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KUMASI
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DEPARTMENT OF HEALTH POLICY, MANAGEMENT AND ECONOMICS**

PhD THESIS

**EVALUATION OF STRATEGIES FOR THE REDUCTION OF MATERNAL
MORTALITY IN THE SEKYERE EAST DISTRICT: A VIEW THROUGH
MICHAEL PATTON'S FOCUSED-UTILIZATION MODEL**

BY

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DEDICATION

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LIST OF ABBREVIATIONS/ACRONYMS

AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal Clinic
CIPP	Content Input Product and Process
CS	Caesarean Section
CHPS	Community-Based Health Planning and Services
CHRPE	Committee for Human Research Publications and Ethics
CEMOC	Comprehensive Emergency Obstetric Care
DHMT	District Health Management Team
EMOC	Emergency Obstetric Care
EmONC	Emergency maternal Obstetric & Neonatal Care
FGM	Female Genital Mutilation
F – UE	Focused – Utilisation Evaluation
GDHS	Ghana Demographic and Health Survey
GoG	Government of Ghana
GPRTU	Ghana Private Road Transport Union
GNI	Gross National Income
HIV	Human Immuno - deficiency Virus
ICPD	International Conference on Population & Development I
IMI	Integrated Management of Illness
IV	Intra vaneous
JHS	Junior High School
MBP	Mother Baby Package
MCH	Maternal and Child Health
MDGs	Millennium Development Goals
MPS	Making Pregnancy Safer Initiative
MNH	Maternal and Neonatal Health
MSM	Maternal Health & Safe motherhood Programme
NHIS	National Health Insurance Scheme
NTG	Nitro – glycerine
OS	Cervix opening

PHC	Primary Health Care
PMM	Prevention of Maternal Mortality
PMMN	Prevention of Maternal Mortality Network
SDG	Sustainable Development Goals
SHR	Sexual and Reproductive Health
SPSS	Statistical Package for the Social Sciences
SMI	Safe motherhood Initiative
TBA	Traditional Birth Attendant
UNDP	United Nations Development Programme
UNICEF	United Nations Children's Fund
UNFPA	United Nation's Population Fund
UN	United Nations
WIFA	Women in Fertility Age
WIRA	Women in Reproductive Age
WHO	World Health Organization
WHR	World Health Report



ABSTRACT

Strategies for preventing maternal deaths have been in existence for more than 20 years in almost all health facilities throughout the world. The study was an evaluation of the existing strategies for the reduction of maternal mortality within the broad framework of the Safe motherhood programme in the Sekyere East District. A focused-case descriptive study in the context of Patton Utilisation-focused evaluation model was employed to evaluate safe motherhood initiatives. This was done using structured questionnaire and observation checklist to observe pregnancy care, labour and delivery processes. The study involved women in reproductive age who developed complications during pregnancy, labour and delivery. In all 412 women who satisfied the inclusion criteria were selected, using simple random sampling while purposive sampling was used to select 22 health staff comprising midwives, orderlies, pharmacist, medical officers and health administrators from Effiduase Hospital. The study results showed that all the essential logistics and supplies needed to save mothers during pregnancy, labour and delivery were available and functioning. There were trained personnel at post. All strategies suggested by the World Health Organization assist mothers during complications in pregnancy were implemented, 76% of the clients attested that there was an enabling environment, 88% said it was not difficult to access the facility, 87% reported that there was service adequacy, while 72% asserted that strategies were acceptable. Strategies appeared effective and resulted in increased utilization which was evident in the low case fatality rate of 0.082%. The study found that the maternal mortality reduction strategies in the district were effectively implemented according to safe motherhood protocols. It is recommended that the necessary resources continue to be provided for the sustenance of the achieved results of the maternal mortality reduction strategies in the district.

TABLE OF CONTENTS

DECLARATION	ii
DEDICATION	iii
ACKNOWLEDGEMENT	iv
LIST OF ABBREVIATIONS/ACRONYMS	vi
ABSTRACT	viii
TABLE OF CONTENTS	ix
LIST OF TABLES	xiv
LIST OF FIGURES	xv
CHAPTER ONE	1
INTRODUCTION	1
1.1 Current state of knowledge on maternal mortality reduction.....	1
1.2 Problem Statement	5
1.3 Rationale/justification for the Study	7
1.4 Research Questions	8
1.5 Objectives.....	9
1.5.1 General Objective.....	9
1.5.2 Specific Objectives.....	9
CHPATER TWO	10
LITERATURE REVIEW	10
2.0 Introduction	10
2.1 Overview of maternal health service delivery globally	10
2.2 Theoretical Underpinnings	15
2.2.1 Positivism epistemology philosophical worldview	15
2.2.2 Michael Quinn Patton’s Focused-Utilisation Evaluation (F-UE) Model.....	15
2.2.3 Anderson and Newman’s Healthcare Utilization model.....	17
2.2.4 Conceptual Framework of the study	19
2.3 Enabling factors for the implementation of life saving maternal health services	22
2.4 Strategies and their effectiveness during pregnancy, labour and after delivery.....	36

2.4.1 Maternal health service delivery strategies	36
2.4.2 Effectiveness of maternal healthcare delivery strategies	43
2.5 Factors that influence the care women receive during pregnancy, labour and after delivery.....	47
2.5.1 National Commitment	47
2.5.2 Utilization of maternal health services.....	50
2.5.3a Accessibility and Affordability of maternal healthcare.....	55
2.5.3b. Affordability.....	60
2.5.4 The influence of health promotion and education.....	63
2.5.5 The role of poverty in maternal healthcare seeking	65
2.5.6 The influence of birth order and age of mother in healthcare utilisation	67
2.5.7 Culture/Religion and maternal healthcare utilization.....	68
2.5.8 Adequacy of maternal healthcare received and subsequent utilisation of care	69
2.5.9 Acceptability of maternal healthcare.....	73
2.5.10. Outcome of previous pregnancy, labour and delivery and subsequent use of care	74
2.6 Knowledge gaps	76
CHAPTER THREE	77
METHODOLOGY	77
3.0 Introduction	77
3.1 Study Design:	77
3.2 Study area	79
3.3 Study Population	81
3.4 Sampling.....	81
3.4.1 Sample Size Determination.....	81
3.4.2 Selection of participants	82
3.5 Study Variables and Measurement.....	83
3.6 Data Collection Techniques and Tools	84
3.7 Pre-Testing	86
3.8 Data handling	86

3.9 Data Analysis	86
3.10 Ethical Considerations.....	87
3.11 Limitations of the study.....	87
3.12 Assumptions	88
3.13 Delimitation.....	88
CHAPTER FOUR.....	89
RESULTS.....	89
4.0 Introduction	89
4.1 Demographic Characteristics of respondents	89
4.2 Enabling factors for the implementation of life saving maternal health services	92
4.2.1 Availability of Human Resource	93
4.2.2 Availability of Key Emergency Obstetric care drugs	94
4.2.3 Available Essential Labour Room Equipment for EmNOC	95
4.2.4 Laboratory equipment	96
4.2.5 Policy and Clinical Protocols or Guidelines	97
4.3 Strategies and their effectiveness during pregnancy, labour and after delivery.....	99
4.3.1 Mode of Delivery	99
4.3.2 Observation of the strategies and their effectiveness in maternal healthcare.....	100
4.3.3 Focused case studies.....	103
4.3.4 Reasons why some respondents do not attend hospital.....	106
4.4 Factors that influence maternal healthcare seeking.....	106
4.4.1 Availability of staff and facilities for maternal services	107
4.4.2 Accessibility of maternal healthcare	108
4.4.3 Affordability - Ability to pay for maternal healthcare	109
4.4.4 Acceptability and utilisation of maternal healthcare.....	110
4.4.5 Adequacy of maternal healthcare women receive.....	111
4.4.6 Maternal Health Outcome of previous experience.....	112
4.4.7 Complicated cases maternal deaths.....	114
4.4.8 Foetal Outcome	115

CHAPTER FIVE.....	118
DISCUSSIONS	118
5.0 Introduction	118
5.1 Background Information	118
5.2 Enabling factors for the implementation of life saving maternal health services	121
5.3 Strategies and their effectiveness during pregnancy, labour and after delivery.....	124
5.4 Factors That Influence Care Women Receive During Pregnancy, Labour and After Labour	126
5.4.1 National Commitment (funds release)	126
5.4.2 Utilization.....	127
5.4.3 Accessibility to maternal health care.....	128
5.4.4 Education, knowledge level and utilisation of maternal healthcare.....	129
5.4.5 Affordability of healthcare women receive.....	130
5.4.6 Culture/Religion and utilisation of maternal healthcare	131
5.4.7 Outcome of pregnancy, delivery and postnatal and utilisation of maternal healthcare	132
5.4.8 Adequacy of maternal healthcare received and subsequent utilisation of care.....	133
5.4.9 Acceptability of maternal healthcare.....	133
5.4.10 Limitations of the study.....	134
CHAPTER SIX.....	135
CONCLUSIONS AND RECOMMENDATIONS	135
6.0 Introduction	135
6.1 Conclusions	135
6.1.1 Background Characteristics.....	135
6.1.2 Enabling Factors.....	135
6.1.3 Strategies and their effectiveness	136
6.1.4 Factors that influence maternal healthcare utilisation.....	136
6.1.5 Concluding Remarks	137
6.2 Recommendations	137
6.2.1 Women in their reproductive age	137

6.2.2 Health Facilities.....	137
6.2.3 Household and Community.....	138
6.2.4 Areas for further research.....	138
REFERENCES	139
APPENDICES	154
Appendix I: STRCUTURED QUESTIONNAIRES.....	154
Appendix II: OBSERVATION CHECKLIST	176
Appendix III: MAP OF SEKEYERE EAST DISTRICT	178

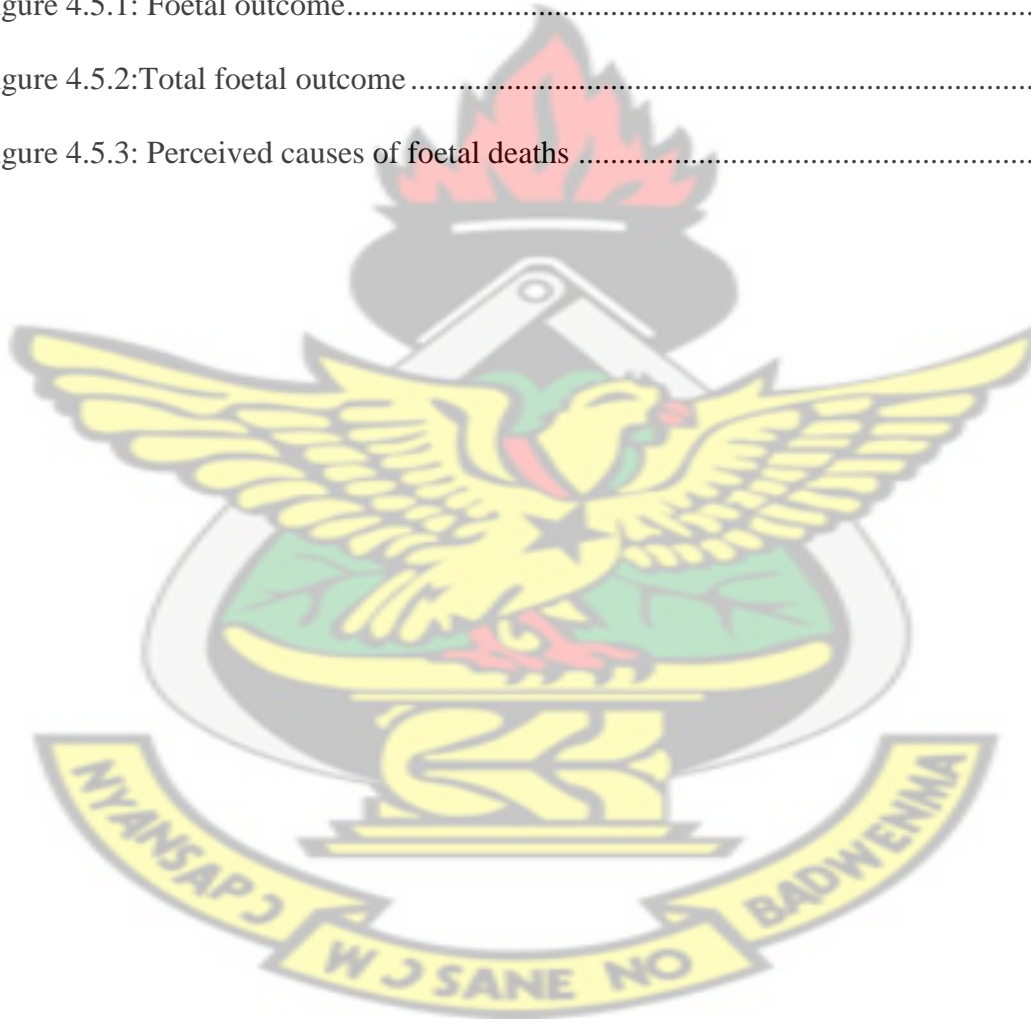


LIST OF TABLES

Table	Page
Table 1: Sample distribution	83
Table 4.1a: Distribution of Socio-demographic characteristics of clients and health care providers	90
Table 4.1b Distribution of Socio-demographic characteristics of Clients	91
Table 4.2.1 Availability of Human Resource:.....	93
Table 4.2.2 Availability of Key Emergency Obstetric care drugs	94
Table 4.2.3: Available Essential Labour Room Equipment for EmNOC	95
Table 4.2.4: Available Laboratory Equipment.....	96
Table 4.2.5: Observed availability of guidelines and source of funds	98
Table 4.3.1: Procedures in Delivery	99
Table 4.4.1: Distribution of factors that Influence maternal healthcare seeking behaviour	107
Table 4.4.2: Means of Transport and waiting time at facility	108
Table 4.4.3 : Ability to pay for transport – Registered members	109
Table 4.4.4: Conditions, mostly reported to health facilities	111
Table 4.4.5: Responses related to adequacy of maternal health services	112
Table 4.4.6: Normal and complicated deliveries from January to December 2012.....	113
Table 4.4.7a: Yearly report of Complicated cases of maternal deaths from 2008 to 2015.....	114
Table 4.4.7b: Complicated cases of maternal deaths from January December, 2012....	115

