
# THE UNIVERSITY OF ZAMBIA
## SCHOOL OF MEDICINE
### DEPARTMENT OF PUBLIC HEALTH

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RESEARCH REPORT

**COMMUNITY BASED STRATEGIES FOR REDUCING MATERNAL MORTALITY IN LUSAKA AND CHONGWE: A GROUNDED THEORY APPROACH**

BY

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A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF *MASTER OF PUBLIC HEALTH (HEALTH PROMOTION AND EDUCATION)* IN THE FACULTY OF MEDICINE AT THE UNIVERSITY OF ZAMBIA.

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## Declaration

This dissertation is my original work as Obrey Katungu.

I declare that this Dissertation (Community Based Strategies for Reducing Maternal Mortality in Lusaka and Chongwe: A Grounded Theory Approach) presented for the degree of Master of Public Health - Health Promotion and Education has never been submitted for any degree or examination at any other university. All the sources herein quoted have been acknowledged by complete references.

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The undersigned certify that they have read the dissertation and are satisfied that it is the original work of the author under whose name it is being presented

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## Abstract

Zambia is one of the countries with a very high maternal mortality rate. Since the focus on attaining the Millennium Development Goals begun, the Ministry of Health has been implementing a series of strategies and interventions aimed at reducing maternal mortality with varying success. The country recently recorded a reduction in maternal mortality from 591 in 2007 to 398 in 2014 (CSO-ZDHS, 2014). While this figure is still high, it is nonetheless a positive indication that the country is doing something right. Available data shows that most of the maternal deaths take place in the community: at home or while on the way to a health facility. While we are sure of the clinical based strategies, little has been done to understand what is working well in the communities and how the end-users perceive these interventions. This paper aimed to qualitatively explore the community based interventions and strategies that have contributed in reducing maternal mortality in Lusaka and Chongwe Districts, Zambia.

Data was gathered through review of documents and Key Informant Interviews. A total of 29 interviews were conducted with Ministry of Health staff, community based health volunteers, mothers and pregnant women as well as maternal health specialists from selected NGOs.

The results show that reducing maternal mortality is an inter play of many strategic interventions supported by policies focussed on empowering people in the community to take an active role in the management of maternal health. Strengthening of human capacity and systems; improving maternal health financing and service delivery at community level also helps to consolidate and sustain the maternal health activities. Community based maternal health groups have helped to address cultural barriers to good maternal health; helped increase male involvement in maternal health; as well as helped build a network of transporters who help transport pregnant women to the health facilities using different available local means. Community level prevention of haemorrhage has also greatly helped reduce death from excessive bleeding. This study also found that the active involvement of the local civic and traditional leadership helped to pool volunteers and eased communication processes. However, limited resources and tools were also identified as some hindrances to effective implementation of maternal health interventions.

The most effective way to address maternal mortality is to have community focussed policies that support financing, capacity building and strengthening of systems at community level. This ensures that platforms are created for community members and the local traditional and civic leaders to participate in addressing their maternal health challenges.



**Key words**: community level, maternal health, maternal mortality, strategy

## Dedication

I dedicate this work to all the people that have at one point in their life shaped me through their admonishment, correction, encouragement, advice and support. We usually look for greater contributors to our lives when the small things done by people are what creates the persona. Many have contributed to creating me and to you all, I say thank you.

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## List of Abbreviations and Acronyms

| | |
|---|---|
| ANC | Ante Natal Care |
| CHW | Community Health Worker |
| CSO | Central Statistics Office |
| CBO | Community Based Organisation |
| EmOC | Emergency Obstetric Care |
| EU | European Union |
| DHO | District Health Office |
| GRZ | Government of the Republic of Zambia |
| HIS | Health Information System |
| MCDMCH | Ministry of Community Development Mother and Child Health |
| MDGs | Millennium Development Goals |
| MM | Maternal Mortality |
| MMR | Maternal Mortality Ratio |
| MOH | Ministry of Health |
| NGO | Non-Governmental Organisation |
| NHC | Neighbourhood Health Committee |
| NHSP | National Health Strategic Plan |
| PPH | Post-Partum Haemorrhage |
| RCT | Randomised Control Trials |
| SDGs | Sustainable Development Goals |
| SMAGS | Safe Motherhood Action Groups |
| TBA | To Be Advised |
| TBAs | Traditional Birth Attendants |
| UNICEF | United Nations Children's Fund |
| UNDP | United Nations Development Plan |
| USAID | United States Agency for International Development |
| UTH | University Teaching Hospital |
| WASH | Water, Sanitation and Hygiene |
| WHO | World Health Organisation |
| WVZ | World Vision Zambia |
| ZDHS | Zambia Demographic Health Survey |

## Definition of key terms

To give more meaning and context in this study, the following are the working definitions of some of the key words

**Community Based** – Community Based in this research refers to interventions which are accessed and/or delivered locally in the community, done with and by the community outside of the clinical environment (Kidney et al., 2009)

**Community Participation** – The involvement of people in a community in activities aimed at addressing their own challenges.

**Maternal health** - Maternal health refers to the health of women during pregnancy, childbirth and the postpartum period (WHO, 2014).

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

**Safe Abortion** – The termination of an unwanted pregnancy by qualified personnel in a designated.

**Strategy** – A plan of action designed to achieve a long-term or overall aim.

# 1 INTRODUCTION

## 1.1 Background Information

Pregnancy related complications are a major cause of death among women of reproductive age in many countries. In sub Saharan Africa, maternal mortality remains a serious public health issue in many developing countries (WHO et al., 2014, Khan et al., 2006, Font et al., 2000, Shah and Say, 2007). Despite huge investments by national and international efforts, maternal health continues to be a serious health challenge in many African countries. It is estimated that over 800 deaths occur daily due to pregnancy related complications (WHO, 2014). This figure translates into one pregnant woman dying every two minutes. Additionally, 7-10 million girls and women suffer severe or long lasting illness caused by complications in pregnancy and child birth. These women do not need to suffer and die; most lives could easily be saved (WHO et al., 2014). Zambia has equally not been spared from the burden of maternal mortality. The current maternal mortality rate stands at 398 deaths per 100, 000 live births (CSO-ZDHS, 2014).

### *1.1.1 Understanding Maternal Mortality*

Maternal Mortality is the death of a woman while pregnant or within 42 days of termination of pregnancy The deaths of pregnant women arising from accidental or incidental causes are are not counted in defining maternal mortality (WHO, 2014, Sullivan and Hirst, 2011). Maternal mortality ratio (MMR) is defined as the annual number of female deaths per 100,000 live births. The MMR includes deaths during pregnancy, childbirth, or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, for a specified year (Khan et al., 2006, WHO, 2014).

The direct causes of maternal mortality are complications during and following pregnancy and childbirth. Most of these complications develop during pregnancy. Other complications may exist before pregnancy but are worsened during pregnancy (WHO, 2014). According to the World Health Organisation, nearly all the maternal deaths are caused by prolonged obstructed labour, hypertensive disorders of pregnancy, haemorrhage, sepsis, and complications of unsafe abortions (WHO, 2014, Sibley and Armbruster, 1997).

The remainder are caused by or associated with diseases such as malaria, and AIDS during pregnancy (Khan et al., 2006, WHO et al., 2014, MOH, 2013). However, the effects can be reduced if appropriate community based strategies are put in place as has been shown later.

### *1.1.2 International Strategies to combat Maternal Mortality*

Maternal mortality has placed a high disease burden on national resources and many countries are collectively working together to address this burden. In the year 2000, these national efforts culminated into the introduction of the Millennium Development Goals (MDGs). The millennium declaration of the United Nations was approved in 2000 by 189

States and includes 2 goals related to Maternal Health: *reduce the maternal mortality ratio by three-quarters between 1990 and* 2015 and *achieve universal access to reproductive health by 2015*. Progress is measured with reference to MMR and the proportion of deliveries attended by skilled health personnel (Sullivan and Hirst, 2011). There is now an increasing movement to learn from countries that are doing well in reducing their maternal mortality ratios. Brouwere and his colleagues have written an interesting article on how the developing countries can learn from the developed countries most of whom have reduced their maternal mortality ratios to less than 20 per 100, 000 (De Brouwere et al., 1998)

There is also a major push towards concentrating efforts on the care of obstetric emergencies (Gabrysch et al., 2011a, Gabrysch et al., 2011b). Gabrysch and others argue that maternal mortality can be significantly reduced if all women delivered in settings where skilled attendants could provide emergency obstetric care (EMOC) (Gabrysch et al., 2011c, Gabrysch et al., 2011a, Gabrysch et al., 2011b, Sibley and Armbruster, 1997). While this is an important strategy, Liljestrand (200) argues that it is not enough. Other important strategies that focus at the community level needed to be included in maternal health interventions. These should focus on improving coverage and quality of skilled attendance at birth as key long term strategies for reducing maternal mortality (Liljestrand, 2000). Liljestrand thus focusses on both the clinical based strategies and the community based strategies (health service environment) and argues that these two approaches are not contradictory but rather supplement each other (Liljestrand, 2000, Gabrysch et al., 2011a).

In Bangladeshi, it was found that increasing access to family planning was key in reducing maternal mortality (Fortney, 1987). In another study in Cambodia, it was found that increasing access to maternal health services including training of TBAs contributed towards the reduction in maternal deaths (Chatterjee, 2005). Additionally, In Sweden, focus was on increasing trained personnel (De Brouwere et al., 1998). In a review of RCTs done in various countries, Carroli and his colleagues showed that ante natal attendance at community level also significantly contributed towards reducing maternal mortality (Carroli et al., 2001).

In a yet another study conducted in Nepal, through a community based participatory programme that involved women's groups in managing maternal health, it was found that maternal mortality reduced by 88% through implementing community level strategies (Lassi et al., 2010). Maternal death is therefore a preventable public health problem which could be avoided through appropriate interventions and strategies.

### *1.1.3 Sub Saharan Africa Situation*

Although some countries have made remarkable progress, half of the maternal deaths in the world still take place in Sub-Saharan Africa where little progress has been made (Alvarez et al., 2009). Maternal deaths have dropped by a massive 41% in 20 years, from 920 deaths per 100,000 live births in 1990 to 500 deaths per 100,000 in 2010 globally. But the rates in Sub Saharan Africa are still unacceptably high. An estimation of 278,000 women die annually

from pregnancy and delivery related complications and half of these are in Sub Saharan Africa (WHO et al., 2014). Furthermore, women in Africa are 1 in 39 at risk of dying from pregnancy and related complications as compared to 1 in 4000 in developed countries. Over one million children are left motherless and made vulnerable due to these deaths (Hogan et al., 2010, WHO et al., 2014).

In Africa, a notable contributing factor to the high maternal mortality is the high number of child marriages on the continent with most girls being forced to start bearing children soon after marriage; these girls are most of the time not prepared to be parents and they are also not physiologically read for child birth. The younger women, aged 15-19 years are twice as likely to die in childbirth compared to those above twenty (WHO, 2010).

Poorer women, particularly those living in rural areas with poor access to health services are far more likely to die in childbirth than those who are wealthier or who live in urban areas (Chatterjee, 2005, Alvarez et al., 2009). It is therefore increasingly clear that empowering women and men through various community based interventions can help address and prevent most of these causes of maternal deaths in Sub Saharan Africa. Challenges such as early marriages, health services inaccessibility and many more which contribute to maternal mortality in Sub Saharan Africa can help reduce maternal deaths if appropriate community interventions and strategies are utilised.

### *1.1.4 Zambian Situation*

Zambia has not been spared from the burden of maternal mortality. In Zambia, 398 maternal deaths occur per 100, 000 live births (CSO-ZDHS, 2014). While this figure indicates a slight reduction from 591 recorded in the Zambia Demographic Health Survey of 2007, it is still unacceptably high.

The Zambian government through the Ministry of Health has identified the direct causes of maternal mortality in Zambia as: Haemorrhage (25%), puerperal infection (15%), eclampsia (13%), complicated abortion (13%), obstructed labour (7%), malaria (5%), tetanus (1%), and non-specific (21%). The indirect causes of maternal mortality are malaria, diabetes, anaemia and HIV/AIDS (GRZ-MOH, 2011, MOH, 2013). Both the direct and indirect causes are manageable and treatable within the clinical environment. However, the major challenges leading to the high maternal deaths of Zambian women are community based factors such as delays in accessing health and lack of community based systems to manage pregnancy related complications or expedite referrals. The Zambian Ministry of Health acknowledge that most maternal deaths in Zambia occur at home or on the way to the health facility (MOH, 2013). Another huge contributing factor to maternal mortality in Zambia is the huge number of unsafe and illegal abortions. Unsafe abortions are said to account for about 30% of all maternal deaths in Zambia (Sims, 1996). In a study done in Western Province of Zambia, it was reported that over two third of abortions are done alone by individuals using unsafe

means and in unsafe environments in their communities (Koster-Oyekan, 1998). This just goes to show the importance of an effective set of community level strategies.

Over the past few years, Zambia has recorded some positive gains in reducing maternal mortality despite its inability to meet the MDG targets. The country seems to have made some positive gains on some indicators. For example, Institutional deliveries increased from 47% in 2007 to 64% in 2014 (CSO-ZDHS, 2014). Antenatal care attendance also increased from 94% in 2007 to 96% in 2014 (CSO-ZDHS, 2014). Institutional deliveries and ante natal care both have to be supported by a strong community support and referral system. Subsequently, the country recorded a reduction in the overall maternal mortality rate from 591 in 2017 to 398 in 2014. Despite these positive improvements on maternal mortality indicators, Zambia is still ranked among the worst in East and Southern Africa (MOH, 2013). The need to understand community based strategies that are working and the ones not working motivated this research.

### *1.1.5 Summary of Background Information*

The government of the Republic of Zambia through the relevant ministries has put in place a higher level strategic framework that helps the various levels of health service delivery employ different strategies to address maternal mortality at the community level and prevent the death of any pregnant woman before, during and after delivery. The extent to which these strategies are contributing towards the reduction of maternal mortality is not known. As such, it was therefore important to effectively review these strategies in order to help strengthen, re align and re-enforce these strategies for greater reduction of maternal deaths.

There is no single simple, straightforward intervention that will significantly decrease maternal mortality alone; however, there consensus on the importance of a strong health system, skilled delivery attendants, and women's rights for maternal health (Alvarez et al., 2009). It is based on the need to understand in depth the actual strategies and factors responsible for the reduction in maternal mortality that this research was done. The study explored the community based strategies that the Government of the Republic of Zambia and other stakeholders are implementing to reduce maternal mortality.

## 1.2 Statement of the Problem

Maternal mortality is still very high in Zambia (MOH, 2013). Current figures stand at 398 deaths per 100, 000 live births (CSO-ZDHS, 2014). While this is a reduction from 591 reported in the ZDHS of 2007 (CSO-ZDHS, 2007), it still falls short of the national target set by the government of Zambia (GRZ-MOH, 2011) and the UN's MDG Target 5B (WHO, 2010).

The Ministry of Health has adopted different strategies and interventions to reduce maternal mortality and achieve the Millennium Development Goal and the National Health Strategic

Plan targets (GRZ-MOH, 2011). While a lot is known about the clinical based interventions of reducing maternal mortality, and most studies have focussed on understanding the clinical based strategies, most maternal deaths in Zambia occur due to unmanaged complications while at home or in the community. Therefore, there is need to review and understand community based interventions and strategies that are being implemented to reduce maternal mortality and how these can be enhanced and scaled up. This will help the country develop grounded strategies on how to reduce maternal mortality as it embarks on designing strategies for the SDGs.

## 1.3 Study Research Questions and Objectives

### *1.3.1 Research Questions*

- What are the community based strategies being used to reduce maternal mortality in Lusaka and Chongwe and how effective are they?
- What are the perspectives of local health workers and service users on how to enhance the implementation of strategies to reduce maternal mortality rate in Lusaka and Chongwe?

### *1.3.2 General Objectives*

- To explore the different community based strategies for reducing maternal mortality and understand how they are implemented and communicated in the delivery of health services.

### *1.3.3 Specific Objectives*

1. To investigate and identify community strategies being used to reduce maternal mortality
2. To examine how the strategies for reducing maternal mortality are communicated from policy makers to the community
3. To describe health workers and community member's perspectives on how to enhance implementation of strategies for reducing maternal mortality

# 2 LITERATURE REVIEW

## 2.1 Review of Studies

The literature in this study focusses mostly on different studies related to review of community strategies outside of Zambia. Some studies done in Zambia looking at maternal mortality in general have also been discussed.

