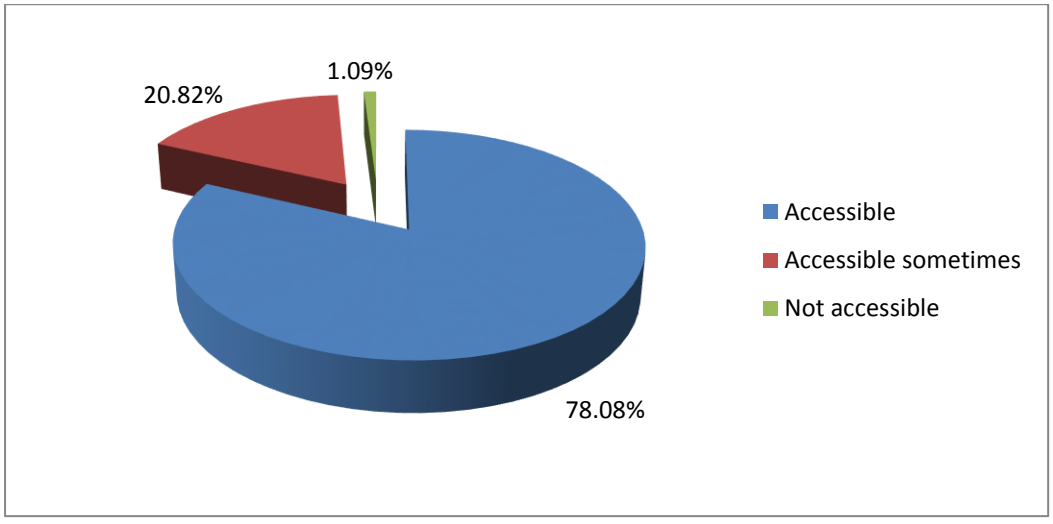

Figure 3.12: Accessibility to professional nurses at the health facility (health care users N=365)

Table 3.9 indicates the statistical analysis of professional to patient ratio based on the information that was provided by professional nurse and health care user respondents. According to the average population per rural health facility, each professional nurse serve approximately 2732 persons (refer to Table 3.9) if it is assumed that everyone visits the health facility for consultation. This is more than the Zimbabwe standard of at least 1 professional nurse to 1000 people in the catchment area (Health Services Board 2010) and the WHO standard of 2.84 nurses and midwives per 1000 population (Chirwa et al 2014:12; Zimbabwe Health Workforce Observatory 2013:22).

Table 3.9: Ratio of professional nurse to health care user and population in the catchment area

Professional nurse to health care user ratio								
Mean	95% Confidence Interval for Mean		Weighted Mean	95% Confidence Interval for Weighted Mean		Std. Deviation	Price-Related Differential	Coefficient of Dispersion
	Lower Bound	Upper Bound		Lower Bound	Upper Bound			
23.671	18.777	28.565	21.864	17.799	25.928	21.560	1.083	.866
Professional nurses to catchment population ratio								
2732.308	2303.046	3161.570	2437.327	2078.775	2795.880	1891.253	1.121	.566
The confidence intervals are constructed by assuming a Normal distribution for the ratios.								

Although both professional nurses [54 out of 90 (60%; *f*=54)] and health care users [200 out of 445 (44.94%; *f*=200)] reported the presence of at least 3 professional nurses at some health facilities (refer to Figure 3.11), the average was 1 professional nurse for 2732 health care users (refer to Table 3.9). The ratio of 2.84 professional nurses to 1000 population was not reached. It is alarming that at some health facilities there are 2 professional nurses or only 1 professional nurse serving the same population. This indicates a critical shortage of professional nurses in rural health facilities in Zimbabwe.

In order to test the linear relationship, the researcher cross-tabulated the concepts of availability of professional nurses at the health facility and chances of the health care users being attended to when they visited the health facility. The test indicated that there is no

significant relationship between the two-compared data as shown by the Spearman's correlation value of 0.116 at 95% confidence interval. The value is higher than P<0.05 showing that no relationship existed between the data set. Therefore, 85 out of 445 (19.10%; *f*=85) health care user respondents who reported returning home without consultation and treatment were not due to the unavailability of professional nurses. This might be due to ratio of professional nurses to population, which is higher than the standard as indicated in Table 3.9 with a ratio of 3 professional nurses to 2434 people instead of 2,84 professional nurses to 1000 population. This implies that despite the availability of the professional nurses, there is a shortage to meet the required standard of 2.84 professional nurses per 1000 people. The findings are consistent with studies conducted in Zimbabwe by Chibango (2013:45) and MacKinnon and MacLaren (2012:2) during a cholera outbreak in 2007/2008 where it was found that patients returned home without being attended to by professional nurses. The shortage of professional nurses to meet the required standard of 2.84 nurses per 1000 people does not only affect health care users but also the professional nurses themselves. Understaffing creates a vicious cycle of increased staff sickness rates, inadequate cover, overstretched staff, less-safe care, and further demoralisation (O'Brien & Gostin 2011:16; WHO 2010a:13). All these factors increase barriers to accessibility to health care by the health care users during emergencies, after hours, and during weekends.

The indications of the higher population to professional nurse ratio at the rural health facilities resulted in after-hour services being compromised since it is the same professional nurse on duty during the day, who will be on-call during the night. In the study area, each professional nurse attend to a mean of 23 health care users per day with an upper limit of 28 at 95% confidence interval (refer to Table 3.11). The number of health care users attended to by professional nurses per day is well above the WHO standard of 15 health care users per professional nurse per day (Zimbabwe Health Workforce Observatory 2013:22).

The shortage of professional nurses leads to a shortage of midwives since the same pool of professional nurses is also trained as midwives. According to the Training and Research Centre (TARSC) and MoHCC (2011:13), at least one of the professional nurses at the health facilities should be a trained midwife to provide maternal health care services.

3.15.2 Professional nurses with midwifery skills

The midwives are involved in every aspect of a pregnant woman's health, from pregnancy screening to post-delivery care, and the provision of family planning and pap-smears to detect cervical cancer. Eighty-six (86) out of 90 (95.55%; *f*=86) professional nurse respondents answered the question on accessibility to midwives. Although the professional nurses who have been trained as midwives play an important role in reducing maternal mortality and providing mother and child care at birth, only 20 out of 86 (23.25%; *f*=20) professional nurses were trained in midwifery (refer to Table 3.10). This was also indicated by 119 out of 445 (26.74%; *f*=119) health care users who were very dissatisfied and 122 out of 445 (27.41%; *f*=119) health care users who were dissatisfied with health care services in rural areas (refer to Figure 3.16).

Twenty (20) out of 86 (23.25%; *f*=20) professional nurse respondents indicated that they were trained as midwives, thus 66 out of 86 (76.74%; *f*=66) professional nurse respondents were not trained midwives (refer to Table 3.10). This finding reveals challenges of accessibility to midwives encountered by health care users when in need of maternal health care. Looking at the trend of 66 out of 86 (76.74%; *f*=66) professional nurses who were not trained in midwifery creates a challenge for the MoHCC to reach a target of employing 60% of professional nurses with midwifery skills in rural areas (Chirwa et al 2014:27). This might be the reason for the high maternal and child mortality rate that has doubled in the past 20 years in Zimbabwe (WHO & World Bank 2015:33) Therefore, the health care users have challenges of accessing maternal health care services where they end up being attended to by untrained professional nurses (Mudokwenyu, Rawdon, Dube, Moyo, Munjanja 2015:49). It is merely impossible to reduce the high MMR of 560 per 100,000 in Zimbabwe with the shortages of midwives (Chirwa et al 2014:27). Giving birth without a midwife leaves women and their babies in danger of death from one of the many severe complications during childbirth (Mudokwenyu et al 2015:47; Save the Children UK 2011:7). In a study conducted in Nigeria by Nkwo, Lawani, Ezugwu, Iyoke, Ubesie and Onoh (2015:2), high neonatal mortality was recorded in rural PHFs due to the shortage of midwives.

Table 3.10: Midwife-trained professional nurse (Professional nurse N=86)

Type of nurse (N=86)	Trained as midwives		Total
	Yes	No	
Nurse(RGN)	5 (23.80%)	16 (76.20%)	21
Nurse(SCN)	7 (70.0%)	3 (30.0%)	10
Nurse(PHC)	8 (14.80%)	46 (85.20%)	54
Total	20 (23.25%)	66 (76.74%)	86

According to Banchani and Tenkorang (2014:7), the MDG 5 focused on improving maternal health and was structured with two key targets: first, to reduce MMRs by 75% between 1990 and 2015, and second, to achieve universal coverage of skilled health care at birth by 2015. The few professional nurses [20 out of 86 (23.25; *f*=20)] who have been trained as midwives might be the reason that 45 out of 90 (50%; *f*=45) professional nurses indicated that rural health facilities had no midwives (refer to Figure 3.13). This showed inequality to accessibility to skilled maternal health care services at the rural health facilities. Thirty-five (35) out 90 (38.88%; *f*=35) professional nurses indicated only 1 midwife was employed at each health facility, while 5 out of 90 (5.55; *f*=5) indicated that 2 midwives were employed at the rural health facilities.

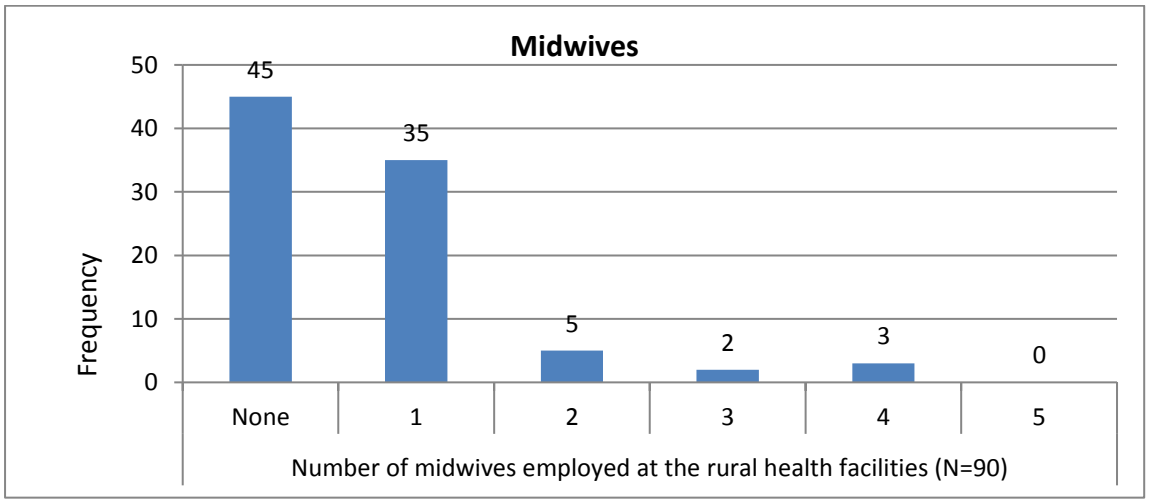

Figure 3.13: Professional nurses trained as midwives working at the rural health facilities (Professional nurses N=90)

- **Accessibility to physicians at the rural health facilities**

Apart from professional nurses, health care users are attended to by physicians; therefore, the researcher enquired about the availability of physicians at the rural health facilities. All 90 professional nurses and 445 health care user respondents indicated that there are no physicians employed at the rural health facilities (refer to Figure 3.14).

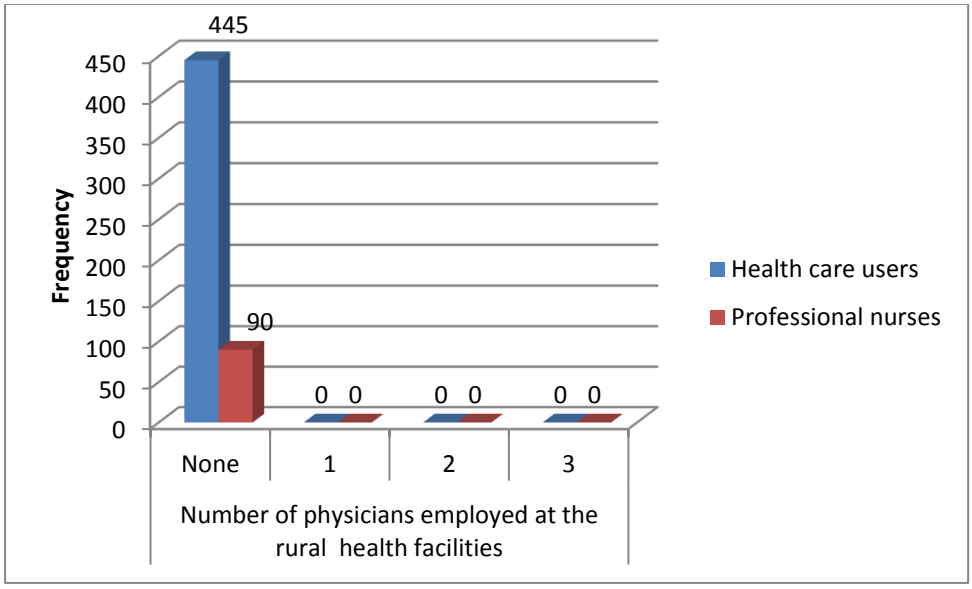

Figure 3.14: Number of physicians employed at the health facilities (professional nurses N=90; health care users N=445)

Due to the lack of physicians employed at the rural health facilities, 428 out of 445 (96.17%; *f*=428) health care users reported that they were only attended to and diagnosed by professional nurses at the rural health facilities. Very few, 17 out of 445 (4%; *f*=17) health care users, indicated that during their last visit to the rural health facility they were attended to by nurse aids (refer to Figure 3.15).

Even at the mission health facilities, 436 out of 445 (97.97%; *f*=436) health care user respondents reported being attended to by professional nurses. Therefore, there are no significant differences in seeking health care at rural health facilities or mission health facility in rural areas since all health care users are first attend to by the professional nurses.

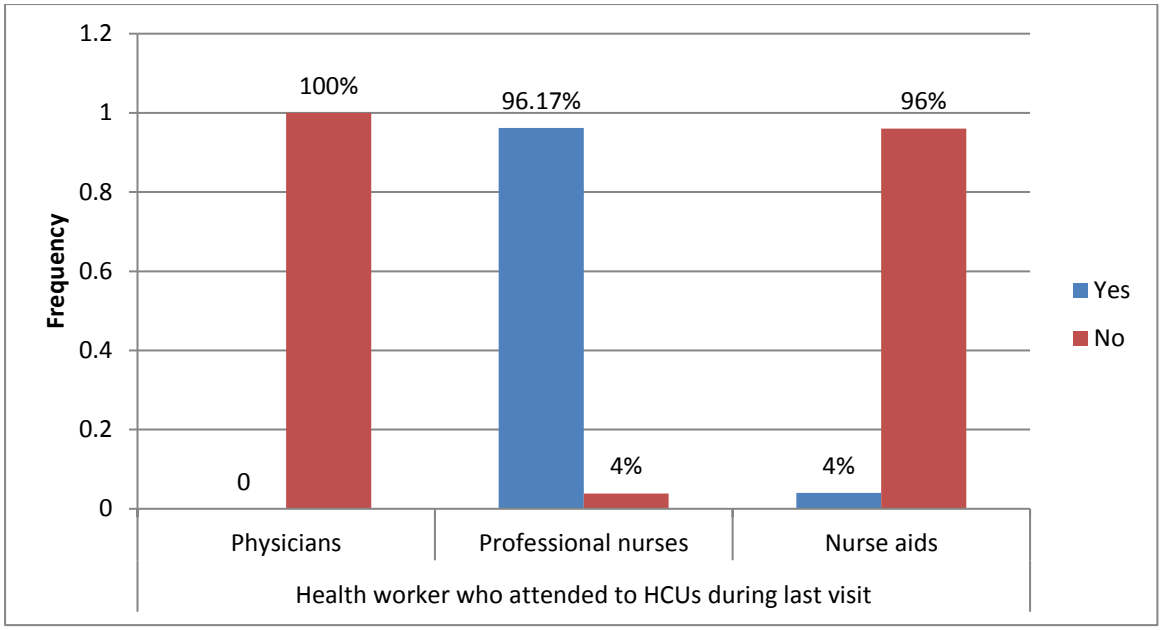

Figure 3.15: Health workers who attend to health care users at rural health facilities (health care users N=445)

The absence of other health workers results in overloading available professional nurses at the rural health facilities (refer to Figure 3.15). There are no physicians and adequate midwives deployed and serving at rural health facilities, leaving professional nurses to perform extra roles like dispensing medical drugs and attending to pregnant women (Mudokwenyu et al 2015:49). This contributes to work pressure on available professional nurses leading to stress, dissatisfaction and disappointment that can result in problems with staff retention, as well as commitment to attend to health care users.

According to Nkwo et al (2015:5) and Banchani and Tenkorang (2014:7), professional nurses who are overworked tend to be less efficient in monitoring patients and provide inadequate support, for example, to women in labour, leading to high morbidity and mortality rates. Also, overworking professional nurses at rural health facilities can have a knock-on effect on accessibility to professional nurses as well as on the health of the professional nurses themselves (Govule et al 2015:261). There will be inadequate cover for sickness, maternity and annual leave due to professional nurse shortages, thereby reducing accessibility to health care by the health care users. This was also echoed by 65 out of 90 (72.22%; *f*=65) professional nurse respondents when they reported that the shortage of health workers had a negative impact on the treatment of tuberculosis, especially following up with defaulters. The

professional nurses have to follow up with health care users on tuberculosis treatment in the community when they default, leaving the health facilities understaffed for that day.

It is evident from Table 3.11 that some rural health facilities had high health care user attendance. Depending on the number of professional nurses working at the rural health facility per day, the number of health care users seen by a single professional nurse ranged from 12 to 200 as per the mean value of 60 in Table 3.9. For example, where there are 3 professional nurses at the health facility, each professional nurse can attend to between 20 and 60 health care users per day based on the mean value of 60 health care users per day and maximum attendance of 200 per day, against the standard ratio of 2.84 nurses per 1000 people.

The availability of professional nurses below the standard ratio of 2.84 per 1000 people, and the shortage of midwives and physicians in rural areas, contributed to Zimbabwe failing to meet the MDGs pertaining to maternal mortality and child mortality rates (United Nations Economic Commission for Africa, African Union, African Development Bank and United Nations Development Programme 2014:27; Kadobera et al 2012:2).

Table 3.11: Number of patients seen by professional nurses per day (N=90)

Professional nurses N=90	Number of patients seen per day	Catchment area population for the health facility
Mean	60.89	6816.16
Median	40.00	6000.00
Std. Deviation	50.584	3722.654
Variance	2558.752	13858152.043
Skewness	1.620	.846
Std. Error of Skewness	.254	.254
Minimum	12	1369
Maximum	200	17253

3.16 SERVICES AVAILABLE AND ACCESSIBLE AT THE RURAL HEALTH FACILITIES

The rural health facilities offer a wide range of health care services as indicated in Table 3.12. The health care services provided include outpatient health care services (90 professional nurses), antenatal care [89 out of 90 (98.88%; *f*=89) professional nurses], maternal health care services [85 out of 90 (94.44%; *f*=85) professional nurse], and laboratory services [25 out of 90 (27.7%; *f*=25) professional nurses] (refer to Table 3.12). The response to the availability of laboratory services [25 out of 90 (27.7%; *f*=25) professional nurses] was low, indicating very limited access to laboratory services. The results on the availability of laboratory services agree with findings in a study conducted in Zimbabwe by Vogt, Tayler-Smith, Bernasconi, Makondo, Taziwa, Moyo, Havazvidi, Satyanarayana, Manzi, Khogali and Reid (2015:2), which indicates that the provision of laboratory services was limited in all provinces due to a shortage of human resources and laboratory equipment.

Table 3.12: Services provided at the 45 rural health facilities (Professional nurses N=90)

Health services offered at the health facility	**Health Service offered**		**Number of days per week**				**Availability of 24 hour health care service**	
	Yes	**No**	**4**	**5**	**6**	**7**	**Yes**	**No**
	F %)	**F (%)**	**F (%)**	**F (%)**	**F (%)**	**F (%)**	**F (%)**	**F (%)**
Outpatient Department	90 (100)			13 (14.4)	16 (17.7)	61 (67.7)	44 (48.8)	46 (51.1)
Antenatal care	89 (98.8)	01 (1,1)		38 (42.2)	11 (12.2)	41 (47.7)	24 (26.6)	64 (71.1)
Mother and Child Health Care (maternal health care)	85 (94.4)	05 (5.5)	03 (3.3)	02 (2.3)	03 (3.3)	80 (88,8)	80 (88.8)	09 (10.1)

Health services offered at the health facility	Health Service offered		Number of days per week				Availability of 24 hour health care service	
	Yes	No	4	5	6	7	Yes	No
Integrated Management of Child Illnesses	87 (96.6)	03 (3.3)	01 (1.1)	09 (10.1)	08 (8,8)	69 (76.6)	60 (66.6)	28 (31.1)
Expanded Program on Immunisation	89 (98.8)	01 (1,1)	01 (1.1)	49 (54.4)	05 (5.5)	35 (38.8)	17 (18.8)	73 (81.1)
Laboratory services	25 (27.7)	65 (72.2%)	21 (23.3)	24 (26.6)	06 (5.6)	15 (16.6)	13 (14.4)	70 (77.7)
Voluntary Counselling and Testing	86 (95.5)	04 (4.4)	05 (5.5)	38 (42.2)	09 (10.1)	37 (41.1)	13 (14.4)	77 (85.5)
Malaria services	90 (100)			18 (20.0)	10 (11.1)	62 (68.8)	57 (63.3)	33 (36.6)
Tuberculosis services	90 (100)		01 (1.1)	28 (31.1)	10 (11.1)	51 (56.6)	44 (48.8)	46 (51.1)
Family Planning	87 (96.6)	03 (3.3)	02 (2.2)	44 (48.8)	12 (13.3)	31 (34.4)	12 (13.3)	77 (85.5)
Opportunistic Infection Clinic	60 (66.6)	30 (33.3)	18 (20.0)	24 (26.6)	10 (11.1)	26 (28.8)	21 (23.3)	62 (68.8)
Anti-Retrovirus Treatment Initiation	61 (67.7)	29 (32.2)	17 (18.8)	29 (32.2)	14 (15.5)	18 (20.0)	11 (12.2)	71 (78.8)
Option B plus	54 (60.0)	26 (28.8)	21 (23.3)	35 (38.8)	13 (14.4)	16 (21.3)	10 (11.1)	70 (77.7)
Key	F = frequency		% = percentage					

The outpatient services are offered 7 days per week as indicated by 61 out of 90 (67.77%; *f*=61) professional nurses, with 46 out of 90 (51.1%; *f*=46) professional nurses stating that health care services are not offered on a 24-hour basis. Although maternal health care services are offered 7 days a week and 24 hours per day as indicated by 80 out of 90 (88.88%; *f*=80) professional nurse respondents, findings from 118 out of 445 (26.51%; *f*=118) health care users contradicted the availability of maternal health care services, as some health care users were sent home before being attended to after working hours.

Three hundred and seventy (370) out of 445 (83.14%; *f*=370) health care user respondents reported that only emergency cases like accidents [169 out of 370 (45.67%; *f*=169) health care users], and maternal health care (specifically deliveries) [118 out of 370 (31.9%; *f*=118) health care users] are attended to after hours (refer to Table 3.13).

Table 3.13: Health care services provided after working hours at the rural health facilities (health care users N=445)

Type of services provided afterhours	Health care service given afterhours (between 16h00 and 07h00)			
	Yes		No	
	%	Frequency	%	Frequency
Child illness	2.16%	8	74.66%	56
All services provided at local clinic	14.59%	54	2.66%	2
Emergency cases	45.67%	169	13.33%	10
Major injuries (accidents)	5.13%	19	6.66%	5
Maternal health (deliveries)	31.9%	118	1.33%	1
Other services	0.54%	2	1.33%	1
	83.14%	370	16.85%	75

Seventy-five (75) out of 445 (16.85%; *f*=75) health care user respondents indicated that no services are offered after hours. Professional nurses [44 out of 90 (48.88%; *f*=44)] did not agree with health care users [75 out of 445 (16.85%; *f*=75)] as the professional nurses emphasised that health care services are offered after hours in line with the health facility policy. However, health care user respondents based their responses on previous experiences when they were sent home without being attended to. Health care users [75 out of 445

(16.85%; *f*=75)] indicated that some professional nurses were not living at the health facility due to accomodation shortages.

According to 49 out of 90 (54.44%; *f*=49) professional nurse respondents, immunisation services are offered 4 days per week with no 24 hour service as indicated by 73 out of 90 (81.11%; *f*=73) professional nurse respondents. The reason why it is offered during the week is that immunisation has no emergency and the child can wait for the immunisation day to get vaccinated without complications. The professional nurse respondents indicated that there are pre-set immunisation days per week that are made known to health care users, often through postings at public places.

Due to the limited availability of laboratory services in rural health facilities, these were not offered after hours as indicated by 70 out of 90 (77.77%; *f*=70) professional nurse respondents (refer to Table 3.12). All other non-emergency health care services, like voluntary counselling and testing indicated by 77 out of 90 (85.5%; *f*=77), family planning as indicated by 77 out of 90 (85.5%; *f*=77), and ARV as indicated by 71 out of 90 (78.8%; *f*=71) professional nurse respondents, were not offered 24 hours per day. The limited accessibility to some health care services affected health care users' satisfaction.

3.16.1 Satisfaction of health care users with health care services at the rural health facilities

Although the rural health facilities provided a variety of health care services (refer to Table 3.12), there were other factors considered essential when accessing health care services. Issues like compassionate care and respect by professional nurses were viewed as important for the accessibility to health care services by the health care users. Satisfaction with the health facility is vital for return visits (Viberga et al 2013:54; Kaarboe & Carlson 2013:2). Therefore, a question on satisfaction was included in the study using a five-level Likert scale to measure satisfaction. The five-level Likert scale to measure health care user satisfaction had these indicators: 1 = Very Dissatisfied, 2 = Dissatisfied, 3 = Partially satisfied, 4 = Satisfied, and 5 = Very satisfied. The level of dissatisfaction was alarming; 119 out of 445 (26.74%; *f*=119) health care user respondents reported being very dissatisfied, while 122 out of 445 (27.41%; *f*=122) respondents were dissatisfied with accessibility to health care

services in rural areas (refer to Figure 3.16). The level of dissatisfaction (combined very dissatisfied and dissatisfied) among health care user respondents [241 out of 445 (54.15%; *f*=241] was very concerning, indicating that health care users might not be using the rural health facilities as a result of their dissatisfaction. This might be the motivation behind 200 out of 445 (44.94%; *f*=200) health care user respondents seeking health care services from traditional health care providers (refer to Section 3.18). Forty-three (43) out of 445 (9.66%; *f*=43) health care users, and 119 out of the 445 (26.74%; *f*=119) health care user respondents indicated being satisfied and very satisfied respectively, revealing that 162 out of 445 (36.40%; *f*=162) health care user respondents were satisfied (combined very satisfied and satisfied) with health care services at the rural health facilities.

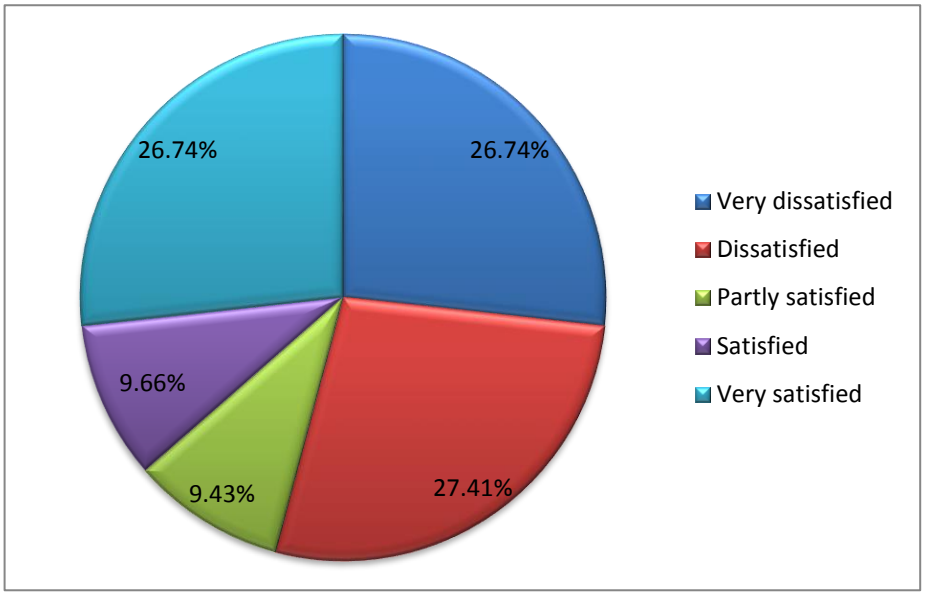

Figure 3.16: Satisfaction of health care users with health care services (N=445)

The very dissatisfied, 119 out of 445 (26.74%; *f*=119) health care user respondents, and dissatisfied, 122 out of 445 (27.41%; *f*=122) health care users, were requested to list reasons for their dissatisfaction with health care services. Two hundred and forty-one (241) out of 445 (54.15%; *f*=241) health care user respondents listed several reasons that included negative attitudes of professional nurses towards patients [84 out of 241 (34,9%; *f*=84) health care users], being sent home without treatment [54 out of 241 (22.40%; *f*=54) health care users], failing to get medical drugs [39 out of 241 (16.2%; *f*=39) health care users] at the health facility, and late attendance to patients by professional nurses [42 out of 241 (17.4%; *f*=42) health care users] (refer to Table 3.14). Satisfaction affects treatment outcomes and

accessibility to health care services. The findings were in accordance with a study by Smith et al (2014:38) which showed that improved satisfaction is associated with desired treatment results, including enhanced quality of life and reduced hospitalisations.

Table 3.14: Frequency distribution: Causes of health care users dissatisfaction with health care services by Health Care Users (N=445)

Reasons for dissatisfaction	Dissatisfaction levels with the health care services				Total	
	Very Dissatisfied		Dissatisfied			
	frequency	%	Frequency	%	Frequency	%
Late attendance to patients	20	16.4%	22	19.3 %	42	17.4 %
Long waiting time	13	10.7%	9	7.6 %	22	9.1 %
Negative attitude of nurses	41	33.6%	43	36.1 %	84	34.9 %
No drugs issued	23	18.9%	16	13.4 %	39	16.2 %
Returned home without treatment	25	20.5%	29	24.4 %	54	22.4 %
	122		119		**241**	

The dissatisfaction levels are also determined by the respect given to health care users by the professional nurses during consultation. The health care users value respect during consultation at the health facility, since the compassionate care makes the health care users feel relaxed and positive about the treatment (Jacobs et al 2012:291). Respect influences satisfaction with health care services and leads to health care users trusting the health workers. One hundred and seventy-eight (178) out of 445 (40.0%; *f*=178) health care user respondents reported that they felt disrespected by the professional nurses at the rural health facilities each time they visit (refer to Figure 3.17). One hundred and sixty-five (165) out of 445 (37.08%; *f*=165) health care user respondents reported that they were respected when they last attended the health facility. A total of 102 out of 445 (22.92%; *f*=123) health care user respondents reported that they were fairly respected (refer to Figure 3.17).

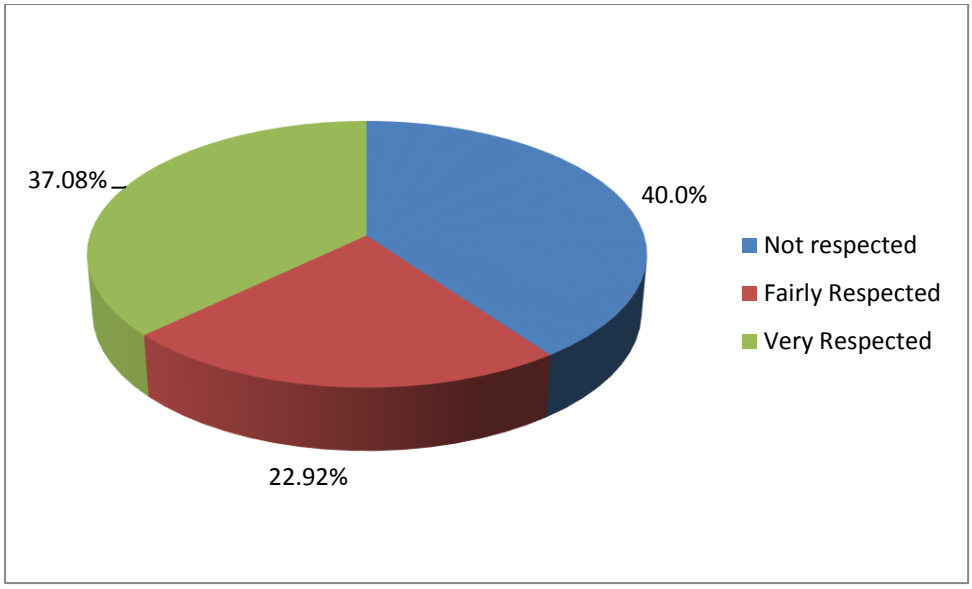

Figure 3.17: Feeling of being respected during the last rural health centre visit (health care users N=445)

When the health care users visit the health facility, they expect to be respected through a friendly welcome, politeness and good treatment (Smith et al 2014:39). A significant number of [280 out of 445 (69.92%; *f*=280)] health care user respondents expressed feelings of not being respected. This includes 178 out of 445 (40.0%; *f*=178) health care user respondents who felt disrespected, and 102 out of 445 (22.92%%; *f*=102) health care user respondents who felt fairly respected (refer to Figure 3.17). The health care user respondents who felt fairly respected had some elements of dissatisfaction, therefore, the researcher looked at the issues regarded by health care user respondents as signs of disrespect (refer to Figure 3.17).

Seventy-six (76) out of 280 (27.14%; *f*=76) health care user respondents reported that feeling disrespected was indicated by yelling, 62 out of 280 (22.14%; *f*=62) health care users reported very moody faces among professional nurses and an unwillingness to attend to patients. Seventy-eight (78) out of 280 (27.86%; *f*=78) health care users indicated a lack of compassionate care, and 51 out of 280 (18.21%; *f*=51) reported patients being generally insulted. Thirty-three (33) out of 280 (11.79%; *f*=33) health care user respondents indicated that professional nurses do not attend to sick persons after working hours. Accessibility to health care is hindered when health care users are not attended to. This is consistent with Jacobs, Ir, Bigdeli, Annear and Van Damme's (2012:291) findings which state that an unwillingness to attend to health care users in need of health care services after hours limited accessibility to health care. Health care users revealed a lack of motivation to return to the

health facility where one has not been respected, as was indicated by 178 out of 445 (40.0%; *f*=178) health care users.

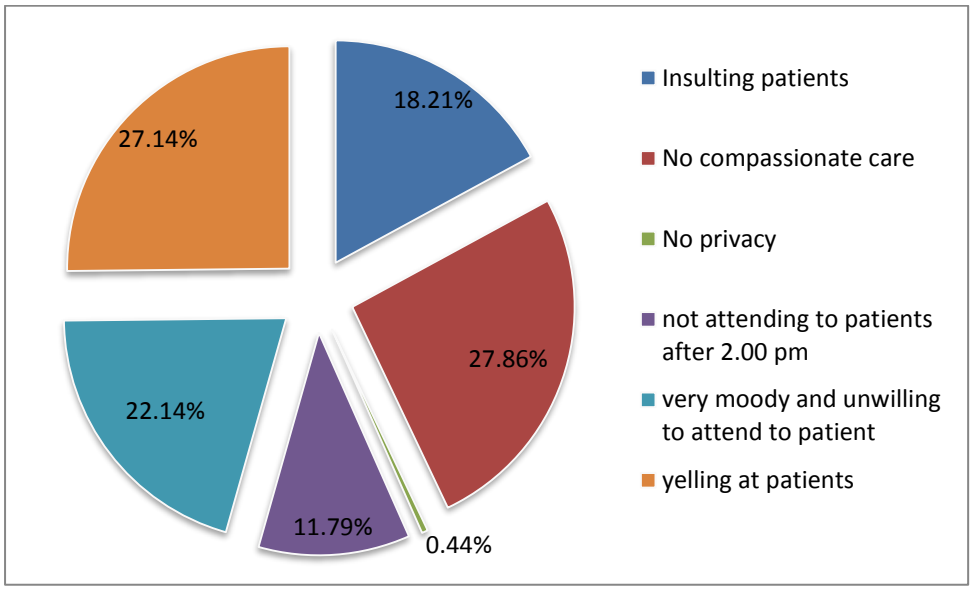

Figure 3.18: Reasons for feeling disrespected by health care users (N=445)

The health care users' attitudes towards the health care system, in particular those who have experienced contact with the health care system, is determined by the level of compassionate care, respect, courtesy shown by the professional nurses, and information given to the health care user about his/her illness. The respect given to health care users during contact with the health care system is associated with satisfaction (Smith et al 2014:40).

The researcher cross-tabulated the level of satisfaction with respect to assessing if respectfulness is associated with satisfaction. The findings indicated a significant relationship between satisfaction and respect (refer to Figure 3.18). The correlation is significant at the 0.01 level (2-tailed) at 95% confidence interval. Some of the health care users who felt disrespected when they visited the health facility were very dissatisfied. Likewise, the health care user respondents who were respected were very satisfied with the health care services. The health care users who felt disrespected never returned to the same health facility. Smith et al's (2014:38) study on user satisfaction also indicate that health care users reporting less satisfaction with health care services are more likely to disengage from follow-up. This acts as a barrier for accessing health care services.

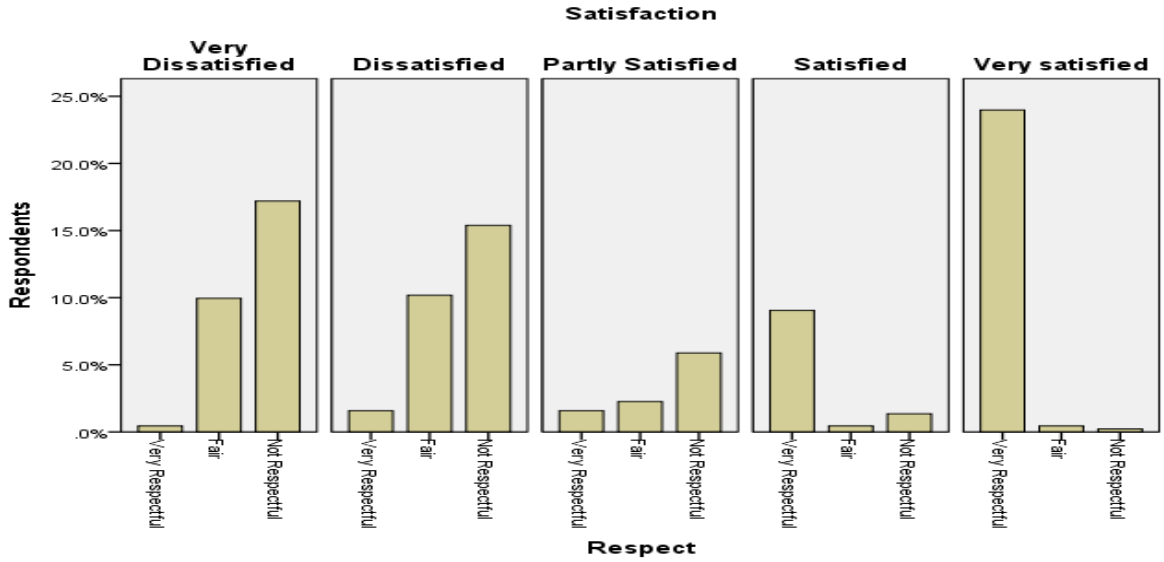

Figure 3.19: Relationship between satisfaction and feeling respected

Apart from feeling respected during consultation at the health facility, professional competency of professional nurses is associated with satisfaction by health care users. The researcher used a Likert scale for professional nurse competency ranking (poor, good and excellent) (refer to Table 3.15). Fifty-six (56) out of 445 (12.58%; *f*=56) health care user respondents ranked professional nurses' competency as poor, and when compared with the level of satisfaction, 23 out of 56 (41.07%; *f*=23) were very dissatisfied with health care services. On the other hand, 174 out of 445 (39.10%; *f*=174) health care user respondents ranked professional nurses' competence as excellent, and 72 out of 174 (41.37%; *f*=72) health care users were very satisfied with the health care services. This indicated that satisfaction was inversely proportional to staff competence (correlation significant figure 0.000 at the 0.01 level, 2-tailed).

While satisfaction with health care services is associated with feelings of respect and professional nurses' competencies, waiting time at the health facility plays an important role in the attitudes of health care users towards the health care system.

Table 3.15: Cross-tabulation of professional nurse competency ranking and level of satisfaction (health care users N=441)

N=441	Professional Nurse Competency Ranking			Total
	Poor	Good	Excellent	
Very Dissatisfied	23	65	37	
	41.07%	30.23%	21.26%	
Dissatisfied	19	65	36	
	33.92%	30.23%	20.68%	
Partly Satisfied	7	21	15	
	12.50%	9.76%	8.62%	
Satisfied	2	32	14	
	3.57%	14.88%	8.04%	
Very satisfied	5	32	72	
	8.92%	14.88%	41.37%	
Total	56 12.58%	215 48.31%	174 39.10%	445
**. Correlation is significant at the 0.01 level (2-tailed).				

3.17 WAITING TIME AT THE HEALTH FACILITY

Waiting time refers to the time that elapses between the health care user's arrival at the health facility and departure from the health facility (Monstad 2013:1). The waiting time includes the time it takes to register the patient, routine professional nurses' consultations, emergency room treatment, laboratory/diagnostic tests, procedures, receiving the results of various tests, and receiving medical drugs. According to Oche and Adamu (2013:589), the normal waiting time at a health facility should be less than 30 minutes. Waiting time has an influence on accessibility to health care, not only in Zimbabwe but in other parts of the world as well (Pizer & Prentice 2011:676; Monstad et al 2013:1). The longer the health care users wait before being attended to increases dissatisfaction and decreases the likelihood of return visits to the same health facility (Pizer & Prentice 2011:677; Smith et al 2014:42). Both professional nurses [45 out of 90 (50%; *f*=45)] and health care users [165 out of 445 (37.07%; *f*=165)] indicated waiting times of less than 30 minutes while 30 out of 90 (33.33%; *f*=30) professional nurses and 125 out of 445 (28.08%; *f*=125) health care users reporting waiting

times of between 31 minutes to 1 hour (refer to Figure 3.20). One hundred and twelve (112) out of 445 (25.16%: *f*=112) health care user respondents reported a waiting time of more than 2 hours which was agreed by 6 out of 90 (6.66%; *f*=6) professional nurses. The difference might be explained by the fact that health care users were giving feedback based on previous experiences of contact with the health care system, while professional nurses were generalising the average waiting time for health care users to be attended. The health care users' waiting time at the health facility is one of the key factors considered for professional nurses' performance, and this might have influenced the 45 out of 90 (50%; *f*=45) professional nurses to report waiting times of less than 30 minutes. The longer waiting time as indicated by 112 out of 445 (25.16%: *f*=112) health care user might be the reason for 147 out of 445 (33.03%; *f*=147) health care user respondents returning home without being attended to (refer to Figure 3.21).