LIST OF FIGURES

Figure	Page
Figure 1: Michael Quinn Patton’s Focused-Utilization Evaluation (F-UE) Model (1978)	16
Figure 2: Anderson and Newman’s Healthcare Utilization model (1973).....	17
Figure 3 Conceptual Framework.....	20
Figure 4.5.1: Foetal outcome.....	116
Figure 4.5.2: Total foetal outcome	117
Figure 4.5.3: Perceived causes of foetal deaths	117



CHAPTER ONE

INTRODUCTION

1.1 Current state of knowledge on maternal mortality reduction

For centuries, the care for mothers was regarded as a domestic affair but now it has been transformed into a public health priority and has been given an international spotlight. Thus, in his report to the Millennium Summit in 2000, the then Secretary General of the United Nations, Kofi Annan, called on the Heads of State and Governments concerned at the summit to set out eight specific goals, Millennium Development Goals (MDG), each with its numerical targets and indicators for monitoring progress (UN Millennium Report, 2000).

The onus was on both the rich and poor countries to pool their resources together to help eradicate poverty and see to the health of women, mothers and children. The fifth goal (Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio and universal access to reproductive health.) is very important because the future health of society depends on the health of children and their mothers today. In effect, if women are not healthy, it will have effect on the foetus and this will go a long way to affect the health of children in their later life. It is, therefore, important that the health of women be considered a priority and as such should be given the needed recognition and attention especially during pregnancy, labour and delivery. Thus reducing maternal deaths as much as possible. The question to be answered then is what is maternal death? A maternal death is “the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration or site of the pregnancy, from any cause related to or

aggravated by the pregnancy or its management, but not from accidental causes.” (WHO, 2005).

An increasing number of countries have succeeded in improving the health and well-being of mothers. However, in recent years, some women still die during childbirth and others suffer disabilities as a result of pregnancy. Assessing the situation, the World Health Report (WHR) 2015, attributed the lack of progress in the health of women to poverty, inequality, war and civil unrest and also failure to translate life-saving knowledge to reality (WHO, 2015).

The United Nations Population Fund (UNFPA) in 2013 also attributed the lack of progress in maternal health to the factors similar to those stated in the WHR (2015). These include the lack of access of mother/woman) and the community to skilled care and health facility. The Sustainable Development Goals(SDGs) challenge the world to ensure the right of every woman to enjoy life of good health and equal opportunities in order to protect the lives of women and their expected children during every pregnancy, labour and delivery. The realities in respect of the SDGs are that the enjoyment of the highest attainable standard of health by women in reproductive age (WIRA) in most developing countries is far below expectation. For instance, while women in the developed countries consider the day a child is born as the happiest day in their lives the same cannot be said for women in developing countries because most of them would lose their lives together with the babies. In Africa 1 in 16 women risk dying in childbirth compared to 1 in 2000 in Europe and 1 in 3500 in North America (WHO/ UNICEF 2015).

Globally, an estimated 289,000 women die in pregnancy and childbirth annually, and ten to twenty million women become disabled every year out of these, a majority occur in developing countries (Louis *et al*, 2015). The gap between the wealthier countries and the poorer countries in respect of maternal mortality needs to be bridged.

The five (5) direct obstetric deaths are caused by complications that develop directly as a result of pregnancy, delivery or the postpartum period; and these are obstructed labour, ruptured uterus, postpartum haemorrhage, eclampsia, postpartum infections and complications of abortion, the indirect obstetric deaths are due to existing medical conditions that are made worse by delivery or pregnancy (Asamoah *et al*, 2011). Most of these complications increase with age and can lead to death during labour and delivery and soon after delivery (Rosenfield, 2015). According to Hussein *et al*, (2009), the more women become pregnant the more complications they develop. In addition, between 30% and 40% of pregnant women or over 54 million women in developing countries are estimated to experience pregnancy-related complications annually (Rosenfield, 2015). Hogan *et al*, (2010), established that these deaths are due to the following:

- Improper hygiene during and after delivery as well as lack of tetanus toxic immunization
- Non-improvement of referral and transportation facilities for emergencies
- Unsafe abortions
- Nutritional deficiencies
- Lack of postpartum and family planning services

Due to the fact that pregnancy is a period of potential risk, there is the need for women to go for ante-natal visits for early detection of risks and treatment to prevent the progression

of problem pregnancies to the level of emergency (Prata *et al*, 2010). When there is early ante-natal visit, women can be helped. During these visits, the women could be immunized against tetanus, given iron and fesoate tablets, as well as multiple micro-nutrient supplementations and, when available, malaria prophylaxis. Again, during these visits, early diagnosis and management of sexually transmitted and urinary tract infections can also be addressed or managed (Ogerinde, 2013).

These infections can be addressed early since there are medications which infected mothers could take to prevent their babies from contracting the disease. In developing countries where some women undergo Female Genital Mutilation (FGM), it is important that such women are identified and added to those who need emergency care to be helped by trained specialists (Prata *et al*, 2010).

During delivery, women need to be supervised. According to Mathias (2011), supervised delivery is a process by which a pregnant woman and the foetus are provided with care during pregnancy, labour, birth and post-partum and immediate newborn periods, whether the place of delivery is the home or a health facility..

This means that there should be trained professionals to assist as well as the provision of appropriate drugs and equipment that are functional in the health facility. This also calls for a professional delivery care with accountable and responsive personnel and a strategy to guarantee access to such professional services, such as Emergency Obstetric and Neonatal Care (EmONC) and Comprehensive Emergency Obstetric Care (CEMOC) (Gurtani *et al*, 2013).

The health of a mother also depends on the nutritional status during pregnancy. During this period, the woman eats for two (Shahid, Hosna, & Alam, 2012). This means her diet

during pregnancy should be nutritionally balanced to provide the required energy, growth and repair as well as protect the two (mother and foetus) against deficiency diseases (*ibid*, 2012).

Safe motherhood, one of the established initiatives for improving maternal health has made remarkable achievement since its inception. Its main objective is to save the lives of pregnant women and their children. Though the safe motherhood protocol clearly outlines the need for strategies to reduce maternal mortality, inequalities in access seem to be an issue to address. The time for ending these inequalities in basic human health is long overdue, and as such childbirth should be something safe to look forward to everywhere in the whole world and not just in the rich countries. The achievement of this condition will be a fulfillment of the promise made by World Leaders to stop women from dying from preventable causes in childbirth by 2015. Barely four decades ago, varying interventions such as safe motherhood have been piloted and implemented to reverse the staggering maternal health statistics (Hogan et., 2010).

1.2 Problem Statement

Maternal health remains a top public health priority yet progress towards the achievement of the SDGs is very slow. Maternal mortality and morbidity are unacceptably high. Globally it is 216 per 100,000 live births, and 319 per 100,000 in Africa (Ghana Statistical Service, 1988; 1993; 1998; 2003; 2008; 2014).

The World Health Organization estimates that 500,000 women in developing countries die every year from complications of pregnancy, abortion attempts and childbirth (WHO *et al*, 2014). According to the WHO (2015), an estimated 289,000 died during pregnancy and

childbirth in 2013 a decline of 45% from 1990, 33 women are still dying each hour. One hundred and ten women experience a complication in their effort to produce life. Every year approximately 500,000 women die from pregnancy-related causes, 98% of these deaths occur in developing countries (Say et al, 2014). This figure is much higher than tuberculosis, suicide, motor accidents or AIDS combined. The more women become pregnant the more complications they develop (Khlal & Ronsmans, 2009). In addition, between 30% and 40% of pregnant women or over 54 million women in developing countries are estimated to experience pregnancy-related complications annually due to abortion and non-use of contraceptives to prevent unwanted pregnancies (Bustreo *et al*, 2013). The WHO in 2014 again estimated that 15 million women per year develop long term disabilities from complications like obstetric fistula, severe anaemia, pelvic inflammatory diseases and reproductive tract infection as well as infertility. The above situations call for utmost attention to women during pregnancy, delivery and after delivery.

The above are all issues that the SDG 3 which seeks to ensure healthy lives and promotes well-being for all ages addresses. This certainly places women in the reproductive age at the centre and calls for strategies and actions to promote safe motherhood. For this to be achieved, mothers are to have access to quality care in order to address common causes of maternal mortality such as: haemorrhage, eclampsia, hypertension and so on. Provision of skilled care during delivery is important for the reduction of maternal mortality ratio. To be able to achieve the above, women should be provided with ante-natal care, supervised delivery, good nutrition during pregnancy, family planning and post-natal care

Since the inception of the Safe Motherhood Initiative in the world in 1987, Ghana decided to move with the world in that direction and therefore implemented it. Ghana started with the implementation of the programme in the health facilities. Effiduasi health facility was established in 1954 as a health centre. It operated in that capacity until 1996 when it was upgraded to the hospital status and thus implemented the Essential Obstetric Care in the district to save mothers during pregnancy, labour and delivery.

Since the implementation of the safe motherhood programme, no empirical evaluation has been conducted to track progress. Hence the need for an evaluation research, to examine utilization, effectiveness or improved performance at the facility, as women are still dying from pregnancy, labour and delivery. The maternal health statistics in Ghana and from the Sekyere East district suggest some improvement in maternal health.

In the current situation where technology is available to prevent maternal mortality since the past 20 years, (Hogan *et al*, (2010), it is unacceptable to allow preventable maternal mortality to continue. The study therefore sought to assess whether there is an improvement in the strategies to clients or there are challenges to be addressed and also whether providers have adequate and functional equipment to work with. Ultimately, the goal would be to achieve SDG 3 - ensuring healthy lives and promoting well-being for people of all ages.

1.3 Rationale/justification for the Study

Ghana is one of the first countries to implement the MDGs and though much has been said about Ghana achieving the MDGs, there is nothing on record to indicate how Sekyere East District fared in achieving these goals especially Goals 4 and 5 which seek to reduce by

three quarters, between 1990 and 2015. Since the implementation of the safemotherhood initiatives in Ghana, no evidence exist in the Sekyere East district to show how the district has performed in the achievement of the related outputs. With the launch of the SDGs, it is expected of Ghana and for that matter the Ghana Health Service in all the districts to achieve the SDG3. This evaluation would reveal the true state of strategies towards safe motherhood in the district, subsequently, the potential of the district to help achieve the SDG3.

Resources are scarce and therefore any amount invested in programmes must be closely monitored to achieve the intended outcome hence there is the need for evaluation (AbouZahr, 2011).

The outcome of the study can also be used to influence decisions on continuation, expansion or even suspension of some components of the safe motherhood strategies. The results can be used to solicit political and financial support from opinion leaders and philanthropists. Improved maternal health interventions can be used as basis to promote and increase the utilization of the maternal and child health services available in the health facilities in the Sekyere East district.

1.4 Research Questions

1. What are the enabling factors for the implementation of life-saving services in the Sekyere East District?
2. What maternal mortality reduction strategies are carried out during pregnancy, labour and after delivery, and how effective are they?