**Community Based Systems**

The pinnacle of most community based interventions is the presence of strong community systems that promote the involvement and active participation of the community. Community participation in maternal health activities ensures high levels of ownership, success and sustainability (Lassi et al., 2010, Fawcus et al., 1996, Burchett and Mayhew, 2009). In a review of community-based intervention packages for reducing maternal and neonatal mortality, Lassi and others indicated that community participation was key in improving maternal and child health (Lassi et al., 2010). Other authors have also emphasised the need for the active involvement and participation of women in the overall management of their pregnancies (Fawcus et al., 1996, Bhutta et al., 2005). This is further supported by Rosato and his colleagues who state that strategies to improve maternal health should be community based and should involve the community as a way of complementing facility based interventions (Rosato et al., 2008).

In another study done in Nepal by Manandhar and others, in a cluster randomized control trial that compared neonatal and maternal outcomes for women who participated in shaping their health outcomes against those that did not participate, it was found that women who participate in health intervention are 1.2 more likely to have antenatal care, institutional delivery, trained birth attendance, and hygienic care than those who are not involved and do not participate (Lassi et al., 2010). In order to achieve these incredible results, Mahandhar and his colleagues trained all cadres of government health staff, CHWs and TBA on essential newborn care and these helped to transfer the same skills to the mothers in the community. Community participation therefore becomes an important component of every effective strategy for reducing maternal mortality.

Community participation also helps in addressing bad cultural practices that result in maternal deaths. Some cultural practices have been shown to increase maternal deaths in many communities if not well addressed (Carroli et al., 2001, AbouZahr, 2003). Carroli and others stated in their study that cultural practices can hinder high risk women such as young pregnant girls and women from revealing their pregnancies or seeking care and thus becoming more susceptible to pregnancy related complications and maternal death (Carroli et al., 2001). In another study, Bartlett and others conducted a retrospective study of women of reproductive age in Afghanistan and found that cultural practices contributed to the high maternal deaths among other causes (Bartlett et al., 2005). There are widespread restrictions on education and employment and these limit the number of trained female health providers

and reduce women's resources to access care. Inability to leave the home without the permission or escort of a male relative is a constraint means that women cannot access essential maternal health services (Bartlett et al., 2005).

**Male Involvement**

Another complimentary aspect to local participation is the involvement of men in the health of their pregnant wives or partners. Several studies have highlighted the importance of male involvement in reducing maternal mortality. Understanding the implications of male involvement is very critical especially in Africa due to the patriarchal nature of most African communities. In an article on Maternal Health and HIV, Mclntyre indicated that the reduction of maternal mortality requires the involvement of men in order to ensure that appropriate care is provided to pregnant women. McIntyre further stated that male involvement was essential for the success of PMTCT programmes. The reduction of maternal mortality requires the involvement of men to ensure timely and appropriate care for pregnant HIV-positive women (McIntyre, 2005).

In another article highlighting the major problems and key issues in Maternal Health in Nepal, the authors emphasised that as a promising new strategy for maternal health, male involvement is needed in order to improve maternal well-being of women (Simkhada et al., 2006). Like most patriarchal societies, men are the primary decision makers in families and communities and their involvement in maternal health can promote better relationships between men and women and lead to women empowerment. Simkhada and his colleagues further state that involving the husband/partner and encouraging couple joint decision making in maternal health may provide an important strategy in achieving women's empowerment, which will ultimately help to reduce the maternal morbidity and mortality (Simkhada et al., 2006)

Another study in Nepal showed that including men in reproductive health can enhance health outcomes. The study tested the impact of involving male partners in antenatal health education on maternal health care utilisation and birth preparedness. The results of the study showed evidence that educating pregnant women and their male partners yields a greater net impact on maternal health behaviours compared with educating women alone. (Mullany et al., 2007). The study showed that women who received education with their husbands were nearly twice more likely to attend ante natal care check-ups and deliver in a health institution than those whose men were not included. As such, the involvement of males as a key strategy in managing maternal health and reducing maternal death cannot be overlooked (Mullany et al., 2007, Simkhada et al., 2006, Safer, 2004).

**Health Information System**

The presence of a functional data surveillance system is also key in reducing maternal mortality. A functional surveillance system helps communities track maternal indicators and

can provide planning data on outreach services. Most research has shown that the absence of such a system does not help in reducing maternal mortality.

Fauveau, in his article in the Lancet identified the absence of quality data for planning as a big area of concern. According to Fauveau, this lack of data means that politicians and planners do not know the extent of the differences in maternal mortality between, for instance, remote and urban communities, or between rich and poor (Fauveau, 2006). Lack of information makes needs-based resource allocation difficult, even where there is a will to act. In the community based randomized control trial by Manandhar and his colleagues which was done in Nepal and has been referred to above, it was shown that a well-coordinated data surveillance system enabled quick reference for over 24% of cases (Manandhar et al., 2004).

An important component of HIS is the continuous learning and understanding of maternal mortality trends and improvements in strategy. De Brouwere and others in their article on strategies for reducing maternal mortality underscored the important of research in finding solutions to the maternal mortality challenge (De Brouwere et al., 1998). They stated that most developed countries have invested heavily into understanding maternal mortality issues and involving all stakeholders in finding solutions. Clark in his article on strategies for reducing maternal mortality in the USA also underscores the importance of research in finding context based solutions that address the underlying causes of maternal mortality (Clark, 2012). An understanding of what is working and what is not working can help improve the data collection and data management processes for maternal health. Good data surveillance system helps in strengthening referral systems in a community (Sibley and Armbruster, 1997).

Kerber and others also emphasised the importance of formative research of programmes aimed at improving family and community care by understanding the social and cultural environments in which these strategies are implemented (Kerber et al., 2007). Research helps communities to understand the state of the evidence base upon which policy and decisions can be based (Burchett and Mayhew, 2009, Sullivan and Hirst, 2011).

**Supervision and Support**

De Brouwere et all looked at the implementation process as another angle of strategy review that has an impact of maternal mortality (De Brouwere et al., 1998). They argue that the implementation of some strategies has been done haphazardly without proper supervision and support and this has reduced their effectiveness (De Brouwere et al., 1998). For example, the obstetric techniques which make it possible to save the mother's life are widely used in developing countries including Zambia. However, unlike the industrialized countries, in developing countries like Zambia, recognition of the unmet needs of the mothers and the consultative engagement of both the community and professionals is lacking (De Brouwere et al., 1998). This is as a result of limited support provided and also due to insufficient supervision and monitoring by relevant ministries. Supervision and support is also critical in

countries like Zambia where most of the health interventions are facilitated by community volunteers most of whom are untrained.

In a review of strategies that lead to massive reductions in maternal mortality in the USA, Bergstrom and Goodburn indicate that there was a significant reduction in maternal mortality when midwives were trained and supervised appropriately (Bergström and Goodburn, 2000). Ultimately, in Zambia, there is need to access the type of support and supervision provided to community level resources such as the TBAs, CHWs and NHCs.

**Accessibility of Maternal Health Services**

In a study done in Zambia by Gabrysch et al (2011) to assess availability and distribution of, and geographic access to emergency obstetric care, it was found that distance between the point of access and the community played an important role in the success of Emergency Obstetric care in Zambia in reducing maternal mortality (Gabrysch et al., 2011b). Without a functioning and accessible emergency obstetric care (EmOC) services to treat the complications that kill women in pregnancy, childbirth, and the postpartum, no country can expect maternal mortality to decline significantly (Gabrysch et al., 2011b).

Distances between the points of health care delivery and the community also have a bearing on the success of maternal mortality strategies in Zambia (Gabrysch et al., 2011b, Gabrysch et al., 2011c). In their study, Gabrysch et al found varying differences in the distances in access to Emergency Obstetric care between the rural dwellers and the urban dwellers. However, they still point out that the number of people able to access delivery care within a radius of 15 km was quite high and this did not tally with the high numbers of maternal deaths (Gabrysch et al., 2011b).

In a study done in Kaputa and Kasama Districts in Northern Zambia to access the risk of maternal mortality due to poor accessibility, it was clearly shown that maternal mortality can double when there is no hospital in the district in addition to poor transport (Le Bacq and Rietsema, 1997). Improved transportation system can save women life when they need emergency obstetric services (Simkhada et al., 2006).

**Availability of well-trained Human Resource**

Skilled human resources are needed for effective delivery of maternal health services. But a far greater worry is that we may not be able to enrol sufficient health workers to reduce maternal mortality at all. Bergstrom in his commentary on the state of human resources for health in different countries found that availability of trained human resource was a key factor in countries such as Tanzania, Sri Lanka and Malaysia which has recorded positive gains in reducing maternal mortality among the third world countries (Bergström, 2005).

Hongoro and McPake in their series in the Lancet described Human Resources as the 'heart of the health system in any country' and labelled this the most important aspect of health care systems and a critical component of health policies (Hongoro and McPake, 2004).

An important intervention for Safe Motherhood is to make available of health workers with midwifery skills at every birth including those in rural settings. In Nepal, the lack of skilled birth attendants is a contributing factor to maternal deaths (Simkhada et al., 2006). Maternal health services which can easily be administered in the community such as ANC, skilled assistance during delivery and postnatal care, along with adequately equipped health institutions play a major role in the reduction of maternal mortality and morbidity (Simkhada et al., 2006)

**Safe Abortion Services**

Closely linked to improved accessibility of maternal health services is the as an important component in reducing maternal mortality is the provision of safe and legal abortions services to the population (Campbell et al., 2006). Zambia enacted the Termination of Pregnancy Act in 1972 and this act allows termination of pregnancy on socio-economic and medical reasons (Webb, 2000, Castle et al., 1990). The World Health Organisation state that between 20 – 30 percent of maternal deaths are due to unsafe abortions (Grimes et al., 2006). In essence, provision of safe and legal abortions services would help reduce maternal mortality by over between 20 to 50 percent in many developing countries (Haddad and Nour, 2009).

In Zambia, the extent of maternal mortality from unsafe abortion is not very clear. In a study done in the Western parts of Zambia, in which women were interviewed, it was revealed that 69% of the respondents knew one or more women who had died from an unsafe illegal abortion (Koster-Oyekan, 1998). In another study conducted in five urban districts of Lusaka, Kitwe, Ndola, Livingstone and Chipata, it was revealed that 25.9 percent of girls would prefer going to a traditional healer for an abortion (Webb, 2000). This just highlights the extent of illegal and unsafe abortions in Zambia. Most researchers have indicated that unsafe and poorly performed abortions account for 30 percent of maternal mortality in Zambia (Webb, 2000). The figure could even be higher than this due to under reporting and many cases which are hidden due to the perception that abortion is illegal and is likely to result in retribution and stigma (Webb, 2000, Warenius et al., 2006).

**Policies**

The creation of platforms or systems where the community can actively participate in health issues needs to be supported by appropriate policies and local laws. The Ministry of Health has put in place some policies to stimulate the participation of local communities in managing health issues. Some of the policies have been motivated by the shortage of critical staff in most health facilities (Zulu et al., 2014, Zulu et al., 2013) while other have recognised the important role that communities can play in improving various health outcomes. Policies also guide the interactions and extent of involvement in the health interventions. As indicated by

Mcleroy and his colleagues, public policies are key determinants of individual health seeking behaviours (McLeroy et al., 1988). These argue that policies help to restrict bad health behaviours, stimulate positive health behaviours and provide guidance to different players on what can be done and cannot be done. Policies also provide guidance on resources and incentives.

**Health Resources**

Health Financing is another key component needed to effectively address maternal mortality. Many challenges are faced by Zambia and other Sub Saharan countries to finance health issues related to addressing maternal mortality. Borghi and collegues state that the current financial commitments in maternal health is insufficient to meet the fifth Millennium Development Goal (MDG), and much greater resources are needed to scale up coverage of maternal health services and create demand (Borghi et al., 2006). De Brouwere and his colleagues also note that professionals in developing countries have known many process and interventions of managing maternal health but these have had little impact on reducing maternal mortality (De Brouwere et al., 1998). This, they note, is partly due to a failure to mobilize resources adequately and partly due to ill informed choices for introducing new technologies. They further state that resource and strategy questions are compounded by a series of misconceptions about the nature and extent of problems women face which may not be fully understood (De Brouwere et al., 1998, Burchett and Mayhew, 2009)

Ensor and Cooper in their article reviewing barriers to health service access identified location and distance costs as negatively impacting service utilization. These, they stated were mainly as a result of insufficient financing of maternal health activities in many countries (Ensor and Cooper, 2004). They further state that lack of finances lead to lack of nearby services thus lengthening the distance women have to cover to access maternal health services. Distance is therefore a principle determinant of how long patients delay before seeking care and is also cited as a reason why women choose to deliver at home rather than at a health facility thereby contributing to the increase in maternal mortality (Ensor and Cooper, 2004).

**Communication and Education Provision**

The type of communication methods used in most communities also has an impact on maternal health outcomes. In most rural and poor Zambian communities, there are usually very limited ways in which to communicate health information. As such, the success of any maternal health strategy or intervention depends also on how information is packaged as well how it is delivered to the pregnant women and the community at large. In a study aimed at reviewing the National Community Health Assistant policy in Zambia, poor communication was identified as one of the major bottleneck in the successful implementation of the health policy (Zulu et al., 2013). Poor communication system was also seen as a major barrier to increasing demand for health access in a review of demand and supply barriers in the utilisation of health care services (Ensor and Cooper, 2004).

A poor communication system can also hinder successful delivery of information and education messages. Available evidence shows that improving women's educational status is one of the best strategies to improve the maternal health as well as women's status in society. Effective education at community level is only possible if there is a good communication channel. According to Simkhada and his colleagues, studies done in Nepal show that mother's education is the best predictor and most important factor that influence ANC visits (Simkhada et al., 2006). Their study showed that women that have been empowered with education and knowledge are more likely to realize the benefits of using maternal health services. Education increases the chances of women using maternal health care in every community. Having a well-coordinated local communication system is therefore key in improving maternal health outcomes.

It is also important to ensure that information and education messages regarding women's health needs are designed in a manner that they reach husbands and families, as they are the main decision makers concerning the health of women. This education can also provide better results if it is extended to the general public as well as among primary level health care workers and should emphasise that every delivery is a potential high risk delivery (Simkhada et al., 2006).

In a study done to review community-based antenatal, intrapartum, and postnatal intervention trials in developing countries, it was also found that providing improved opportunities for female education; and improvement of women's social status, including empowerment and improvement of women's decision-making ability significantly helped in reducing maternal death (Bhutta et al., 2005).

## 2.2 Summary of Literature Review

It is clear from the studies reviewed that reducing maternal mortality cannot be done through one intervention. It is also clear that there is a gap in understanding the community level strategies for reducing maternal mortality. Different contexts have focussed on different strategies and have achieved varying degrees of success. While other countries have focussed on building the capacity and expanding the presence of Traditional Birth Attendants at the point of delivery, the government of the Republic of Zambia has banned TBAs from assisting in deliveries. Currently, so many community based strategies are being utilised through various community interventions such as the Safe Motherhood Action Groups and other initiatives. These interventions have focussed on strategies such as community participation, male involvement and strengthening of community based referral systems.

This study therefore aimed at reviewing the community based strategies that are currently being implemented in Zambia to reduce maternal mortality and empower women, families and communities to improve maternal health.

# 3 STUDY METHODOLOGY

This was a qualitative study designed to collect more in-depth data in order to understand the different community based strategies being used to reduce maternal mortality.

## 3.1 Study Setting

The study took place in Lusaka and Chongwe districts of Lusaka Province, Zambia.

This study focussed on strategies being implemented at community level to reduce maternal mortality. In Zambia, the government of the republic of Zambia works with other stakeholders to develop appropriate strategies and therefore, the government remains as the main custodians of all these strategies.

Lusaka was chosen because it is the national capital and houses the national headquarters for the Ministry of Health. This enabled data to be collected on the strategies being implemented country wide. This data was then followed with field level interviews in communities within Lusaka and Chongwe Districts. In Lusaka, interviews were done at the ministry headquarters, provincial and district offices and at Matero and Chelstone Clinics. In Chongwe, interviews were done at the district offices and selected health centres. The staff at these centres requested that the names of their health centres be withheld. Most of the rural health facilities have only one staff and given the sensitive nature of some of the information, they preferred to maintain their anonymity.

Chongwe was chosen due to its low rate of maternal mortality despite it being a rural area. Most of the maternal deaths occur in rural areas. For example, in a study done in Kaputa District in Northern Zambia, the risk of maternal death was 1, 549 per 100, 000 live births. In the same study, the risk of death in Kasama District which is also predominantly rural, was 764 per 100 000 live births (Le Bacq and Rietsema, 1997). However, a review of DHIS data from 2010 to 2013 reveals that Chongwe District had no maternal death recorded at any of the clinics. Chongwe therefore, provided valuable lessons in the implementation of community level maternal health strategies.

