UNIVERSITY of the WESTERN CAPE

FACULTY OF COMMUNITY AND HEALTH SCIENCES

SCHOOL OF NURSING

THE ROLE OF MIDWIVES IN THE IMPLEMENTATION OF MATERNAL DEATH REVIEW (MDR) IN HEALTH FACILITIES IN ASHANTI REGION, GHANA

A thesis submitted in fulfillment of the requirements for the degree of Master in Nursing in the School of Nursing, University of the Western Cape

Anita Fafa Dartey

Student Number: 3105163

Supervisor: Prof. Makombo Ganga-Limando (PhD)

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DECLARATION

I declare that the study entitled ***"The role of midwives in the implementation of maternal death review (MDR) in health facilities in Ashanti Region, Ghana",*** is my own work, and that it has not been previously submitted for any degree or examination at any other university, and that all the sources that I have used or quoted, have been indicated and acknowledged by complete references.

Anita Fafa Dartey

Signed..... October, 2012

DEDICATION

My love goes to my children Isaac, Prince, Princess, and Falk for their continuous understanding and encouragement.

ACKNOWLEDGMENT

First and foremost, I would like to thank God for His grace and for giving me the strength throughout this arduous process.

Special thanks to all my friends and relatives for their support.

I am indebted to my supervisor, Prof. M. Ganga-Limando, for believing in me, especially when I did not believe in myself, and for his patience throughout this journey.

LIST OF ABBREVIATIONS

ANC: Ante-Natal Care

CHPS: Community Based Health Planning and Services

GHS: Ghana Health Service

ICD-10: International Statistical Classification of Diseases and related Health Problems (10^{th} Revision)

KATH: Komfo Anokye Teaching Hospital

MDGs: Millennium Development Goals

MDR: Maternal Death Review

MMR: Maternal Mortality Ratio

MMRate: Maternal Mortality Rate

MOH: Ministry of Health

UNFPA: United Nations Population Fund

UNICEF: United Nations Children's Fund

USAID: United States Agency for International Development

WHO: World Health Organization

ABSTRACT

Background and Problem Statement: Maternal mortality is a global health issue, which mostly affects the developing countries. The United Nations (UN) member states have made a commitment to reduce maternal mortality by 75% by 2015. However, one of the biggest challenges in monitoring maternal deaths in Sub-Sahara Africa including Ghana, is the lack of adequate information for the accurate estimation of the maternal mortality rate (MMRate), and to identify causes of death. The World Health Organization (WHO) developed strategies and guidelines to assist countries to generate accurate information regarding maternal deaths. Maternal death review is one such strategy that was implemented in Ghana. Midwives are among the health workers who participate in the implementation of this strategy in different health facilities. However, what is not well understood is the role that midwives play in the implementation of Maternal Death Review (MDR).

The purpose of the study: To explore and describe the roles that midwives play in the implementation of MDR in selected health facilities in Ghana's Ashanti Region.

Methodology: A qualitative descriptive design was used to guide the research. Purposive sampling was conducted to select midwives who have been involved in maternal death review from the teaching, regional and district referral hospitals. Data was collected by conducting semi-structured individual interviews. Data saturation was reached after twenty interviews. Thematic Content Analysis was used to manage and analyse data. The Facility-based maternal death review model was used to assist the researcher to identify and organize the emerged themes. Ethical clearance was

obtained from the University, as well as approval from the management of the health facilities prior to approaching the informants.

Main findings: The results of this study indicate that midwives in Ghana's Ashanti Region are undertaking various activities and duties in all the stages of the Facility-based maternal review model. The type of activities and duties undertaken by midwives varied according to their seniority and the level of the health facilities.

Conclusion and recommendation: The findings of this study bring insight into the roles played by midwives in the implementation of the Facility-based maternal death review process in the health facilities in Ghana's Ashanti Region. These findings have a direct implication for the training and education of midwives. It is recommended that issues related to maternal death review methods and processes be included in the formal and continuing training and education of midwives. However, further research considering the training and practice development needs of midwives in respect of implementation of maternal death review is required.

Key words: *clinical audit, community-based maternal death review, confidential inquiry, facility-based maternal death review, maternal death, maternal death review, midwives, role of midwives, and survey of severe morbidity.*

Table of Contents

LIST OF TABLES

LIST OF FIGURES

CHAPTER ONE: ORIENTATION TO THE STUDY

1.1 INRODUCTION

This chapter provides an overview of the study in terms of the background and rationale; problem statement; purpose and objectives of the study; significance of the study; the ethical statement; and the definitions of key concepts as well as an outline of the report.

1.2 BACKGROUND AND RATIONALE OF THE RESEARCH STUDY

The Republic of Ghana covers an area of 238,537 square kilometers with its population estimated at 24, 233, 431 (National Population and Housing Census, Ghana Statistical Service, 2010). In 2010 the population of the Ashanti Region of Ghana was estimated at 4,720,916, making it the second largest region in the country (National Population Housing Census, Ghana Statistical Service, 2010). The region is divided into 27 administrative and health districts. It has the highest number of health facilities in the country (549 health facilities). These facilities consist of one teaching hospital, one regional referral hospital, twenty-seven district hospitals, and the remaining five hundred and twenty are sub-districts and first level facilities. In terms of the ownership of the facilities, 281 are owned by the private sector, while 197 are fully or partially owned by Government, and 71 are owned by missionaries. In terms of geographical

location, 38% of these facilities are situated in the capital city of the region, namely Kumasi. According to the 2009 Ghana Health Service (GHS) annual report, the Ashanti Region had 7, 262 health care workers. The same report indicates that the region had the lowest number of supervised deliveries and the highest number of institutional maternal deaths in the country.

Maternal mortality is a public health problem in Ghana, as it is in many developing countries. Maternal mortality undermines governments' efforts towards improving its citizens' quality of life, (Kildea, Pollock & Barclay, 2008). It contributes to the underdevelopment in a country because of its severe impact on the lives of the families, young children and society in general (Donnay, 2000).

The (WHO, UNICEF, UNFPA, World Bank, 2010). indicates that maternal mortality accounts for the majority of deaths of women in the reproductive age in developing countries. Comparative data on Maternal Mortality Rates (MMR) in the six regions of World Health Organization (WHO) indicates that the Afro-region has the highest MMR estimated at 620 per 100 000 live births. The Eastern Mediterranean and South East Asia regions followed, respectively, with 320 and 240 deaths per 100 000 live births. The European region had the lowest MMR (21 deaths per 100 000 births), while the MMR in the North American and Western Pacific regions were estimated, respectively, at 66 and 51 deaths per 100 000 births (Population Health Metric (PHM), 2008).

The risk of women in Sub-Sahara Africa who die from complications of pregnancy during their life time is higher than their counterparts in other parts of the world. Globally, the life time risk of women who die from complications during pregnancy and childbirth is estimated at 1:140. In Sub-Sahara Africa the risk stands at 1:31 compared to 1:2,900 in Europe (WHO *et al*., 2010). In Africa, this risk increases because of poverty, low education, higher proportions of home delivery and HIV and AIDS-related infections and complications (PHM, 2008).

The literature argues that the causes of maternal deaths are known, and are similar for each maternal death across the world (Fayyaz, Faiz, Rahim & Fawad, 2011; MOH, 2008; Ronsmans & Graham, 2006; Graham, Bell & Bollough, 2001). These include haemorrhage; sepsis; unsafe abortions; hypertension; obstructed labour and others (Asamoah, Moussa, Stafström, & Musinguzi 2011; Ministry of Health (MOH), 2008; Khan, Woidyla, Gülmezoglu, & Van Look, 2006; Senah, 2003). Several factors have been identified as contributors to maternal deaths. In most developing countries, including Ghana, some of these factors include delay to seek medical care; difficulty or delay in transportation to hospital; delay of health workers to promptly attend to the clients; shortages of qualified health professionals; parity; and religious beliefs (Population Health Metric, 2008; Obeng, Gyimah, Takyi, & Addei, 2006). Kerber, de Graft Johnson, Bhutta, Okong, Starrs and Lawn (2007:1360) argue that "delay responsiveness to complications during labour not only leads to deaths, but also to

poor outcomes such as intra-partum stillbirths, neonatal illness and disability, obstetric fistula, and other long-term obstetric complications".

Evidence suggests that maternal deaths can be prevented with minimum costs even in countries that have poor resources (Kildea, Pollock & Barclay, 2008; Senah, 2003). Maternal Death Review (MDR) is seen as an intervention that can be implemented without major cost to improve the quality of maternal healthcare services. It focuses on the causes of deaths and measures that could have been taken to avoid each death. It looks beyond the numbers by studying the causes and avoidable factors behind each death, leading to top actions to improve quality of care on the basis of the findings (Pearson, deBernis & Shoo, 2009;GHS 2008;WHO, 2004).

During the past decades, Ghana has shown slight decline in maternal deaths with reports indicating that the country has moved from 594 deaths per 100 000 births in 1990 to 538 in 2000 and 409 in 2008 (WHO *et al.*, 2010). According to Asamoah, Moussa, Stafström, and Musinguzi (2011), the maternal mortality ratio in Ghana has decreased because of certain measures that have been established by government. The Republic of Ghana has developed a national policy on MDR and packages to assist with reporting maternal death cases from health facilities to districts. In this regard, MDR Committees were established in all tertiary hospitals, regional referral hospitals, and district referral hospitals (Asamoah et al., 2001;Pearson, deBernis & Shoo, 2009).

For any death of a woman assumed to be a maternal death, the most senior health professional involved in the management of that woman must complete one of the two maternal death notification forms within 72 hours but for purposes of accuracy, it is advised that the form should be completed within 24 hours of the death. A facility-based maternal death notification/reporting form 1A or 1B must be completed (MOH, 2008). The first form (Form 1A) is a descriptive form which captures information related to the client's personal background, the antenatal care received during pregnancy and clinical history (history of pregnancy, history of labour and delivery and peurperiun, autopsy report). The second form (Form 1B) provides a description if death occurred before arrival at the facility or the client arrived very late at the facility and little was done before death. The completed form requires an attachment of a narrative report, which summarizes the circumstances surrounding the death of the woman (MOH, 2008).

Thereafter, the facility's maternal death review team conducts an audit to ascertain the cause of death. At the end of the audit the chairperson completes the audit form which is submitted along with Forms 1A or 1B to the head of the facility, and it is later passed on to the district and the regional offices. These reports are reviewed and discussed at the quarterly and yearly regional health review meetings. At the review meetings, the various health institutions (hospitals and districts health directorates) present cases of maternal deaths that occurred at their respective institutions. These

presentations are followed with discussions that focus on where, when, how, and what interventions took place, and if at all auditing was done (MOH, 2008).

The Ghana government also introduced universal free health care for all pregnant women in Ghana in health facilities. This covers ante-natal care, delivery and postnatal care for mother and baby up to 3 months after delivery (Asamoah *et al.*, 2011). Ante-natal days have been increased from two days in week to Monday to Friday in all major hospitals. Out-patient departments are open every day of the week for consultation in all district hospitals and regional hospitals are also available for referral cases. Some health centres have the services of midwives who have accommodation within the health facility. The nurses at the Community Based Health Planning and Services areas (CHPS zones) are also stationed there for a 24-hour service. The Ministry has also introduced direct midwifery training in response to the shortage of midwives (GHS, 2008).

Even though the government has established interventions to reduce maternal mortality, these interventions are silent on issues that involve the role of midwives in the implementation of a maternal death review. It is known that midwives are key participants in the implementation of these policies. However, what is not clear and well documented in the literature is the role played by these midwives in the actual implementation of maternal death review, as well as the challenges that are associated with these roles. As a nurse educator, the researcher was particularly interested to

establish the following: “What role do midwives actually play in the implementation of the maternal death review process in their facilities?”

1.3 PROBLEM STATEMENT

Midwives are in the forefront of maternal health care delivery in Ghana. They have more contact hours with pregnant women than any other group of health workers. Midwives are the first to collect and record information of their clients during their visits to the health facilities. The quality of this information is critical not only in providing maternal care, but also in monitoring and evaluating maternal deaths. It is also known that in countries that have acute shortages of health professionals, the role of midwives and nurses are constantly expanded to meet the needs of clients and the health care systems. Ghanaian midwives participate in the implementation of MDR, but little is known about their role in this process. This lack of information may negatively influence any interventions aimed at improving the quality of their participation in the above process, and consequently the accuracy of the report.

A report (WHO *et. al*., 2010) confirms that inadequate information makes it difficult to accurately estimate maternal mortality in the region, and hinders proper planning towards maternal health issues. The inadequacy of information is also attributed to under-reporting and misclassification of maternal mortality (UNICEF, 2009; Africa Progress Panal, 2006). In Ghana, it has been acknowledged that the recording of

maternal deaths is a recurrent problem in most hospitals, and when it is done, effective records systems are not in place (Senah, 2003). The researcher's own experience in participating in different quarterly and annual regional health review meetings shows that in most cases many questions related to maternal deaths were not adequately answered. Some institutions were asked to go back to find answers to these questions. It is therefore, important to explore and describe the role played by midwives in the implementation of MDR at the health facilities.

1.4 PURPOSE OF THE STUDY

The purpose of this study was to explore and describe the roles of midwives in the implementation of maternal death review at selected health facilities in the Ashanti Region.

1.5 OBJECTIVES OF THE STUDY

The study intended to explore and describe the activities and duties undertaken by midwives in the following stages of the facility-based maternal death review at the selected health facilities:

- Identification of maternal death cases in their health facilities;
- Collection of data related to maternal death cases in their health facilities;

- Analysis of the collected information and formulation of findings on maternal death cases in their health facilities;
- Formulation of recommendations and actions that should be taken by their facilities to avoid maternal deaths; and
- Evaluation of the impacts of implementation of the recommendations and actions that are taken to avoid maternal deaths in their facilities.

1.6 RATIONALE AND SIGNIFICANCE OF THE STUDY

MDR is one of the health care responses to maternal mortality. It serves as a tool to identify why and where these deaths occur, and serves to promote, protect and fulfill the obligation of the highest attainable Right to Health, and Right to Life for preventable maternal deaths (Freeman, 2003). In order to monitor and evaluate progress towards reducing maternal mortality by 75% by the year 2015 as set in the MDG 4, current and reliable data and statistics are required (Rapley, 2007). A recent report suggests that accurate information on maternal mortality data helps towards priority setting, proper planning of reproductive health programmes, advocacy efforts, research, accountability and mobilization of funds (WHO *et. al*., 2010).

Understanding the role played by midwives in the implementation of Maternal Death Review is important to assess the quality of maternal death's data generated at health facilities in the region. Data generated from this study has implications for midwifery

practice and education, to the existing body of knowledge, and policy implementation in the following ways:

Nursing practice and education: Midwifery regulatory bodies and senior management at the target facilities could use the findings to improve the role played by midwives in the implementation of MDR. The health facilities may also use the findings to formulate needs-based in-service training programmes for midwives.

Body of knowledge: Above all, the findings of the study will contribute to the existing body of knowledge related to the roles of health professionals in the implementation of MDR. These findings may also be used to inform further research on MDR.

Policy implementation: The findings of the study have the potential to inform healthcare managers about the role that midwives play in the implementation of the government's strategy on MDR, as well as the challenges, which face healthcare professionals in the implementation of this policy in the region.