3. What factors prevent women from seeking maternal health care during pregnancy, labour and after delivery?

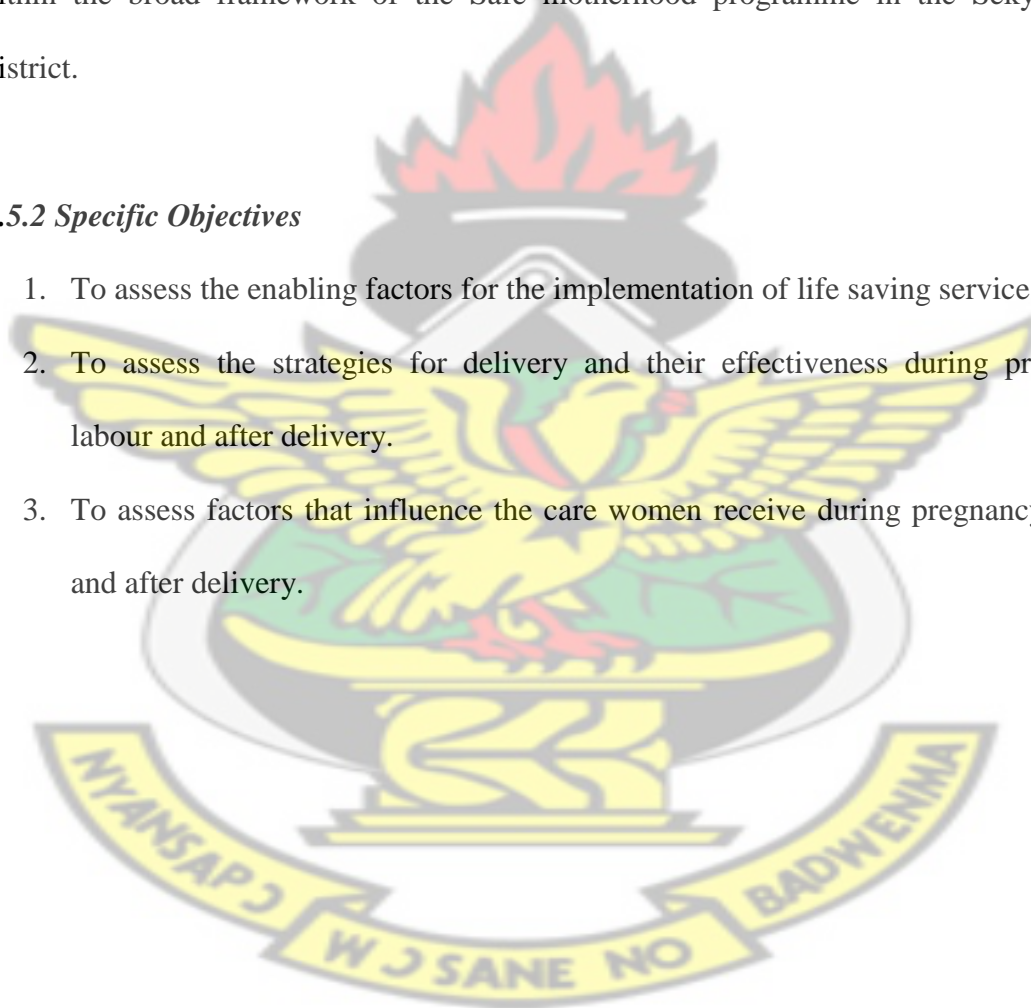
1.5 Objectives

1.5.1 General Objective

To evaluate the existing strategies carried out for the reduction of maternal mortality within the broad framework of the Safe motherhood programme in the Sekyere East District.

1.5.2 Specific Objectives

1. To assess the enabling factors for the implementation of life saving services.
2. To assess the strategies for delivery and their effectiveness during pregnancy, labour and after delivery.
3. To assess factors that influence the care women receive during pregnancy, labour and after delivery.



CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

Maternal health remains one of the public health and developmental issues over four decades. Yet progress towards achieving maternal health targets globally and specifically in low and middle-income countries has been very slow. To better understand the maternal health delivery challenges, a study was designed to evaluate progress in a rural district in Ghana. This chapter presents literature of previous work, overview of maternal healthcare service delivery, theoretical underpinnings and how the study was conceptualized in line with the study's objectives. As per the objectives, the chapter discusses the enabling factors, their effectiveness on maternal healthcare delivery strategies and the factors that influence the care women receive during pregnancy, labour and after delivery.

2.1 Overview of maternal health service delivery globally

At the UN Millennium Summit in 2000, the International Community agreed on some set goals, referred to as the MDGs for the world's population, to be met by 2015 (UNFPA, 2015).

One of these goals underlined the importance of improving health particularly that of mothers and their children. This calls for management of normal delivery/labour and ensuring efficient life – saving interventions for all women who develop complications during childbirth as a way of reducing maternal mortality. Some countries have achieved the MDG5 by 2015 and these are Eritrea, Equatorial Guinea and Rwanda. Ghana, Ethiopia and Senegal experienced slow decline in achieving the goal. Ghana was ranked 154 out of

179 countries in 2015 (Nimako *et al.*, 2016). Universal access to reproductive health services was added to MDG5 for those countries which were unable to achieve the target set. It is believed that Ghana's pace will make them reach the target in 2037 (*ibid*, 2016). In 2010, the accelerated framework was developed by United Nations Development Programme and other United Nations agencies to identify possible causes of the delay and find solutions to hasten progress. Ghana developed the Maternal Declaration Framework Country Action Plan in 2011 Gething, P. W *et al* (2012).. The purpose of the Millennium Development Goals Acceleration Framework (MAF) is to redouble efforts to overcome bottlenecks in implementing interventions that have proven to have worked in reducing the maternal mortality ratio in Ghana. The MAF focuses on improving maternal health at the level of both community and health care facilities through the use of evidence-based, feasible and cost-effective interventions in order to achieve accelerated reduction in maternal and newborn deaths Gething, P. W *et al* (2012)..

Three areas to be looked at included family planning, skilled development services, emergency obstetric and neonatal care, Nimako *et al.*, (2016). To reduce maternal mortality, the following conditions are of prime importance:

- Supervised Delivery
- Staffing
- Availability of Drugs
- Enabling Environment (*ibid*, 2016)

Seeing to the health of mothers and children is not a new issue. It has been a priority over decades now, but what is new is that it has been given a global focus. This paper assesses

the strategies that have been put in place so far towards the reduction of maternal mortality. Looking at the strategies in place, the most important question that needs to be answered is where are we as a country? Ghana has not been able to achieve the goal of reducing maternal mortality by two-thirds but several developments such as EmONC are in place to indicate some form of progress in the district (Hogan et al., 2010). EmONC has been implemented at the Effiduasi Hospital which seeks to reduce maternal death and disability to all women who may need it.

In all the initiatives such as family planning, antenatal care, labour, skilled attendants and neonatal and postnatal care, problems and complications such as Haemorrhage – ante-partum, intra-partum or post-partum, Prolonged/obstructed labour, Complications of abortion, Pre-eclampsia/eclampsia and Ectopic pregnancy and ruptured uterus, as well as early detection and treatment to prevent the progression of problem pregnancies to the level of an emergency must be addressed. The initiatives also admonish accredited health facilities to implement or perform some procedures which include surgical obstetrics, anesthesia, blood transfusion management of problem pregnancies, medical treatment, manual procedures, neonatal special care (WHO, 2009).

Specifically, under the safe motherhood otherwise known as maternal health initiatives, health facilities are to perform some eight (8) medical functions in order to save lives of women who experience obstetric complications,

- ❖ Administration of parenteral antibiotics
- ❖ Administration of oxytocic drugs
- ❖ Administration of anti-convulsant for pregnancy induced hypertension

- ❖ Manual removal of placenta
- ❖ Removal of retained products
- ❖ Assisted vaginal delivery
- ❖ Surgery (Caesarean Section)
- ❖ Safe blood transfusion

It is important to stress that staff need ample knowledge and skills related to these functions and within an enabling environment, which includes the type of health facilities, staff skills level, equipment or supplies, to perform the above mentioned functions. These functions can be performed when there are enough trained staff to provide skilled care for reducing maternal mortality rate and by so doing have a low case fatality rate (Yakoob *et al* ,2011). Again, the health facility should be well equipped with appropriate drugs and functional equipment. All these can address the third delay in the “Three Delay Model” (Cham & vangen 2005).

According to the UNFPA, it is only when the three delays are addressed that the safe motherhood programme can succeed. It is therefore imperative to refocus on the Three Delay Model and in some cases Four Delays to include decision to seek care (*ibid*).

Despite the availability of trained staff, equipment and drugs, the other question to be answered is why progress has been slow or nil. The difficulties experienced in reaching a health facility with life-saving interventions and factors influencing decision to seek care under emergency conditions are barriers that need to be addressed. Once/anytime a pregnant woman decides to seek care, other factors including transportation and easy accessibility to the facility are no longer hindrances (Vaah, 2010).

The villages do not have ambulance services and the routes to some of the villages are not motorable. In the whole of Sekyere East District, for instance, there is only one hospital which provides Emergency maternal Obstetric and neonatal Care (EmONC) (Amo-Agyei, n,d)

Even when there are health facilities which provide care, are easily accessible, some women may sometimes not use them. In some communities, women cannot make these decisions on their own, since culturally this role belongs to their husbands or senior family members. Some people in the communities feel that birth is a natural process and therefore do not see signs and symptoms of complications as a reason for concern (Amo-Agyei, n.d). Expectations of the society also hinder the use of health services. Some societies assert that a woman who delivers at home is recognized as brave and therefore when she delivers at the hospital, she is stigmatized Evans (2013). The way of life and beliefs of the people (culture) also have vast control on decision to seek care. This is attributed to the fact that it impinges on their privacy. The challenges are many which include urban-rural residence, poverty, maternal education and birth order. Success stories from other communities can be adopted and used in the district to ascertain drawbacks and how they can be addressed. All these can contribute to help achieve reduction in Maternal Mortality within appropriate enabling environment. This study broadly evaluates the safemotherhood initiative for achieving reduction in maternal mortality within the context of the Positivism epistemology philosophical worldview.

2.2 Theoretical Underpinnings

2.2.1 Positivism epistemology philosophical worldview

The study is grounded in the Positivism and constructivism epistemologies philosophical worldviews. Positivism states that all true knowledge is scientific and that all things are ultimately measurable, and that "processes are reducible to physiological, physical or chemical. It also posits that events and even "social processes are reducible to relationships between the known and the knower and actions of individuals, or that "biological organisms are reducible to physical systems. On the other hand constructivism is a theory of knowledge that argues that humans generate knowledge through interactions between their experiences and their ideas, in this instance, health staff and safe motherhood initiatives (Mingers, Mutch and Willcocks (2013). Following from the principles of the positivism and constructivism, the study was conducted within the framework of Michael Quinn Patton's Focused-Utilization Evaluation (F-UE) Model (2008; 2012).

2.2.2 Michael Quinn Patton's Focused-Utilisation Evaluation (F-UE) Model

The F-UE model, Fig 1, proposes that in assessing a programme in this context, maternal health initiatives such as safe motherhood, one has to take into account the input, process and output outcome levels. The model asserts that in evaluating a programme the focus should be on intended use by intended users (mothers, would-be mothers health providers and policy makers) as they are more likely to use evaluation findings if they understand and feel ownership of the evaluation process, and are more likely to understand and feel part or ownership if they have been actively involved. By actively involving primary intended users, the evaluator is preparing the ground work for use. The model prescribes a

total evaluation that is, making evaluation formative, summative, process and impact oriented.

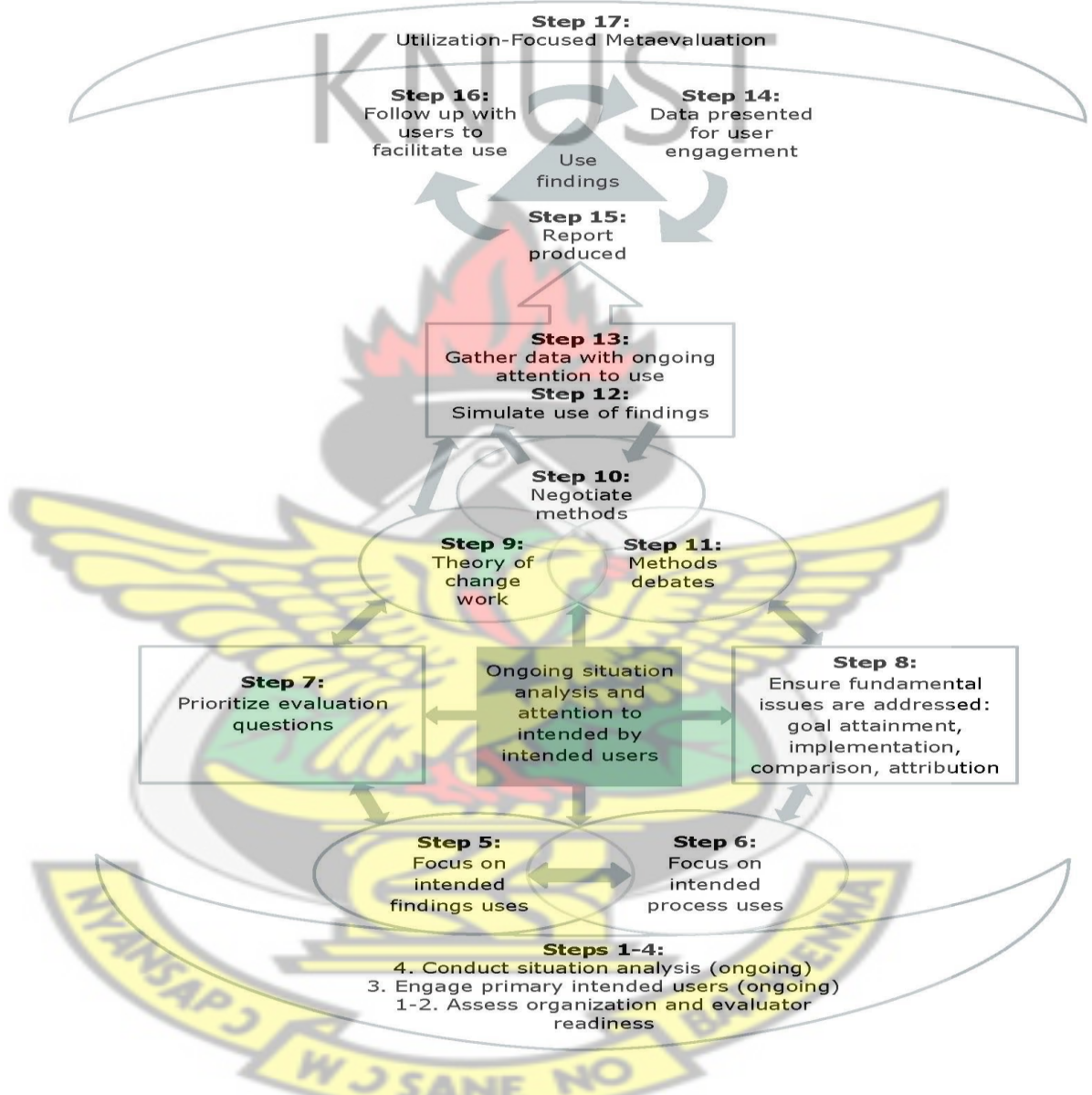


Figure 1: Michael Quinn Patton’s Focused-Utilization Evaluation (F-UE) Model (1978)

The model recommends that evaluators should work closely with primary intended users so that the latter’s needs will be met. This requires focusing on stakeholders’ key

questions, issues, and intended uses. It also requires involving intended users in the interpretation of the findings, and then disseminating those findings so that they can be used. The study recruited mothers and would-be-mothers present at Effiduase Hospital in the evaluation. It further added programme managers and providers of maternal healthcare and shared the preliminary findings with the study sites for their inputs. The F-UE further recognizes that certain resources and conditions (enabling environment) must be present to be able to provide a service while the evaluation process establishes the proportion of time that these resources may be available within the period under evaluation. Patton's F-UE model was selected among others because it lends itself with the tenets and objectives of the study.