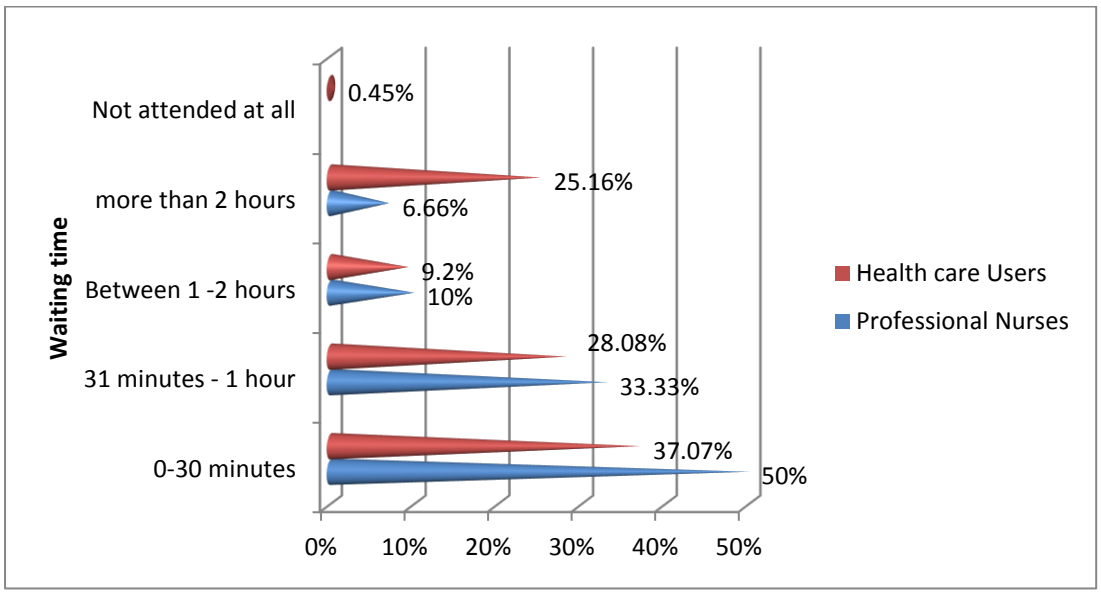

Figure 3.20: Waiting time at the health facility (professional nurses N=90 and health care users N=445)

Waiting time has an influence on health care user satisfaction (Alijani, Kwun, Omar & Williams 2015:4; Sokhela, Makhanya, Sibiya & Nokes 2013:3). In a study conducted in the USA by Alijani et al (2015:4), and a study conducted in South Africa by Sokhela et al (2013:3), health care users' satisfaction with the health care services were low when they waited longer than expected at the health facility, and they were satisfied when the waiting time was shorter than expected. This was also reflected in this study where 112 out of 445 (25.16%; *f*=112) health care user respondents who waited more than 2 hours were not

satisfied with the health care services. Greenberg (2015:1), in a study conducted in Israel, reported that waiting times influenced accessibility to health care services as some health care users returned home without being attended to. Even in this study, 147 out of 445 (33.0%; *f*=147) health care users possibly returned home without being attended to due to long waiting times (refer to Figure 3.21). According to Greenberg (2015:1), in critical cases, such unnecessary long waiting times might be injurious to the health of health care user's and might result in complications and hospitalisation.

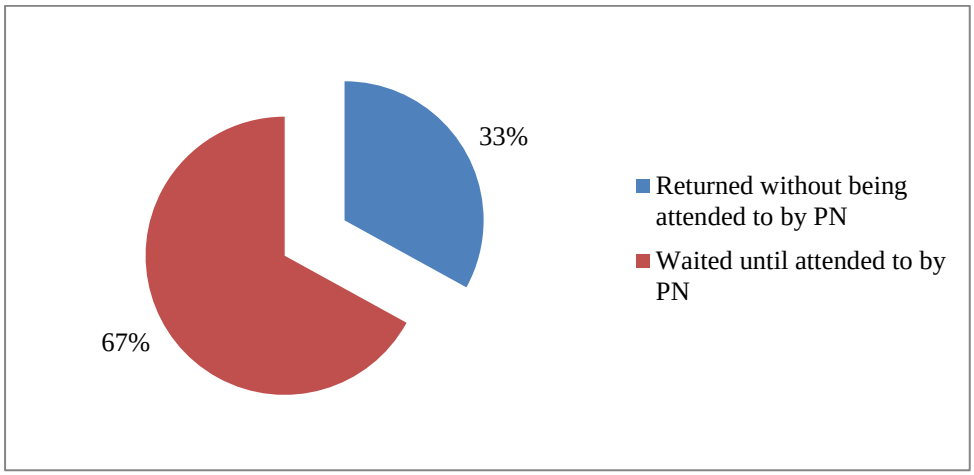

Figure 3.21: Health care users returning home without being attended to by professional nurses due to long queues (health care users N=445)

All professional nurses (90) indicated that waiting times vary among each health facility and the day of the week and or month. There are different health care services allocated for each day of the week. During the days planned for child health (baby clinics), maternal health and ARV collection, health care users experience long queues and long waiting times. As a result, some health care users might return home without being attended to by professional nurses, as priority will be given to health services planned for that day. This is further complicated by the shortage of professional nurses, for example, the case where only 2 professional nurses are available at the health facility (refer to Figure 3.11). There are no other professional nurses to attend to sick health care users while the one professional nurse is offering the health care services scheduled for that day. The sick health care users have to wait, thus some health care users end up returning home without being attended to (refer to Figure 3.21).

In addition to the lack of professional nurses, and scheduled health care services, all professional nurse respondents reported that each health care service offered at the rural

health facility have different waiting times (refer to Table 3.16), showing mean waiting times for the different health care service offered. The researcher calculated the mean for each health care service using descriptive statistics (SPSS) to analyse all the computed data on waiting times. The analysed data is presented in Table 3.16. According to the professional nurse respondents, malaria services (mean of 42 minutes), and maternal health and child care (mean of 2.44 hours) have long waiting times as indicated in Table 3.16, and this correlates to data from 112 out of 445 (25.16%; *f*=112) health care user respondents who reported waiting more than 2 hours at the health facility (refer to Figure 3.20).

Table 3.16: Waiting time at the health facility (professional nurses N=90)

Waiting time for each health care service	N	Minimum	Maximum	Mean	Std. Deviation
Out Patient (OPD)	90	.00	2.00	.2618	.28488
Maternal and Child health (safe deliveries)	90	.00	48.00	2.4409	6.89627
Integrated management of Childhood illness	90	.00	2.00	.2128	.26717
Laboratory Services	90	.00	48.00	2.4409	6.89627
Voluntary Council and Testing	90	.00	1.00	.1850	.19364
Malaria services	90	.00	15.15	.4217	1.58690
Tuberculosis services	90	.00	1.00	.1889	.16047
Family Planning	90	.00	2.00	.2050	.31356

The professional nurses reported that health care services that involve laboratory services (mean of 2.44 hours) entail a longer waiting time as health care users have to wait for the results before treatment is given. All this affects accessibility to health care services as purported by Monstad et al (2013:3), who found that waiting times act as a barrier to accessibility to health care and causes pain, discomfort and anxiety to the individual health care users.

Although the waiting time varies among the health facilities and health care services offered, there are waiting areas at the health facilities. The data from 393 out of 445 (88.31%; *f*=393) health care user respondents indicated that most of the health care facilities in rural areas

have good waiting areas with adequite shelter and benches for resting. However, 52 out of 445 (11.68%; *f*=52) health care user respondents reported that the health facilities do not have good waiting areas. This was based on a lack of shelter for protection from the sun or rain, as indicated by 24 out of 52 (46.15%; *f*=24) health care user respondents, and a lack of benches to rest on as indicated by 23 out of 52 (44.23%; *f*=23) health care user respondents.

The health care users further reported the agony of paying user fees at some of the health facilities after waiting for a long time to be attended to, thereby creating more obstacles in accessibility to health care services.

3.18 HEALTH CARE USER FEES

Professional nurses [27 out of 90 (30.0%; *f*=27)] and health care users [198 out of 445 (44.49%; *f*=198)] indicated that some rural health facilities charge user fees. In contrast, a significant number of professional nurses [63 out of 90 (70.0%; *f*=63)] and health care users [247 out of 445 (55.51%; *f*=247)] disagreed that health facilities charge user fees in rural areas (refer to Figure 3.22). The professional nurses [63 out of 90 (70.0%; *f*=63)] gave responses based on their experiences when providing health care services at the health facilities, while health care users [247 out of 445 (55.51%; *f*=247)] were reporting based on their experiences of paying user fees.

The health care user fees are charged per type of health care service offered (refer to Figure 3.23). Twenty-seven (27) out of 90 (30.0%; *f*=27)] professional nurses and 198 out of 445 (44.49%; *f*=198) health care users who had indicated that some rural health facilities charge user fees responded to the question on the type of health care services that attract user fees (refer to Figure 3.23).

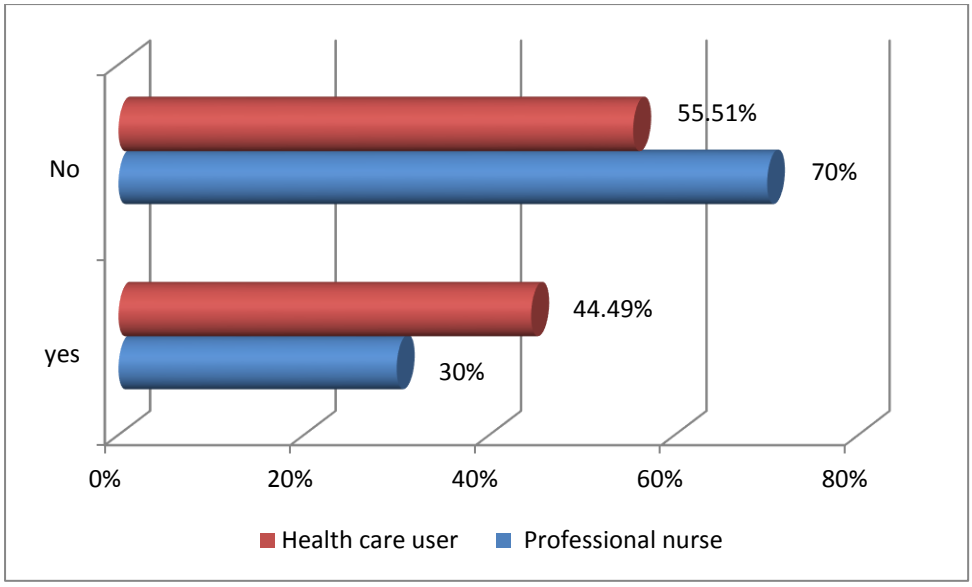

Figure 3.22: Health care user fees charged at the rural health facility (professional nurses N=90 and health care users N=445)

Twenty-seven (27) out of 90 (30.0%; *f*=27)] professional nurses, and 198 out of 445 (44.49%; *f*=198) health care user respondents answered questions on health care services that attract health care user fees. Both professional nurses [7 out of 27 (25.92%; *f*=7)] and health care users [104 out of 198 (52.5%; *f*=104)] indicated that outpatient health care services attract health care user fees. Very few professional nurses [4 out of 27 (14.9%; *f*=4)] and health care users [19 out of 198 (9.60%; *f*=19)] indicated that maternal and child health care are charged health care user fees, while 2 out of 27 (9%; *f*=2) professional nurses and 4 out of 198 (2%; *f*=4) health care user respondents indicated that health facilities charge health care user fees for integrated management of childhood illnesses (refer to Figure 3.23).

Medical drugs attract health care user fees as revealed by both professional nurses [14 out of 27 (50.0%; *f*=14)] and health care user respondents [71 out of 198 (35.9%; *f*=71)]. The findings in this study were consistent with a study conducted in Zimbabwe by Chirwa et al (2013:5) on financial risk protection for mothers and new-borns in Zimbabwe, which found that health care users were paying health care user fees.

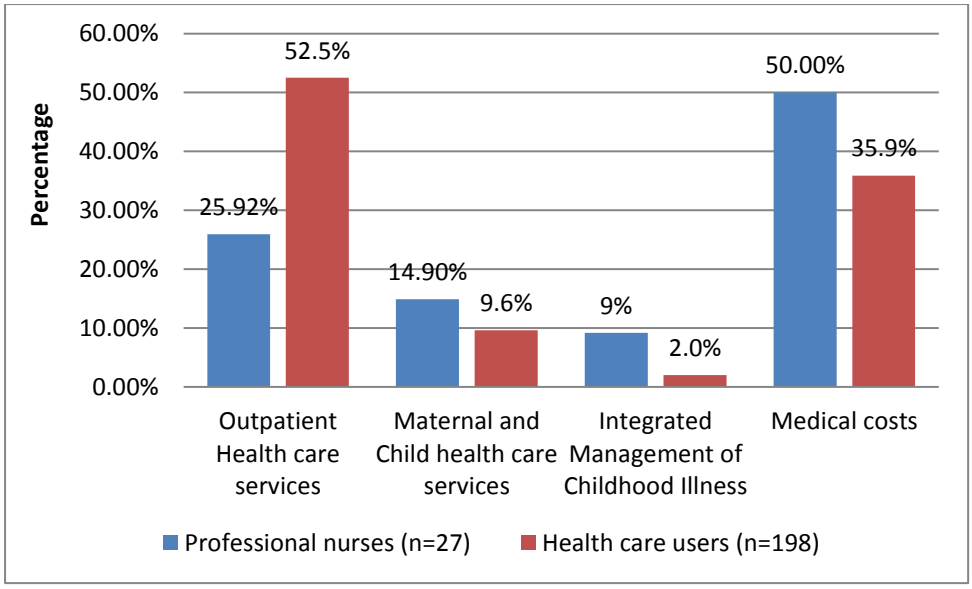

Figure 3.23: Type of health care services attracting user fees (professional nurses N=27; health care users N=198)

Both professional nurses [86 out of 90 (95.55%; *f*=86)] and health care users [200 out of 445 (44.94%; *f*=200)] responded to the question on the amount of money paid for user fees at the rural health facilities. Health facilities charge different health care user rates. Some charge US$1 as indicated by both professional nurses [44 out of 86 (51.16%; *f*=44)] and health care users [46 out of 200 (23%; *f*=46)] (refer to Figure 3.24). Other health facilities charge US$2 as reported by professional nurses [42 out of 86 (48.83%; *f*=42)] and health care users [106 out of 200 (53%; *f*=42)]. No professional nurse respondent indicated a user fee of $3, $4 and $5. Thirty (30) out of 200 (15%; *f*=30) health care user respondents reported health care user fees of $3, 10 out of 200 (5%, *f*=10) health care users indicated $4, and 8 out of 200 (4%; *f*=8) health care user respondents indicated a user fee of $5 (refer to Figure 3.24).

The data from 86 out of 90 (95.55%; *f*=86) professional nurses and 200 out of 445 (44.94%; *f*=200) health care user respondents clearly indicate that user fees do exist in the rural health facilities. The findings align to the study conducted by Chirwa et al (2013:5) in Zimbabwe, which found that health care user fees were being paid by health care users when accessing health care services. According to the information in Figure 3.24, $1 and $2 are the health care user fees paid by health care users, but affordability to pay the user fees is a challenge (refer to Table 3.17).

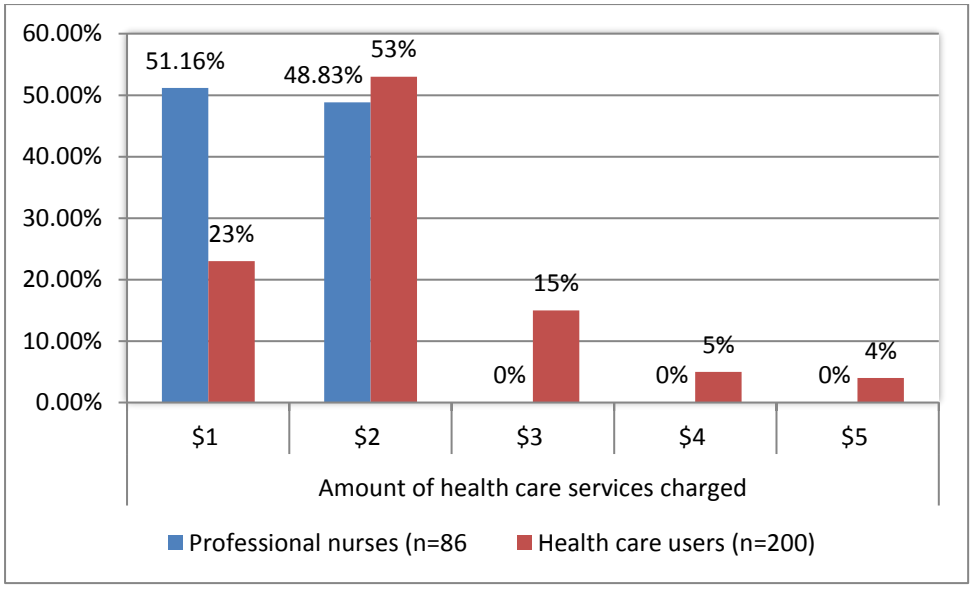

Figure 3.24: User fees paid at the health facilities (health care users N=200)

Eighty-nine (89) out of 90 (98.88%; *f*=89) professional nurse respondents, and all 445 health care user respondents answered the question on affordability to pay health care user fees (refer to Table 3.17). Although the health facilities charge health care user fees, professional nurses [79 out of 89 (88.76%; *f*=79)] and health care users [339 out of 445 (76.17%; *f*=339)] reported that health care users cannot afford to pay the user fees. It is merely impossible to access health care when you cannot afford to pay user fees [339 out of 445 (76.17%; *f*=339) health care user respondents], and in most cases illness happens when there is no money. The situation is worsened by health care users in rural areas having no medical insurance [397 out of 445 (89.21%; *f*=397) health care user respondents]. The findings are consistent with the study conducted in Zimbabwean by Chirwa et al (2013:2), which concluded that user fees are regressive and undermine equitable accessibility to essential health services. With an income of less than $100 [269 out of 445 (60.85%; *f*=269) health care users] that should cover food needs for an average family size of 6, health care services and education needs for children, it is impossible for health care users to access health care (refer to Table 3.1). Therefore, not seeking medical treatment due to an inability to afford user fees is a choice that health care users have to make in order to avoid the embarrassment that they face if they present to the health facilities without the required health care user fees. Both professional nurses [80 out of 89 (89.88%; *f*=80)] and health care users [368 out of 445 (82.69; *f*=368)] indicated that no credit is accepted at the health facilities where user fees are charged for health care services, making accessibility to health care near impossible for some.

Table 3.17: Health care user fees and accessibility to health care (professional nurses N=90 and health care users N=445)

	Health care users (N=445)				Professional Nurses (N=89)			
	Yes		No		Yes		No	
	Freq	%	Freq	%	Freq	%	Freq	%
1. Affordability to pay user fees	106	23.83	339	76.17	10	11.23	79	88.76.
2. Medical Insurance	48	10.95	397	89.21				
3. Treat on credit	79	18.45	368	82.69	9	10	80	89.88
4. Exemptions to pay					30	33.70	59	66.29

Key: Freq = Frequency

Due to challenges with paying user fees, some health facilities offer exemptions to some groups of health care users. The question on exemption of user fees was answered by 89 out of 90 (98.88%; *f*=89) professional nurse respondents. Thirty-eight (38) out of 89 (42,69%; *f*=38) professional nurse respondents indicated exemptions from paying user fees at rural health facilities by adults over the age of 60 years, while 13 out of 89 (14.60%; *f*=13) professional nurse respondents indicated that children under 5 years are exempted from paying user fees. Mentally ill persons [11 out of 89 (12.35%; *f*=11) professional nurses], maternal health care services [18 out of 89 (20.22%; *f*=18) professional nurse respondents], and chronic patients [9 out of 89 (10.11%; *f*=9) professional nurses] were also exempted from paying user fees (refer to Figure 3.25). The findings are in accordance to Chirwa et al's (2013:4) study which reported that exemptions were being implemented at rural health facilities for pregnant women, children under 5 and adults over 60 years old not to pay user fees up to the district health care level.

The health care users who cannot afford to pay user fees, use other alternative health care services like traditional health care services when they or a member of the family is ill (refer to Section 3.19). The health care users have no option other than to use the local traditional

health care services that include prophets, birth attendants, village health workers, and traditional healers (Chirwa et al 2013:7).

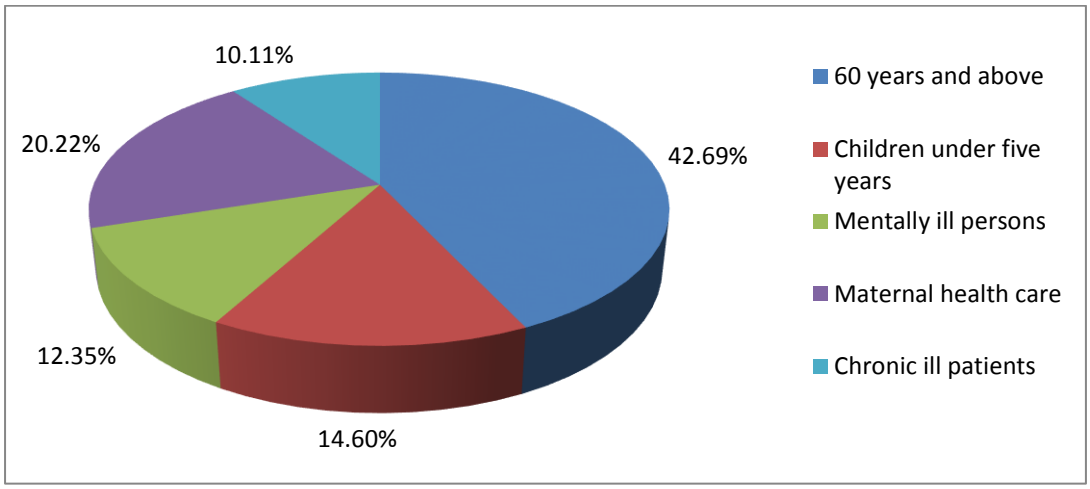

Figure 3.25: Exemptions to pay user fees (Professional nurses N=89)

3.19 TRADITIONAL HEALTH CARE SERVICES

Traditional health care services refer to native healing, or complementary and alternative cultural medicine, and include knowledge and practices used in diagnosis, prevention and elimination of physical, mental, or social imbalance relying exclusively on traditional practical experience (Maroyi 2013:3). Traditional healers are recognised by the community where he or she lives as someone competent to provide health care by using animal, plant and mineral substances and other methods based on social, cultural and religious practice (World Bank 2011:4). Those who cannot afford the health care user fees [200 out of 445 (44.94%; *f*=200) health care users] at the rural health facilities, seek health care assistance from traditional healers (refer to Figure 3.26). One hundred and forty-four (144) out of 445 (32.40%; *f*=144) health care users obtain health care from the prophets, and 34 out of 445 (7.65%; *f*=34) health care users seek health care from community health workers and traditional birth attendants as alternative options (refer to Figure 3.26). Sixty-seven (67) out of 445 (15%; *f*=67) health care user respondents indicated that they prefer to stay home. Two hundred (200) out of 445 (44.94%; *f*=200) health care user respondents concurred that traditional healers agree to treat sick health care users on credit or accept small livestock like chickens or goats as payment. The traditional health care providers stay within the community and share the same community support mechanisms. They live in the same

villages, therefore, they accept treating health care users on credit in case there are no in-kind materials to be given.

These findings are similar to studies conducted in Zimbabwe by Chimhowu et al (2010:89) and Chirwa et al (2013:9), who reported that the community turns to traditional means of treatment which has options for paying in kind and/or on credit. In a study conducted in Bangladesh by Sarker, Rahman, Rahman, Hossain, Reichenbach and Mitra (2016:11), it was also found that an inability to pay for transport and health facility-based service charges was a consistently cited reason for preferring home deliveries. This confirmed this study's findings of 149 out of 445 (33.48%; *f*=149) health care user respondents indicating staying home when they have no money to meet the cost of service fees (refer to Figure 3.26). Therefore, health care users prefer traditional health care services due to the lower price and the option to pay off the debt with non-monetary items such as traditional dresses, goats or chickens. In addition, 200 out of 445 (44.94%; *f*=200) health care user respondents reported that traditional health care service providers are easily accessible. There is no transport needed, no long distances to walk, or being ill-treated by professional nurses, traditional treatment drugs are always available, and most importantly, health care users spend no time waiting. Every health care user is attended to without waiting for 30 minutes or 1 hour as is the case at health facilities.

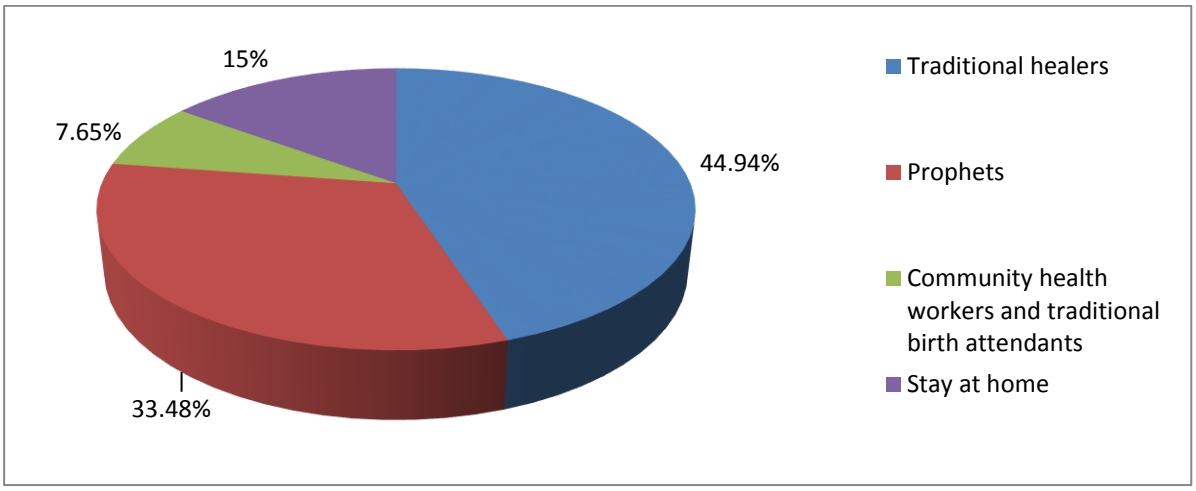

Figure 3.26: Alternative treatment options when ill (health care users N=445)

Although the user fee is a noble idea, 339 out of 445 (76.17%; *f*=339) health care user respondents indicated they cannot afford the user fees each time they need health care and this poses a challenge to accessing health care in rural areas. The user fees charged in rural

health facilities are beyond the payment capacity of populations living in rural areas. In addition to giving health care services on credit, traditional health service providers do not refer health care users to referral hospitals like rural health facilities. Disease complications that cannot be managed at the rural health facility are referred to the next level of health care. Thus, user fees contribute to limited accessibility to health care, as well as the referral system which comes with more expenditure related to transfers and transport costs from the first level health facility to the second level health facility.

3.20 ACCESSIBILITY TO THE REFERRAL HEALTH FACILITIES

All cases that cannot be managed by the professional nurses at the rural health facilities are referred to the next level of health care facility as indicated by 89 out of 90 (98.88%; *f*=89) professional nurse respondents (89 professional nurse respondents answered the question on referral of patients). The professional nurses indicated that they refer sick health care users to the district hospital [36 out of 89 (40.44%; *f*=36)], mission health facilities [25 out of 89 (28.08%; *f*=25)], provincial hospitals [22 out of 89 (24.71%; *f*=22)], rural hospitals [4 out of 89 (4.49%; *f*=4)], and central hospitals [3 out of 89 (3.37%; *f*=3)] (refer to Table 3.18). Referral to the next level has challenges, which create barriers to accessibility to health care by health care users. The main challenge associated with referrals were a lack of transport as indicated by both professional nurses [75 out 89 (84.26%; *f*=75)] and health care users [398 out of 445 (89.43%; *f*=398)]. No ambulance services are available at rural health facilities (refer to Table 3.5) and this may be why 200 out of 445 (44.94%; *f*=200) health care users indicated seeking traditional healers (refer to Figure 3.26).

In addition to the unavailability of ambulances, the distances travelled to referral hospitals are significant as indicated by 33 out of 90 (36.66%; *f*=33) professional nurse respondents (21-40km); 17 out of 90 (18.88%; *f*=17) professional nurse respondents (41-60km), and 20 out of 90 (22.22%; *f*=20) professional nurse respondents (61-80km), therefore health care users incur high costs for public and private transport (refer to Table 3.18). Forty-seven (47) out of 90 (52.22%; *f*=47) professional nurse respondents reported that health care users pay transport costs of less than $5, and 18 out of 90 (20%; *f*=18) professional nurse respondents reported that health care users pay between $6-10 to the first referral facility (refer to Table 3.18).

Table 3.18: Referral to higher level health care (Professional nurses N=90)

Professional nurses refer patients		Response (F)	Percent (%)
Valid	Yes	89	98.88
	No	1	1.12
	Total	90	100.0
Referral facility			
	District hospital	36	40.44
	Mission hospital	25	28.08
	Provincial hospital	22	24.71
	Rural hospital	4	4.49
	Central hospitals	3	3.37
	Total	90	100.0
Distance to referral facility			
	0-20km	14	15.55
	21-40km	33	36.66
	41-60km	17	18.88
	61-80km	20	22.22
	81+km	6	6.66
	Total	90	100.0
Transport cost to referral health facility			
	$1 - $5	47	52.22
	$6 - $10	18	20.0
	$11 - $20	8	8.88
	$21 - $40	7	7.77
	$41 and above	10	11.11
	Total	90	100.0
Health care user fees at referral facility			
	$1 - $5	60	66.66
	$6 - $10	25	27.77
	$11 - $20	2	2.22
	$21 - $40	2	2.22
	$41 and above	1	1.11
	Total	90	100.0

Eight (8) out of 90 (8.88%; *f*=8) professional nurses indicated that health care users pay between $11-$20, 7 out of 90 (7.77%; *f*=7) professional nurse respondents indicated $21-40

per trip, while 10 out of 90 (11.11%; *f*=10) professional nurse respondents reported a transport cost of $41 and above. This implies that when the patient is transferred to the provincial hospital, the family members have to spend additional money on transport costs. If the provincial hospital cannot manage the disease complications, the patient is again referred to the central hospital, incurring even more transport costs.

Apart from incurring transport costs during the transfer to a referral hospital, the health care user pays user fees at the referral hospital for the treatment. Data in Table 3.18 shows that 60 out of 90 (66.66%; *f*=60) professional nurse respondents indicated that user fees vary between $1 and $5, while 25 out of 90 (27.77%; *f*=25) professional nurses indicated user fees of $6-$10, and 2 out of 90 (2.22%; *f*=2) professional nurse respondents indicated that between $11 and $20 user fees are paid at referral health facilities.

The findings revealed that health care users face greater challenges by incurring more costs for health care services by paying for transport costs during transfer and user fees at referral health facilities. As established, the families in Zimbabwe survive on less than $100 per month (60.1%) (refer to Table 3.1). This worsens the economic status of the majority of the rural populations as falling ill further drains their meagre monthly income, especially if they are transferred to referral hospitals since travelling a mean distance of 46.97km requires money to pay for transportation. This contributes to the fact that most health care users forego the referral system and only present at the next level health facility like district hospitals in order to save time and money. Also, health care users report directly at the district hospital to try to offset the delay in obtaining health care service at the referral hospital due to transport challenges during the transfer (Munjanja et al 2012:34).

Eighty-one (81) out of 90 (90%; *f*=81) professional nurse respondents follow up on referred patients with the referral health facility to check if the patient has arrived, and 73 out of 90 (81.11%; *f*=73) professional nurse respondents follow up through mobile phones. Eighty-eight (88) of the 90 (97.77%; *f*=88) professional nurse respondents indicated that rural health facilities have a business mobile phone and only 2 out of 90 (2.22%; *f*=2) professional nurse respondents reported the absence of business mobile phones. In addition to following up on referrals, professional nurses obtain feedback from supervisors at the referral hospitals pertaining to the progress of the health care user.

3.21 MANAGEMENT SUPPORT TO PROFESSIONAL NURSES (Management Resources input)

The management and administration of the health facilities is critical for the inputs needed to enhance accessibility to health care. Zimbabwe's health care sector is divided into four functional levels: national, provincial, district, and rural health facilities (Chirwa et al 2015:1). The national level formulates policies and regulations and mobilises resources, while the provincial level provides technical and management support to the district level, which coordinates planning, ensuring compliance with national standards and guidelines by the rural health facilities (Chimhowu et al 2010:92, MoHCC 2014:21). In order for all these to function well, the management support from head office to rural health facilities should be efficient.

A total of 88 out of 90 (97.77%; *f*=88) professional nurse respondents at rural health facilities reported that they receive support visits from the district health executive, 50 out of 90 (55.55%; *f*=50) professional nurses reported receiving supervisory support from the provincial medical team, and 22 out of 90 (24.44%; *f*=22) professional nurse respondents received supervisory visits from the head office (refer to Table 3.19).

Table 3.19: Management support for professional nurses (N=90)

Management supervisory visits	Frequency (*f*)	Percent (%)
District		
Yes	88	97.77
No	2	2.22
Province		
Yes	50	55.55
No	40	44.44
Head Office (Harare)		
Yes	22	24.44
No	68	75.55

Supervision has contributed to an increase in the professional nurses' competency and influences the care and the support given to the health care users in the health facilities

(Severinsson, Haruna & Frieberg 2010:400-408). Therefore, 40 out of 90 (44.44%; *f*=40) professional nurse respondents felt that the provincial health team should frequently conduct support visits to rural health facilities.

3.22 IMPORTANT FACTORS FACILITATING ACCESSIBILITY TO HEALTH CARE SERVICES AS INDICATED BY HEALTH CARE USERS

The researcher included 6 factors that are likely to affect accessibility to health care by health care users in rural areas. The factors included: reduced travelling time, reduced waiting times at rural health facilities, free health care services, friendliness of professional nurses, accessibility to medical drugs, and availability of medical equipment (gloves, sutures and drips and blood for transfusion) at the health facility. Each of the health care user respondents were requested to vote for one important factor which is the most important issue to enhance accessibility to health care. All 445 health care users voted for at least one, which they regarded as the most important when accessing health care (refer to Table 3.20). Reduced travel time [121 out of 445 (27.19%; *f*=121) health care users] to the health facility was voted the most important priority, followed by availability of medical drugs [114 out of 445 (25.62%; *f*=114) health care users], reduced waiting times [96 out of 445 (21.57%; *f*=96) health care users], availability of medical equipment (gloves, sutures and drips and blood for transfusion) [56 out of 445 (12.58%; *f*=56) health care users], free health care services [32 out of 445 (7.19%; *f*=32) health care users], and friendliness of professional nurses [26 out of 445 (5.84%; *f*=26) health care users] (refer to Table 3.20). The first three highest ranked priorities when accessing health care in rural areas from the health care user respondents' perspective are reduced travel time (voted 1), availability of medical drugs (voted 2), and reduced waiting times (voted 3). These three had the highest number of votes compared to the bottom three, indicating their importance to health care users when accessing health care at the rural health facilities. The three factors contributed to 179 out of 445 (40.22%; *f*=179) health care user respondents recommending improved accessibility to the health facilities, accessibility to medical drugs, and accessibility to professional nurses as immediate actions to be taken. The equitable distribution of health facilities reduces travelling time, while adequate numbers of professional nurses at health facilities reduce waiting times, and a constant supply of medical drugs facilitates accessibility to timely treatment (Jacobs et al 2012:292; Chi, Bulage, Urdal & Sundby 2015:9).

Table 3.20: Important factors to health care user respondents when accessing health care services by health care users (N=445)

Important factors influencing accessibility to health care as per health care users' perspective	Frequency	Percentage	Priority
Reduced travel time	121	27.19%	1
Availability of Medical Drugs	114	25.62%	2
Reduced waiting time	96	21.57%	3
Availability of medical equipment like gloves, sutures, drips, blood transfusion	56	12.58%	4
Free health care services	32	7.19%	5
Friendliness of professional nurses	26	5.84%	6

3.23 CONCLUSION

There is evidence in Phase 1 of challenges associated with accessibility to health care in rural areas of Zimbabwe. The challenges include poor distribution and availability of health facilities, inaccessibility to medical drugs, shortages of professional nurses (midwives and physicians included), lack of financial resources, and inadequate managerial support.

The health care system depends on well-functioning and coordinated inputs as per the Systems Model, and the findings highlighted that nearly all Systems Model inputs had challenges that act as barriers to accessibility to health care systems in rural areas.

Although health care users [418 out of 445 (93.93%; *f*=418)] prefer to consult at health facilities close to where they live, the poor distribution and inaccessibility to health infrastructure force health care users to travel long distances of more than 10km [53 out of 90 (58.88%; *f*=53) professional nurses and 156 out of 445 (35.05%; *f*=156) health care users] to the health facilities in the rural areas. This is despite the fact that the further the distance to the health facility the less likely the health care users are to seek health care services (WHO & World Bank 2015:20). Both professional nurses [61 out of 90 (67.77%; *f*=61)] and health

care users [293 out of 445 (65.84%; *f*=293)] were of the opinion that a lack of infrastructure development is contributing to challenges in travelling vast distances since walking is the preferred means of travelling to the nearest health facility. The challenges related to travelling long distances is worsened by a lack of transport [270 out of 417 (64.74%; *f*=270) health care users] that includes unavailability of ambulances at the rural health facilities [403 out of 443 (90.97%; *f*=403) health care users].

Medical drugs are among of the vital material resource inputs necessary for accessibility to health care but are rarely available at rural health facilities as reported by professional nurses [50 out of 90 (55.55%; *f*=50)] and health care users [249 out of 445 (55.95%; *f*=249)]. Professional nurses [87 out of 90 (96.66%; *f*=87)] receive medical drugs every three months, which is not consistent with their specific order in both quantities and type. The lack of consistency in supplying medical drugs might be the reason for health care users [249 out of 445 (55.95%; *f*=249)] failing to obtain medical drugs during their visits to the health facility despite obtaining prescriptions. In case of unavailability of medical drugs at the rural health facilities, professional nurses [34 out of 90 (37.77%; *f*=34)] give prescriptions and refer health care users to the pharmacies which are inaccessible to health care users [409 out of 445 (91.91%; *f*=409)] in rural areas. This results in some health care users [148 out of 445 (32.25%; *f*=148)] staying at home as it is impractical for health care users to be referred to pharmacies more than 15km away [356 out of 445 (80%; *f*=356) health care users].

Health care users face challenges of accessibility to professional nurses [13 out of 90 (14.44%; *f*=13) professional nurses and 134 out of 445 (30.11%; *f*=134) health care users] especially at the rural health facilities manned by 1 professional nurse [5 out of 90 (5.55%; *f*=5) professional nurses and 31 out of 445 (6.96%; *f*=31) health care users]. The limited accessibility to professional nurses in the rural areas has been attributed to poor distribution of professional nurses. There was evidence of shortages of professional nurses as 3 professional nurses manning a health facility covering a population of 2732 was far below the recommended ratio of 2.84 professional nurses to 1000 population. Even more alarming is some health facilities where there is 2 professional nurses or only 1 professional nurse serving the same population. This indicates a critical shortage of professional nurses in rural health facilities in Zimbabwe.

No physicians work in the health facilities, professional nurses do not have nursing degrees, and only a few professional nurses are trained midwives [20 out of 90 (22.22%; *f*=20) professional nurses]. This is why health care users [284 out of 445 (63.82%; *f*=284] were dissatisfied with the health care system in the rural areas. Health care users have to wait more than 2 hours [112 out of 445 (25.2%: *f*=112) health care users] before they can consult professional nurses due to staff shortages. The long waiting hours result in others returning home without being attended to [147 out of 445 (33.03%; *f*=147) health care users] by a professional nurse, which has created a barrier to accessibility to health care.

Both professional nurses [65 out of 90 (72.22%; *f*=65)] and health care users [311 out of 445 (69.88% *f*=311)] confirmed health care users had to bring their own medical supplies, beyond their capacity as the average income of health care users [133 out of 311 (42.76%; *f*=133)] was less than US$100. The health care users [339 out of 445 (76.1%; *f*=339)] cannot afford to pay health care user fees at rural health facilities and district hospitals, which is also worsened by the lack of medical insurance [390 out 445 (87.64%; *f*=390) health care users] of people living in the rural areas. In addition, when health care users are referred to second levels of health care, they pay extra costs as indicated by 47 out of 90 (52.22%; *f*=47) professional nurse respondents who reported that health care users pay transport costs of less than $5, and 18 out of 90 (20%; *f*=18) professional nurse respondents indicated $6-10 to the first referral facility (refer to Table 3.18). The health care users have no choice except to consult traditional healers [200 out of 445 (44.94%; *f*=200)], health care users staying home [67 out of 445 (15%; *f*=67) health care users], and health care users seeking help from prophets [144 out of 445 (32.40%; *f*=70) health care users] as alternative remedies when they have no money. The traditional healers offer treatment on credit or accept small livestock like chickens or goats as payment, as reported by 200 out of 445 (44.94%; *f*=200) health care user respondents.

In the first part of Chapter 3, the researcher provided an extensive description of the methodology and procedures followed to gather data by means of a SAQ used for the professional nurses, and an interview questionnaire administered by research assistants collecting data from health care users. The second part of Chapter 3 focused on a description of the results that were derived from the data obtained during Phase 1 of the study. Chapter 4

(Phase 2) presents a description of the processes involved in developing strategies through the nominal group technique. Thus, the description of Phase 2 follows.

CHAPTER 4: PHASE 2 IDENTIFICATION OF STRATEGIES RESEARCH METHODOLOY, DATA PRESENTATION, INTERPRETATION AND LITERATURE CONTROL

4.1 INTRODUCTION

Chapter 4 presents Phase 2, the process according to the Systems Model of the study (refer to Figure 1.1 and Section 1.8). The aim of Phase 2 was to identify strategies to form the basis for the development of the strategic action plan to enhance accessibility to health care in rural areas of Zimbabwe (refer objective 5, Study Phase 2). This discussion portrays all the processes involved in Phase 2; the methodology, the data collection process, data presentation, analysis, interpretation, and the literature control are discussed.

Figure 4.1 shows the organisation of the thesis layout to guide the reader through the thesis.

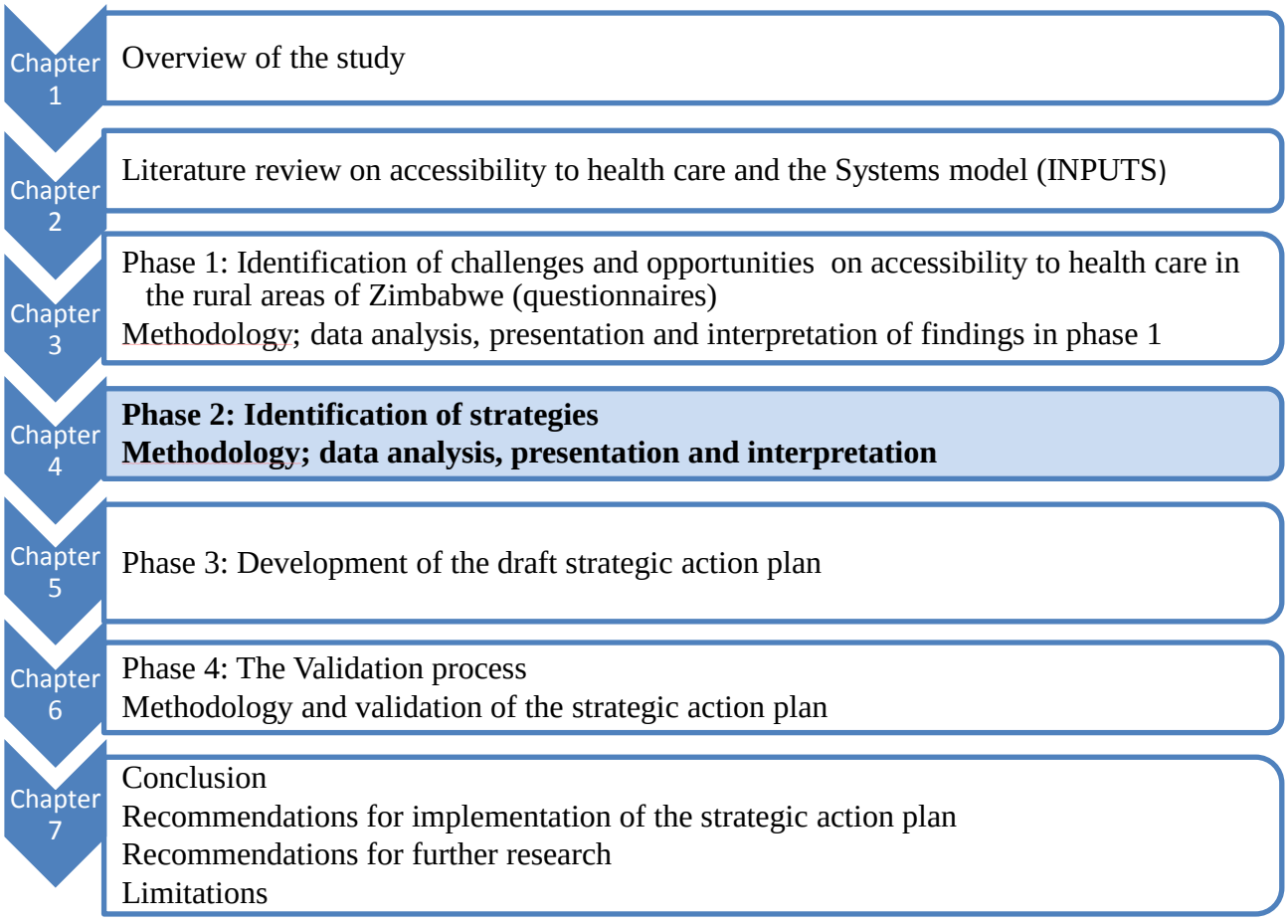

Figure 4.1: Diagrammatic presentation of the thesis layout and progress

4.2 QUALITATIVE RESEARCH

Qualitative research focuses on getting profound and important information from small groups which fulfill a certain standard set out by the researcher (Polit & Beck 2012:342). It involves interactive, inductive and flexible ways of data collection and analysis (Onwuegbuzie & Combs 2010:3; Polit & Beck 2012:342). During Phase 2, the researcher used the nominal group technique (NGT), which is a qualitative data collection method.