1.7 ETHICAL STATEMENT

Ethical clearance was obtained from the University of the Western Cape's Senate Higher Degrees before commencement of the research. Further ethical approval was sought from the MOH/GHS in Ashanti the Region as well as from Komfo Anokye Teaching Hospital. Permission to collect data from participants was granted by the

heads of the different facilities where the study was conducted. Informants were fully informed about the study and they were requested to sign a consent form. More details about the ethics are provided in Chapter Three under ethical considerations.

1.8 DEFINITION OF KEY CONCEPTS

Clinical audit: A quality-improvement process that focuses on systematic review of the structure, processes and outcomes of the care against explicit criteria and the subsequent implementation of change. Where indicated, changes are carried out at an individual, team or service level and further monitoring is used to confirm improvement in health care delivery (WHO, 2004).

Community-based maternal death review: It involves an inquiry into the medical causes of death and ascertaining personal, family or community factors that may have contributed to the deaths of women who died outside of a medical facility (WHO, 2004).

Confidential inquiries: A systematic multi-disciplinary anonymous investigation of all or a representative sample of maternal deaths occurring at an area, regional (state) or national level. It identifies the numbers, causes and avoidable or remedial factors which are associated with them (WHO, 2004).

Facility-based maternal deaths review: It is "an in-depth qualitative investigation of the causes of, and circumstances surrounding, maternal deaths, which occur in health care facilities" (WHO, 2004**:**15).

Maternal death: Maternal death is defined as "a death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to- or aggravated by- the pregnancy or its management, but not from accidental or incidental causes" (WHO, ICD-10, Volume 2:134). It also includes the death of a woman in early pregnancy from complications of abortion and ectopic pregnancy (WHO, 2004).

Maternal death review: According to the World Health Organization (WHO, 2004), maternal death review is a qualitative, in-depth investigation of the causes, and the circumstances surrounding maternal deaths. Five main approaches (community-based review, confidential inquiries, surveys of severe morbidity or near misses, clinical audit, and facility-based review). Facility-based review was used to conduct this investigation.

Midwife: According to the International Confederation of Midwives (2005), "a midwife is a person who, having been regularly admitted to a midwifery educational programme, duly recognised in the country in which it is located, has successfully

completed the prescribed course of studies in midwifery and has acquired the requisite qualifications to be registered and/or legally licensed to practise midwifery".

For this study, a midwife refers to a person who has been trained and is recognized by the Nursing and Midwifery Council for Ghana and uses the title "midwife".

Role of midwives: In practice, a role is defined as the application of the rights and duties which constitute the status of a specific occupation. Every group "has a series of roles deriving from the various patterns in which they participate, while a role represents the sum of these duties and determines what they do for the society" (Biddle & Thomas, 1966). The role of midwives is endless, even though the traditional roles are those that are well documented worldwide. In particular, the role of a midwife is to care and treat pregnant mothers and their child before, during and after delivery (Farrell, 2007). In this study, the role of midwives refers to the activities and duties undertaken by midwives throughout the Facility-based maternal death review process.

Surveys of severe morbidity (near misses): It entails the identification and assessment of cases in which pregnant women survive obstetric complications. It is, however, acknowledged that there is no universally applicable definition for such cases and therefore, it is significant that the definition used in any survey should be appropriate for the local circumstances to enable local improvements in maternal care (WHO, 2004).

1.9 OUTLINE OF THE THESIS

This report is divided into five chapters, as outlined below:

Chapter One: An overview of the study in terms of the background and rationale, problem statement, purpose and objectives of the study, significance of the study, the ethical statement, and definition of key concepts.

Chapter Two: Literature review with a focus on midwifery education and practice in Ghana; the magnitude of, causes and factors contributing to maternal mortality with a focus on Africa; global and regional policy responses to maternal mortality; and maternal death review methods.

Chapter Three: Describes the research methodology that was used to reach the objectives of the study, and discusses in detail the research design, study population, sampling, data collection instrument and technique and method of data analysis.

Chapter Four: Presents the analysis of data and a discussion of the research findings.

Chapter Five: Provides a summary of the main findings and the relevant recommendations, as well as the limitations of this study.

CHAPTER TWO: LITERATURE REVIEW

2.1 INTRODUCTION

This study focused on the role of midwives in the implementation of the MDR in selected health facilities in the Ashanti Region, Ghana. The literature review considered midwifery education and practice in Ghana; the magnitude, causes and contributing factors to maternal mortality with a focus on Africa; global and regional policy responses to maternal mortality; and MDR methods.

2.2 MIDWIFERY EDUCATION AND PRACTICE IN GHANA

It is a well-known fact that one of the key elements in reducing maternal mortality is to ensure that during pregnancy, childbirth and the immediate post-partum period, all women are attended to by well-skilled and qualified midwives professionals (Fullerton, Johnson, Thompson, & Vivo, 2010). However, the level of knowledge and skills of birth attendants in low resource countries often do not meet the required standards (Lonkhuijzen, Dijkman, Roosmalen, Zeeman, & Scherpdier, 2010). It is argued that midwives as the main health care providers of reproductive and maternal health should be able to perform their roles as the indisputable birth attendants who, among others, should report details of every delivery that they perform whilst strictly following the protocols of all necessary procedures and interventions. They must also

be able to identify mothers who are at risk and plan for their safe childbirth delivery (Walton, Essay and Morgan, 2007). Considering the nature and magnitude of the work involved, the role of the midwife cannot be performed effectively without appropriate education and training, especially in clinical practice (Gijbels, 2004; Ronsmans & Scott, 2009; Ferrell, 2007).

Therefore this section of the literature review provides an overview of the regulatory body for midwifery education and practice in Ghana and the different levels of education programmes leading to registration as midwives in Ghana.

2.2.1 Regulation of Midwifery Education and Practice in Ghana

Midwifery education and practice in Ghana is regulated by the Ministry of Health (MOH), Ghana and the Nurses and Midwives Council (NMC) of Ghana. The MOH plays an overall role in policy direction in the training and practice of nurses and midwifery in Ghana. The Ministry mobilizes and allocates resources for all training institutions, and monitors and evaluates the training programmes of various nursing institutions (Ministry of Health, Ghana, 2012).

The NMC has been in operation since 1971 under the statutory mandate of the N.R.C.D. 117 of 1972 and L.I. 683 of 1971. The NMC is concerned with the nursing and midwifery profession and in particular, with the organization of training and

education of nurses and midwives as well as maintenance and promotion of standards and professional conduct and efficiency. The NMC also establishes a system of training for nurses and midwives. It selects subjects where persons who wish to qualify as nurses or midwives, may be examined in. It also establishes courses of instruction for student nurses and midwives and conduct examination for student nurses and midwives for professional licensing (Nurses and Midwifery Council of Ghana, 2012).

2.2.2 Midwifery Education Programmes in Ghana

There are two types of midwifery education and training in Ghana. The first type is a one year post-basic nursing programme leading to a certificate in midwifery. The post basic curriculum builds on previous training in nursing by offering mainly midwifery subjects, which include the physiology of pregnancy and labour and its management. The graduate of this programme is registered as a professional nurse-midwife. She/he is also referred to as staff nurse-midwife. The second type is a 3-year direct entry post-secondary programme leading to a diploma in midwifery. The direct midwifery diploma programme consists of a combination of basic nursing subjects and midwifery. These subjects, in effect, equip midwifery students with skills to be able to perform as expected. The graduate of this programme is registered as a staff midwife. The above programmes (one year post-basic and 3 – year direct entry) are offered at

midwifery training colleges (MOH, 2008;Nurses and Midwifery Council of Ghana, 2012). Currently, there is no midwifery training in any of the Ghanaian universities.

In as much as the roles that midwives play are obvious, the roles of these two categories may be further determined by individual institutions or governments to which they are attached. For example, in Ghana a midwife is expected to perform the following duties according to the Ministry of Health, Ghana Health Service (MOH/GHS) job description and evaluation (2008):

- Assist in the organization and delivery of antenatal and postnatal care to clients, which includes IPT and PMTCT.
- Provide counselling services for birth preparedness and complication readiness, conduct deliveries, assist mothers, initiate infant feeding after delivery, and also introduce complementary food.
- Provide education to clients on issues such as nutrition, personal hygiene, breastfeeding and management of minor ailments, be able to detect deviation from normal infant delivery and provide the necessary interventions such as resuscitation of the new-born, treatment of haemorrhage, shock, foetal distress, cord prolapse and other life threatening conditions.

2.3 MAGNITUDE, CAUSES AND CONTRIBUTING FACTORS TO MATERNAL MORTALITY

The knowledge of women's deaths classification is critical and serves as the first type of data on maternal deaths as well as a basis for defining maternal mortality Senah, 2003). It is only when a woman's death has been classified as maternal death that maternal mortality can be mentioned (MOH, 2008). Understanding maternal death also implies an understanding of the causes of maternal death. In order to accurately identify the cause of a maternal death, there is a need for all health professionals who deal with pregnant women to be familiar with the definitions of maternal death, and hence conduct a diligent assessment of clients under their care (Campbell & Graham, 2006; Ronsmans and Graham, 2006). The literature indicates that, when women die at hospitals, they are often misclassified, either because of wrong diagnosis or because the definition of maternal death is not well understood by the health workers (AbouZahr & Wardlaw, 2003). Senah (2003) suggests that in some cases, misclassification of maternal death at the hospital is due to the fact that healthcare providers do not assess whether women were pregnant upon admission or not.

It is within the above context that this section of the literature looks at the magnitude of maternal mortality within the WHO definition, the causes and factors contributing to maternal mortality with specific focus on the African continent.

2.3.1 Magnitude of Maternal Death

Maternal mortality is defined as "a death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to- or aggravated by- the pregnancy or its management, but not from accidental or incidental causes" (WHO ICD-10, Volume 2:134). The ICD-10 also provides an alternative definition of maternal death as a pregnancy-related death, thus 'it is a death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the cause of death' (WHO, 2004).

From the definitions of maternal mortality provided above, it is clear that knowing what maternal death means, is crucially significant. This is so because it facilitates the reporting of cases that involve it satisfactorily. For example, Ronsmans and Graham (2006) and Karimian-Teherani, Haidinger, Waldhoer, Beck and Vutue, (2002) argue that under-reporting can occur if there is misclassification of a woman's death. Misclassification arises when there is no information on a woman's pregnancy status, and the civil registration systems with correct attribution of cause of death are not in order or, worse still, when most deliveries are conducted at homes and women get to the health facilities with severe complications or even die on arrival (Karimian et al., 2002; AbouZahr & Wardlaw, 2001).

The problem of maternal mortality is well documented across the world. It is reported that approximately 1500 women die daily, and over 500 000 yearly owing to complications of pregnancy (Asamoah, *et al*., 2011; Lewis, 2008; Hunt and De Mesquita, 2007; Ronsmans & Graham, 2006; Donnay, 2000). Africa has the highest maternal mortality rate in the world. This rate varies within the sub-region and between countries. In the eastern part of Africa, there have been troubling increases in the MMR in Malawi, Mozambique and Zambia. Some countries such as Comoros, Rwanda and Sudan have seen more encouraging declines in their MMRs since 1990 (Institute for Health Metrics and Evaluation (IHME), 2010).

In the southern part of Africa, the most significant annual increase was noted in Zimbabwe at 5.5%. South Africa had the lowest MMR in the region, while Lesotho had the highest (four times higher than South Africa's MMR) in 2008. The West African region is amongst the highest, since in 2008 Chad and Sierra Leone had more than 1000 deaths per 100 000 live births, while Cote d'lvoire, Cameroon, Liberia and Nigeria experienced substantial increases in their MMRs since 1990. Cape Verde had a dramatically lower maternal mortality rate than its neighbours, Gambia and Mauritania (IHME, 2010).

In addition to death, many more women (about 20 million) are left with life-long complications of child birth every year (Lewis, 2008). Hence, for each death of a pregnant woman, 30 others are left with permanent disabilities (Donnay, 2000;

Ronsmans & Filippi, 2006). Some of these complications are neurological sequelae, rectovaginal fistula, severe anaemia and infertility (Goldie, Sweet, Carvalho, Mouli, Uma, and Hu, 2010). Children whose mothers die experience an increased mortality risk, reduction in nutrition and schooling (WHO, 2006: Fraster, Cooper & Nolte, 2003; Robinson, 2004).

The effects of maternal deaths and maternal related complications have serious implications on the lives of women and their families. For example, women contribute to a majority of small businesses in the developing world and their unpaid work on farms and at home account for one-third of the world's GDP (USAID, 2010). Maternal deaths directly erode the gains from social and economic investments that have been made in their lives (WHO, 2006). The family is also dispossessed of the mother's love, care and productivity within and outside of the home (WHO, 2006).

2.3.2 Causes and Factors Contributing to Maternal Death

The World Health Organization ICD-10 classifies the causes of maternal deaths into direct and indirect categories.

2.3.2.1 Direct causes of maternal deaths

Direct causes of maternal deaths are "deaths resulting from obstetric complications of the pregnancy state (pregnancy, labour and puerpurium), from interventions,

omissions, incorrect treatment, or from a chain of events resulting from any of the above" (WHO, 2004:25). The common direct causes of maternal deaths are obstetric haemorrhage, unsafe abortion, infection (sepsis) and hypertension and its complications such as pre-eclampsia and eclampsia (Fayyaz, Faiz, Rahim & Fawad, 2011; MOH, 2008; WHO, 2007a; Ronsmans & Graham, 2006; Graham, Bell & Bollough, 2001). However, obstetric haemorrhage is believed to be the leading cause of maternal deaths (Ronsmans & Graham, 2006; Senah, 2003; Khan *et al.*, 2006). Kongnyuy, Mlava and Van den Broek (2009), in their study on causes and characteristics of maternal deaths in Malawi, indicated that haemorrhage was the highest cause of maternal deaths followed by post-partum sepsis. Similarly, Liang, Dai, Zhu, Li, Zeng, Wang, Li, Li, Zhou and Wang (2010), in a survey conducted in China on preventable maternal mortality, report that of all maternal deaths recorded between 2001-2005, 50% occurred as a result of obstetric haemorrhage.

2.3.2.2 Indirect causes of maternal deaths

Indirect causes of maternal deaths are diseases that are perceived as not related unswervingly to pregnancy, but can affect or contribute to maternal deaths (WHO, 2007a). Indirect causes of maternal deaths, as mentioned earlier, vary according to the researchers' orientation, and their origin in terms of regions and experiences. For example, Asamoah *et al*., (2011) regards malaria as a major indirect cause of maternal deaths in Ghana and its neighbouring countries; while HIV and AIDS is seen as the

most indirect cause of maternal deaths in Southern African countries, according to researchers (Hogan, Foreman, Naghavi, Ahn, Wang, Makela, Lopez & Murray, 2010). They argue that even though there are variations in causes across countries, regions and sub regions, the issue of indirect causes of maternal deaths cannot end without the mention of the devastation of HIV and AIDS.

Cross, Bell and Graham (2010) assert that health care providers should be able to differentiate between direct and indirect causes of maternal deaths in order to develop and implement effective strategies to reduce maternal mortality. They argued that it is also equally important to understand contributing factors to maternal deaths if the problem is to be approached from all angles.