2.2.3 Anderson and Newman's Healthcare Utilization model

To further understand the behavioural dynamics of intended users and the safe motherhood initiatives, the study adapted Andersen & Newman health utilization model (1973), Fig 3. This model proposes that proximal, enabling and system factors influence utilization of service in this case healthcare women receive at health facilities. The model was specifically developed to assess the use of biomedical health services which have been modified to examine other sectors outside the health facilities.



Figure 2: Anderson and Newman's Healthcare Utilization model (1973)

Prior to adapting Patton (1978) Anderson and Newman(1973) models, the Content, Input, Product and Process (CIPP) model of David Stufflebeam (2011), was assessed. This model proposes that evaluation should consider the content, input, product and process (CIPP) at the goals, plans, outcomes and actions levels. In this way, service availability can be measured and used to assess inputs for a specified programme. It is then important to examine the level of demand which will be determined by depending on the type of services provided or performance of the personnel at the facility. The next step is to determine the proportion of the target population who has access to the services provided which assesses the resource allocation, and finally utilization which among other things assesses the proportion of the target population who use the services.

Andersen's model has been modified in the International Collaborative Study on Health Care (Kroeger, 1983). In addition to the predisposing factors and enabling factors, this version includes Health Service System factors, referring to the structure of the health care system and its link to a country's social and political macro-system. This is a valuable extension as it puts emphasis on the link of health-seeking behaviour with structural levels within a macro-political and economic context. However, the model omits the 'need factors' which are central for understanding health-seeking behaviour (Weller *et al.*, 1997). A further variant of Andersen's model was elaborated by Kroeger (1983). Based on an extensive and well-elaborated literature revision, he proposed the following framework (see figure 2):

Both utilization and adequacy measure service inputs under effectiveness. By effectiveness the proportion of the target population that receives adequate services at the prescribed standard of practice provides a good measure of service outcome. It is important to note

that the symbiotic relationship among determinants affects all subsequent factors thereby reducing the effectiveness of the strategies being used. According to Patton, it is helpful to develop a utilization plan and to outline what the evaluator and primary users must do to result in the use of the evaluation findings. Ultimately, according to Patton, evaluation ought to be judged by its utility and actual use.

Basically, Patton wants evaluators to provide information to primary intended users, and not to even conduct an evaluation if it has little or no potential for utilization. He wants evaluators to facilitate use as much as possible. The main thrust of Patton's model is "focus on intended use by intended users". The F-UE model recommends that evaluators work closely with primary intended users so that their needs will be met while the Anderson and Newman model emphasizes how to improve service utilization, in this case safe motherhood initiatives to facilitate the realization of maternal health related SDGs. However, Patton's model was chosen over Anderson and Newman's model because the focus of the current study was more inclined to evaluation rather than utilization of safe motherhood initiative.

2.2.4 Conceptual Framework of the study

Figure 3 is the conceptual framework for the evaluation of strategies for the reduction of maternal mortality in the Sekyere East District using Michael Patton's Utilization-Focused and Anderson and Newman's Models. The maternal targets or goals were examined to raise, discuss and agree on questions for the evaluation at the formative stage. The enabling factors which also include process and inputs for the safe motherhood were assessed.

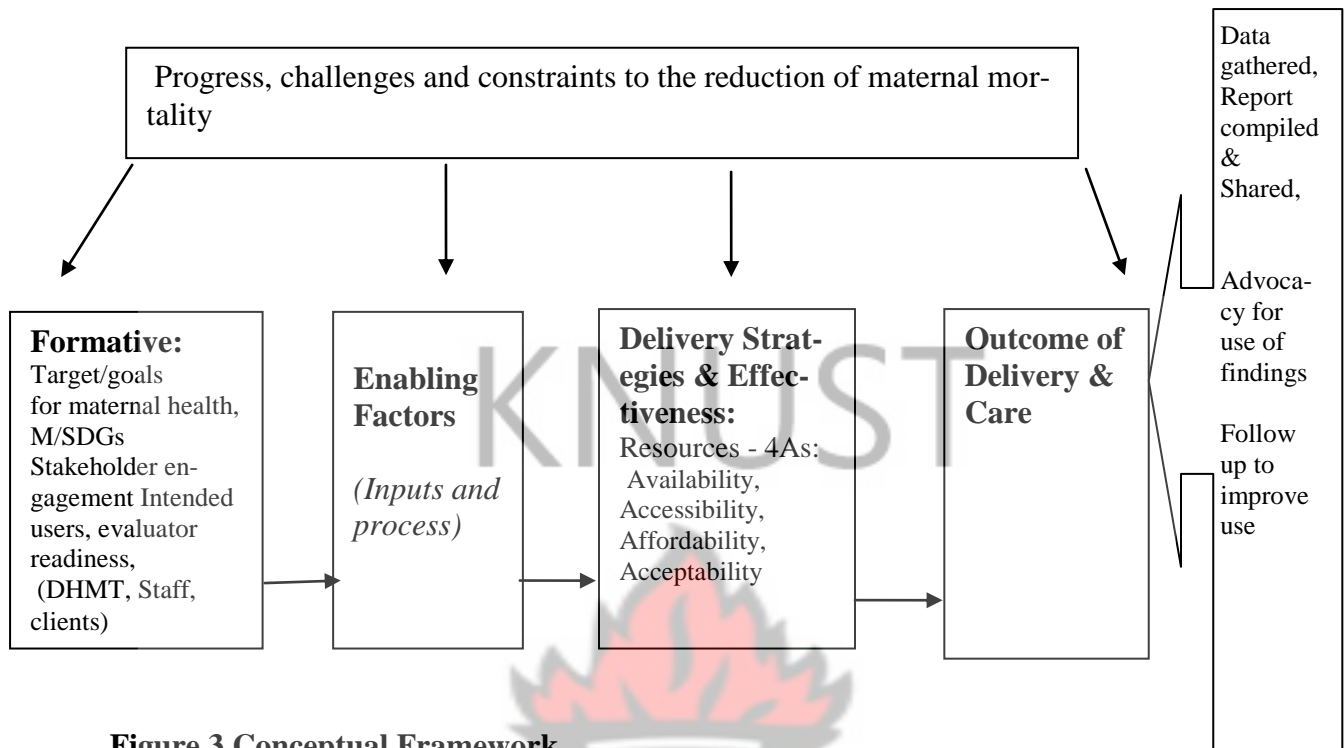


Figure 3 Conceptual Framework

Fig3: Clients' focused and system utilization evaluation model

Author's own construct aided by Michael Patton (1978) Andersen & Newman (1973) models

This conceptual framework Fig. 3, was curved specifically to deal with Life – Saving initiatives for women in Safe motherhood.

The delivery strategies and their effectiveness were examined in terms of the 4As; availability, accessibility, affordability and acceptability while the progress, challenges and constraints in the implementation of maternal health care initiatives were assessed. The factors that influence the support women receive during pregnancy, delivery and after delivery depend on the enabling factors, delivery strategies and available, accessible, affordable and acceptable resources.

Patton (1978) Anderson and Newman (1973) posit that the care that women receive is influenced by the enabling factors and this affect the outcome of delivery. The effectiveness of the strategies carried out during delivery also affects the outcome of the delivery and measures the quality of care. When resources are available, they should be accessible to women to be able to use, otherwise the outcome will not be pleasant. In the same way, services should be affordable for women to access. All these conditions cannot help women to achieve the desired outcome if the services are not acceptable by the women who are to use them (Anderson and Newman, 1973). It is important to note that the goals and target setting for maternal health outcomes, enabling factors, delivery strategies and outcomes of delivery and care to a large extent determine the progress, challenges and constraints to achieving the goals and targets. After gathering the data, it is compiled as a report and shared with stakeholders. For high evaluation utility, the findings should be used to support implementation of safe motherhood, which can be achieved through dissemination, advocacy and follow up.

This Conceptual framework focuses on District hospital and its catchment area. The study thus does not cover the different health systems level and their respective maternal health care but rather dwells on EMNOC and CEMOC services

Limitations of Patton, Anderson & Newman and Stufflebeam's Models.

Both Patton and Anderson's models were more of provider focussed and say little about Client's behaviour. In this case the input, process, output and outcome of programmes are well explained. However since the ultimate beneficiaries are clients, the Anderson and Newman's model was adapted to critically assess utilization of maternal health care in the

Sekyere East district. The three models were used in different context and for different purposes and thus elicited maternal health care in total as defined by the Safe motherhood initiative. This Conceptual framework Fig 3, is curved specifically to deal with life – saving initiatives for women, - Safe motherhood

2.3 Enabling factors for the implementation of life saving maternal health services

Overview

The health of women and their children is very important because the future of society depends on them. Mothers are said to be more than caregivers and homemakers because they transmit cultural history of families and communities as well as social norms and traditions. They influence early behaviour and establish lifestyle patterns that determine the future development of children (Evans, 2013). All these will be possible only when women become pregnant and are able to bring forth safely. It is, therefore, imperative that very serious attention is paid to women during the period of pregnancy and delivery.

Though natural, pregnancy may not be problem-free, as women go through great danger during this period. Pregnancy is not just a matter of carrying the foetus and delivering after gestation. This period is often a defining phase in the life of a woman. It can be a joyful and fulfilling moment for the mother who is considered as an individual and a member of the society. It can also be a period of misery and suffering when the pregnancy is unwanted or mistimed or when complications or adverse circumstances compromise it, causing ill-health or even death Blyden, (2010). This has been seen as a human right imperative which has enormous socio-economic implications and therefore a crucial international development priority. As far back as in 1987 in Nairobi, Kenya, the United Nations and in

1994 the International Conference on Population and Development (ICPD) advocated for Safe Motherhood throughout the world. Again in 1990, the World Summit for Children sponsored by the United Nations and organized by UNICEF, had one of its goals as reduction of maternal mortality by half between 1990 and 2000. This was re-emphasized by the ICPD held in Cairo, Egypt and in 1995 at the 4th World Conference on Women in Beijing, China. The United Nations and the ICPD in 2000 again sought to address the issue of pregnancy-related problems, as well as finding ways to help women during these periods (Haines and Cassels, 2004).

Definition and Components of Enabling Factors

According to Say *et al*, (2014), the enabling environment describes the situation that provides the trained health provider with the needed help to perform regular deliveries and make sure that women with complications receive timely emergency obstetric care. It basically means a well-functioning health system together with equipment, supplies, infrastructure and transport, electrical, water and communication systems, human resources, policies, supervision and management and clinical protocols and guidelines.

The “enabling environment” has sometimes been described as a well-functioning health system.

For the health system to function effectively, at least, the following must be in place:

- Regulatory frameworks and policies that not only protect the public, but also support the provision of effective maternal and newborn health care and allow skilled attendants to provide necessary care including, where required, essential life-saving skills.

- Standards and protocols that define what high-quality maternal and newborn health care is.
- Adequate human resources and management systems. This includes ensuring that there are:
 - sufficient skilled attendants with all the necessary skills (including where required skilled attendants with additional skills) deployed where they are needed
 - satisfactory pay scales and career advancement opportunities
 - continuing education opportunities to maintain and upgrade skills
 - supportive supervision mechanisms to ensure skilled attendants can continually assess their own practice (as a mechanism for improvement of quality of their work), and obtain assistance in dealing with complicated cases, where they feel they are reaching the boundaries of their competence
 - possibilities for skilled attendants to refer women and newborns directly to higher-level care, should it be needed
- Availability of all essential drugs, supplies, equipment and existence of mechanisms to replenish drugs and supplies and maintain equipment
- Availability of established procedures for maintaining facilities and infrastructure (e.g. buildings, vehicles, etc.)
- A working transport and referral system to ensure timely access to higher level of care, especially in an emergency
- Financial resources sufficient to ensure the provision of effective care, including transportation and emergency care

- Functioning mechanisms for quality improvement that ensure and evaluate the effectiveness of the system, including practitioners' as well as women's and community's satisfaction with the care provided
 - Functioning linkages between the health services and the community to sustain interactions, communications and partnerships with community members and their representatives; these linkages serve in particular to ensure the quality of services
- WHO (2015)

In assessing whether there has been any progress made, the big question that needs to be answered is, where are we? This is in relation to the health of women during pregnancy, that is, when there is ill-health, or complications during pregnancy, would it be safe to carry the foetus for nine months, deliver, and bring them up to take over from the present generation in future?