The qualitative approach was used to collect data from the national health directors as essential stakeholders to produce outputs according to the Systems Model. The quantitative data gathered in Phase 1 (inputs), informed and supported the qualitative data gathering process of Phase 2 (outputs).

4.3 POPULATION

The population for Phase 2 was the national health directors in the MoHCC. There were 15 national health directors (Departmental Directors) in the MoHCC head office.

4.4 SAMPLING

Convenient sampling was done to recruit all the national health directors (15) for inclusion in the study. All available national health directors were invited to participate in the nominal group session.

4.5 PROCESS/UNIT OF ANALYSIS

The gatekeeper (Principal Director for Planning, Policy, Monitoring and Evaluation), on behalf of the Permanent Secretary for Health, invited all 15 national health directors for the NGT using information letters (Annexure N). The gatekeeper agreed with the participants and the researcher on the date, time and venue of the meeting, 3 months before the actual date for the nominal group session. The initial date for the nominal group session was 26 November 2015. The researcher invited an experienced facilitator to enhance the credibility of the study as discussed under sections 4.7.1 and 4.8.1 in this chapter. The researcher booked

and paid for the facilitator's plane ticket, as well as the facilitator's hotel accommodation. A conference room was reserved for the NGT data collection process. Four days before the 26th November 2015, the gatekeeper realised that the date was clashing with another MoHCC planning meeting. The researcher was advised to postpone the nominal group session. The researcher had to postpone the plane ticket, cancel the hotel booking and venue reservation that was already made. The date, time and venue were followed up with the gatekeeper several times, and it was finally agreed that the nominal group will be facilitated on 6 April 2016.

On 5 April 2016, the gatekeeper confirmed the attendance of 15 national health directors and the arrangements were made accordingly. On 6 April 2016, despite confirmation of the gatekeeper that all national health directors were willing to participate, at 10.00 am, the time arranged for the NGT session, only 2 members arrived. The researcher contacted the gatekeeper to confirm the attendance of the other members and to inform him that more participants were required for the NGT session. The facilitator invited the 2 participants for tea while waiting for other participants. The facilitator and the researcher had to be patient to avoid postponing the session again.

One of the participants in attendance then contacted her colleagues as she assured the researcher of the importance of the research and their willingness to participate. At 11.30 am, another 3 national health directors arrived, and the facilitator, researcher and present participants agreed to start with the nominal group session.

Five national health directors were enough to conduct a NGT as 5-15 participants could still allow for the quality and diversity of ideas (Delp, Thesen, Motiwalla & Seshardi 1977:15 cited in Harvey & Holmes 2012:190; Fournier, Escourrou, Dupouy, Bismuth, BIrebent, Simmons, Poutrain & Oustic 2014:3).

4.6 DATA COLLECTION INSTRUMENT: THE NOMINAL GROUP TECHNIQUE

A NGT is a group process for gathering opinions, aggregating judgments, and reaching consensus to increase rationality and creativity when resolving complex problems such as

accessibility to health care in rural areas (Delbecq, Van de Ven & Gustafson 1975 cited in Harvey & Holmes 2012:190; Fournier et al 2014:2; McMillan, Kelly, Sav, King, Whitty & Wheeler 2014:2). According to the application of the Systems Model, the NGT was the process used to develop outputs, that is, the strategies for the strategic action plan to enhance accessibility to health care in rural areas of Zimbabwe. The nominal group process permitted in-depth exploration of and eliciting information from the stakeholders during the development of the strategies for the strategic action plan that might enhance accessibility to health care in rural areas of Zimbabwe.

The NGT is a highly structured method which facilitates the generation and discussion of participant ideas, thereby eliciting and comparing opinions and reaching consensus on priorities (O'Connor, Cerin, Hughes, Robles, Thompson, Baranowski, Lee, Nicklas & Shewchuk 2013:2) identified by national health directors, since they were from different departments.

When comparing the NGT with other group processes, such as the Delphi (Delbecq et al 1975 cited in Harvey & Holmes 2012:190), focus groups and brainstorming, the NGT has many advantages over other group processes (Fournier et al 2014:4). This served as the motivation for using the nominal group to develop the strategies.

One of the advantages is that one participant in the group cannot dominate the discussion and it constrains the group leader to have less influence (and therefore less potential bias), as may occur in traditional focus groups (O'Connor et al 2013:2; Fournier et al 2014:4). In this study, the researcher instructed the participants to individually write down strategies that can be used to enhance accessibility to health care in rural areas of Zimbabwe during the NGT. The fact that every individual participant had an opportunity to respond in an orderly manner showed no influence of dominant participants. The subsequent contributions ended with voting, providing all the participants equal opportunity to fairly contribute and provide independent opinions. Since qualitative methods are used to explore people's ideas, the reasons why problems occur, and what people see as possible solutions and constraints, surfaces. This allowed the researcher and participants to conduct an in-depth inquiry into solutions to enhance accessibility to health care in rural areas of Zimbabwe, from the national health directors' perspectives.

Another advantage is that the NGT allows for the quick development of a list of consensual and ranked answers to a precise question. In this study, it took 5 participants 90 minutes to reach consensus (Fournier et al 2014:5). This method has been used extensively for a wide range of general practice related purposes, including the exploration of emergent concepts or identification of educational needs. Thus, the researcher felt that it would be appropriate to use it to elicit strategies from the national health directors (Fournier et al 2014:2). The focus instruction of the group meeting was exploratory as it probed participants to set strategies from the findings, and was clear to the participants. This facilitated the participants to make a meaningful contribution.

Participants were directly involved in both data collection and analysis and therefore researcher-bias was minimised. The process followed facilitated task completion and the immediate dissemination of the consensus strategies to the group, which fostered participation satisfaction (Hiligsmann, Salas, Hughes, Manias, Gwadry-Sridhar, Linck & Cowell 2013:134).

The disadvantage of a NGT is that some participants feel the process is perfunctory (Fournier et al 2014:5). This was avoided to some extent as the experienced facilitator allowed detailed discussions during the process while ensuring that the procedures of nominal group processes were adhered to.

A NGT can also be challenging to implement effectively with many participants, unless it is planned very carefully beforehand. In this study, the group was planned in advance and was conducted with 5 national health directors. The participants were selected based on their expertise on health care issues, they were representative of their profession (nurses, pharmacists, environmental health specialists and doctors), and they had the power to implement the findings since they were national health directors.

4.7 DATA COLLECTION (NOMINAL GROUP) PROCESS

After ethical approval (Annexure A) and informed consent (Annexure R) was obtained from all the participants, data were gathered through the NGT and the steps followed were those

described by Delbecq et al (1975:41 cited in Harvey & Holmes 2012). An experienced facilitator facilitated the process.

4.7.1 The facilitator

The researcher used a facilitator who is an expert in nominal group facilitation and therefore was familiar and comfortable with the group meeting process, providing quality leadership during the process. The facilitator had extensive experience in facilitating nominal groups at both national and international levels. She had a PhD degree, a nursing degree, and was trained in communication and counselling skills. She, therefore, was the ideal person to facilitate the nominal group with stakeholders in a health-related field.

4.7.2 The venue

A Holiday Inn hotel in Zimbabwe, close to the offices of the MoHCC head office, the workplace of all stakeholders, was selected and agreed on by the participants as the ideal venue for the NGT session. A spacious room with the capacity to host 17 people was selected.

The venue was prepared for 15 participants, the facilitator and the researcher. The seating arrangement was a U-shape pattern to ensure that all the participants could see the flip chart, the overhead projector, and one another. The seating arrangements allowed enough space behind chairs for participants to freely move around. The room was well lit and conducive to open discussion. Participants indicated that they were comfortable in the venue.

The facilitator and researcher ensured that every seating place had a pen, notepad, and 5 index cards. Flipcharts and markers, a laptop and a screen were placed at the open end of the seating arrangement (Delbecq et al 1975:41 cited in Harvey & Holmes 2012).

4.7.3 The process

The nominal group was conducted in two separate sessions to ensure that all participants (stakeholders) were well informed about the data gathered during Phase 1 of the study. They

were, therefore, able to take note of the voice of the health care users as well as the professional nurses in developing the strategies.

- **Session 1 - Presentation of findings of Phase 1 to nominal group participants**

The researcher welcomed all the participants and the facilitator. He explained the purpose of having the nominal group in two sessions, as well as the importance of both sessions.

A PowerPoint presentation with a summary of the key findings from Phase 1 was presented by the researcher. The purpose of the presentation was to enlighten the participants about the challenges and opportunities experienced by professional nurses and health care users in the field as they are the important stakeholders. This information was necessary to ensure that participants develop relevant strategies based on the evidence from the field. The findings presented were based on the Systems Model, which purports that a successful health care system requires inputs that include physical resources, material resources, human resources, financial resources, and managerial resources (refer to Section 1.8). After the presentation, the group shared a coffee break before the NGT commenced as session 2 .

- **Session 2: Nominal group technique (NGT) data gathering process**

The facilitator gave the participants the information leaflet that explained the purpose of the research, for them to read and to make sure it was understood (refer Annexure N). Participants were asked to read the information and sign the consent form if they agreed to participate in the study. If they wished to withdraw from the study, there was no penalty. All 5 participants were willing to participate and signed the consent form.

The facilitator summarised the researchers' presentation of the findings of Phase 1 to set the scene for the development of the strategies. The facilitator re-emphasised the reasons for including the national health directors as important stakeholders in the study that focused on developing strategies for the strategic action plan to enhance accessibility to health care in rural areas of Zimbabwe. The process, as well as the advantages of abiding to the NGT steps, was explained by the facilitator to ensure that the participants were familiar with the rules that apply and the structure of the process. One of the participants asked whether they can

simply discuss the topic rather than having a formal nominal group discussion. The facilitator explained the difference between the NGT and focus group discussions, in that the NGT is used for decision-making by consensus. Each participant had a chance to freely contribute to decision-making without interference from other participants, unlike in formal group discussions where it is not a systematic discussion. The participants were satisfied and agreed to commence with the NGT. Participants indicated after the NGT that this was a very positive experience and can be used to gather information or discuss any topic where consensus needs to be reached at governmental level.

After the process of the NGT was clearly explained to the participants, the facilitator read the instructions to the participants in simple and clear terms for their clarity and understanding. Every participant also received the typed instructions:

« Please write down the strategies you think can enhance accessibility to health care in rural areas of Zimbabwe?
» Please provide a numeric number in front of every strategy that you propose.

The facilitator repeated the instructions 3 times to ensure the participants understood what was expected of them. The participants were requested to silently generate the strategies as individuals in Step 1.

4.7.3.1 Step 1: Silent generation of ideas

Participants were informed to remain silent and individually write down the information on the paper provided for the purpose, without sharing ideas or discussing the issue at hand. They had 10 minutes for this exercise. Participants were asked to indicate that they were finished by putting down their pens to enable the facilitator to manage the time. The participants completed the silent generation of ideas in 10 minutes and the facilitator continued to the next step.

4.7.3.2 Step 2: Round-robin listing of ideas

Each participant, in a round-robin manner, was requested to read out the first item on his/her list, followed by the next participant to read his/her first item on the list. The participants

continued to read the ideas on their list in this fasion, until no new ideas from any participant were generated (McMillan et al 2014:2; Delbecq et al 1975:67 cited in Harvey & Holmes 2012). Participants who had no new ideas skipped a round until all others were finished. This process ensured that all the particiants' ideas written on the papers, were exhausted. No discussion during the round-robin process was allowed to ensure that all the ideas of every participant were captured. A total of 19 strategies were generated as indicated in Table 4.1.

Table 4.1: List of generated ideas by the research participants

1	Provision of free health services
2	Building the health facilities closer to where people are and ensure they are fully manned by professional nurses
3	Reviewing the workload of health workers at the health facilities and address the shortages
4	Developing good health infrastructure in rural areas
5	Provide adequate training in public relations to the professional nurses
6	Building the health facilities in rural areas within 5 km radius of each village
7	Establishment of outreach and mobile health care services to communities living far from health facilities
8	Provision of adequate and minimum required equipment at the health facilities in rural areas
9	Introduction of points of care and testing for HIV, tuberculosis and malaria in rural areas with the right testing equipment
10	Improve the capacity of the health care delivery and management systems
11	Establishment of community health insurance schemes
12	Use of Information and Communication Technology for facilitating easy accessibility to health care for example use of telemedicine for consultations
13	Provision of appropriate medical drugs at the rural health facilities
14	Advocate for health funding to improve the annual budget allocations for the Ministry of Health from government and donors
15	Strengthening the community health education department
16	Use of results-based health financing system
17	Training and retaining health professionals in rural health facilities
18	Involvement of communities in managing their own health centres
19	Provision of incentives for motivating health professionals working in rural areas

4.7.3.3 Step 3: Data analysis by participants

The generated ideas as illustrated in Table 4.1 were displayed on the wall and participants were invited to seek verbal explanation to clarify any of the ideas that colleagues had produced which were unclear to others. The facilitator ensured that each person could contribute and that the discussion of all ideas was thorough, without spending too much time on any single idea.

The facilitator ensured that the process was as neutral as possible, avoiding judgment and criticism.

All the participants critically analysed the listed ideas. Every listed idea was discussed and analysed through active involvement and participation of all the NGT participants. During the discussion and analysis of the listed ideas, participants matched similar ideas and merged them into themes (Delbecq et al 1975:8 cited in Fournier et al 2014:5) as illustrated in Table 4.2. The agreed upon listed ideas were selected as strategies to enhance accessibility to health care in rural areas of Zimbabwe, and were written down on a flip chart. The participants merged the 19 strategies into 13 themes with the underpinning categories as indicated in Table 4.2.

Table 4.2: Themes developed from the list of generated ideas

Number	Themes	Categories based on discussions during theme development
1 (4.8.6)	**Free health services for all**	i. No user fees should be charged at the rural health facilities
2 (4.8.1)	**Develop health infrastructure in the rural areas**	i. Build health facilities closer to where people are, within 5km of each village ii. Ensure that facilities are fully manned by professional nurses iii. Develop good infrastructure that includes roads and communication networks
3 (4.8.3)	**Develop and retain human resources (Health Workers) in**	i. Train nurses in public relations ii. Train more health professionals to be deployed

Number	Themes	Categories based on discussions during theme development
	the rural health facilities.	in rural areas iii. Retain health workers in rural areas iv. Provide incentives to motivate health professionals working in rural areas
4 (4.8.4)	**Review the workload of health workers at the health facilities and address the shortages.**	i. Review workload in relation to the number of health workers at the rural health facilities ii. Deploy health workers in rural areas based on workload at the health facility iii. Address the shortage of nurses
5	**Establish outreach health care services to communities living far from health facilities.**	i. Increase mobile clinics for better health care coverage ii. Adequate funding for outreach health programmes
6 (4.8.5)	**Provide adequate and minimum required equipment in the health facilities.**	i. Equip health facilities with adequate medical equipment ii. Introduce point-of-care and testing for HIV, tubercolusis and malaria where testing equipment is supplied
7 (4.8.2)	**Provide medical drugs at the rural health facilities.**	i. Supply appropriate drugs as ordered by professional nurses ii. Improve medical drugs' availability at all times at the rural health facility iii. Build professional nurses' capacity regarding medical drug ordering systems iv. Use information and communication technology (ICT) to monitor medical drugs v. Use ICT for ordering drugs at the rural health facilities
8 (4.8.7)	**Improve the capacity of the**	i. Review the health care delivery system

Number	Themes	Categories based on discussions during theme development
	health care delivery and management systems.	ii. Put measures in place to improve health care system performance iii. Improve the management of the health care system iv. Ensure all management posts are filled
9	**Establish community health insurance schemes.**	i. Establish community health insurance schemes that reduce OOP expenditures when accessing health care in the rural areas
10	**Use ICT in the health care delivery system.**	i. Introduce the telemedicine system ii. Use the ICT to manage records, medical drugs and easy information sharing among health facilities
11	**Advocate for health funding to improve the annual budget allocations for the Ministry of Health from government and donors.**	i. Ensure lobbying is done with PPCH to increase fiscal budget allocation for the MoHCC ii. Fundraise with donors for health programmes, especially for procurement of medical drugs
12	**Strengthen the community health education programmes.**	i. Support community health education initiatives for health promotion ii. Build capacity of health workers on community health education iii. Involve communities in managing their own health facilities
13	**Use a results-based health financing system.**	i. Allocate annual budgets based on health facility performance

After all the participants agreed on the themes and categories as indicated in Table 4.2, the facilitator guided the participants and proceeded to the next step of ranking the agreed themes.

4.7.3.4 Step 4: Voting of the themes (strategies)

After the themes were grouped as in Table 4.2, the participants individually voted for the strategies according to priority. The participants were requested to individually and secretly vote for strategies using 5 cards which were distributed by the facilitator. The participants had to select 5 priority themes from the list of 13. Each participant had 5 voting cards, individually numbered in the right-hand corner from 1 - 5 (Figure 4.2 is an example of the card used). The participants were requested to write the number and name of the theme (strategy) they viewed as the highest priority in the middle of the card numbered 5. The card, numbered 1 in the right-hand corner, should contain the number and name of the least of the 5 priority strategies they selected. In this manner, they ranked the second (card 4), third (card 3) and forth (card 2) priority theme.

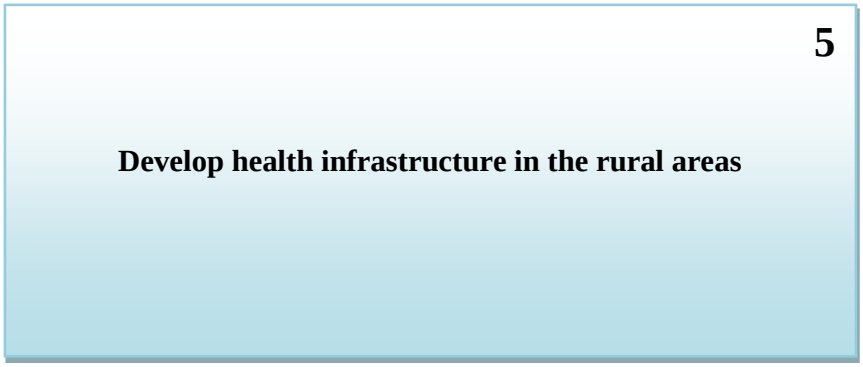

Figure 4.2: Sample of a card that was used for voting the strategies

4.7.3.5 Step 5: Ranking of the themes (strategies)

When the participants had completed and voted for their 5 most important strategies on the voting cards, the facilitator took the written cards, and verified that the 5 participants had written the required information on all 25 cards. Each set of 5 cards were redistributed among the participants. Each participant received a set of cards written by another participant. The facilitator requested each participant to state the strategy (theme) that was voted 5, followed by 4, until the participants read all 5 voted cards. The facilitator wrote down the scores against the agreed strategies as illustrated in Table 4.3. This action kept all participants actively involved and enhanced the accuracy during voting. After completion, the participants assisted the facilitator to calculate the scores for each of the 13 strategies to make sure that

each strategy was awarded its rightful score. The total calculated scores of the developed 13 strategies were then written down as in Table 4.3.

Table 4.3: Voting and Ranking of the strategies

Strategy (Theme)	Votes received					Total score	Ranking (1 – lowest and 5 – highest rank)
1. Free health services for all.	5					5	5
2. Develop health infrastructure in the rural areas.	5	4	3	2	1	15	1
3. Develop and retain human resources (Health workers) in the rural health facilities.	5	3	2	1		11	3
4. Review the workload of health workers at the health facilities and address the shortages.	5	3				8	4
5. Establish outreach health care services to communities living far from health facilities.	1	1				2	
6. Provide adequate material resources at the rural health facilities.	4	2	2			8	4
7. Provide medical drugs at the rural health facilities.	5	4	3			12	2
8. Improve the capacity of the health care delivery and management systems.	3	2				5	5
9. Establish community health insurance schemes.	4					4	
10. Use ICT in health care delivery systems.							
11. Advocate for health funding to improve the annual budget allocations for the Ministry of Health from government and donors.	4					4	
12. Strengthen the community health education programmes.	1					1	
13. Use a results-based health financing system.							

The theme (strategy) with the highest score was ranked as first priority, followed by the rest in order of scores (refer to Table 4.4). A total of 7 themes were voted as a priority instead of 5 because there were two pairs of themes which had a similar number of votes. The 7 themes (strategies) with the highest scores are presented in Table 4.4. The 1st pair of themes with similar total scores was theme 4 and theme 6 with a total score of 8, theme 4 was numbered the 4th strategy, while theme 6 was recorded as the 5th strategy (refer to Table 4.4). The second tie was for themes 1 and 8 with a total score of 5, and theme 1 was numbered the 6th strategy, and theme 8 as the 7th strategy.

Six (6) themes (strategies) received a total score of less than 5 and were not considered priority strategies (refer to Table 4.3). Two (2) themes, namely theme 10 and 13 were not ranked at all. Theme 12 had a total score of 1, theme 5 had 2 scores and theme 11 had 4 scores. These themes with a total score of less than 5 were regarded as not being a priority for the participants, hence only the first 7 themes (strategies) with the highest scores were agreed as priority strategies by the participants.

Table 4.4: Final ranking order of Strategies

Strategy number	Strategies ranked as the highest priority (Themes)	Total Score
1	Develop health infrastructure in the rural areas.	15
2	Provide medical drugs at the rural health facilities.	12
3	Develop and retain human resources (health workers) in the rural health facilities.	11
4	Review the workload of health workers at the health facilities and address the shortages.	8
4 (5)	Provide adequate material resources at the rural health facilities.	8
5 (6)	Free health services for all.	5
5 (7)	Improve the capacity of the health care delivery and management systems.	5

4.8 TRUSTWORTHINESS

Trustworthiness involves the use of various ways for collecting data to get a complete picture of what is being studied, as well as checking information through verification and triangulation to make it trustworthy (Moule & Goodman 2014:188). The researcher adhered to the NGT protocol and this ensured a wealth of valuable information that accurately reflects participants' thoughts (Fournier et al 2014:4). The following principles pertaining to trustworthiness as described by Moule and Goodman (2014:188), and Streubert and Carpenter (2010:410) were adhered to by the researcher.

4.8.1 Credibility

According to Streubert and Carpenter (2011:49), credibility deals with assurance in the reality of the data and is equivalent to internal validity in quantitative studies. It relates to the degree to which the findings of a study reveal the experiences and perceptions of study participants (Streubert & Carpenter 2010:235). The researcher enhanced the credibility of the results by inviting participants who could positively contribute to the NGT session. The participants were selected based on their knowledge on the subject under discussion and were representative of the outcome of the research study. All the NGT participants were directors in the MoHCC, tasked with shaping policies and enforcing them within the ministry. The participants were informed by means of a PowerPoint presentation about the challenges experienced by the health care users as well as the health care providers to further contribute to them being in the best position to identify strategies for the strategic action plan that could be used to enhance accessibility to health care in rural areas of Zimbabwe.

Due to the nature of the NGT, participants themselves validated the inputs, thereby contributing to credibility. This allowed for a fit between participants' views and the researcher's representation of participants' views (Fournier et al 2014:4).

4.8.2 Dependability

Dependability is described as the consistency of data over time under conditions related to reliability in quantitative studies (Moule & Goodman 2014:189). In this study, the researcher used an experienced NGT facilitator to enhance dependability. The facilitator enforced the

rules of the NGT and made sure that all listed strategies were recorded on the flipchart and were captured in the report to provide a clear and comprehensive data trail. The rules of the NGT were strictly followed in a step-by-step approach. This systematic step-by-step approach influenced the credibility of the results and is considered to have had a positive influence on the dependability of the results. The detailed description permitted a chain of evidence that is very clear. The extensive elaboration of the process ensured that the process is dependable. Since participants were directly involved in both data collection and analysis, researcher-bias was minimised.

4.8.3 Confirmability

Confirmability is explained as the independence or impartiality of the data and its analysis (Moule & Goodman 2014:190). The NGT by its nature allowed the participants to validate their own inputs. The facilitator remained neutral, focused and strictly followed the NGT process. All strategies which were listed by the participants were recorded. The facilitator did not influence the analysis of the strategies to ensure participants' involvement, which contributed to the confirmability of the data.

4.8.4 Transferability

Transferability is defined as the degree to which qualitative findings can be transferred to other settings (Moule & Goodman 2014:189). The researcher correctly recorded the data from the participants which assisted in providing sufficient explanatory data in the research report. A very elaborate data trail was kept providing other researchers the opportunity to assess the data for usability in similar situations and contexts (Moule & Goodman 2014:189).

4.8.5 Triangulation

Triangulation is the collection of data from various sources in a study of the same phenomenon (Polit & Beck 2012:72). The primary purpose of triangulation is to reduce the limitations that stem from using a single method. The objectives were addressed using quantitative and qualitative research approaches, which increase the reliability and validity of the findings.

The researcher used methodological triangulation where quantitative and qualitative methods were used to collect data during the two phases of the research study, namely the methodological triangulation where different methods of data collection were used (Johnson & Christensen 2012:439). The researcher also collected data from various districts and villages in accordance with Johnson and Christensen (2012:439), who state that data triangulation involves the use of data collected at different times, from more than one place, and from different levels of respondents.

The approaches used ensured that data was triangulated between different sources. The researcher triangulated data during Phase 1 of the study where quantitative data was collected from professional nurses and health care users on health care challenges and opportunities in rural areas of Zimbabwe. This was in agreement to Johnson and Christensen's (2012:439) view that triangulation provides convergence and corroboration of results from different sources while studying the same phenomenon. The complementarities of different sources provided elaboration, enhancement, illustration and clarification of results from one method to another. Information was collected from both professional nurses and health care users pertaining to factors that affect accessibility to health care in rural areas of Zimbabwe. The 7 agreed upon priority strategies were discussed, elaborated on and supported or contradicted by means of a literature control.

4.9 DISCUSSION OF THE FINDINGS AND LITERATURE CONTROL

This discussion focused only on the 7 most important strategies identified by the national health directors. A strategy refers to a chosen plan that leads to a required potential, such as the accomplishment of a goal or resolution of a problem (Ahmed, Bwisa, Otieno & Karanja 2014:80). The strategies are illustrated in Table 4.3 and developing health infrastructure in the rural areas was ranked as the most important strategy to improve accessibility to health care in rural areas of Zimbabwe.

4.9.1 Priority Theme 1: Develop health infrastructure in the rural areas (Physical resources INPUT)

As illustrated in Table 4.4, the development of the health infrastructure in the rural areas was ranked as the number 1 strategy by the national health directors. According to the Systems Model, the health infrastructure is part of the physical resources that include the health

facility buildings, pharmacies and laboratories, as well as the roads and communication systems (White 2015:104). The nominal group participants categorised the development of health infrastructure as follows: (i) building the health facilities closer to where people live, within 5km of each village, (ii) ensuring facilities are fully manned by professional nurses, and (iii) developing good infrastructure that includes roads and communication networks. Ensuring facilities are fully manned by professional nurses is not discussed in this section but under Section 4.9.3 as it relates to human resources.

Distance to the health facility might influence accessibility to health care in rural areas as it is associated with managing people's time. The further the distance to health facilities, the less likely the health care users are to seek health care due to other factors like the time needed to travel, leaving work on their farms and other responsibilities at home, as well as a lack of financial resources to meet the associated direct and indirect costs of travelling (WHO & World Bank 2015:21; Kadobera et al 2012:2). Therefore, building health facilities closer to the people or within 5km walking distance (radius) improves accessibility and reduces other costs related to travelling (Kadobera et al 2012:3). The opinion of the national health directors was consistent with the study in Uganda by the Institute for Health Metrics and Evaluation (IHME) (2014:14), which found that utilisation of health care facilities improved with less distance and the presence of skilled health workers during the evaluation of the Uganda health system.

The implications of vast distances contribute to delayed treatment, the development of complications, seeking health care from traditional healers, and sometimes death (Kevany et al 2012: 47). During Phase 1, 200 out of 445 (44.94%; *f*=200) health care users indicated visiting traditional healers due to significant distances to the health facilities that require the use of transport when they do not have money (Chapter 3: Section 3.18).

In a study in Burkina Faso conducted by Schoeps Gabrysch, Niamba, Sie and Becher (2011:496), and in Zimbabwe by the ZNSA (2012:123) on accessibility to health care, it was found that reducing the travel time to health facilities occurred through building additional health facilities in the areas where people travel long distances. However, a study conducted in Canada by Lamarche, Pineault, Gauthier, Hamel and Haggerty (2011:52) contradict most of these findings. Lamarche et al's (2011:52) findings indicated that there was no association

between the availability of health facilities closer to the people and the utilisation of these health care services. The study by Lamarche et al (2011:52) correlates with the study in Uganda by Wilunda, Oyerinde, Putoto, Lochoro, Dall'Oglio, Manenti, Segafredo, Atzori1, Criel, Panza and Quaglio (2015:8) on accessibility to maternal health services. In Uganda, geographical accessibility to the health care services was expected to improve from 49% to 72% for the population living within 5km of a health facility. However, after building the health facilities within 5km distance in Karamoja area, it did not result in significant utilisation of the health care facilities (Wilunda et al 2015:8). This showed that there are other factors that need to be considered when bringing health facilities closer to the people. Thus, the availability of health facilities should be accompanied by good health infrastructure like electricity, water, communication networks, and road infrastructure (IHME 2014:16).

The availability of infrastructure like a water supply system, electricity and means of communication facilitate provision of health care services, thus enhancing access to necessary health care services (Mkoka, Mahiti, Kiwara, Mwangu, Goicolea & Hurtig 2015:3). In a study conducted by IHME (2014:30) on health service provision in Uganda, the absence of basic electric power, water and sanitation infrastructure at the rural health facilities resulted in medicines that require refrigeration going bad and failure to facilitate deliveries by midwives. If a health facility is without lighting facilities, health care users arriving at night must wait until morning or are requested to bring their own lights to receive health care. Also, if the cold chain is inoperable, medical supplies like vaccines, blood, and other medical drugs may go to waste (Kevany et al 2012:49).

An effective road infrastructure facilitates access to the health facilities and reduces costs incurred by health care users when seeking health care services (Gaede & Versteeg 2011:101). In a study conducted in South Africa by Gaede and Versteeg (2011:101) on the state of the right to health care in rural South Africa, it was found that adequate coverage of affordable and reliable transport enhances accessibility to health care services, particularly when there are significant distances and few health facilities in rural areas. The absence of road infrastructure contributes to greater accessibility barriers being experienced by the rural population compared to urban communities. The poor road infrastructure can delay the delivery of essential medical drugs to the rural health facilities.

4.9.2 Priority Theme 2: Provision of medical drugs at the rural health facilities (Material resources INPUT)

The provision of appropriate medical drugs was voted as the second priority strategy by the national health directors (refer to Table 4.4). The NGT participants emphasised appropriate medical drug provision because each health facility orders different drugs based on disease burden (Jamison, Summers, Alleyne, Arrow, Berkley, Binagwaho, Bustreo, Evans, Feachem, Frenk, Ghosh, Goldie, Guo, Gupta, Horton, Kruk, Mahmoud, Mohohlo, Ncube, Pablos-Mendez, Reddy, Saxenian, Soucat, Ulltveit-Moe & Yamey 2013:11). However, the uncertainty in supply of the medical drugs in rural health facilities as indicated by 87 out of 90 (55.81%; *f*=87) professional nurse respondents during Phase 1 of the study (Figure 3.7 in Chapter 3), has contributed to the national health directors suggesting the formation of public and private partnerships in the health care system to improve accessibility and availability of medical drugs at the rural health facilities. A study conducted by Mkoka et al (2014:3) in Tanzania, also found that medical drug availability at the rural health facilities were uncertain as supply was erratic, especially at rural health facilities at the lower level of the health system. Very often medical drugs available in the central warehouse were distributed instead of looking at what has been ordered by the recipient health facilities (Brown & Gilbert 2014:3). During Phase 1 of the study, 86 out of 90 (95.55%; *f*=86) professional nurse respondents reported that the medical drugs brought to the rural health facilities were sometimes not those that were ordered (Chapter 3: Section 3.14.1). Moreover, medical drugs that were supplied to the health facilities were insufficient and did not match the needs of the health facility at that specified time.

The provision of medical drugs is vital to reduce disease burden and improve the health care users' health in general. However, this can only be achieved if health care users have access to the health facilities with medical drugs supported by adequately skilled professional nurses. A study conducted in Papua New Guinea by Brown and Gilbert (2014:7) noted that the retention of the professional nurses posed a challenge to sustaining the best practices around medical drug supply management, with professional nurses who receive training on standard operating procedures frequently moving to other health facilities or out of the country. The failure to retain trained professional nurse resulted in the loss of medical drug supply management capacity in the health facilities.

4.9.3 Priority Theme 3: Development and retention of human resources (health workers) in the rural health facilities (Human Resources INPUT)

The human resource development and retention of the health workers in the rural areas was selected as priority 3 by the nominal group participants (refer to Table 4.4). According to Nyandoro et al (2016:27), a well-functioning health workforce is one which works in ways that are reactive, realistic and competent to attain the best health outcomes possible, given existing resources and situations. There should be sufficient numbers, 2.84 professional nurses for every 1000 people, and the right skill mix among the professional nurses, equitably distributed, competent, responsive and updated with the current health trends (Nyandoro et al 2016:27, Leversque et al 2013:6, WHO 2007:16). During Phase 1 of the study, it was found that 3 professional nurses were covering an average of 2437 people (refer to Table 3.9), which was significantly below the standard 2.84 professional nurses per 1000 people. To maintain the standard of 2.84 professional nurses to 1000 people in the rural areas, a mechanism for health worker motivation should be put in place, like promoting career growth, in-service training, and offering further education opportunities.

The education and training system for the health sector in Zimbabwe has not grown sufficiently to meet health needs and system requirements; this was shown by the satisfaction of national health directors with a professional nurse who has a diploma and not a university degree. In Phase 1 of the study, there was not a single professional nurse respondent who had a degree in nursing (refer to Table 3.1). The national health directors reported that the minimum entry for professional nurses in Zimbabwe is a certificate and the professional nurse training is not integrated into a university curriculum. In other countries, for example the USA, there is integrated planning between the health and education sectors on developing health professionals in relation to health care needs and financing mechanisms for health professional development (Institute of Medicine 2011:221). Attaining a degree allows professional nurses to employ evidence-based practices, integrate research approaches with clinical knowledge and patient principles for optimal care, and contribute to learning and research activities to the greatest extent possible (Wu, Yang, Liu & Ye 2016:12). Therefore, the immense difference or distinction in the level of educational entry for professional nurses and midwives around the world can no longer be ignored. Based on this, the MoHCC considered raising the entry level of nursing to university first-degree rather than going back

to certificate level as transpired in 2005 (UNICEF 2011:19). Professional nurses who lack further training will not reach their full potential and higher levels of productivity, and are less likely to improve their performance unless employers provide conditions for advancement and adequate training. Training is also one of the most important parts of professional nurse retention systems in rural areas (Nyandoro et al 2016:29).

The competency of professional nurses is an expected and quantifiable level of nursing performance that combines knowledge, skills, abilities and decisions based on conventional scientific knowledge and expectations for nursing practice (Mbaruka, Larson, Kimweri & Kruk 2015:5). The scientific knowledge assist nurses to perform their duties based on empirical evidencem, thereby upholding patient safety and quality care (Wu et al 2016:12). Competency levels change over time as professional nurses gain more experience and education throughout their careers.

Health worker retention is essential for enhancing accessibility to health care. Workers, in general, are prone to pull-factors, such as job contentment and economic situations, and push-factors, such as remuneration and work environment (Ojakaa, Olango & Jarvis 2014:2). Pull-factors appeal to an individual to continue working or move to a new area (Nyandoro et al 2016:30). The pull-factors include better employment prospect and/or career opportunities, good income, more motivating environments, and good living conditions (Mkoka et al 2015:2). Push-factors deter the health workers from a work station, and demoralise the worker, such as low wages and poor living conditions (Ojakaa et al 2014:2).

In a study conducted by Mbaruku et al (2015:8) in Tanzania on health worker dissatisfaction in rural health facilities, the health workers who were discontented with the low levels of remuneration, looked for employment elsewhere after a short period of working at the rural health facility. Low pay levels have also previously been reported to negatively influence job satisfaction and motivation (Chirwa, Mashange, Chandiwana, Buzuzi, Munyati, Chandiwana & Witter 2014:23). However, salary is not the only important dimension that motivates workers, but also the workload at the rural health facilities.

4.9.4 Priority Theme 4: Reviewing the workload of the health workers at the health facilities and address shortages (Human Resources – Systems Model INPUT)

The review of the work of the health workers at the health facilities was voted the 4th priority strategy together with the provision of adequate material resources with scores of 8 points each (refer to Table 4.4). According to Nayndoro et al (2016:30), a well-performing health workforce is one which is adequate and available. Some countries, like Namibia, conducted workload indicators of staffing need (WISN) to identify the professional nurse shortages with the aim of improving the distribution and performance of existing health workers (McQuide, Kolehmainen-Aitken & Forster 2013:3).

Health systems in both developed and developing countries are under pressure to improve service delivery to an ever-increasing population with limited or reducing resources (Bonfim, Laus, Leal, Fugulin & Gaidzinski 2016:3; Mungisha, Muyinda, Wandiembe & Kinyanda 2015:3). This includes human resources which constitute a significant input in health care delivery according to the Systems Model and a key determinant of the cost and quality of health care. The total number of professional nurses and the skill mix required to work in a health facility will depend on the workload and the scope of health services offered at the health facility (Bonfim et al 2016:3). Therefore, health facility staffing norms based on population or health unit size alone, without consideration to the workload, may not be appropriate.

Most countries, for instance Zimbabwe, have several different nursing categories, such as registered nurses and primary care nurses (refer to Figure 3.2). These professional nurses work in the same facilities and have somewhat overlapping roles. If registered nurses are in short supply when there is a surplus of primary care nurses, it is reasonable to conclude that primary care nurses perform some of the registered nurses' tasks (Hagopian, Mohanty, Das & House 2011:7). Where possible, it allows for increasing the number of staff in the cadre with a shortage so that they have sufficient time to perform all their tasks. In cases where the professional nurses with limited training are likely to continue performing the tasks in the future, there should be a system to upgrade the appropriate skills for these tasks. This can be done by working together with those in charge of decisions regarding pre-service training and continuing education (Nyandoro et al 2016:29).

Often health personnel are in incorrect proportions to each other, in the wrong geographical locations, sometimes spend too much time on activities that make a limited contribution to health care, or are inappropriately used considering their level of training (Govule, Mugisha, Katongole, Maniple, Nanyingi & Onzima 2015:255; WHO 2010:12). Therefore, if health worker establishment is based on workload, and strengthened by supplying appropriate health care equipment, this will enhance accessibility to health care services.

4.9.5 Priority Theme 4 (5): Provision of adequate material resources at the rural health facilities (minimum required medical equipment) – Material Resources INPUT

The provision of material resources (medical supplies and equipment) at the health facilities, together with reviewing health facilities guided by workload, was also voted as the 4th strategy and scored 8 points each (refer to Table 4.4). Equipment and medical supplies form an essential part of the rural health facility to improve accessibility to health care (Moran, Coyle, Pop, Boxal, Nancarrow & Young 2014:25). During Phase 1 of the study, 65 out of 90 (72.22%; *f*=65) professional nurses and 133 out of 311 (42.76%; *f*=133) health care users reported that there was a shortage of medical supplies and equipment at the rural health facilities. Thus, health care users were requested to bring their own medical supplies (Section 3.14.2). This is despite the fact that available, adequate and appropriate medical material resources enable professional nurses to perform their roles and save lives at the rural health facilities (Moran et al 2014:25).

According to the national health directors, the rural health facilities are the first line contact for health care service between health care users and health workers, and 67% of people in African countries live in rural areas. However, considerable constraints remain in material resource allocation at the rural health facilities (Carter, Lema, Wangai, Munafu, Rees & Nyamongo 2012:1). The availability of the minimum required medical supplies and equipment at the rural health facilities guarantees accessibility to health care and reduces challenges posed by transfers to higher referral levels (WHO 2010:13; Parsons, Somoskovi, Lee, Paramasivan, Schneidman, Birx, Roscigno & Nkengasong 2012:2). In Uganda, Wilunda et al (2015:5) found that the lack of basic equipment like scissors, microscopes, slides and equipment for neonatal resuscitation led to health care users seeking health care at district

hospitals far from where they were living. The shortage of essential equipment in Uganda undermined the significant roles of the professional nurses' self-respect and ability to offer a reasonable quality of care, contributing to resignations. Equipping the rural health facilities enhances accessibility to health care. Also, the availability of essential equipment facilitates testing for HIV/AIDS, malaria and tuberculosis at the point of entry into the health care system as reported by the national health directors (NGT participants).

HIV/AIDS, tuberculosis and malaria remain major threats that undermine the health of global populations and account for approximately five million deaths every year (WHO 2014:5). As laboratory and non-laboratory testing for HIV, tuberculosis and malaria is one of the main entry points of access to prevention and support services, accurate and reliable laboratory results are essential for diagnosing and monitoring the diseases of public health importance (Cham, Maleka, Masango, Goetsch, Belabbes, Singh, Gershy-Damet & Puren 2012:3). A lack of adequate laboratory capacity in resource-poor, high-burden rural health facilities presents a significant barrier in providing appropriate diagnosis, care and treatment to patients infected with these diseases (Parsons et al 2012:1-5). Equipping health facilities with medical equipment for diagnostic procedures as suggested by nominal group participants, would significantly improve the control of these diseases. Most essentially, the health care users will be timely supported and provided with inclusive health care and treatment without the costs and delays associated with referral to specialised facilities for particular diagnostic examinations (Parson et al 2012:4).

4.9.6 Priority Theme 5 (6): Free health services for all – Financial Resources INPUT

The nominal group participants voted free health services for all as the 5th strategy together with 'improve the capacity of the health care delivery system and management systems'. The provision of free health services removes the inequality to accessibility to health care among all the country's population (McPake, Witter, Ensor, Fustukian, Newlands, Martineau & Chirwa 2013:2). Using health care user fees to finance health services in low and middle-income countries is no longer preferred, regardless of the 1987 Bamako Initiative that was encouraged by the WHO and UNICEF as a way of improving accessibility to quality health care (Watson, Wroe, Dunbar, Mukherjee, Squire, Nazimera, Dullie & Lilford 2016:1).

In Zimbabwe, some rural health facilities charge health care user fees as indicated by professional nurses [27 out of 90 (30.0%; *f*=27)] and health care users [198 out of 445 (44.49%; *f*=198] during Phase 1 of the study (refer to Section 3.18). A significant number of rural health facilities do not charge health care user fees (refer to Figure 3.20) because of the inability of rural health care users to pay. According to Mushi (2014:84), when sick health care users are not able to be attended to and obtain treatment at the right time due to their inability to pay, days of illness will be prolonged and may lead to the risk of death. Watson et al (2016:3) found that in Malawi health care user fees had imposed access barriers to health care, putting progress towards universal health coverage at risk, and in Africa, countries are struggling to attain universal health coverage through a health care system based on OOP payments (Mushi 2014:87).

Several research studies were conducted in Sub-Saharan Africa to investigate the effect of introducing or removing user fees (Largade & Palmer 2011:4; McKinnon, Harper, Kaufman & Bergevin 2015:438; Watson et al 2016:4; Leone, Cetorelli, Neal & Matthews 2016:3). The studies suggested improved utilisation of health care services with the removal of user fees, or a reduction in the use of health care services with the introduction of health care user fees (Watson et al 2016:4). There were increases in facility-based deliveries when the health care user fees were removed across African countries where these studies were conducted (McKinnon et al 2015:13; Leone et al 2016:3).

Contrary, accessibility is not just about user fees, but there are other important factors. A study conducted in West Africa by Ridde, Robert and Meessen (2012:5), found that free health care policies had essentially delivered on the promise to make basic health services free, but fees were not the only obstacle to accessibility to health care. There were factors such as transport to and from health care facilities, and shortages of nursing staff and medical drugs. Therefore, overcoming these obstacles requires an improved understanding on the part of all duty-bearers as to what free health care services for all exactly entails (Watson et al 2016:6). There should be enough financial resources to provide heavily subsidised health care. This implies that the whole health care delivery system should have an improved capacity to meet the demands of the health care users.

4.9.7 Priority Theme 5 (7): Improve the capacity of the health care delivery and management systems – Managerial Resources INPUT

The nominal group participants voted for improved capacity as the 5th strategy, tied with free health care services for all (refer to Table 4.4). The national health directors focused on improving every component of the health care system to ensure accessibility to health care by the health care users without overburdening them (WHO & World Bank 2015:32). The physical, material, financial, human and managerial resources, if well attended to, will improve the overall capacity of the health care delivery system to meet the needs of the population. Therefore, the improved capacity of the health care system involves efficient health services which deliver effective, safe, quality personal and non-personal health interventions to those who need them, when and where needed, with minimum waste of resources (WHO 2010:14). Improved capacity entails the establishment of effective health infrastructure, training and retaining staff, and the provision of appropriate medical drugs, adequate staffing, and equipping the health facilities as discussed earlier.