Kerber, de Graft Johnson, Bhutta, Okong, Starrs, and Lawn , (2007); and Fraser, Brockert and Ward, (1995) associate maternal deaths, especially in developing countries, to long distances between homes and health care facilities, financial constraints, poor communication and transport, weak referral links, and low-quality of care in some health facilities. They contend that these factors can limit access to care for those who need it the most. Filippi, Ronsmans, Campbell, Graham, Mills, Koblinsky and Osrin, (2006) assert that the high cost of obstetric care borne by women during their visits to hospitals for child birth, especially Caesarean Sections make pregnant women vulnerable to all sorts of complications. Considering the fact that days before and after child birth is a period that can be full of anxiety for women, this

may be compounded by a lack of education, and decision making power (predominantly in relation to care during pregnancy). All these issues, coupled with the pressures associated with pregnancy itself, as well as fear of complications, causes more anxiety, which in turn increases the dangers related with pregnancy and childbirth.

Lewis (2008) asserts that delays in decision making by the client and family to seek health care; delays in arrival at the health care facility owing to a lack of transport and bad road networks; and delay in receiving timely and appropriate healthcare, are some of the contributing factors to maternal deaths. The Ministry of Health in Ghana refers to the above delays as the three Ds' (3Ds') (Högberg, 2004b; Senah, 2003; Gli-González, Carrasco-Portiño & Ruiz 2006).

The World Health Organization attributes poverty to high maternal mortality. It has been established that more maternal deaths occur in poor countries than in rich countries owing to comparative economic differences (WHO et al., 2010). According to Ronsmans and Graham (2006), even though differences exist in the number of maternal deaths per developed and developing countries, the issue of economic growth cannot be used conclusively because there are some countries that are in the same economic category but have different maternal death records. For example, Vietnam and Sri Lanka are said to be in the same economic ratings with Yemen and Cote d'lvoire yet the first two countries have lower maternal deaths than the latter two

(Ronsmans and Graham 2006). They further argue that, since developed countries have advanced in health care services, infrastructure and equipment; this does not necessarily mean that they have no maternal death problems and that these developed countries also have variations among themselves.

Just as there are variations between developed and developing countries in maternal mortality, there exist differences between rural and urban cities too (Betrán, Wojdyla, Posner & Gülmezoglu, 2005). For example, it is reported that more maternal deaths occur in rural areas than in urban areas. This may be the case because more accessible and well-staffed health facilities exist in most urban areas, than in the rural areas where health facilities are either fewer or poorly staffed (WHO *et al*., 2010).

According to Hunt and De Mesquita (2007), maternal health is an important human right that is well known and accepted by the international community and they argue that preventable maternal deaths occur when and where womens' rights to health, fairness and non-discrimination are undermined. Hence, Hunt and De Mesquita (2007) consider maternal mortality and morbidity as defilement to the right to life. Ronsmans and Graham (2006) reveal that most maternal deaths occur during the third trimester, and especially within the first week of the end of pregnancy and particularly, within the first and second days after delivery. Therefore, they suggest that more attention

should be paid to women during these periods and more specific strategies should be established to solve intra partum care.

According to Ganyaglo and Hill (2012), WHO et al., (2010), Burchett and Mayhew (2009), Gli-González, Carrasco-Portiño and Ruiz (2006), about 80% of maternal deaths are avoidable at little or no cost, regardless of the place (developed or developing, fully resourced or under-resourced). Maternal death is considered to be avoidable if the death had not occurred owing to quick interventions or one or more modifications in the health care system/service delivery related to clinical care, facility infrastructure, and /or patient factors which lead to the death of the client (Liang *et al*., 2010; McCarthy 2011; GHS, 2009; Lewis 2008: Liljestrand, 2005: Högberg, 2004a). Liang *et al*., (2011) state that 86% of all maternal deaths in China were found to be avoidable. Kongnyuy *et al.*, (2009) associate these avoidable factors to health professional, hospital administration, patient/family and Traditional Birth Attendant (TBA) factors. McCarthy (2011) reports that 60% of women in Uganda give birth whilst unattended, not only because of a lack of accessibility to healthcare facilities but also because of non-accessibility to qualified birth attendants.

2.4 POLICY RESPONSES TO MATERNAL MORTALITY

Senah (2003) argues that the war against maternal mortality should be fought collectively by all stakeholders. At a global level, the UN Human Rights Council

views maternal mortality as a human rights issue which warrants measuring countries' progress. The question that one may ask is whether or not these leaders are abiding by the agreements they signed. This section looks at policy responses with a focus on the Millennium Development Goals, the WHO's Safe-Motherhood Initiative, and the selected African Member States policies.

2.4.1 Millennium Development Goals

The Millennium Development Goals represent a single example of the world leaders' commitment to the development of the world's population. This commitment is translated in the Millennium Declaration, which was signed by the 189 United Nation Member States in 2000. The declaration consists of eight goals, which are referred to as millennium development goals (MDGs). Each goal contains specific targets with a time line. One of the targets of MDG 5 which is related to improving maternal and child health, is the reduction of maternal deaths from the 1990 rates by three quarters (75%) by the year 2015 in all member states.

Lewis (2008) states that world leaders can influence positively the reduction of maternal deaths if they consider the set objective for 2015 by United Nations Millennium Development Goals, and understand why, where, when and, which women die. Evidence of achieving this goal within the 25 year period is manifest from the fact that some developed countries have been able to reduce maternal mortality

drastically even before the deadline. An example is Thailand, which took 18 years to reduce its maternal deaths by 3 quarters (Ronsmans & Graham, 2006). Developed countries seem to have fewer problems with regard to progress in maternal mortality, probably because of their huge investments in health care facilities and training of human resources (Hoope-Bender, Liljestrand & MacDonagh, 2006).

Authors (Lown, Tinker, Munjanja and Cousens 2006; Krupp and Madhivanan 2009) argue that efforts to reduce maternal mortality may be hampered by several factors such as inadequate funding, civil conflicts, lack of required human resources and changes in global policy. They consider human resources as a major element to reduce maternal mortality, since pregnant mothers need highly skilled and trained staff, especially midwives.

2.4.2 Safe-motherhood Initiative

The Safe Motherhood Initiative (SMI) was launched in 1987 by international agencies and governments (Family Health International, 2007; Africa Union Commission, 2006; USAID, UNFPA, PRIME, and Path, 1998). The SMI is an effort by the international community to raise awareness of the dimensions and scope of maternal mortality and to galvanize commitment among governments, donors, the United Nations (UN) and other relevant stakeholders to take steps to address maternal mortality as a public health tragedy (WHO, 2007b); Betrán, Wojdyla, Posner &

Gülmezoglu, 2006; Kristof, 2004). The groups that came together to initiate Safe Maternal include the WHO, UNICEF, UNFPA, World Bank, Population Council and the IPPF. When health experts met in Nairobi in 1987 to inaugurate the SMI, their aim was to reduce the burden of maternal death and ill health in developing countries by one half by the year 2000. SMI is a component in Maternal- Child Health (MCH). (WHO, 2007b; Africa Union Commission, 2006).

The inauguration of Safe Motherhood Initiative saw the establishment of goals and programmatic priorities for global actions such as research, mobilization of resources and shared information to make pregnancy and childbirth safer (Family Health International, 2006). They acknowledge that health services such as family planning, promotion of antenatal care, improving essential obstetric care and addressing the socio-economic status of women, are key factors in the reduction of maternal deaths (USAID *et al*., 1998).

According to WHO (2007b), more than 20 years after the launch of SMI, some countries with the utmost burdens of mortality and illness have made little progress. There are inequalities amongst countries between those that live in improved conditions and have access to care, and those that, for a variety of reasons, are excluded. Inequalities amongst countries also exist and continue to increase. WHO (2007b) calls for action on the "need to challenge our policy-makers and programme

managers to refocus programme content and to shift focus from development of new technologies towards development of viable organizational strategies that ensure a continuum of care, and account for every birth and death".

2.4.3 African Regional Policy Response

In Africa, measures to improve maternal health and curve maternal mortality are embedded in political commitments of African leaders, as outlined in documents such as the "Maputo Plan of Action; African Union Campaign on Reduction of Maternal Mortality in Africa (CARMMA); and Protocol on Rights of Women in Africa" (Africa Union Commission, 2006). The Sexual and Reproductive Health and Rights Continental Policy Framework which was developed in response to a call for the reduction of maternal and infant mortality and morbidity on the African continent (WHO, 2002a; Africa Union Commission, 2006). When African countries realised that they cannot achieve Millennium Development Goals, especially Goal Five without addressing sexual and reproductive health they decided to adopt the Maputo Plan of Action, which sets out a framework for countries to improve reproductive health (UNFPA, 2009; African Union Commission, 2006; Goodburn & Campbell, 2001). Some of these actions are the establishment of maternal and new born health roadmaps that focus on implementing core strategies to reduce maternal deaths (UNFPA, 2009; Goodburn & Campbell, 2001).

The strategies include family planning, skilled birth attendance, emergency obstetric care, and neonatal care. The action is also to give some attention to adolescents' reproductive health issues (UNFPA, 2009). CARMMA acknowledges that the Maputo Plan of Action needs visible, knowledgeable, and politically powerful leaders to take the following actions:

- Invest in family planning services;
- Ensure youth-friendly sexual and reproductive health services;
- Fully integrate family, HIV/AIDS services, post-abortion care, and maternal and new born care into primary health care;
- Establish systems to measure progress, accessibility and service quality and ensure accountability;
- Engage the private sector in promoting and financing initiatives, which focus on improving sexual and reproductive health outcomes; and
- Strengthen health systems, prioritising sexual and reproductive health through targeted policies, programmes, and budgeting (Africa Union Commission, 2003).

The protocol of the rights of women in Africa outlines the role of all Member States in relation to reproductive health, that States Parties shall ensure that the right to health

of women, including sexual and reproductive health, is respected and promoted (Africa Union Commission, 2003). These include, the rights to:

- Control their fertility;
- Decide whether to have children, the number of children and the spacing of children;
- Choose any method of contraception;
- Self-protection and to be protected against sexually transmitted infections, including HIV/AIDS;
- Be informed of one's health status and of the health status of one's partner, particularly if affected with sexually transmitted infections, including HIV/AIDS, in accordance with internationally recognised standards and best practices; and
- Have family planning education (Africa Union Commission, 2003).

The protocol urges State Parties to take all appropriate measures to:

- Provide adequate, affordable and accessible health services, including information, education and communication programmes to women, especially in rural areas;
- Establish and strengthen existing pre-natal, delivery and post-natal health and nutritional services for women during pregnancy, and while they are breast-feeding;

- Protect the reproductive rights of women by authorising medical abortion in cases of sexual assault, rape, incest, and where the continued pregnancy endangers the mental and physical health of the mother or the life of the mother or the foetus (WHO, 2002b; Africa Union Commission, 2003).

In Ghana, the Safe Motherhood Initiative programme was started in 1987, soon after the international conference on SMI was held in Nairobi. It began with twelve (12) selected districts on basic operational research which also included training of traditional birth attendants (TBAs). The objectives of the programme in Ghana are not different from the global objectives, but specifically iterates to make childbirth safe for all women, and also to contribute to the improvement of infant health (Odoi-Agyarko, 2003).

Strategies were established to help to integrate services at all levels of health delivery:

- Training of service providers in life saving and use of the SMI protocols and educational guidelines on safe motherhood;
- Operational research;
- Provision of appropriate equipment and supplies;
- Provision of support to partner organizations;
- Dissemination and monitoring the use of the national reproductive health service policy and standards and protocols; and

- Involvement of relevant people, ministries, agencies and the organizations that deal with maternal mortality and morbidity issues (Odoi-Agyarko, 2003).

2.5 MATERNAL DEATH REVIEW METHODS

This section of the literature review provides the rationale for MDR and describes the facility-based MDR model. The literature describes several methods for MDR while the most common include community-based review, confidential inquiry, survey of severe morbidity or near misses, clinical audit, and facility-based review. All these methods were defined in Chapter One of this study. In this section, the focus is placed on the facility-based maternal review model, which was used as a conceptual framework for this study.

2.5.1 Rationale for maternal death review

MDR is a health care response to maternal mortality. This was introduced by the WHO, UNFPA, UNICEF and their development partners and professional bodies in 2003, as a result of many maternal deaths, which occurred especially in developing countries (WHO, 2004). Pearson, deBernis and Shoo, (2009) see MDR as a qualitative, in-depth investigation of the circumstances surrounding maternal deaths that occur at health care facilities, at home or anywhere else. It serves as a tool to identify why and where these deaths occur, and assists to promote, protect and fulfill

the commitment outlined in the Right to Health, and the Right to Life in respect of preventable maternal deaths (Hunt & De Mesquita, 2007).

It is argued that MDR is conducted to achieve the following objectives:

- To save more women and new babies' lives, to reduce deaths and complications and to improve the quality of maternity services for the benefit of all pregnant women and their babies;
- To use guidelines and recommendations to ensure that all pregnant and recently delivered women receive the best health care and delivery services in appropriate settings in ways that meet their individual needs; and
- To identify the wider non-health system barrier to maternity care, and to take action or advocate for beneficial changes such as improve status of women, health education programmes and improved community transport (Lewis, 2008:448).

According to Pearson, deBernis and Shoo (2009), MDR is an important policy to reduce maternal death, as it helps to improve the quality of health care, which is received by pregnant women. This, they state, can be achieved by paying attention to the causes of maternal death and what can be done to circumvent each of these deaths. They further argue that findings from the reviews should be used to direct and inform effective decisions that bring about improvements to the quality of services that is provided by each health facility. Hence, they emphasize universal reporting of

maternal death as an element in the management of health information systems because it makes people accountable for their actions, and helps the organization to provide the required resources for progress in service delivery (Pearson *et al.*, 2009). MDR data helps with priority setting and advocacy, whilst it increases awareness about safe motherhood, and encourages accountability and fundraising. Reliable data on the levels and causes of maternal death can be used for planning, monitoring and evaluation programmes (WHO, 2006; Goodburn & Campbell, 2001). Graham and Hussein (2006) argue that at an individual level, MDR helps with "Telling the Story"- seeks to identify and understand the circumstances and contributing factors with a view to improve health care in future. Furthermore, in order to achieve a positive mark on reducing maternal mortality, all-inclusive data on the distribution of why women die is important, as is updating reproductive health services and policy (Khan *et al.*, 2006).

In addition, MDR offers the following advantages:

- It helps to detect the level of clinical care received by clients. For example, if the care that is received is low, measures are put in place to make sure that care is improved, which of course brings about the development of new procedures and policies or guidelines for management of those cases which possibly leads to a clinical audit (WHO 2004).

- In situations where negligence of a health professional requires an action, the right educative action is taken to further train health workers both in practice

and theory (WHO, 2004). These training sessions should be evidence-based, providing corrections to erroneous practices and further information in the case of information gap (WHO, 2004). The people responsible for pre-service or in-service may need to provide answers to some of these problems/outcomes of facility-based MDR by creating changes to the curriculum, or by presenting new and more appropriate teaching techniques and guiding mechanisms (Ronsmans & Filippi, 2004).

- Findings from the review may be used by policy makers to improve certain facilities such as adequate staffing, better equipment and adequate emergency drugs for the maternity unit.