Chongwe district covers an area of around 10,500 square kilometres, with a population of approximately 181, 816 people and an annual population growth rate of 3.4% (CSO, 2010). Chongwe District is one of the districts implementing various community based strategies for reducing maternal mortality such as SMAGS. The district has 23 health centres, 10 health posts and 1 hospital. Chongwe District is predominantly rural with about 91% of its population living in rural areas. Houses in the district are brick built with metal sheet roofs and a few have electricity and running water. The houses in surrounding villages are small and usually built from burnt bricks with thatched roofs. Most of the population is scattered over vast geographical area.

## 3.2 Study Design

The study used a Grounded Theory Approach. Grounded theory is a qualitative research design in which the inquirer generates a general explanation (a theory) of a process, action, or interaction shaped by the views of a large number of participants (Strauss and Corbin, 1998). It is a methodology for developing a theory that is grounded in systematically gathered and analysed data. The theory in grounded theory evolves and takes shape during the actual research and it does this through continuous interplay between analysis and data collection (Strauss and Corbin, 1994, Mills et al., 2008). We note that grounded theory is currently looked at from two paradigms: one paradigm advanced by Barney Glasser referred to as the Glassian paradigm and the other by Anselm Strauss referred to as the Straussian paradigm (Creswell, 2013). This study was guided by the Straussian paradigm. This was the most ideal design for a short term grounded theory research such as this one. The design is also easy to follow for short term research compared to the other design that requires more time to be able to develop the theory and is recommended for longer studies. In this research therefore, we aimed at understanding how different people perceive the strategies that have contributed to the reduction of maternal mortality in Zambia. Based on the responses, a theory that reflects the people's understanding of the strategies for reducing maternal mortality was developed using the theory development stages developed by Straus and Corbin (1998).

The reason for using grounded theory in this study was therefore to move beyond mere description of data but to explore, analyse and refine data in order to generate a theory of what community strategies have contributed towards reducing maternal mortality (Strauss and Corbin, 1998, Corbin and Strauss, 2014). Like all qualitative research, the aim of the study was not to generalise the findings but to understand the context specific community strategies and get the implementers and users' perceptions of how effective these strategies were contributing towards reducing maternal mortality.

## 3.3 Study Population and Sample

In Lusaka district, the target population were officials from government who initiate the policies for reducing maternal mortality. These were drawn from the Ministry of Health staff working at the ministry headquarters, provincial and district offices, and UTH.

In Chongwe District, the target was staff from the District Health Office and the rural health centres directly implementing maternal health initiatives. Community volunteers and women who were either pregnant or had given birth within the last 6 months were also considered.

Chongwe district has a population of 187, 969 (CSO, 2010). The people of Chongwe are involved in subsistence farming, cattle-rearing, traditional crafts, including pottery and basket making. These activities provide the local economy with a small diversity of products, such as milk, meat, charcoal and cash crops. The majority of inhabitants live far below the current national poverty line. Due to the vast geographical area, the scattered population and the lack

of transport in communities, adequate access to health services is not available. Furthermore, there is a critical shortage of trained staff of all cadres in all health institutions (Kaluba, 2011). The area has a strong presence of NGOs such as World Vision and Plan who have partnered with various government departments to implement a wide range of community based development programmes in health, education and WASH.

### *3.3.1 Sampling Strategy*

A mixture of purposive, snowball and theoretical sampling methods were used to identify the participants in this study.

The first person to be selected was selected purposively. This was because the first person to be interviewed needed to have enough knowledge and be able to provide appropriate references of other individuals that would provide additional data on maternal mortality.

Thereafter, each successive participant was selected through snowball sampling. Snowball sampling is a process where the next participant to be interviewed is 'recommended' by the person who has just been interviewed. Snowball was particularly useful in this case because it helped provide the needed reference to other individuals who in turn provided the right information at every level of health delivery. This method was preferred because the study did key informant interviews and reference to individuals that have expertise in maternal health issues was central.

Theoretical sampling was then used as more data was collected and analysed. The theoretical sampling procedure dictates that the researcher chooses participants who have experienced or are experiencing the phenomenon under study. (Strauss and Corbin, 1998, Thomson, 2011, Mills et al., 2008) This helped in identifying the 'experts' in maternal issues who provided specific information that helped in generating a theory of maternal health strategies.

Policy makers, implementers, health volunteers and mothers were interviewed in this study. Table 3.1 below provides the details of people who were interviewed and the type of sampling strategy used for each of the study participants. The participants that were sampled purposively were entry points for a particular research focus. For example, the first Ministry of Health official was selected purposively, thereafter; each successive participant was selected based on the recommendation of the last person interviewed. The focus of the next interviewee was to build up on emerging themes. Thus theoretical sampling was applied together with snowball at this stage. On many occasions, we had to follow up and conduct additional interviews with some of the participants as we begun to follow up on emerging categories and as the theory begun to emerge.

**Table 3.1: List of Interviewees and the Sample Strategy Used**

| No | Level | Respondent | Total No | Sampling Strategy |
|---|---|---|---|---|
| 1 | Ministry Hq | | | |
| | MOH | Maternal Health Specialist<br>Health Policy Specialist | 1<br>1 | Purposive |
| | | | | |
| 2 | Lusaka Province | | | |
| | MOH | Maternal Health Specialist | 1 | Snowball and theoretical |
| | | D | | |
| 3 | District | | | |
| | Lusaka | ▸ Maternal Health Specialist | 1 | Snowball and theoretical |
| | Chongwe | ▸ Maternal Health Specialist | 1 | Snowball and theoretical |
| | | | | |
| 4 | UTH | ▸ Obstetrics and Gynaecologist | 2 | Purposive and theoretical |
| | | | | |
| 5 | RHC/Clinic | ▸ Nurses/Midwives | 7 | Snowball and theoretical |
| | | | | |
| 6 | Community | ▸ Community Health Volunteers | 8 | Snowball |
| | | ▸ Mothers | 4 | Snowball |
| | | | | |
| 7 | NGOs | | | |
| | World Vision | ▸ 1 TBA | 3 | Purposive |
| | Ipas | ▸ 2 TBA | | Purposive and theoretical |
| | **Total** | | 29 | |

## 3.4 Data Collection

Primary data was collected through Key Informant Interviews. Secondary data was collected through reviewing documents and records from the Ministry of Health and selected Non-Governmental Organisations (NGOs).

With the permission of the participants, the interviews were recorded and the highest security measures employed to store the data.

### *3.4.1 Key Informant Interviews*

Key Informant Interviews were conducted with 29 different people involved in various maternal health interventions. The participants were sampled purposively and later through theoretical sampling. For example, the first Ministry of Health official who was interviewed first was selected purposively, thereafter; each successive participant was selected based on the recommendation of the last person interviewed. The focus of the next interviewee was to build up on emerging themes. Thus theoretical sampling was applied together with snowball at this stage. On many occasions, we had to follow up and conduct additional interviews with some of the participants as we begun to follow up on emerging themes and categories.

Higher level data was collected from the Ministry of Health Headquarters and triangulated with data from the University teaching Hospital (UTH), Provincial and District Medical Offices; local health centres and community members.

### *3.4.2 Review of Documents*

Different documents were reviewed. These ranged from reports, strategic plans, policies and other relevant documents in draft form. Key strategies were coded and followed up through interviews. Data from these documents helped give a broad understanding of the strategies being used and the general progress made in the implementation and operationalisation of these strategies. We also reviewed reports and other documents from selected NGOs. Table 3.2 below shows the list of documents reviewed and some of the identified maternal health policy focus areas.

Document review is instrumental in helping to refine ideas, identify conceptual boundaries and pinpoint the specific thematic categories that can help in refining and grounding the theory (Bowen, 2009). A document review checklist was used to help define the data that was collected.

**Table 3.2: List of Documents Reviewed**

| S/N | NAME OF DOCUMENT | MATERNAL HEALTH FOCUS AREAS/MAJOR THEMES IDENTIFIED |
|---|---|---|
| 1 | National Health Strategic Plan 2011 -2015 | • Reproductive health access<br>• Maternal health information<br>• Maternal nutrition<br>• National Health Policy Focus Areas<br>• Facility deliveries |
| 2 | Zambia Reproductive Health Policy | • Provision of safe motherhood services<br>• Provision of safe abortion services and information<br>• Community based health linkages<br>• Community health systems<br>• Community capacity building |
| 3 | Adolescent Health Strategic Plan 2011 – 2015 | • Unplanned pregnancies<br>• Unsafe abortions<br>• Sexual and reproductive health information |
| 4 | Zambia MDG Report – 2013 | • Skilled birth Attendants<br>• High maternal deaths |
| 5 | National Health Policy – 2012 | • Maternal health access<br>• Maternal Health policy |
| 6 | Guidelines for Reducing Unsafe Abortion Morbidity and Mortality – 2009 | • Abortion Information<br>• Abortion service access |
| 7 | National Community Health Worker Strategy – 2010 | • Financing and remuneration for community health workers and health systems<br>• Role in maternal health<br>• Capacity Building<br>• Local leadership involvement |
| 8 | Draft Reproductive, Maternal, Neonatal, and Child Health Essential Care Package | • Role of community members in maternal health<br>• Community management of PPH<br>• Provision of safe abortion information and services |

### *3.4.3 Languages used*

The interviews with government staff and stake holders were done in English. Interviews with the community members were done either in Lenje or Nyanja which are the two major local languages used in the area. The questionnaire guides, consent forms and information sheets from community interviews were translated in the local languages. A digital recorder was used to record the conversations and consent was given. All the interviews were transcribed.

### *3.4.4 Data Saturation*

We stopped data collection after reaching theoretical saturation. Theoretical saturation, according to Straus and Corbin occurs in data when:

i. No new or relevant data seem to emerge regarding a category,
ii. The category is well developed in terms of its properties and dimensions demonstrating variation, and
iii. The relationships among categories are well established and validated and the theory has emerged clearly.

(Strauss and Corbin, 1998, Thomson, 2011)

In this study, all the data collected was constantly compared and analysed at every stage of data collection and this formed the basis for theoretical sampling. Most of the interviewees were interviewed more than once to get more clarification as the themes and theoretical categories emerged. The follow up interviews helped to refine the emerging theory and also ensured that data saturation was achieved with the same number of participants interviewed.

## 3.5 Data Management and Analysis

Data collected from the key informants was treated with the strictest care and privacy. All data audio files and notes were kept under lock and key. Access to the computer where the data was kept was limited only to the researchers and the note taker.

All data collected was transcribed in order to help in understanding the emerging themes and theories. In order to ensure the highest levels of confidentiality, the researcher did most of the transcription and the manuscripts were kept under lock and key.

Data was analysed using Grounded Theory processes. Grounded theory demands that data should be analysed as it is being collected. This helps the research to begin to identify emerging themes and concepts that will help in the development of a theory. The process of analysing the data in this research involved three levels or types of coding used in grounded theory:

**Open Coding**

Open coding is the process through which data is segmented into small groups in order to form emerging thematic categories about the strategies for reducing maternal mortality. Open coding helps in analysing new insights into the information by breaking through standard ways of thinking about the information (Corbin and Strauss, 2014). As data collected and analysed, key words and concepts were identified, compared and more refined categories defined until no more new categories were generated. This process was an iterative one in which we made follow up trips to the field to seek clarification or follow up on an emerging theme.

**Axial coding**

Axial coding involved making connections between the categories identified during open coding. Axial coding in this study focussed on the relationships and interrelationships between the categories and this helped to form the basis for a theoretical theme. In this study, axial coding focussed on the emergency of the phenomena. And based on the data, the phenomena that emerged from the study was local participation which was facilitated by local policies and resources. As stated by Straus and Corbin, axial coding focuses on the conditions that give rise to a category (phenomenon), the context (specific set of properties) in which it is embedded, the action/interactional strategies by which the processes are carried out, and the consequences of the strategies (Corbin and Strauss, 2014).

Axial coding was also involved in bringing together the different thematic areas which helped to define the next set of questions asked and the type of interviewees.

**Selective Coding**

Selective coding was the final part of data analysis and involved organising and integrating categories and themes in a way that articulates a coherent understanding of a theory concerning the different strategies for reducing maternal mortality. During this process, all the categories were unified around a central core category. The core category represented the central phenomenon of the study and was identified by the main analytic idea of the research. It is based on the interplay of the main category with the other processes that the theoretical framework was developed.

**Use of NVIVO**

NVIVO software was used in organizing the data. As per the principles of grounded theory, data collected was be systematically analysed at the same time that other data was being collected. The software helped in identifying themes that were then grouped into categories during open and axial coding. Using NVIVO, data was organised in hierarchies using thematic nodes. The hierarchical thematic nodes helped to clarify the different data hierarchies starting with the basic codes, themes and the categories. The first hierarchical

level represented the categories and the subsequent levels represented the themes and codes identified in the study. Data was also organised according to case nodes with the major two case groups being defined according to occupation. The two groups identified were 'health workers and community members'. We aimed to have this distinction in order to capture the two groups' perspectives on the different community based strategies being used to address maternal mortality.

## 3.6 Ethical Considerations

Ethical clearance was sought from ERES before the study commenced. In addition, permission was also gotten from the Ministry of Health and the National Research Authority as custodians of all health related research. The District and Provincial Medical Offices also gave their approval to conduct the research.

All interviewees and other participants voluntarily consented to participating in the study. Only persons above the ages of 18 were interviewed. The right of all participants and respondents to quit their participation at any time during the interview was made clear to everyone.

In this type of research, it is difficulty to detach the participants from their responses. It is also possible for the participants, especially those in the government to feel uncomfortable releasing information concerning their work some of which maybe negative. As such, the principle of respect for autonomy was observed by ensuring that individual preferences were respected. The study endeavored to de-identify all the participants. Unless where express permission was provided, information concerning the location of the sites was withheld. There was some discomfort by some participants in divulging information concerning some strategies that they thought were 'pushed' by the ministry headquarters but which some staff felt were not working. As such, participants requested not to be identified including not identifying the health centres as most of the rural health centres only had one staff and it would be easy to identify the staff.

Additionally, the principle of non-maleficence (do no harm) was observed by ensuring that all the interviews with nurses and health staff were done outside their working periods so as not to disturb service delivery especially that there are critical staff shortages at most health institutions.

All the discussions were done within acceptable cultural norms and values. There was no cultural conflict or discomfort in any of the interviews. At every point of the study, the ethical principles of informed consent, anonymity, confidentiality, voluntary withdrawal and no personal harm were emphasized to the participants.

Care was taken to ensure that all secondary data provided by different individuals was maintained with the highest level of security and confidentiality. All the normal processes were followed in accessing government documents not yet in the public domain but that provided valuable information.

The participants were also informed that there was no immediate benefit that was to accrue to them by participating in the study. It was explained to them that the results will help improve future community interventions aimed at reducing maternal mortality in their community and the country at large.

# 4 FINDINGS OF THE STUDY

This study aimed to develop a theoretical model for the strategies being used at community level to reduce maternal mortality. The two major study questions focussed on exploring the interventions and strategies being used to reduce maternal mortality and understanding the perspectives of health workers and community members on how to effectively implement these strategies.

The results are presented in two ways: The first part looks at the general results. These are the results as collected from the field. They represent the different views of the people interviewed and the documents reviewed. This part focusses on the strategies being implemented in the community and highlights how they are communicated and how different people feel they can be enhanced to reduce maternal mortality. The second level of results focusses on the development of the theory. This theory development follows the grounded theory development model developed by Straus and Corbin (1998) and is the basis on which the theoretical model in this paper was developed.

Table 4.1 below shows a summary of the key codes, themes and categories that were identified during the interview and document review. The data was organised with the help of NVIVO software. The categories represent the actual strategies being implemented to reduce maternal mortality in the communities where the study took place.