White (2015:108) describes the existence of adequate basic infrastructure as a nerve centre of the health care delivery system. The availability of health infrastructure within 5km facilitates accessibility to health care services and prevents travelling long distances as indicated by professional nurses [53 out of 90 (58.88%; *f*=53)] and health care users [156 out of 445 (35.05%; *f*=156)] (Section 3.13.2.1). This implies that improving the capacity of the health care delivery system is congruent to providing effective infrastructure in rural areas. The deficiency in capacity is reflected in shortages of medical drugs, therefore, by providing a constant supply of medical drugs in both quantity and type needed [50 out of 90 (55.55%; *f*= 50) professional nurses and 249 out of 445 (55.95%; *f*= 249) health care users] is an indicator of improved health care delivery system capacity. Further to this, the right skill mix in human resources, that is, trained health workers with desired skills and competencies, is also an indicator of improved capacity. The training of health workers is a way of improving the capacity of the health care delivery system that will enhance accessibility to health care services by the health care users. The improved capacity can be observed in a well-performing health workforce, adequately deployed as per the recommended 2.84 professional nurses per 1000 people and not at the current levels of 3 professional nurses per 2732 (refer to Table 3.15 in Chapter 3). The training should be strengthened by vibrant retention systems

in rural health facilities that favour developing the capacity of the health system to respond to health challenges.

The critical aspect as stated by the NGT is the managerial resources in addition to what has been discussed in the previous paragraphs. Moran et al (2014:26) conducted a study in Australia indicating that strong organisational dedication to good management contributed to greater participation levels by health workers, sustainable and efficient health worker retention, and an improved health care delivery system. Therefore, strengthening and improving the capacity of the managers is central to the improved capacity of the health care delivery system. The effective management of people and material resources can improve morale, reduce stress levels, and high health worker turnover. Those in leadership and management positions need to be clear about their own managerial roles, responsibilities and the ways in which they contribute to the overall goals of enhancing accessibility to health care (Moran et al 2014:27). Management roles and responsibilities involve the design of strategic action plans which should be in line with policies, and managers should ensure that action plans are followed through. The discussion on developing the strategies led to the drafting of the strategic action plan.

4.10 SUMMARY

The proposed strategies identified during the nominal group were: (1) develop health infrastructure in the rural areas, (2) provide medical drugs at the rural health facilities, (3) develop and retain human resources (health workers) in the rural health facilities, (4) review the establishment of health workers at health facilities guided by workload, (4) provide adequate material resources at the rural health facilities, (5) free health services for all and, to (5) improve the capacity of the health care delivery and management systems. These proposed strategies will be discussed in greater detail in Chapter 5, as well as the relevance to the Systems Model for the development of a strategic action plan to enhance access to health care.

CHAPTER 5: THE DEVELOPMENT OF THE DRAFT STRATEGIC ACTION PLAN

5.1 INTRODUCTION

This chapter presents Phase 3 of the study; the process of developing a draft strategic action plan using the Systems Model as shown in the diagrammatic representation of the thesis progress (Figure 5.1). This chapter also presents the draft strategic action plan that was developed for presentation during the validation process in Phase 4 (refer to Chapter 6) of the study.

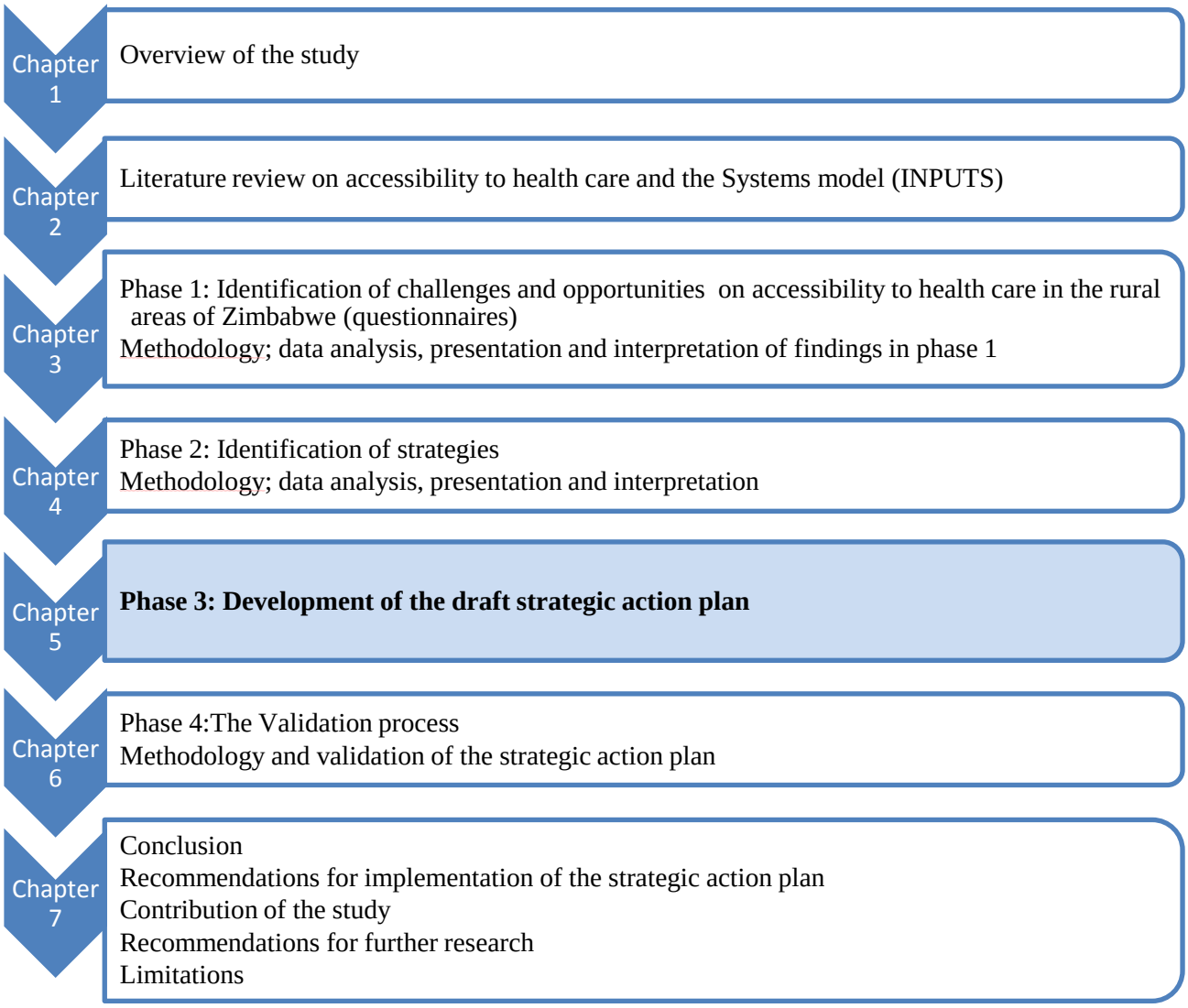

Figure 5.1: Diagrammatic representation of the thesis progress

5.2 THE STRATEGIC ACTION PLAN

A strategic action plan refers to a road map designed to lead to a required potential, such as the accomplishment of a goal or resolution of a problem (Ahmed, Bwisa, Otieno & Karanja 2014:80; Rajan, Kalambay, Mossoko, Kwete, Bulakali, Lokonga, Porignon & Schmets 2014:1). The strategic action plan is also defined in this study as a set of established actions or interventions by stakeholders to enhance accessibility to health care in rural areas of Zimbabwe. These stakeholders include members of parliament, national health directors, MoHCC, Ministry of Higher Education and Technology, Ministry of Labour and Social Welfare and the Ministry of Finance. Strategic action planning assists to identify specific and measurable short-term, mid-term, and long-term actions, with appropriate milestones and outcomes that organisations will take to meet each priority strategy (Rajan et al 2014:3). The strategic action plan identifies the lead persons or ministry, and gaps and needs in a health care delivery system as illustrated in Table 5.1.

The researcher used the Systems Model to develop the strategic action plan that will be accepted and owned by the important stakeholders concerned with health care provision in Zimbabwe. The Systems Model was used to strengthen the effectiveness of health care systems (Rajan et al 2014:3) by ensuring that all Systems Model components (Figure 1.1) were considered during the development of the strategic action plan. The Systems Model **inputs** (human, material, physical, financial and managerial) were reviewed and taken into consideration based on the perceptions of the professional nurses and health care users on challenges and opportunities in accessibility of health care in rural areas in Zimbabwe.

The **processes** according to the Systems Model were the steps that were taken to bring about the preferred outputs, in this study, the strategies as identified (Phase 2) by the nominal group participants (national health directors) in the study. These participants (national health directors), played an essential role in the formulation of the draft strategic action plan (Phase 3). The important **outcomes** were the strategic action plan that was developed and validated (Phase 4). As described in Chapter 1 (refer to Figure 1.1), the last step is the impact, which will only be measured over time.

5.3 FORMULATING THE STRATEGIC ACTION PLAN

In this study, the researcher used the findings from professional nurses and health care users in Phase 1, Systems Model inputs, the strategies developed by the national health directors (Phase 2), and the literature control in Phase 3 to formulate the draft strategic action plan. The process applied was in line with a first draft strategic action planning procedure. Strategic action planning refers to a process of bringing together ideas and resources to strengthen procedures and operations, ensuring that health workers and other stakeholders are focused on common goals, and setting the organisation's target (Hill & Jones 2013:11; Ahmed et al 2014:1; Sadeghifar, Jafari, Tofighi, Ravaghi & Maleki 2015:57).

The Systems Model provided the researcher with a guideline of how a strategic action plan can be formulated. The preliminary point for formulating the draft strategic action plan was to identify the strategy to be used to address accessibility to health care in rural areas (Table 5.1). These strategies were identified by national health directors (Phase 2) after findings from Phase 1 (professional nurses and health care users) were presented and through conducting a literature control on the identified strategies. The formulation of the draft strategic action plan in this study included aligning each strategy against the Systems Model input, defining the processes needed to address the strategy and developing outcomes of the strategy that could be used to measure the impact of the strategic action plan (Tables 5.1 – 5.7).

Information used to develop the draft strategic action plan was obtained from data from the professional nurses and health care users on challenges and opportunities in accessibility to health care in rural areas of Zimbabwe, the nominal group session, as well as a literature control on challenges and opportunities to accessibility to health care.

After the identification of the strategies, the next step was to focus on the process needed to address each strategy and the expected outcomes for determining impact (Sadeghifar et al 2015:57). The desired outcomes were the viewpoint of the participants and researcher which was subject to modification during the validation in Phase 4 of the study. Active contribution of Phase 4 participants was essential for the successful improvement of accessibility to health care in rural areas, hence the need to include their input and validate the draft strategic action

plan. Therefore, each strategy that had been prioritised by the nominal group participants was looked at individually starting with the health infrastructure which was voted as priority 1 (Table 5.1).

5.3.1 Develop health infrastructure in the rural areas

All health care services depend on the existence of a basic health infrastructure and this has been described as critical to the health care delivery system (Smith 2015:108). Table 5.1 indicates the key components for developing the health infrastructure based on Phase 1 findings and as suggested by the national health directors.

During the nominal group discussion, the national health directors identified the following actions as critical processes to address this strategy: (i) build health facilities within 5km of each village (Table 5.1, Action 1.1), and (ii) develop infrastructure by building roads, providing safe piped water, providing electricity, facilitating communication networks, and renovating existing buildings (Table 5.1, Action 1.2).

Table 5.1: Systems Model illustration for physical resources strategy development

Inputs	Strategy	Processes to address the strategy		Outcome of the strategy
		Action	**Method**	
Physical resources	**1. Develop health infrastructure in the rural areas**	**1.1** Build health facilities within 5km of each village.	**1.1.1** Prioritise construction of health facilities in areas with poor distribution, like resettlement areas.	Improved health facility coverage in rural areas of Zimbabwe.
			1.1.2 Mobilise financial resources to upgrade the satellite health facilities.	Health care users walk less than 5km to the health facility.

		1.2 Develop infrastructure by: • building roads • providing safe piped water • providing electricity • facilitating communication networks • renovating existing buildings.	**1.2.1** Review the health facility infrastructural development needs and allocate the budget according to these needs, and ensuring water, electricity and communication equipment is prioritised.	Improved accessibility to water, electricity and communication networks and equipment at the existing health facilities.
			1.2.2 Enforce infrastructure development policy priorities to address health infrastructure backlogs and upgrade existing health facilities.	Improved health infrastructure conditions at the health facilities.

Participants indicated that "*health facilities should be closer to where people are and within a walking distance of 5km"*. It is important to note that "closer" for the nominal group participants imply "very close" to facilitate health care users' access without further burdening health care users (WHO & World Bank 2015:21). The NGT participants indicated this as the most important priority and was supported by professional nurses [53 out of 90 (58.88%; *f*=53)] and health care users [219 out of 445 (*f*=219; 49.21%)] who indicated that the health facilities in the rural areas are in fact more than 5km walking distance from villages. Two hundred and twenty-six (226) out of 445 (50.78%; *f*=226) health care user respondents reported a distance less than 5km (Figure 3.3). The main means of transport in rural areas to the health facilities is walking [61 out of 90 (67.77%; *f=61*) professional nurse respondents and 293 out of 445 (65.84%; *f*=293) health care user respondents] (Figure 3.4, Section 3.13.2.2). Therefore, reducing the distances to 5km would facilitate accessibility to

health infrastructure. To achieve the walking distance of 5km to the health facilities, the policy makers should prioritise health infrastructure development in poorly distributed areas or areas with no health infrastructure like resettlement areas (Table 5.1, Method 1.1.1).

During Phase 1 of this study, 418 out of 445 (93.93%; *f*=418) health care users indicated that they prefer to use health facilities that are closer to their villages to reduce the OOP costs (Table 3.2; Section 3.13.1). The national health directors have the knowledge and overview of the health care system in Zimbabwe. Therefore, voting this strategy as a top priority was confirmation that the Zimbabwean health care system has physical barriers to accessibility to health care, where the health facility is far from health care users. In this context, distance to the health facility does affect the utilisation of these facilities as is the case in rural Zimbabwe (Loewenson et al 2014:21). The government should mobilise financial resources to meet the Zimbabwe infrastructure development goals (Zimbabwe Agenda for Sustainable Socio-Economic Transformation (ZimASSET) 2013:66) and reduce the walking distance to within a 5km radius (Table 5.1, Method 1.1.2). The development of health infrastructure in poorly distributed areas will improve health facility coverage in rural areas of Zimbabwe, as well as achieve the WHO standard of 5km walking distance to the nearest health facility (WHO & World Bank 2015:6).

The development of infrastructure like roads, piped water, electricity, communication networks and renovating health facility buildings was indicated as one of the critical actions needed to facilitate accessibility to health care services (Table 5.1, Action 1.2). The absence of roads, communication systems like telephones and pharmacies, does not only act as a barrier to accessing health care but also affects other Systems Model inputs like human resources in the rural health facilities (Nyandoro et al 2016:3).

In this study, the findings in Phase 1 showed that the health facilities in rural areas did not have an emergency transportation system as indicated by 403 out of 445 (91%; *f*=403) health care user respondents (Table 3.5), laboratory facilities (62 out of 87 (71.26%; *f*=62) professional nurse respondents (Table 3.12), and pharmacies in rural areas by 409 out of 445 (91.91%; *f*=409) health care user respondents (Section 3.13.3). Transferring patients under emergency circumstances, getting medical drugs to treat patients, and treating ailments based on evidence is compromised and fraught with delays and possible complications.

The lack of transportation systems is exacerbated by the relatively poor road infrastructure in rural areas that connect villages, towns and rural health facilities (Schoeps et al 2011:498). In this study, 417 out of 445 (93.7%; *f*=417) health care user respondents answered the question on accessibility to public transport and 270 out of 417 (64.74%; *f*=270) health care user respondents indicated that it is a challenge to get transport, therefore, most of their time is spent waiting for transport due to bad road conditions (Table 3.3).

There is also a need to ensure that facility-based transportation and modes of communication are available at the rural health facilities. In a study conducted in South Africa, Sharkey, Chopra, Jackson, Winchy and Minkovty (2011:383) found that accessibility to any type of vehicle, regardless of the number of wheels and its emergency abilities, significantly determined accessibility to health care services. The availability of health facilities in the rural areas with an ambulance increases transportation capacity, thereby improving accessibility to health care (Wilunda et al 2015:9). If all the proposed actions (Table 5.1) are considered it will contribute to improved accessibility to health infrastructure within a 5km walking distance and improvements in the health infrastructure at the health facilities.

The Zimbabwe MoHCC should make use of the existing infrastructure development policies like the Zimbabwe Agenda for Sustainable Socio-Economic Transformation (Zim Asset) of 2013 to improve accessibility to health facilities through enhancing infrastructure like roads, means of communication, and transport. The government should review the health facility infrastructural development needs, particularly safe water supply, electricity, and means of communication, and allocate financial resources according to these established needs (Table 5.1, Method 1.2.1). In addition, the enforcement of the infrastructure development policy might assist to address the health infrastructure development backlogs as well as upgrading existing health facilities to meet the requirements in relation to water, electricity and road infrastructure (Table 5.1, Method 1.2.2).

The improvements of health infrastructure will also contribute to improvements in the supply of medical drugs and conservation of these medical drugs when electricity and transport are available.

5.3.2 Provision of appropriate medical drugs at the rural health facilities

According to the Systems Model, medical drugs are an important part of the material resource input (strategy on the provision of medical drugs at the rural health facilities) (Table 5.2). The nominal group participants suggested three actions to address this strategy. The first was to establish partnerships with national and international medical drug producers and non-government organisations, and facilitating a medical drug supply pipeline (Action 2.1). The medical drug supply pipeline might ensure medical drugs are supplied (type and quantity) as ordered by professional nurses. The second action was to build the capacity of professional nurses through facilitating training to utilise information communication technology for the ordering and monitoring of medical drugs, and facilitating training in logistics management of medical drugs (Action 2.2). The third action recommended by the participants was the need to provide payment to medical drug companies within deadlines (Action 2.3).

Table 5.2: Systems Model input material resources strategy: provision of medical drugs

Input	Strategy	Processes to address the strategy		Outcome of the strategy
		Action	**Method**	
Material resources	**2. Provide appropriate medical drugs at the rural health facilities**	**2.1** Establish partnerships with national and international medical drug producers and non-government organisations. • Facilitate a medical drug supply pipeline.	**2.1.1** Share medical drug supply strategic action plans and/or joint planning with health partners like donors, non-governmental organisations and United Nations Agencies (UNICEF, WHO).	To ensure availability and accessibility to essential medical drugs at the health facilities for the health care users and health workers in the rural areas.
		2.2 Build the capacity of professional nurses by: • Facilitating	**2.2.1** Use ICT for ordering and monitoring medical drugs at the rural	Improved accessibility and management of medical drugs at

Input	Strategy	Processes to address the strategy		Outcome of the strategy
		Action	**Method**	
		training to utilise ICT for the ordering and monitoring of medical drugs • Facilitating training in logistics management of medical drugs at the health facilities.	health facilities. **2.2.2** Train professional nurses in logistics management focusing on drug ordering and chain management.	the rural health facilities.
		2.3 Provide payment to medical drug companies within deadlines.	**2.3.1** Multi-year financial mobilisation for payment of medical drugs through the development of proposals based on the country's health strategy.	Improved funding for the procurement of medical drugs.

During the nominal group discussion, the national health directors pointed out that appropriate medical drugs, specific to the requirements of the health facility should be adequately supplied, in the right quantity as per the order, and within the requested time (Table 5.2, Action 2.1). This was also indicated by 87 out of 90 (*f*=87; 96.66%) professional nurses who reported to be receiving medical drugs on a quarterly basis (Table 3.6) but lacking consistency on quantities and the type of medical drugs requested [48 out of 86 (55.81%; *f*=48) professional nurse respondents] (Section 3.14.1). The specific medical drugs ordered by a particular health facility depend on the disease burden of that particular health facility catchment area. This includes the amount of medical drugs indicated by professional

nurses based on consumption rate per quarter before the next order is supplied. Medical drug distributors should efficiently go through orders to allow equitable distribution of limited supplies against requests while addressing the needs of each health facility (McKeever et al 2013:490, Mkoka, Goicolea, Kiwara, Mwangu & Hurtig 2014:3).

In order to enhance medical drug supply in the rural health facilities, partnerships need to be formed and strengthened between the government, private companies in Zimbabwe, national and international drug producers, and non-government organisations (Jamison et al 2013:11) (Table 2, Method 2.1.1). This method of addressing the shortage was suggested due to the national health directors recognising that a lack of sufficient funding for medical drugs from the central government was deterring expectations of improved medical drug availability in the rural health facilities. The method worked well in India as reported in a study conducted by Sharma and Chaudhury (2015:2) on improving availability and accessibility of medicines in India. A well-functioning country-wide medical drug supply system should be in place where there is accountability at each level. This ensures that medical drugs and medical supplies are made available in a timely fashion (Sharma & Chaudhury 2015:3). Each player in the medical drug procurement and delivery system should be responsible and accountable for making the system operate (Mkoka et al 2014:7). The MoHCC should make timely payments to the medical drug companies for the medical drugs ordered and delivered to the rural health facilities to enable these companies to replenish the stocks for future supplies, thereby avoiding delays (Table 5.2, Method 2.1.2). This was evident during the nominal group discussion when national health directors suggested training professional nurses in medical drug supply chain and management.

One of the key actions proposed by the national health directors was the need to improve the medical drug delivery system through capacity building of professional nurses on logistics management, focusing on ordering and managing medical drugs at health facilities (Table 5.2, Action 2.2). Delivery of the medical drugs in the rural health facilities is unreliable as noted by national health directors [48 out of 86 (55.81%; f=48) professional nurse respondents] (Figure 3.7). This led to a proposed method of addressing this strategy through training professional nurses to use ICT in the management of medical drugs; that is, ordering and monitoring consumption (Table 5.2, Method 2.2.1), as well as logistics management focusing on medical drug chain management at the health facility level (method 2.2.2).

The use of ICT for ordering and monitoring the supply chain at the rural health facilities improves the timeliness of ordering and paying for medical drugs and promotes accountability and transparency in handling the medical drug supply chain (Sharma & Chaudhury 2015:7). A computerised health information system with a strong medical drug management component can help build the evidence base to plan for the availability of required medical drugs of desired quantity in the right place, at the right time. This planning requires health workers with knowledge of the numbers and characteristics of diseases normally treated in the health facility which can be computed and monitored using ICT to check expiring, and fast consumed medicines, and the time span for replenishing the medical drugs (Brown & Gilbert 2012:17). Comprehensively training health workers on ICT helps to guide decision-making to ensure efficient management of the medical drugs, thereby improving governance from grassroots level. A well-trained health workforce on medical drug management using ICT is essential for timely, reliable and health facility specific monitoring and evaluation of the medical drugs supply plan (WHO 2014:63).

The outcome of the processes to address provision of medical drugs at the rural health facilities is expected to improve availability and accessibility, ensuring that health care users obtain treatment when in need. The availability and accessibility to medical drugs can be made possible when professional nurses are available at the rural health facilities.

5.3.3 Development and retention of human resources in the rural health facilities

Human resource is one of the important inputs according to Systems Model, which focus on the recruitment and management of health workers. The nominal group participants voted this strategy as priority 3. Human resources management is the organisational role that regulates issues associated with people. It includes recruitment, performance management, organisation development, remuneration, employee motivation, and training (Nyandoro et al 2016:28).

The nominal group participants identified actions that need to be taken relating to this strategy and these were: (3.1) provide incentives such as transport and off station allowances to attract health workers to work in rural health facilities, (3.2) promote career growth for the

health workers working at the rural health facilities by professional development of skills and competencies, and (3.3) train health workers according to changing trends and health needs in the rural health facilities (Table 5.3). The nominal group participants reported that using this strategy might lead to the retention of health workers in the rural health facilities thus addressing staff shortages and decreasing the workload.

Table 5.3: Systems Model for the human resources strategy

Input	Strategy	Processes to address the strategies		Outcome of the strategy
		Actions	**Methods**	
Human resources	**3. Develop and retain human resources in the rural health facilities**	**3.1** Provide incentives such as: • Transport allowances • Off station allowances to attract health workers to work in rural health facilities.	**3.1.1** Review the health worker incentives and gazette the Statutory Instrument for additional rural health worker allowances.	Improved retention of competent and skilled health workers at the rural health facilities.
		3.2 Promote career growth for health workers at rural facilities by: • Professional development of skills and competencies.	**3.2.1** Put well-defined criteria in place for career advancement by low-level health workers.	Increased job satisfaction by health workers at the rural health facilities.
		3.3 Train health workers according to changing trends and health needs in the rural health facilities.	**3.3.1** Reinforce and upscale in-service training of the health workers in rural areas to improve	Increased motivation by health workers to continue working at the rural health

			knowledge and health services delivered to health care users particularly by professional nurses.	facilities.
			3.3.2 Target professional nurse recruits living in rural areas and who have done their training in the rural areas.	The health workers at the rural health facilities are retained.

The development and retention of human resources in the rural areas were associated with paying incentives and promoting health workers' career growth in rural areas (Table 5.3; strategy 3). The nominal group participants indicated that the re-introduction of incentives like transport and off station allowances would attract and retain health workers in the rural health facilities (Table 5.3, Action 3.1). Therefore, putting a system of retention in place that involves incentives like rural health worker allowances (Table 5.3, Method 3.1) and improving the accommodation at the health facilities, will motivate the health workers to work in remote rural areas (UNICEF 2011:19). Strategies aimed at improving the performance of the health workforce should address shortages of the existing health workers by giving incentives to those working in challenging areas (Table 5.3, Action 3.1), for example, in some remote rural areas of Zimbabwe (Chirwa et al 2014:18; Ojakaa et al 2014). Paying incentives may also be complemented by facilitating career growth.

The professional nurse respondents during Phase 1 of the study indicated lack of career growth as one of the demotivating factors that influenced their decision to work in rural areas. Due to a lack of career growth, 65 out of 90 (72%; *f*=65) professional nurse respondents reported dissatisfaction working at the rural health facilities, contributing to health care users'

(241 out of 445 (54.15%; *f*=241) health care user respondents) dissatisfaction with the health services offered by professional nurses at the rural health facilities (Section 3.16.1).

Health workers were unwilling to work in rural areas as there were fewer opportunities for career growth (advancement) compared to urban areas (Mbaruku et al 2015:6). The MoHCC should put a well-defined criterion in place for low-level health workers working at the rural health facilities' career advancement (Primary Care Nurses and SCN) in order to improve retention of experienced health workers in the rural health facilities.

Offering opportunities for career growth (advancement) for the health workers is an important aspect for improving their competencies and skills (Table 5.3) which, in turn, improves retention of the health workers (Matsoso & Strachan 2011:52; Mkoka et al 2015:13). When health workers are trained, adequately skilled and retained at their respective health facility, accessibility to health services will be enhanced for the health care users. The rural health facilities in Zimbabwe employ three categories of professional nurses: registered general nurses (RGNs) as indicated by 29 out of 90 (32.22%; *f*=30) professional nurse respondents, primary health care nurses (PHCNs) as reported by 51 out of 90 (56.67%; *f*=51), and state certified nurses (SCNs) according to 9 out of 90 (11.11%; *f*=9) professional nurse respondents (Figure 3.2). The professional nurses who qualify with a certificate are also recommended to undergo professional development. Such internal training and advancement initiatives are critical for health worker development.

Creating well-defined criteria for low-level health workers' (PCNs and SCNs) career advancement at the rural health facilities (Table 5.3, Method 3.2.1), such as sharing of knowledge, enhanced professional networking and linkages that reduce professional isolation among health workers in the rural areas, might improve professional nurse competencies and skills (Nyandoro et al 2016:29, Adzei & Atinga 2012:470).

Training the health workers according to changing trends and health needs in the rural health facilities may also contribute to retaining health workers (Table 5.3, Action 3.3). Training professional nurses in rural health facilities is an essential component of capacity building due to constant and dynamic changes concerning patient care (Mbaruku et al 2013:5). While Zimbabwe is training professional nurses with diplomas and certificates, other countries have

changed to university degrees in nursing. A university degree is a qualification awarded to students upon successful completion of a course of study in higher education, normally at a university (Wu et al 2016:10). In a study conducted in the USA by the Institute of Medicine (2011:221), new Bachelor of Science in Nursing (BSN) graduates reported significantly higher levels of preparation in evidence-based practice, research skills, and assessment of gaps in areas such as teamwork, collaboration and practice. This indicates that raising the educational level of professional nurses will play an important part in improving clinical decision-making skills. This is coherent with the point of view that more intensive training helps nurses to develop a good theory foundation to draw on for decision-making purposes and improve their competency levels (WHO 2010:13; Wu et al 2016:12).

In addition, the world population is becoming more and more educated and highly informed about the quality of nursing care they deserve. To make health care quality socially relevant, professional nurses should be educated at levels matching the general educational pattern of the society which they serve (Institute of Medicine 2011:73, Mkoka et al 2015:14). The application of knowledge and skills (based on research) result in outstanding competencies in assisting health care users, sick or fit, in ways that contribute to improving public health (Flinter 2011:7; Institute of Medicine 2011:125). These challenging realities should motivate the MoHCC and professional nurses to train and advance as a way of preparing those professional nurses to attain higher qualifications and adapt to the changing society and provide relevant nursing care.

These challenges were reported by 66 out of 86 (76.74%; *f*=66) professional nurse respondents who indicated the lack of advanced- and in-service training as a contributing factor for lack of skilled and competent midwife-trained professional nurses (Table 3.10). The educational level of health workers has a significant positive impact on professional nurses' clinical decision-making skills (Mbaruka et al 2013:5).

The national health directors were of the opinion that recruiting trainee professional nurses from rural areas would promote retention at the rural health facilities, especially when they are deployed back to rural health facilities after completing their training. This notion is supported by literature. Research carried out in Ghana (Adu-Gyamfi & Brenya 2016:9) indicated that professional nurses who were recruited from rural areas were more likely to

continue working at the rural health facilities than professional nurses who were recruited in urban areas. According to Mbemba, Gagnon, Paré and Côté (2013:6), professional nursing students from rural areas are more attached to their rural homes (Table 5.3, Action 3.3). Therefore, recruitment should be done by targeting professional nurse recruits living in rural areas and who have done their training in the rural areas (Table 5.3, Method 3.3.2).

These efforts should then be supported through reinforcing and upscaling professional nurses' in-service training for those working at rural health facilities to improve knowledge and promote career advancement, thereby motivating the professional nurses to continue working in the rural areas. In addition, the MoHCC should ensure staffing is done by reviewing the workload at every rural health facility to prevent professional nurses overloading at some of the health facilities.

5.3.4 Review the workload of the health workers at the health facilities and address shortages

According to Nayndoro et al (2016:30), a well-performing health workforce is one which is available and adequate. It was evident from the nominal group discussion that it is a necessity to improve the distribution and performance of existing health workers through the WISN. The national health directors voted this strategy as priority 4. They emphasised the need to use the WISN methodology to determine staffing requirements at each rural health facility in Zimbabwe (Table 5.4, Action 4.1). The distribution of human resources is inequitably distributed between urban and rural areas and between primary, secondary and tertiary levels of care (Bonfim et al 2016:4). Concerns about balancing the workforce within and between service institutions rank high in seeking how best to respond to challenges in human resources.

Table 5.4: Systems Model for review of workload of the health worker strategy to address shortages

Systems Model Input	Strategy	Processes to address the strategy		Outcome of the strategy
		Actions	**Methods**	
Human resources	**4. Review the workload of the health workers at the health facilities**	**4.1** Conduct WISN assessment in Zimbabwe and address shortages.	**4.1.1** Review the number of health workers based on the workload at each rural health facility.	The shortage of health workers is addressed in rural areas.
		4.2 Select and recruit health workers with skills needed for the day-to-day running of the health facilities, such as microscope technicians, and pharmacy technicians.	**4.2.1** Review the job profiles of the health workers at the health facilities and employ based on available human resources budget.	Improved health care service delivery according to the community needs.

The WISN has been described as a method that calculates the number of health workers based on health facility workload (Govule et al 2015:255; McQuide et al 2013:6; WHO 2007:16). It uses a form of activity analysis (activity standards), together with measures of utilisation and workload to determine staffing requirements (Table 5.4, Method 4.1.1). Therefore, it provides two indicators to assess staffing gaps/excess between the current and required number of health workers and the WISN ratio, which is a measure of workload pressure. It is a way of carrying out functional job analyses to identify the core skills required to deliver essential services and interventions (Table 5.4, Method 4.2.1). In a study conducted in Namibia by McQuide et al (2013:6) using the WISN, it was found that the entire country's health facilities had appropriate numbers of professional nurses. However, the nurses were very inequitably distributed between the different types of the health facilities with the total

professional nurse workforce in Namibia skewed towards hospitals. McQuide et al's (2013:6) findings in Namibia correlates with this study as some health facilities were manned by an average of 2 professional nurses (Section 3.15.1). This type of distribution may be due to lack of WISN being done in Zimbabwe by MoHCC. The health facilities in rural areas did not have adequate nurses in relation to the workload. Therefore, the WISN should be conducted in Zimbabwe as suggested by nominal group participants.

According to Govule et al (2015:254), allocating health workers to the health facilities with shortages after the WISN is conducted will help in efficient utilisation of financial resources. The other advantage includes no disruption in the life and work of health workers in the facilities with a staff surplus when the WISN is conducted. In many countries, however, there is little scope to hire new health workers because of stagnant or even diminished salary budgets and health worker establishments. In such settings, severe health worker shortages cannot be addressed promptly by allocating new staff without using the WISN.

Once the WISN is conducted, it may facilitate the employment of health workers with skills needed for the day-to-day running of the health facilities, like microscope or pharmacy technicians (Table 5.4, Action 4.2). This could reduce the workload of the professional nurses and lead to improved health care delivery systems.

The health worker shortages should be addressed together with health equipment required at the health facilities.

5.3.5 Provision of adequate and minimum required equipment in the health facilities

In addition to conducting the WISN, it is important to assess the availability of material resources like medical equipment at the health facilities. Health systems in both developed and developing countries are under pressure to improve service delivery to an ever-increasing population with limited or reducing material resources (Bonfim et al 2016:3). Equipment and medical supplies form an essential part of the rural health facility for improving accessibility to health care. Adequate and appropriate material resources can be made available (Table 5.5, Action 5.1) by budgeting for the acquisition of basic medical equipment and financial resource mobilisation (Table 5.5, Method 5.1.1). The availability of medical equipment

accessible to health workers contributes to high levels of health worker job satisfaction (Moran et al 2014:25).

Table 5.5: Systems Model for provision of medical equipment strategy

Systems Model Input	Strategy	Processes to address the strategy		Outcome of the strategy
		Actions	Methods	
Material resources	**5. Provide adequate and minimum required equipment in the health facilities**	5.1 Procure and deliver basic medical equipment to rural health facilities with shortages or without.	5.1.1 Budget for the acquisition of basic equipment and financial resource mobilisation from other stakeholders like donors, private companies.	Improved diagnosis and health care service delivery by health workers at the first point of access for health care users.
		5.2 Distribute medical equipment using the WHO minimum standard Equipment List to the rural health facilities in need.	5.2.1 Enforce the policy that supports distribution, management and maintenance of medical equipment at the rural health facilities.	
		5.3 Train health workers to maintain and manage the medical equipment at the rural health facilities.	5.3.1 Mobilise resources by identifying companies that can supply health equipment and provide training on maintenance to the health workers.	

The nominal group participants voted this strategy as priority 4 and some of the issues identified under this strategy were adequately equipping clinics and introducing points of care and HIV, tuberculosis and malaria testing. All 3 listed disease conditions require minimum equipment for testing before treatment. This could be achieved by enforcing the policy that

supports distribution, management and maintenance of medical equipment at the rural health facilities (Table 5.5, Method 5.2.1).

However, these strategies cannot be implemented unless laboratory services, an essential and important support service for the rural health facilities, are made available. The laboratory facilities were lacking in the majority of the health facilities as reported by 62 out of 87 (71.3%; *f*=62) professional nurse respondents and 335 out of 445 (75%; *f*=335) health care user respondents (Table 3.12). This would explain why some of the required laboratory investigations were not carried out and some results were delayed (Carter et al 2012:1). The findings were also consistent with the study in Nigeria conducted by Nnebue, Ebenebe and Nwabueze (2014:11), which found that poor quality of care was provided by the rural health facility due to limited availability of equipment coupled with poor knowledge of the use of available equipment by the health workers. Not only were laboratories unavailable but basic laboratory equipment to test for tuberculosis and malaria were also unavailable, as indicated by 220 out of 445 (49.5%; *f*=220) health care user respondents and 43 out of 90 (47.77%; *f*=43) professional nurse respondents (Section 3.16).

The availability of the entire minimum equipment package required at the rural health facilities (Table 5.5, Action 5.2) guarantees accessibility to health care and reduces challenges posed by transfers to higher referral levels (WHO 2010:13; Parsons et al 2012:2). Medical equipment maintenance can be made possible by training health workers working at the rural health facilities to manage and maintain the health equipment (Table 5.5, Action 5.3). To achieve this, resource mobilisation is needed, either in kind or in cash, and the government has to meet the health budget allocation of at least 15% of total annual budget as agreed during the Abuja Declaration of 2001 (UNICEF 2016:3). The national health directors also pointed out that the policy on recapitalisation of health facilities should be enforced. The expected outcome for this strategy is the improved diagnosis and health care service delivery by health workers at the first point of access for health care users in rural areas of Zimbabwe (Table 5.5, outcome of the 5th strategy). This could improve utilisation of health care services.

5.3.6 Free health care services for all

Not only do recapitalisation of health facilities enhance accessibility to health care, but elimination of health care user fees increases the utilisation of health care by people with financial challenges (Table 5.6, Action 6.1), especially in rural areas (Nyandoro et al 2016:30; UNICEF 2016:4). The national health directors (nominal group participants) had indicated that health care user fees restrict access to health care, particularly in the rural areas.

Table 5.6 : Systems Model for free health services for all strategy

Input	Strategy	Processes to address the strategy		Outcome of the strategy
		Actions	**Methods**	
Financial resources	**6. Free health care services for all**	6.1 Provide free health care services at the rural health facilities.	6.1.1 Put a clear exemption policy framework in place for the people in rural areas.	Improved affordability and utilisation of health care services in the rural areas.
		6.2 Provide performance-based grants to the district health manager for rural health facilities to reduce health care user fees paid by health care users at point of entry.	6.2.1 Establish cost effective financial systems like subsidies and performance-based grants that reduce the cost burden for the health care users.	Increased use of health care services by the health care users in the rural areas.

Due to the negative effect of health care user fees, the national health directors recommended to provide free health care for all by making it priority 5 (Table 4.4). The findings in Phase 1 of the study indicated that health care users cannot afford to pay health care user fees [79 out of 89 (88.76%; *f*=79) professional nurses and 339 out of 445 (76.17%; *f*=339) health care users] (Section 3.18). It is merely impossible to access health care when you cannot afford to

pay user fees [339 out of 445 (76.17%; *f*=339) health care user respondents)]. This finding was contrary to the studies on benefit incidence by the World Bank in Ghana which showed that rich people benefitted more than the poor when free health care services were made available (Dzakpasu, Soremekun, Manu, ten Asbroek, Tawiah, Hurt, Fenty, Owusu-Agyei, Hill, Campbell & Kirkwood 2012:7). The richest people could articulate their demand to health workers in Ghana. Because of this, the national health directors proposed a clear exemption policy framework for the people in rural areas to facilitate access to health care by those who cannot afford the health care user fees (Table 5.6, Method 6.1.1).

Establishing initiatives such as performance-based grants or subsidies offered to the district health managers who are responsible for health facilities contribute to a reduction of the formal or informal costs of accessing health care in rural areas when in need (Table 5.6, Action 6.2). The national health directors based this recommendation on experiences in other countries where introducing payment methods that reward performance-based financing proved an efficient way to increase health care service quality and utilisation (Table 5.6, Method 6.2.1), resulting in improved child health outcomes in some countries in Africa, for example, Cameroon, Rwanda and the Democratic Republic of Congo (Zang, Djienouassi, Sorgho & Taptue 2015:11). In the Democratic Republic of Congo, the performance-based mechanism led to increased efforts by professional nurses to attract more health care users for health care services that were part of the performance quota, without overcrowding non-targeted health care services (Huillery & Seban 2014:29).

Another important factor to consider is financial support systems when free health services are provided to everyone. If there are no adequate management systems in place, for example, sound and sustainable fiscal resource mechanisms, health care will be inaccessible to the population. The financial system should ensure that there are enough human and material resources available to cope with the demand for health services. This will prevent patients failing to be attended to by professional nurses and physicians. For instance, when free health care services were declared in Burundi, all public hospitals recorded double, sometimes triple, the number of patients (McPake et al 2013:4). The in-patient wards were overcrowded as the introduction of the free health care for all policy was affected due to the shortage of skilled health workers. The outcome of this strategy will be to improve

affordability and utilisation of health care services in the rural areas and could be achieved if there is improved health care system capacity.

5.3.7 Improve the capacity of the health care delivery and management systems – managerial resources input

Although free health care services for all may achieve the main objective of increasing utilisation of the health care services, it has negative implications on financial resources and quality of health care (McPake et al 2013:4). The nominal group participants agreed to prioritise improved capacity as the 5th strategy, tied with free health care services for all as the capacity of the health care delivery system influences accessibility. The nominal group recommended training health workers on leadership, financial and resource management in rural health facilities to strengthen the health care delivery and management systems in Zimbabwe (Table 5.7, Action 7.1). This may ensure proper management and co-ordination of Systems Model inputs namely physical, human, material and financial resources allocated to health facilities.

Table 5.7: Systems Model to improve the capacity of health care delivery and management systems

Input	Strategy	Processes to address the strategy		Outcome of the strategy
		Actions	Methods	
Managerial Resources	**7. Improve the capacity of the health care delivery and management systems**	7.1 Provide training on leadership, financial and resource management to health workers in rural health facilities.	7.1.1 Strengthen the harmonisation and co-ordination of Systems Model inputs (physical, human, financial, material and managerial resources) among all health programmes.	Resources are used effectively in the provision of health care services.

Input	Strategy	Processes to address the strategy		Outcome of the strategy
		Actions	Methods	
		7.2 Advertise vacant post and appoint competent managers in health care management posts.	7.2.1 Recruit and support the use of research evidence to translate knowledge into policy and practice.	Improved health care management systems by managers.

A study conducted in Ghana, Nepal, Sierra Leone, Zambia and Zimbabwe by McPake et al (2013:4) found that all these countries experienced problems with the availability of medical drugs after user fees were eliminated due to a lack of financial resources, leadership and management skills among the health workers. The lack of financial resource capacity to sustain all costs that were being covered by the health care user fees in Sierra Leone and the late distribution of medical drugs in Ghana due to a lack of logistics management capacity were the main contributing factors. This same study (McPake et al 2013:4) found no benefits in free health services for all without employing adequate health workers. Therefore, strengthening the harmonisation and co-ordination of Systems Model inputs (physical, human, financial, material and managerial resources) among all health programmes might address the problems of the quality of health care services (particularly shortages of medical drugs and health workers), workload for health workers, and availability of financial resources to cover the gaps.

The nominal group participants recommended to advertise vacant posts and appoint competent health managers who can develop infrastructure, manage available material, human and financial resources, which will contribute to the effective use of resources thus improving the capacity of the health care system to deliver. In order to achieve this, all vital health care management positions in the MoHCC should be filled (Table 5.7, Action 7.2) and the health managers would contribute to strengthening the harmonisation and co-ordination of Systems Model inputs among all health programmes (Table 5.7, Method 7.1.1).