- Health care managers could use these findings to help to recognize service needs and to prioritize available resources.

- Community health workers, public health workers and NGOs that may have access to some of these findings, could use them to educate communities as a way of providing feedback.

- It is less expensive to conduct, mostly because the health facility is already in place (WHO, 2004).

2.5.2 Facility-based Maternal Death Review Model

The aim of the facility-based MDR is to trace the passageways of women who died, through the health care system and within the health facility, in order to ascertain preventable issues that could change and improve maternal care yet to come. It is an educational process for health care professionals who take care of women with pregnancies and its related issues, and for students in training. It also serves as a way to make health providers answerable for their actions (Bullough & Graham, 2004).

The facility-based MDR has been adopted by WHO member states, including Ghana, to formulate their strategies to address the issue of maternal mortality. The model is in a cyclical format, which is also called a surveillance cycle. It consists of five stages, which are identified as case identification, data collection, analysis of findings, recommendations and action, and evaluation (Figure 1).

2.5.2.1 Cases identification

Identification of maternal death is the initial step in the surveillance model. Women die before, during and after delivery, as well as during early pregnancy as a result of ectopic pregnancy, abortion and complications. Likewise, maternal death can occur anywhere, be it at home, on the road or in a health facility (WHO, 2004). In identifying maternal death, one must consider the definition of maternal death by the

WHO in ICD -10, which classifies maternal death as direct or indirect, early or late maternal deaths. The knowledge of the definition of maternal death is important in differentiating maternal death from non-maternal death. Deaths that could have occurred accidentally or incidentally are not maternal deaths, even though the woman might be pregnant (Cross, Bell & Graham, 2010; Ronsmans and Graham, 2006; Senah, 2003).

The client's death must be identified (classified) as maternal death and confirmed by a medical officer or a specialist on duty, and a death certificate must be completed and duly signed. Patient records, either within the hospital or as a referral case, can help with the identification of maternal death. A short summary of the state of the woman before death must be written. For example, woman dead 30 minutes after delivery, death caused by heavy bleeding at home before arrival at the hospital (Lewis & Berg, 2004; GHS, 2008).

2.5.2.2 Data collection

As soon as death of a woman at the hospital is confirmed as maternal death, a maternal death report form must be completed to indicate that a maternal death has been recorded. Recording of a maternal death is expected to be completed within 72 hours (GHS, 2008), but in order to achieve better exactness of data, it is best to collect data almost immediately after death (WHO, 2004). The data that is collected must

correspond with the entire client's information. The client's information may come from the following sources: the hospital's general admission records; emergency room records; delivery ward admission records; a death certificate; daily nursing reports; operating theatre register; facility antenatal notes; the client's antenatal card and a discharge letter (WHO, 2004).

The data that is collected must be in simple language for easy understanding of the events that occurred before a death. The maternal death recording form and reporting process must be cross-checked for completeness. If the records are incomplete, missing information must be found to fill the gap. Data on maternal death is obtained without being biased. This should be made known to the data collectors during training. Data collectors should create a rapport with the participants. The data should be checked first by the collectors and their supervisors to ascertain the quality of the data before it is sent to the next stage (WHO, 2004).

2.5.2.3 Analysis of findings

Each maternal death should first be considered individually for elements that are directly associated with possible reasons why the women die, particularly those deaths that may have been prevented. It could also be assessed in groups to look for patterns or similar factors that led to the death of the woman. Individual cases are compared to see if there are any similarities or differences with other cases. For example, pregnant

women from a particular area always arrive late at the hospital with complications, and end up dying from these complications while others arrive early (Lewis & Berg, 2004).

The analysis should make available added insight into the databases of maternal deaths. Should the quantitative method be used, the result should be able to state, which group of women are, or may be, at risk of maternal death, whilst giving an example of some ethnic groups or places of residence, or others who may have shared characteristics. When the qualitative method is used, the results should be able to bring out in more detail, the clear-cut reasons why individual women die. Data concerning, for example, the physiognomies and quality of training received by the health care providers; who cared for the client; health beliefs of the client; and differences in lifestyle, are examples of qualitative data that can be obtained (WHO, 2004).

The analysis data should convey the lessons that were learnt; which of these lessons can be put to good use in the reduction of maternal death in future; how this information can make health care providers understand, accept and modify changes to reduce maternal deaths; and how does the hospital or facility can use the information to provide the required interventions to enhance quality of care provided at that facility (the facility could provide more equipment, skills training, or recruit more workers if these are some of the problems that are identified). For example, the facility may not

have much capital to solve all these problems as a goal, hence the most important issues are dealt with first (Bullough & Graham, 2004).

2.5.2.4 Recommendations and action

This refers to all actions that are taken to decrease maternal deaths will be as a result of the review process. "The recommendations and actions must be evidence-based, arising from analysis of the data collected, otherwise they can be open to challenge" (WHO, 2004:35). The actions must not be subjective, and should be a result of personal or departmental conflict. Every action must be supported by the result of the findings. Clinical guidelines or principles must be built on the best accessible proof.

Recommendations are targeted at refining the processes of maternal health, and minimizing maternal death. Actions that are taken must be well communicated for the understanding of all involved because acceptance of the actions will result from the manner in which it was understood. The implementers should be able to use simple, clear language that people can easily understand. The implementers must also be involved in the process from the start of the review process.

2.5.2.5 Follow-up and evaluation

Evaluating the impact of the recommendation is an important and final stage of MDR process. The evaluation is purposed to deliberate whether the recommendations and actions that are taken will improve the quality of health, comfort and security of expectant mothers. For example, are the processes to achieve the targeted results of the actions feasible, and will they be beneficial considering the available resources. The health facility's policies and procedures are examined with regard to consistency in the provision of care (attitudes, skills and methods), as well as measures put in place to make sure that these policies and procedures work smoothly and produce the required outcomes expected of the evaluation (WHO, 2004; Högberg, 2004).

The evaluation process also checks whether the recommended actions have been implemented, and determine any difficulties that come with it. The success of the evaluation will be based on how they consider the details of the recommendations, the circumstances that lead to the actions and how that health care facility works. The evaluation should consider the issue of confidentiality in the entire process of MDR. The laws of the country in question should be properly considered when dealing with the issue of confidentiality so that people's information is protected during the investigation. The evaluators should also examine the ethics of maternal death investigation in terms of whether they were properly adhered to (WHO, 2004).

Furthermore, those who participate in the review should be protected from intimidation in order to keep the review an ongoing process. If participants in the

review are sent to court or are faced with lawsuits, others may be discouraged from participating in the review in future for fear of the unknown consequences (WHO, 2004). The coordinators must remove any information that will likely expose the identity of the client and family from the report before assessors complete the report. Following the investigations, all records must be kept under lock and key (Lewis & Berg, 2004).

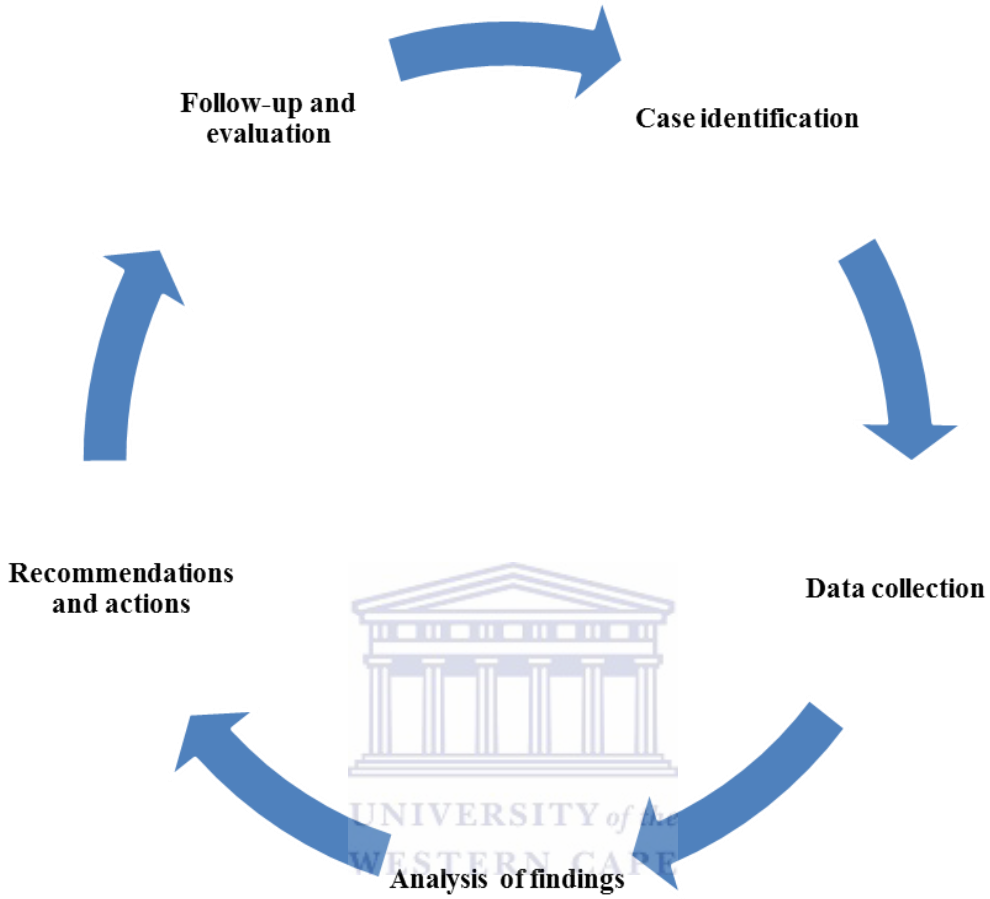


Figure 1: Facility-based MDR process (Source: WHO-Geneva (2004))

2.6 SUMMARY

This chapter presented the literature review. The chapter dealt with midwifery education and practice in Ghana; the nature and magnitude of maternal mortality; global and regional policy responses to maternal mortality; and maternal mortality review methods. The literature that reviewed showed that maternal mortality is at the centre of the policies at all levels of society. The literature showed that there is an agreement and commitment towards improving maternal health, while maternal mortality is used as the main indicator of that improvement. Facility-based maternal death review is one of the methods that guides countries in their strategies towards the improvement of maternal health. The role of highly skilled and trained human resources, including midwives, has been acknowledged. However, the roles that are actually played by midwives in relation to the implementation of facility-based MDR are not clear. The next chapter presents the research methodology that was followed to answer the research question.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 INTRODUCTION

The purpose of the study was to explore and describe role of the midwives in the implementation of MDR in selected health facilities in the Ashanti Region, in Ghana. This chapter describes, in detail, the research methodology that was used to address the above purpose by describing the research design, setting, population, sample and sampling techniques, data instrument, data collection process and analysis as well as ethical considerations.

3.2 RESEARCH DESIGN

A qualitative descriptive design was used to assist the researcher to explore and describe the role played by midwives involved in the implementation of facility-based MDR from their own perspective without seeking deeper meaning attached to those views. The choice of the qualitative approach was first and foremost determined by the nature of the phenomenon of interest and the research questions. As hinted to in the previous chapter, MDR is viewed as a form of qualitative process of data collection, which is conducted after the death of a pregnant woman with the objective of assessing if the death was an unavoidable death whilst making recommendations in order to avoid recurrences of similar cases. Secondly, the researcher believed that

understanding the role of midwives in that process can only be best depicted through qualitative inquiry owing also to the fact that the word 'role' in itself, also depicts a process. Processes are mostly difficult to quantify because they come with experiences and emotions which must follow a logical order. Finally, the researcher believed that qualitative approach was more appropriate to guide the exploration of this topic which little is known about in the literature.

Qualitative research involves a systematic, interactive, and subjective approach which is used to describe life experiences, and to present them in a meaningful way (AECT, 2011; Curtin & Fossey, 2007; Welman, Krugar & Mitchell, 2005: Gillis & Jackson, 2002; Munhall & Boyd, 1999). Qualitative research is an interpretative methodological approach that is supposed to create more subjective knowledge (McBride & Schostak, 2005: Gillis & Jackson, 2002; Munhall, 2001; Maree, 2011). It is developed from the behavioural and social sciences as a process of understanding the exceptional, self-motivated, all-inclusive nature of human beings (Maree, 2011; Curtin & Fossey, 2007; Hek, Judd & Moule, 2003). The philosophical base of qualitative research is interpretative, humanistic, and naturalistic (Bickan & Rog, 2008; Curtin & Fossey, 2007). Qualitative researchers trust that fact is both multifaceted and active, and can be found only by studying persons as they intermingle with and within their socio-historical settings (Munhall, 2001; Munhall & Boyd, 1999, Creswell, 1994).

It is argued that qualitative descriptive studies are less interpretive than other qualitative research studies, as they do not require researchers to go in-depth with their data (Bless & Higson-Smith 2004; Sandelowski, 2000). According to Burns and Grove (2001), the purpose of descriptive design is to discover and describe a phenomenon in a real life status quo. The exploratory nature of the design is mostly related to the inquisitiveness of the researcher, as well as his/her desire to gain a deeper understanding of the phenomenon (Bickan & Rog, 2008; Babbie & Mouton, 2001).

3.3 RESEARCH SETTING AND STUDY POPULATION

The study took place in six health facilities in the Ashanti region. These facilities included one teaching hospital, one regional referral hospital, two district referral hospitals with the highest maternal mortality rate, and two district referral hospitals with the lowest maternal mortality rate. The researcher used the 2010 report of the Ghana Health Service to identify the four district referral hospitals.

According to Burns and Grove (2008), a study population is the set of elements (people, behaviours, events) that the research focuses on, and to which the results obtained should be generalized. In this study, the population consisted of all midwives who worked in health facilities that implement MDR in the Ashanti Region. The literature also distinguishes between a study population and a target population. The

target population is referred to as a sub-set of the study population, which consists of those elements that meet the inclusion criteria to the study (Burns & Groove, 2001). In this study the target population comprised of 54 midwives who were involved in the implementation of MDR at the six health care facilities of interest. Twelve midwives at the teaching hospital, ten at the regional hospital and eight each at the district hospitals.

3.4 SAMPLE AND SAMPLING TECHNIQUES

A sample is a subset of the target population that is selected for the study (Brink, 2006). The researcher used purposive sampling to select the informants who met the following inclusion criteria and were required to:

- Be continuously working as midwives for at least two years from the date of data collection; and
- Be involved in the implementation of MDR at their facilities.

The researcher assumed that informants who met the above inclusion criteria would be more knowledgeable and be able to provide rich information about the phenomenon of interest (Polit & Beck, 2004; LoBiondo-Wood & Haber, 2002). For this study, the researcher was assisted by the senior management of the participating health facilities to identify midwives who met the above inclusion criteria.

In a qualitative study, the sample size is determined by data saturation (Fain, 2004). Data saturation is when the researcher is at the point where no new information or themes are detected in the data been collected (Polit & Beck, 2008). For this study, the researcher reached saturation after twenty semi-structured interviews with midwives who were involved in the implementation of maternal death reviews in their respective health facilities.