Due to this, an increasing number of countries have succeeded in improving the health and well being of mothers during pregnancy. Equatorial Guinea, Eritrea, and Rwanda are typical examples of such countries. This notwithstanding, some women are currently still dying during childbirth and others obtain disabilities in most developing countries (Hogan *et al*, 2010).

In assessing the situation, Agan and colleagues, (2010), attributed the lack of progress to failure to translate life-saving knowledge into reality during pregnancy, inadequate staff, non-availability of drugs, lack of supervision in pregnancy, during and after delivery. A lot of things can go wrong during pregnancy as it is a period of potential risk Hogan *et al*, (2010). In supporting Hogan *et al* (2010), Lydon and colleague (2010), assessed that some of the health problems that exist during pregnancy include complications of the pregnancy

itself; pre-eclampsia, haemorrhage due to placental abruption/placenta praevia, ectopic pregnancy and molar pregnancy. Other risks were listed as diseases that affect a pregnant woman and which may or may not be aggravated by the pregnancy such as malaria, HIV/AIDS, tuberculosis, malnutrition and negative effect of unhealthy lifestyle on the outcome of pregnancy – consumption of alcohol, tobacco and other drugs that can lead to the premature detachment of the placenta. All these can be classified as direct and indirect factors. The direct factors, which can also be referred to as Obstetric Conditions include haemorrhage, obstructed labour, infections, eclampsia and complications from unsafe abortions (Fawcus, 2008). The Indirect factors on the other hand are referred to as Non-Obstetric Conditions such as HIV/AIDS, malaria, tuberculosis, hepatitis, chronic diseases of the heart, lung and liver (Gorman, 2013).

However, as much as all these are not predictable or preventable, they can all be tackled in an environment where there is supervised delivery, trained staff, availability of drugs, and EmONC to reduce Maternal Mortality and Morbidity in developing countries. Progress can be achieved when there is supervised delivery. Supervised delivery cannot be assessed without looking at the number of ante-natal visits (average visit per client, client visit in delivery, post-natal visits and family planning). For supervised delivery, Campbell and Graham (2006) explained it as a process by which a pregnant woman and the foetus are provided with care during pregnancy, labour, birth and the post partum and immediate newborn periods, whether the place of delivery is the home, health centre or hospital. To be able to supervise deliveries, there should be professionals who have variety of integrated skills and competencies for which they are labeled as skilled attendants or “care

givers”. There is the need for these professionals to provide efficient care and therefore it is not enough to be partially skilled, that is, only being able to carry out so-called normal delivery. There is a school of thought that “any fool can catch a baby” as long as nothing goes wrong but as soon as a complication occurs, a situation which is difficult to predict, the professional then is needed, Anderson, *et al*(2007) .

Johnson, (2009) asserted that skilled care means when a trained health attendant works within an enabling environment or health system capable of providing care during pregnancy, that is, ante-natal care, normal deliveries, as well as appropriate emergency obstetric care for all women who develop complications or better still refer them when the need arises and also take care during post-natal care. These trained professionals must have a conducive environment that allows the personnel to operate efficiently all the areas within the health system. The environment should include adequate supplies, a framework which is well regulated and policies that support the system, efficient and effective system of sending messages, referral centre and means of conveying clients when complications set in. These, if well carried out will cause a reduction in Maternal Mortality. Hogan *et al*, (2010) asserted that in developing countries, the proportion of birth with skilled care increased significantly between 1990 and 2005 from 42% to 52%, representing a 24% increase in the developing world as a whole. Hogan *et al*, (2010) attributed that only a few benefitted from skilled attendants at delivery and this figure has remained unchanged between 1990 and 2003.

However, looking at the trends closely, there is an indication that the change in skilled delivery between 1990 and 2008 is insignificantly small in Sub-Saharan Africa where there

are large population and high maternal death rate. On the contrary, Cuba and Egypt had significant reduction in maternal mortality due to the offering of skilled care at hospital (Lydon *et al*, 2010).

In most health facilities in developing countries, some of the personnel described as trained, would not meet the accepted criteria internationally because they are only trained and not skilled and therefore cannot address certain complications.

Importance of Skilled Care in the Health Environment

Starrs (2015) indicated that when personnel are trained, it is implied but the acquisition of knowledge and competence with midwifery skills is not guaranteed. On the other hand, when a health provider is said to be truly skilled health provider, it does not only mean the person should have midwifery skills but also have the expertise in using those skills acquired through the use of drugs or blood transfusion.

Those who are skilled can carry out vital registration to record birth, death and the cause of death. They must have skills and abilities to perform all the core functions listed below.

- Communicate effectively cross-culturally in order to be able to provide holistic “women-centred” care
- To provide such care, skilled attendants will need to cultivate effective interpersonal communication skills and an attitude of respect for the woman’s right to be a full partner in the management of her pregnancy, childbirth and the postnatal period
- In pregnancy care, take a detailed history by asking relevant questions, assess individual needs, give appropriate advice and guidance, calculate the expected date

of delivery and perform specific screening tests as required, including voluntary counselling and testing for HIV

- Assist pregnant women and their families in making a plan for birth (i.e. where the delivery will take place, who will be present and, in case of a complication, how timely referral will be arranged)
- Educate women (and their families and others supporting pregnant women) in self-care during pregnancy, childbirth and the postnatal period
- Identify illnesses and conditions detrimental to health during pregnancy, perform first-line management (including performance of life-saving procedures when needed) and make arrangements for effective referral
- Perform vaginal examination, ensuring the woman and her own safety
- Identify the onset of labour
- Monitor maternal and foetal well-being during labour and provide supportive care.
- Record maternal and foetal well-being on a partograph and identify maternal and foetal distress and take appropriate action, including referral where required
- Manage a normal vaginal delivery
- Manage the third stage of labour actively
- Assess the newborn at birth and give immediate care
- Administer blood transfusions
- Identify any life threatening conditions in the newborn and take essential life-saving measures, including, where necessary, active resuscitation as a component of the management of birth asphyxia, and referral where appropriate.

This is supported by what Goldie *et al*, (2010) alluded to that skilled attendants should also be able to use partograph, record blood level, record when labour starts, loss of blood, the condition of the mother and baby at delivery and discharge. Partograph is a simple graph used for recording and monitoring the progress of labour and other essentials, which can provide an early, signal that the mother or client needs an emergency obstetric care. Haemoglobin count carried out, this refers to the number of oxygen transporting component of red cells, composed of haeme and globin, Anderson *et al*,(2007).

In the delivery process, the onset of labour was identified with the effacement and dilation of the cervix in centimeters or finger widths. It shows whether the cervix is fully dilated. Blood loss through bleeding can be pre-partum or post-partum, which can be addressed through the use of drugs or blood transfusion; this can lead to the patient being anaemic if not addressed. Immediately after delivery, the condition of mother as well as the baby should be critically monitored. The observation of the condition of mother and baby after delivery can help prevent deaths or disability to both and through this the one that needs intensive care can be referred and the other discharged to go home. Again, when staff is skilled or trained, they can carry out vital registration to record births, deaths as well as their causes. Any woman who wants to have babies wants to do so safely and therefore need access to a range of care including skilled care but this has been held back by stagnation in rural areas mainly in developing countries.

Professionalization of maternity care must be of absolute priority but there is a lag in filling the global gap of 330,000 midwives which would require new midwifery training schools, before taking time to reach poorer, rural countries (WHO, 2005). Lack of skilled

care in most developing countries, where there are large populations, causes increase in maternal deaths. According to Vink *et al*, (2013), there is an increase in maternal deaths in areas where population is large. Their deaths were attributed to wrong diagnosis and delays in starting treatment. In most cases the leading principal avoidable factor in 38% of deaths are related to 19% wrong treatment, 16% lack of blood transfusion, 18% deficient hospital care, 11%, wrong diagnosis (the leading principal avoidable factor in 38% of deaths), Prata *et al*,(2011).

It was again established that in the remotest areas, one midwife was in-charge of the entire rural health centre and was expected to be available for work, day and night, seven days a week. One (1) maternity out of ten (10) was closed down due to lack of staff (WHO, UNICEF *et al*, 2012). There was also severe shortage of midwives and that unskilled cleaners sometimes assist in deliveries. Anytime there is skilled care focus is on ante-natal, intra-partum skilled care, pre-natal newborn care. However better skilled care giving should be from pre-pregnancy, pregnancy, through birth and into the post-natal care. During the ante-natal period, the skilled care provider provides Vitamin A supplements to reduce maternal deaths by 45% (Prata *et al*, 2010).

Antenatal care is important, Prata *et al*, (2010) asserted that this helps to screen and detect early signs of rising factors for diseases, followed by timely interventions. This provides a platform for additional evidence based on interventions, including those for malaria and HIV/AIDS. They are given anti-malaria drugs or anti-retroviral drugs. HIV/ AIDS is a rapidly growing threat to the health of women during pregnancy and this is a common cause of maternal death (Khalid, 2006).

Post natal care is equally important, some women due to malnutrition become anemic others who bleed before and after delivery can also be anemic, fortunately there are drugs such as tranexamic acid to support women during this period. Cada , Levien, & Baker, (2010)

During antenatal visits, early diagnosis and management of sexually transmitted infections, tuberculosis and urinary tract infection can help in the management of complications (Gorman, 2013). This also helps to promote healthy lifestyles that seek to improve the health of women and their unborn children. Ante-natal care achieved relatively high coverage, 68% of African women attended ante-natal clinic at least once and an average of four visits (Ogerinde 2013) and Bergum et al 2009).

Hogan *et al*, (2010) indicated progress in Africa where the women attended ante-natal clinic. Again after delivery, both mother and baby need medical attention during this period. Physical, social and mental problems can emerge indicating a need for strategies that encompass both preventive and curative interventions. Post-natal care coverage is said to be lower than antenatal care, despite the fact that at least half of maternal deaths occur during this period (Lawn *et al*, (2014), Prata *et al*, 2010). In order to save pregnant women from dying, there should be both human and non-human resources at work.

The human resource should cover both technical and managerial sectors. These people are supposed to improve clinical and organizational performance to promote, protect and improve distribution, retention and recruitment. In Africa most health workers especially the skilled ones leave for greener pasture after their countries have spent huge sums of money to train them (Dovlo, 2003). This is not different in Ghana; it has been difficult to

retain highly skilled doctors and nurses. Due to this, most countries train medical assistants, physical assistants and other middle level health workers. Again internal migration of the population from the rural to urban areas has created new high-density areas that are poorly served and which has made access to health services in some remote rural areas to remain low Dovlo (2003). There should be supporting staff to help the skilled personnel.

As trained personnel are at work in a facility, there is the need for the trained personnel at work to prepare and make ready the facility for saving the lives of women, thus reducing the third delay of the 3-delay model that unfolds when a woman is not promptly diagnosed or treated at the facility. Once the services and personnel are in place, the first and second delays could be reduced (Scott-Pillai *et al*, 2013). Facilities should be well equipped and staffed 24 hours a day, seven days a week, so that the women who need them can have a way of getting them on time to prevent death or disability (Costello, 2006). In addition to the foregoing, there must be a means of communication and transportation between facilities that patients would be referred to.

Importance of Medication and Logistics in a Health Environment

Studies have shown that delays in the facility contribute to an increase in maternal mortality. Some of these delays were said to be caused by shortage or lack of essential supplies in the hospital pharmacy or private pharmacy. In Senegal's Kaolak Hospital, it was revealed that 80% of women who were referred during labour were unable to get blood transfusion due to the unavailability of blood bank, again 64% of those who needed anesthesia were unable to get it due to the absence of it, these led to loss of lives (Dumont

et al, 2013). Another study in India revealed that when equipment was lacking and technical competence to provide services was weak, maternal mortality ratio increased (Montgomery *et al*, 2014).

Lack of equipment in Illala district, Dares-Salaam revealed that the lack of equipment at the facility led to a lot of lives being lost Pembe *et al*, (2014). Provision of necessary equipment for labour room and the operating theatre helped in the restoration of life in Nigeria. Through this, caesarean section performed increased (Shiffman & Smith. 2007). Problems with equipment were further highlighted as the main cause of high mortality rate in Kenya (Ziraba *et al*, 2009).