Table 5.8: Completed draft Strategic Action Plan for validation in Phase 4

Systems Model input	Theme	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Lead Responsible
Physical resources	**1. Develop health infrastructure in the rural areas**	• To improve the distribution of the health facilities in rural areas of Zimbabwe.	1.1 Build health facilities within 5km of each village.	1.1.1 Prioritise the construction of health facilities in areas with poor distribution like resettlement areas. 1.1.2 Mobilise financial resources for the upgrading of the satellite health facilities.	Improved health facility coverage in rural areas of Zimbabwe. Health care users walk less than 5km to the health facility.	MoHCC Ministry of Finance MPs (Health Committee)
		• To improve the conditions of the existing health facilities' infrastructure.	1.2 Develop infrastructure by: • building roads • providing safe piped water • providing electricity • facilitating communication networks • renovating existing buildings.	1.2.1 Review the health facility infrastructural development needs and allocate the budget as per the needs and ensuring water, electricity and communication equipment is prioritised.	Improved accessibility to water, electricity and communication at the rural health facilities.	MoHCC Members of the Parliamentary Committee for Health.
				1.2.2 Enforce infrastructure	Improved health infrastructure	Ministry of Finance and

Systems Model input	Theme	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Lead Responsible
				development policy priorities to address health infrastructure backlogs and upgrading existing health facilities.	conditions at the health facilities.	economic development. Members of Parliament and PPCH.
Material Resources	**2. Provide appropriate medical drugs at the rural health facilities.**	• To ensure availability and accessibility to essential medical drugs at the health facilities for the health care users and health workers in the rural areas.	2.1. Establish partnerships with national and international medical drug producers and non-government organisations. • Facilitate a medical drug supply pipeline.	2.1.1 Share medical drug supply strategic action plans and/or joint planning with health partners like donors, non-governmental organisations and United Nations Agencies (UNICEF, WHO).	To ensure availability and accessibility to essential medical drugs at the health facilities for the health care users and health workers in the rural areas.	MoHCC. Permanent Secretary and Director of Pharmacy. Provincial and District Pharmacists.
			2.2 Build the capacity of professional nurses by: • Facilitating training to utilise ICT for the ordering and	2.2.1 Use ICT for ordering and monitoring medical drugs at the rural health facilities 2.2.2 Train professional	Improved accessibility and management of medical drugs at the rural health	Health Services Administrators.

Systems Model input	Theme	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Lead Responsible
			monitoring of medical drugs • Facilitating training in logistics management of medical drugs at the health facilities.	nurses in logistics management focusing on drug ordering and chain management.	facilities.	
			2.3 Provide payment to medical drug companies within deadlines.	2.3.1 Multi-year financial mobilisation for payment of medical drugs through development of proposals based on the country's health strategy.	Improved funding for the procurement of medical drugs.	

Systems Model input	Theme	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Lead Responsible
Human Resources	**3. Develop and retain human resources in the rural health facilities**	• To attract and retain health workers at the rural health facilities through promotion and payment of incentives.	3.1 Provide incentives such as: • Transport allowances • Off station allowances to attract health workers to work in rural health facilities.	3.1.1 Review the health worker incentives and gazetting the Statutory Instrument for additional rural health worker allowances.	Improved retention of competent and skilled health workers at the rural health facilities.	MoHCC Director of Manpower Planning and Development Director of Human Resources in the MoHCC.
			3.2 Promote career growth of health workers at rural facilities by: • Professional development of skills and competencies.	3.2.1 Put well-defined criteria in place for career advancement by low-level health workers.	Increased job satisfaction by health workers at the rural health facilities.	
		• To build the capacity of health workers through in-service and on job training in line with changing	3.3 Train health workers according to changing trends and health needs in the rural health facilities.	3.3.1 Reinforce and upscale in-service training of the health workers in rural areas to improve knowledge and health services delivered to	Increased motivation by heath workers to continue working at the rural health facilities.	

Systems Model input	Theme	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Lead Responsible
		health trends.		health care users particularly by professional nurses. 3.3.2 Target professional nurse recruits living in rural areas and who have done their training in the rural areas.	Retention of the health workers at the rural health facilities.	
Human Resources	**4. Review the workload of the health workers at the health facilities**	• To employ the right number of health workers based on workload at the health facility.	4.1 Conduct WISN assessment in Zimbabwe and address shortages.	4.1.1 Review the number of health workers based on the workload at each rural health facility.	The shortage of health workers is addressed in rural areas.	MoHCC. Ministry of Labour and Social Welfare. Parliamentary Committee for Health.
		• To ensure an appropriate skill mix at the health facility level including	4.2 Select and recruit health workers with skills needed for the day-to-day running of the health facilities such as microscopes technicians,	4.2.1 Review the job profiles of the health workers at the health facilities and employ based on available human	Improved health care service delivery according to the community	

Systems Model input	Theme	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Lead Responsible
		estimating workforce requirements for health workers.	pharmacy technicians.	resources budget.	needs.	
Material Resources	**5. Provide adequate material and minimum required medical equipment in the health facilities**	• To ensure the availability of adequate, appropriate and well-maintained medical equipment and accessories in accordance with standards at the rural health facilities.	5.1 Procure and deliver basic medical equipment to rural health facilities with shortages or without.	5.1.1 Budget for the acquisition of basic equipment and financial resource mobilisation from other stakeholders like donors, private companies.	Improved diagnosis and health care service delivery by health workers at the first point of access for health care users.	Members of Parliament (PPCH). MoHCC. Ministry of Finance.
			5.2 Distribute medical equipment using the WHO minimum standard Equipment List to the rural health facilities in need.	5.2.1 Enforce the policy that supports distribution, management and maintenance of medical equipment at the rural health facilities.		
			5.3 Train health workers to maintain and manage the medical equipment at the	5.3.1 Mobilise resources by identifying companies that can supply health		

Systems Model input	Theme	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Lead Responsible
			rural health facilities.	equipment and provide training on maintenance to the health workers.		
Financial Resources	**6. Free health care services for all.**	• To improve the affordability and utilisation of health care services in the rural areas.	6.1 Provide free health care services at the rural health facilities.	6.1.1 Putting a clear exemption policy framework in place for the people in rural areas.	Improved affordability and utilisation of health care services in the rural areas.	Policy makers (MPs). MoHCC. Ministry of Finance. Heads of Mission Hospitals.
			6.2 Provide performance-based grants to the district health manager for rural health facilities to reduce health care user fees paid by health care users at point of entry.	6.2.1 Establish cost effective financial system like subsidies and performance-based grants that reduce the cost burden for the health care users.	Increased use of health care services by the health care users in the rural areas.	
Managerial Resources	**7. Improve the capacity of the health care**	• To put in place policies, human	7.1 Provide training on leadership, financial and resource management to	7.1.1.1 Strengthen the harmonisation and co-ordination of Systems	Resources are used effectively in the provision	Policy makers (MPs).

Systems Model input	Theme	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Lead Responsible
	delivery and management systems	resources, financial resources that strengthen the health care delivery and management systems.	health workers in rural health facilities.	Model inputs (physical, human, financial, material and managerial resources) among all health programmes.	of health care services.	MoHCC. Ministry of Finance.
			7.2 Advertise vacant post and appoint competent managers in health care management posts.	7.2.1 Recruit and support the use of research evidence to translate knowledge into policy and practice.	Improved health care management systems by managers.	National health directors.

Information gaps are among the greatest barriers in developing the capacity of the health care system, hence the need to have health managers who are trained and knowledgeable (Birken et al 2012:40; Mihic, Obradovic, Todorovic & Petrovic 2012:10). The trained managers could recruit and support the use of research evidence to translate knowledge into policy and practice since they have the responsibility to enforce policies and implement strategic action plans (Table 5.7, Method 7.2.1).

After developing a draft strategy specific action plan, the researcher consolidated the draft plan with all strategies, processes to address the strategy, and outcome of the strategies using the Systems Model. The completed draft strategic action plan is shown in Table 5.8 and is presented in Phase 4 for validation by the members of parliament in Zimbabwe.

5.4 SUMMARY

To formulate the draft strategic action plan involved the categorisation of the strategies according to the Systems Model, processes needed to address the strategies, and developing outcomes for the strategies. The discussions in Chapter 5 contributed to the development of the strategic action plan that is presented in Chapter 6 which is the validation process (Phase 4).

CHAPTER 6: PHASE 4: THE VALIDATION PROCESS METHODOLOGY AND VALIDATION OF THE STRATEGIC ACTION PLAN

6.1 INTRODUCTION

As illustrated in Figure 6.1, Chapter 5 dealt with the development of the draft strategic action plan while this chapter will focus on Phase 4 of the study. The chapter consists of a discussion on the validation process after the presentation of the draft strategic action plan. The first part presents the draft strategic action plan, while the second part offers the validation process and methodology used. The validated strategic action plan will also be introduced in this chapter (Figure 6.8).

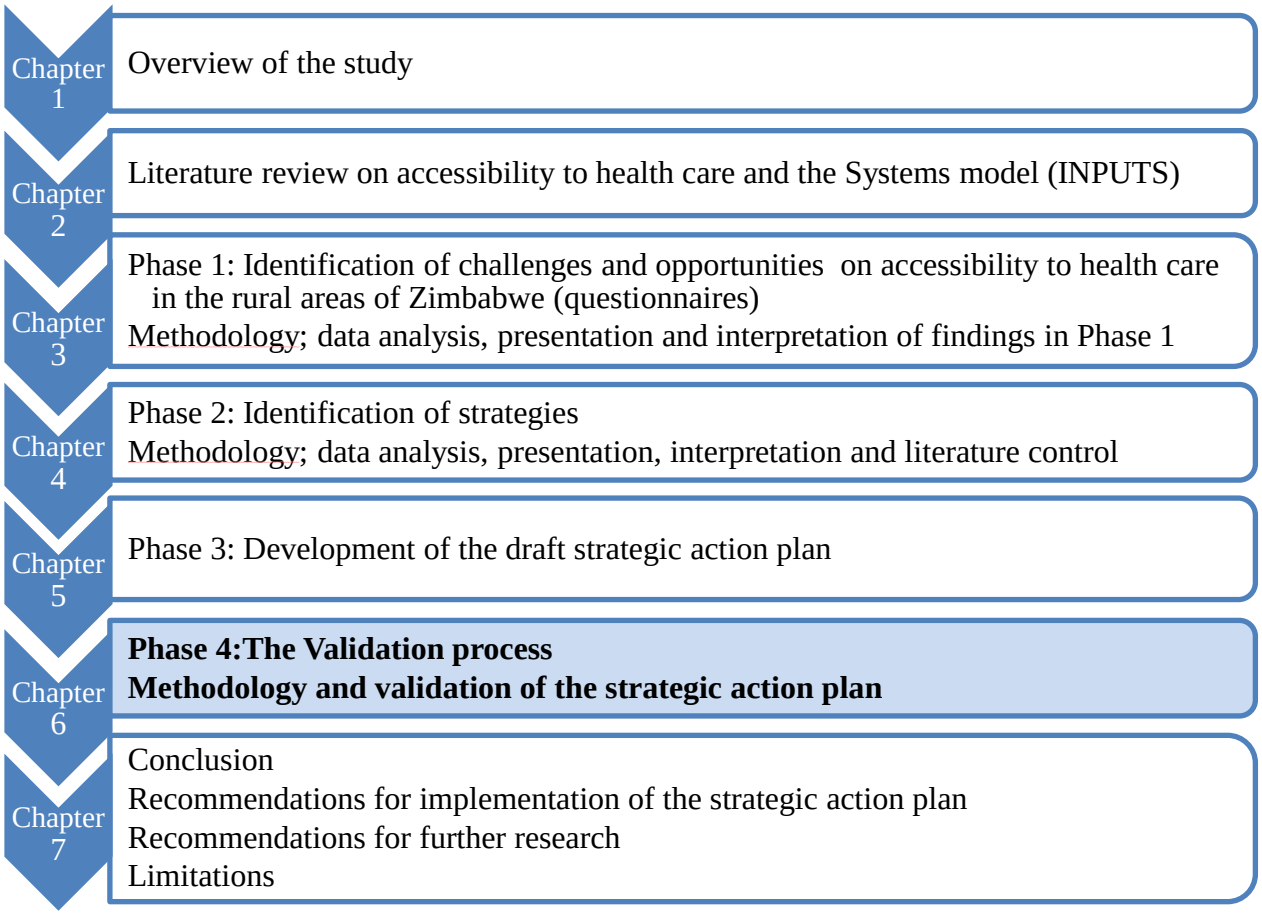

Figure 6. 1: Diagrammatic presentation of the thesis progress

6.2 POPULATION AND UNIT OF ANALYSIS

The population in Phase 4 were the MPs in Zimbabwe. There are 270 National Assembly seats in Zimbabwe, 210 for constituency MPs and 60 for women MPs elected by a party-list system of proportional representation, and 6 for each of the ten provinces based on the number of votes each participating political party got in the constituency elections in each province. The parliament of Zimbabwe set committees based on government portfolios for monitoring the operations of government ministries and departments, checks and balances, as well as initiating policies. Most of the work of parliament is carried out and generated by portfolio committees. The national assembly has 19 parliamentary portfolio committees of which the PPCH is one which is fully operational. Each parliamentary portfolio committee is headed by a committee leader who is responsible for coordinating the members and each parliamentary portfolio committee function is regulated by the chairperson (Clerk of Zimbabwe Parliament). The term 'gatekeeper' will refer to the chairperson (clerk of parliament) throughout this chapter. The target population for the validation of the strategic action plan were the members of the PPCH. All-inclusive sampling was done as all 5 members of the PPCH were invited and volunteered to participate.

6.3 DATA COLLECTION PROCESS (validation process)

The gatekeeper on behalf of the Speaker of Parliament invited all 5 members of the PPCH for the validation session and gave each invited participant the information letter. The term 'participant' throughout Chapter 6 (Phase 4 of the study) refers to members of the PPCH. The gatekeeper agreed with the researcher on the date, time and venue of the meeting, 2 months before the intended validation session. The initial date for the validation session was 2 August 2016. Ten days before the validation session date, the gatekeeper realised that the date was clashing with MPs' fiscal planning meetings in constituents. The researcher was advised to postpone the validation session to 17 August 2016. The date, time and venue were followed up several times by email and telephone to ensure the availability of the 5 members and to confirm the data collection session. On 17 August 2016, all 5 invited participants attended the validation session.

6.3.1 The venue

The gatekeeper arranged the PPCH's meeting room in the Zimbabwe parliament building (5th floor, Room 16) as the venue of preference. The gatekeeper agreed with the use of the venue due to its convenience for the participants as they had a parliamentary session the afternoon after the validation session. The room had enough space to accommodate more than 6 people, was well lit and the temperature was comfortable. The researcher ensured that every seating place had a pen, a copy of the draft strategic action plan, the instrument for validation (refer to Annexure Q), scrap paper, and bottled water. A flipchart and markers were available in the room.

The seating arrangement was in a U-shape pattern to ensure that all the participants could see the flip chart, one another, and the researcher, and that there was enough space for free movement among participants.

6.4 THE VALIDATION PROCESS

After all the participants were seated, the researcher requested each participant to introduce themselves. Thereafter, the researcher gave the consent forms (refer to Annexure R) to the participants to fill in since the information leaflets (Annexure O) were given to the members of parliament 2 months in advance during the scheduling of the validation session. The researcher explained the stages of the validation process and made sure that all participants understood the importance of their participation in the validation of the strategic action plan. The purpose, procedure and steps involved were explained. The researcher followed the steps listed:

- **Step 1:** The developed draft strategic action plan was presented and the participants were orientated on how it was developed.
- **Step 2**: Participants reviewed the draft strategic action plan and added comments on the validation instrument (refer to Annexure Q).
- **Step 3**: Participants had a discussion to reach consensus on the items to be included/excluded in the strategic action plan. All comments were discussed to ensure that every participant had an equal voice and that the comments were incorporated.

- **Step 4.** The researcher took all comments and agreed on strategies to finalise the second draft strategic action plan.
- **Step 5**: The amended strategic action plan was then again validated during a virtual meeting (electronic) to ensure that all participants were satisfied and had consensus on the final strategic action plan.

The validation process (steps 1 to 3) was conducted over 2 hours.

6.4.1 Step 1: Presentation of the developed draft strategic action plan and orientation of the participants on how it was developed

The researcher presented a summary of the process which was followed during the identification of the strategies by the national health directors. The researcher explained that the data obtained (identified strategies) from the nominal group (national health directors) during Phase 2, as well as a literature control of the strategies, was combined to develop the draft strategic action plan using results from Phase 1 of the study. The purpose of the presentation was to enlighten the participants about the process followed during the development of the draft strategic action plan using the Systems Model. After the presentation, each participant was provided with a printed copy of the draft strategic action plan and the validation form (Annexure Q).

6.4.2 Step 2: Review of the draft strategic action plan by the participants to add comments on the validation instrument

The validation group reviewed each strategy following the order as indicated on their validation instrument (refer to Annexure Q) (draft strategic action plan), including assessing the importance of the strategy. Every strategy in the draft strategic action plan provided space for the participants to write comments, ideas or amend the draft strategic action plan and indicate the importance of each strategy using a score of essential (E), feasible (F), not feasible (NF), and not necessary (NN) (Table 6.1). The participants were requested to silently go through the draft strategic action plan and individually write comments in the spaces between each strategy and assess its importance. Twenty minutes were allowed for this process and the participants completed the task within the timeframe provided.

6.4.3 Step 3: Discussion of the draft strategic action plan to reach consensus on items to be included or excluded

After 20 minutes of individual review each participant had 10 minutes to present his/her comments and suggestions on each of the strategies and accompanied actions as outlined in the Systems Model. The researcher was writing suggested amendments, comments and individual assessments of the importance of the strategy on the flipchart where everyone could see it. After a round-robin presentation by each individual participant, the researcher then facilitated the discussion on amendments and items to be included or excluded in the draft strategic action plan as illustrated in Tables 6.1 - 6.5. Each strategy with the accompanied actions was discussed while the researcher was capturing the agreed amendments and deleting the excluded items through consensus. The researcher captured actions to be incorporated in the draft strategic action plan which were agreed on through consensus. Each strategy was discussed as follows:

6.4.3.1 Strategy 1: Develop health infrastructure in the rural areas (Physical resources input as per Systems Model)

The draft strategic action plan for strategy 1 as illustrated in Table 6.1, indicates the reviewed content in black ink. The amendments that were suggested after the discussion are in blue ink. The struck through content were rejected by the validation participants. The importance was indicated in the scale provided (E, F, NF and NN) as reflected in Table 6.1. Discussions followed the assessment of importance by each individual participant.

Table 6.1: Amended draft strategic action plan for 1st Strategy

Systems Model Input	Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	E	F	N F	N N	Comments
Physical Resources	**1. Develop Health Infrastructure in the rural areas**	• To improve the distribution and the conditions of the health facilities in rural areas of Zimbabwe.	1.1 Upgrade satellite health facilities to become permanent health facilities and • maintain current health facilities.	1.1.1 ~~Prioritising construction of health facilities in areas with poor distribution like resettlement areas~~ Renovating satellite health facilities, upgrading the building plans to the standard health facility conditions in areas with poor distribution like resettlement areas.	Improved health facility coverage in rural areas of Zimbabwe.	The Health Committee in collaboration with MoHCC	**5**				Goal 1 was incorporated into the draft strategic action plan with the amended actions through consensus by all participants
				1.1.2 Renovating the buildings, water supply and	Health care users walk less than 5km to the	The Health Committee in collaboration					

Systems Model Input	Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	E	F	N F	N N	Comments
				electricity of the existing health facilities.	health facility.	with Ministry of Finance.					
			1.2 Build health facilities within 5km of each village.	1.2.1 Mobilisation of financial resources for the construction of health facilities from corporate companies and global health funds.							
				1.2.2 Enforcement of infrastructure development policy priorities to address health infrastructure backlogs ~~and upgrading existing health facilities.~~							

Systems Model Input	Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	E	F	N F	N N	Comments
				1.2.3 Use of the tax from the natural resource-exploiting companies like mining and national parks to fund construction of health facilities in the disadvantaged areas.	Increased physical accessibility to health facilities in rural areas.	MPs (Health Committee).					
				1.2.4 Present a motion in parliament for the introduction of a 5% levy on mining and hunting activities for funding health facilities	Improved financial resources for health care.	PPCH (Members of Parliament).					

Systems Model Input	Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	E	F	N F	N N	Comments
				construction.							
		• To improve the necessary infrastructure like water, electricity and communication at the existing health facilities.	1.3 Develop infrastructure by: • building roads • providing safe piped water • providing electricity • facilitating communication networks • renovating existing buildings.	1.3.1 ~~Reviewing the health facility infrastructural development needs and allocating the budget as per the needs and ensuring water; electricity and communication equipment is prioritised.~~ Facilitating improvements of the roads to health facilities; Electrification of the rural health	~~Improved accessibility to water, electricity and communication network and equipment at the existing health facilities. .~~ Improved road access to health facilities, electricity supply, water supply and communication at the health facilities in the rural areas.	PPCH in collaboration with the MoHCC.		**3**	**2**		Three out of 5 PPCH participants regarded goal 1.2 as important and *feasible* while 2 regarded it as not feasible hence not important. Overall, the participants agreed to include this goal with its amendment

Systems Model Input	Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	E	F	N F	N N	Comments
				facilities; Installation of piped water systems (boreholes connected to electric pumping systems).	Improved health infrastructure conditions at the health facilities.						in the draft strategic action plan.
				1.3.2 Internal mobilisation of financial resources through introduction of 5% levy to the companies exploiting natural resources (mining, timber, national parks) for the purposes of							

Systems Model Input	Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	E	F	N F	N N	Comments
				funding health infrastructure development plans.							
			1.4 Physical assessment/inspection of the health facilities in the rural areas by the Parliamentary Committee for health.	1.4.1 Visiting the health facilities in remote areas of Zimbabwe and meeting with health committees at the health facilities in each province and taking note of the conditions of the buildings and giving feedback in parliament on the state of the health in rural areas.	Improved motivation of health workers to work at the rural health facilities.	Members of the Parliamentary Committee for Health.					

The participants suggested that the walking distance should be reduced to less than 5km as described in the literature (World Bank 2015:15). Therefore, the participants recommended to upgrade the existing satellite health facilities (Table 6.1, Action 1.1) and build new health facilities within 5km of each village (action 1.2). It was voiced by the participants that people who were resettled during the land reform process were the most affected, therefore should be the first to benefit from the construction of the health facilities. All participants agreed that the new settlement areas created as a result of land reform have inadequate health facility coverage. The participants suggested that they will move a motion in parliament for a parliamentary debate by all the MPs to review the old statutory regulations on health in order to deal with discrepancies in new health facility distribution in rural areas and, as such, they added the issue to the strategic action plan (Table 6.1).

The participants were of the opinion that the roads network, the health facility structures, and social amenities that includes piped water supply, electricity and health worker accommodation at the rural health facilities were not in good condition, a view supported by Oguzor (2011:28). The participants recommended to develop infrastructure by building roads, providing safe piped water, providing electricity, facilitating communication networks and renovating existing buildings as indicated in Table 6.1 action 1.3.

It was interesting to note that the participants as members of parliament added an action under the goal "To improve the conditions of the existing health facilities' infrastructure", where they agreed that in their routine duties as PPCH members, they will add an activity for assessing the conditions of the rural health facilities (Table 6.1, Action 1.4). This will be done through visiting the rural health facilities using the constituent development funds given by the parliament of Zimbabwe for the purposes of reporting to the full parliament and enforcing the strategic action plan. After the presentation of the findings, participants will move a motion for a debate with the Parliamentary Committee on Finance for consideration in the funding of infrastructure development.

The participants agreed to include strategy 1 in the draft strategic action plan after the amendments as indicated in Table 6.1, since goal 1.1 of strategy 1 was regarded as ***essential*** after all participants agreed that there is inequity in the health facility coverage in rural areas of Zimbabwe as some health care users walk more than 5km to the nearest health facility. In

this case health facilities are essential to accessibility to health care (UNICEF 2016:2). Goal 1.2 (Table 6.1) was regarded as ***feasible*** by 3 out of 5 participants while 2 indicated ***not feasible***, due to challenges of the economic situation in Zimbabwe causing deterioration of resources and it would be difficult to mobilise financial resources to improve all the health facilities. This is also supported by literature which indicates that the gross domestic product (GDP) in Zimbabwe is being eroded (World Bank 2016:3). The 2 participants reflected that the fiscal space was constrained because of the poor performance of domestic revenues, increases in public expenditures, depressed exports, limited foreign direct investment, and other capital inflows into the country (World Bank 2016:21). Despite all the concerns of some participants, strategy 1 was retained and incorporated in the draft strategic action plan through consensus.

6.4.2.2 Strategy 2: Provision of medical drugs at the rural health facilities (Material Resources – Systems Model input)

During the discussions, the participants acknowledged that the MoHCC budget is always less than the 15% of total annual fiscal budget for Zimbabwe. The participants felt that due to a lack of funding the pharmacy department in the Ministry of Health is affected. The MoHCC should establish partnerships with national and international medical drug producers and non-government organisations, and facilitate a medical drug supply pipeline (Table 6.2 action 2.1). This will facilitate availability and accessibility of medical drugs at the rural health facilities (Table 6.2). In order to achieve this, medical drug supply strategic action plans and/or joint planning should be shared with other health partners like donors, non-governmental organisations, and United Nations Agencies (UNICEF, WHO) (Table 6.2, Method 2.1.1).

The budget that goes to the pharmacy department is not enough to cover the demand for medical drugs' procurement and adequate distribution among all the health facilities in Zimbabwe. The participants recommended internal mobilisation of financial resources within Zimbabwe through levying companies as a way of outsourcing funds that will be directly used by the pharmacy department for procurement of medical drugs (Table 6.2, Action 2.2). The participants proposed to put the introduction of a 5% levy for all the companies exploiting natural resources (companies involved in using the resources to derive benefits

from mining, forestry, fishing and hunting) in motion during one of the parliamentary debates. Within the health levy of 5% for the local and international companies who are exploiting natural resources, part of it will be budgeted for procurement of medical drugs. The action point depends on the parliamentary debate approval to charge the 5% levy to parastatals and companies exploiting natural resources. The participants agreed that they will work with the MoHCC on the budget details of the proposed levy and how it will be distributed between the health departments. The participants and the MoHCC will hold caucus meetings on the budgeting of the levy through the Permanent Secretary for Health, and the Minister of Health and Child Care.

The recommendations for change by the participants was based on the acknowledgement of the critical shortage of medical drugs in the rural health facilities, including general hospitals in Zimbabwe (Kevany et al 2012:47) (refer to Table 6.2). The opinions of the participants confirmed the findings from Phase 1 were the professional nurses were ordering medical drugs, but were supplied with less than they ordered due to shortages; the demand exceeded the supply due to shortages [48 out of 86 (55.81%; *f*=48)] (refer to Figure 3.7). The participants also added an action point for the retention of the health care user fees from all rural health facilities at the district hospital in each district. This will allow the district health executive team to plan for medical drug procurement at the district level in order to address their medical supply needs and the shortages.

There was acknowledgement from the participants that the shortage of medical drugs at the rural health facilities might be due to a lack of skills by the health workers since there is high shortage of pharmacists and pharmacy technicians. Literature also indicated a critical shortage of pharmacists and pharmacy technicians at the district and provincial hospitals (Loewenson et al 2014:47). Due to the shortage of pharmacists and pharmacy technicians, the participants agreed to add a second goal to this strategy *"good management of medical drugs at the health facility level through timely ordering of the right quantities and type of medical drugs consumed at the rural health facilities"* (refer to Table 6.2, Goal 2). This should be achieved through building the professional nurses' capacity by facilitating training on the use of ICT for the ordering and monitoring of medical drugs and training in logistics management of medical drugs at the health facilities (Table 6.2, Action 2.5). Participants added professional nurses' training in logistics management focusing on drug ordering and chain

management, however, it seems as if the problem does not lie with the ordering of the drugs but supplying the correct amount ordered (48 out of 86 (55.81%; *f*=48) professional nurses) (Figure 3.7).

The participants proposed to add a logistics management module in the training curriculum for the professional nurses, especially medical drug ordering and the supply chain. They also recommended supervisory and support visits by the available pharmacists and technicians on a quarterly basis (Table 6.2, Method 2.5.1). The participants stated that if computers are made available at the rural health centres, it will assist the health workers to easily manage the medical drug supply through computing all relevant information into the computers for easy reference during monitoring (Table 6.2, Method 2.5.1). The availability of computers and training will enable the professional nurses to follow up on orders with suppliers to ensure they are supplied with all the medical drugs ordered.

There was general consensus among the participants that medical drug provision at the rural health facilities is ***essential*** (Goal 2.1 on availability and accessibility of medical drugs) and ***feasible*** (Goal 2.2 on management of medical drugs) as medical drugs are important in averting disease burden, preventing and controlling morbidity and mortalities, hence all participants agreed to include the strategy in the draft strategic action plan. According to UNICEF (2016:1), the Zimbabwe MoHCCs' priority budget was to procure essential medical drugs and equipment for health facilities at different levels of health care, including recapitalisation of NATPHARM for improvement in medical supplies' procurement and distribution.

The participants agreed to keep it in the strategic action plan as it is feasible to implement. Financial resources as per the opinion of participants can be raised by engaging corporate companies and enterprises benefiting from the natural resources, engaging the global funds, United Nations Agencies, and internally through fiscal annual budgets. This is possible since the MoHCC normally receive additional funding from development partners and statutory funds which habitually exceed the total national treasury allocation towards health, as was the case in 2016 (UNICEF 2016:5).

Table 6.2: Amended strategic action plan for 2nd Strategy

Systems Model Input	Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Lead Responsible	E	F	NF	NN	Comments
Material Resources	**2. Provide medical drugs at the rural health facilities**	• To ensure availability and accessibility to essential medical drugs at the health facilities for the health care users and health workers in the rural areas.	**2.1** Establish partnerships with national and international medical drug producers and non-government organisations; • Facilitate a medical drug supply pipeline.	**2.1.1** Share medical drug supply strategic action plans and/or joint planning with health partners like donors, non-governmental organisations and United Nations Agencies (UNICEF, WHO).	To ensure availability and accessibility to essential medical drugs at the health facilities for the health care users and health workers in the rural areas.	MoHCC. Permanent Secretary and Director of Pharmacy – Caucus meeting with PPCH participants.	**5**				There was general consensus among the participants that Goal 2.1 is ***essential*** therefore important. As a result of the consensus on the assessment of its importance

Systems Model Input	Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Lead Responsible	E	F	NF	NN	Comments
			2.2 Establish health levies and local tax for the procurement of medical drugs.	**2.2.1** Put a sustainable funding system in place to procure medical drugs such as levying companies benefiting from natural resources in Zimbabwe.	Improved accessibility to essential medical drugs by the health care users in the rural areas.	Ministry of Finance with PPCH through caucus meetings.					this strategy was incorporated in the draft Strategic action plan.
			2.3 Decentralise use of health care user fees to district health teams.	**2.3.1** Retain user fees by district health executives for the districts to manage payment of the medical drugs.	Improved availability of medical drugs in rural health facilities.	PPCH participants introduce the motion in parliament.					
			2.4 Provide payment	**2.4.1** Multi-year	Improved	PPCH					

Systems Model Input	Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Lead Responsible	E	F	NF	NN	Comments
			to medical drug companies within deadlines.	financial mobilisation for payment of medical drugs through development of proposals based on the country's health strategy. **2.4.2** Put funding mechanisms in place, like performance-based health facility grants that ensure sustainable supply of	funding for the procurement of medical drugs.	participants – caucus meeting with Minister of Health and Permanent Secretary for Health and national Pharmacy Director.					

Systems Model Input	Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Lead Responsible	E	F	NF	NN	Comments
				essential medical drugs to the health facilities.							
		• To ensure good management of medical drugs at the health facility level through timely ordering of the right quantities and type of medical drugs consumed at the rural	**2.5** Build the capacity of professional nurses by: • Facilitating training to utilise ICT for the ordering and monitoring of medical drugs • Facilitating training in logistics management of medical drugs at the health facilities.	**2.5.1** Train professional nurses in logistics management focusing on drug ordering and chain management. **2.5.2** Use ICT for ordering and monitoring medical drugs at the rural health facilities.	Improved and efficient medical drug supply management system. Improved accessibility and management of medical drugs at the rural health facilities.	PPCH will inform the MoHCC directors Provincial Pharmacist District Pharmacist and Pharmacy Technicians.		**5**			All 5 participants indicated ***feasible*** for Goal 2,2 and its amended actions, methods and outcome hence important and all participants agreed to include it in the draft

Systems Model Input	Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Lead Responsible	E	F	NF	NN	Comments
		health facilities.	**2.6** Conduct quarterly supervisory visits at the rural health facilities for monitoring management of medical drugs where there are problems.	**2.6.1** Plan medical drugs monitoring visits to the rural health facilities and/or putting in place information management systems for monitoring medical drugs.	Supported supervisory visits by specialists at quarterly (3 months) intervals.						strategic action plan.

6.4.2.3 Strategy 3: Development and retention of human resources (health workers) in the rural health facilities

According to the participants, the MoHCC should improve human resource management of the rural health facilities, in particular the retention strategies. The attraction and retention of the health workers at the rural health facilities should be done through promotions and paying incentives (Table 6.3; first goal). The action put forward by the participants was to provide incentives such as rural transport, hardship allowances, and off station assignment allowances to attract health workers to the rural health facilities (Table 6.3, Action 3.1). Providing motivational incentives to the health workers working in the rural health facilities can be done through the introduction of the health worker retention scheme (HWRS), which should be owned and funded by government and not be dependent on donors (Table 3, Method 3.1.1). The HWRS should be properly managed as poor management of motivational efforts for rural health workers can prompt resignations (Dieleman et al 2012:13; Chirwa et al 2014:18).

The participants recommended that the MoHCC should promote health workers at rural health facilities' career growth by developing their professional skills and competency to retain experienced health workers employed at the rural health facilities (Table 6.3, Action 3.2). The career growth has to be reinforced by training health workers in rural areas according to changing trends and health needs in rural areas (Table 6.3, Action 3.3), and should target professional nurse recruits living in rural areas who have done their education in the rural areas (Table 6.3, Action 3.4). According to the participants, Action 3.2 in Table 6.3 can be achieved by putting well-defined criteria in place for career growth by low-level health workers, while action 3.3 could be achieved by establishing a system of continuous in-service training, to strengthen and formalise the in-service training of the health workers. The government should expand the conversion training programmes to district hospitals to upgrade the SCN and primary care nurses to the level of registered general nurses. This can be achieved by allocating financial resources to meet the costs related to the training, which will be part of the 5% health levy to be initiated by the participants (Table 6.3, Method 3.3.2). Therefore, establishing a system upgrade for primary care nurses should be prioritised during annual fiscal budgeting and the manpower development budget within the Ministry of Higher Education and Technology.

According to the discussion with the participants, the government of Zimbabwe should produce university graduates (nurses) with significantly higher levels of preparation in evidence-based practice and research skills, who can match the changing educational context (Table 6.3, Method 3.3.3). Professional nurses should be educated at levels similar to the general educational pattern of the society which they serve. The participants recommended a review of professional nurses' entry level to first university degree to support the efforts of upgrading and improving professional nurses' skills and competencies.

Health workers in Zimbabwe are trained at MoHCC schools, technical colleges, and universities (Zimbabwe Health Workforce Observatory 2014:18). The involvement of more than one ministry in the training of health workers needs good co-ordination and integration between the Ministry of Higher Education and Technology and MoHCC. During the discussion, the participants stressed the importance of establishing a symbiotic correlation in curricula development that includes organisation of health workers, planning and authorisation of health programmes, and graduation of students. Based on these discussions, the participants amended this strategy as indicated in Table 6.3.

During discussion on the assessment of the importance of the human resource development and retention strategy, all 5 participants indicated ***essential*** on their validation instrument for this strategy. The participants were of the opinion that since the government is training many professional nurses who are unemployed, they can easily be employed to serve in rural health facilities provided the frozen posts are opened as indicated by the World Bank (2016:21).

Table 6.3: Amended draft strategic action plan for the 3rd Strategy

Systems Model Input	Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Lead Responsible	E	F	N F	N N	Comments
Human Resources	**3. Develop and retain human resources in the rural health facilities**	• To attract and retain health workers at the rural health facilities through promotion and payment of incentives.	**3.1** Provide incentives such as: • Transport allowances • Hardship allowances • Off station allowances to attract health workers to work in rural health facilities	**3.1.1** Review the health worker incentives and gazetting the statutory instrument for additional rural health worker allowances. **3.1.2** Provide motivational incentives to the health workers working in the rural health facilities to attract and retain them.	Retain competent and skilled health workers at the rural health facilities.	MoHCC. Director of Manpower Planning and Development. Director of Human Resources in the MoHCC. Members of Parliament (Parliamentary Committee for Health) will inform MoHCC.	**5**				All the PPCH participants reached a consensus that human resource is an essential component for accessibility to health care and was included in the draft strategic action plan.
			3.2 Promote career	**3.2.1** Put well-	Increased job						

Systems Model Input	Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Lead Responsible	E	F	NF	NN	Comments
			growth of health workers at rural health facilities by: • Professional development of skills and competencies	defined criteria in place for career advancement by low-level health workers.	satisfaction for health workers at the rural health facilities.						
		• To build the capacity of health workers through in-service and on job mentoring in line with	**3.3** Train health workers according to changing trends and health needs in the rural health facilities.	**3.3.1** Reinforce and upscale in-service training of the health workers in rural areas to improve knowledge and health services delivered to health care users, particularly by professional	Increased motivation by heath workers to continue working at the rural health facilities.	Members of Parliament (Parliamentary Committee for Health), - caucus meetings and planning with MoHCC, Ministry of Higher Education and Technology.					

Systems Model Input	Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Lead Responsible	E	F	N F	N N	Comments
		changing health trends.		nurses. **3.3.2** Annual planning, budgeting and implementation of in-service training programmes for the health workers working in rural areas. **3.3.3** Train university graduates (nurses) with significantly higher levels of preparation in							

Systems Model Input	Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Lead Responsible	E	F	N F	N N	Comments
				evidence-based practice and research skills and able to match the changing educational context.							
			3.4 Train health workers living in rural areas and employ them in the rural areas after completing the nursing training.	**3.4.1** ~~Targeting professional nurse recruits living in rural areas and who have done their training in the rural areas.~~ Recruit trainee professional nurses from rural	Improved retention of health workers in the rural health facilities.						

Systems Model Input	Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Lead Responsible	E	F	NF	NN	Comments
				areas who will be employed at the rural health facilities.							

The challenges related to equitable distribution of professional nurses and the negative impacts on accessibility constraints by health care users were discussed and there was consensus that employing professional nurses to cover the gaps was essential and feasible as many professional nurse graduates are underutilised. The MoHCC have the capacity to use funding from development partners to cover the human resource gaps, for example, in 2016 the development partners donated $400 million dollars which was more than the direct budget allocation from the fiscal annual budget (UNICEF 2016:5). During the discussion on the assessment of important issues, the high wage bill of Zimbabwe MoHCC's annual budget for the health workers which exceeds all other health expenditures, was mentioned. This was reported on in literature by UNICEF (2016:5) who indicated that 60.5% of government health funding is allocated to wages. The recommendation after consensus by the participants was to incorporate the human resource development and retention strategy in the draft strategic action plan.

6.4.2.4 Strategy 4: Review the workload of the health workers at the health facilities

During discussion with the participants (Phase 4 research participants), it was clear that deploying professional nurses to rural health facilities was not based on the workload, as some participants noted understaffing in some of the rural health facilities during the validation process. The participants recommended that government employ the right number of health workers based on workload at the health facility (Table 6.4; first goal), and this should be achieved through conducting a WISN assessment in Zimbabwe to review health worker gaps (Table 6.4, Action 4.1). The WISN assessment process will facilitate a review of health worker gaps in the rural health facilities and the findings would then be used to address the health worker shortages and unequal distribution of health workers in the rural areas. The participants acknowledged that government had frozen the recruitment of health workers due to constrains on financial resources, therefore, if the WISN assessment is carried out, it will assist in making informed decisions based on evidence from the field to unfreeze all the existing health worker vacancies (Table 6.4, Action 4.2).

The participants recommended employing an appropriate skill mix at the health facility level, including estimating workforce requirements for health workers (Table 6.4, Action 4.3). According to the participants, this will ensure the selection and employment of health

workers with skills needed for the day-to-day running of the health facilities like microscope and pharmacy technicians (Table 6.4, Action 4.4), and should be achieved through training available health workers on the right skills needed to run the health facility, for instance, medical drug management. Additionally, the job profiles of the health workers at the health facilities should be reviewed, and staff should be employed based on the available human resource budget.

The participants reached a consensus to retain the review of the workload of the health workers to address shortages in the draft strategic action plan. The review of the workload was ranked ***essential*** and ***feasible***, and the participants indicated their willingness to be part of the review team. The strategy was included in the draft strategic action plan.

Table 6.4: Amended strategic action plan for 4th Strategy

Systems Model Input	Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	E	F	NF	NN	Comments
Human Resources	**4. Review the workload of the health workers at the health facilities.**	• To employ the right number of health workers based on workload at the health facility.	**4.1** Conduct WISN assessment in Zimbabwe and address shortages.	**4.1.1** Review the number of health workers based on the workload at each rural health facility.	The shortage of health workers is addressed in rural areas.	PPCH (MPs) will inform concerned ministries through caucus meetings. MoHCC. Ministry of Labour and Social Welfare. Ministry of Finance and Economic Develop-	**5**				All the PPCH agreed that it is essential and feasible to conduct a review of the workload of the health workers in order to address shortages and overstaffing at some health facilities. The review of the workload was ranked feasible and
			4.2 Unfreeze all vacancies for health workers in the rural health facilities and • employ professional nurses graduating from nursing	**4.2.1** Employ trained professional nurses to fill in the vacancies.							

Systems Model Input	Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	E	F	NF	NN	Comments
			training institutions.			ment.					the parliamentary committee for health indicated willingness to be part of the review team. The strategy was included in the draft strategic action plan.
		• To ensure an appropriate skill mix at the health facility level including estimating workforce require-ments for health workers.	**4.3** Select and recruit health workers with skills needed for the day-to-day running of the health facilities such as microscope and pharmacy technicians.	**4.3.1** Review the job profiles of the health workers at the health facilities and employing based on available human resources budget.	Improved health care service delivery according to the community needs.						
			4.4 Train available health workers on the	**4.4.1** Review the health workers	Improved health care						

Systems Model Input	Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	E	F	NF	NN	Comments
			skills and competencies needed to run the health facility for example medical drug management	training curriculum in line with expected roles and responsibilities for running the rural health facility.	service delivery according to the community needs.						

6.4.2.5 Strategy 5: Provision of adequate material resources at the rural health facilities (minimum required medical equipment)

The participants acknowledged that material resources like medical equipment plays an important role in accessibility to health care, however there is a critical shortage of medical equipment at the rural health facilities. The participants suggested that the MoHCC should procure and deliver basic medical equipment to rural health facilities with shortages or without equipment (Table 6.5, Action 5.1) by budgeting for the acquisition of basic equipment and financial resource mobilisation from other stakeholders like donors and private companies (Table 6.5, Method 5.1.1). Important equipment, for example, laboratory equipment, should be established as it is vital for initiating the right diagnosis. The availability of adequate, appropriate and well-maintained medical equipment and accessories in accordance with standards at the rural health facilities could enhance accessibility to health care when needed. Participants recommended distribution of medical equipment using the WHO minimum standard Equipment List to the rural health facilities in need (Table 6.5, Action 5.2). The MoHCC should implement a policy that supports distribution, management and maintenance of medical equipment at the rural health facilities. During the discussion of the draft strategic action plan for strategy 5, the participants proposed a review of the standard Equipment List for the rural health facility – which facilitates understanding of the equipment needs – and distribute the equipment based on the WHO standard Equipment List (WHO & World Bank 2015:32).

The participants reached a consensus on the actions and methods that were developed by the researcher and included an action for the MoHCC. The participants assessed the strategy to provide adequate material resources to the rural health facilities (minimum required medical equipment) as ***important*** by indicating it as essential for enhancing accessibility. It is also critical for facilitating health workers to meet the current demand in the use of equipment for improved diagnosis. The participants recommended training health workers on managing and maintaining the medical equipment at the rural health facilities (Table 6.5, Action 5.3). Resources for the training can be mobilised by identifying companies that can supply health equipment and provide training on maintenance to the health workers.

This will lead to improved maintenance of the medical equipment at the rural health facilities, facilitating evidence-based treatment for cases like malaria.

There was general consensus among the participants that health care users will save costs if the nearest health facilities are adequately equipped with medical equipment as they will no longer travel long distances to other health facilities with medical equipment, like laboratories. The participants agreed that the strategy is important through prioritising recapitalisation of health facilities, and internal and external mobilisation of financial resources using the means detailed in Table 6.5 (method 5.1.1). The participants felt the action was ***important*** and it was included in the draft strategic action plan.

Table 6.5: Amended draft strategic action plan for 5th Strategy

Systems Model Input	Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	E	F	NF	NN	Comments
Material Resources	**5. Provide adequate material and minimum required medical equipment in the health facilities.**	• To ensure the availability of adequate, appropriate and well-maintained medical equipment and accessories in accordance with standards	**5.1** Procure and deliver basic medical equipment to rural health facilities with shortages or without.	**5.1.1** Budget for the acquisition of basic equipment and financial resource mobilisation from other stakeholders like donors, private companies.	Improved diagnosis and health care service delivery by health workers at the first point of access for health care users.	MoHCC. Ministry of Finance.	**5**				All 5 PPCH participants agreed to incorporate this strategy in the draft strategic action plan after assessing and categorising it as essential.
			5.2 Distribute medical equipment using the WHO minimum standard Equipment List to the rural health	**5.2.1** Enforce the policy that support distribution, management and maintenance of medical equipment at the rural health facilities.							