3.5 DATA COLLECTION METHOD AND PROCESS

The researcher used semi-structured individual interviews to collect data. Semi-structured interviews allow respondents the scope and time to give their opinions on a particular issue. It uses a structured sequence of questions that are followed in all the interviews. The researcher used probing, where appropriate, to provide the interviewees with an opportunity to elaborate on responses to the structured questions (Maree, 2011; Pelto & Pelto, 1997). The use of semi-structured interviews allow for complex questions and issues to be discussed and clarified (Gillis & Jackson, 2002; Rubin & Rubin, 1995). Conversely, the presence of the researcher may have influenced the responses, and at times the respondents were not equally articulate.

The research found semi-structured interview more relevant to the objectives of the study. It allowed the researcher to structure the questions according to the maternal review process. As described in previous chapters, MDR is a cyclical process, and it

was deemed important that the exploration of the midwives' role should follow the same process. It was assumed that the roles of the midwives will follow the same process with one role leading to another.

The data collection process followed the steps of qualitative research interviews, which were described in the literature (AECT, 2011; Kvale, 2007). A pre-interview meeting was organized with all potential informants, where they were briefed about the study by using information contained in the "Informants Sheet" (see Appendix 4). At the end of this meeting, the researcher set an appointment with each informant who agreed to be interviewed. The interview was set in a place and time that was convenient for the informant. All the informants preferred to be interviewed at their work place.

In this study, the researcher began the interviews on a friendly note by sharing work experiences with the prarycipants in order to allow the informants to settle down if at all they were anxious about the interview. This was followed byasking five main questions of the interview, which were intermittently done with probing questions to allow the informants to satisafactory answer the main questions. The probing questions were not the same and did not follow any order. Questions were sometimes clarified where the researcher thought that the informant required further explaination.

On the day of the appointment, the researcher reviewed the Information Sheet again with the informants. Following the review, the informants were requested to sign the consent form. The interviews began like a social conversation and gradually moved to become highly interactive. Information was solicited without controlling or manipulating the informants. By starting the interviews as a social conversation set a relaxed and trusting atmosphere between the researcher and the interviewees. Once general information were received, the researcher led the interview process by using open-ended questions as per the interview schedule. Informants were allowed to speak freely after the introduction of open-ended questions and the researcher made use of probing, paraphrasing, and checking where it was appropriate in order to enrich data, and to maintain interaction. Body language and emotional expressions accompanying the informants' interactions were noted as the interviews progressed. All informants were comfortable to be interviewed in English, and all the interviews were conducted over a period of two months and varied between 30 to 40 minutes each.

The researcher used a letter and a number to code the interview schedule, while the same code was used to identify the individual informant's audio recording. Each of the 20 respondents was coded as M1 to M20, where M means midwife, followed by the number 1 to 20, depending on the time of the interview. The researcher immediately transcribed the interviews verbatim at the end of the interview in order to refrain from missing relevant data. A follow-up was held to review and verify the transcripts with the informants the following day. No major changes were requested by the informants.

3.6 DATA COLLECTION INSTRUMENT

The interview schedule included five broad open-ended questions, which were related to the five stages of the MDR process (WHO, 2004). An interview schedule safeguards adequate use of limited interview time; it prepares interviews to be more efficient and comprehensive; and aids in keeping the interactions focused. It contributed to the researcher's ability to certify that the same general area of information is gathered from each interviewee (McNamara, 2009). An interview schedule provides more focus than the conversational approach, but still permits some degree of freedom and flexibility in order to obtain the required data from informants (Lofland, Snow, Anderson & Lofland, 2001).

The researcher conducted five pilot interviews with midwives who were not selected for this study. The aim of the pilot interviews was to familiarize the researcher with the interview schedule and the interviewing technique. These interviews were tape-recorded and transcribed verbatim by the researcher. The tapes and the transcripts were given to two independent researchers for assessment. Both of them were satisfied with the way that the interviews were conducted and captured by the researcher, as well as the interviewees' responses to questions that were asked.

After the pilot interviews and refinement of the interview schedule, the researcher conducted interviews with the selected participants. The five broad questions were

used as a guide to solicit information about participants' roles in the implementation of MDR at their facilities. Probing was used where appropriate to facilitate the flow of information (see Appendix 1). In addition, the researcher made use of field notes to document all relevant non-verbal expressions and reactions that were observed from the participants during the interview. The field notes ensured that reflective ideas that evolve during the interviews and analysis of data are documented as a continuous process (Polit & Beck, 2008).

3.7 DATA MANAGEMENT AND DATA ANALYSIS

Holloway and Wheeler (2002) argue that data analysis begins with data management, which involves transcribing, organizing, developing categories and coding data. For this study, the researcher used the Thematic Content Approach as a framework to guide the data analysis process. This process included familiarization, identification of thematic framework, indexing, charting, mapping and interpretation (Aronson, 1994).

This process of data management and analysis began during the data collection process. After each interview the researcher listened to the recorded data to make sure that, firstly, the data was recorded and to have an idea of the type of data that was generated. Transcription of data was done within 24 hours, along with data collection. In this regard, the researcher began by transcribing data into the written text. This transcription was done verbatim so that the data remained unchanged. Transcription of

data assisted the researcher to immerse herself in the data which also allowed for organization of the data as indicated by Balls (2009) who believes that, researchers should transcribe the interviews themselves, to help them to become familiar with it and immerse themselves within it. The transcription was performed by the researcher herself so that confidentiality was maintained. Field notes of non-verbal communication codes, such as nodding, silence, body language were later added to the transcripts.

At the end of all the interviews, the researcher transferred the recorded audio data onto a laptop computer, while an ear piece was used to listen to each respondent's data again in order to compare it to the written documents. A few phrases that were said in the respondents' local language, "Twi", were translated without any problems, since the researcher understood the local language. The researcher made all the necessary corrections and thereafter typed the manuscript into a Microsoft Word document. The researcher kept the same code that was used on the original manuscripts (for example M1, M2). The capturing and typing of data was done according to the order of questions on the interview schedule and related probing questions.

After capturing data into MSWord, the researcher created a file with five folders corresponding to the five stages of the facility-based maternal death review method that was used as a framework for the study. Information related to each stage for the 20 informants was captured into the related folder. While the information in each

folder was further organized and captured into a table format, which contained five columns.

The informants' answers with the corresponding code (example M1) were captured in the first column. The informants' answers were copied from their transcribed manuscripts and pasted into this column with the probing questions. Thereafter, the researcher reviewed the documents and proceeded with cleaning the data.

Following the cleaning of data, the researcher studied the data in order to identify concepts that emerged from data by using an inductive approach. Similar concepts were highlighted with the same colour. The quotes from which the concept emerged were also given the same colour. At the end of this exercise, the identified concepts were copied and pasted into the second column of the table. Similar concepts were grouped together in the third column. The fourth column contains the number of times that a concept emerged from the data. These groups of concepts were examined to derive possible categories, which were captured in the fifth column. Each category was captured with the emerged concepts. In the last column the researcher captured possible theme with the related interpretation after consulting the literature.

3.8 SCIENTIFIC RIGOUR

Trustworthiness is used in qualitative research in achieving the quality of the study (Polit & Beck, 2008). In qualitative research, the quality of data that is collected is assessed in terms of confirmability, dependability, credibility, transferability and trustworthiness (Patel, 2008).

3.8.1 Confirmability

Confirmability is measured by studying the findings of research in relation to the data collected (Polit & Hungler, 2006). It clears the air on objectivity and neutrality of the data collected for the study (Patel, 2008). In this study, confirmability was achieved through the research findings which could be traced to the data collected from the respondents and not from researcher's own inclinations. The researcher developed an audit trail, where data collected, documentations made during the data collection and all processes and procedures used in conducting the research were made available to the supervisor as an independent auditor to come into conclusion about the data.

3.8.2 Dependability

Dependability refers to the consistency of the research findings in the event that the study was to be replicated within a similar context (Shenton, 2004). The study is regarded as credible when the findings of the study are considered dependable (Polit & Hungler, 2006). The dependability contained by the current study was enhanced by

relating the theoretical, methodological and analytical processes elaborate in completing the study. It also focused on the findings by making sure the semi-structured interviews were properly conducted and also made sure that the research questions were clear to the understanding of the respondents.

3.8.3 Credibility

According to Shenton (2004), a researcher is able to ensure credibility, when the research demonstrates that the true picture of the phenomenon under study has been presented. Credibility was ensured by way of multiple reviews of the field notes and audiotapes; the neutrality of the researcher during the interviews; member checking; careful handling of emotional expressions and the examination of findings by the supervisor.

3.8.4 Transferability

Transferability is the extent to which the findings of the study can be applied to other settings or groups (Patel, 2008). It deals with exhaustive explanation of the research processes, settings and other transactions to provide sufficient information for readers to judge the context of the fieldwork and conventions that are central to the research study (Shenton, 2004).

Transferability was ensured by providing detailed descriptions of the informants' characteristics, the informants' description of the phenomenon, as well as the researcher's observations in reporting the findings.

3.9 ETHICAL CONSIDERATIONS

Ethical clearance to conduct this study was obtained from the University of the Western Cape's Senate Research Committee (see Appendix 2), and the Ethics Committee of the Ministry of Health- Ghana Health Service/Ashanti Region (see Appendix 3). The researcher was granted permission to access the selected facilities from the respective managers by using the ethical clearance, which was obtained from the MOH/GHS Ethics Committee. In addition, the researcher observed all the fundamental ethical principles that guide social science and health research (autonomy, rights to privacy and confidentiality, justice, and protection from risk and harm).

Informants were provided with an Information Sheet (see Appendix 4) that included the purpose of the study and an explanation of the right to privacy, as well as the benefits and risks associated with the study, and the data collection methods and process. Informants were not forced to be interviewed, but were requested to indicate their willingness to participate in the study by signing a consent form. The researcher conducted the interviews in place and time that were convenient to them, while data

management, analysis and reporting were handled in a way so that no other person would be able to link the names of the informants with the interviewees. Informants' names were substituted with codes in the interview transcripts, and the audio records were strictly handled by the researcher and the supervisor only.

The researcher did not collect any other data outside of the scope of this study, and all the informants were treated equally during the interview process. The study did not have any potential risks. However, the researcher ensured that interview questions were carefully phrased and that participants were offered an opportunity to ask questions at the end of the interviews.

3.10 SUMMARY

This chapter outlined the methodology that was used for data collection and analysis. It concentrated on the two main research designs and clarified why these particular methods and techniques of data collection were used. It also examined how data was analyzed and assembled into themes of interest which brought meaning to the collected data and, which in the end, provided answers to the research questions. The following chapter presents at the results of the research study.

CHAPTER FOUR: PRESENTATION AND DISCUSSION OF MAIN FINDINGS

4.1 INTRODUCTION

The purpose of this study was to explore and describe the roles of midwives in the implementation of MDR at selected health facilities in the Ashanti Region. As indicated in Chapter One, these roles were looked at in terms of the activities and duties undertaken by midwives in the five stages of the Facility-based MDR model described by the WHO (2004). A qualitative descriptive design with a semi-structured individual interview was used, as described in Chapter Three. In this chapter the researcher presents the main findings, and related discussion. It is divided into three main sub-sections. The first sub-section describes the informants demographic characteristics. The second sub section presents and discusses the main findings, while the third sub-section provides a summary of the chapter.

4.2 DESCRIPTION OF INFORMANTS

A total of twenty midwives involved in the MDR process at six hospitals (one teaching hospital, one regional hospital and four district hospitals), were interviewed. As indicated in Chapter Three, this number was determined by data saturation. They are described in this sub-section according to their current position/rank; number of years

they had been working as midwives; and the number of years that they had been working as midwives at their current facilities. Table 1 provides a summary of the informants demographic characteristics.

As indicated in Table 1, 9 (45%) work as Principal Midwifery Officers; 6 (30%) as Senior Midwifery Officers; 2 (10%) as Staff Midwives; and 1 (5%) each as a Deputy Director, Senior Staff Midwife, and Midwifery Officer. The number of years that informants had been working as midwives varied from 2 to 33 years. Of the 20 informants, 9 (45%) had worked for 25 years or more; 3 (15%) had worked between 6 and 10 years; 3 (15%) between 5 years or less; 2 (10%) had worked between 11 and 15 years; 2 (10%) between 16 and 20 years; and 1 (5%) had worked between 21 and 24 years. The number of years working as midwives in their respective facilities varied from 2 to 33 years. Of the twenty informants, 7 (35%) spent 5 years or less in their respective facilities; 4 (20%) spent between 6 and 10 years, and 25 and more years in their respective facilities; 3 (15%) worked between 11 and 15 years in their respective facilities; and 2 (10%) worked between 21 and 24 years in their respective facilities.

Tables 1: Informants Demographic Characteristics (N=20)

Characteristics of the informants	Frequency (Percentage)
Position/Rank:	
▪ **Principal Midwifery Officer**	9 (45%)
▪ **Senior Midwifery Officer**	6 (30%)
▪ **Staff Midwife**	2 (10%)
▪ **Deputy Director**	1 (5%)
▪ **Senior Staff Midwife**	1 (5%)
▪ **Midwifery Officer**	1 (5%)
Number of years working as a midwife since qualifying:	
▪ **0-5**	3 (15%)
▪ **6-10**	3 (15%)
▪ **11-15**	2 (10%)
▪ **16-20**	2 (10%)
▪ **21-24**	1 (5%)
▪ **25 and above**	9 (45%)
Number of years working in the current facility:	
▪ **0 - 5**	7 (35%)
▪ **6 – 10**	4 (20%)
▪ **11-15**	3 (15%)
▪ **16 -20**	0 (0%)
▪ **21- 24**	2 (10%)
▪ **25 and above**	4 (20%)

4.3 PRESENTATION AND DISCUSSION OF FINDINGS

Eight main themes, which described the duties and activities undertaken by midwives in the implementation of MDR in the six health facilities emerged from the thematic content analysis of the data. The literature review and the WHO (2004) facility-based MDR model assisted the researcher to identify themes from the data. The extensive literature review indicated that there are few studies that have been conducted on the roles of midwives, or indeed any health professionals' study directly related to MDR process. However, a review of the WHO's (2004) facility-based MDR model assisted in comparing the prescribed roles of health workers (especially those who work directly with pregnant women such as the doctors and midwives) to the informants' roles that were identified in this study. Some information on MDR, in general, which has some relationship with the themes that were identified, were also used in the discussion. Extracts from the informants were used to support the descriptions of these themes. The exact language and phrases that were used by the informants were maintained, but for additional clarity and the flow of lexes, some grammatical amendments were made. Table 2 provides a summary of the emerged themes with the corresponding sub-objectives.

Table 2: Emerged themes with the corresponding sub-objectives

Emerged Themes	Corresponding sub-objectives
1. Reporting of maternal death	**Sub-objective 1:** Role of midwives in identification of maternal death cases
2. Certification of maternal death	
3. Collecting and documenting evidence	**Sub-objective 2:** Role of midwives in the collection of data related to maternal death cases
4. Notification of maternal death	
5. Processing and presentation of midwifery findings	**Sub-objective 3:** Role of midwives in the analysis of collecting data on maternal death cases
6. Participation in the formulation of recommendations	**Sub-objective 4:** Role of midwives in the formulation of recommendations and action to be taken to avoid maternal death
7. Dissemination and implementation of the recommendations	
8. Monitoring and evaluation of implementation of the recommendations	**Sub-objective 5:** Role of midwives in the evaluation of impacts of the implementation of formulated recommendations and actions

4.3.1 Role of midwives in identification of maternal death cases

Informants were asked the following main question "what role do you play as a midwife in the identification of maternal death cases in your facility"? Two themes emerged from the thematic content analysis of the informants' descriptions. As indicated in Table 2, these themes included reporting and certification as discussed below.