**Table 4.1: Summary of the Strategies *(Thematic Nodes Hierarchy)***

| **Strategies/Categories** ***(Selective Coding)*** | **Themes**[1] ***(Axial Coding)*** | **Codes** ***(Open Coding)*** |
|---|---|---|
| Supportive Policies Focussed on Community Health | Community focussed policies | o Community engagement<br>o Incentives for health volunteers<br>o Community based health workers |
| Strengthened Community Capacity and Systems | Community based maternal health groups | o Presence of maternal health groups<br>o Home based antenatal support<br>o Availability of community volunteers<br>o Early detection of complications<br>o Early management of |

[1] The themes indicated in this research are at the sub category level and were identified during the second level of grounded theory analysis: axial coding. These were organised with the help of NVIVO to show the systematic views as highlighted in Table 4.1. A group of themes were then further categorised in actual strategies they contributed to.

| | | |
|---|---|---|
| | Improved community capacity | complications<br>o Birth planning support<br>o Challenging negative cultural practices<br>o Encouraging positive cultural practices<br>o Male involvement<br>o Local nutrition |
| | Involvement of local leadership | o Selection of volunteers<br>o Community coordination |
| Improved Service Delivery | Provision of maternal services at Community level | o Referal<br>o Administration of Misoprostol<br>o Community management of haemorrhage<br>o Focussed antenatal<br>o Early detection<br>o Provision of abortion services |
| Improved Community Health Financing | Pooled community resources | o Government xxxx<br>o Local resources<br>o Stakeholder support<br>o Group IGAs |
| Improved Information and Communication Systems | Local based information and communication channels | o Use of churches and schools to communicate maternal health information<br>o Local radio stations |

## 4.1 General Findings

### *4.1.1 Development of Supportive Policies Focussed on Community Health*

The study established that the government has put in place policies that have stimulated increased provision of services at community level as well as encourage the participation of local people in maternal health. Policies aimed at increasing access to abortion information and services were also among the policies that the government has put in place.

**Policies aimed at increasing community access to health services**

The government in the National Health Strategic Plan 2011 – 2015 prioritised increasing access to health services as close to the family as possible. This strategic plan aimed at ensuring that even rural community which have few health facilities are provided with the

basic access to health including maternal health services. This included among other things the promotion of local level community members to participate in the enhancement of health in their communities. The national Health Strategic Plan 2011 – 2015 underscores the need for the use of community based structures as stated below:

> *'At district and community levels, the health sector has established structures for participation of stakeholder at all levels, which include Village Health Committees, committees at health facilities and District Health Boards'. P 37*

In addition, the Ministry of Health is developing their post 2015 strategic plan in which maternal health has been given a priority owing to the failure to meet most of the MDGs. It was also revealed during the interviews that, a more consolidated continuum care package called the Reproductive, Maternal, Neonatal and Child Health Essential Care Package has been developed and is awaiting operationalising. A review of the draft document found that the document empowers community members to administer certain prescribed health activities such as providing temporal family planning methods; provision of iron and Folic acid supplements; prevention and management of post-partum haemorrhage; hygienic cord and skin care; and facilitating referrals for pregnant women. The package also segregates health roles that will be managed by the community through Community Health Assistants and other health volunteers.

**Policies Encouraging Community Participation**

In 2010, the government developed the National Community Health Worker strategy as one way of bridging the human resource gap as well as advancing active participation of the local people in the health affairs of their communities. Building on this strategy, a Community Health Worker Policy was developed in 2011 and this consolidated the role of Community Health Workers in the health of their communities. The National Health Policy developed in 2012 emphasise the importance of community involvement and participation in addressing community health challenges.

> *The government will work towards strengthening health promotion among the communities and strengthening community involvement and participation in the planning, management, implementation, and monitoring and evaluation of health services, to achieve higher impact. This will be achieved by strengthening the community participation structures, and transparency and accountability in the management of health services at community level.* ***National Health Policy p.49***

**Policies aimed at reducing abortion related maternal deaths**

The Ministry of Health has also been developing policies aimed at improving the provision of safe abortion safes. This started with the development of the Standards and Guidelines on Reducing Abortion Morbidity and Mortality in 2009 and this helped the ministry to start providing safe abortion services in most health facilities as a primary health service. A review of documents from the Ministry of Health also revealed that the ministry has also developed

the Reproductive, Maternal, Neonatal and Child health Essential Care Package (in draft form) which has proposed to include and expand the provision of safe abortion services. The Reproductive Health Policy also include the provision of safe abortion services in its statement of commitment which states that the government was *'Committing itself to the concept of Reproductive Health, which encompasses, safe Motherhood, including Safe Abortion care'.*

However, while the Reproductive Health Policy acknowledges the lack of knowledge on abortion laws and policies by most people, there is no specific outline of how the nation will address the increasing number of unsafe abortions which have continued to cause significant maternal morbidity and mortality. There is also no outline on how abortion related services and information can be scaled up owing to the low knowledge levels on abortion currently.

### *4.1.2 Strengthening Community Capacity and Health Systems*

The study found that strengthening local systems and building the capacity of community members was critical in reducing maternal mortality in the community. This helped address a lot of community level challenges such as volunteerism, participation, culture and traditional leadership involvement among other things.

**Community Based Maternal Health Groups**

The presence of a community health system that supports pregnant women was one of the major strategies used in addressing maternal health challenges and reducing maternal deaths. In both the rural and urban areas, each community had a local system of managing maternal health issues. The community based health systems involved in maternal health promotion included the Safe Motherhood Action Groups (SMAGs), Community Based Distributors and the Nutrition Promoters

***The role of SMAGs in reducing maternal mortality***

The Small Action Motherhood Groups (SMAGs) proved to be effective in helping pregnant women improve their nutrition, engage in appropriate health seeking behaviours as well as help them access antenatal and delivery services at health facilities. The SMAGs consist of the Traditional Birth Attendants, Community health Workers and other volunteers who help pregnant women. The SMAGs also helped to address negative cultural practices and also helped in encouraging male involvement in the health of their wives. They have also created a network of local transporters who helped transport pregnant women to the health facilities using available local transport in cases of pregnancy related emergencies.

In urban areas, the SMAGs monitor pregnant women and ensure that these women attend the required number of antenatal visits. In rural areas, in addition to monitoring pregnant women, the home visitors provide basic education on how to maintain a healthy pregnancy, they also address cultural barriers that negatively affect pregnant women as well as help the pregnant

women plan for delivery by ensuring that logistics such as transport and baby clothes are available.

In instances where transport is a challenge, or a pregnant woman develops complications, the home visitors transport the women on their bicycles to the nearest health facility.

> *'…what has worked well for us is to eliminate community level barriers that cause complications by strengthening community groupings and training the home visitors… the home visitors are members of the SMAGS and we try to train them using what we call the Home based Life Savings Skills model…'* ***Maternal Health Specialist, NGO 1***

***The role of Community Based Distributors in reducing maternal mortality***

The Community Based Distributor's main role is to provide oral contraceptives and advise women on family planning. They combine this with education on maternal health as well as the benefits of child spacing.

> *'... we have the CBDs who help the women on issues of contraceptives, of course there are challenges but the government has told us to work with them…' District Nurse 1*

***The role of Nutrition Promoters in Promoting Maternal Health***

The Nutrition promoters' primary focus is on enhancing the nutrition of pregnant women and mothers. These assist women to eat local foods that are nutritious and good for the growth of the baby and pregnant woman. While they are identified as a separate and distinct group, they are mostly embedded in the activities of the SMAGs.

> *'... the (nutrition) promoters help on issues of nutrition. They also follow up the women and children …'* ***Nurse 3***

**Improved capacity**

The study revealed that training of key community health volunteers has helped in building their capacity to effectively support pregnant women in their communities even in times of emergencies. It was evident from the interviews that the health volunteers trained through the SMAGs understood how to help and support pregnant women. The help is provided from the time a pregnant woman is identified in the community till delivery. The community health volunteers prepare pregnant women for safe delivery by counselling them, helping come up with birth plans and as well provide individualised home based antenatal care where they visit individual pregnant women in their homes and educate and support them to prepare for safe delivery.

> *'So as soon as the woman discovers that she is pregnant the Home Based Care comes in and start counselling her, encouraging her to start access antenatal care,*

*encouraging her on nutritional issues, birth plans and how to feed a child etc'* ***District Maternal Health Coordinator 2***

Furthermore, it was also revealed that these volunteers know what to do when a woman has a pregnancy complication. They are able to detect complications early and manage the complications before they worsen. They provide the needed first aid to pregnant women while at home or on the way to a health facility. They also facilitate the transportation of pregnant women to the health facility.

*'... we help them (the pregnant women) when labour starts and when they develop complications… We go with them to the clinic and even assist the madam (midwife) to deliver them'* ***Health Volunteer 4***

**Male Involvement**

The study revealed that there has been an increase in the involvement of men in maternal health issues. This was due to the continued sensitisation work of the volunteers. This involvement stretches from partners being involved and actively concerned about the health of their pregnant partners and also escorting them for ante natal visits.

*'These days, the men have started to be cooperative and I see most of the women coming to the clinic for antenatal with their men. We actually tell the women that when they are coming for antenatal registration, they have to come with their husbands…'* ***Health Volunteer 4***

**Addressing Cultural Beliefs and Norms**

The study found that there is a lot of education that is taking place in the community concerning cultural beliefs and practices that can cause maternal health complications. Through the various community based structures, women are engaged and educated on some of the practices that can affect their health during pregnancy. Cultural values and norms which forbid disclosure of a pregnancy before a certain process is done can lead to delays by women from seeking antenatal services. Equally, practices that forbid women from eating some foods such as eggs may have negative implications of the health of the women and the health volunteers make these known to the pregnant women.

*'As of nowadays many women have become aware but of the recent past our traditions would not allow someone to tell a woman that she is pregnant until you take the woman to the family intending to marry her, but through teachings, people have today come to learn that a woman cannot have a miss courage just because someone mentioned that she was pregnant'.* ***Health Volunteer 1***

The study also found that some practices are so engraved in the communities that even the health volunteers are unable to handle them and provide effective education to the pregnant

women without trained health personnel. These cultural beliefs pose a serious risk as they prevent women from delivering at a health facility.

> *'One of the barrier which we are working on that the home visitors cannot solve is a cultural belief that … if you give birth from the health facility then you are weak, or lazy woman. Strong women deliver from home and by themselves. So women wouldn't want to show themselves to their in-laws that there lazy by delivering at the healthy facility'.* ***NGO Community Coordinator 1***

**Improved Accessibility/Transport**

The study found that the rural communities had an informal way of helping pregnant women access services at a health facility especially during the onset of labour. While every pregnant woman is educated and helped to come up with a birth plan, the home visitors were always handy to organise transport in times of emergency or when labour developed earlier than planned. This transport system ranged from wheelbarrows, oxcarts to vehicles depending on the availability and time of the emergency.

> *'My work helps women who are pregnant to come to the clinic and help them to look for means of transportation so that they can come and access maternal health services'* ***Health Volunteer 3***

**Involvement of local leadership**

Most of the people interviewed emphasised the involvement of traditional leadership in all maternal health programmes for them to be successful. They indicated that traditional leaders help in the identification and reward of volunteers. The traditional leaders are also in charge of coordinating all the community groupings. In some instances, they also enforce community level by laws to protect pregnant women. Some of these by laws include ensuring that partners of pregnant women take responsibility for their pregnant women as well as provide for them. They also organise support that helps some pregnant women in need.

'… When choosing the community structures, the traditional leaders are involved… because you cannot just train anyone from the community, we go through these community structures' ***District Nurse 1***

### *4.1.3 Improved Service Delivery*

Another important strategy that has helped reduce maternal mortality at community level is the improved delivery of maternal health services provided in most communities. The improvements in service delivery are closely linked with the strengthened capacity of volunteers and systems. The study found that key maternal health related services were being provided in almost all the communities. These included the management of post-partum haemorrhage through community based administration of misoprostol; provision of safe abortion services as well a good referral systems for services not provided in the community.

**Management of postpartum haemorrhage through Misoprostol**

As part of its strategy to reduce maternal related deaths due to excessive bleeding at community level, the government has been piloting the use of misoprostol administered by pregnant women and community members to reduce bleeding after delivery. This strategy focusses on preventing and reducing post-partum haemorrhage at the household or community level. This strategy is implemented mainly in areas where access to health facilities is difficulty due to the terrain or distance. This strategy empowers pregnant women to actively participate in the prevention of severe bleeding while in their home or community or while on their way to the health facility. The health facility gives out the medication (misoprostol) to pregnant women and these women are supported by a home visitor (usually a member of the SMAG). The drug is given only to women living far away from a health facility and is taken in an event that they deliver at home or while on the way to a health facility.

'*… Misoprostol, ideally it's meant to reduce bleeding. Even when we did our review, where we looked at those who have died, we found that the leading cause of death was PPH. So we thought of how do we stop this bleeding after delivery, and we thought of Miso. I would recommend scaling up although we have to find a way so that it cannot be used for abortion…*' ***Provincial Health Staff 1***

***Availability of Misoprostol***

While this is actively being administered in rural areas, we were informed that the mass administration of the drug for community level management of PPH has reduced and most rural health centres are no longer receiving the drug in required quantities.

'*… it comes in small quantities, … like that time when we were piloting, we had plenty and it really helped ma women, especially those living very far from the clinics or hospitals, because it was easily managed compared to injections, you find in other rural health centres, some centres are only manned by casual daily employees, so they don't give injections but for the tablets, they can be able to (give*)'. ***Nurse 2***

***Abuse of Misoprostol***

The administration of misoprostol was without any challenges. It was discovered that the use of the drug for the prevention of post-partum haemorrhage resulted in some negative consequences. We discovered that some people in urban areas abused the drug and some of the drugs ended up being used to induce pregnancy termination.

'*… they misused this drug, they used it for abortion, you know, I don't know who told them that if you consume this much … or overdose, it was very much misused by school children, there were a lot of abortions, now that it is not very common, abortions have reduced also'*. **Nurse 2**

**Improved Provision of Abortion Information and Services**

A review of reports and documents on abortion indicates that there is general consensus that the provision of abortion related information and services are helping in reducing maternal mortality. Records from some selected health facilities show that the number of people seeking safe abortion services has been steadily increasing. This upswing has been facilitated by increased knowledge on safe abortion services. In most rural communities, the provision of information on abortion is being done by the health facility staff working with volunteers such as the Community Health Workers and the Home visitors and during community outreach programmes. In most urban areas, it is being done through the Youth friendly corners.

> '*… we are supporting the Youth Friendly Corners based in the health facilities with information and they are sharing related information on safe abortion to the young people'.* ***NGO Staff 2***

At most of the health centres where the interviews took place, reviews of log books showed that the number of women accessing abortion related services was increasing. The number of people presenting themselves with incomplete abortion was going down and more people were accessing safe termination of pregnancy at designated health facilities. Figure 4.1 below shows the cumulative totals of women attended to who received safe abortion services and post abortion care at Matero Reference Clinic as captured in their abortion care logbooks. Post Abortion care has been designated as a quasi-indicator of unsafe abortion in any given community.

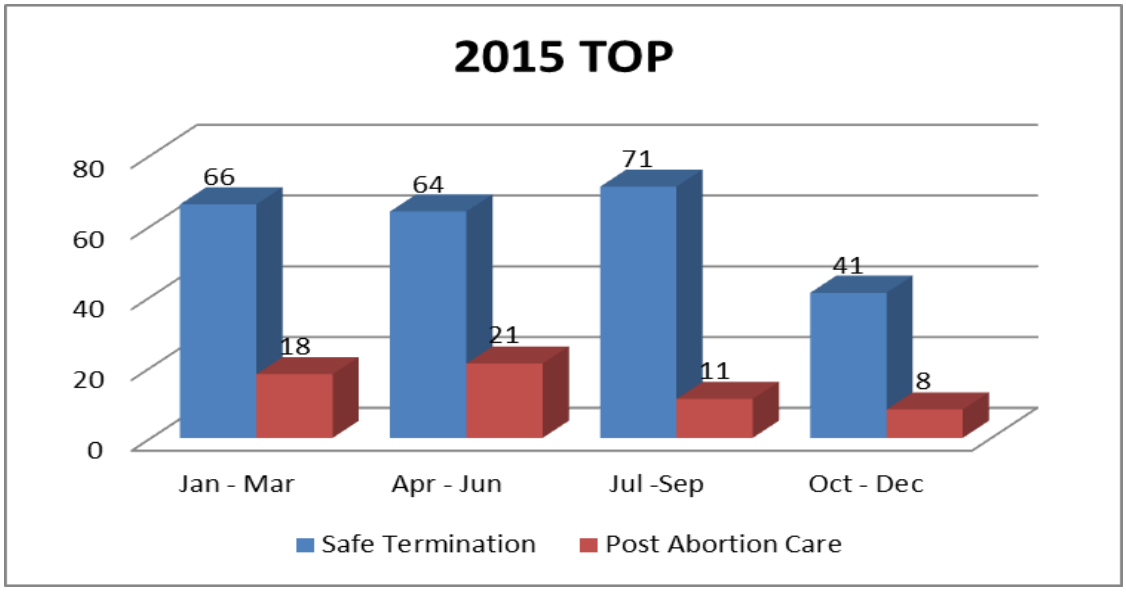


**Figure 4.1: Matero Reference Clinic Termination of Pregnancy 2015 Statistics**

The figure above shows that there are more people accessing safe termination of pregnancy (TOP) than those presenting themselves with unsafe abortion (Post Abortion Care)

### *4.1.4 Improved Community Health Financing*

Another important strategy that has contributed towards the reduction of maternal deaths in the community has been due to improvements in financing of health activities at community level. The study found that there was a pooling of resources from different sources aimed at addressing maternal health challenges. Resources came from the government, NGOs as well as the local community. These resources were not only in monetary forms, but also in materials and voluntary time spent assisting pregnant women.