Systems Model Input	Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	E	F	NF	NN	Comments
		at the rural health facilities.	facilities in need.								
			5.3 Train health workers to maintain and manage the medical equipment at the rural health facilities.	**5.3.1** Mobilise resources through identifying companies that can supply health equipment and provide training on maintenance to the health workers.	Improved maintenance of the medical equipment at the rural health facilities.	PPCH and MoHCC.					

6.4.2.6 Strategy 6: Provision of free health care services for all

The participants believed that increased utilisation of health care services in the rural areas can be achieved through the removal of health care user fees (Table 6.6, Action 6.1). Though this has been done before, the participants suggested that a policy framework for free health care services should be established (Table 6.6, Method 6.1.1). The government should look for funding to meet the 15% budget allocation for health care services as per the Abuja Declaration of 2001. With the concentration of poverty, low health status and high burden of disease in rural areas, there is a need to focus specifically on improving the health of people in the rural and remote areas.

In order to improve the use and management of health resources, the participants recommended putting initiatives in place, such as performance-based grants or subsidies provided to health facilities, in return for free health care (Table 6.6, Action 6.2). The subsidies are expected to reduce OOP expenditures when poor rural people access health care. The success of these initiatives increases the use of health care services by the health care users in the rural areas.

The discussion on the importance of strategy 6 and whether to include or exclude it, had mixed feelings. One participant felt it was ***essential***, while most of the others indicated it was ***not feasible*** resulting in it not being included in the strategic action plan. Only 1 participant indicated the strategy essential based on the opinion that it facilitates increased use of health facilities and prevents the poor from plunging into poverty. Three participants had different views in their assessment of this strategy (strategy 6, Table 6.6), as they indicated it was not feasible. Three out of 5 participants cited generalised free health care services for all as a major burden to the governmental budget, which is already consuming 60.5% of the total health budget (UNICEF 2016:3). This strategy will further bloat the budget beyond the government's capacity and, according to literature, those who can afford health care costs benefit the most (Mohanty & Srivastava 2013:245). One out 5 participants assessed it ***not necessary*** as the economic situation in Zimbabwe could not support such a scenario and it will further contribute to the crumpling of the health care system if health care user fees are removed (World Bank 2016:22). It will be a big challenge to sustain the health care delivery system since OOP expenditure is the major contributing source (54.1%) of the total health

care income in Zimbabwe (UNICEF 2016:5; World Bank 2016:22). The 4 out of 5 participants further recommended that as health expenditures rise there is need to move from private OOP spending at the point of health care service, to health insurance to facilitate accessibility to health care, rather than giving free health care to all. Free health care services will challenge the health care in Zimbabwe due to lack of financial resources for implementing the 100% subsidy. Therefore, the 4 participants recommended not to remove the health care user fees but to look for an exemption policy that will clearly define the criteria to identify the disadvantaged people to be exempted. There was also a recommendation to introduce a community-based health insurance scheme that will improve health care service delivery and reduce OOP expenditures, as is the case of Rwanda, where the population contribute to community-based health insurance on an annual basis (Lagomarsino, Garabrant, Adyas, Muga, & Otoo 2012:934). Community-based health insurance in Rwanda has allowed the most vulnerable and poorest population to be incorporated into the health insurance system, thus ensuring participation of the whole community. During validation, the participants confirmed that the government has no financial mechanism to provide free health care, hence the participants agreed through consensus that the strategy should not be included in the draft strategic action plan as it was retrogressive (Table 6.6).

Table 6.6: Amended draft strategic action plan for 6th Strategy

Systems Model Input	Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	E	F	N F	N N	Comments
Financial Resources	**6. Free health care services for all**	• To improve the affordability and utilisation of health care services in the rural areas	**6.1.** Provide free health care services at the rural health facilities.	**6.1.1** Put a clear exemption policy framework in place for the people in rural areas.	Improvements in the affordability and utilisation of health care services in the rural areas.	Policy makers (MPs) through PPCH and MoHCC		**1**	**3**	**1**	The PPCH participants assessed this strategy as not feasible and there was consensus that the strategy should be excluded in the draft strategic action plan as it was retrogressive
			6.2 Provide performance-based grants to the district health manager for rural health facilities to reduce health care user fees	**6.2.1** Establish cost effective financial system like subsidies and performance-based grants that reduce the cost burden for the health care users.	Increased use of health care services by the health care users in the rural areas.	MoHCC Heads of Mission Hospitals.					

Systems Model Input	Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	E	F	N F	N N	Comments
			paid by patients at point of entry.								

6.4.2.7 Strategy 7: Improve the capacity of the health care delivery and management systems

The participants recommended strengthening and establishing human and financial resource policies favourable to strengthening the health care delivery and management systems in Zimbabwe (Table 6.7; first goal). Some of the human resource policies include HWRSs as discussed under Section 6.4.2.3. Financial resource mobilisation, like the proposed levies (Section 6.4.2.1), include multi-year financial mobilisation for paying medical drugs and equipment through the development of proposals based on the country's health strategy (Table 6.2, Action 2.2). The financial policies should include funding mechanisms like performance-based health facility grants that ensure sustainable provision of essential medical drugs to the health facilities. Strengthening the harmonisation and co-ordination of Systems Model inputs (physical, human, financial, material and managerial resources) among all health programmes will lead to improved capacity of the health care delivery system as indicated by the participants.

The research participants acknowledged the need to meet the Abuja Declaration of 2001 during validation. This can be done by aligning all the health regulations, statutory instruments and policies with the new constitution that was put in place in 2013 (Table 6.7, Action 7.3). Participants recommended that this can be done by raising a motion in parliament for the alignment of health policies with the new constitution. During the discussion, the participants supported the action on fundraising for health care service research and using the results to improve health care system delivery (Table 6.7, Method 7.2.1). The participants indicated the need to advocate for raising the annual budget allocation to MoHCC to meet the 15% annual health budget benchmark. This is due to significant declines in the health share of the budget in 2013 (7%), 2014 (8.2%) and 2015 (8.5%) (Chirwa et al 2015:12). The share of GDP to health has been relatively high, but the overall level of public spending is low relative to need. While external funding contributes to the health sector, including off-budget funding, there is a need for adequate domestic funding to the public health sector for sustainability purposes and for public leadership in the health sector in order to prevent fragmentation of the health system (WHO & World Bank 2015:26). The participants reached consensus during validation on an action point to move a motion in parliament to ensure that the health budget meets the Abuja Declaration of 2001. This will

ensure the MoHCC's annual budgets are in line with Alma Atta Conference (1979) to improve accessibility to health care services in rural areas of Zimbabwe.

All 5 participants assessed the importance of this strategy during validation and categorised it as ***feasible*** (Table 6.7) and it was included in the draft strategic action plan. The opinion of the participants was that the government, through the MoHCC, can employ health workers who have received adequate training in nursing and leadership skills, further exposing them to leadership positions, supported by effective mentoring at work. This will increase the potential to improve health care management systems.

Strengthening the health care management systems could be done through mobilisation of resources and strengthening Private Public Partnerships. The participants recommended updating core health care services and costing the whole health care package by looking at the essential health care services and redefining it. There was also a recommendation to introduce and support community ownership health care service schemes, and strengthening the health care service donor co-ordination unit to improve efficiency and effective health care service management.

Table 6.7: Amended draft strategic action plan for 7th Strategy

Systems Model Input	Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	E	F	NF	NN	Comments
Managerial Resources	**7. Improve the capacity of the health care delivery and management systems.**	• To put in place policies, human resources, financial resources that strengthen the health care delivery and management systems in Zimbabwe.	**7.1** Provide training to health workers in rural health facilities on leadership, financial and resource management.	**7.1.1**Strengthen the harmonisation and co-ordination of Systems Model inputs (physical, human, financial, material and managerial resources) among all health programmes.	Resources are used effectively in the provision of health care services.	Policy makers (MPs) working together with MoHCC.		**5**			This strategy was assessed feasible by all 5 PPCH participants and was included in the draft strategic action plan.
			7.2 Support use of research evidence to translate knowledge into policy and practice.	**7.2.1** Fundraising for health care service research and using the results for improving the health care system delivery.	Reduction of disease burden in Zimbabwe.	National health directors.					

Systems Model Input	Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	E	F	NF	NN	Comments
			7.3 ~~Advertise vacant post and appoint competent managers in health care management posts.~~ ~~.~~Align health regulations, statutory instruments and policies with the new constitution	**7.3.1**~~Recruitments and supporting use of research evidence to translate knowledge into policy and practice.~~ Move a motion in parliament for the realignment of the health acts, regulations, statutory instruments and policies in line with the new constitution.	Favourable policies that enhance accessibility to health care in rural areas.	Parliamentary committee for health. Members of Parliament of Zimbabwe.					

6.5 STEP 4: REVIEW OF ALL COMMENTS AND DEVELOPMENT OF THE SECOND DRAFT STRATEGIC ACTION PLAN

The participants amended the draft strategic action plan (Tables 6.1 – 6.7) during the validation process by using the validation instrument scale (E - essential, F - feasible, NF - not feasible and NN - not necessary). The researcher explained the process of approval to be conducted through a virtual meeting, that is, sending electronic copies of the second draft strategic action plan through email and the participants had to approve or disapprove the strategy by indicating with an "**X**" under either column ***Agree*** and or column ***Not Agree*** (refer to Table 6.8). The researcher made it clear that each participant must make one decision for each strategy. After filling in the validation form, each participant had to email the completed form back to the researcher within a specified timeframe. After the participants agreed to the next process, the session ended. It took 2 hours to complete this process.

The researcher then took the flip charts and validation forms that were commented on by the participants to develop the second draft strategic action plan (refer to Table 6.8). The researcher used these comments and inputs. The suggestions from participants added a positive dimension from the policy makers (MPs) that were needed to complete the second draft strategic action plan.

The researcher removed all the crossed-out contents from the first draft strategic action plan (refer to Table 6.1 - 6.7) and added the actions that were agreed upon by the participants. During the consensus discussion with participants, only 6 strategies were retained from the first draft strategic action plan (refer to Table 6.8). The provision of free health care services for all was the 7^{th} strategy that was excluded (refer to Table 6.6). After incorporating all comments and amendments as per the discussion with participants during the validation session, the researcher sent the second draft strategic action plan to all participants through email (virtual meeting) for their approval. The participants had 1 week to respond. Table 6.8 shows the second draft strategic action plan that was sent to all 5 participants.

Table 6.8: Second draft strategic action plan for approval

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	Agree	Not Agree	Comment
Physical Resources	**1. Develop the health infrastruc-ture in the rural areas**	• To improve the distribution and the conditions of the health facilities in rural areas of Zimbabwe.	**1.1** Upgrade satellite health facilities to become permanent health facilities and • maintain current health facilities.	**1.1.1** Renovate satellite health facilities, upgrade the building plans to the standard health facility conditions in areas with poor distribution like resettlement areas. **1.1.2** Renovate the buildings, water supply and electricity of the existing health facilities.	Improved health facility coverage in rural areas of Zimbabwe.	The Health Committee in collaboration with MoHCC.	**5**		All 5 PPCH participants approved this strategy
			1.2 Build health facilities within 5km of each	**1.2.1** Mobilise financial resources for the	Health care users walk less than 5km to the	The Health Committee in collaboration			

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	Agree	Not Agree	Comment
			village	construction of health facilities from corporate companies and global health funds. **1.2.2** Enforce infrastructure development policy priorities to address health infrastructure backlogs.	health facility.	with Ministry of Finance.			
				1.2.3 Use the tax from the natural resource-exploiting companies like mining and national parks to	Increased physical accessibility to health facilities in rural areas.	MPs (Health Committee).			

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	Agree	Not Agree	Comment
				fund construction of health facilities in the disadvantaged areas.					
				1.2.4 Present a motion in parliament for the introduction of a 5% levy on mining and hunting activities for funding health facilities construction.	Improved financial resources for health care.	PPCH (Members of Parliament).			
		• To improve the necessary infrastructure like water, electricity and communication at the existing	**1.3** Develop infrastructure by: • building roads • providing safe piped water • providing	**1.3.1** Facilitate improvements of the roads to health facilities; Electrification of the rural health	Improved road access to health facilities, electricity supply, water supply and	PPCH in collaboration with the MoHCC.			

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	Agree	Not Agree	Comment
		health facilities' infrastructure.	electricity • facilitating communication networks • renovating existing buildings.	facilities; Installation of piped water systems (boreholes connected to electric pumping systems). **1.3.2** Internal mobilisation of financial resources through introduction of 5% levy to the companies exploiting natural resources (mining, timber, national parks) for the purposes of	communication at the health facilities in the rural areas.				

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	Agree	Not Agree	Comment
				funding health infrastructure development plans.					
MATERIAL RESOURCES	**2. Provide medical drugs at the rural health facilities**	• To ensure availability and accessibility to essential medical drugs at the health facilities for the health care users and health workers in the rural areas.	**2.1** Establish partnerships with national and international medical drug producers and non-government organisations and; • Facilitate a medical drug supply pipeline.	**2.1.1** Share medical drug supply strategic action plans and/or joint planning with health partners like donors, non-governmental organisations and United Nations Agencies (UNICEF, WHO).	To ensure availability and accessibility to essential medical drugs at the health facilities for the health care users and health workers in the rural areas.	MoHCC. Permanent Secretary and Director of Pharmacy – Caucus meeting with PPCH participants.	**5**		All 5 PPCH participants approved this strategy

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	Agree	Not Agree	Comment
			2.2 Establish health levies and local tax for the procurement of medical drugs.	**2.2.1** Put a sustainable funding system in place to procure medical drugs such as levying companies benefiting from natural resources in Zimbabwe.	Improved accessibility to essential medical drugs by the health care users in the rural.	Ministry of Finance with PPCH through caucus meetings. PPCH participants introduce the motion in parliament.			
			2.3 Decentralise use of health care user fees to district health teams.	**2.3.1** Retain user fees by district health executives for the districts to manage payment of the medical drugs.	Improved availability of medical drugs in rural health facilities.				
			2.4 Pay medical drug companies on time for medical drugs	**2.4.1** Multi-year financial mobilisation for payment of	Improved funding for the procurement of medical drugs.	PPCH participants – caucus meeting with			

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	Agree	Not Agree	Comment
			received at the rural health facilities.	medical drugs through development of proposals based on the country's health strategy. **2.4.2** Put funding mechanisms in place, like performance-based health facility grants that ensure sustainable provision of essential medical drugs to the health facilities.		Minister of Health and Permanent Secretary for Health and national Pharmacy Director.			
		• To ensure good management of medical	**2.5** Build the capacity of professional	**2.5.1** Train professional nurses in logistics	Improved and efficient medical drug	PPCH will inform the MoHCC			

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	Agree	Not Agree	Comment
		drugs at the health facility level through timely ordering of the right quantities and type of medical drugs consumed at the rural health facilities.	nurses by: • Facilitating training to utilise ICT for the ordering and monitoring of medical drugs • Facilitating training in logistics management of medical drugs at the health facilities.	management focusing on drug ordering and chain management. **2.5.2** Use ICT for ordering and monitoring medical drugs at the rural health facilities.	supply management system. Improved accessibility and management of medical drugs at the rural health facilities.	directors Provincial Pharmacist District Pharmacist and Pharmacy Technicians.			
			2.6 Conduct quarterly supervisory visits at the rural health facilities for	**2.6.1** Plan medical drug monitoring visits to the rural health facilities and/or putting in	Supported supervisory visits by specialists at quarterly (3				

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	Agree	Not Agree	Comment
			monitoring management of medical drugs where there are problems.	place information management systems for monitoring medical drugs.	months) intervals.				
HUMAN RESOURCES	**3. Develop and retain human resources in the rural health facilities**	• To attract and retain health workers at the rural health facilities through promotion and payment of incentives.	**3.1** Provide incentives such as: • Transport allowances • Hardship allowances • Off station allowances to attract health workers to work in rural health facilities	**3.1.1** Review the health worker incentives and gazetting the statutory instrument for additional rural health worker allowances. **3.1.2** Provide motivational incentives to the health workers working in the rural health	Retention of competent and skilled health workers at the rural health facilities.	MoHCC. Director of Manpower Planning and Development. Director of Human Resources in the MoHCC. Members of Parliament (PPCH) will inform	**5**		All 5 PPCH participants approved this strategy

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	Agree	Not Agree	Comment
				facilities so as to attract and retain them.		MoHCC.			
			3.2 Promote career growth of health workers at rural health facilities by: • Professional development of skills and competencies.	**3.2.1** Put well define criteria in place for career advancement by low-level health workers.	Increased job satisfaction for health workers at the rural health facilities.				
		• To build the capacity of health workers through in-service and on job mentoring in line with changing health	**3.3** Train health workers according to changing trends and health needs in the rural health facilities.	**3.3.1** Review in-service training and scale-up in-service training of the health workers in rural areas to improve knowledge and	Increased motivation by heath workers to continue working at the rural health facilities.	Members of Parliament (Parliamentary Committee for Health), - caucus meetings and planning with			

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	Agree	Not Agree	Comment
		trends.		health services delivered to health care users, particularly by professional nurses. **3.3.2** Annual planning, budgeting and implementation of in-service training programmes for the health workers working in rural areas. **3.3.3** Train university graduates (nurses) with significantly		MoHCC, Ministry of Higher Education and Technology.			

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	Agree	Not Agree	Comment
				higher levels of preparation in evidence-based practice and research skills and able to match the changing educational context.					
			3.4 Train health workers living in rural areas and employ them in the rural areas after completing the nursing training.	**3.4.1** Recruit trainee professional nurses from rural areas who will be employed at the rural health facilities.	Improved retention of health workers in the rural health facilities.				

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	Agree	Not Agree	Comment
HUMAN RESOURCES	**4. Review the workload of the health workers at the health facilities and address shortages**	• To employ the right number of health workers based on workload at the health facility.	**4.1** Conduct WISN assessment in Zimbabwe and address shortages.	**4.1.1** Review the number of health workers based on the workload at each rural health facility.	The shortage of health workers is addressed in rural areas.	PPCH (MPs) will inform concerned ministries through caucus meetings. MoHCC.	**5**		All 5 PPCH participants approved this strategy
			4.2 Unfreeze all vacancies for health workers in the rural health facilities and employ professional nurses graduating from nursing training institutions.	**4.2.1** Employ trained professional nurses to fill in the frozen vacancies.		Ministry of Labour and Social Welfare. Ministry of Finance and Economic Development.			
		• To ensure an	**4.3** Select and	**4.3.1** Review the					

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	Agree	Not Agree	Comment
		appropriate skill mix at the health facility level including estimating workforce requirements for health workers.	recruit health workers with skills needed for the day-to-day running of the health facilities such as microscope and pharmacy technicians.	job profiles of the health workers at the health facilities and employing based on available human resources budget.	Improved recruitment and staffing levels at the rural health facilities.				
			4.4 Train available health workers on the skills and competencies needed to run the health facility for example medical drug management.	**4.4.1** Review the health workers training curriculum in line with expected roles and responsibilities for running the rural health facility.	Improved health care service delivery according to the community needs.				

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	Agree	Not Agree	Comment
MATERIAL RESOURCES	**5. Provide adequate material and minimum required medical equipment in the health facilities**	• To ensure the availability of adequate, appropriate and well-maintained medical equipment and accessories in accordance with standards at the rural health facilities.	**5.1** Procure and deliver basic medical equipment to rural health facilities with shortages or without.	**5.1.1** Budget for the acquisition of basic equipment and financial resource mobilisation from other stakeholders like donors, private companies.	Improved diagnosis and health care service delivery by health workers at the first point of access for health care users.	MoHCC. Ministry of Finance.	**5**		All 5 PPCH participants approved this strategy
			5.2 Distribute medical equipment using the WHO minimum standard Equipment List to the rural health facilities in need.	**5.2.1** Enforce the policy that support distribution, management and maintenance of medical equipment at the rural health					

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	Agree	Not Agree	Comment
				facilities.					
			5.3 Train health workers to maintain and manage the medical equipment at the rural health facilities.	**5.3.1** Mobilise resources through identifying companies that can supply health equipment and provide training on maintenance to the health workers.	Improved maintenance of the medical equipment at the rural health facilities.	PPCH and MoHCC.			
MANAGERIAL RESOURCES	**6. Improve the capacity of the health care delivery and management systems**	• To put policies, human resources, and financial resources in place that strengthen the health care delivery and management systems in Zimbabwe.	**6.1** Provide training to health workers in rural health facilities on leadership, financial and resource management.	**6.1.1**Strengthen the harmonisation and co-ordination of Systems Model inputs (physical, human, financial, material and managerial resources) among all health	Resources are used effectively in the provision of health care services.	Policy makers (MPs) working together with MoHCC.	**5**		All 5 PPCH participants approved this strategy

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	Agree	Not Agree	Comment
				programmes.					
			6.2 Support use of research evidence to translate knowledge into policy and practice.	**6.2.1** Fund raising for health care services research and using the results for improving the health care system delivery.	Reduction of disease burden in Zimbabwe.	National health directors.			
			6.3 Align health regulations, statutory instruments and policies with the new constitution	**6.3.1** Move a motion in parliament for the realignment of the health acts, regulations, statutory instruments and policies in line with the new constitution.	Favourable policies that enhance accessibility to health care in rural areas.	Parliamentary committee for health. Members of Parliament of Zimbabwe.			

6.6 STEP 5: VALIDATION OF THE STRATEGIC ACTION PLAN THROUGH VIRTUAL MEETING

All 5 participants returned the completed second draft strategic action plan within 1 week indicating approval against each strategy. The researcher analysed the responses from the participants by adding the total responses against each strategy. All participants marked ***Agree*** against each strategy (Table 6.8). The feedback indicated that all participants were satisfied and reached consensus on the final strategic action plan as presented in Chapter 7 (refer to Table 7.1).

6.7 TRUSTWORTHINESS IN THE DEVELOPMENT OF THE STRATEGIC ACTION PLAN

The trustworthiness of the study's results refers to the level of trust qualitative researchers put in their work and is an important tenet in all the steps followed when conducting qualitative research (Moule & Goodman 2014:188). Trustworthiness in the development of the strategic action plan was considered using the following principles: credibility; validity; transferability, dependability, confirmability and triangulation.

6.7.1 Credibility

Botma, Greeff, Mulaudzi and Wright *(*2010:292) refer to credibility as reporting on the actual perceptions or opinions of the research participants. All the validation session participants were members of the PPCH, tasked with shaping the policies concerning the MoHCC. The participants were in the position to develop a strategic action plan that could be used to enhance accessibility to health care in rural areas of Zimbabwe. The MPs (members of the PPCH) validated the strategic action plan. The process of validating the strategic action plan enhanced credibility as it was discussed, and consensus was reached during the validation meeting.

6.7.2 Validity

Validity considers face validity, construct validity, and content validity (Johnson & Christensen 2012:256). Face validity refers to the degree to which a test happens to measure what it is intended to assess (Bolarinwa 2015:196). Face validity in this strategic action plan development was guaranteed by the step-by-step method taken as per Systems Model – all the components were described in the Systems Model. Construct validity refers to a measure of how meaningful the scale or instrument is when it is in practical use (Bolarinwa 2015:197). The researcher ensured construct validity in the strategic action plan development using information generated from the literature review, findings from professional nurses and health care users during Phase 1, and national health directors during the nominal group session in Phase 2. Content validity relates to the degree to which the instrument fully measures or evaluates the construct of interest (Bolarinwa 2015:197). The content validity was further supported by the endorsement of the strategic action plan by Phase 4's validation participants.

6.7.3 Transferability

Transferability is the degree to which the research findings is relevant to be applied to other perspectives or contexts with other respondents (Moule & Goodman 2014:189). The researcher provided a thick description of the situational context and produced a data trail that will enable other researchers to transfer data to similar contexts. A rich and detailed description of the context of the study, the data collection process, the sampling and research design ensured that the research findings can be transferred by other researchers to similar contexts as is described by Botma et al (2010:292). If adopted, the developed strategic action plan can be used in any part of Zimbabwe, hence its transferability, and will contribute to accessibility to health care in the rural areas of Zimbabwe.

6.7.3 Dependability

Dependability was described as the constancy of data over time under conditions related to reliability in quantitative studies (Moule & Goodman 2014:189). Dependability refers to the process involved to determine the quality of the data. The researcher ensured dependability

through the strict adherence to the NGT procedures, the use of an experienced nominal group facilitator, as well as strictness in following the validation process as per the guidelines from the supervisors, using tools that were reviewed by the two supervisors. These measures enhanced credibility and, in the process, determined the dependability of the data of the developed strategic action plan.

6.7.4 Confirmability

Confirmability is explained as the impartiality of the data and its analysis (Moule & Goodman 2014:190; Botma et al 2010:292). The validation session allowed participants to validate their own inputs. The facilitator remained neutral, focused and strictly followed the validation process. All amendments to the strategic action plan which were listed by the participants were recorded. The researcher did not influence the analysis of the strategies to ensure involvement of the participants. The fact that the participants reached consensus in finalising the strategic action plan is evidence that there was confirmability of the data.

6.7.5 Triangulation

Triangulation refers to the collection of data from various sources in a study of the same phenomenon (Polit & Beck 2012:72). Triangulation is a verification of data through the use of more than one method of data collection and data analysis (Botma et al 2010:87). The logic behind triangulation is the assumption that any bias related to a particular process, source of data, or researcher, can be impartial when combined with other data sources, researchers, and methods.

The researcher used different sources of data, techniques and instruments to analyse data that led to the development of the strategic action plan. Quantitative data was collected from professional nurses and health care users using questionnaires in Phase 1. This informed strategy development in Phase 2 using the NGT, the literature control (Phase 3), and lastly the validation session with the participants for the development of the strategic action plan in Phase 4.

6.8 STRENGTHS AND LIMITATIONS OF THE STRATEGIC ACTION PLAN

The researcher highlights the strengths and limitations of the strategic action plan in this section.

6.8.1 Strengths of the strategic action plan

- The agreed strategic action plan depended on the contributions from the grassroots level; perceptions of professional nurses and health care users on challenges and opportunities on accessibility to health care in rural areas. The strategies were initiated and developed by influential people at higher levels in the MoHCC (national health directors) and deliberated by the policy makers (PPCH) who regulate the operations of the MoHCC in Zimbabwe. The approval and endorsement by the participants offers a greater likelihood for implementation as practical action points were put in place (refer to Table 7.1).

- The research participants in this study were actively involved in the identification of challenges of accessibility to health care in rural areas, the development of the strategies, the development of the draft strategic action plan, as well as the validation of the strategic action plan. The researcher is convinced that the participants will find support for the implementation of the agreed strategic action plan among members of parliament, and the MoHCC at national level through to the health facility level.

- The strategic action plan was developed to address the challenges faced by professional nurses and health care users based on the existing opportunities as per the findings from respondents in Phase 1 and participants in both Phases 2 and 4.

6.8.2 Limitations of the strategic action plan

The first phase of the study, the initial step leading to development of the strategic action plan, was only carried out at the rural health facilities and not at district, provincial and referral hospitals. Data was not collected at the district hospitals where information from health facilities is consolidated and where the first-line supervision is based. This was not done due to financial resource limitations to collect data at district and provincial health care

levels. The consequence of this limitation was minimised by the participation of the national health directors in Phase 2 of the study as the participants (NGT session) developed strategies based on the challenges faced in the provision of health care in the districts and provinces.

6.9 SUMMARY

The strategic action plan (refer to Table 7.1) to enhance accessibility to health care in rural areas of Zimbabwe was developed to address critical gaps in access to health care that exist in rural areas of Zimbabwe. The researcher was assisted by the findings from Phase 1, the nominal group participants who developed strategies in Phase 2, and the literature review information during the development of the strategic action plan. The Systems Model focusing on health systems was used during the development of the strategies in Phase 2.

The validation session participants validated the strategic action plan and added their expert advice to complete the strategies in Phase 4. The researcher worked closely with the participants from the MoHCC's head office, the professional nurses and health care users, as well as the members of parliament in the development of the strategic action plan and it is anticipated that this strategic action plan will be incorporated into policies regarding enhancing accessibility to health care in rural areas of Zimbabwe. Chapter 7 presents the conclusion and recommendations for implementation of the strategic action plan and further research needed.

CHAPTER 7: CONCLUSIONS AND RECOMMENDATIONS

7.1 INTRODUCTION

This chapter presents the conclusions and recommendations that were derived from the study findings. The recommendations will reflect the implementation of the strategic action plan to enhance accessibility to health care in the rural areas of Zimbabwe, and offer recommendations for future research. The diagrammatic representation of the processes that were followed during the research study is presented in Figure 7.1.

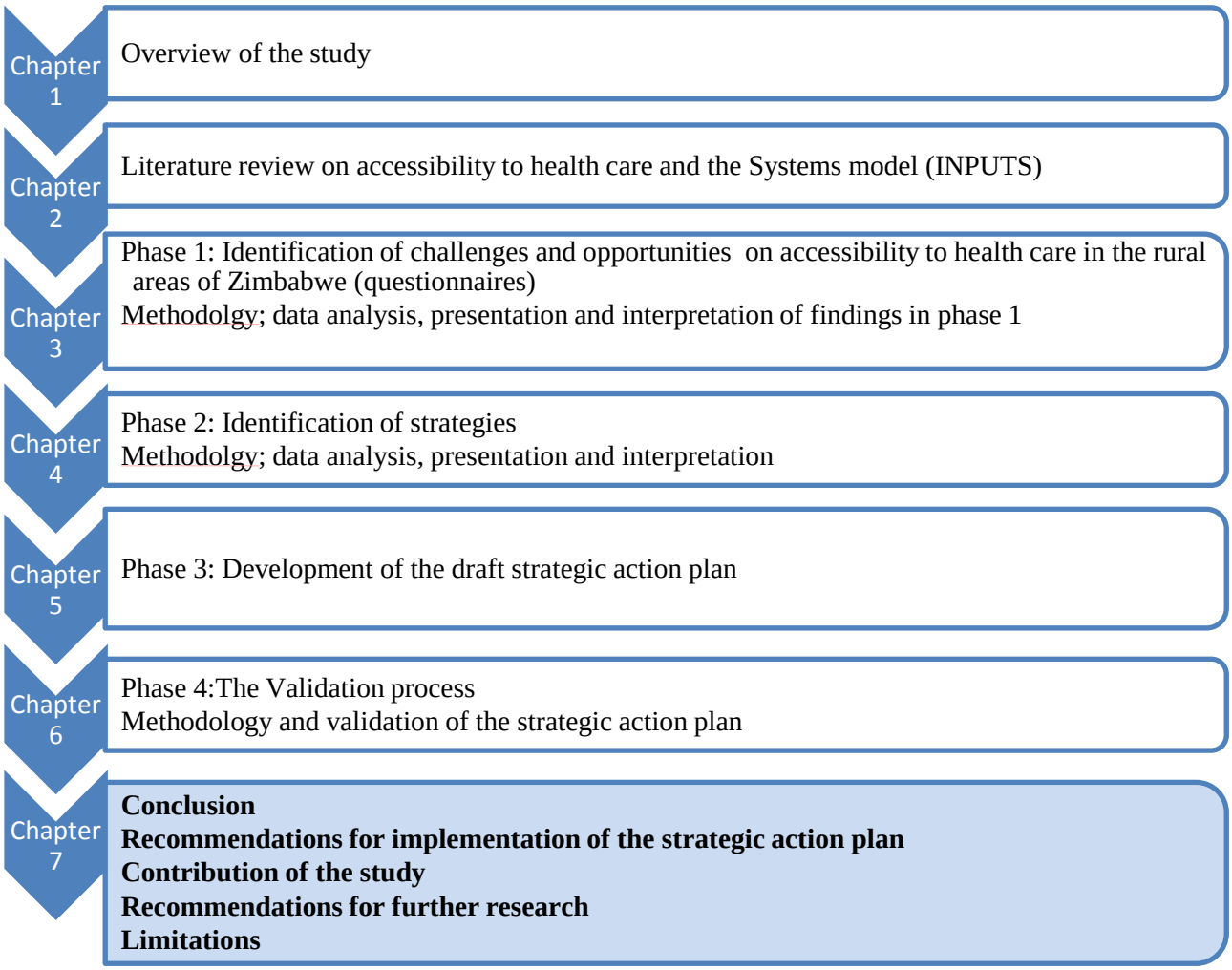

Figure 7.1: Diagrammatic presentation of the flow of the study

7.2 CONCLUSIONS

The conclusions are presented according to the various research objectives.

- **Objective 1: Identify challenges experienced by professional nurses when providing health care at the rural health facilities in Zimbabwe**

The professional nurses identified challenges relating to physical, material, human, and managerial resources linked to the Systems Model inputs in Phase 1 of the study. A *lack of infrastructure (roads, transport and communication and health facility buildings)* (Chapter 3: Section 3.13) was experienced by the professional nurses as a challenge in providing health care, and was linked to physical resources as a Systems Model input (Table 7.1).

The professional nurses face challenges with consistent supply and delivery of medical drugs, vaccines, and patient referrals due to a *lack of road and communication infrastructure in rural areas*. The health facility infrastructure also worsens the challenges professional nurses face, as *health facilities are inadequately distributed, some are substandard for example satellite health facilities needing upgrading and absence of clean, safe water for use at the health facility as well as electricity* (physical resource, Table 7.1).

Professional nurses in rural Zimbabwe (refer to Chapter 3: Section 3.14.1) experienced *inadequate and inconsistent (erratic) supply of medical drugs* (material resource, Table 7.1) at the rural health facilities. The quarterly supply of medical drugs is not consistent with the quantity and type needed to treat diseases and chronic conditions at the rural health facilities. This posed challenges such as an inability to provide treatment to health care users who visited the health facility, and having to refer patients to distant pharmacies which incurred travel costs causing delays in treating the patients. This reflected negatively on the health care service provided by the professional nurses as health care users often blamed them for poor health care service delivery.

Professional nurses also faced *heavy workload* challenges *due to shortage of health workers* (human resource, Table 7.1) at the rural health facilities (refer to Chapter 3: Section 3.15.1). The general accepted standard in Zimbabwe is that each health facility should be manned by 3 professional nurses. The findings revealed only 1 or 2 professional nurses attend to more

than 15 patients per day; in some instances attending up to 200 patients a day (Table 3.5). Of concern was the shortage of midwives which has created heavy workloads, as well as an ethical dilemma as the professional nurses who had to attend to deliveries were not trained in midwifery and ended up performing midwifery-related duties. Therefore, there seemed to be a lack of the correct skills mix for health workers at the rural health facilities. *Professional nurses were also not degree-prepared*. Due to a lack of degree-prepared professional nurses, some competencies like critical thinking skills and research abilities are lacking, which can influence the level of expertise in practice, the level of diagnosis accuracy, as well as the provision of evidence-based care. Degree-prepared professional nurses have a theoretical and practical knowledge-base that can be tested and refined in actual situations.

Health workers faced managerial challenges due to *lack of supervisory and support visits* (managerial resources, Table 7.1), especially visits by district health and provincial health executive members (refer to Chapter 3: Table 3.17).

- **Objective 2: Identify opportunities for improving health care accessibility in the rural areas of Zimbabwe from professional nurses' perspectives**

According to the professional nurses the *existing health facilities can be improved by rehabilitating old buildings and connecting electricity and piped water from existing boreholes* (physical resource, Table 7.1). *Existing satellite health facilities could also be upgraded to the standard of rural health facilities* (physical resource, Table 7.1) (refer to Chapter 3: Section 3.13.1).

Medical drugs are supplied on a quarterly basis, *but the ordering process to address the demand and quantity needs to be enhanced (material resource, Table 7.1). Professional nurse shortages in each health facility can be improved through use of existing universities offering nursing degrees* (human resource, Table 7.1). (refer to Chapter 3: Section 3.15.1).

- **Objective 3: Identify challenges experienced by health care users to gain access to health care in rural areas**

Health care users experienced challenges associated with physical accessibility to health care in the rural areas of Zimbabwe. The *main means of transport to the health facility is walking* [293 out of 445 (65.84%; *f*=293) health care user respondents] (Figure 3.5), which involves *long distances (average 8.56 km) from homes to rural health facilities* (physical resource, Table 7.1). One hundred and fifty-six (156) out of 445 (35.05%; *f*=156) health care user respondents travel between 6-10km and 63 out of 445 (14.15%; *f*=63) health care user respondents travel greater distances than 10km (>10km) (Figure 3.4), thereby facing challenges of not reporting for treatment before diseases worsen (refer to Chapter 3: Figure 3.4). Health care users who were resettled during the fast track land redistribution were the most affected by long distances (MoHCC 2015:23). *Travel routes to health facilities are influenced by the seasonal weather* (physical resource, Table 7.1)*; during rainy season, rivers and streams make the people resort to using longer routes* as short routes will be impassable (refer to Chapter 3: Table 3.6: Section 3.13.2.2).

Health care users noted that *accessibility to medical drugs is a challenge* (material resource, Table 7.1) in the rural health facilities (refer to Chapter 3: Section 3.14). This challenge contributes to poor quality of health care with negative health outcomes. *Health care users were requested to buy medical drugs* (65 out of 90; 72% professional nurses) from other suppliers like pharmacies and bring their own supplies like cotton wool, intravenous fluids and other accessories, especially pregnant women when they come for deliveries (refer to Chapter 3: Section 3.14.2). To worsen the situation, *pharmacies were not available in rural areas* as indicated by 409 out of 445 (91.91; *f*=409) health care user respondents (refer to Chapter 3: Section 3.14.3). The inaccessibility to medical drugs was one of the contributing factors to 44.94% of the health care users seeking health care from traditional healers (refer to Chapter 3: Section 3.19).

One of the key factors to accessibility to health care services is ensuring people living in rural areas have access to trained health workers, especially professional nurses. Although an adequate number of professional nurses should be available at the rural health facilities to enhance accessibility to health services by the health care users, findings indicated an

inadequate number of professional nurses which resulted in long waiting times (human resources, Table 7.1).

A *lack of professional nurses with appropriate technical skills and training* (human resources, Table 7.1) has affected not only accessibility and coverage of the health care services, but also the planning processes which could otherwise help lessen the health care crisis in Zimbabwe. The study findings revealed that *poor staffing of the health facilities* (human resources, Table 7.1) *has increased the burden on health care users* (refer to Chapter 3: Section 3.15).

Financial resources were identified as a challenge by the health care users when *gaining access to health care (*material resource, Table 7.1). Health care user fees were introduced to address financial resources and the health care users *cannot afford to pay the health care user fees at some health facilities* (refer to Chapter 3: Table 3.17), *opted to seek traditional health care services from traditional healers* [200 out of 445 (44.94%; *f*=200) health care users (Figure 3.26)]. Health care users who chose traditional healers' help revealed a willingness by the traditional health service providers to accept payment in kind (pay with chickens, goats or maize) as indicated by 200 out of 445 (44.94%; *f*=200) health care user respondents who seek health care from traditional heath service providers (refer to Chapter 3: Section 3.19).

- **Objective 4: Identify opportunities for improving health care accessibility in rural areas from health care users' perspectives**

Similar to the opportunities identified by the professional nurses, the health care users also mentioned that existing health facilities, roads and boreholes with water supplies (physical resource, Table 7.1) need to be improved to enhance accessibility to health care. *There is an opportunity to improve supply of medical drugs* (material resources, Table 7.1) *to address the demand of the health facility* as 249 out of 445 (55.95%; *f*=249) health care user respondents had indicated the unavailability of medical drugs in rural health facilities (refer to Chapter 3: Section 3.14.1) (Figure 3.7).

- **Objective 5: Identify strategies to form the basis for the development of the strategic action plan**

Five national health directors participated in the nominal group and identified the strategies based on the findings from Phase 1 (professional nurses and health care users' perspectives) (refer to Chapter 4; Table 4.2; Section 4.7). The most important strategies in ranking order analysed by the nominal group participants were: 1st priority, to develop health infrastructures in the rural areas; 2nd priority, to provide medical drugs at the rural health facility; 3rd priority, human resource (health workers) development and retention in the rural health facilities. Two strategies were tied at the 4th priority, that is (4) reviewing the workload of health workers at the health facilities and address shortages, and (5) providing adequate material resources at the rural health facilities. Also, the 5th priority was a tie: (6) free health services for all, and (7) to improve the capacity of the health care delivery and management systems (refer to Chapter 4: Section 4.7.3.5, Table 4.4).

Together with the literature control and findings from Phase 1 (professional nurses and health care users), these strategies were used to develop the draft strategic action plan (refer to Chapter 5: Table 5.8).

- **Objective 6: Develop and validate a strategic action plan to enhance accessibility to health care in the rural areas of Zimbabwe**

The draft strategic action plan was validated by 5 members of the PPCH to ensure that the final strategic action plan, as the product of this research, was developed (Table 7.1).

Table 7.1: Validated and Approved Strategic action plan for implementation

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible
Physical Resources	**1. Develop health infrastructure in the rural areas**	• To improve the distribution and the conditions of the health facilities in rural areas of Zimbabwe.	**1.1** Upgrade satellite health facilities to become permanent health facilities and • maintain current health facilities.	**1.1.1** Renovate satellite health facilities, upgrading the building plans to the standard health facility conditions in areas with poor distribution like resettlement areas. **1.1.2** Renovate the buildings, water supply and electricity of the existing health facilities.	Improved health facility coverage in rural areas of Zimbabwe.	The Health Committee in collaboration with MoHCC.
			1.2 Build health facilities within 5 km of each village.	**1.2.1** Mobilise financial resources for the construction of health facilities from corporate companies	Health care users walk less than 5km to the health facility.	The Health Committee in collaboration with Ministry of Finance.

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible
				and global health funds. **1.2.2** Enforce infrastructure development policy priorities to address health infrastructure backlogs.		
				1.2.3 Use the tax from the natural resources exploiting companies like mining and national parks to fund construction of health facilities in the disadvantaged areas.	Increased physical accessibility to health facilities in rural areas.	MPs (Health Committee).

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible
				1.2.4 Present a motion in parliament for the introduction of a 5% levy on mining and hunting activities for funding health facilities construction.	Improved financial resources for health care.	PPCH (Members of Parliament).
		• To improve the necessary infrastructure like water, electricity and communication at the existing health facilities' infrastructure.	**1.3** Develop infrastructure by: • building roads • providing safe piped water • providing electricity • facilitating communication networks • renovating existing buildings.	**1.3.1** Facilitate improvements of the roads to health facilities; Electrification of the rural health facilities; Installation of piped water systems (boreholes connected to electric pumping systems). **1.3.2** Internal mobilisation of	Improved road access to health facilities, electricity supply, water supply and communication at the health facilities in the rural areas.	PPCH in collaboration with the MoHCC.

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible
				financial resources through introduction of 5% levy to the companies exploiting natural resources (mining, timber, national parks) for the purposes of funding health infrastructure development plans.		
			1.4 Physical assessment/inspection of the health facilities in the rural areas by the Parliamentary Committee for health.	**1.4.1** Visit health facilities in remote areas of Zimbabwe and meeting with health committees at the health facilities in each province and taking note of the conditions of the buildings and giving feedback in parliament	Improved motivation of health workers to work at the rural health facilities.	Members of the Parliamentary Committee for Health.

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible
				on the state of the health in rural areas.		
Material resources	**2. Provide medical drugs at the rural health facilities**	• To ensure availability and accessibility to essential medical drugs at the health facilities for the health care users and health workers in the rural areas.	**2.1** Establish partnerships with national and international medical drug producers and non-government organisations and; • Facilitate a medical drug supply pipeline.	**2.1.1** Share medical drug supply strategic action plans and/or joint planning with health partners like donors, non-governmental organisations and United Nations Agencies (UNICEF, WHO).	To ensure availability and accessibility to essential medical drugs at the health facilities for the health care users and health workers in the rural areas.	MoHCC. Permanent Secretary and Director of Pharmacy – Caucus meeting with PPCH participants.
			2.2 Establish health levies and local tax for the procurement of medical drugs.	**2.2.1** Put a sustainable funding system in place for the procurement of medical drugs such as	Improved accessibility to essential medical drugs by the health care users in the rural.	Ministry of Finance with PPCH through caucus meetings.

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible
				levying companies benefiting from natural resources in Zimbabwe.		PPCH participants introduce the motion in parliament.
			2.3 Decentralise use of health care user fees to District health teams.	**2.3.1** Retain user fees by district health executives for the districts to manage payment of the medical drugs.	Improved availability of medical drugs in rural health facilities.	
			2.4 Pay medical drug companies on time for medical drugs received at the rural health facilities.	**2.4.1** Multi-year financial mobilisation for payment of medical drugs through development of proposals based on the country's health strategy.	Improved funding for the procurement of medical drugs.	PPCH participants – caucus meeting with Minister of Health and Permanent Secretary for Health and national Pharmacy Director.