Theme 1: Reporting of Maternal Death

"Reporting" refers to acknowledging the death of a woman who might be classified as maternal death. This role was for all midwives irrespective of the type of health facility at which they worked, the number of years that they worked there, or the ranks/positions whenever death occurred in the absence of the medical officer at the health facility. The midwife's immediate role was to report the case to a medical doctor on call for confirmation and certification of death. This role is mainly performed by attending midwives who work in hospitals as captured by the following extracts from informants:

"When a patient comes and the patient passes away, we call the ward Doctor to come and certify the death". (M4)*"... When maternal death occurs, the midwife calls the doctor to confirm it".* (M13)

The reporting role of midwives in cases of maternal death, which emerged from this study is consistent with the first stage of the facility-based MDR Model (WHO, 2004). According to the model, maternal death must be immediately reported by the healthcare professionals who are attending to the client at the time of death. Prompt reporting of maternal death is essential for the initiation of the MDR's activities (WHO, 2004). It is suggested that reporting of maternal deaths at the facility level would help to reduce if not solve the problem of under-reporting several maternal death cases that occur unnoticed (Graham & Hussein, 2006). This role of the midwives is also in support of the national protocol of reporting maternal deaths in Ghana (GHS, 2008).

It is well known that nurses and midwives are continuously at the bedside of patients in order to provide routine care such as monitoring a client's vital signs which place them in a better position to notice and report any degradation of the clients' condition. However, midwives who work in rural areas do not have access to such support from the medical officers, and they are often expected to do more than merely report on incident of maternal death. This, therefore, implies that midwives who work under such conditions should be better trained to deal with such situations.

Theme 2: Certification of maternal death

"Certification" of maternal death means confirming a woman's death as a maternal death and signing and providing a copy of the death certificate to relatives (GHS, 2008). This role is mainly performed by senior midwives at the health facilities in the absence of medical doctors, as well as midwives who work in the rural areas, and limited to confirming the death without specifying the cause of death. This is demonstrated in the following quotes from informants:

"Maternal death may be certified by the doctor or the midwife, depending on the type of health facility. In the big hospitals where there are always doctors, the midwife does not certify death, but where there is no doctor, the midwife is expected to certify death" (M10).

Certification of maternal death is part of the first stage of the facility-based MDR Model (WHO, 2004). This role is expected to be carried out by specialist health care professionals who care for pregnant women. Death certification is the leading link in the determination and identification of maternal death (WHO, 2004). This means that for a death to be certified, the cause of death would have been known. It is no secret that identification of maternal death is extremely difficult in the absence of vital registration (WHO, 2007). Hence death certification is mostly used in developing countries such as Ghana.

It is believed that maternal death certification cannot identify all maternal death cases, but it is a practical way of identifying causes of death in respect of maternal mortality (WHO, 2004). Thus, certification is paramount in facilitating reporting of maternal death cases satisfactorily and avoidance of misclassification maternal death cases which leads to under-reporting (Ronsmans & Graham, 2006). W H O's (2004) guidelines on certification of maternal death stresses that death certification should only be done by a specialist. In Ghana, midwifery is considered as a specialized area in the nursing field which provides care for pregnant women and babies. Thus, in the absence of a medical doctor, the most senior midwife or health professional on duty during the incident of maternal death is expected to certify the death (GHS, 2008). Moreover, even in the presence of a medical doctor, the midwife is still expected to provide the necessary documentation and information, which is required for certification to be carried out.

Furthermore, certification of maternal death requires specialized competencies that are acquired through formal training, which is not currently provided in midwifery training. The ability of midwives to effectively perform this role may be questionable. This concern was raised by one informant who is a member of the MDR team at regional level. Her concern is captured in the statement below:

"Midwives certify maternal death just like the doctor but most of them are not able to establish if maternal death was due to direct or indirect causes" (M12).

This challenged can be understood within the context of the training that is received by midwives in the country. This is partly so because advanced training programmes at Master's level in midwifery is not available in the country. Most midwives are thus trained at diploma or bachelor's degree level, which does not prepare them well to practice at an advanced level.

4.3.2 Role of midwives in the collection of data related to maternal death

Informants were asked the following main question: "what role do you play as a midwife in the collection of data for MDR in your facility?" Two themes emerged from the thematic content analysis of the informants' descriptions. As indicated in Table 2, these themes included "collecting and documenting evidence"; and "notification of maternal death".

Theme 3: Collecting and documenting evidence

This theme involves assessment, collection and documentation of the personal and medical history of the deceased women, maternal and nursing care provided and any other relevant information. Midwives performed these activities regardless of the type of health facility and the presence or absence of a medical officer. This theme is well captured with the following extracts from the informants' descriptions:

"The midwife is supposed to document everything about the client; all that was done for the patient before she died in the nurses' note" (M20).

"We collect data on the history of the mother, the time she reported, what we did (services provided) for her and what happened later during her stay on admission" (M2).

"The data we collect is all about the client's name, age, time, history and what happened before the death occurred (M3);

"What we do is that, we take the history of the client, and put down out what actually happened and what solution has been taken" (M11).

"We get the folder, assess the nursing care, treatment given, what we could have done to save the mother's life which we couldn't do… and document all these details".
(M19);

Collecting and documenting of evidence is not limited to information from the hospitals but also involves a follow-up visit to the client's home to collect data, which is related to the deceased before her admission to hospital. This task is captured by the extract below:

***"…** We get some of the information from client ante-natal card… we normally follow the information on the client's folder and ante-Natal card before we write"* (M3);

"… We get information by contacting relatives or next of kin for clarification. We take the home address (physical address) from the client's relative who was present at the time of death so we follow up to see what happened at home before the woman reported at the hospital, we take history from them at home as to what happened at home" (M6).

The information that the informants collect include obstetrical, medical and any events prior to hospital admission. The obstetric data includes information about current and previous pregnancies as illustrated in the extracts below:

"…. I have to know the gestational age of the pregnancy…mode of delivery and medication, history … the gravida/parity" (M1);

"The past obstetric history; example parity, history (family and medical) how labour went on, the first stage, second stage and so on all that happened during deliver with interventions given" (M15).

Regarding the medical history of the client in the hospital, the time of admission, and reasons for admission, the following extracts have the answers:

"... the number of days that she spent at the hospital before death, the lab investigations done, the diagnosis and all that were done before the patient died". (M1);

"... history, date of admission, date the woman died, address of the woman and the cause of death". (M6);

"... to find the cause of death, we start from the date of admission to death, treatment, response to treatment, and why the woman died" (M20).

It transpired from this theme that in performing this role, midwives consult various sources of data and work with other members of the healthcare team. The following sources of data were frequently quoted by the informants:

- Antenatal card;
- Nurse's report book;
- Client's folder; and Patients' relatives.

According to the facility-based MDR Model (WHO, 2004), evidence of maternal deaths at the health facility must be collected and documented accordingly. This is manifested in the current study, which is consistent with the theme where information on maternal death is gathered for the purpose of tracing inaccurate care on the part of health professionals. The data will also help to identify the cause of death of the

pregnant woman, as no analysis can be done if data is not available. Hence, this makes collecting and documenting evidence in MDR an important role. In order to get good results in collecting and documenting evidence, one must understand issues relating to data collection on maternal auditing; know the reasons and importance of data collection; the type of data to be collected; and the sources of data from which to collect (WHO, 2004).

Collecting and documenting evidence of maternal deaths is a role for all midwives, irrespective of the type of health facility to which they belong, the number of years worked or the ranks/positions or number of years worked in the current facility. The results of the study show that this role has been performed well given that all informants were able to mention types of data to collect, reasons for data collection and sources of data. Hence, the informants are performing what is expected of them as midwives by the WHO and the GHS. This positive role would go a long way towards helping to improve the issue of inadequate data on maternal mortality in the Ashanti Region as well as in Ghana as a whole since it is a country that faces the problem of insufficient data. Data insufficiency on women who die and the possible causes of death is expressed by the WHO as a major issue confronting the achievement of MDGs 5 (WHO, 2010; Rapley, 2007; Khan, Wojdyla, Say, Gülmezoglu & Van Look, 2006; Ronsmans & Graham, 2006; Betran, Wojdyla, Posner & Gülmezoglu, 2005; WHO, 2004; WHO, 2003).

Additionally, recent reports suggest that, data on the extent of maternal mortality help to publicise the main concern; have appropriate planning of reproductive health programmes; guide advocacy efforts and research; and encourage accountability and mobilization of funds at an international level (WHO *et al.,* 2010) . Therefore, all-inclusive data on the distribution of why women die is very important in order to update reproductive health services and policy (Khan, *et al.,* 2006). Measuring maternal mortality also helps to set priorities and encourages awareness about safe motherhood (Graham *et al*., 2008).

According to WHO et al., (2010), it has been a challenge to assess the degree of progress on maternal mortality as a result of a lack of reliable data, predominantly in low income countries where maternal mortality is extraordinary. WHO et al., (2010) highlights the need for collecting and documenting evidence on maternal mortality as support for priority setting and advocacy; increasing awareness about safe motherhood; and encouraging accountability and raising funds. Moreover, reliable data on the level and causes of maternal death can be used for planning, monitoring and evaluation of health programmes.

The importance of collecting and documenting evidence on maternal death has also been highlighted by the WHO since 2003, when the organization urged member states to review the country's estimates, data sources, and methods to obtain other crucial data sources that may not have been used earlier; and to build a common

understanding of the powers and faintness of available data and ensuring far-reaching ownership of the results (WHO, 2003). This is because any meaningful intervention on maternal health must be based on reliable data (Khan, 2006).

Even though collecting and documenting evidence on maternal death is acknowledged in the literature, Graham and Hussein (2006) believe that the quality of reporting maternal death is a test of obligation and concern for the action in relation to the health of women. For these researchers, societal values clearly define what should be measured and monitored and therefore, data that is collected must be purposive and consistent with the broader agenda of improving maternal health via an equitable health care system. Furthermore, according to these scholars, the scope of health professional responsibility of collecting and documenting evidence of maternal deaths, is also important. It is the duties of health professionals under whose care the deaths occur, to collect quality data of individual cases.

Additionally, there should be a need for the data to be collected in order to know which type of data is to be collected. In other words, if usage of data is not known, data should not be collected (WHO, 2004). The type of data that is collected, as well as the purpose helps data collectors to know what is expected of them. Informants collect three main data types, which are, demographic, obstetric and medical history in order to bring about a clear distinction of the data types which should meet the required data for MDR.

Theme 4: Notification of Maternal Death

This role involves the completion and submission of relevant documentation for the public health unit of a facility, as per the national protocol of maternal death notification. This is marked in this study following the theme "notification of maternal death", which involves completing a maternal death notification form alongside a written narrative report. It is completed by midwives within 72 hours of the death of the pregnant woman. The completed maternal death form is sent to the public health nurse in-charge to indicate that a maternal death has occurred. This view is best articulated by the following extracts from informants:

"We fill the maternal auditing form or a death notification form and submit it to the public health nurse in-charge who will further submit it to the district director and an audit is organized for us to meet in the hospital here". (M6)

"When death occurs, at our facility here, we inform the Public Health Department (the public health in-charge) and they forward the information to the Kumasi Metropolitan Authority (KMA) for auditing to be organized for us" (M3).

It emerged that a narrative report is always written and submitted with the notification, as seen in the following extracts:

"We write a narrative report about the client, a brief summary of all the occurrences with regards to client's stay on admission, and attach it to the death notification form " . (M3)

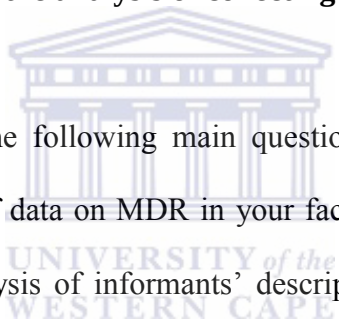
"The death notification form is filled within 72 hours after death, with a brief narrative report and the client's personal data such name, age, patient's history, whatever happened and the intervention". (M12)

This role was performed by all informants irrespective of the number of years that they had been working, type of health facility they were in or the number of years that they had worked in the current health facility. Information about the death is forwarded to the regional health directorate for maternal death auditing/review to be organized, hence a date and a time is fixed for this purpose. It forms part of national protocol on maternal death in Ghana (GHS, 2008). It may also be argued that one of the reasons why the midwives follow the above protocol is the regular MDR or auditing meetings, which are held in all facilities in Ghana which require accurate and consistent information from the facilities. Thus, this may reinforce compliance with the national protocol.

Notification of maternal death is consistent with the second stage of the facility-based MDR Model (WHO, 2004). It depicts protocols that must be followed when collecting and documenting evidence when maternal death occurs. The model prescribes some

protocols that should be followed during data collection in order to meet the required data for MDR, which may differ from country to country. Graham and Hussein (2006) support the fact that the events that occur directly in the presence of the health professionals must undergo protocol for reporting maternal death. It is mandatory that health professionals should comply with notification requirements because it provides an opportunity for lessons to be learnt, and also raises responsibilities for action to be taken.

4.3.3 Role of midwives in the analysis of collecting data on maternal death cases



Informants were asked the following main question "what role do you play as a midwife in the analysis of data on MDR in your facility?" One theme emerged from the thematic content analysis of informants' descriptions. As indicated in Table 2, "processing and preparation for the audit meeting" was identified as the role performed by midwives from the above main question.

Theme 5: Processing of data and preparation for the audit meeting

This role involves the compilation and interpretation of the collected data, and a pre-auditing meeting to present the report to the MDR committee. This role is associated with several tasks, which include:

- Compilation of evidence gathered on the client in a report;

- Pre-auditing presentation;
- Identification of mistakes which is done by going through the occurrences in detail during the client's stay on admission to see if the woman's death was preventable;
- Evaluation of care provided goes hand in hand with identification of mistakes to find out if the woman received adequate care. The issue of quality care is given the required attention in this case; and
- Documentation is one of the important tasks performed at the hospital by health workers and particularly the issue of maternal death where evidence of services and time that is provided, is needed to evaluate quality care;

The above theme and some of these tasks are captured in the extracts below:

"*… the midwife checks the role of the nurses in the patient's folder. You know, we have nurses' notes, vital signs; daily activities and we analyse all the collected data to find out where we did wrong and where we should have improved or done better".* (M19)

"...The information we collect is important because it helps us to prepare the audit report…". (M5)

"... I have to prepare the report for the audit team, so when we meet auditing can be done". (M1)

"We have a pre-meeting where all midwives attend, especially those who attended to women who died in the health facility. Questions are raised regarding circumstances surrounding death, for example, the interventions given when the condition was changing, if the doctor was called on time and so on just to know if the midwives have the knowledge on what she should have done. And if they need knowledge on active management of first stage of labour so these are some of the things we talk about". (M12)

In some facilities, these meetings are not limited to midwives/nurses only, as described below:

"… the midwives, the pharmacists, laboratory technicians, the district director and his team, the public health nurse in-charge, the medical superintendent and others. We all get prepared for auditing to take place". (M6)

Data processing and preparation for the audit meeting that emerged as the role of midwives in the analysis of collecting data corresponds to the third stage of the facility-based MDR Model (WHO, 2004). The model argues that all gathered evidence on maternal death should be analysed effectively to arrive at the cause of death of the woman. For midwives in this study, it included collating all the evidence that was collected and processing it whenever maternal death occurs before appearing at the MDR review meeting. During the preparation, the midwife is expected to provide a detailed account of the deceased client from admission to death. This supported by

information that is gathered from the home of the client in respect of what led to her being admitted to the hospital. Active preparation and presentation of reports are important because any decisions or recommendations that are given should be taken and fully implemented based on reports that are presented and, therefore, the midwife is expected to give the facts and be able to answer or clarify any misunderstandings (Bullough & Graham, 2004).