**Government Support to Maternal Health Community Groups**

The study revealed that the government has developed a 'minimum package' that is supposed to be provided to the health volunteers working on maternal health. The minimum package includes essential tools needed for the volunteers to effectively support pregnant women. Some of the items include a bicycle, rain attire and night vision gadgets. The government has also put in place a grant that is supposed to go to the community based Neighbourhood Health Committees. However, the study also established that the government grant is not consistently provided.

> *'... government has luckily put a minimum package that you can give them, may be bicycles, rain boot, work suits and something like that... where I have worked the grants are irregular going to the rural health centers and you find that when the grants come they have debt to pay and sometimes it doesn't come for a long time...'* ***RHC Midwife 3***

**Community Support**

There is no formal support system in terms of financial and material resources provided to the maternal health groupings. However, there is some support provided when need arises such as when there is need to provide transport to a pregnant woman. The local community are nonetheless beginning to discuss ways of supporting some of the local volunteers in their work. At one of the rural health centres visited, the nurse is working with the community health volunteers to initiate some activities to raise income for the volunteers.

> *'It is hard for most of them since they don't work and they have to survive. So we are trying to bring them together so that maybe they can start keeping chickens for sale, that way they can be getting something...'* ***Nurse 3***

**NGO Support**

The study established most of the financial and material support provided to maternal health groupings in the community came from Non-Governmental Organisations (NGOs). The NGOs provide financial and material resources to the maternal health groupings. Some NGOs even provide incentives to pregnant women aimed at encouraging them to deliver at home. It was further established that two major NGOs were currently providing what was called a mama pack to all women who delivered at the facility. The other NGO was providing mosquito nets and blankets to all women who delivered at the health facility.

*'... Our SMAGs were not trained by the District (Health Office), we just head about the SMAGs from other facilities and copied because it was a good thing. '... (A local NGO) is the one that trained us and the District gave us materials…'* ***RHC Midwife 3***

While they are doing great work in reducing maternal mortality, it is clear from the interviews that the community feel there is need to concentrate on systems which will continue even without donor support. While both the health staff and volunteers appreciated the support from the NGOs, there is a general feeling among the health staff and community members that the continuity of such systems is only dependent on continued support from the funding NGOs.

'*… from my personal view of things, I think most people can stop, because some of us (most people) volunteer with the view to receive something (from the NGOs)…. Others volunteer because they have passion and these can continue'* ***Health Volunteer 1***

The same sentiments were also echoed by ministry of health staff. While they appreciate that some of the systems have a strong community level involvement and have greatly help in addressing the maternal health challenges, they are sceptical on the extent to which they can be sustained in the absence of continued donor support. When asked about the type of support given to the SMAGS and how they will be sustained, the Nurse in charge at one of the rural health centres had this to say;

'… it's a challenge (to coordinate the SMAGS), … us as a health facility, no one was trained, but we just copied the concept from other districts… and all the SMAGS which are here, they were trained by the World Vision … they were complaining that since the World Vision are going, what are we going to do? ***RHC Midwife 2***

**Incentives to the Volunteers**

It was clear from the interviews with both the health staff and volunteers that incentives played a significant role in motivating the maternal health volunteers in their work. It was revealed that volunteers that received bicycles were more motivated than those that did not receive bicycles. It must be noted that a bicycle in most rural communities of Zambia is an important asset. Other health volunteers put emphasis on building their capacity and providing them with tools as key incentives. This view was also echoed by the health staff who also indicated that the community volunteers could do much more if they were supported with resources and tools to do their work.

*'…the government should look at that (motivating the volunteers), they really need to be motivated…, gam boots, attires, even bicycles, torches, …and sometimes even at*

*least a little something, like a stipend… so they are motivated to work…* ***District Nurse 1***

### *4.1.5 Improved Information and Communication Systems*

Improvements in the way maternal health information is communicated has also had positive impact on reducing maternal deaths. The study found that different communication channels are used to communicate maternal health policies and activities across the different structures of health delivery. At community level equally, different ways are used to communicate maternal health information to community members and pregnant women. The diversity in these communications channels reflects the availability of resources, context and geographical distribution of people in an area.

**Communication within the government health structures**

The government follows a formal and structured way of communication which is basically standard across all levels of health service delivery. From the Ministry Headquarters where policies and strategies are formulated, the communication goes to the district through the provincial offices. This is done through letters and instructions. While the process seems bureaucratic, it helps in ensuring that all the different levels of health care have the same information on maternal health strategies and implement interventions in a coordinated manner. This also creates a strong support system from the ministry headquarters to the health facility. A midwife or nurse from a rural health facility can easily request for support from the district health office or the provincial health office because there is a formal structure of communicating and support. Where there is need for capacity building in order to understand the operationalisation of new strategies, selected provincial, district and facility staff are called to a central point where they are trained.

*'… we receive all instructions from the headquarters through the province. The headquarters writes to the province and they write to us (district)…'* ***District Nurse 1***

**Communication to community members and pregnant women**

From the facility to the community members and mothers, different modes of communications are used. In urban areas, the major form of communication is through posters and notices stuck at a health facility. The use of mobile phones in some cases also helps to easy communication between the facility and the home visitors. In the rural areas, many forms of communication are used. They range from the use of posters, brief notes sent through the churches and schools as well as the use of local community radio stations. In Chongwe, the health facilities are able to make an announcement at the local community radio station for free. Health facilities in urban areas such as Lusaka could not make the same type of announcement without paying for air space. There is thus a much wider coverage of the maternal health communication to the people in the rural areas than the people in the urban areas.

*'We write the announcement and take to the radio station… they do not charge us from the clinic…'* ***Nurse 2***

The community radio station does not charge health facilities when making announcements on health. Equally, schools and churches act as media of communication between the health facility and the community. The facility sends out a note to the teacher or pastor and these then make announcements for any health activity such as antenatal outreach areas or health education centres.

*'…when we want to meet the pregnant women here (at the clinic), we announce for the meeting in church and the information reaches them… sometimes, we send to the school and the teachers announce to the children'* ***Health Volunteer (Home visitor) 4***

## 4.2 Enhancing Implementation of Strategies for Reducing Maternal Mortality: Health Workers and Community Members' Perspectives

Different perspectives emerged on how the community based strategies for reducing maternal mortality can be enhanced. While most of the perspectives were positive, there were also some negatives perspectives that indicated that certain strategies should be discontinued as most interviewees thought these would increase maternal deaths. Table 4 below shows the different views of the community on how to enhance the implementation of community based interventions aimed at reducing maternal mortality.

Table 4: Perspectives on how to effectively implement community maternal strategies

| **Perspectives of Community Members** | **Common Perspectives** | **Perspectives of Health Workers** |
|---|---|---|
| Positive<br>• Increase on the number of health facilities | Positive<br>❖ Involvement of traditional leaders<br>❖ Local participation<br>❖ Build more capacity<br>❖ Provide incentives and tools to the health volunteers<br><br>Negative<br>❖ Restrict provision of abortion information and services | Positive<br>• Increase on the number of facility staff to reduce workload in order to support the health volunteers<br><br>Negative<br>• Stop the use of community administered Miso for prevention of PPH |

### *4.2.1 Common Perspectives*

**Increase the involvement of traditional leaders**

Most of the people interviewed indicated that the implementation of maternal health interventions would be implemented better if there is more involvement of traditional leaders in all activities. Traditional leaders play an important role in the community and their active involvement can help speed up many activities.

> *'Chiefs are important are an important component at community level, interventions that are being rolled out to prevent maternal mortality, I think, must pass through the chiefs. Because our chiefs hold a very important key because once they say something in the community, every one follows. …* ***(Medical Doctor 1)***

**Increase Local Participation**

The involvement of the local community was another perspective given by most participants on how to enhance implementation of effective strategies for reducing maternal mortality. While there is visible participation of local people in the community, the people felt more was needed to further involve the community in maternal health issues.

> *'It would be good if more (community) members can be welcomed because the work is too much. Sometimes we have to escort them (pregnant women) to the clinic and it's a lot of work'.* ***Community Health Volunteer 3***

**Build More Capacity**

The need for capacity building was mentioned as a key intervention that would help improve maternal health outcomes. While most of the volunteers had undergone some form of training, most of them still felt they could do much more if their capacity was built further.

> *'We need more trainings to enhance our level of competence so that we can serve our clients better and effectively. We need more tools to demonstrate when teaching the women so they can understand our lessons better'* ***Health Volunteer – KII 3***

**Provide incentives and tools to the health volunteers**

Interviews with the volunteers and health staff indicated that their main view of enhancing implementation of maternal health strategies was to provide incentives to the volunteers and well as to support them with resources and tools to carry out their work. Incentives play a key role on motivating volunteers to do their work. The interviews results showed that the need for incentives to be provided or scaled up was mentioned by almost all the interviewees. Different forms of incentives were mentioned. These included money, bicycles, trainings and tools. Others just mentioned recognition in the community as an incentive that would push them to do their job.

*'…the government should look at that (motivating the volunteers), they really need to be motivated…, gam boots, attires, even bicycles, torches, …and sometimes even at least a little something, like a stipend… so they are motivated to work…* ***District Nurse 1***

**Discourage Provision Abortion related Information and Services**

On the other hand, some nurses and community members discouraged the implementation of some strategies indicating that it would worsen maternal deaths. The provision of abortion services was one strategy that was discouraged by some health staff and community members. Some of the facility staff such and some volunteers were not even comfortable discussion issues of abortion. Most of them requested to be exempted from being asked question on abortions despite their facility records showing a totally different picture. Apart from one health centre in Chongwe, most of the facilities we went to conduct interviews had high records of people who had attempted an unsafe abortion (Post Abortion Care).

*'I don't think this is a good intervention on the part of government, because now many of the young girls, especially school going girls have taken it for guaranteed that they have been allowed to terminate pregnancies and they go on rampage getting pregnant that they soon terminate. I don't think this is a good strategy that can benefit the community'.* ***Nurse 1***

### *4.2.2 Health Worker's Perspectives*

The major perspectives from Health workers focussed on addressing staff shortages as well as increasing on the number of trained community health assistants and other community health workers.

**Address staff shortages at community health facilities**

There was a lot of emphasis on addressing staff shortages at health facilities in the communities as a key way of reducing maternal mortality. Most of the health staff complained about being over worked. At one of the rural health centres, the researcher was informed that there is only one nurse and she has found it difficult to even go on leave as there will be no one at the facility to attend to patients.

*'We are usually overwhelmed with work such that we cannot (even) supervise the home visitors (health volunteers) properly. It will be good if we can have more staff'.* ***Nurse 2***

**Restrict the Use of Misoprostol for Managing Post-partum Haemorrhage at community Level**

The other negative perspective focussed on restricting the use of Misoprostol in the management of pregnancy related excessive bleeding among pregnant women. Most of the people interviewed were concerned that the use of such a drug in the community can lead to unintended consequences such as the drug being used to terminate pregnancies. Such a case would instead increase abortion related complications and subsequently increase maternal deaths

> *'… it could be misused and with very bad consequences cause miss use of a drug such as that for termination of pregnancies obviously leads to un safe terminations. So you might find that on the one hand you are trying to prevent PPH from deliveries, but people are using (Misoprostol) for pregnancy terminations. You could cause maternal mortalities or morbidities from unsafe abortions'.* ***Nurse 2***

### *4.2.3 Community Members' Perspectives*

**The need for more health facilities**

Most of the community members interviewed emphasised the need to have more health facilities in the communities. For most of the people interviewed, the distance to the health facility was too much and they needed more health facilities to be constructed so as to ease the distances covered.

> *'…the clinic is too far. We just need a clinic nearby …'* ***Health Volunteer 2***

## 4.3 Theory Development

The emergency of the theory is guided by the model developed by Straus and Corbin Straus (1990) as presented in figure 2. This model is based on the interplay of various other factors on the core category and has seven stages that guide in the emergency of the theory. These are the context, causal conditions, phenomenon, strategies, intervening conditions and consequences. In this research, the context refers to the environment in which the strategies are implemented. The causal conditions are the supportive factors that made it possible for the strategies to be implemented. The phenomenon refers to the core categories. The intervening conditions create an environment for the strategies to succeed. The strategies are the approaches used to implement the community interventions and the consequences are the results and outcomes of community level interventions on maternal mortality.

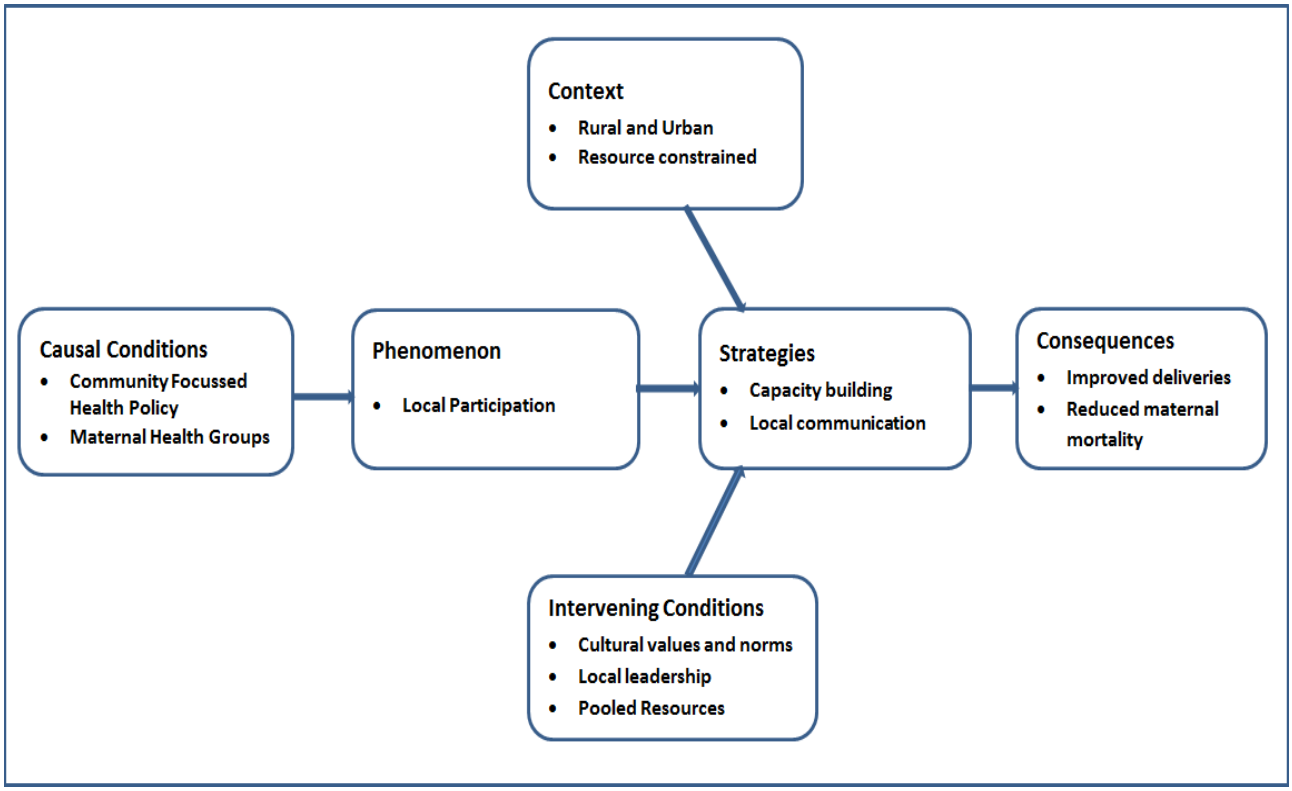


**Figure 4.2: Theoretical Model for Community Based Strategies for Reducing Maternal Mortality**

This theoretical model was guided by the theory development stages developed by Straus and Corbin (1998) and adapted to the findings of this research on the community based strategies being used to reduce maternal mortality.