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible
				2.4.2 Put funding mechanisms like performance-based health facility grants in place, that ensure sustainable provision of essential medical drugs to the health facilities.		
		• To ensure good management of medical drugs at the health facility level through timely ordering of the right quantities and type of medical drugs consumed at the rural health	**2.5** Build the capacity of professional nurses by: • Facilitating training to utilise ICT for the ordering and monitoring of medical drugs • Facilitating training in logistics management of medical drugs at the health facilities.	**2.5.1** Train professional nurses in logistics management focusing on drug ordering and chain management. **2.5.2** Use ICT for ordering and monitoring medical drugs at the rural	Improved and efficient medical drug supply management system. Improved accessibility and management of medical drugs at the rural health facilities.	PPCH will inform the MoHCC directors Provincial Pharmacist District Pharmacist and Pharmacy Technicians.

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible
		facilities.		health facilities.		
			2.6 Conduct quarterly supervisory visits at the rural health facilities for monitoring management of medical drugs where there are problems.	**2.6.1** Plan medical drug monitoring visits to the rural health facilities and/or putting in place information management systems for monitoring medical drugs.	Supported supervisory visits by specialists at quarterly (3 months) intervals.	

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible
Human resources	**3. Develop and retain human resources in the rural health facilities**	• To attract and retain health workers at the rural health facilities through promotion and payment of incentives.	**3.1** Provide incentives such as: • Transport allowances • Hardship allowances • Off station allowances to attract health workers to work in rural health facilities	**3.1.1** Review the health worker incentives and gazetting the Statutory Instrument for additional rural health worker allowances. **3.1.2** Provide motivational incentives to the health workers working in the rural health facilities so as to attract and retain them.	Retention of competent and skilled health workers at the rural health facilities.	MoHCC. Director of Manpower Planning and Development. Director of Human Resources in the MoHCC. Members of Parliament (Parliamentary Committee for Health) will inform MoHCC.
			3.2 Promote career growth of health workers at rural health facilities by: • Professional development of skills and competencies.	**3.2.1** Put well-defined criteria in place for career advancement by low-level health workers.	Increased job satisfaction by health workers at the rural health facilities.	

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible
		• To build the capacity of health workers through in-service and on job mentoring in line with changing health trends.	**3.3** Train health workers according to changing trends and health needs in the rural health facilities.	**3.3.1** Review in-service training and upscale in-service training of the health workers in rural areas to improve knowledge and health services delivered to health care users particularly by professional nurses. **3.3.2** Annual planning, budgeting and implementation of in-service training programs for the health workers working in rural areas.	Increased motivation by heath workers to continue working at the rural health facilities.	Members of Parliament (Parliamentary Committee for Health), - caucus meetings and planning with MoHCC, Ministry of Higher Education and Technology.

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible
				3.3.3 Train university graduates (nurses) with significantly higher levels of preparation in evidence-based practice and research skills and able to match the changing educational context.		
			3.4 Train health workers living in rural areas and employ them in the rural areas after completing the nursing training.	**3.4.1** Recruit trainee professional nurses from rural areas who will be employed at the rural health facilities.	Improved retention of health workers in the rural health facilities.	

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible
Human resources	**4. Review the workload of the health workers at the health facilities and address shortages**	• To employ the right number of health workers based on workload at the health facility.	**4.1** Conduct workload indicator staff need assessment in Zimbabwe and address shortages.	**4.1.1** Review the number of health workers based on the workload at each rural health facility.	The shortage of health workers is addressed in rural areas.	PPCH (MPs) will inform concerned ministries through caucus meetings. MoHCC. Ministry of Labour and Social Welfare. Ministry of Finance and Economic Development.
			4.2 Unfreeze all vacancies for health workers in the rural health facilities and employ professional nurses graduating from nursing training institutions.	**4.2.1** Employ trained professional nurses to fill in the frozen vacancies.		
		• To ensure an appropriate skill mix at the health facility level including estimating	**4.3** Select and recruit health workers with skills needed for the day-to-day running of the health facilities such as microscopes technicians, pharmacy technicians.	**4.3.1** Review the job profiles of the health workers at the health facilities and employing based on available human resources budget.	Improved recruitment and staffing levels at the rural health facilities.	

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible
		workforce requirements for health workers.	**4.4** Train available health workers on the skills and competencies needed to run the health facility for example medical drug management.	**4.4.2** Review the health workers training curriculum in line with expected roles and responsibilities for running the rural health facility.	Improved health care service delivery according to the community needs.	
Material resources	**5. Provide adequate material and minimum required medical equipment in the health facilities**	• To ensure the availability of adequate, appropriate and well-maintained medical equipment and accessories in accordance with standards at the rural health	**5.1** Procure and deliver basic medical equipment to rural health facilities with shortages or without.	**5.1.1** Budget for the acquisition of basic equipment and financial resource mobilisation from other stakeholders like donors, private companies.	Improved diagnosis and health care service delivery by health workers at the first point of access for health care users.	MoHCC.
			5.2 Distribute medical equipment using the WHO	**5.2.1** Enforce the policy that support		Ministry of Finance.

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible
		facilities.	minimum standard Equipment List to the rural health facilities in need.	distribution, management and maintenance of medical equipment at the rural health facilities.		
			5.3 Train health workers to maintain and manage the medical equipment at the rural health facilities.	**5.3.1** Mobilise resources through identifying companies that can supply health equipment and provide training on maintenance to the health workers.	Improved maintenance of the medical equipment at the rural health facilities.	PPCH and MoHCC.
Managerial resources	**6. Improve the capacity of the health care delivery and management**	• To put in place policies, human resources,	**6.1** Provide training on leadership, financial and resource management to health workers in rural health	**6.1.1**Strengthen the harmonisation and co-ordination of Systems Model inputs (physical,	Resources are used effectively in the provision of health care services.	Policy makers (MPs) working together with MoHCC.

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible
	systems	financial resources that strengthen the health care delivery and management systems in Zimbabwe.	facilities.	human, financial, material and managerial resources) among all health programmes.		
			6.2 Support use of research evidence to translate knowledge into policy and practice.	**6.2.1** Fund raising for health care services research and using the results for improving the health care system delivery.	Reduction of disease burden in Zimbabwe.	National health directors.
			6.3 Align health regulations, statutory instruments and policies with the new constitution	**6.3.1** Move a motion in parliament for the realignment of the health acts, regulations, statutory instruments and policies in line with the new constitution.	Favourable policies that enhance accessibility to health care in rural areas.	Parliamentary committee for health. Members of Parliament of Zimbabwe.

7.3 RECOMMENDATIONS FOR IMPLEMENTATION AND SHARING OF THE STRATEGIC ACTION PLAN

The strategic action plan should be implemented by the PPCH, and the MoHCC, through the national health directors, provincial health directors, and district health managers in collaboration with the Ministry of Finance, Ministry of Labour and Social Welfare and Ministry of Higher Education and Technology. The fact that all important stakeholders, professional nurses, health care users, national health directors, and members of parliament of Zimbabwe were involved in the development and finalisation of the strategic action plan, could lead to it being accepted by the concerned ministries and policy makers.

7.3.1 Developing health infrastructure in the rural areas (Physical resources – Systems Model input)

The health infrastructure provides the communities and the nation with the ability to prevent and control diseases, promote public health, and prepare and act against disease outbreaks and chronic (ongoing) challenges related to the health of the citizens. Health infrastructure is the base for preparing, executing and enhancing accessibility to health care. The government of Zimbabwe should improve distribution of the health facilities in the rural areas by upgrading the satellite health facilities and maintaining the existing rural health facilities (Table 7.1, Action 1.1.1). The members of parliament, who were the participants in the validation of this strategic action plan, indicated that they will take the responsibility to put a motion forward to prioritise building health facilities in villages without the health facility infrastructure and with a population of 6000 or less (Table 7.1, Action 1.1.2), thereby reducing walking distance to a 5km radius to the health facility. The members of parliament included an action to conduct an assessment of the conditions of the health facilities' infrastructure, paving the way to enforce the infrastructural development policy (Table 7.1, Action 1.2.2) (Zimbabwe Agenda for Socio-Economic Transformation 2013:69).

7.3.2 Provision of medical drugs at the rural health facilities (Material resources – Systems Model input)

The Zimbabwean government, through the MoHCC at the national level and the provincial health departments should develop an effective and efficient system to supply essential medical drugs and material supplies (cotton wool, surgical needles, etc), and provide minimum equipment needed at the rural health facilities. It was recommended that the MoHCC form partnerships with national and international drug producers and non-government organisations to enhance medical drug supply (Table 7.1, Action 2.1.1) and conduct internal mobilisation of financial resources to procure medical drugs by levying companies exploiting natural resources (Table 7.1, Action 2.1.2). The other important action included in the strategic action plan is timely payments to medical drug companies by the MoHCC for medical drugs ordered and delivered to the rural health facilities (Table 7.1, Action 2.1.4).

There is also a need to review the existing process of acquiring and managing medical drugs and other health facility supplies, and implement corrective measures to enhance improvement in logistics management. Training professional nurses in logistics management focusing on medical drug ordering and chain management (Table 7.1, Action 2.2.1) means including logistics management in the training curriculum for the professional nurses, especially medical drug ordering and supply chain (Table 7.1, Method 2.2.1.1). These are some of the measures the MoHCC should take to address the management of medical drugs at the health facilities.

7.3.3 Human resources (health workers) development and retention in the rural health facilities (Human Resources – Systems Model input)

The MoHCC at the national level should critically address the shortage of health workers, especially professional nurses, who are key providers of health care services in rural areas. The MoHCC should attract and retain health workers at the rural health facilities by paying incentives like rural transport and hardship allowances, housing allowances, and off station assignment allowances (Table 7.1, Action 3.1.1), and through career promotion and advancement for the

lower-level health workers (primary care nurses and SCN) at the rural health facilities (Table 7.1, Action 3.1.2).

Professional nurses' capacity building through in-service and on the job mentoring in line with changing health trends should be reinforced (Table 7.1, Action 3.2.1), and it should be ensured that professional nurse recruits living in rural areas who have done their education in the rural areas are targeted as trainees. Such actions of creating working conditions and giving opportunities for career growth and promotion encourages retention of the health worker and maintaining the minimum ratio of 2.28 per 1,000 populations as recommended by WHO (WHO 2014:109).

7.3.4 Review the workload of health workers at the health facilities and address shortages (Human Resources – Systems Model input)

The government of Zimbabwe should conduct a WISN assessment in rural health facilities in order to employ the right number of health workers, especially professional nurses, based on workload at the health facility (Table 7.1, Action 4.1.1). If shortages are noted after conducting the WINS, then the MoHCC will request to unfreeze all vacancies for health workers (professional nurses) in the rural health facilities (Table 7.1, Action 4.1.2). In addition, the MoHCC should employ health workers with correct skills needed for the day-to-day running of the health facilities and train the available health workers on the correct skills needed at the health facility, for example, medical drug management.

The involvement of more than one ministry in the training of health workers needs good co-ordination and integration between the Ministry of Higher Education and Technology and the MoHCC. The co-ordination should require a symbiotic correlation in curricula development that facilitates educating professional nurse graduates who can be employed to cover the health worker shortages at the rural health facilities.

7.3.5 Provision of adequate material resources at the rural health facilities (minimum required medical equipment) (Material resources – Systems Model Input).

Medical equipment has a substantial impact on accessibility to health care and make up a high proportion of health care costs and ensure quality health care. The MoHCC should ensure the availability of adequate, appropriate and well-maintained medical equipment and accessories in accordance with standards at the rural health facilities (Table 7.1, Action 5.1). The government of Zimbabwe should acquire basic equipment for the rural health facilities (Table 7.1, Action 5.1.1) and distribute the equipment based on the standard Equipment List for the rural health facilities (Table 7.1, Action 5.1.2).

7.3.6 Managerial resources (Systems Model input)

The MoHCC should employ senior managers with management skills and the capacity to provide supervisory support and mentorship to junior health workers. The MoHCC should mobilise financial resources to attract and retain the senior managers and enforce performance-based contracts. The senior managers (national health directors) should strengthen and coordinate the harmonisation of the Systems Model inputs (physical, human, financial, material and managerial resources) among all health programmes (Table 7.1, Action 6.1.1). This should be done by mobilising financial resources for health care services to address shortages. The MoHCC and MPs should consider the alignment of the health regulations, statutory instruments, and health policies working together with the Minister of Health and Minister of Justice (Table 7.1, Action 6.2.1).

7.4 CONTRIBUTIONS OF THE STUDY

The study contributed to the development of a strategic action plan where views of the health care users and professional nurses were used to inform the national health directors to formulate a strategic action plan for enhancing accessibility to health care in rural areas of Zimbabwe.

This study offers an opportunity to enhance accessibility to health care services in rural areas through the implementation of the approved and agreed strategic action plan. The PPCH indicated their willingness to lobby for an increase in the government's 2018 annual budget allocation for the MoHCC towards the 15% indicated by the 2001 Abuja Declaration minimum annual government allocation for health. The members of parliament also indicated their willingness to assist with financial resources (Systems Model input) by moving a motion to levy corporate companies involved in mining or exploiting natural resources.

The strategic action plan was developed based on the data analysis and findings, which demonstrated the importance of a thorough assessment of challenges and priority needs from the grassroots level before programme planning and implementation for better allocation of human, material and financial resources which are key Systems Model inputs. The challenges and opportunities on Systems Model inputs identified in this study can guide the design of future policies that can assist with health care service interventions that enhance accessibility to health care. The outcome of this study promotes the wellbeing of the health care users in the rural areas across Zimbabwe. It is possible that if the identified Systems Model input challenges are addressed, this could enhance accessibility to health care in the rural areas of Zimbabwe.

7.5 RECOMMENDATIONS FOR FUTURE STUDIES

The findings of this study can be used to influence further research on the existing health policy, including infrastructural development, human resources, and finance resource mobilisation strategies (Systems Model input). These policies can be reviewed through research to modify, improve and align with the new Zimbabwe Constitution of 2013.

Further studies on accessibility to health care should continue to use a mixed method approach and include health workers at all health care levels, such as the district and provincial health care level, to deepen the understanding of the challenges and opportunities for enhancing accessibility to health care, focusing on the Systems Model inputs.

7.6 LIMITATIONS OF THE STUDY

The research study was conducted in Masvingo and Chegutu rural district out of a total of 59 districts in Zimbabwe. It was not possible to conduct the research across the whole country due to financial constraints, accessibility and affordability issues on the part of the researcher. However, these two districts represented the rural areas, including resettlements (land reform resettlements), targeting rural health facilities and their catchment areas. The fact that only 5 out of 15 national health directors attended the nominal group session could have influenced the number of strategies identified during Phase 2, however, the literature control and the data obtained in Phase 1 did provide rich information.

An important challenge will be the feasibility of the implementation of the strategic action plan in Zimbabwe. All 5 members of PPCH were actively involved in the validation session, clearly revealing that actions included in the strategic action plan were essential, but not always feasible due to the financial resource mobilisation challenges in Zimbabwe.

7.7 CONCLUDING REMARKS

The developed strategic action plan intended to enhance accessibility to health care in rural areas of Zimbabwe, was made possible by the participation of research participants (professional nurses, health care users, national health directors and members of parliament) to reach the 6 objectives of this study. The objectives were reached over 4 phases as outlined in the thesis report. The draft strategic action plan was presented to the participants who were members of the PPHC to review, finalise and validate.

The outcome of the validated strategic action plan might enhance accessibility to health care through equitable distribution of health facilities, improving access to medical drugs, and enhancing the availability of trained and competent health workers that will influence improved health and wellbeing of people living in rural areas (Figure 1.1). Accessibility to health care can be strengthened by viewing health care as a whole and not as individual components. The Systems Model was applied in the strategic action plan by incorporating the inputs, processes,

outputs and outcomes (Chapter 2) to enhance accessibility to health care in rural areas. The movement towards excellence, success, and favourable results in accessibility to health care in rural areas depends on progress and commitment in the implementation, monitoring and evaluation of the strategic action plan.

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Annexure A: Ethical Clearance

UNISA university of south africa

UNIVERSITY OF SOUTH AFRICA
Health Studies Higher Degrees Committee
College of Human Sciences
ETHICAL CLEARANCE CERTIFICATE

HSHDC/240/2013

Date: 23 October 2013 Student No: 4727-215-5

Project Title: Strategies to enhance access to health care in rural areas in Zimbabwe.

Researcher: Manenji Mangundu

Degree: D Litt et Phil Code: DPCHS04

Supervisor: Dr ES Janse van Rensburg
Qualification: D Cur
Joint Supervisor: -

DECISION OF COMMITTEE

Approved [√] **Conditionally Approved** [ ]

Prof L Roets
CHAIRPERSON: HEALTH STUDIES HIGHER DEGREES COMMITTEE

UNIVERSITEIT VAN SUID-AFRIKA
PRETORIA
UNIVERSITY OF SOUTH AFRICA

Prof MM Moleki
ACADEMIC CHAIRPERSON: DEPARTMENT OF HEALTH STUDIES

PLEASE QUOTE THE PROJECT NUMBER IN ALL ENQUIRES

Annexure B: Approval from Medical Research Council of Zimbabwe

Telephone: 791792/791193
Telefax: (263) - 4 - 790715
E-mail: mrcz@mrcz.org.zw
Website: http://www.mrcz.org.zw

Medical Research Council of Zimbabwe
Josiah Tongogara / Mazoe Street
P. O. Box CY 573
Causeway
Harare

APPROVAL

REF: MRCZ/A/1832 03 July, 2014

Manenji Mangundu
University of South Africa College of Health Sciences
Preller Street
Pretoria 0002
South Africa

RE: Strategies To Enhance Accessibility To Health Care In Rural Areas In Zimbabwe

Thank you for the application for review of Research Activity that you submitted to the Medical Research Council of Zimbabwe (MRCZ). Please be advised that the Medical Research Council of Zimbabwe has **reviewed** and **approved** your application to conduct the above titled study.

This approval is based on the review and approval of the following documents that were submitted to MRCZ for review:-

a) Completed MRCZ form 101
b) Study Protocol, Version 1.0 dated 30 April, 2014
c) Adult Informed Consent Forms-English and Shona
d) Health Care Users Interview-English and Shona

- **APPROVAL NUMBER** : **MRCZ/A/1832**

This number should be used on all correspondence, consent forms and documents as appropriate.

- **TYPE OF MEETING** : **Full Board**
- **EFFECTIVE APPROVAL DATE** : **03 July, 2014**
- **EXPIRATION DATE** : **02 July, 2015**

After this date, this project may only continue upon renewal. For purposes of renewal, a progress report on a standard form obtainable from the MRCZ Offices should be submitted three months before the expiration date for continuing review.

•**SERIOUS ADVERSE EVENT REPORTING**: All serious problems having to do with subject safety must be reported to the Institutional Ethical Review Committee (IERC) as well as the MRCZ within 3 working days using standard forms obtainable from the MRCZ Offices or website.

•**MODIFICATIONS**: Prior MRCZ and IERC approval using standard forms obtainable from the MRCZ Offices is required before implementing any changes in the Protocol (including changes in the consent documents).

•**TERMINATION OF STUDY**: On termination of a study, a report has to be submitted to the MRCZ using standard forms obtainable from the MRCZ Offices or website.

•**QUESTIONS**: Please contact the MRCZ on Telephone No. (04) 791792, 791193 or by e-mail on mrcz@mrcz.org.zw

Other

- Please be reminded to send in copies of your research results for our records as well as for Health Research Database.
- You're also encouraged to submit electronic copies of your publications in peer-reviewed journals that may emanate from this study.

Yours Faithfully

MRCZ SECRETARIAT
FOR CHAIRPERSON
MEDICAL RESEARCH COUNCIL OF ZIMBABWE

MEDICAL RESEARCH COUNCIL OF ZIMBABWE
2014 -07- 03
APPROVED
P.O. BOX CY 573 CAUSEWAY, HARARE

PROMOTING THE ETHICAL CONDUCT OF HEALTH RESEARCH

Annexure C: Letter of Approval: Head Office for Ministry of Health and Child Care

Telephone 730011

Telegraphic Address
"MEDICUS", Harare
Fax: 729154/793634 (702293 FHP)
Telex: MEDICUS 22211ZW

ZIMBABWE

Reference:

MINISTRY OF HEALTH AND CHILD CARE
P.O. Box CY 1122
Causeway
Zimbabwe

18 February 2014

Dear Mr Mangundu

RE: REQUEST FOR APPROVAL/PERMISSION TO CONDUCT A STUDY ON "STRATEGIES TO ENHANCE ACCESS TO HEALTH CARE IN RURAL AREAS OF ZIMBABWE" (MASVINGO AND CHEGUTU DISTRICTS)

I write to acknowledge receipt of your study proposal and request for permission to conduct the study on **"Strategies to Enhance Access to Health Care in Rural Areas of Zimbabwe".**

The Ministry is in full support of such studies that enhance our understanding of access and utilization of our services.

Attach the communication in support of your study from the regulatory authority, the Medical Research Council of Zimbabwe and present it to the Provincial Medical Directors of Mashonaland West (Chegutu District) and Masvingo respectively. They will assist you with access to the relevant health institutions and staff.

We look forward to getting the feedback once your study is finished.

Yours sincerely

SECRETARY FOR HEALTH & C/C
(PRINCIPAL DIRECTOR
PREVENTIVE SERVICES)
19 FEB 2014
P.O. BOX CY 1122. CAUSEWAY
ZIMBABWE

Dr G Mhlanga

A/SECRETARY FOR HEALTH AND CHILD CARE

Cc: Director Medical Research Council of Zimbabwe - Prof P. Ndebele

Annexure D: Letter of Approval: Ministry of Health and Child Care, Mashonaland West Province

Reference:

Telephone: 23211-6
Telegraphic Address:
"PROVMED" Chinhoyi
Fax: 23218

E-mail: pmdmashwest@gmail.com

ZIMBABWE

MINISTRY OF HEALTH AND
CHILD CARE
PROVINCIAL MEDICAL DIRECTOR
(Mashonaland West Province)
P.O Box 139
Chinhoyi
Zimbabwe

21st July 2014

Manenji Mangundu
Number 1, 44th Avenue
Haig Park, Mabelreign
Harare

Re: **REQUEST FOR PERMISSION TO CONDUCT A RESEARCH STUDY ON "STRATEGIES TO IMPROVE ACCESSIBLITY TO HEALTH CARE IN RURAL AREAS IN ZIMBABWE"**

Permission has been granted for you to carry out the above mentioned study.

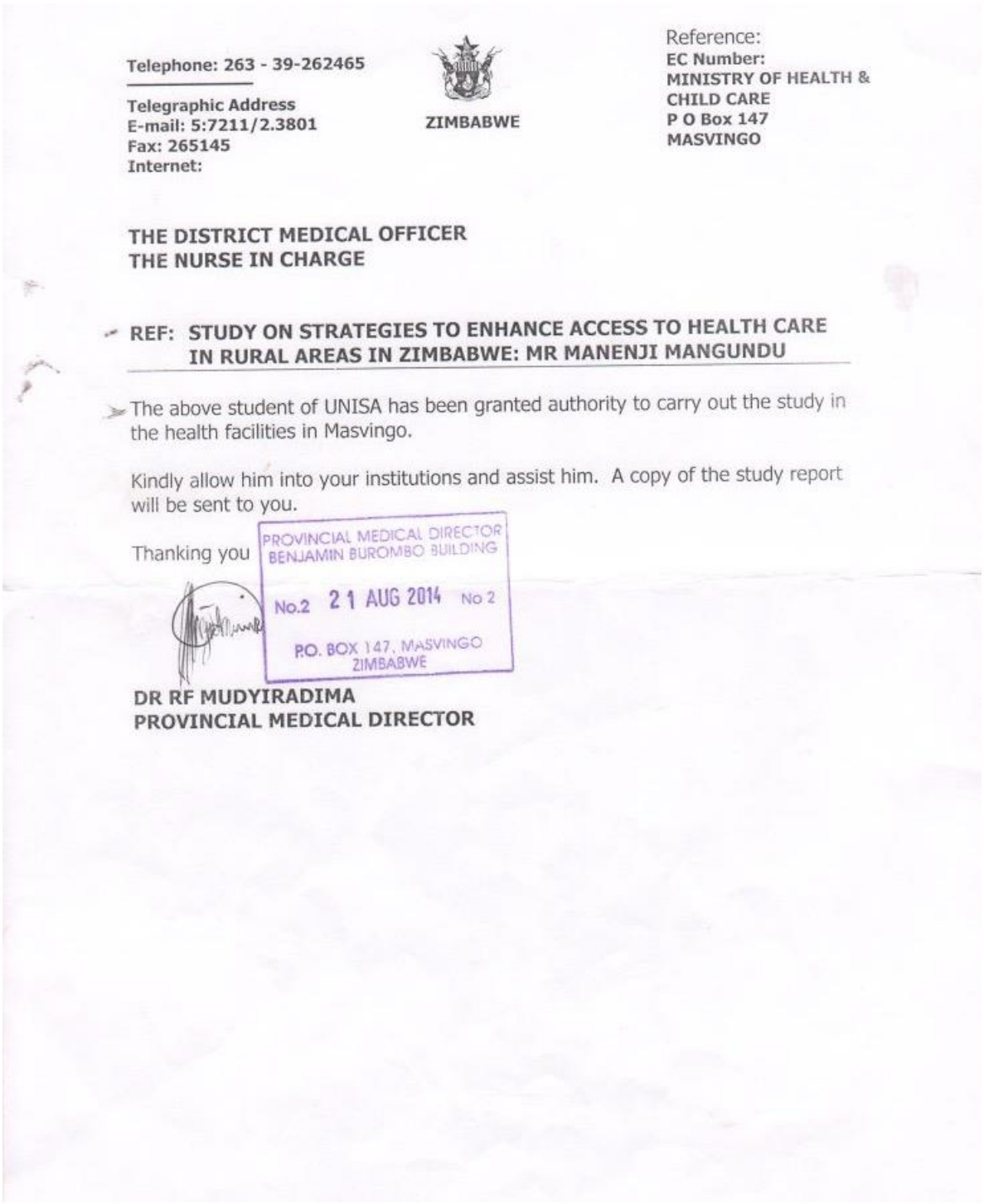
MINISTRY OF HEALTH & CHILD CARE
PROVINCIAL MEDICAL DIRECTOR
MASHONALAND WEST PROVINCE
28 JUL 2014
P.O. BOX 139, CHINHOYI
ZIMBABWE TEL: 067-

Dr. W. Nyamayaro
PROVINCIAL MEDICAL DIRECTOR (MASHONALAND WEST)

cc. A/DMO – Chegutu District

/ak

Annexure E: Letter of Approval: Ministry of Health and Child Care, Masvingo Province



Telephone: 263 - 39-262465

Telegraphic Address
E-mail: 5:7211/2.3801
Fax: 265145
Internet:

ZIMBABWE

Reference:
EC Number:
MINISTRY OF HEALTH & CHILD CARE
P O Box 147
MASVINGO

THE DISTRICT MEDICAL OFFICER
THE NURSE IN CHARGE

REF: STUDY ON STRATEGIES TO ENHANCE ACCESS TO HEALTH CARE IN RURAL AREAS IN ZIMBABWE: MR MANENJI MANGUNDU

The above student of UNISA has been granted authority to carry out the study in the health facilities in Masvingo.

Kindly allow him into your institutions and assist him. A copy of the study report will be sent to you.

Thanking you

PROVINCIAL MEDICAL DIRECTOR
BENJAMIN BUROMBO BUILDING
No.2 21 AUG 2014 No 2
P.O. BOX 147, MASVINGO
ZIMBABWE

DR RF MUDYIRADIMA
PROVINCIAL MEDICAL DIRECTOR

Annexure F: Approval letter from Masvingo District Medical Officer

Tel: 039-266533

ZIMBABWE

Ministry of Health and child welfare
Masvingo District Health Executive
P O Box 114
MASVINGO

08 SEPTEMBER 2014

THE NURSE IN CHARGE
ALL RURAL HEALTH CENTRES
MASVINGO

RE: STUDY ON STRATEGIES TO ENHANCE ACCESS TO HEALTH CARE IN RURAL AREAS IN ZIMBABWE: MR MANENJI MANGUNDU

This note serves to confirm that the above named ha been granted permission to conduct a research at your area.

May you please assist.

MASVINGO DHE
PERSONNEL & ADMINISTRATION
08 SEP 2014
P.O. BOX 114, MASVINGO
ZIMBABWE

DR MAKURIRA M T P
ACTING DISTRICT MEDICAL OFFICER

Annexure G: Approval letter from Chegutu District Medical Officer

Telephone: 153-2226/2481/3787
Fax: 153-3600

ZIMBABWE

Ref.:

DISTRICT MEDICAL OFFICER
CHEGUTU DISTRICT HOSPITAL
P.O. Box 460
Chegutu
Zimbabwe

27th August 2014

Manenji Mangundu
Number 1, 44th Avenue
Haig Park, Mabelreign
HARARE

REF:- REQUEST FOR PERMISSION TO CONDUCT A RESEARCH STUDY ON "STRATEGIES TO IMPROVE ACCESSIBILITY TO HEALTH CARE IN RURAL AREAS IN ZIMBABWE

Permission has been granted for you to carry out the above mentioned study in Chegutu District.

D.M.O
CHEGUTU DISTRICT HOSPITAL
27 AUG 2014
P.O. BOX 460, CHEGUTU
ZIMBABWE

Dr T. Nhende
A/ District Medical Officer: Chegutu

/sm

Annexure H: Letter requesting permission from village heads

Number 1, 44th Avenue
Haig Park, Mabelreign
Harare

22 September 2015

The Village Head

Dear Sir

Re: Request for approval/permission to conduct a research study in your village

I Manenji Mangundu, a PhD student (Student number 47272155) with UNISA intend to conduct a research study on Strategies to Enhance Accessibility to Health Care in Rural areas of Zimbabwe. The purpose of my research is to develop strategies for enhancing accessibility to health care in rural areas. I therefore request for your permission to undertake the research study with health care users utilising the local public health facilities in your village.

The selection of study participants and collection of data will be treated in accordance with ethical principles where privacy, beneficence, do no harm will be respected. All information collected will be private and confidential and participants will have rights not to participate or withdraw from participating. No identifiable participants' names will be revealed in the final report of the study.

A consent form has been developed which outline key issues pertaining to the study for the participants who are willing and interested to participate in the study. Participants have the right to withdraw from the study at any time without penalty. There will be no remuneration for participating in the study.

If approval/permission is granted, data will be gathered by means of structured interview questionnaire for health care users, each questionnaire will take at least 45 minutes. No costs will be incurred by individuals participating in this research study.

Thank you for your cooperation, please indicate approval by signing under your name below.

Student Village head' signature .....

Manenji Mangundu Date of signature
PhD student, UNISA

……
Signature

Annexure I: Informed Consent Form for Professional Nurses

PROJECT TITLE: Strategies to enhance accessibility to health care in rural areas of Zimbabwe

Principal Investigator Manenji Mangundu, [*Ph.D student*]

Phone number(s) +263 779324355

PURPOSE

You are being asked to participate in a research study of "Strategies to enhance accessibility to health care in rural areas of Zimbabwe". The purpose of the study is to determine strategies to enhance accessibility to health care in rural areas of Zimbabwe. You were randomly selected as a possible participant in this study because you are a professional nurse working at the health facility selected for the study. A total of 120 professional nurses are expected to participate in this study in Zimbabwe.

PROCEDURES AND DURATION

If you decide to participate, you will be involved in responding to self administered questionnaire for approximately 45 minutes on challenges to accessibility to health care services and opportunities for improveing access to health care in rural areas of Zimbabwe. The data collection is a once off process as you will only complete the self administered questionnaire once for the time specified above.

RISKS AND DISCOMFORTS

There is no risk associated with this research study only your time to participate is needed, the data collection process will be carried out at your work place.

BENEFITS AND/OR COMPENSATION

Your views will be used to inform the policy makers (Directors in Ministry of Health and Child Care) for the purposes of formulating policies or strategies that may enhance accessibility to health care by the people in rural areas of Zimbabwe. You will not be compensated for participating in this research study.

ALTERNATIVE PROCEDURES OR TREATMENTS

There will be no alternative procedures and/or treatments

CONFIDENTIALITY

The responses will be recorded on the questionnaire and your name will not appear anywhere in the form. If you indicate your willingness to participate in this study by signing this document, you plan to disclose challenges in accessing health care in rural areas of Zimbabwe to the University of South Africa (UNISA) Any information that is obtained in connection with this study that can be identified with you will remain confidential and will be

disclosed only with your permission. Under some circumstances, the MRCZ may need to review respondent's records for compliance audits.

ADDITIONAL COSTS

There are no additional costs or burden for participating in this study except your time.

IN THE EVENT OF INJURY

In the event of injury resulting from your participation in this study, treatment shall be offered by the study.

In the event of injury, contact [Manenji Mangundu Mobile number 0779324355, I will be available 24 hours per day]

VOLUNTARY PARTICIPATION

Participation in this study is voluntary. If you decide not to participate in this study, your decision will not affect your future relations with the researcher and University of South Africa If you decide to participate, you are free to withdraw your consent and to discontinue participation at any time without penalty.

OFFER TO ANSWER QUESTIONS

Before you sign this form, please ask any questions on any aspect of this study that is unclear to you. You may take as much time as necessary to think it over.

AUTHORIZATION

You are making a decision whether or not to participate in this study. Your signature indicates that you have read and understood the information provided above, have had all your questions answered, and have decided to participate.

Name of Research Participant (please print)	Date
Signature of Respondent or legally authorized representative	Time

Name of Staff Obtaining Consent	Signature	Date
Name of Witness (*if required)*	Signature	Date

YOU WILL BE OFFERED A COPY OF THIS CONSENT FORM TO KEEP.

If you have any questions concerning this study or consent form beyond those answered by the investigator, including questions about the research, your rights as a research participant or research-related injuries; or if you feel that you have been treated unfairly and would like to talk to someone other than a member of the research team, please feel free to contact the Medical Research Council of Zimbabwe (MRCZ) on telephone (04)791792 or (04) 791193 and cell phone lines 0772 433 166 or 0779 439 564. The MRCZ Offices are located at the National Institute of Health Research premises at Corner Josiah Tongogara and Mazowe Avenue in Harare.

Annexure J: Informed Consent Form for Health care users (HCUs)

PROJECT TITLE: Strategies to enhance accessibility to health care in rural areas of Zimbabwe

Principal Investigator Manenji Mangundu, [*Ph.D student*]

Phone number(s) +263 779324355

PURPOSE

You are being asked to participate in a research study of "Strategies to enhance accessibility to health care in rural areas of Zimbabwe". The purpose of the study is to determine strategies to enhance accessibility to health care in rural areas of Zimbabwe. You were randomly selected as a possible participant in this study because you are a health care user and in the cluster of the selected areas for the research study. A total of 450 health care users will participate in this study in Zimbabwe.

PROCEDURES AND DURATION

If you decide to participate, you will be involved in responding to interview questionnaire for approximately 45 minutes on challenges to access health care services and your contributions on how to improve access to health care in rural areas in Zimbabwe. The data collection is a once off process as you will only be interviewed once for the time specified above.

RISKS AND DISCOMFORTS

There is no risk associated with this research study only your time to participate is needed, the data collection process will be carried out at your home.

BENEFITS AND/OR COMPENSATION

Your views will be used to inform the policy makers (Directors in Ministry of Health and Child Care) for the purposes of formulating policies or strategies that may improve access to health care by the people in rural areas of Zimbabwe. You will not be compensated for participating in this research study.

ALTERNATIVE PROCEDURES OR TREATMENTS

There will be no alternative procedures and/or treatments

CONFIDENTIALITY

The responses will be recorded on the questionnaire and your name will not appear anywhere in the form. If you indicate your willingness to participate in this study by signing this document, you plan to disclose challenges in accessing health care in rural areas of Zimbabwe to the University of South Africa (UNISA) Any information that is obtained in connection with this study that can be identified with you will remain confidential and will be

disclosed only with your permission. Under some circumstances, the MRCZ may need to review patient records for compliance audits.

ADDITIONAL COSTS

There are no additional costs or burden for participating in this study except your time.

IN THE EVENT OF INJURY

In the event of injury resulting from your participation in this study, treatment shall be offered by the study.

In the event of injury, contact [Manenji Mangundu Mobile number 0779324355, I will be available 24 hours per day]

VOLUNTARY PARTICIPATION

Participation in this study is voluntary. If you decide not to participate in this study, your decision will not affect your future relations with the researcher and University of South Africa If you decide to participate, you are free to withdraw your consent and to discontinue participation at any time without penalty.

OFFER TO ANSWER QUESTIONS

Before you sign this form, please ask any questions on any aspect of this study that is unclear to you. You may take as much time as necessary to think it over.

AUTHORIZATION

You are making a decision whether or not to participate in this study. Your signature indicates that you have read and understood the information provided above, have had all your questions answered, and have decided to participate.

Name of Research Participant (please print)	Date
Signature of Participant or legally authorized representative	Time

Name of Staff Obtaining Consent	Signature	Date
Name of Witness (*if required)*	Signature	Date

YOU WILL BE OFFERED A COPY OF THIS CONSENT FORM TO KEEP.

If you have any questions concerning this study or consent form beyond those answered by the investigator, including questions about the research, your rights as a research participant or research-related injuries; or if you feel that you have been treated unfairly and would like to talk to someone other than a member of the research team, please feel free to contact the Medical Research Council of Zimbabwe (MRCZ) on telephone (04)791792 or (04) 791193 and cell phone lines 0772 433 166 or 0779 439 564. The MRCZ Offices are located at the National Institute of Health Research premises at Corner Josiah Tongogara and Mazowe Avenue in Harare.

Annexure K: Approval letter from Clerk of Parliament

All communications should be addressed to:
CLERK OF PARLIAMENT

Fax: 252935

PARLIAMENT OF ZIMBABWE
P.O. Box CY 298
Causeway
Zimbabwe
Telephone: 700181-8, 252931
252936/7, 252940/2
252945/6, 708923

Ref: 201

02 August, 2016

Mr. M. Mangundu
Number 10 Shashi Flats,
Quendon Road, Mabelreign
HARARE

mmangundu@gmail.com

RE: PORTFOLIO COMMITTEE ON HEALTH AND CHILD CARE: PERMISSION FOR A VALIDATION MEETING ON A STUDY ON "STRATEGIES TO ENHANCE ACCESS TO HEALTH CARE IN RURAL AREAS OF ZIMBABWE."

Reference is made to your letter dated 30 June, 2016, wherein you requested for permission for a validation meeting on the study "Strategies to enhance access to Health Care in rural areas of Zimbabwe." I am pleased to inform you that the Speaker of the National Assembly has granted approval for you to engage the Portfolio Committee on Health and Child Care. Parliament adjourned to 16 August, 2016. It is, therefore, proposed that the validation meeting be scheduled on 16 August, 2016 when Members will be available.

Should you need further clarifications, please contact Mrs. E. Mafuruse at 04-700181-9, Ext. 2253/2164 or 0778717255/0734829936.

K.M CHOKUDA
CLERK OF PARLIAMENT

Annexure L: Self-administered questionnaire for Professional Nurses

My name is Manenji Mangundu a student registered with UNISA (47272155) and I am conducting research on the accessibility to health care in rural areas. In order to assess the current situation pertaining to accessibility to health care facilities, I kindly request you to complete the questionnaire. It will take about 30-45 minutes to complete. Your response to this questionnaire will be treated with strict confidentiality and your personal details will nowhere be asked or provide to anybody else. You are requested to provide honesty responses as this will enable me to have reliable information. You are welcome to ask for more details about this study or you can contact the ethics committee chair at MRCZ +263 4 791792 or UNISA +27 12 429-2226. If you volunteer to participate in the study, please answer all the questions and be as honest as you possibly can. You have no obligation to participate and are free to withdraw at any time without any disadvantages.

Name of District: _____ Name of the health facility: _____

Please answer the following questions by making an X in the appropriate answer of your choice.
Eg Yes ☒ No ☐

A	**General information of respondent**	
A1	Gender	Male ☐ Female ☐
A2	Position at health facility	Nurse-in-Charge ☐ Nurse-Midwife ☐ Nurse (RGN) ☐ Nurse (SCN) ☐ Nurse (PHC) ☐
A3	Your age in years	.....
A4	What is you highest education level	Certificate ☐ Diploma ☐ Degree ☐ Masters degree ☐
A5	How many years have you been working as a nurse in general?	.....
A6	How many years have you been working as a nurse in Primary Health Care?	.....
A7	List all the in-service training opportunities that you have done since you joined the Ministry of Health and Child Welfare.	....
A8	How often are you able to update your knowledge or training? (in-service, workshops, seminars)	....

		.....
A9	What is your average monthly income?	US$250 – 600 □ US$751 – 1000 □ US$501 -750 □ US$1000+ □

B. Human Resources					
-/*B10	Indicate the number of health staff members on duty, available posts per position, vacant post per position in your facility	Post	Available posts	Vacant posts	On duty Male/ Female
		Medical doctors			
		Nurse-Midwife			
		Nurse			
		Pharmacy Technician			
		Environmental health technician			
		Laboratory Technician			
		Nurse aid			
		General hand			
B11	Catchment area population for health facility?	.....			
B12	What is the type of settlements in the catchment area that you serve?	Farms □ villages □ Resettlements □ Other …….			
B13	How many patients do you see/attend per day?	.....			

C. Services accessible/available at health facility

C14	Type of services offered at this health care facility *(Tick all the applicable services please)*	Out Patient Department (OPD)	□
		Antenatal Care (ANC)	□
		Maternal and Child Health (safe deliveries)	□
		Integrated Management of Childhood Illness	□
		Expanded Program on Immunisation	□
		Laboratory services	□
		Voluntary Council and Testing	□
		Malaria services	□
		Tuberculosis services	□
		Family Planning	□
		Other specify	□

C15	Opening hours for this health facility?	.....to .....

C16	How many days/week and hours/day does the clinic open for the	Service	Days/week	24 Hour Care	
		Out Patient Department (OPD)		yes	No
		Antenatal Care (ANC)		yes	No

	following services? *(Write number of days against each service and circle yes or no on 24 hr care)*	Maternal and Child Health (safe deliveries)		yes	No
		Integrated Management of Childhood Illness		yes	no
		Expanded Program on Immunisation		yes	no
		Laboratory services		yes	no
		Voluntary Council and Testing		yes	no
		Malaria services		yes	no
		Tuberculosis services		yes	no
		Family Planning		yes	no
		Other specify		yes	no

D. Accessibility (physical) for the health care users				
D17	What is estimated distance in km for the care users who access you facility from the health facility to where majority of people stay in catchment area?	Shortest	Average	Longest .....
D18	What is the mode of transport used by the majority of the health care users in your catchment area?	☐ Walk ☐ Bicycle ☐ Car ☐ Public Transport ☐ Animal drawn Cart :		
D19	What is the average cost of transport?	.....		
D20	What is the longest distance	.....		

E. Waiting time			
E21	What is the average waiting time for any health care user for the listed services? *(Registration and consultation)*	Out Patient Department (OPD)	.....
		Antenatal Care (ANC)	.....
		Maternal and Child Health (safe deliveries)	.....
		Integrated Management of Childhood Illness	.....
		Expanded Program on Immunisation	.....
		Laboratory services	.....
		Voluntary Council and Testing	.....
		Malaria services	.....
		Tuberculosis services	.....
		Family Planning	.....
		Other specify	.....
E22	Are patients sometimes sent back because of heavy caseload?	Yes ☐ No ☐ If yes, motivate your answer please	

E23	If yes what happens to patients?	....			
E24	Do patients leave before being attended because of long waiting time?	Yes ☐ No ☐			
E25	What can be done to improve this problem (people leaving the facility because of the long waiting time)?	....			
F. Affordability (user fees)					
F26	Does this facility charge user fees?	Yes ☐ No ☐			
F27	Which type of services are charged user fees?		**Yes**	**No**	**Cost if Yes**
		Out Patient Department (OPD)			
		Antenatal Care (ANC)			
		Maternal and Child Health (safe deliveries)			
		Integrated Management of Childhood Illness			
		Expanded Program on Immunisation			
		Laboratory services			
		Voluntary Council and Testing			
		Malaria services			
		Tuberculosis services			
		Family Planning			
		Drugs			
		Other specify			
F28	Can the majority of people afford to pay?	Yes ☐ No ☐ If yes, motivate your answer			
F29	If no, what happens to the patients?	....			
F30	Are there any exemptions from paying for special groups?	Yes ☐ No ☐			
		If yes, who are the special group.....			
G. Accessibility to referral health facilities					
G31	Do you refer patients from this health facility?	Yes ☐ No ☐			
G32	Where do you refer your patients?	.....			
G33	How do you communicate with other facilities?	.....			