Attending midwives who nurse clients and present reports at the auditing meeting, according to the facility-based MDR Model (WHO, 2004) makes available added insight, which aid's with better interpretation of evidence gathered and provides the bases for maternal death. It is expected that each maternal death should first be considered individually for elements that are directed to possible reasons why the women die. This is done by presenting and analyzing the data that is collected on the woman, particularly regarding deaths that could have been prevented. Maternal death could also be assessed in a group to look for patterns or similar factors that led to the death of the woman. In this regard, findings of individual cases are compared to see if any similarities and differences exist. For example, pregnant women from a particular area always arrive late at the hospital with complications and end up dying from these complications (WHO, 2004).

According to the WHO (2004), the result of any MDR should be able to state which group of women is or may be at risk of maternal death, whilst citing examples of some

ethnic groups or places of residence, or perhaps women who may have shared characteristics. When the qualitative method is used, as in the case of this study, the results should be able to bring out more details and hence clear-cut reasons why an individual woman dies.

According to the WHO (2004), health professionals should examine the presented reports and ask questions such as how does this information make health care providers understand, accept and modify changes to reduce maternal deaths? How does the hospital or health facility use the information to provide the needed interventions to enhance the quality of care provided at that facility? (The facility could provide more equipment, skills training, or recruit more workers if these are some of the problems that are identified). For example, the facility may not have so much capital to solve all these problems at once, hence the most important issues are dealt with first (WHO, 2004).

It must be noted that a majority of the informants are actively involved in the processing and preparation of the analysis of data for MDR. This is what is expected of them according to the facility-based model (WHO, 2004). This is so because midwives are at the forefront of maternal health, they are expected to play an active role in the preparation and presentation of evidence that is gathered on maternal death. This role will not only help with verifying the cause of death of women who die at health facilities, but will also make the process of processing and preparation of

midwifery/nursing audit reporting on maternal death more efficient and effective, which could in turn bring cohesiveness to the MDR team (Bullough & Graham, 2004). Active participation may also lead to positive outcomes of the review process; the decisions taken would be respected by all because collective decision making is always binding.

4.3.4 Role of midwives in the formulation of recommendations and actions to be taken to avoid maternal death

Informants were asked the following main question: "what role do you play as a midwife in the formulation of recommendations and actions regarding MDR at your facility?". Two themes emerged from the thematic content analysis of the informants' descriptions. As indicated in Table 2, these themes include, "participation in the audit meeting and in the formulation of recommendations; and dissemination and implementation of the recommendations".

Theme 6: Participation in the MDR meeting and formulation of recommendations

It emerged that midwives participate in maternal death audit meetings and in formulating recommendations as members of the audit team at their facilities. This role refers to the input given by midwives in the interpretation of the audit report, and

recommendations that are formulated by the MDR committee. The role is captured in the following extracts:

"Normally, the Doctor on duty at the time of death presents the case, whether the client was attending ANC, what was done for the client and all that, after that, if there are questions, then it is asked and when there is any question concerning nursing care then the midwife answers it". (M6)

"During the audit meeting the Doctor presents the report to the committee for discussion ... and as I said, the Doctor gives his report and I add the little that I know". (M8)

"We give recommendations over there (at the auditing)... Yes, because we are all from the same facility, if the mistake comes from a nurse, she will be queried and after that the recommendations given". (M14)

This theme corresponds with the fourth stage of the facility-based MDR Model (WHO, 2004). It relates to understanding the role that is played by midwives in giving recommendations once data analysis of maternal death has been completed, as well as how active they are in formulating these recommendations. According to WHO, recommendations should be targeted at refining the processes of maternal health whist minimizing maternal death to avoid challenges. The actions that should be taken must not be subjective, nor as a result of personal or departmental conflict**.** In this regard,

recommendations are made once maternal death auditing has been completed and the cause of death has been identified and mistakes established. Acceptance of the action will depend on the manner in which recommendations are formulated and the involvement of implementers in the review process (WHO, 2004).

As shown in this study, midwives play an active role in providing recommendations. As major stakeholders in the care of pregnant women, it is encouraging that they are actively involved in providing needed recommendations, to improve on service delivery, which eventually reduces the needless deaths of pregnant women. This perhaps explains why, generally, informants' attitudes towards this role were positive, as well as well-performed. This positive attitude exhibited by midwives is critical in the achievements of the aim of the United Nations to reduce maternal death by 75% by the year 2015, especially if the active performance of this role can lead to the provision of quality health care which all pregnant women deserve (Berg, Danel, Atrash, Zane, & Bartlett: 2001).

It is emphasized that midwives' active participation in the process of formulating recommendations in maternal death can promote their commitment and likelihood of the implementation of proposed recommendations and actions. This may also lead to women getting more attention and support from these midwives (WHO, 2003). The informants believed that they learn from their mistakes, which could be one of the reasons why they are active informants in this role, which was evident from almost all

of the responses from the midwives. This implies that there is cooperation and cohesiveness amongst and between the MDR team members and can lead to better outcomes because everybody is reminded of his or her responsibilities.

Theme 7: Dissemination and implementation of the recommendations

This role involves the dissemination of the findings and recommendations of the MDR committee at unit level as well as facilitation of the implementation of recommendations that are made by the MDR committee. This role is carried out by all midwives who attend the MDR meeting/review; all midwives are invited to the auditing meeting, at the districts and regional hospitals but this is not the case at the teaching hospital. At the teaching hospital, the attendants, namely the attending midwives (midwives providing health care at the time of death), senior midwives who are the ward in-charges or delegated by the ward in-charge are those who attend the MDR meetings. This is demonstrated in the few extracts below:

"*Each ward has an in-charge who comes and disseminates the recommendations/information to the others and tells them the outcome of the audit and make sure that they implement the actions for the decisions that we took. Henceforth, this and that, example after one of the auditing sections, we needed to get closer to our client who are in critical condition so even if you are tired, your eyes will be on the client and the monitoring will be more…, so after the auditing, we made sure*

we implement that decision taken, also like writing protocols, directing others on what to do". (M19)

"For the midwives, in terms of dissemination of the recommendations a memo has to be written to the administration and the departments that are involved so that the recommendations are carried out…". (M10)

There is an internal supervision of the unit heads and myself as the unit manager and the external audit team also do follow up to see if the recommendations are implemented". (M12)

"Yes, we implement recommendations…the midwives get involved in the giving of recommendations because we render the care, and our inputs are always needed". (M3)

This theme is congruent with the fourth stage of the facility-based MDR model (WHO, 2004) which indicates that all the findings and recommendations should be made known to all stakeholders. It is shown that informants who attend review meetings are accountable for the dissemination of findings to the other colleagues, and that they should see to it that the recommendations are implemented. The active role of midwives in the implementation of recommendations has a positive implication in reducing maternal death, whilst improving the general health of women (WHO, 2004).

Implementation as the basis for the whole process of MDR cannot be compromised in any way, because if anybody undermines this stage of the MDR process, it would render the entire process useless, and all work, efforts, time and energy will be wasted (WHO, 2004).

Implementation is the main purpose for the previous stages of the facility-based MDR process. Implementation of the recommendations is the process of putting into action the outcomes of MDR. It emerges as an agreement among stakeholders in the review, and sometimes who should be responsible for what action. It requires the commitment of the implementers and the support of all stakeholders (WHO, 2004). As shown in this study, midwives, as key stakeholders in the delivery of maternal healthcare, seem to be committed in the roles that they play in the implementation of the recommendations, which are of the MDR committee at their respective facilities. This role also involves the dissemination of the recommendations made by the MDR committee.

4.3.5 Role of midwives in the evaluation and implantation of formulated recommendations and Actions

Informants were asked the following main question: “what role do you play as a midwife in the implementation and evaluation of the recommendations formulated by

the MDR committee at your facility?". One theme emerged from the thematic content analysis of the informants' descriptions. As indicated in Table 2, the data showed that "monitoring and evaluation" emerged as a role played by midwives.

This theme relates to the role of midwives in realizing the impact of the review process of the implemented recommendations of the MDR committee, as well as evaluating the entire MDR system for total health service delivery. It helps to know that there is a need for adjustment in the implemented recommendation, for example.

Theme 8: Monitoring and evaluation of the implementation of recommendations

This is mainly performed by midwives/nurses in charge of the unit, though it is not limited to the in-charges. The following quotes from informants illustrate this role:

"*The in-charge makes sure that all recommendations are carried out. She gives the order that from now on there should be proper records of every procedure that is performed*". (M6)

"Since all of us (midwives) attend the review meeting, if there is a regrettable something maternal death and recommendations are given, everybody takes it in good faith and we try to check each other and go according to the recommendations. In midwifery, there is nothing like senior or junior, we are all equal. Nobody says, because I am the senior so I will do this and you the junior will do that". (M11)

"We supervise ourselves during handing over and ward meetings. If 'am taking over and I look through the folder and I see that something was not done, I make sure I remind you (referring to the colleague) about the way it should go..."(M6).

The monitoring role was strongly associated with the benefit of the MDR, as illustrated below:

"We believe that the recommendations from the MDR Committee have prevented some of the deaths that might have occurred" (M5);

"... yes, every client that comes with 6 centimeters dilation of cervix, we set up either the Normal Saline or Ringers, and the primipare and para 5s, we set up IV infusion, also especially the laboratory staffs have been doing their best. They now organized some blood and as soon as I request for blood, they serve me and at times as soon as they see my phone ringing, they serve us with blood for transfusion". (M9)

"Yes, for instance, there was a time that they recommended that the anesthetist should be called to do cut-down when the midwives were not getting veins to set up infusions and it was followed. This helped so much in saving lives". (M11)

It also emerged that in performing this role, midwives experience certain challenges such as limited human resources, as well as certain cultural practices. The limited

human resources refer to the number of medical doctors and midwives, as illustrated by the extracts below:

"*Through the audit meetings, we have been able to secure some resources like mobile oxygen, but the number of doctors to run all shifts is limited. We wanted a doctor to be there all the time".* (M3)

"We ensure that recommendations/actions are implemented but we don't have enough midwives in the facility… to ensure more chance and more time for each client". (M8)

The issue of limited equipment and space is not omitted as challenges to quality care delivery. This is demonstrated in the following extracts:

"We are not always happy, because not all the resources (I mean equipment) needed adequate health delivery are available and we tend to improvise most of the time". (M13)

"We are doing our best but the labour wards are not conducive for proper care, sometimes we deliver women on the floor and it does not encourage quality care because it is difficult to nurse people on the floor". (M15)

With reference to cultural practices, the use of traditional herbal products such as the use of an enema, which midwives attribute to some complications, are illustrated below:

"…but most pregnant women from this area are still giving themselves enemas. So when they come to deliver and you are not careful and observant, complications may set in. So we need time to educate the mothers". (M8)

The informants also made special appeals to stakeholders to help them to deliver adequate health care to pregnant mothers, as per the following extracts:

"… all that I have is to plead with all the higher offices to provide necessary information to us on time to improve our skills. If there are some documentaries on how to improve our skills on saving life, or there is something new, it should be made known to those of us in the grass root so we can benefit from it and use it in saving lives". (M16)

"In terms of equipment, our high dependency should be monitored but human efforts all the time. There should be mentors to help in easy detection of change in condition". (M19)

"Midwives should be given critical care training. Most of the time, when we are in trouble, we call the anaesthetics to resuscitate the women. Midwives could be given such training". (M19)

"They should provide transportation to for the health facilities that do not have means of transport so referral cases can be transported in time". (M 20)

The monitoring and evaluation roles of midwives in facility-based MDR that emerged from this study is consistent with the last stage of the facility-based MDR Model (WHO, 2004), which states that all recommendations must be monitored and evaluated to bring improvement into the health service delivering system. This is shown in this study, which, according to the theme, is well performed by all midwives, irrespective of the type of health facility, number of years worked as a midwife, or current rank/position. However, it is supervised by the midwife/nurse in-charge following recommendations from the MDR committee once they have been implemented. The process of monitoring and evaluation is done by considering procedures that are used in service delivery whilst also examining shortcomings or problems that might be associated with recommendations that are given (WHO, 2004).

Monitoring and evaluating within the facility-based MDR Model is done to assess the processes involved in implementation of the recommendations, and to find out if the recommendations have improved the health, well-being and safety of the pregnant

women. It is also done to show achievements that are associated with the review process, even though achieving significant reductions in overall mortality rates takes time (WHO, 2004).

It also emerged that midwives experienced certain challenges when discharging their "monitoring and evaluation" roles. These challenges ranged from human resources, equipment and cultural practices. Human resources challenges have to do with a shortage of doctors and midwives to manage the number of clients adequately and timeously. The issue of equipment, according to the informants, should be addressed so that it can assist with quality care. More space was requested by the informants at KATH, which they believe will enhance health care that the mothers deserve.

Despite the above challenges, informants seem to understand the importance of monitoring and evaluation, and have been performing this role as indicated by WHO (2004). In most cases, the informants reported that they check each other during the period of implementation. It is clear that everybody is involved in evaluating the recommendations and that they are satisfied with MDR as a whole because they believe that it helps to improve conditions in the health delivery. It also reduces maternal deaths and enhances the skills of the professionals who are involved in caring for pregnant women, whilst improving equipment for health care delivery.

4.4 SUMMARY

This chapter presented the main results of the study and discussed them with reference to the objectives and conceptual framework of the study. Relevant literature and extracts from the informants' descriptions were used to support the discussion, and to enrich presentation of the findings. The findings of this study show that midwives play different roles throughout the implementation process of the facility-based maternal death review. The roles of informants are similar, irrespective of the type of facility at which they work, but slightly varied according to seniority in terms of the number of years that they worked and position/rank, which they occupy in relation to the type of health facility. In the following and final chapter, the implications of these findings, as well as relevant recommendations are presented.