### Context Impacting Implementation of the Strategies

The study findings revealed that the context plays an important part in improving maternal health. The implementation of the strategies was influenced by local contextual conditions. These included the location of the area, the available resources and the skills of the people providing maternal health services. The location in which the interviews were conducted ranged from urban areas where people are within a radius of 5km to the nearest health centre to the rural areas where some people take days to reach a health centre. The location affects access to the health facility. And thus some strategies such as the use of misoprostol for post-partum haemorrhage helped in preventing maternal death. Resources also played a key role in the implementation of effective maternal health strategies. While the rural areas are usually worse in terms of resources, both focus areas for the interviews were generally resource constrained areas.

### Causal conditions related to strategies for reducing maternal mortality

Two types of causal conditions emerged from the data that provided the foundation for the implementation of community based maternal health interventions. These were government

policy focussed on community health and the availability of local maternal health grouping that propelled implementation of community based maternal health interventions. The implementation of any strategy was motivated by the presence of policies or policy instructions from the Ministry of Health as well as the presence of a strong community based cadre of volunteers.

The ministry of health has developed policies focussed on improving maternal health outcomes at community level. These have therefore provided space for the creation of maternal health groups where community members can actively participate in managing maternal health issues in their communities.

**Phenomena Resulting from Community Focused Policy and Community Health Resources**

The two causal conditions above provided the foundation for the phenomenon of local participation to be pronounced. The available policies not only encouraged local participation in health but also provided guidelines on providing incentives to community volunteers engaged in maternal health interventions. Further, the presence of various community based maternal health groupings also facilitated the involvement of local people and created space where the community can actively participate is shaping their maternal health outcomes.

In both the urban and rural areas, the successes of maternal health programs were dependent on high involvement of the local community. This involvement was seen either through individuals volunteering for maternal health related tasks such as being home visitors, nutrition promoters or helping pregnant women access maternal health services at a facility.

Local participation was more evident in rural areas compared with the urban areas. In one of the health facilities, a pregnant woman was brought to the health facility while the researcher was conducting interviews. The woman had gone into labour before her time and the community organised an oxcart that transported the woman to the health facility where she received medical attention. Local participation was also visible in the manner communication on maternal health is done in rural areas where the local churches and schools are used as channels to take information to pregnant women concerning any health intervention.

Local participation was the major theme under strong community capacity and systems. Other themes related to local participation also emerged. Some of the themes included the need for women to be educated on nutrition, need for partners to escort them for antennal and need to address bad cultural practices.

**Intervening conditions**

In addition to the contextual issues, there were also intervening conditions that impacted implementation of the maternal health strategies. The intervening conditions included local

leadership and the availability of resources. The leadership structure was responsible for addressing cultural issues that impacted the implementation of maternal health interventions. For example, family dynamics seemed to play a key role on how effective the maternal health strategies were. Single pregnant girls and women indicated that they delayed antenatal attendance for fear of being returned since they could not be accompanied by a male partner. For example, one unmarried pregnant woman lamented that she was afraid to go to the health centre for fear of being shouted at since pregnant women were encouraged to bring alone their spouses or partners *'I was afraid to go because I did not want the sister (nurse) to shout at me since I am not married'*

However, interviews with the health facility revealed that they do not force women to come with their partners although this is encouraged and it has more maternal benefits to the pregnant women. Men who accompany their partners learn how to take care of a pregnant woman and are supportive in times of birth planning and couple HIV testing.

Another important intervening condition was the pooling of resources for maternal health activities. It was discussed that resources for maternal health interventions came from different sources with the NGOs being the major contributors.

**Strategies for Community Based Maternal Health Strategy Implementation**

These are the success factors for effective implementation of maternal health strategies. They help mitigate the adverse effects of the context and intervening conditions. Three key lower level strategies were identified based on the data from the interviews. These are improved local service provision, capacity building, information and linkages.

Service provision at community level has continued to improve despite the slow pace. Most of the critical maternal health services are now being provided closer to the people. Examples include services like the management of Postpartum Haemorrhage through the use of Misoprostol, the provision of abortion information and referral services as well as the general provision of maternal health support to the pregnant women through the volunteers.

There were also deliberate efforts by the government and local NGO to build the capacity of the volunteers on maternal health support. As a result of the capacity building activities, information on maternal health was easily communicated to the pregnant women. Evidence from the interviews indicated that information on maternal health was also communicated during routine community health outreach programmes by the community health volunteers.

**Consequences of community based maternal health strategies**

The strategies being used in managing maternal health at community level have had different consequences. The community level strategies have over the past few years seen a general reduction in maternal health complications and maternal deaths. All the health facilities

interviewed at community level have not had a maternal death in the last two years. One of the nurses when asked whether the gains made so far for women to deliver at health facilities could be reversed if the home visitors stopped doing their work responded that '*the women have been educated and the numbers cannot go down'* Increased information dissemination to the community members has empowered women and men to review their attitudes towards pregnant women as well as to provide local supportive mechanisms. A home visitor indicated that the pregnant women who are not married are sometimes '*escorted by their parents or uncles'* for antenatal if the person responsible for the pregnancy is unavailable.

Capacity building of local volunteers in maternal health has also helped save many lives. These home volunteers utilise their knowledge by helping pregnant women on good nutrition, personal hygiene, appropriate health behaviours and help out in times of pregnancy related complications. In addition, community based linkages have also been key in improving facility based deliveries. Improved community based linkages provides a network of volunteers who are able to easily coordinate and provide transport in whatever form, to take a pregnant woman to the nearest health facility when complications or labour start.

# 5 DISCUSSION OF THE FINDINGS

This paper has shown that maternal mortality can be reduced through the implementation of a range of community based interventions supported by the right policies and strategies. The paper has also shown that the foundation for the successful reduction of maternal mortality in poor communities such as Zambia is to have government policy that promotes implementation of maternal health interventions at community level. The study found that a strong maternal health system in the community contributed greatly towards improving maternal health and reducing maternal deaths. Additionally, improved service delivery of maternal health interventions; improved resources; and a well-coordinated information and communication system summed up the key strategies and interventions that have helped to reduce maternal deaths in the communities.

The study found that the government has put in place policies to strengthen community based maternal health systems. Several policies have been formulated while others are still being reviewed and awaiting implementation. The approved National Health Policy has emphasised the strengthening of community based health systems. Other policies such as the National Community Health Assistant Strategy has gone further by fully providing for the integration of community cadres in the management of health at local health facilities. This has immense advantages not only for the health facility staff who are under-staffed but also helps to encourage the involvement of stakeholders like NGOs in the provision of maternal health services. The importance of government policy in advancing and strengthening of community health system was also supported by Zulu and others (Zulu et al., 2014, Zulu et al., 2013) who explored the factors that shaped the acceptability and adoption of Community Health Assistants into the mainstream health system in Zambia. These authors found that the presence of the National Community Health Assistant Strategy helped to increase acceptance levels of the community health assistants by the facility staff and general community.

In addition to the presence of government policy that focussed on community health, this study also found that strengthening the systems and capacity of local people in the community was key in improving maternal health and reducing maternal related morbidity and mortality. Through the creation and strengthening of various community-based maternal health groups and building the capacity of various community members, there was a coordinated system of providing support to pregnant women that helped to identify pregnancy related dangers early and correct the situation before it became life threatening. These local groups worked hand in hand with the local health centres as well as with the local traditional and civic leadership. The presence of local maternal health groupings provided a platform for the community to actively participate in their own health issues. This study found that the success of any community level maternal health intervention should start with active local participation. Participation is key as it shows that people have accepted the interventions. It is also an indicator of strong community ownership. In the communities where the study took place, this was evidenced by the number of volunteers who have

committed to working as part of the SMAGs and other community groupings. The local people have volunteered without expectation of pay.

Further, community participation increases the efficiency levels of managing complications. As most of the communities are far off from the nearest health centres, local participation provided a cadre of people that helped in providing first level care and support to pregnant women while preparing for the long trip to the facility. These findings are consistent with the findings of other authors (Lassi et al., 2010, Fawcus et al., 1996, Bhutta et al., 2005) who also support the involvement of local communities in the management of maternal health. They argue that the fact that antenatal delivery and post-natal experiences for women usually take place in the communities rather than the facility, strategies to improve maternal health should therefore involve the community as a complimentary effort to any facility based effort. It must however, be noted that while there is overwhelming support for these local systems, most of them are not locally initiated but introduced by the Ministry of Health or local NGOs.

The common saying that knowledge is power was proven in this study. Community volunteers were applauded for being able to manage basic complications and provide first aid to pregnant women who developed complications or those who gave birth while on the way to the facility. The importance of first level support to pregnant women within their homes and community becomes handy especially in rural areas where distances make it difficult to access health facilities on time. The volunteers have reached a level where they can provide care and support even within the maternity wards in the absence of the midwives. The community volunteers have been trained in various maternal health programmes in their communities. Results from this study align with most studies on the need to build the capacity of community health volunteers. Simkhada et al (2006) in a study in Nepal showed that extending the education on maternal health to the general public resulted in better maternal health outcomes.

In all the communities where the interviews took place, both the health staff and the community volunteer ascribed the reduced cases of mortality and morbidity to the work being done by the community health volunteers. This is in agreement with the findings of a study done by Lassi and others (Lassi et al., 2010) which found that implementing community based maternal health interventions in which the community members participated resulted in a reduction in maternal health complications. Furthermore, Lassi and his colleagues found that active community based interventions on maternal health resulted in reduced maternal morbidity by up to 25%.

The study also revealed the importance of community participation in addressing cultural values and norms that negatively affect the maternal health of women. Such cultural practices tend to reinforce behaviours and practices that lead to negative impact on the health of pregnant women. For example, practices that demands that a woman should wait until a relative from his partner's family identifies the pregnancy before she can tell anyone may

result in women starting their ante natal visits late. As a result, this may result in difficulties managing complications which would otherwise have been detected early had the woman accessed antenatal services early. Other cultural practices that tend to look down on women who deliver at the facility as weak may altogether discourage women from going to attend ante natal clinics as well as delivering from the facility. These findings are consistent with many studies that show that some cultural practices have the potential to increase maternal deaths if not well managed. Carroli and others (Carroli et al., 2001) found that a cultural practice such as the refusal to reveal a pregnancy makes pregnant girls and women more susceptible to pregnancy complications including death. Bartlett and others in a study in Afghanistan where they did a retrospective study of women of reproductive age who died due to pregnancy related complications also found similar findings (Bartlett et al., 2005).

A strong community system also helped in organising local transport for pregnant women to access services at health centres. While other studies have isolated distance to the nearest health facility as a hindrance to facility delivery (Ensor and Cooper, 2004), this study looked further and established the collective efforts on community members to provide a system of transporting pregnant women when faced with an emergency or complication. Such transport ranged from bicycles to oxcarts. Community members would quickly be mobilised through the health volunteers to provide any transport mode available. Simkhada and others also emphasised the importance of improved transportation in saving women's lives (Simkhada et al., 2006). While we would generally not recommend such type of transport systems to be used to transport pregnant women as they may expose the women to severe discomfort, pain and sometimes even infection as some most of the transport system are used interchangeably between humans and animals, however, we are also mindful of the fact that the options for transport in most rural areas are limited and further delays in accessing health services at a facility may result in maternal deaths. We would therefore suggest that environmental hygiene education is part of the training for the health volunteers and further suggest that the government considers providing other simple transport systems to the volunteers involved in maternal health.

There were observable improvements in service delivery at community level. Our study found that improving service delivery of maternal health at community level was key in improving maternal health outcomes. Community members and volunteers were involved in the management of Post-Partum Haemorrhage through home administration of Misoprostol to prevent excessive bleeding in the event that such a complication started while at home or before accessing specialist care at a health facility. Other notable improvements were seen in the provision of abortion related information as well as the management of a referral system among the volunteers and the health facilities. Additionally, the provision of focussed antenatal by the volunteers helped to detect complications early and to provide appropriate support.

The study found that most health staff had high regard for the use of misoprostol in the management of post-partum haemorrhage at community level. Again, this goes back to the inability of most pregnant women to access health facilities due to distance and cultural practices. Post-partum haemorrhage is the major cause of death among pregnant women in Zambia. And with the challenges in the Zambian health sector, it is clear that empowering women to be able to manage this condition could save a lot of lives. The challenge with the application of this drug is that the pregnant women need to be thoroughly educated on when and how to take the drug. While there some concerns concerning the administration of the drug, the presence of highly empowered health volunteers in the community helped to mitigate the dangers and they closely monitored its usage in the community. However, the fact that some of the drugs were perceived to have ended up being abused and used for inducing pregnancy terminations by some girls and women shows that there is need to put in place mechanisms that will ensure that the drugs are used for the intended purposes. These finding are supported by many studies done in India and Cambodia (Chatterjee, 2005) which also found that that the use of misoprostol greatly helped in reducing maternal deaths in resource constrained communities like Zambia.

Another important indicator of improved accessibility of services being delivered at community level was the provision of safe abortion services and information. Women's appreciation and perceptions of abortions seems to differ. There were both negative and positive sentiments regarding the provision of abortion related information and services in the community. Some community members reached an extent of claiming that unsafe abortions do not take place so as not to be seen to support provision of abortion information and services. While such perceptions maybe expected among community members most of whom are veiled in a shell of cultural norms and values that project abortion as an abomination, it was rather surprising that some educated health staff such as nurses and midwives also held very strong negative views about the promotion of abortion services and information. Probed further, it seemed most of these individuals relied more on what their religious and cultural beliefs are rather than what has been proven to work in reducing maternal mortality.

Health staff are generally protected by conscious objection but this does not exclude them from providing a referral. However, most of the health staff who were against provision of abortion services were also adamant to refer clients to providers who could provide information on abortion. There was also some ignorance among some health staff that abortion was legal in Zambia and the ministry of health had designated its provision as a primary health service. The fact that medical staff interviewed indicated that unsafe abortion could be one of the major triggers of sepsis and excessive bleeding among pregnant women, demand that a lot of care is given to either training or educating health staff on the importance of addressing unsafe abortion if we are to reduce maternal mortality.

While the apparent biases from health staff on their reactions and perceptions on abortion have been recorded in many studies (Koster-Oyekan, 1998, Castle et al., 1990, Kinoti et al.,

2004), it was rather surprising to find that some health staff while enjoying their right to conscientious objection, would blatantly refuse to even entertain referrals for to women who needed such services. Other studies have shown that refusal to provide abortion information and services do not lead to a reduction in abortion; on the contrary, studies have shown that this leads to an increase in unsafe abortions and high maternal deaths (Sims, 1996, Koster-Oyekan, 1998).

Among community members, the negative perceptions of abortion are even further compounded by the lack of knowledge on the legal provisions of abortion in the country. The perception that abortion is illegal, rather than the perception that abortion is religiously or culturally wrong maybe be seen to be the major hindrance to accessing safe abortion services. Abortions have been happening in most Zambian communities for a long time. With rising technology and an increase in sexual activities among young people, we are likely to see a lot more abortions, unsafe abortions will cause death and morbidity, and safe abortions will prevent them. The need to address these wrong perceptions cannot be over stated.

The findings of our study also highlight the importance of adequate financing of maternal health programmes at community level. While there is an improvement in the resources allocated towards community health interventions, more could be done if the commitments from government were provided consistently. Most of the resources used by the volunteers and pregnant women are provided by local NGOs. The NGOs also fund most of the capacity building activities for the health volunteers. It may therefore seem that the operationalisation of most community based interventions is mostly dependent on the support of donor funded programmes and local NGOs. Such support is definitely useful in kick starting the process but our findings reveal that most of these interventions would stop being implemented if the support from the NGOs and donors ended. It therefore becomes important for the government to take full ownership of these strategies and begin to engage local communities on how they can use local resources to support implementation of community level strategies focussed on reducing maternal mortality. The need for improved financing of maternal health interventions is consistent with many other findings. In Ensor and Cooper's review of demand based barriers to health access, financing was identified as a major indicator of success for health interventions (Ensor and Cooper, 2004).

Our study also revealed that a good information and communication system was key in ensuring that appropriate messages and information on maternal health reached the intended audience. The communication of maternal health strategies and interventions within the government health system followed almost the same path from the ministry headquarters to the health facility. The government structures use a formal system where communication is communicated from one level of service delivery to the next through formal documents. However, at community level, different means of communications are used. These range from the use of community radio stations to using churches, schools and community leaders. This helped to spread information fast to many members.

Another interesting finding of this study was the use of context specific communication channels. Rural areas used school children and church members to communicate health information. In areas where there was access to community radio stations, maternal health messages were broadcast on these platforms for free. The role of a good information and communication system in improving maternal health outcomes is consistent with many studies done in poor communities that showed that the use of local based communication channels not only ensured effective delivery of maternal health information but also reached many people (Ensor and Cooper, 2004, Simkhada et al., 2006).