G34	How far is the referral health facility?	.....	
G35	How do they travel to the referral facility?	.....	
G36	If by bus or taxi what is the estimated cost of transport?	.....	
G37	What are the service charges at the referral health facility?	.....	
G38	Are referrals followed up?	Yes ☐ No ☐	
		If no why?.....	
H. Accessibility to medical supplies (Drugs availability)			
H39	Do you have a list of drugs that should be at the health facility?	Yes ☐ No ☐	
H40	Which essential drugs are not available?	....	
H41	If no, how do patients access drugs?	....	
H42	How often are drugs supplied at the health facility?	Monthly ☐ Quarterly (3months) ☐ Half-Yearly ☐ Yearly ☐	
H43	Is a refrigerator available?	Yes ☐ No ☐	
H44	Is the refrigerator functioning?	Yes ☐ No ☐	
H45	How do you rate drug availability at the health facility?	Poor ☐ Good ☐ Better ☐	
I. Support visits by supervisors			
I46	Did you receive supervisory visits in the last 6 months?	Yes ☐ No ☐	
I47	If yes, at which level	District ☐ Province ☐ Headquarters ☐	
I48	Please describe what you think can be done to improve the accessibility to the listed services at this health facility? *(state per each service)*	Out Patient Department (OPD)	
		Antenatal Care (ANC)	
		Maternal and Child Health	

		(safe deliveries)	
		Integrated Management of Childhood Illness	
		Expanded Program on Immunisation	
		Laboratory services	
		Voluntary Council and Testing	
		Malaria services	
		Tuberculosis services	
		Family Planning	
		Drugs	
		Other specify	

49. Please write down any recommendations that you think can be implemented to improve the accessiblilty to health care in rural areas in Zimbabwe?

.....

.....

.....

.....

.....

THANK YOU FOR YOUR TIME AND COOPERATION

Annexure M: Health Care Users Questionnaire

My name is ……..I am part of a team of people who are carrying out research on how accessible is health care to you in the rural areas. To help me to understand the situation, I would like to ask you some questions regarding access to health care. This will take about 30-45 minutes. Your answers will remain confidential, and we will not be taking down your name or address, so your answers will be anonymous. This means that no one will know who gave us these answers. There are no "correct" or "incorrect" answers. Each of your answers will depend on your views and your situation. You are welcome to ask for more details about this study. If you agree to participate in the study we can continue. Please be assured that you are free to withdraw at any time without any disadvantages.

Date: ___/___/___ Start time: ___:___ End time: ___:___

Name of District:……Name of Health Centre/clinic: ……

A	**General information of respondent**				
A1	Respondent is	Male ☐ Female ☐			
A2	Position in family	Head of family: Yes ☐ No ☐ Husband ☐ Wife ☐ Son/Daughter ☐			
A3	Age of respondent	.....			
A4	Number of household members *(Tick the ages of members and indicate next to age range, how many members fall in this age range -only members staying at the house for past 1 year or more)*	☐ I day to 5 years …… ☐ 6 – 15 years …….. ☐ 16 – 45 years …… ☐ 46 and above ……			
A5	Highest education level in the household	Primary School ☐ Secondary School ☐ College Certificate ☐ Diploma ☐ Degree ☐ Masters degree ☐			
A6	Employment status of household bread winner/s	Indicate the position of the household member (husband/wife/child)	Full time job	Part-time Job	Self Employed
		....	☐ ☐ ☐	☐ ☐ ☐	☐ ☐ ☐

A7	Average monthly income for the household	Less than US$100 □ US$100 – 250 □ US$251 – 500 □ US$501 -750 □ US$751 – 1000 □ US$1000+ □
A8	Land status	Owned □ Rented □ Resettlement □ Ancient Village □
A9	Type of Livestock and numbers owned	Chickens ……. Goats…….. Sheep …… Cows …… Donkey …….. Horse …….
A10	Which of the following assets does your household have?	Bicycle □ Ox-drawn or donkey drawn cart □ Telephone □ Motorbike □ Car □ Television □ Wheelbarrow □ Cell Phone □ Radio □

Existing health care facilities

B	**Physical Accessibility**	
B11	Which health centre/clinic do you visit when in need of health care? **Mark all answers as per response if more than 1**	□ Hospital □ Mission hospital □ Health Clinic □ Local Pharmacy shop □ Traditional Healer □ Traditional Birth Attendant
B12	If you attend all the facilities, please state which one do you normally go to visit first.	…… …….. …… …… ……
B13	What is the type of the health clinic?	□ Private □ Public (government) □ Mission □ Company medical facility
B14	During your last visit who attended to you?	□ Professional Nurse □ Professional Doctor □ Village Health Worker
B15	Is the health clinic visited by your household members the nearest one to you?	Yes □ No □ If no, what was the reason not to visit the nearest health facility ? Expensive □ No doctors □ Do not trust the staff □ No medicine/drugs □ Unfriendly behaviour □ Religious reasons □

B16	What is the distance in km from your household to the health clinic?	Distance
B17	What type of transport do you use to visit the clinic? *(Tick and indicate time during the two seasons)*	**In Dry season** **In Rainy season** ☐ Walk: Time taken to reach **.....** **.....** ☐ Bicycle: Time taken to reach …….... ..... ☐ Car: Time taken to reach ……..... ..... ☐ Public Transport: Time taken to reach …… ..... ☐ Animal drawn Cart: Time taken to reach …… **.....**
B18	If you use public transport, is it easily available	Yes ☐ No ☐ How long do you have to wait to get it ?**.....**
B19	If you use public transport, can you afford to pay the fare?	Yes ☐ No ☐ If no can you explain why ?**.....** …… …… …… …….
B20	What is the cost of transport from your home	
B21	What is the condition of the public transport? **Skip B22 if public transport is used**	Very bad (skorokoro) ☐ Safe to travel in ☐ Good and comfortable ☐
B22	If by your own car, who drives?	Drive myself ☐ Family member or friend drive me ☐ My driver drives me ☐
B23	Is fuel easily accessible?	Yes ☐ No ☐
B24	What is the state of the road?	Potholes ☐ No road, cart strips ☐ No bridge ☐
B25	What do you do if you	**……**

	cannot pay for transport and you or someone from your household needs to get to the nearest clinic/hospital?	…… …… …….. …… ……..
B26	What challenges makes your journey to the clinic difficult?	No road ☐ Bad road ☐ No bridge ☐No transport ☐ Other_____
B27	Are you able to contact the health facility in case of emergency?	Yes ☐ No ☐
		If yes, what do you use to communicate? ……
B28	In case of emergency, do you have access to an ambulance from the health facility?	Yes ☐ No ☐

C. Accessibility to health care services at the health centre/clinic

	Waiting time at the health facility	
C29	How long does it normally take before a nurse attended to you	0- 30 minutes ☐ 31 mins – 1 hour ☐ Between1–2 hours ☐ More than 2 hours ☐ Not attended at all ☐
		Is there a good waiting area? Yes ☐ No ☐ If the answer is no, motivate please ……
C30	Have you ever been returned without being attended to, what was the reason?	…… …… ……
		Did you get treatment the following day? Yes ☐ No ☐ If no, why not?……
C31	Do you have access to health care at anytime of the day at the clinic that you visit?	Yes ☐ No ☐
		If no which time is the clinic closed? …… ……
Access to health workers		
C32	When did you last seek health care?	…… ……
C33	Where did you seek health care?	……

C34	What treatment did you receive the last time you visited the clinic?	…… …….. …… …… …… ……
C35	What health care services are provided at the clinic **Read responses to the respondents**	Expanded program on immunisation (EPI) ☐ Maternal health services (ante and post natal care) ☐ Family planning services ☐ HIV/AIDS services ☐ Voluntary testing and counseling services ☐ Treatment of minor ailments and injuries ☐ Prevention programs ☐ Integrated Management of child Illnesses ☐ Malaria Treatment services ☐ Tuberculosis treatment services ☐ Laboratory services ☐ Pharmacy / drug store ☐
C36	How many nurses are at your clinic?	……..
C37	Is there always a nurse available at the health facility?	Always ☐ Sometimes ☐ Never ☐
C38	How respectful towards you was the nurse who attended to you last time you were at the clinic? **Skip C39 if response is respectful**	Very Respectful ☐ fair ☐ Not respectful ☐
C39	If the nurse was not respectful, please explain in what way(s) she was disrespectful to you	....
C40	Overall, how satisfied were you with the type and quality of care you received from nurses at the clinic?	5 Very satisfied ☐ 4 Satisfied ☐ 3 Partly satisfied ☐ **2** Dissatisfied ☐ 1 Very Dissatisfied ☐
C41	How do you view the competency of the staff at the	Poor ☐ Good ☐ Excellent ☐

	clinic? If excellent skip C42	
C42	If dissatisfied, please explain why you were dissatisfied with the service at your nearest clinic/hospital	....
C43	Is there any health care service given after hours (between 16h00 and 07h00)?	Yes ☐ No ☐
		If yes, which types of services are provided? ....
		If no explain why? ....
C44	If you have a health problem/illness, do you seek traditional help?	Yes ☐ No ☐
		If yes, which one? Prophets ☐ Traditional healer ☐ Traditional birth Assistant ☐.
		If no, why not ?..... .....
D. Availability of drugs and equipment		
D45	During the past year, were any of your prescribed medicines unavailable ("out of stock")?	Yes ☐ No ☐
D46	Do you get drugs at the clinic after consultation with the nurse? **If yes, skip D47**	Yes ☐ No ☐
D47	If no, where do you get the drugs?	Pharmacy ☐ General Dealers Shops ☐ Hospital ☐
D48	How far is the nearest point of drug purchase from your home?	5km ☐ 6-10km ☐ 11-15km☐ more than 15km ☐
D49	Are you sometimes asked to buy Intravenous fluids from a Pharmacy (drip) when admitted or as in- patient at hospital?	Yes ☐ no ☐
		If yes how often? .....
D50	Are pregnant women asked to bring suturing threads, needles, cotton, gloves to the clinic for assisted deliveries by nurses?	Yes ☐ no ☐
		If yes, how often? .....
D51	Are laboratory services available at the clinic/hospital?	Yes ☐ no ☐
		If no why..not..... .

		If no, where are these services available? .....
		If yes, is it clean?.....
D52	Are ambulance services available at the clinic for referrals?	Yes ☐ no ☐
		If no how are patients transferred to the next referral level? ....
E. Affordability		
E53	Do you pay when you visit the clinic?	Yes ☐ No ☐
E54	How much do you pay when you visit the clinic?	.....
E55	Do you afford to pay user fees?	Yes ☐ No ☐
E56	If not, what do you do when you are ill?	....
E57	Does your household have an insurance card? Medical aid	Yes ☐ No ☐
E58	Does the health clinic staff give treatment on credit?	Yes ☐ No ☐
E59	What do you think should be done to improve the following health services?	Treatment of minor ailments (like flu, nausea, headache, vomiting ect) and injuries ....
		Integrated Management of child Illnesses .....
		Maternal health services (ante and post natal care) .....
		Laboratory services .....
		Pharmacy / drug store ....
		Malaria Treatment services..... .....
		Tuberculosis treatment services ....

		Family planning services .....
		Expanded program on immunisation (EPI) .....
		HIV/AIDS services .....
		Voluntary testing and counselling services .....
E60	Which of the listed factors are important to you, to be satisfied with the health care services? *Please rank (1-highest and 6 lowest).*	Reduced travel time..... Reduced waiting time..... Reduced costs..... Friendliness of health clinic nurses..... Availability of drugs..... Availability of medical equipment like gloves, sutures, drips, blood transfusion (IV).....

Thank you for your time. I appreciate your participation.

Annexure N: Information letter for national health directors

I Manenji Mangundu, a PhD student (Student number 47272155) with University of South Africa (UNISA) intend to conduct a research study on accessibility to health care in rural areas. The research study topic is "Strategies to enhance accessibility to health care in rural areas of Zimbabwe".

You are kindly requested to participate in a Nominal Group Technique (NGT) session for approximately 90 to 120 minutes. The nominal group may be carried out in Harare, which the researcher thinks is a central place and also closer to majority of the National Health Coordinators (Departmental Directors). If you are out of Harare you may be requested to travel. The NGT session will be focusing on developing strategies for improving access to health care in rural areas. The nominal group session will be recorded and your name will not appear anywhere in the data. You will not get any remuneration for participating in the research study. There are no known risks associated with the study.

Your participation in the study will be voluntary and you can pull out of the study when you do not feel comfortable. If you withdraw from the study you will continue to be treated as usual with respect and customary way.
The knowledge gained from the study may either help your department or others including health care users in the rural areas in Zimbabwe. Your participation will be highly appreciated as your contributions will go a long way in improving access to health care in rural Zimbabwe.

Yours Sincerely,

Manenji Mangundu
PhD student, UNISA

……
Signature

Number 1, 44th Avenue
Haig Park, Mabelreign
Harare

Annexure O: Information letter for Health Care Users

"Strategies to enhance accessibility to Health Care in rural areas of Zimbabwe".

I Manenji Mangundu, a PhD student (Student number 47272155) with University of South Africa (UNISA) intend to conduct a research study on accessibility to health care in rural areas, looking at strategies that can be developed based on your contribution pertaining to state of health care in your area. I therefore need your participation in the research study and contribution based on your experience with the health care situation to be able to develop the Strategies. The knowledge gained from this study may either help you or others in the rural areas in Zimbabwe.

If you are willing to participate in this study, you will be asked to answer questions on access to health care. This interview will take 45 minutes of your time. Information collected will not be revealed to anyone even supervisors. While data collected from you, will be confidential the report may be published and your name will remain anonymous.

The responses will be recorded on the questionnaire form and your name will not appear anywhere in the form. The interview will be conducted at your household premises. Your participation in the study is voluntary and you are free to pull out of the study if you are not comfortable even in the middle of data collection. If you withdraw from the study your status will not change and you will continue to be treated with respect just like before refusing to participate in the research study.

There will be no remuneration for participating in the research study. There are no known risks associated with the study.

Therefore if you are willing to participate in this research study, your participation will be highly appreciated.

Yours Sincerely,

Manenji Mangundu
PhD student, UNISA

……
Signature

Number 1, 44th Avenue
Haig Park, Mabelreign
Harare

Annexure P: Professional nurses Information letter for a research study

"Strategies to enhance accessibility to health Care in rural areas of Zimbabwe".

I Manenji Mangundu, a PhD student (Student number 47272155) with University of South Africa (UNISA) intend to conduct a research study on accessibility to health care in rural areas, looking at strategies that can be developed based on your understanding on access to health care in your area. I therefore need your participation in the research study in order to carry out the study.

If you are willing to participate in this study, you will be asked to complete a questionnaire on access to health care. The questionnaire will take at least 30 – 45 minutes of your time. Information collected will not be revealed to anyone even your supervisors. While data collected from you, will be confidential the report may be published and your name will remain anonymous. The questionnaire will be delivered and collected personally by the Field Workers at your workplace.

The responses will be recorded on the questionnaire form and your name will not appear anywhere in the form. Your participation in the study is voluntary and you are free to pull out of the study if you are not comfortable even in the middle of data collection. If you withdraw from the study your status will not change and you will continue to be treated with respect just like before refusing to participate in the research study.

The knowledge gained from this study may either help you or others in the rural areas in Zimbabwe.

There will be no remuneration for participating in the research study. There are no known risks associated with the study.

Therefore if you are willing to participate in this research study, your participation will be highly appreciated.

Yours Sincerely,

Manenji Mangundu
PhD student, UNISA

……
Signature

Number 1, 44th Avenue
Haig Park, Mabelreign
Harare

Annexure Q: Validation form for the PPCH participants

Systems Model input	Theme	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Lead Responsible	E	F	NF	NN	Comments
Physical Resources	**3. Develop Health Infrastructure in the rural areas.**	• To improve the distribution of the health facilities in rural areas of Zimbabwe.	**1.1** Build health facilities within 5 km of each village.	**1.1.1** Prioritising construction of health facilities in areas with poor distribution like resettlement areas. **1.1.2** Mobilisation of financial resources for the upgrading of the satellite health facilities.	• Improved health facility coverage in rural areas of Zimbabwe. • Health care users walk less than 5 km to the health facility.	• Ministry of Health and Child Care (MoHCC) • Ministry of Finance • MPs (Health Committee)					
		• To improve the conditions of the existing health facilities' infrastruc-ture.	**1.2** Develop infrastructure by: • building roads • providing safe piped water • providing electricity • facilitating communication networks • renovating existing buildings.	**1.2.1** Reviewing the health facility infrastructural development needs and allocating the budget as per the needs and ensuring water, electricity and communication equipment is prioritised.	• Improved accessibility to water, electricity and communicatio n at the rural health facilities.	• MoHCC • Members of the Parliamentary Committee for Health.					

Systems Model input	Theme	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Lead Responsible	E	F	NF	NN	Comments
				1.2.2 Enforcement of infrastructure development policy priorities to address health infrastructure backlogs and upgrading existing health facilities.	• Improved health infrastructure conditions at the health facilities.	• Ministry of Finance and economic development. • Members of Parliament and PPCH					
Material Resources	**4. Provision of appropriate medical drugs at the rural health facilities.**	• To ensure availability and accessibility to essential medical drugs at the health facilities for the HCUs and health workers in the rural areas.	**2.1.** Establish partnerships with national and international medical drug producers and non-government organizations and; • Facilitate a medical drug supply pipeline.	**2.1.1** Sharing medical drug supply strategic action plans and/or joint planning with health partners like donors, non-governmental organisations and United Nations Agencies (UNICEF, WHO).	• To ensure availability and accessibility to essential medical drugs at the health facilities for the HCUs and health workers in the rural areas. • Improved accessibility and management of medical drugs at the rural health facilities.	• Ministry of Health and Child Care. • Permanent Secretary and Director of Pharmacy. • Provincial and District Pharmacists. • Health Services Administrators.					
			2.2 Build the capacity of professional nurses by: • Facilitating training to	**2.2.1** Use of information, communication technology for ordering and							

Systems Model input	Theme	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Lead Responsible	E	F	NF	NN	Comments
			utilise information, communication technology for the ordering and monitoring of medical drugs • Facilitating training in logistics management of medical drugs at the health facilities.	monitoring medical drugs at the rural health facilities **2.2.2** Training of professional nurses in logistics management focusing on drug ordering and chain management.							
			2.3 Provide payment to medical drug companies within deadlines.	**2.3.1** Multi-year financial mobilisation for payment of medical drugs through development of proposals based on the country's health strategy.	• Improved funding for the procurement of medical drugs.						

Systems Model input	Theme	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Lead Responsible	E	F	NF	NN	Comments
Human Resources	**3 Development and retention of human resources in the rural health facilities.**	• To attract and retain health workers at the rural health facilities through promotion and payment of incentives.	**3.1** Provide incentives such as: • Transport allowances • Off station allowances to attract health workers to work in rural health facilities.	**3.1.1** Reviewing of the health worker incentives and gazetting the Statutory Instrument for additional rural health worker allowances.	• Improved retention of competent and skilled health workers at the rural health facilities.	• Ministry of Health • Director of Manpower Planning and Development • Director of Human Resources in the MoHCC.					
			3.2 Promote career growth of health workers at rural facilities by: • Professional development of skills and competencies.	**3.2.1** Putting in place well defined criteria for career advancement by low level health workers.	• Increased job satisfaction by health workers at the rural health facilities.						
		• To build the capacity of health workers through in-service and on job training in line	**3.3** Train health workers according to changing trends and health needs in the rural health facilities.	**3.3.1** Reinforce and scale-up in-service training of the health workers in rural areas to improve knowledge and health services delivered to HCUs particularly by	• Increased motivation by heath workers to continue working at the rural health facilities. • Retention of						

Systems Model input	Theme	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Lead Responsible	E	F	NF	NN	Comments
		with changing health trends.		professional nurses. **3.3.2** Targeting professional nurse recruits living in rural areas and who have done their training in the rural areas.	the health workers at the rural health facilities.						
Human Resources	**4. Review the workload of the health workers at the health facilities.**	• To employ the right number of health workers based on workload at the health facility.	**4.1** Carryout workload indicator staff need assessment in Zimbabwe and address shortages.	**4.1.1** Review the number of health workers based on the workload at each rural health facility.	• The shortage of health workers is addressed in rural areas.	• Ministry of Health and Child Care. • Ministry of Labour and Social Welfare.					
		• To ensure an appropriate skill mix at the health facility level including estimating workforce	**4.2** Select and recruit health workers with skills needed for the day to day running of the health facilities such as microscopes technicians, pharmacy technicians.	**4.2.1** Reviewing of the job profiles of the health workers at the health facilities and employing based on available human resources budget.	• Improved health care service delivery according to the community needs.	• Parliamentary Committee for Health.					

Systems Model input	Theme	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Lead Responsible	E	F	NF	NN	Comments
		requirements for health workers.									
Material Resources	**5. Provision of adequate material and minimum required medical equipment in the health facilities.**	• To ensure the availability of adequate, appropriate and well-maintained. medical equipment and accessories in accordance with standards at the rural health facilities.	**5.1** Procure and deliver basic medical equipment to rural health facilities with shortages or without.	**5.1.1** Budgeting for the acquisition of basic equipment and financial resource mobilization from other stakeholders like donors, private companies.	• Improved diagnosis and health care service delivery by health workers at the first point of access for health care users.	• Members of Parliament (PPCH). • MoHCC. • Ministry of Finance.					
			5.2 Distribute medical equipment using the WHO minimum standard Equipment List to the rural health facilities in need.	**5.2.1** Enforcement of the policy that support distribution, management and maintenance of medical equipment at the rural health facilities.							
			5.3 Train health workers to maintain and manage the medical equipment at the rural health facilities.	**5.3.1** Resources mobilisation through identifying							

Systems Model input	Theme	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Lead Responsible	E	F	NF	NN	Comments
				companies that can supply health equipment and provide training on maintenance to the health workers.							
Financial Resources	**6. Free health care services for all.**	• To improve the affordability and utilisation of health care services in the rural areas.	**6.1** Provide free health care services at the rural health facilities.	**6.1.1** Putting in place a clear exemption policy framework for the people in rural areas.	• Improvements in the affordability and utilisation of health care services in the rural areas.	• Policy makers (MPs). • Ministry of Health and Child Care. • Ministry of Finance. • Heads of Mission Hospitals.					
			6.2 Provide performance based grants to the district health manager for rural health facilities to reduce health care user fees paid by health care users at point of entry.	**6.2.1** Establishment of cost effective financial system like subsidies and performance based grants that reduce the cost burden for the HCUs.	• Increased use of health care services by the health care users in the rural areas.						

Systems Model input	Theme	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Lead Responsible	E	F	NF	NN	Comments
Managerial Resources	**7. Improve the capacity of the health care delivery and management systems.**	• To put in place policies, human resources, financial resources that strengthen the health care delivery and management systems.	**7.1** Provide training on leadership, financial and resource management to health workers in rural health facilities.	**7.1.1.1** Strengthening the harmonisation and co-ordination of Systems Model inputs (physical, human, financial, material and managerial resources) among all health programmes.	• Resources are used effectively in the provision of health care services.	• Policy makers (MPs). • Ministry of Health and Child Care. • Ministry of Finance. • National Health Directors.					
			7.2 Advertise vacant post and appoint competent managers in health care management posts. .	**7.2.1** Recruitments and supporting use of research evidence to translate knowledge into policy and practice.	• Improved health care management systems by managers.						

Annexure R: Informed Consent Form for National Health Directors

PROJECT TITLE: Strategies to enhance accessibility to health care in rural areas of Zimbabwe

Principal Investigator Manenji Mangundu, [*Ph.D student*]

Phone number(s) +263 779324355

PURPOSE

You are being asked to participate in a research study of "Strategies to enhance accessibility to health care in rural areas of Zimbabwe"**.** The purpose of the study is to determine strategies to enhance accessibility to health care in rural areas of Zimbabwe. You were conveniently selected as a possible participant in this study because you are a national health director. All national health directors available and willing will participate in this study in Zimbabwe.

PROCEDURES AND DURATION

If you decide to participate, you will be involved in nominal group for approximately 2 hours to identify strategies as your contributions on how to improve access to health care in rural areas in Zimbabwe. The data collection is a once off process as you will only be involved in the nominal group once for the time specified above.

RISKS AND DISCOMFORTS

There is no risk associated with this research study only your time to participate is needed, the data collection process will be carried out at a convenient place close to your work place.

BENEFITS AND/OR COMPENSATION

Your views will be used to inform the policy makers (Members of Parliamentary committee on health) for the purposes of formulating policies or strategic action plan that may improve access to health care by the people in rural areas of Zimbabwe. You will not be compensated for participating in this research study.

ALTERNATIVE PROCEDURES OR TREATMENTS

There will be no alternative procedures and/or treatments

CONFIDENTIALITY

The responses will be discussed during the nominal group and your name will not appear anywhere in the content of the discussions. If you indicate your willingness to participate in this study by signing this document, you plan to disclose challenges in accessing health care in rural areas of Zimbabwe to the University of South Africa (UNISA) Any information that is obtained in connection with this study that can be identified with you will remain confidential and will be disclosed only with your permission.

ADDITIONAL COSTS

There are no additional costs or burden for participating in this study except your time.

IN THE EVENT OF INJURY

In the event of injury resulting from your participation in this study, treatment shall be offered by the study.

In the event of injury, contact [Manenji Mangundu Mobile number 0779324355, I will be available 24 hours per day]

VOLUNTARY PARTICIPATION

Participation in this study is voluntary. If you decide not to participate in this study, your decision will not affect your future relations with the researcher and University of South Africa If you decide to participate, you are free to withdraw your consent and to discontinue participation at any time without penalty.

OFFER TO ANSWER QUESTIONS

Before you sign this form, please ask any questions on any aspect of this study that is unclear to you. You may take as much time as necessary to think it over.

AUTHORIZATION

You are making a decision whether or not to participate in this study. Your signature indicates that you have read and understood the information provided above, have had all your questions answered, and have decided to participate.

Name of Research Participant (please print)	Date
Signature of Participant or legally authorized representative	Time

Name of Staff Obtaining Consent	Signature	Date
Name of Witness (*if required)*	Signature	Date

YOU WILL BE OFFERED A COPY OF THIS CONSENT FORM TO KEEP.

If you have any questions concerning this study or consent form beyond those answered by the investigator, including questions about the research, your rights as a research participant or research-related injuries; or if you feel that you have been treated unfairly and would like to talk to someone other than a member of the research team, please feel free to contact the Medical Research Council of Zimbabwe (MRCZ) on telephone (04)791792 or (04) 791193 and cell phone lines 0772 433 166 or 0779 439 564. The MRCZ Offices are located at the National Institute of Health Research premises at Corner Josiah Tongogara and Mazowe Avenue in Harare.

Annexure S: Informed Consent Form for members of parliamentary portfolio committee on health (MPs)

PROJECT TITLE: Strategies to enhance accessibility to health care in rural areas of Zimbabwe

Principal Investigator Manenji Mangundu, [*Ph.D student*]
Phone number(s) +263 779324355

PURPOSE

You are being asked to participate in a research study of "Strategies to enhance accessibility to health care in rural areas of Zimbabwe". The purpose of the study is to determine strategies to enhance accessibility to health care in rural areas of Zimbabwe. You were conveniently selected as a possible participant in this study because you are a policy maker, critical for validation of the strategic action plan. All members of the parliamentary portfolio committee on health available and willing will participate in this study in Zimbabwe.

PROCEDURES AND DURATION

If you decide to participate, you will be involved in the review and validation of strategic action plan for approximately 2 hours. The validation process is a once off process as you will only be once for the time specified above.

RISKS AND DISCOMFORTS

There is no risk associated with this research study only your time to participate is needed, the validation process will be carried out at a convenient place close to your work place.

BENEFITS AND/OR COMPENSATION

Your views will be used to validate the strategic action plan that may be implemented to improve access to health care by the people in rural areas of Zimbabwe. You will not be compensated for participating in this research study.

ALTERNATIVE PROCEDURES OR TREATMENTS

There will be no alternative procedures and/or treatments

CONFIDENTIALITY

Your name will not appear anywhere in the content of the discussions. If you indicate your willingness to participate in this study by signing this document, you plan to validate the strategic action plan for enhancing

accessibility to health care in rural areas of Zimbabwe. Any information that is obtained in connection with this study that can be identified with you will remain confidential and will be disclosed only with your permission.

ADDITIONAL COSTS

There are no additional costs or burden for participating in this study except your time.

IN THE EVENT OF INJURY

In the event of injury resulting from your participation in this study, treatment shall be offered by the study.

In the event of injury, contact [Manenji Mangundu Mobile number 0779324355, I will be available 24 hours per day]

VOLUNTARY PARTICIPATION

Participation in this study is voluntary. If you decide not to participate in this study, your decision will not affect your future relations with the researcher and University of South Africa If you decide to participate, you are free to withdraw your consent and to discontinue participation at any time without penalty.

OFFER TO ANSWER QUESTIONS

Before you sign this form, please ask any questions on any aspect of this study that is unclear to you. You may take as much time as necessary to think it over.

AUTHORIZATION

You are making a decision whether or not to participate in this study. Your signature indicates that you have read and understood the information provided above, have had all your questions answered, and have decided to participate.

Name of Research Participant (please print)	Date
Signature of Participant or legally authorized representative	Time

Name of Staff Obtaining Consent	Signature	Date
Name of Witness (*if required)*	Signature	Date

YOU WILL BE OFFERED A COPY OF THIS CONSENT FORM TO KEEP.

If you have any questions concerning this study or consent form beyond those answered by the investigator, including questions about the research, your rights as a research participant or research-related injuries; or if you feel that you have been treated unfairly and would like to talk to someone other than a member of the research team, please feel free to contact the Medical Research Council of Zimbabwe (MRCZ) on telephone (04)791792 or (04) 791193 and cell phone lines 0772 433 166 or 0779 439 564. The MRCZ Offices are located at the National Institute of Health Research premises at Corner Josiah Tongogara and Mazowe Avenue in Harare.

Annexure T: Information letter for Parliamentary Portfolio Committee on Health (PPCH)

"Strategies to enhance accessibility to health Care in rural areas of Zimbabwe".

I Manenji Mangundu, a PhD student (Student number 47272155) with University of South Africa (UNISA) intend to conduct a research study on accessibility to health care in rural areas. The research study topic is "Strategies to enhance accessibility to health care in rural areas of Zimbabwe".

You are kindly requested to participate in a validation meeting for approximately 120 minutes. The validation group session will be carried out in Harare, which the researcher thinks is convenient to members of the PPCH and also closer to the parliament building. If you are out of Harare you may be requested to travel. The valideation process will be focusing reviewing the strategic action plan that was developed with national health directors to enhance accessibility to health care in rural areas of Zimbabwe. You will not get any remuneration for participating in the research study but lunch will be provided to those who will attend the validation session. There are no known risks associated with the study.

Your participation in the study will be voluntary and you can pull out of the study when you do not feel comfortable. If you withdraw from the study you will continue to be treated as usual with respect and customary way.
The knowledge gained from the study may either help improve health care services in rural areas of Zimbabwe. Your participation will be highly appreciated as your contributions will go a long way in improving accessibility to health care in rural Zimbabwe.

Yours Sincerely,

Manenji Mangundu
PhD student, UNISA

……
Signature

Number 1, 44th Avenue
Haig Park, Mabelreign
Harare

Annexure U: Approval form for validated strategic action plan

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	Agree	Not Agree	Comment
Physical Resources	**2. Developing health infrastructure in the rural areas.**	• To improve the distribution and the conditions of the health facilities in rural areas of Zimbabwe.	**1.1** Upgrade satellite health facilities to become permanent health facilities and maintain current health facilities.	**1.1.1** Prioritising construction of health facilities in areas with poor distribution like resettlement areas. **1.1.2** Mobilisation of financial resources for the upgrading of the satellite health facilities.	• Improved health facility coverage in rural areas of Zimbabwe.	• The Health Committee in collaboration with Ministry of Health and Child Care (Ministry of Health and Child Care)			
			1.2 Build health facilities within 5 km of each village.	**1.2.1** Mobilisation of financial resources for the construction of health facilities from corporate companies and	• Health care users walk less than 5 km to the health facility.	• The Health Committee in collaboration with Ministry of Finance			

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	Agree	Not Agree	Comment
			. .	global health funds. **1.2.2** Enforcement of infrastructure development policy priorities to address health infrastructure backlogs					
				1.2.3 Use of the tax from the natural resources exploiting companies like mining and national parks to fund construction of health facilities in the disadvantaged areas.	• Increased physical accessibility to health facilities in rural areas.	• MPs (Health Committee)			

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	Agree	Not Agree	Comment
				1.2.4 Present a motion in parliament for the introduction of a 5% levy on mining and hunting activities for funding health facilities construction.	• Improved financial resources for health care.	• PPCH (Members of Parliament)			
		• To improve the necessary infrastructure like water, electricity and communication at the existing health facilities' infrastructure.	**1.3** Develop infrastructure by: • building roads • providing safe piped water • providing electricity • facilitating communication networks • renovating existing buildings.	**1.3.1** Facilitating improvements of the roads to health facilities; Electrification of the rural health facilities; Installation of piped water systems (boreholes connected to electric pumping	• Improved road access to health facilities, electricity supply, water supply and communication at the health facilities in the rural areas.	• PPCH in collaboration with the Ministry of Health and Child Care			

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	Agree	Not Agree	Comment
				systems). **1.3.2** Internal mobilisation of financial resources through introduction of 5% levy to the companies exploiting natural resources (mining, timber, national parks) for the purposes of funding health infrastructure development plans.					
			1.4 Physical assessment/inspection of the health facilities in the rural areas	**1.4.1** Visiting the health facilities in remote areas of Zimbabwe and meeting with	• Improved motivation of health workers to work at the rural health facilities.	• Members of the Parliamentary Committee for Health.			

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	Agree	Not Agree	Comment
			by the Parliamentary Committee for health.	health committees at the health facilities in each province and taking note of the conditions of the buildings and giving feedback in parliament on the state of the health in rural areas.					
MATERIAL RESOURCES	**2. Provision of medical drugs at the rural health facilities.**	• To ensure availability and accessibility to essential medical drugs at the health facilities for the HCUs and health workers in the rural areas.	**2.1** Establish partnerships with national and international medical drug producers and non-government organizations and; • Facilitate a medical drug supply pipeline.	**2.1.1** Sharing medical drug supply strategic action plans and/or joint planning with health partners like donors, non-governmental organisations and United Nations	• To ensure availability and accessibility to essential medical drugs at the health facilities for the HCUs and health workers in the rural areas.	• Ministry of Health and Child Care. • Permanent Secretary and Director of Pharmacy – Caucus meeting with PPCH participants.			

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	Agree	Not Agree	Comment
				Agencies (UNICEF, WHO).					
			2.2 Establish health levies and local tax for the procurement of medical drugs.	**2.2.1** Put in place sustainable funding system for procurement of medical drugs such as levying companies benefiting from natural resources in Zimbabwe.	• Improved accessibility to essential medical drugs by the health care users in the rural	• Ministry of Finance with PPCH through caucus meetings. • PPCH participants introduce the motion in parliament.			

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	Agree	Not Agree	Comment
			2.3 Decentralise use of health care user fees to District health teams.	**2.3.1** Retention of user fees by District health executives for the districts to manage payment of the medical drugs.	• Improved availability of medical drugs in rural health facilities.				
			2.4 Pay medical drug companies on time for medical drugs received at the rural health facilities.	**2.4.1** Multi-year financial mobilisation for payment of medical drugs through development of proposals based on the country's health strategy. **2.4.2** Putting in place funding mechanisms like performance based	• Improved funding for the procurement of medical drugs.	• PPCH participants –caucus meeting with Minister of Health and Permanent Secretary for health and national Pharmacy Director.			

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	Agree	Not Agree	Comment
				health facility grants that ensure sustainable provision of essential medical drugs to the health facilities.					
		• To ensure good management of medical drugs at the health facility level through timely ordering of the right quantities and type of medical drugs consumed at the rural health facilities.	**2.5** Build the capacity of professional nurses by: • Facilitating training to utilise information, communication technology for the ordering and monitoring of medical drugs • Facilitating training in logistics management of medical	**2.5.1** Training of professional nurses in logistics management focusing on drug ordering and chain management. **2.5.2** Use of information, communication technology for ordering and monitoring medical drugs at the rural health facilities	• Improved and efficient medical drug supply management system. • Improved accessibility and management of medical drugs at the rural health facilities.	PPCH will inform the Ministry of Health and Child Care Directors Provincial Pharmacist District Pharmacist and Pharmacy Technicians.			

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	Agree	Not Agree	Comment
			drugs at the health facilities.						
			2.6 Carry out quarterly supervisory visits at the rural health facilities for monitoring management of medical drugs where there are problems.	**2.6.1** Planning medical drugs monitoring visits to the rural health facilities and/or putting in place information management systems for monitoring medical drugs.	• Supported supervisory visits by specialists at quarterly (3 months) intervals.				

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	Agree	Not Agree	Comment
HUMAN RESOURCES	**3. Development and retention of human resources in the rural health facilities.**	• To attract and retain health workers at the rural health facilities through promotion and payment of incentives.	**3.1** Provide incentives such as: • Transport allowances • hardship allowances • Off station allowances to attract health workers to work in rural health facilities	**3.1.1** Reviewing of the health worker incentives and gazetting the Statutory Instrument for additional rural health worker allowances. **3.1.2** Provision of motivational incentives to the health workers working in the rural health facilities so as to attract and retain them.	• Retention of competent and skilled health workers at the rural health facilities.	• Ministry of Health and Child Care • Director of Manpower Planning and Development • Director of Human Resources in the Ministry of Health and Child Care. • Members of Parliament (Parliamentary Committee for Health) will inform Ministry of Health and Child Care.			
			3.2 Promote career growth of health workers at rural health facilities by:	**3.2.1** Putting in place well define criteria for career advancement by	• Increased job satisfaction by health workers at				

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	Agree	Not Agree	Comment
			• Professional development of skills and competencies	low level health workers.	the rural health facilities.				
		• To build the capacity of health workers through in-service and on job mentoring in line with changing health trends.	**3.3** Train health workers according to changing trends and health needs in the rural health facilities.	**3.3.1** Reviewing of in-service training and scale-up in-service training of the health workers in rural areas to improve knowledge and health services delivered to HCUs particularly by professional nurses. **3.3.2** Annual planning,	Increased motivation by heath workers to continue working at the rural health facilities.	• Members of Parliament (Parliamentary Committee for Health), - caucus meetings and planning with Ministry of Health and Child Care, Ministry of Higher Education and Technology.			

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	Agree	Not Agree	Comment
				budgeting and implementation of in-service training programs for the health workers working in rural areas. **3.3.3** Train university graduates (nurses) with significantly higher levels of preparation in evidence-based practice and research skills and able to match the changing educational context.					
			3.4 Train health workers living	**3.4.1** Recruitment of trainee	Improved retention of				

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	Agree	Not Agree	Comment
			in rural areas and employ them in the rural areas after completing the nursing training.	professional nurses from rural areas who will be employed at the rural health facilities.	health workers in the rural health facilities.				
HUMAN RESOURCES	**4. Review the workload of the health workers at the health facilities and address shortages.**	• To employ the right number of health workers based on workload at the health facility.	**4.1** Carryout workload indicator staff need assessment in Zimbabwe and address shortages.	**4.1.1** Review the number of health workers based on the workload at each rural health facility.	The shortage of health workers is addressed in rural areas. .	• PPCH (MPs) will inform concerned ministries through caucus meetings. • Ministry of Health and Child Care.			
			4.2 Unfreeze all vacancies for health workers in the rural health facilities and employ professional	**4.2.1** Employing trained professional nurses to fill in the frozen vacancies.		• Ministry of Labour and Social Welfare.			

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	Agree	Not Agree	Comment
			nurses graduating from nursing training institutions.			• Ministry of Finance and Economic Development.			
		• To ensure an appropriate skill mix at the health facility level including estimating workforce requirements for health workers.	**4.3** Select and recruit health workers with skills needed for the day to day running of the health facilities such as microscopes technicians, pharmacy technicians.	**4.3.1** Reviewing of the job profiles of the health workers at the health facilities and employing based on available human resources budget.	Improved recruitment and staffing levels at the rural health facilities.				
			4.4 Train available health workers on the skills and competencies	**4.4.2** Reviewing of the health workers training curriculum in line with expected	Improved health care service delivery				

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	Agree	Not Agree	Comment
			needed to run the health facility for example medical drug management.	roles and responsibilities for running the rural health facility.	according to the community needs.				
MATERIAL RESOURCES	**5. Provision of adequate material and minimum required medical equipment in the health facilities.**	• To ensure the availability of adequate, appropriate and well-maintained medical equipment and accessories in accordance with standards at the rural health facilities.	**5.1** Procure and deliver basic medical equipment to rural health facilities with shortages or without.	**5.1.1** Budgeting for the acquisition of basic equipment and financial resource mobilization from other stakeholders like donors, private companies.	Improved diagnosis and health care service delivery by health workers at the first point of access for health care users.	• Ministry of Health and Child Care. • Ministry of Finance.			
			5.2 Distribute medical equipment using the WHO minimum standard	**5.2.1** Enforcement of the policy that support distribution, management and maintenance of					

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	Agree	Not Agree	Comment
			Equipment List to the rural health facilities in need.	medical equipment at the rural health facilities.					
			5.3 Train health workers to maintain and manage the medical equipment at the rural health facilities.	**5.3.1** Resources mobilisation through identifying companies that can supply health equipment and provide training on maintenance to the health workers.	Improved maintenance of the medical equipment at the rural health facilities.	PPCH and Ministry of Health and Child Care.			
MANAGERIAL RESOURCES	**6. Improve the capacity of the health care delivery and**	• To put in place policies, human resources, financial resources	**6.1** Provide training on leadership, financial and resource	**6.1.1**Strengthening the harmonisation and co-ordination of Systems Model	Resources are used effectively in the provision of health care	Policy makers (MPs) working together with Ministry of Health and			

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	Agree	Not Agree	Comment
	management systems	that strengthen the health care delivery and management systems in Zimbabwe.	management to health workers in rural health facilities.	inputs (physical, human, financial, material and managerial resources) among all health programmes.	services.	Child Care.			
			6.2 Support use of research evidence to translate knowledge into policy and practice.	**6.2.1** Fund raising for health care services research and using the results for improving the health care system delivery.	Reduction of disease burden in Zimbabwe.	National Health Directors.			
			6.3 Align health regulations, statutory instruments and policies with the new constitution	**6.3.1** Moving in a motion in parliament for the realignment of the health acts, regulations, statutory instruments and	Favourable policies that enhance accessibility to health care in rural areas.	Parliamentary committee for health. Members of Parliament of Zimbabwe.			

Systems Model Inputs	Theme / Strategy	Goal	Action (What?)	Method (How?)	Outcome (Why?)	Responsible	Agree	Not Agree	Comment
				policies in line with the new constitution.					

Annexure V: Turnitin Report

turnitin

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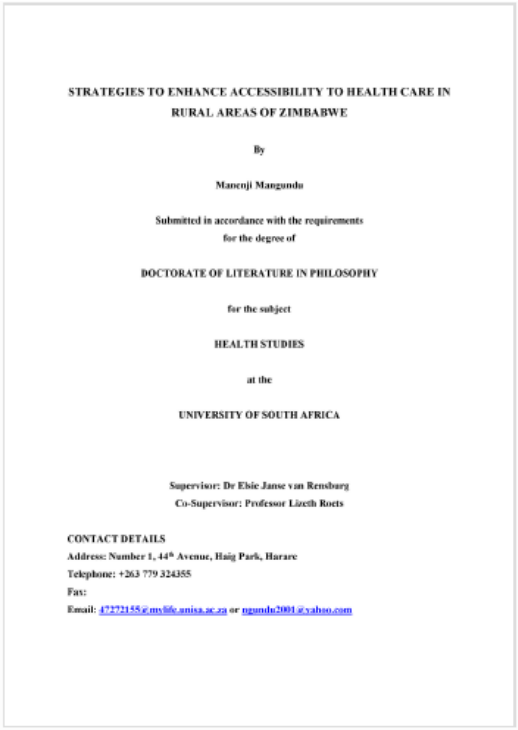

STRATEGIES TO ENHANCE ACCESSIBILITY TO HEALTH CARE IN RURAL AREAS OF ZIMBABWE

By

Manenji Mangundu

Submitted in accordance with the requirements for the degree of

DOCTORATE OF LITERATURE IN PHILOSOPHY

for the subject

HEALTH STUDIES

at the

UNIVERSITY OF SOUTH AFRICA

Supervisor: Dr Elsie Janse van Rensburg
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