There is ample evidence to suggest that appropriate enabling environment and skilled attendants have significant impact on maternal health outcomes. In Sierra Leone when an unused theatre was made functional with suitable modifications, the number of women seeking care at the facility increased from 31 in 2010 to 98 in 2015 and the case fatality rate among these women dropped from 32% to 5% (Lizo, 2013). A study in India also indicated that lack of an emergency operating theatre in addition to lack of blood bank led to a lot of women losing their lives when complications arose (Bates, 2014). In Haiti, the inability of the health providers to give blood transfusion due to unavailability of blood bank led to the death of 12 women with pregnancy-related complications (Hogan *et al*, 2010). It can be said that when surgical theatres are restored to working order and blood banks are also developed, most obstetric deaths can be prevented. When women are bleeding, a good communication with the blood bank ensures timely release of appropriate blood products (Simoes, 2014).

Saving women's lives during pregnancy does not solely depend on the presence of medically trained health professionals. There should be a conducive environment. This supports the fact that even when there are normal deliveries there should be preparedness to address any complication that might occur, if they do occur they should be detected early for immediate referrals to a higher level of care which is available and organized. In addition, there should be sufficient human resource, administrative systems that makes sure that opportunities for long term education and appropriate deployment and supervision of skilled attendants are carried out. It also encompasses the community in which the birth occurs, including local traditions and attitudes.

There should be a preferred progress from normal labour delivery care at the primary level to basic and comprehensive emergency obstetric care for women who develop obstetric complications and need higher levels of care. In addition to referral between facilities, referral from the community to a health facility is also important. It has been established that complications are not predictable or preventable; they can be treated through efficient emergency interventions such as EMOC which is defined as a professional medical and surgical care for pregnant women, with special focus on delivery and immediate post partum period (Grady *et al*, 2011).

For providing Basic Emergency Obstetric Care, the skilled attendant is expected to be well equipped to carry out the interventions at delivery:

- give antibiotic injection
- give oxytoxics injections to induce uterine contractions
- administer anticonvulsants injections

- manually remove entire placenta or parts
- use the vacuum extractor to assist in vaginal delivery
- Retained products being removed

(Karim *et al*, (2010) assert that removal of retained products from the uterus which is the sixth function, does not occur at the time of delivery. They explained that performing the basic emergency obstetric care can be carried out in a health centre that does not require an operating theatre. For comprehensive emergency obstetric care (CEMOC), the health attendant should be able to refer cases above his/her capabilities to a higher level of care in case the prescribed functions are required, and to manage the patient in transit. .

CEMOC includes the six (6) basic functions listed under the emergency care plus Caesarean Section (C.S.) in addition Safe blood transfusion is also administered and this requires an operating theatre and is usually performed in district hospitals.

2.4 Strategies and their effectiveness during pregnancy, labour and after delivery

2.4.1 Maternal health service delivery strategies

The Millennium Development Goals underscore the importance of sound strategies, an intervention to reduce maternal mortality and morbidity because pregnancy is the leading cause of death of most women in the reproductive ages. A lot of programmes have been put in place since the establishment of the World Health Organization in the late 1948. Some projects and programmes designed to help alleviate women's suffering and death in the course of pregnancy and childbirth include Primary Health Care (PHC), Maternal and Child Health (MCH) and Sexual and Reproductive Health (SRH), (Stanton *et al*, 2011).

These umbrella concepts provide the framework within which the national health safe-motherhood issues should be addressed.

Other specific umbrella concepts that are focused on ways of reducing maternal mortality are Safe Motherhood Initiative (SMI), Maternal Health and Safe Motherhood Programme (MSM), Mother Baby Package (MBP), Maternal and Neonatal Health (MNH), prevention of Maternal Mortality Network (PMMN) and Making Pregnancy Safer Initiative (MPS).

The new phase in the reduction of maternal mortality is the improvement of strategies or techniques. PHC concentrates on preventive care and management of infections and nutritional deficiencies among children and MCH also addresses family planning issues.

Techniques utilized include:

- Identifying haemorrhage and hypertension in labour provide first-line management (including life-saving skills in emergency obstetric care where needed) and, if required, make an effective referral
- Providing postnatal care to women and their newborn infants and post-abortion care where necessary
- Assisting women and their newborns in initiating and establishing exclusive breastfeeding, including, educating women and their families and other helpers in maintaining successful breastfeeding
- Identifying illnesses and conditions detrimental to the health of women and/or their newborns in the postnatal period, applying first-line management (including the performance of life-saving procedures when needed) and, if required, make arrangements for effective referral

- Supervising non-skilled attendants, including TBAs where they exist, in order to ensure that the care they provide during pregnancy, childbirth and early postpartum period is of sound quality and ensuring continuous training of non-skilled attendants
- Providing advice on postpartum family planning and birth spacing
- Educating women (and their families) on how to prevent sexually transmitted infections including HIV
- Collecting and reporting relevant data and collaborating in data analysis and case audits
- Promoting an ethos of shared responsibility and partnership with individual women and their family members/supporters and the community for the care of women and newborns throughout pregnancy, childbirth and the postnatal period

In addition, skilled attendants working at the primary care levels in remote areas with limited access to facilities should also be able to use vacuum extraction or forceps in vaginal deliveries, perform manual vacuum aspiration for the management of incomplete abortion and perform symphysiotomy for the management of obstructed labour, where access to safe surgery is not available. Advanced (optional) functions that may also need to be performed by selected skilled attendants working at a referral facility are to perform Caesarean Sections, manage complications during pregnancy and childbirth and administer blood transfusions. Health staff have been found to adhere to safe motherhood protocols for quality delivery. Staff are able to use all the techniques above in health facilities under programmes such as Basic Emergency Obstetric Care, Emergency Obstetric Care and

Essential Obstetric Care/Comprehensive Emergency Obstetric Care, which provides both minor (removal of placenta, episiotomy, and other non-surgical problems (Moran, 2012) and major (caesarean section, general anesthesia and manual vacuum aspiration) (Bhutta, Das and Rizvi, 2013).

To stabilize and manage majority of obstetrical complications, intravenous fluids and oxytocics are given after delivery to help in the contraction of the uterus and its blood vessels in case of post-partum haemorrhage; they also help with the removal of retained products. Magnesium sulphate and broad-spectrum antibiotics are administered to save the mother and the unborn child, (Sutherland , & Bishai , 2009).

According to Agan (2010), evacuation of incomplete miscarriages, retained products and resuscitation of neonates can help prevent death of the mother and the baby. A study in rural Ghana revealed that most women who delivered at home or en route to the health facility get retained products, others who also abort pregnancies on their own get retained products and are rushed later to the nearby facilities for the removal of the retained products (Graham *et al*, 2008). Due to improper and inadequate family planning services in Pakistan, a lot of young women practice unsafe abortion and have to be rushed to the hospital for the removal of retained products (Haddad, & Nour, 2009). The adolescents are also vulnerable to abortion. Even though they are aware of life-saving procedures, they decide not to use the facilities because of stigmatization. Sometimes Caesarean Section is performed when there is failure to progress in labour, a condition which may be caused by either the foetus or the mother (Raymond *et al*, 2012). Complications in delivery include

cephalopelvic disproportion, breech, shoulder or compound presentation, placenta previa, placenta abruptio, foetal distress, cord prolapsed and prolonged second stage of labour.

It has been suggested that progress in the reduction of maternal mortality can be gained through caesarean sections which help prevent progression to more serious complications. This can also help stabilize and manage the majority of obstetrical complications that arise and threaten the life of the mother and the unborn child (Lavender, 2012). It has been observed that the total number of deliveries and cases admitted with obstetric complications has increased in Ethiopia due to Caesarean Section performed in their hospitals which tend to save women from dying (Berhan, & Berhan, 2014). (Nisar & Sohoo,2010) also found in their study in India that caesarean sections are associated with high case fatality rate, suggesting better life-saving procedures were needed. Studies have proved that Caesarean Section is commonly performed in primigravida and grand multi para to save most women (WHO, 2015).

In Sierra Leone when hospitals increased the performance of caesarean section, a lot of lives were saved. The number of deaths among women treated dropped sharply (Leigh, 2009). A number of women seeking treatment for obstetric complications increased from 31 in 2003 to 157 in 2008, case fatality rate (the number of deaths among all women treated) dropped sharply, from nearly one out of every three in 2000 to one in every 200 in 2008 indicating that the hospitals capability of performing the procedures when necessary had increased substantially (Lizo, 2013).

During delivery some women see the cord coming ahead of the baby. When this happens the mothers are quickly prepared for the theatre because if the woman is not helped the

baby can suffocate to death due to lack of oxygen. Women who experience obstructed labour but delay or refuse to report for Caesarean Section get vesico-vaginal fistula, the most devastating of all maternal morbidity caused by obstructed labour. This condition results when a hole is created between the bladder and vagina or the rectum and vagina, leaving women leaking urine and/or faeces continually from the vagina. This occurs as a result of prolonged labour, and the condition is ignored, when this happens it causes a multifaceted nature of injury that many of these patients have to live with. Such physical injuries may include total urethral loss, stress, hydronephrosis, renal failure, retovaginal fistula formation, rectal atresia, and a host of others (Starr, 2014).

In addition to these physical injuries, women who have experienced obstructed labour often develop serious social problems including divorce, exclusion from religious activities, and separation from their families, thus worsening poverty, malnutrition and unendurable suffering (Champagne *et al*, (2010). The international medical community must publicize the problem of untreated obstructed labour in order to mobilize resources needed to treat women who have suffered its consequences and prevent this from happening to future generations because it is said to be one of the greatest unaddressed health care needs for women (Champagne *et al*, 2010). According to UNFPA (2004), about 50,000 to 100,000 women are affected by fistula each year.

Blood transfusion is another strategy that can help save lives. A study in Tanzania concludes that the difficulty in obtaining and providing blood transfusion was responsible for 35% of maternal deaths (Illah *et al.*, 2013). In Enugu Teaching Hospital, Nigeria, the survival rate for patients with ruptured uterus who were unable to have blood transfusion

was 57% compared with a survival rate of 76% for those who received blood transfusion (Bates, 2014).

Celebrelpelvic disproportion can be managed with prophylactic symphysiotomy which allows women to deliver at home instead of caesarean section.

Comprehensive Maternal Care model was instituted by Taylor and Berelson in 1971. This model seeks to train midwives in the use of aseptic procedures. Episiotomy is a strategy that can be administered to save lives. By this an incision is made in the perenium to facilitate delivery and if not well done can cause laceration. Both median and medio lateral episiotomy can be made. Forceps delivery and vacuum assisted deliveries can be used to save lives but these can cause bruises to the face and head as well as lacerations to the foetal head and birth cord. Vacuum extraction, even though can be used to save lives, can cause complications to the scalp and cephalohematoma.

General anesthesia can be used for normal delivery and Caesarean Section. Pudendal block or local anesthesia can be used when there is the need to repair lacerations. Epidural and spinal anesthesia can also be used during Caesarean Sections to save lives, however it has been observed that if anesthesia is not properly administered during surgical operations, death may result. When drugs are not able to bring down blood pressure, emergency C.S. is performed using epidural analgesia (Bucklin *et al*, 2005).

Giving uterotonic drugs within one minute of birth causes the uterus to contract. Pitocin and amniotomy are used to augment labour when there is inadequate contraction or prolonged phase of labour. Magnesium sulphate is used to manage eclampsia. Active management of the third stage of labour includes using oxytocic drugs, misoprostol,

clamping and cutting the umbilical cord, and applying controlled cord traction. This strategy involves the early clamping and cutting of the umbilical cord, applying controlled traction on the umbilical cord and counter-traction on the uterus through the abdomen (Prata *et al*, 2010). Hydralzine injection may be given in a bolus intravenous dose versus continuous drip to bring down the blood pressure (Prata and Bell, 2014) while Nitro-glycerine (NTG) is used for facilitating acute uterine in retained placenta (Bustreo *et al.*, 2014). In complications that call for surgery, a good communication with a blood bank ensures timely release of appropriate blood products (Barros *et al.*, 2012). When strategies are correctly followed, maternal mortality and morbidity are largely reduced.

2.4.2 Effectiveness of maternal healthcare delivery strategies

Effectiveness is the degree to which objectives are achieved and the extent to which targeted problems are solved. In the study, Effectiveness was defined by the target population who received adequate care at the facility and would want to use the facility when in need. Specifically, effectiveness is the combined effects of the enabling factors, strategies and factors influencing care in relation to the outcome. Thus, poor outcomes indicate ineffectiveness while good outcome connotes effectiveness. When life-saving services are available and clients have access to them, and they are adequate and of good quality, thus resulting to reduction in case fatality rates over the years, then it can be concluded that they are effective, other factors being equal. A maternal programme could be said to be effective when obstetric complications are promptly recognized, decisions are made about care, there is access to quality care, training, effective communication management, supervision, logistics and supplies, research, monitoring and evaluation are

combined properly. If all these are associated with maternal healthcare, patients or clients will least complain. But if they are dissatisfied with quality of care offered, there is non-availability of drugs and physicians, patients are not able to recover after treatment, they would not utilize the facility as the facility is described as ineffective (Bustreo *et al*, 2014).

Again when providers are seen to be too busy and overworked, effectiveness would be lacking. This would cause the delivery and birthing process to be dehumanized, and make people conclude that without access and availability, good quality alone cannot cause a degree in maternal mortality. The services are then said to be ineffective (Rosenfield *et al*, 2007).