This downside of this study was that it relied heavily on the views and experiences of the health staff and volunteers. Most women were not aware of some of the effective strategies being used to reduce maternal mortality such as increase accessing to abortion related information and services and the use of community managed misoprostol to manage post-partum haemorrhage. This meant that data was only collected from health staff and we could not validate such type of data with the community views. Additionally, government workers may not criticise a government strategy and therefore, we could have missed some important information by not interviewing health staff in private health facilities who would have probably provided much deeper critic of the processes than the government workers would.

The absence of statistical records also proved challenging in that we could not triangulate some data collected from the field interviews with records at the facility or district office. For example, we were unable to get data on some of the cases of unsafe abortions being recorded in some of the rural health centres where interviews took place. We could also not manage to find details of women who had accessed misoprostol for the prevention of post-partum haemorrhage in order to get their perception of the intervention. The absence of such data meant that we were limited to only rely on the views of the staff and volunteers.

Despite the above limitations, most of the data collected was triangulated with national level reports and available data statistics. We also endeavoured to use two different methods of data collection and this helped validate the data that we collected. We also compared the emerging themes between the rural and urban and between the volunteers and the facility staff. This ensured that there were high levels of validity in the data collected. There was also a lot of consistence in the data collected between the views of the community members and health staff. These high levels of consistence showed that there were high levels of trustworthiness of the findings. A challenging component of qualitative study research is the difficulty to assess reliability; however, we managed to align the development of the grounded theory to the objectivist paradigm developed by Straus and Corbin (2008). The use of grounded theory data analysis processes also helped to clarify and confirm the data collected as there were follow up interviews done with some participants. It further helped to guide the data analysis and theory development in a systematic manner.

# 6 CONCLUSIONS AND RECOMMENDATIONS

This study has generally shown that maternal mortality can be reduced if appropriate community level strategies are implemented. These strategies should not be limited to the health facility but should actively involve the community members and enforced with appropriate policies. The gains made in reducing maternal mortality can indeed be sustained if the community based interventions discussed in this paper can be consolidated. Resources should also be provided to the community in the implementation and sustainability of these interventions.

Reducing maternal mortality is not an easy undertaking especially for a poor country such as Zambia with structural and procedural challenges associated with access to maternal health services and facilities. Many pregnant women lack basic access to professional maternal health care. This is compounded by distance in rural areas and congestion in urban areas. Maternal health complications are diverse. Many pregnant women present different challenges. And therefore, an integrated system of addressing these maternal health challenges is key.

While we realise that there are challenges by the government to reduce the distances covered by pregnant women in maternal health services, we recommend that appropriate policies be introduced to guide and engage the private sector participation in the provision of maternal health services at community level and capacitation of maternal heath volunteers in the communities. While we also acknowledge the high levels of interest and participation in maternal health interventions by most community members, we note that there is a lot of work done by the volunteers in most of the local maternal health groups such as the SMAGs, we therefore recommend that in addition to the normal package provided to all the health volunteers, the government should come up with a specific policy to provide incentives to the volunteers involved in maternal health as a way of sustaining the maternal health gains made so and consolidating the implementation of the various interventions being implemented.

# 7 BIBLIOGRAPHY


ABOUZAHR, C. 2003. Global burden of maternal death and disability. *British medical bulletin,* 67**,** 1-11.

ALVAREZ, J. L., GIL, R., HERNÁNDEZ, V. & GIL, A. 2009. Factors associated with maternal mortality in Sub-Saharan Africa: an ecological study. *BMC Public Health,* 9**,** 462.

BARTLETT, L. A., MAWJI, S., WHITEHEAD, S., CROUSE, C., DALIL, S., IONETE, D., SALAMA, P. & TEAM, A. M. M. S. 2005. Where giving birth is a forecast of death: maternal mortality in four districts of Afghanistan, 1999–2002. *The Lancet,* 365**,** 864-870.

BERGSTRÖM, S. 2005. Commentary: who will do the caesareans when there is no doctor? Finding creative solutions to the human resource crisis. *BJOG: An International Journal of Obstetrics & Gynaecology,* 112**,** 1168-1169.

BERGSTRÖM, S. & GOODBURN, E. 2000. The role of traditional birth attendants in the reduction of maternal mortality. *Safe motherhood strategies: A review of the evidence*.

BHUTTA, Z. A., DARMSTADT, G. L., HASAN, B. S. & HAWS, R. A. 2005. Community-based interventions for improving perinatal and neonatal health outcomes in developing countries: a review of the evidence. *Pediatrics,* 115**,** 519-617.

BORGHI, J., ENSOR, T., SOMANATHAN, A., LISSNER, C., MILLS, A. & GROUP, L. M. S. S. S. 2006. Mobilising financial resources for maternal health. *The Lancet,* 368**,** 1457-1465.

BOWEN, G. A. 2009. Document analysis as a qualitative research method. *Qualitative research journal,* 9**,** 27-40.

BURCHETT, H. E. & MAYHEW, S. H. 2009. Maternal mortality in low-income countries: What interventions have been evaluated and how should the evidence base be developed further? *International Journal of Gynecology & Obstetrics,* 105**,** 78-81.

CAMPBELL, O. M., GRAHAM, W. J. & GROUP, L. M. S. S. S. 2006. Strategies for reducing maternal mortality: getting on with what works. *The lancet,* 368**,** 1284-1299.

CARROLI, G., ROONEY, C. & VILLAR, J. 2001. How effective is antenatal care in preventing maternal mortality and serious morbidity? An overview of the evidence. *Paediatric and perinatal Epidemiology,* 15**,** 1-42.

CASTLE, M. A., LIKWA, R. & WHITTAKER, M. 1990. Observations on abortion in Zambia. *Studies in Family Planning***,** 231-235.

CHATTERJEE, P. 2005. Cambodia tackles high maternal mortality. *The Lancet,* 366**,** 281-282.

CLARK, S. L. Strategies for reducing maternal mortality. Seminars in perinatology, 2012. Elsevier, 42-47.

CORBIN, J. & STRAUSS, A. 2014. *Basics of qualitative research: Techniques and procedures for developing grounded theory,* Sage publications.

CRESWELL, J. W. 2013. *Qualitative inquiry and research design: Choosing among five approaches,* Sage.

CSO-ZDHS 2007. Zambia Demographic Health Survey 2007. GRZ.

CSO-ZDHS 2014. Zambia Demographic Health Survey 2013/2014 Preliminary Report. Lusaka: CSO.

CSO 2010. 2010 ZAMBIA CENSUS OF POPULATION AND HOUSING. *In:* PLANNING, M. O. F. A. N. (ed.). Lusaka: Governmemnt Printers.

DE BROUWERE, V., TONGLET, R. & VAN LERBERGHE, W. 1998. Strategies for reducing maternal mortality in developing countries: what can we learn from the history of the industrialized West? *Trop Med Int Health,* 3**,** 771-82.

ENSOR, T. & COOPER, S. 2004. Overcoming barriers to health service access: influencing the demand side. *Health policy and planning,* 19**,** 69-79.

FAUVEAU, V. 2006. Strategies for reducing maternal mortality. *The Lancet,* 368**,** 2121-2122.

FAWCUS, S., MBIZVO, M., LINDMARK, G. & NYSTROM, L. 1996. A community-based investigation of avoidable factors for maternal mortality in Zimbabwe. *Studies in Family planning***,** 319-327.

FONT, F., GONZÁLEZ, M. A., NATHAN, R., LWILLA, F., KIMARIO, J., TANNER, M. & ALONSO, P. 2000. Maternal mortality in a rural district of southeastern Tanzania: an application of the sisterhood method. *International journal of epidemiology,* 29**,** 107-112.

FORTNEY, J. A. 1987. The importance of family planning in reducing maternal mortality. *Studies in Family Planning***,** 109-114.

GABRYSCH, S., COUSENS, S., COX, J. & CAMPBELL, O. M. 2011a. The influence of distance and level of care on delivery place in rural Zambia: a study of linked national data in a geographic information system. *PLoS medicine,* 8**,** 150.

GABRYSCH, S., SIMUSHI, V. & CAMPBELL, O. M. 2011b. Availability and distribution of, and geographic access to emergency obstetric care in Zambia. *International Journal of Gynecology & Obstetrics,* 114**,** 174-179.

GABRYSCH, S., ZANGER, P., SENEVIRATNE, H. R., MBEWE, R. & CAMPBELL, O. M. 2011c. Tracking progress towards safe motherhood: meeting the benchmark yet missing the goal? An appeal for better use of health-system output indicators with evidence from Zambia and Sri Lanka. *Tropical Medicine & International Health,* 16**,** 627-639.

GRIMES, D. A., BENSON, J., SINGH, S., ROMERO, M., GANATRA, B., OKONOFUA, F. E. & SHAH, I. H. 2006. Unsafe abortion: the preventable pandemic. *The Lancet,* 368**,** 1908-1919.

GRZ-MOH 2011. NATIONAL HEALTH STRATEGIC PLAN 2011-2015. Lusaka: Government Printers.

HADDAD, L. B. & NOUR, N. M. 2009. Unsafe abortion: unnecessary maternal mortality. *Reviews in Obstetrics and Gynecology,* 2**,** 122.

HOGAN, M. C., FOREMAN, K. J., NAGHAVI, M., AHN, S. Y., WANG, M., MAKELA, S. M., LOPEZ, A. D., LOZANO, R. & MURRAY, C. J. 2010. Maternal mortality for 181 countries, 1980–2008: a systematic analysis of progress towards Millennium Development Goal 5. *The lancet,* 375**,** 1609-1623.

HONGORO, C. & MCPAKE, B. 2004. How to bridge the gap in human resources for health. *The Lancet,* 364**,** 1451-1456.

KALUBA, D. 2011. "Factors affecting Utilization of Community Home Based Care Services by people living with HIV/AIDS in Chongwe District, Zambia".

KERBER, K. J., DE GRAFT-JOHNSON, J. E., BHUTTA, Z. A., OKONG, P., STARRS, A. & LAWN, J. E. 2007. Continuum of care for maternal, newborn, and child health: from slogan to service delivery. *The Lancet,* 370**,** 1358-1369.

KHAN, K. S., WOJDYLA, D., SAY, L., GÜLMEZOGLU, A. M. & VAN LOOK, P. F. 2006. WHO analysis of causes of maternal death: a systematic review. *The lancet,* 367**,** 1066-1074.

KIDNEY, E., WINTER, H. R., KHAN, K. S., GÜLMEZOGLU, A. M., MEADS, C. A., DEEKS, J. J. & MACARTHUR, C. 2009. Systematic review of effect of community-level interventions to reduce maternal mortality. *BMC Pregnancy and Childbirth,* 9**,** 2.

KINOTI, S., GAFFIKIN, L. & BENSON, J. 2004. How research can affect policy and programme advocacy: example from a three-country study on abortion complications in sub-Saharan Africa. *East African medical journal,* 81**,** 63-70.

KOSTER-OYEKAN, W. 1998. Why resort to illegal abortion in Zambia? Findings of a community-based study in Western Province. *Social Science & Medicine,* 46**,** 1303-1312.

LASSI, Z. S., HAIDER, B. A. & BHUTTA, Z. A. 2010. Community-based intervention packages for reducing maternal and neonatal morbidity and mortality and improving neonatal outcomes. *The Cochrane Library*.

LE BACQ, F. & RIETSEMA, A. 1997. High maternal mortality levels and additional risk from poor accessibility in two districts of northern province, Zambia. *International Journal of Epidemiology,* 26**,** 357-363.

LILJESTRAND, J. 2000. Strategies to reduce maternal mortality worldwide. *Current opinion in Obstetrics and Gynecology,* 12**,** 513-517.

MANANDHAR, D. S., OSRIN, D., SHRESTHA, B. P., MESKO, N., MORRISON, J., TUMBAHANGPHE, K. M., TAMANG, S., THAPA, S., SHRESTHA, D. & THAPA, B. 2004. Effect of a participatory intervention with women's groups on birth outcomes in Nepal: cluster-randomised controlled trial. *The Lancet,* 364**,** 970-979.

MCINTYRE, J. 2005. Maternal health and HIV. *Reproductive health matters,* 13**,** 129-135.

MCLEROY, K. R., BIBEAU, D., STECKLER, A. & GLANZ, K. 1988. An ecological perspective on health promotion programs. *Health Education & Behavior,* 15**,** 351-377.

MILLS, J., BONNER, A. & FRANCIS, K. 2008. The development of constructivist grounded theory. *International journal of qualitative methods,* 5**,** 25-35.

MOH. 2013. *Maternal and Child Health Outcomes* [Online]. GRZ. Available: http://www.rbfzambia.gov.zm/articles/item/4.html [Accessed 20th April 2015].

MULLANY, B. C., BECKER, S. & HINDIN, M. 2007. The impact of including husbands in antenatal health education services on maternal health practices in urban Nepal: results from a randomized controlled trial. *Health education research,* 22**,** 166-176.

ROSATO, M., LAVERACK, G., GRABMAN, L. H., TRIPATHY, P., NAIR, N., MWANSAMBO, C., AZAD, K., MORRISON, J., BHUTTA, Z. & PERRY, H. 2008.

Community participation: lessons for maternal, newborn, and child health. *The Lancet,* 372**,** 962-971.
SAFER, M. P. 2004. Making pregnancy safer: the critical role of the skilled attendant.
SHAH, I. H. & SAY, L. 2007. Maternal mortality and maternity care from 1990 to 2005: uneven but important gains. *Reproductive Health Matters,* 15**,** 17-27.
SIBLEY, L. & ARMBRUSTER, D. 1997. Obstetric first aid in the community—Partners in safe motherhood: A strategy for reducing maternal mortality. *Journal of Nurse-Midwifery,* 42**,** 117-121.
SIMKHADA, B., VAN TEIJLINGEN, E., PORTER, M. & SIMKHADA, P. 2006. Major problems and key issues in Maternal Health in Nepal. *Kathmandu University Medical Journal,* 4**,** 258-263.
SIMS, P. 1996. Abortion as a public health problem in Zambia. *Journal of public health medicine,* 18**,** 232-3.
STRAUSS, A. & CORBIN, J. 1994. Grounded theory methodology. *Handbook of qualitative research***,** 273-285.
STRAUSS, A. & CORBIN, J. 1998. Basics of qualitative research: Procedures and techniques for developing grounded theory. *ed: Thousand Oaks, CA: Sage*.
SULLIVAN, T. R. & HIRST, J. E. 2011. Reducing maternal mortality: a review of progress and evidence-based strategies to achieve millennium development goal 5. *Health Care Women Int,* 32**,** 901-16.
THOMSON, S. 2011. Sample size and grounded theory. *Journal of Administration and Governance,* 5**,** 45-52.
WARENIUS, L. U., FAXELID, E. A., CHISHIMBA, P. N., MUSANDU, J. O., ONG'ANY, A. A. & NISSEN, E. B. 2006. Nurse-midwives' attitudes towards adolescent sexual and reproductive health needs in Kenya and Zambia. *Reproductive Health Matters,* 14**,** 119-128.
WEBB, D. 2000. Attitudes to 'Kaponya Mafumo': the terminators of pregnancy in urban Zambia. *Health policy and planning,* 15**,** 186-193.
WHO 2010. Maternal mortality in 2005. Estimates developed by WHO, UNICEF, UNFPA, and The World Bank.
WHO. 2014. *Maternal mortality* [Online]. World Health Organisation. Available: http://www.who.int/mediacentre/factsheets/fs348/en/ [Accessed 20th April 2015].
WHO, UNICEF & ACTIVITIES, U. N. F. F. P. 2014. *Trends in Maternal Mortality: 1990 to 2013: WHO, UNICEF, UNFPA, and The World Bank estimates*, World Health Organization.
ZULU, J. M., KINSMAN, J., MICHELO, C. & HURTIG, A.-K. 2013. Developing the national community health assistant strategy in Zambia: a policy analysis. *Health Res Policy Syst,* 11**,** 10.1186.
ZULU, J. M., KINSMAN, J., MICHELO, C. & HURTIG, A.-K. 2014. Integrating national community-based health worker programmes into health systems: a systematic review identifying lessons learned from low-and middle-income countries. *BMC public health,* 14**,** 987.

# 8 APPENDIXES

## 8.1 Information Sheet

**THE UNIVERSITY OF ZAMBIA**

**SCHOOL OF MEDICINE, DEPARTMENT OF PUBLIC HEALTH**

**INFORMATION DOCUMENT**

**STUDY TITLE:** A REVIEW OF COMMUNITY BASED STRATEGIES FOR REDUCING MATERNAL MORTALITY IN ZAMBIA

**Principle investigator: OBREY KATUNGU**

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**Introduction:** I am requesting for your participation in the research study with the above title. You have been purposively sampled to participate in my study. But before participating in this study, I would like to explain to you the purpose, procedure, benefits and what I expect from you.