CHAPTER FIVE: CONCLUSION, RECOMMENDATIONS AND LIMITATIONS

5.1 CONCLUSION

The purpose of this study as outlined in Chapter One was to explore and describe the roles played by midwives in the implementation of MDR at selected health facilities in the Ashanti Region of Ghana. The researcher used the facility-based MDR model (WHO, 2004) to conceptualize these roles as activities and tasks which are undertaken by midwives throughout the five stages of the MDR model. Consequently, the objective of the study was to explore and describe the activities and duties undertaken by midwives in the following stages of the facility-based MDR at the selected health facilities:

- Identification of maternal death cases in their health facilities;
- Collection of data related to maternal death cases in their health facilities;
- Analysis of the collected information and formulation of findings on maternal death cases in their health facilities;
- Formulation of recommendations and actions that should be taken by their facilities to avoid maternal deaths; and

  Evaluation of the impacts of implementation of the recommendations and actions that are taken to avoid maternal deaths in their facilities

The researcher conducted semi-structured individual interviews with at least thirty midwives who are involved in the facility-based MDR but data saturation was reached after interviewing twenty midwives. The twenty midwives interviewed where from six health facilities (four district hospitals, one teaching hospital and one regional hospital) in the Ashanti Region. Of the twenty informants, nine (45%) where from the district hospitals, three (15%) from the regional hospital and eight (40%) from the teaching hospital. The main findings of the results were presented and discussed according to the research objectives, and the related themes that emerged from the data.

The results of this study as presented and discussed in Chapter Four have shown that the midwives currently play an active role throughout the facility-based MDR process. Eight themes related to the above roles emerged from the data as summarized in Table 3 and illustrated in Figure 2 in this chapter. The findings of the study confirm the main assumption of the study which argue that Ghanaian midwives participate in the implementation of the facility-based MDR in spite of a lack of formal training. The results also show the roles played by midwives as well as some of the challenges they face. The results of this study also confirm the literature which suggests that nurses and midwives in developing countries, specifically those who work in rural areas, often take responsibilities, which they would not otherwise do at facilities that have medical doctors. The results also highlight the need for highly skilled midwives, especially at facilities that do not have medical doctors, and the need for support to

enhance continuous learning. Although the results of this study have provided insights into the roles played by midwives in the implementation of the facility-based MDR at their facilities, the extent to which these roles are performed, is yet to be determined.

5.2 RECOMMENDATIONS

In view of the main findings of the study, the following recommendations are made:

- Junior midwives should be included in MDR meetings to witness procedure as this will help to build their confidence to be able to prepare and present at the auditing meetings without being uninformed and involved
- Continuous in-service training in the clinical area should include issues related to MDR in order to continuously enhance the competencies of midwives and nurses, particularly those in rural areas.
- The Nurses and Midwifery Council of Ghana should include MDR in its curriculum in order to expose midwifery students to the role of the midwives with regard to maternal mortality, policy making in the health sector, and for further research.
- Training of midwives should include MDR as well as their respective responsibilities within the process. This will educate newly trained midwives about what to do when maternal death occurs.

While this study has provided first-hand information about the role of midwives in the implementation of MDR, it recommends that:

- Similar research should be conducted in another part of the country;
- Quantitative research which considers validating the identified roles should be conducted at national level; and
- A study, which considers the training needs of midwives on the implementation of MDR should be conducted at a national level. Results of such a study will inform future training programmes.

5.3 LIMITATION OF THE STUDY

The results of this study were interpreted within the qualitative research approach and, therefore, they cannot be generalised to all midwives in the country.

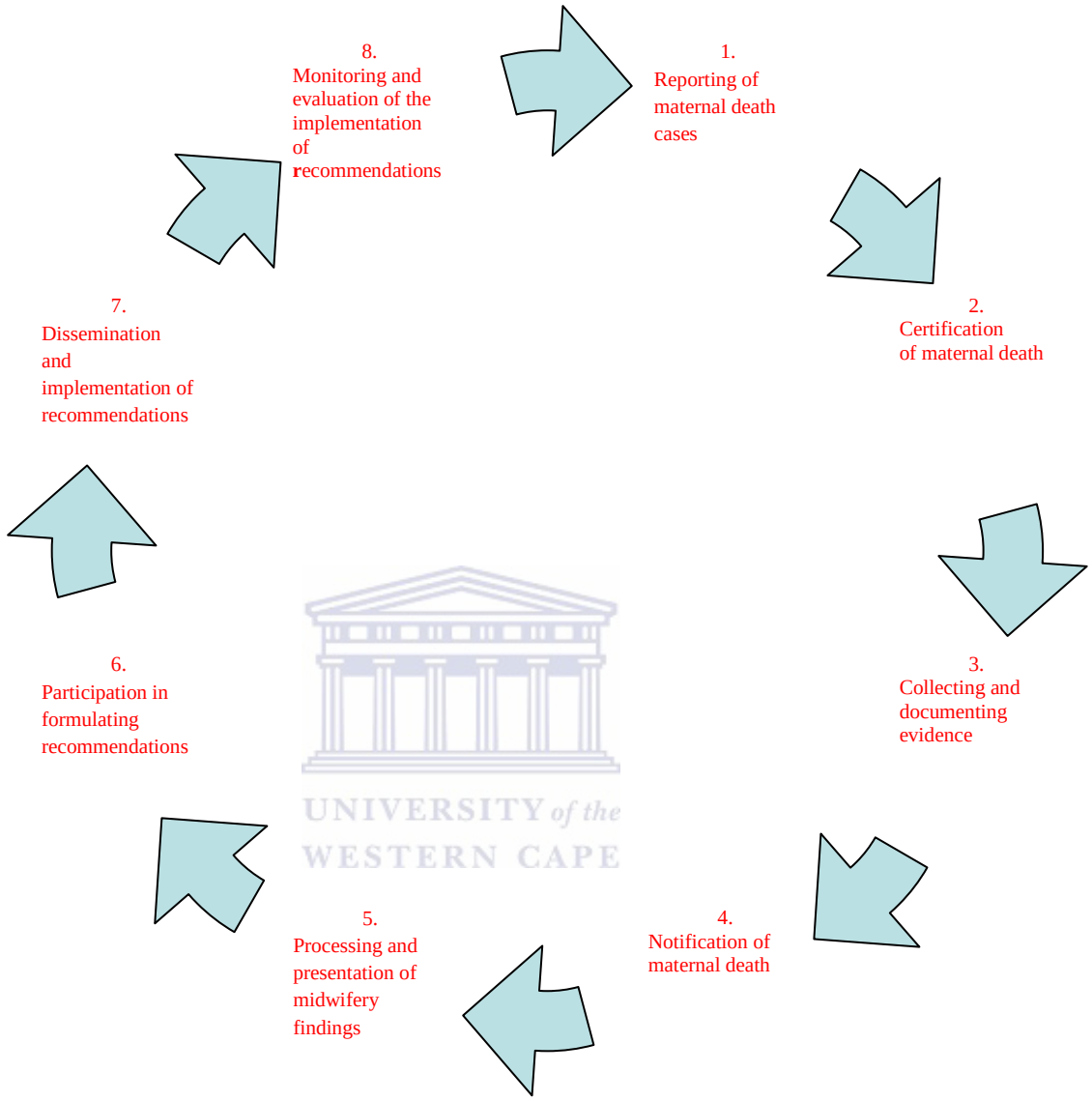


Figure 2: Summary of the roles of midwives in the implementation of facility-based MDR in the selected health facilities in Ashanti Region

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LIST OF APPENDIXES

Appendix 1: Interview Schedule

Section 1: General Information

Date of interview: ---------- Time of interview: Start---------- End------

Interviewee number----------

Place of interview----------

Rank/Position of interviewee----------

Name of facility- ----------

How many years have you being practicing as a midwife? ----------

How long have you being working in this hospital? ----------

Section 2: Main Questions

1. What activities/duties do you undertake as a midwife in the identification of maternal death cases in your facility?
2. What activities/duties do you undertake as a midwife in collection of data for MDR in your facility?
3. What activities/duties do you undertake as a midwife in the analysis of findings for MDR in your facility?
4. What activities/duties do you undertake as a midwife in the formulation of the recommendations/actions regarding MDR in your facility?
5. What activities/duties do you undertake as a midwife with follow ups activities in reducing maternal deaths in your facility?

Appendix 2: Participants Information Sheet

UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa

Tel: + 233 244 73 62 75, E-mail: aniadfafa@ yahoo.co.uk

INFORMATION SHEET

Project Title: THE ROLE OF THE MIDWIVES IN THE IMPLEMENTATION OF MATERNAL DEATH REVIEW IN THE ASHANTI REGION OF GHANA.

What is the research about?

This is a research being conducted by ANITA FAFA DARTEY at the University of the Western Cape. You are invited to participate in this research because you are a midwife who takes part in Maternal Death Review in the Ashanti Region. The purpose of this study is to explore and describe the role of the midwives in the implementation Maternal Death Review in the Ashanti Region of Ghana.

What will I be asked to do if I agree to participate?

You will be asked to answer questions which will be asked by the researcher. The questions will seek information on how long you have been working as a midwife, the

type of health facility, the role you play in Maternal Death Review, the challenges associated with the role of in the implementation of Maternal Death Review.

Would my participation in this study be kept confidential?

The information you provide on the tape will be kept confidential as much as possible. Your name or address is not required. The tape will be locked away by the researcher for a period of three. No individual names or identity will be used in the report. Should an article be written about this research project, your identity will be protected to the maximum extent possible.

What are the risks of this research?

There are no known risks associated with participating in this research.

What are the benefits of this research?

This research will not have any monetary benefit to you as a participant. However, after the research is completed, the role of the midwife in the implementation of Maternal Death Review will be established.

Do I have to be in this research and may I stop participating at any time?

Your participation in this research is completely voluntary. You may choose not to take part in the research. You may choose to withdraw your participation at any time should you decide to participate in the research and you will not be penalized or lose any benefits which you otherwise qualify for.

What if I have questions?

The research is being conducted by ANITA FAFA DARTEY SCHOOL OF NURSING at The University of the Western Cape, South Africa. If you have any questions about the study itself, please contact Anita Fafa Dartey on +233 244 736 275 or aniadfafa@yahoo.co.uk, Nurses Training College, Kwadaso Kumasi, Ghana

Should you have any questions regarding this study and your rights as a research participant or if you wish to report any problems you have experienced related to the study, please contact: Head of Department: Professor T. Khanyile- +27-(21)-9593003.

Dean of the Faculty Community Health Sciences: Professor R. Mpofu – +27-(21)-9592632

University if the Western Cape

Private Bag X 17

Bellville 7535.

This research has been approved by the University of the Western Cape's Senate Research Committee and Ethics committee.

Appendix 3: Consent Form

UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa

Tel: + 233 244 73 62 75, E-mail: aniadfafa@ yahoo.co.uk

Telephone+233-244-795936778
Nurses Training College
Kadaso, Kumasi
Ghana

CONSENT FORM

Title: The Role of the Midwives in the Implementation of Maternal Death Review in the Ashanti Region of Ghana.

Dear Participant.

I am a Master Student at the University of the Western Cape. I am conducting a research project to look at the role of midwives in the implementation of maternal death review in your facility. You are kindly requested to participate in the individual interview at the time which is more convenient to you. The interview will be tape recorded and no one else will have access to the tapes except the researcher. The tapes will be stored in a safe by the researcher and will be destroyed after three years. The information is confidential and your name will not appear on the report. The

participation is voluntary and there will be no consequences should you refuse to participate. If you so wish, you may withdraw from the interview at any time.

If you have any questions you can contact the Department directly at this number +27-(**21)-9593003.**

I ..... voluntarily consent to participate in the above mentioned research project.

The background, purpose, risks and benefits of the study have been explained to me. I have received an information sheet and understand the contents thereof. I also understand that I may withdraw from the study at any time without prejudice. I understand that my participation in the study will be acknowledged, although my identity and the identity of health facility will be withheld.

I agree to be audiotaped during my participation in this study.

I understand that my participation in the study is voluntary.

…….. ……

Participants' signature Date

....

Witness's signature Date

Declaration by investigator

I *(name)* Anita Fafa Dartey…….…… Declare that:

- I explained the information in this document.
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above
- I did/did not use an interpreter. (*If an interpreter is used then the interpreter must sign the declaration below.*

……

Signature of investigator

Appendix 4: University of the Western Cape Clearance Letter

UNIVERSITY of the WESTERN CAPE

OFFICE OF THE DEAN
DEPARTMENT OF RESEARCH DEVELOPMENT

28 October 2011

To Whom It May Concern

I hereby certify that the Senate Research Committee of the University of the Western Cape has approved the methodology and ethics of the following research project by:
Ms A Dartey(School of Nursing

Research Project:	The role of midwives in the implementation of maternal death review (MDR) in health facilities in the Ashanti Region, Ghana
Registration no:	11/9/23

Ms Patricia Josias
Research Ethics Committee Officer
University of the Western Cape

Private Bag X17, Bellville 7535, South Africa
T: +27 21 959 2948/2949 . F: +27 21 959 3170
E: pjosias@uwc.ac.za
www.uwc.ac.za

Appendix 5: Permission Letter to conduct Research in the Ashanti Region

University of the Western Cape
Private Bag X 17, Bellville 7535,
South Africa
24th November, 2011.

The Regional Director of Health,
Ashanti Regional Health Directorate
Ashanti Region

Dear Sir,

PERMISSION TO USE SOME HEALTH FACILITIES FOR RESEARCH PURPOSES

I am a Nursing Tutor at S.D.A Nurses Training College, Kumasi. Currently pursuing a Masters Degree in Nursing at the University of the Western Cape, South Africa and conducting a research in the region entitle 'The role of midwives in the implementation of maternal death review in Ashanti Region, Ghana.' The data collection will take place in six hospitals in the region (KATH, Atonsu Agogo, two district hospitals with the highest maternal deaths and two district hospitals with the least maternal deaths).

This letter serves to introduce myself and seek your permission to proceed with the data collection in the health facilities. Please find attach the etnical clearance letter from the university research committee.

Hope my letter will be given the necessary attention.

Yours Faithfully,

Anita Dartey

Appendix 6: Introductory letter from the regional Health Directorate

In case of reply the number and the date of this letter should be quoted

My Ref.
Your Ref. No:

E-mail: rdhs.ar@ghsmail.org

GHANA HEALTH SERVICE
REG HEALTH DIRECTORATE
P. O. BOX 1908
KUMASI

07 DECEMBER, 2011

Tel: 22089/23651
Fax: 26219

MUN/DIST DIRECTORS OF HEALTH SERVICE
OFFINSO
AHAFO ANO NORTH
AHAFO ANO SOUTH
ATWIMA MPONUA

THE MEDICAL DIRECTOR
KUMASI SOUTH HOSPITAL

LETTER OF INTRODUCTION – MS ANITA DARTEY

I write to introduce the bearer of this letter who is collecting data on maternal deaths for her dissertation for a Masters Degree.

Please kindly assist her to collect data in your facility.

Thank you.

DR. AARON OFFEI
REG DIR OF HEALTH SERVICE

Appendix 7: Certificate of registration form Komfo Anokye Teaching Hospital

KOMFO ANOKYE TEACHING HOSPITAL

RESEARCH AND DEVELOPMENT UNIT (R & D)

CERTIFICATE OF REGISTRATION

REG. NO* RD/CR/262

This is to certify that

Prof/Dr/Mrs/Mr/Ms *Darsy F. Anita*

has registered his/her proposed study titled *The role of the Midwives in the implementation of maternal death review*

with the Research and Development Unit.

Date *6th December, 2011*

Name of issuing officer *Raymond Atiemo Danso (Adm. Mgr, R&D)*

Signature

*Must tally with registration number on the registration form