In Ethiopia, the objective of reducing maternal deaths by promoting availability, access and utilization of life-saving services for women with complications of pregnancy and childbirth due to capacity building made it necessary for physicians and other service providers to be trained in life-saving strategies. Equipment, materials and supplies were also provided and this led to the reduction of maternal deaths thus showcasing effectiveness (Berhan and Berhan, 2014).

In addition to the process of reducing maternal mortality, there is the need to focus attention on both the skills of the clinicians to provide high quality care and the health facilities in which the care is provided (Steven *et al*, 2012). Improving the effectiveness in facilities can increase utilization by women with complicated pregnancies. However, utilization of emergency services appears to be influenced by other factors such as the ability to treat obstetric complications thus being effective. Graham *et al*, (2008)

emphasized availability of equipment, competent staff, emergency transport system, referral mechanisms and enhanced communication systems as main pillars of effectiveness as monitoring labour by partograph, competent and committed personnel and provision of good quality emergency obstetric care.

Again, effectiveness can be achieved when there is ability to provide inter-personal counselling. Studies have revealed that negative client-providers interaction has been acknowledged in focus group research in several countries as a major obstacle between the community and health system (Hogan *et al*, 2010). This revelation then assisted providers in developing skills that enabled them to relate with clients in such a way that when information on a complications, importance of seek care or where to seek care is given, the clients were able to relate the information and therefore made informed decisions. In the provision of life – saving strategies, such practices show how effective a facility is.

The process of expanding roles of non-physicians in life-saving facilities is a way of making the facility effective. This can be done when there are inadequate doctors. In rural northwestern Zaire, some selected obstetric nurses at Kawara and Wasola were trained to perform emergency surgery (Hogan, *et al*, 2010). In Karawa, the trained nurse-surgeons performed 278 of 321 caesarean sections during the period of 18 months with only two deaths (fatality rate is 1%). In Wasola, the nurse-surgeons did 32 caesarean sections during the period of 13 months with no death. The skilled attendant in Karawa and Wasola performed a total of 16 laparotomies for ruptured uteri with only two fatalities. Due to the effectiveness of the services provided, all 16 women survived.

In Ghana, life-saving skills training programme was organized for some skilled attendants. In 1990, nearly 400 midwives underwent two weeks competency-based training course that provided the midwives with expanded skills for preventing and managing some obstetric emergencies and complications (Nimako, *et al.*, 2015). They reported positive results as well as better management of postpartum haemorrhage, prolonged labour, toxemia and infections thus indicating effectiveness. There is the need for management to continue to support the staff to give out their best. This is because the management team is supposed to provide a conducive environment (Mathais, 2011). A survey from an intervention programme at a regional programme in Kigome in Tanzania focused on improving hospital management to provide a conducive working environment showed a reduction in maternal mortality from 933 to 186 per 100,000 live births during the period of 1984 to 1991 (Pembe *et al.*, 2011).

The intervention focused on clarifying responsibilities of skilled health attendants, regular monthly meetings with increased feedback, regular maintenance of equipment using local materials and resources, identification of norms for patient management, referral and development of a detailed plan for the continuous supply of essential drugs including the initiation of a sub-store in the maternity ward. The improved availability of essential drugs due to the buffer effects of the sub-store, the availability and functioning of basic working tools due to regular maintenance schedules using local materials and resources, increased on-the-job training programmes, identification of responsibilities and increased feedback, and information sharing through regular meetings all resulted in significant improvement

in the skills and number of staff in the life-saving facility and therefore demonstrate a good sign of increase in effectiveness (Anderson, 2007).

2.5 Factors that influence the care women receive during pregnancy, labour and after delivery.

The tenth anniversary of the International Conference on Population and Development offered opportunity to review the progress made in reducing maternal mortality. Despite the numerous efforts made to improve the situation, there is little progress and in some countries, backsliding (UNFPA, 1994). Although remarkable progress has occurred in some countries, some women, especially in Africa and Asia, continue to die in childbirth. The stalled progress has many main causes: it is attributed to lack of national commitment in some countries; economic problems and status of women – educational, cultural, economic; the limited authority of women to choose the obstetric care they want; socio-cultural and religious beliefs and lack of institutional facilities and management staff are the causes (Shiffman and Okonofuo, 2006)

2.5.1 National Commitment

National commitment is lacking in most countries and very significant in most developing countries. The reason for this is the fact that most governments are unable to allocate funds towards the health sector due to unsound economic growth or lack of political will (Shiffman and Okonofuo, 2006). Provision of donor aid has received so much criticism. One such criticism is Honcock's polemic, who asserts that, the largest amount of the aid gets into the pockets of foreign experts and their aid agency staff and the rest goes to

dishonest commission agents and their corrupt managers thus leaving very little for the purpose for which the loan was granted (Qureshi, 2015). Sometimes the little resource donated by the international bodies is used for training personnel rather than on measuring their consequences. A typical example is the training of traditional birth attendants with scarce resources without adequate evaluation of their competencies in detecting complications for referrals. Again, the availability of skilled attendants at delivery is now being promoted as a strategy without considering the assessment or evaluation. All these led to improper decision making which in turn made intervention donors or funders lose faith and reduce or stop funding. Hancock therefore called for the closing of the financial gap which led to the International Conference on Financing for Development meeting held in Monterrey, Mexico in March 2002. This meeting agreed that poorer countries should strive for good governance, transparency and improved implementation and the rich countries in turn agreed to assist when they are able to achieve their 0.7% GNT target (Sachus, 2004).

Most governments in developing countries and particularly in Africa are not able to provide the enabling environment for provision of quality maternal healthcare. In Cameroun for instance, due to the lack of commitment on the part of the government, out of the total number of women who needed assistance, only a few were able to get the needed care during emergency. The government was not able to provide the needed materials and human resources in the form of personnel, equipment and supplies. It has been established that auxiliary staff performed interventions beyond their skills due to lack of personnel and inadequate funding, (Tebeu *et al.*, 2007). Similarly, in Cote d'Ivoire, the

government was unable to provide ambulance and other means of transport. Some facilities do not have the needed equipment for blood transfusion and there are no functional operating theatres. Some facilities also lack proper storage facilities for most drugs as well as structures for work (Streamer, 2013).

Looking at the population in Mauritania, there should have been twenty (20) well distributed Emergency Obstetric Care facilities instead of the eight (8) presently operational. Four (4) out of the eight (8) some are located at places where women have difficulties getting there during emergencies. To add injury to the already bad sores, the facilities are not well maintained (Hogan *et al*, 2010).

In Niger, lack of sufficient budgetary allocation has created difficulties for the skilled staff to operate as expected. There was lack of personnel due to lack of funds to train them as well as lack of supplies and equipment for smooth running of facilities. It is established that the proportion of gynaecologists to women of reproductive age is far below expectations, (Garba *et al*, 2011). No progress therefore is being achieved due to armed conflicts and inadequate allocation of funds to address the problem. Nigeria has been able to put maternal health on the political priority list even though Nigeria and India contribute to a third of all maternal deaths worldwide (Shiffman *et al*, 2007). The breakthrough has been necessitated by interest from the federal government and assistance from political campaigners by increasing the health budget.

2.5.2 Utilization of maternal health services

Knowledge of Services

When women are satisfied that there are life-saving services and that the procedures are successfully performed they are willing to use them when the need arises. All pregnant women need access to facilities which provide emergency obstetric care due to the fact that complications come unannounced. An international survey in 43 countries of Sub-Saharan Africa showed that in half of these countries, 50% to 70% of pregnant women use medical services for delivery compared with 50% in the other half. Latin America and Caribbean countries have higher coverage rates with a range of 50% - 75% (Hogan *et al*, 2010). For postpartum services, data on Africa showed a coverage rate of 40% in the urban areas (Al-Ziriq *et al.*, 2008).

Therefore, when there is improvement in the level of care, women will utilize the facility. Findings in a study at Juaben Hospital, Ghana, showed that women with obstetric complications would utilize the facility if they believe that the facility is of high quality (Vaah, 2010). According to (Stanton *et al.*, 2011), women who have normal deliveries do not need CEMOC but rather those with pregnancy-related complications must utilize the facility to prevent death and disability.

Types of Complications in Pregnancy

The type of complications for which a pregnant woman would utilize a CEMOC facility include obstructed labour, postpartum haemorrhage, antepartum haemorrhage, eclampsia, sepsis, shock (related to abortion), bleeding (in early pregnancy), ruptured uterus and ectopic pregnancy. On and off pain experienced by a pregnant woman in her first trimester

can be threatened abortion. Vaginal bleeding with clots means there is incomplete abortion or molar pregnancy. Abruptio placenta occurs when placenta separates from the wall of the uterus before the baby is born and this can cause bleeding and severe pain. This situation is normally seen in mothers with eclampsia and the baby is usually stillborn.

Knowledge of Danger Signs

Knowledge and ample appreciation of danger signs in pregnancy can precipitate utilization of maternal health service. For instance, one's knowledge that placenta previa occurs when the placenta is attached to the wrong site of the uterus and lies below the baby and causes bleeding, but normally no pain occurs in women who have passed twenty (20) weeks or five (5) months in their pregnancy. The baby may be premature and would need special care, and as such a woman would have to utilize a facility that will trigger early action. Knowing that septic abortion is characterized by fever and foul smelling vagina discharge women with this condition could use the facility for assistance. All these need a specialist's attention and therefore those affected may make use of the facilities.

It has been established that pregnant women who have BP of 140/90 or higher, convulsions, pitting oedema and/or generalized oedema may be experiencing eclampsia. On the other hand, a woman with BP below 140/90 with convulsion may have a condition that may be due to epilepsy or cerebral malaria, meningitis or schistosomiasis and need to use a health facility or maternal healthcare immediately (Kuklina *et al*, 2009). Those with BP higher than 160/100 and have epigastric pain, pitting and/or generalized oedema may have severe pre-eclampsia while those with BP higher than 140/90 but not more than 160/100 and have

pitting and generalized oedema may be experiencing mild pre-eclampsia (Olefjite *et al.*, 2013). All these cases need facilities that provide special strategies and their availability to motivate other women to utilize the facilities.

Some women utilize a facility when they develop a cervical pregnancy. This can develop in three different ways. The gestational sac can grow up to external os (mouth of the cervix) and interruption may stimulate an abnormal menstruation. Theoretically, the gestational sac would reach the uterine cavity with a normal evolution of the pregnancy, even if the implantation of the placenta would be on internal uterine os. Lastly the ectopic gestational sac develops in cervical channel with an “obstetrical catastrophe” (Marion & Meeks, 2012). Some women report with painless vaginal bleeding. It is also reported that most women with greater anxiety and stress due to fear of childbirth during the third trimester of pregnancy, report at the hospital for emergency caesarean section (Lavender *et al.*, 2012). Some women opt for elective caesarean sections when they are informed of their conditions. Most women who are educated and are well informed on complications with their pregnancies decide and agree to have caesarean sections to save their babies and themselves. The use of gynaecological ultrasounds draws a lot of women to hospitals because most of them are able to depict the state of the foetus in the uterus (Savage, 2007). A lot of pregnant women who have history of previous caesarean section make sure they utilize the facility for special care in their subsequent pregnancies or deliveries. Women who decide to deliver in the house are among the number of pregnant mothers who utilize the health facilities that provide life-saving interventions. Most often they are rushed to the hospital for emergency care when complications crop-up (*ibid*, 2007).

In most developing countries, women are discharged from the health centre or hospital six hours after delivery, but a lot of things can go wrong in the first few days after delivery. The problems that can arise include the mother bleeding slowly to death. She could have high fever indicating an infection. Lactation might not be well established and the baby can become dehydrated thus causing harm to the mother and the baby. These problems call for women to be detained for a longer period of time (Michal, *et al*, 2011). It has been found in Sierra Leone that the number of women who utilize facility for obstetric complications increased substantially due to increased number of days they were kept at the facility after delivery which in effect reduced maternal and foetal death (Blyden, 2010).

Certain diseases in women which are precipitated by pregnancy require medical intervention. An example is thrombotic microangiopathy which is a rare disease that can be induced and precipitated by pregnancy. This is associated with high maternal and foetal morbidity and mortality. It is said to result from abnormal travascular platelet aggregation that leads to transient ischemia in various organs including the central nervous system, kidney and placenta. This would cause women to use a facility which provides effective strategies (Stanton *et al*, 2011).

A number of women utilize health facilities due to complications that occur prior to delivery, during delivery and after delivery (Maclean, 2010). The three such complications dealt with are one prior to delivery, prolapsed of the umbilical cord, one during delivery, shoulder dystocia and one after delivery, acute inversion of the uterus. Some pregnant women also have the unpleasant problem with the placenta. Placenta accrete, increta or

precerta are rare but potentially lethal obstetric emergencies thus increasing the probability of women using life saving strategies (Srivastava *et al*, 2014).

Pregnancies in women with haemoglobinopathy which is associated with risk of maternal and perinatal morbidities need special interventions. Multiple pregnancies are potentially hazardous than single pregnancies. Such cases prompted women to seek care at northern part of Nigeria (Guerrier *et al.*, 2013). Most pregnant women use hospitals for life-saving services when they develop uterine atoni inversion and rapture of the uterine (Srivastava *et al*, 2014). These are potentially fatal events that can occur in pregnancies and are obstetric emergencies that require immediate attention. Therefore, there is the need for women to utilize the facility for proper assistance.