**Purpose of the research study:** This study is part of the master's program for my training in public health, which I am doing with the University of Zambia. The main purpose of this study is to analyse and review the community level strategies that have been used and are being used to reduce maternal mortality in Zambia. Current data from the Zambia Demographic Health Survey shows that maternal mortality has reduced by a small margin and I would like to understand what is being done and what has contributed to this strategy.

The study will also aim at further:

4. To investigate and identify effective community strategies being used to reduce maternal mortality
5. To examine how the strategies for reducing maternal mortality are communicated from policy makers to the community
6. To describe health workers and mother's perspectives on how to enhance implementation of strategies for reducing maternal mortality

**Why you are been asked to participate**

The participants in this study will be mostly be people working or providing voluntary services in the field of maternal health from government ministries, provinces, districts, hospitals, health facilities, NGOs and local communities. The reason you are being asked to participate in the study is because you fit the description and the requirements of the study or you have been recommended by someone who understands the work you do in providing maternal health services or are mother or pregnant woman.

**PROCEDURES**: Participation in this study is voluntary, you have all the rights to decline participation, end interviews or decide to withdraw from the study at any time without any

penalty. You also have the right not to answer any questions you may feel are personal, uncomfortable or otherwise. Once you sign the informed consent, the interview can commence and I will ask you questions on the above mentioned subject matter. If you permit me, I will tape record the interview to help me pick all you will say. If not, I will ask you if it will be ok for me to write notes. The information from tape or notes will be typed in full, to help me to fully understand what you will say. Your name will not be included in the tape and the typed documents as it will be kept secret.

**RISKS/DISCOMFORT**: There are no physical risks to participating in this research study. However, I recognize some information you may tell me during the interview may be personal or maybe sensitive to other stakeholders. However, I would like to assure you that the information that I will get from you will not be shared with anyone outside the research team or to be used outside academic purposes.

**BENEFITS:** There are no direct benefits that will accrue to you individually by participating in this study. However, your participation in the study will help you and other people learn more about the community level strategies being used to reduce maternal mortality. Such information will help in improving on the strategies and focusing attention on those strategies that are effective in reducing maternal mortality so that we can reduce the death of mothers during pregnancy and child birth even further.

**PAYMENT:** There is no payment of money in exchange for your participation. However, the information that will be obtained from this study will assist in understanding community level strategies for reducing maternal mortality.

**DATA CONFIDENTIALITY:**

The information which will be collected from you will be treated with outer most confidentiality unless permitted by yourself to use the in any manner outside this research. The data collected will be locked in a secure place. I will destroy all data within 1 year after typing the information. I will keep copies of typed information on CDs in case I have a problem with the computer.

**What happens if you do not want to participate in the study?**

You are free to decide whether you want to take part in the study or not. This will not bring any problem to you.

**Who to call if you have any issues, problems or concerns:**

| | |
|---|---|
| **Obrey Katungu** | **ERES CONVERGE IRB** |
| **P.O BOX 320432** | **33 Joseph Mwilwa Road** |
| **Lusaka, Zambia** | **Rhodes Park** |
| **Mobile No: +260-971-252771** | **LUSAKA** |

| | |
|---|---|
| **Email:okatungu@yahoo.co.uk** | **Tel: 0955 155633/4**<br><br>**E-mail: eresconverge@yahoo.co.uk** |

**What do your signature (or thumbprint/mark) on this consent form mean?**

Your signature (or thumbprint/mark) on this form means:

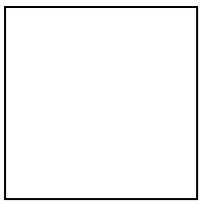
- You have been informed about the program's purpose, procedures, possible benefits and risks.
- You have been given the chance to ask questions before you sign.
- You have voluntarily agreed to take part in this research study.

_____ _____ _____

Print name of Participant Signature of Participant Date

_____ _____ _____

Print name of Person Obtaining Consent Signature of Person Obtaining Consent Date

 Participant to mark a "left thumb impression" in this box if unable to provide a signature above

## 8.2 Consent Form

The purpose of this study has been explained to me and I understand the purpose, the benefits, risks and confidentiality of the study. I further understand that, if I agree to take part in this study, I can withdraw at any time without having to give an explanation and taking part in this study is purely voluntary. I also understand that I am free not to answer any questions I may feel uncomfortable with, personal or otherwise.

I..... (Names)

Agree to take part in this study designed to review the community level strategies being used to reduce maternal mortality in Zambia.

Signed/Thumbprint.....Date.....
(Participant)

Signed.....Date.....
(Witness)

For more information you may contact the principal investigator Obrey Katungu on:

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Department of Public Health

50110

Lusaka, Zambia

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## 8.3 Questionnaires

### *8.3.1 Ministry Headquarter and Province*

**ID No.…… Interviewer…….……. Date of interview……**

**Position of interviewee……..…… Name of Office: ……**

| Objectives | Main Question(s) | Follow-up Questions | Probes | Comments/ Observations |
|---|---|---|---|---|
| Investigate and identify effective community strategies being used to reduce maternal mortality | What does your work involve in relation to maternal Health?<br><br>What specific strategies has the government put in place to speed up the reduction of maternal mortality cases at community level?<br><br>Which strategy or strategies do you think have been very effective in contributing to reducing maternal mortality? | How have the strategies you have mentioned been implemented in the district and community?<br><br>Who is responsible for implementing these strategies and why is this person suitable to undertake this role?<br><br>How do you communicate these strategies to the provinces, districts, health centres and community? | Why is this strategy the easiest to be understood and adopted?<br><br>What else do you think would contribute to reducing maternal deaths in the community?<br><br>Probe on how the ministry is addressing cultural barriers, male involvement, resources to community health structures, sensitisation and awareness etc | |
| Analyse how the strategies for reducing maternal mortality are implemented | What is the role of the ministry in implementing these strategies that contribute to reducing maternal mortality<br><br>How are the strategies being implemented at different levels of service delivery?<br><br>How does your office role out the maternal health strategies? | What steps are taken to ensure that community members and pregnant mothers have information on how to reduce maternal deaths?<br><br>How often is information shared with lower level health structures and the community concerning maternal health issues?<br><br>What role does your office expect the district to play in implementing these strategies? | How do you ensure that information received by the community members and pregnant women<br><br>Probe on incentives to reward facility births, full ante natal attendance, male involvement, information access, role of TBAs, CHWs and NHCs | |

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| | | How does the ministry respond to cases of maternal death? | | |
| Examine how the strategies for reducing maternal mortality are communicated from policy makers all the way through to the community | Which are the most effective strategies for reducing maternal mortality | Which strategies are easier to implement? Why<br><br>Which strategies are cheaper to implement? Why<br><br>Which strategies are easily understood by staff and community? Why<br><br>Which strategies do think have the most impact in reducing maternal mortality? Why<br><br>What systems has the ministry put in place to ensure there is adequate sensitisation and awareness on maternal health | Are the strategies adequate to reduce maternal mortality to the desired levels?<br><br>What do you think are the strategies that need to be concentrated on? | |

### *8.3.2 District Health Office*

**ID No…… Interviewer…… Date of interview……..…**

**Position of interviewee…….…… Name of Office: ……**

| Objectives | Main Question(s) | Follow-up Questions | Probes | Comments/ Observations |
|---|---|---|---|---|
| Investigate and identify effective community strategies being used to reduce maternal mortality | What does your work involve in relation to maternal Health?<br><br>What specific have you implemented in the district in order to reduce maternal mortality?<br><br>Which strategy or strategies do you think have been very effective in contributing to reducing maternal mortality? | How have the strategies you have mentioned been implemented in the district and community?<br><br>Who is responsible for implementing these strategies and why is this person suitable to undertake this role?<br><br>How do you communicate these strategies to the health structures in the district? | Why is this strategy the easiest to be understood and adopted?<br><br>What else do you think would contribute to reducing maternal deaths in the community?<br><br>Probe on how the district office is addressing cultural barriers, male involvement, resources to community health structures, sensitisation and awareness etc | |
| Analyse how the strategies for reducing maternal mortality are implemented | What is the role of the district office in implementing these strategies that contribute to reducing maternal mortality<br><br>How are the strategies being implemented at different levels of service delivery?<br><br>How does your office role out the maternal health strategies?<br><br>What support do you provide to the lower level structures in reducing maternal mortality | What steps are taken to ensure that community members and pregnant mothers have information on how to reduce maternal deaths?<br><br>How often is information shared with lower level health structures and the community concerning maternal health issues?<br><br>What role does your office expect the district to play in implementing these strategies?<br><br>How does the district respond to cases of | How do you ensure that information is received by the community members and pregnant women?<br><br>Probe on incentives to reward facility births, full ante natal attendance, male involvement, information access, role of TBAs, CHWs and NHCs | |

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| | | maternal death? | | |
| Examine how the strategies for reducing maternal mortality are communicated from policy makers all the way through to the community | Which are the most effective strategies for reducing maternal mortality | Which strategies are easier to implement? Why<br><br>Which strategies are cheaper to implement? Why<br><br>Which strategies are easily understood by staff and community? Why<br><br>Which strategies do think have the most impact in reducing maternal mortality? Why<br><br>What systems has the ministry put in place to ensure there is adequate sensitisation and awareness on maternal health | Are the strategies adequate to reduce maternal mortality to the desired levels?<br><br>What do you think are the strategies that need to be concentrated on? | |

### *8.3.3 Health centre*

**ID No.…… Interviewer…… Date of interview……..…**

**Position of interviewee…….…..…… Name of Office: ……**

| **Objectives** | **Main Question(s)** | **Follow-up Questions** | **Probes** | **Comments/ Observations** |
|---|---|---|---|---|
| Investigate and identify effective community strategies being used to reduce maternal mortality | What does your work involve in relation to maternal Health?<br><br>What specific activities have you implemented in order to reduce maternal mortality?<br><br>Which activities have helped you the most in improving maternal health and reducing maternal deaths. | How have the strategies you have mentioned been implemented in the district and community?<br><br>Who is responsible for implementing these strategies and why is this person suitable to undertake this role?<br><br>How do you communicate these strategies to the health structures in the district? | Why is this strategy the easiest to be understood and adopted?<br><br>What else do you think would contribute to reducing maternal deaths in the community?<br><br>Probe on how the district office is addressing cultural barriers, male involvement, resources to community health structures, sensitisation and awareness etc | |
| Analyse how the strategies for reducing maternal mortality are implemented | What is the role of the district office in implementing these strategies that contribute to reducing maternal mortality<br><br>How are the strategies being implemented at different levels of service delivery?<br><br>How does your office role out the maternal health strategies?<br><br>What support do you provide to the lower level structures in reducing maternal mortality | What steps are taken to ensure that community members and pregnant mothers have information on how to reduce maternal deaths?<br><br>How often is information shared with lower level health structures and the community concerning maternal health issues?<br><br>What role does your office expect the district to play in implementing these strategies?<br><br>How does the district respond to cases of | How do you ensure that information is received by the community members and pregnant women?<br><br>Probe on incentives to reward facility births, full ante natal attendance, male involvement, information access, role of TBAs, CHWs and NHCs | |

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| | | maternal death? | | |
| Examine how the strategies for reducing maternal mortality are communicated from policy makers all the way through to the community | Which are the most effective strategies for reducing maternal mortality | Which strategies are easier to implement? Why<br><br>Which strategies are cheaper to implement? Why<br><br>Which strategies are easily understood by staff and community? Why<br><br>Which strategies do think have the most impact in reducing maternal mortality? Why<br><br>What systems has the ministry put in place to ensure there is adequate sensitisation and awareness on maternal health | Are the strategies adequate to reduce maternal mortality to the desired levels?<br><br>What do you think are the strategies that need to be concentrated on? | |

### *8.3.4 Community Members*

**ID No.…… Interviewer……. Date of interview……..…**

**Position of interviewee……..… Name of NHC: ……**

| Objectives | Main Question(s) | Follow-up Questions | Probes | Comments/ Observations |
|---|---|---|---|---|
| Investigate and identify effective community strategies being used to reduce maternal mortality | What help do you give to pregnant women? | What activities are you involved in that help pregnant women?<br><br>What are you doing to support pregnant and ensure they deliver safely?<br><br>Do you know of any pregnant woman who died in the community? What happened? | | |
| Analyse how the strategies for reducing maternal mortality are implemented | How do you receive information from the health centre concerning health for pregnant mothers? | What steps are taken to ensure that community members and pregnant mothers have information on how to reduce maternal deaths?<br><br>Do you help mothers deliver at home? Why/Why not?<br><br>How often do you share information with pregnant women and their families?<br><br>Who helps in sharing this information<br><br>How are you supported in your work? | How is the information received by the community members and pregnant women<br><br>How does the community support pregnant women to reduce maternal death?<br><br>How does the community support pregnant women to reduce maternal death? | |
| Examine how the strategies for reducing maternal mortality are communicated from policy makers all the way through to the community | How do you respond to respond to cases of maternal death? | How do you communicate with pregnant mothers?<br><br>How do you refer pregnant mothers when there is need for them to access services at the | What is working well in this community in helping women deliver safely? | |

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| | | clinic?<br><br>What systems has the ministry put in place to ensure there is adequate sensitisation and awareness on maternal health<br><br>What has helped to ensure that pregnant women are safe: Access ante natal services, are not abused, deliver without complications, those with complications are assisted | | |
| Describe health workers and mother's perspectives on how to enhance implementation of strategies for reducing maternal mortality | How are the community members involved in helping pregnant women?<br><br>What is the understanding of maternal mortality by community members | Do husbands of pregnant women support their wives to access information on maternal health<br><br>What are some of the local beliefs that would affect pregnant women from giving birth normally?<br><br>According to your assessment, what are the levels of knowledge about maternal health among most of the pregnant women who access antenatal services?<br><br>What do you think about the work being done to help pregnant women? Should more be done? | What are the sources of such beliefs?<br><br>Do the community take these beliefs seriously?<br><br>Explain more about the perceptions of the community on the eating habits of pregnant mothers? | |

### *8.3.5 NGOs*

**ID No.…… Interviewer……. Date of interview……**

**Position of interviewee……..…… Name of Office: ……**

| Objectives | Main Question(s) | Follow-up Questions | Probes | Comments/ Observations |
|---|---|---|---|---|
| To investigate and identify effective community strategies being used to reduce maternal mortality | What does your work involve in relation to maternal Health?<br><br>What specific strategies are you promoting/implementing in your organization aimed at reducing maternal mortality community level?<br><br>Which strategy or strategies do you think have been very effective in contributing to reducing maternal mortality? | How have the strategies you have mentioned been implemented in the district and community?<br><br>Who is responsible for implementing these strategies and why is this person suitable to undertake this role?<br><br>Which strategies do think have the most impact in reducing maternal mortality? Why<br><br>Which strategies are easier to implement? Why<br><br>Which strategies are cheaper to implement? Why | Why is this strategy the easiest to be understood and adopted?<br><br>What else do you think would contribute to reducing maternal deaths in the community?<br><br>*Probe on how the organisation is addressing cultural barriers, male involvement, resources to community health structures, sensitisation and awareness etc in their maternal health programming | |
| Analyse the process of implementing strategies for reducing maternal mortality | How does your organisation roll out the maternal health strategies in order to have impact in the community? | What steps are taken to ensure that community members and pregnant mothers have information on how to reduce maternal deaths?<br><br>How often is information shared with lower level health structures and the community concerning maternal health issues?<br><br>What exact activities are you implementing to reduce maternal | How do you ensure that information received by the community members and pregnant women<br><br>Are the strategies adequate to reduce maternal mortality to the desired levels?<br><br>What do you think are the strategies that need to be concentrated on?<br><br>Probe on incentives | |

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| | | mortality | to reward facility births, full ante natal attendance, male involvement, information access, role of TBAs, CHWs and NHCs | |
| To examine how the strategies for reducing maternal mortality are communicated from policy makers to the community | How do you collaborate with the government in the formulation and implementation of these strategies? | How do you communicate these strategies to your partners including the communities?<br><br>Which strategies are easily understood by staff and community? Why<br><br>What systems have you put in place to ensure there is adequate sensitisation and awareness on maternal health | What needs to be done to ensure that these strategies are communicated effectively for increased impact? | |

## 8.4 Ethical Approvals and Clearance

### *8.4.1 ERES Converge Approval*

### *8.4.2 Ministry of Health National Research Approval*

### *8.4.3 District Health Approvals*