Nabham (2008) and Biswas *et al*, (2013), have shown that some women report with premature labour and others also report with breech presentation. All such problems need life-saving interventions. Most teenagers who have been coerced into early marriages are among the host of women who need these life-saving strategies due to the complications they develop as a result of immaturity of the reproductive system and lack of experience.

Desperate circumstances of refugees and internally displaced persons fleeing conflict areas place such women at exceptional risk of pregnancy-related death, illness and disability. This is because whatever health services and resources displaced women had before their flights, may no longer be available to them even though such women need life-saving strategies. In refugee camps, when complications of pregnancy occur, for example, camp medical provisions are likely to prove inadequate and when hospitals are not far they are referred for prompt emergency care, (Hynes *et al.*, 2009).

It has been realized that some women, due to indecision, delay in seeking care. Studies have also shown that women cannot seek medical care because the decision belongs to their husbands or senior members of the family (Gwina, 2013). As a result of the increasing awareness about maternal issues in the communities, a lot of women with complications during pregnancy now utilize health facilities. There is increased utilization of health facility when it becomes “women friendly”, that is, open to families, irrespective of different birthing methods and providing adequate privacy to clients (WHO, UNICEF & UNFPA, 2012).

2.5.3a Accessibility and Affordability of maternal healthcare

Accessibility in terms of geographical and financial aspects are important in health service delivery.

Research has proved that the distance between a woman’s residential place and health facility is a barrier to women seeking care. Travel distance, lack of transportation and inaccessible geographical situations are frequently quoted as reasons. This becomes eminent when there are bad roads and lack of transportation leading to delays in reaching facilities, thus resulting in deaths (Scott-Pillai *et al*, 2013). When roads are bad, patients take a long time before getting to a facility or because of the long distance, decide not to seek care.

In Oyo State, Nigeria, it was established that women decided not to seek care due to distance from home to facility (Guerrier *et al.*, 2013). This was evident when women get to facility in worse conditions. However, road improvement alone cannot cause women to seek care but in addition financial cost of treatment (Ronsmans and Graham (2006).

Inability to provide quality care and proximity to, conveniently located source of healthcare and quality of care provided are barriers to utilization of maternal health services (Simoes and Almeida, 2014; Gulland 2014).

Women with pregnancy-related complications would have access to care only when the services are available, adequate, there is information about it; they accept it, can afford to use it and can easily reach it. On the other hand, geographical and financial inaccessibility that manifest themselves in the poor, scarcity and irregularity of means of transportation and relatively high fares would prevent women from seeking care (Simoes and Almeida, 2014).

Women quite often suffer due to delays in getting access to health facilities. These delays start in the woman's home due to ignorance when she and other people around her fail to recognize that she is suffering an obstetric complication that requires medical attention. This ignorance is brought about by clients not having access to information about strategies and what they seek to address (Raine, 2009).

The second delay takes place in the process of reaching appropriate source of health care. A case in point is what happened in Zambia. One of the village elders had a beautiful daughter who developed complications during labour. During childbirth, she had labour pains for almost a day, but no one was worried because they thought it was normal. (Ignorance at its best!). After a few more hours they brought in the village doctor but he could not help her. Finally, the father decided to take her to the hospital. They had a hard time finding a vehicle. After a long journey, they finally arrived at the hospital but she had a still-born baby. She had a ruptured uterus and she had to have a hysterectomy. Her

husband then took a second wife and she has become a social outcast because she could not have children again (Ng'anjo-Phiri *et al.*, 2014).

A study by Hynes *et al.*,(2012) on refugees maternal mortality in 10 countries showed that two refugee women who preferred to deliver at home due to the distance from their camp to the facility under the supervision of traditional birth attendants ended up losing their babies because of prolonged labour and poor management of the second stage of labour. There is high prevalence of fistula among young women because of the delay in seeking care. The tragically high prevalence of fistula among women would be drastically reduced by access to life-saving interventions (Hynes *et al.*, 2012).

The problem or issue with accessibility is not a simple one because at times even where facilities with capabilities for life-saving interventions are easy to get, but most women may not have access to them. In India, a study revealed that delay in taking the decision to seek care contributed to deaths in rural and urban areas where life-saving interventions are not far from them (Montgomery *et al.*, 2014). This suggests that proximity on its own may not result in people accessing a health facility.

The way women are perceived in the immediate and extended family generally influences the decision to seek care. Other factors influencing decision-making under emergency conditions include supposed seriousness of the complication; this is because pregnancy and delivery are regarded as natural processes. Most often signs and symptoms of complications are given little or no attention. In such a case, even if the facility is available women who are supposed to benefit from it cannot access it (Steven *et al.* 2012).

Societal expectations interfere with access to health services in emergency conditions. Delivery at home remains one way for women to attain high societal status. It is said that a woman who goes to the health facility during labour and delivery is said to have failed in her role as a strong woman and is stigmatized. This prevents some women from accessing the facility. The way of life and people's beliefs, influence greatly the decision to seek care and therefore affect maternal mortality (Evans, 2013). A lot of women in Africa are restricted in their access to health facilities due to lack of privacy, according to their culture a male relative must accompany them while travelling. This is true also with Saudi Arabian women, without their male relatives, they cannot access health facilities. This variable cannot be said to have been fully dilated on without mentioning cost. This is because money is needed to pay transport bills, drugs and services received. Money to pay bills would prevent a lot of women from using the facilities (Steven *et al*, 2012).

Transportation as an access barrier has been elaborated in Tanzania where researchers identified several transportation related reasons for delays in receiving assistance (Pembe *et al.*, 2011). A lot of women face economic barriers in accessing life-saving interventions in Africa since most of them are not working and others need to seek approval and assistance from husbands. This therefore indicates that when husbands refuse to give financial assistance as well as allow their wives to make decisions when the need arises, then such women cannot have access to a health facility. The saying that nothing is free holds when it comes to accessing health services. For example, if the health facility provides free services, money will be needed to commute between the home and the health facility during pregnancy. There are hidden costs even when free services are provided

and efforts to overcome these economic barriers include Health Insurance Schemes (Morgan & Eastwood, 2014).

It was shown that in Pakistan despite the elaborate network of over 5000 basic health units, rural health centres, supported by adequate transport facilities, primary health care activities have not brought about the expected improvement in health status, especially of rural population groups. This is due to poverty on a large scale among most families (Paruzzolo *et al.*, 2010). As widespread poverty remained constant or increased, most women would be denied access to facilities that provide life-saving interventions. Improvement in transportation through the payment of token fees would help women with greater number of complications to reach hospitals. This may improve their chances of survival and they would therefore see the services as affordable.

Furthermore, in Tanzania, the Centres for Disease Control made an effort to build community capacity for problem solving through participating in development of community-based plans for emergency transportation in 50 villages. This created an increase and greater participation of pregnant women during complications (Illah *et al.*, 2013).

Funds and transport barriers were identified in Nigeria to have caused delays in women deciding to seek emergency obstetric care and in reaching facilities (Igberage & Ebeigbe, 2007) while high cost of emergency obstetric intervention was seen as most important obstacle to the use of hospital care in most African countries (Guerrier *et al.*, 2013).

The Prevention of Maternal Mortality (PMM.) with collaboration with hospitals developed “pack systems” and “emergency boxes” of supplies for treatment of obstetric complications in order that drugs and supplies necessary for pregnancy-related complications are readily available at the facility when needed. These packs used in treating obstetric complications are usually replaced or paid for by the woman’s family. There also exists funds which are set aside by the PMM group to purchase vital drugs and supplies for reducing maternal mortality and providing pharmacy services throughout the day (Rosenfield, 2015).

Again, the PMM team established some cost recovery systems for important drugs. Essential drugs and supplies were procured through a commercial source outside regular government channels and emergency obstetric drug packs were then created and made available at prices calculated to cover costs plus an 85% mark-up. In all twenty – six patients were given emergency drug packs during the study period, 12 were able to pay in full, but 9 paid in part, whereas 5 could not pay for them, accounting for a recovery rate of 57% of the total charge (Lizo, 2013). The availability of human and functioning obstetric services, which are geographically accessible and financially affordable, encourages families to seek care at facilities to reduce maternal mortality.

2.5.3b. Affordability.

Financial accessibility involves the ability to pay for health services. Most women die and some are disabled during pregnancy, labour and delivery, even with availability of effective interventions. The saying that nothing is free holds in accessing maternal health services. For example even if health facilities provide free maternal health services, money

would be needed to commute between the home and the facility during pregnancy in order to pay for transport bills, drugs and services received (Turan *et al*,2011). Money to pay bills may prevent a lot of women from using the facilities.

A lot of women face economic barriers in accessing life-saving interventions in Africa since most of them are not working and others need to seek approval and assistance from husbands or family heads. This therefore indicates that when husbands or family heads refuse to give financial assistance as well as allow their wives to make decisions when the need arises, then such women cannot have access to care. There are hidden costs in free maternal health services and efforts to overcome these economic barriers include health insurance schemes (Morgan & Eastwood, 2014). In the developed countries health insurance is well structured and it covers most expenses and ailments but in some developing countries, the same cannot be said about it (Morgan & Eastwood, (2014). In Ghana those who are on National Health Insurance (N.H.I.) renew their policy every year when it expires. However, most women are unable to renew it and suffer financial challenges in paying for drugs and other services during pregnancy, labour and delivery.

Normal deliveries may not be expensive compared with complicated deliveries. When there are complications a lot of money may be spent. For instance, in Ghana women pay for cost of blood transfusion and other drugs during labour and delivery. However, family planning services and antenatal care are provided free.

Lack of understanding among some women sometimes may pose as a barrier during pregnancy, labour and delivery, they see cost of services as relatively high (Paruzzolo *et al.*, 2010). Even most women who have money do not include healthcare in their priority list and they prefer to spend money on other material things other than on health services.

Improvement in transportation through the payment of token fees would help women with greater number of complications to reach hospitals. This may improve their chances of survival as this overcomes financial barrier to healthcare seeking.

A study in Nigeria indicated that inadequate funds and transport caused delays in women deciding to seek emergency obstetric care and in reaching facilities (Igberage & Ebeigbe, 2007). A similar study also detected in Nigeria that high cost of emergency obstetric interventions may be the most important obstacle to the use of hospital care in most African countries (Guerrier *et al*, 2013). Talking about cost, one should not lose sight of the cost of drugs as this can contribute to some women with complications not to seek care. Efforts at addressing financial barrier date back to the past three decades. For instance, the P.M.M. in collaboration with hospitals developed emergency boxes stuffed with adequate essential drugs and supplies for treating obstetric complications, which were readily accessible in the health facilities during emergency cases. These packs of emergency drugs which were used in treating obstetric complications were later replaced or paid for by the woman's family. There also exist funds which were set aside by the P.M.M. group to purchase vital drugs and supplies for reducing maternal mortality and providing pharmacy services throughout the day. (Rosenfield, 2015).

Despite the efforts, financial barrier to healthcare accessibility and utilisation remain problematic. At a rural hospital in Bo, Sierra Leone, the PMM team initiated the establishment of cost recovery systems for drugs. Essential drugs and supplies were procured through a commercial source outside regular government channels and

emergency obstetric drug packs were then created and made available at prices calculated to cover costs plus an 85% mark-up.

2.5.4 The influence of health promotion and education

Health promotion and education used in this context is the process of providing mothers with useful knowledge and information about maternal health issues for them to make informed decisions in life. Inadequate education or lack of education or illiteracy often adversely influences the decision women make.

According to Raine (2009), lack of education is a contributory factor to maternal mortality. In Africa, it has been concluded that most women do not have the autonomy to do what they feel like doing. They look up to their husbands and heads of families during decision making especially those who are uneducated. The educated ones can decide on their own, even when health facilities are distributed far from residential areas, they can get to the health facility by walking or by waiting for a passing lorry.

Most people who lack information often overlook the cost of time. Time used to seek care from health services, time spent in getting to facility, waiting to receive care is time lost for activities like, cooking, fetching firewood, hawking and trading. These costs prevent most women from seeking care because they feel they could carry out most of the activities within the period that they would go to the facility and therefore see it as time wasting.

Most women who are educated are able to clear the first delay of the 3-delay model. This can be attributed to the fact that when women are educated they have higher exposure to information and new ideas that could save their lives during childbirth. Such women are able to make decisions as to whether to use contraceptives to prevent untimed pregnancies

as well as where to deliver (Stover & Ross, 2010). Normally, when such decisions are taken they prevent mistimed or unwanted pregnancies, (Avascarala, 2009, and Yearky & Muntifering, 2009).

Educated women recognize complications when they appear and seek care to prevent mortality or morbidity. This was observed in the Prevention of Maternal Mortality (P.M.M) study in Nigeria, Sierra Leone and Ghana where people in the community who campaigned on safe motherhood used channels of communication such as town criers and community meetings to give information and where to go when complications occur during pregnancy and labour (Karisen *et al.*, 2011). In developing countries, education of females is always pushed to the background; women do not have more access to formal education compared with men.

Most studies show that utilization of medical services increases with increasing levels of education. In Ethiopia, Jordan and the Philippines, studies indicated a significant positive association between the use of pre-natal care services and level of women's education. The reason for this is not well understood but it has been speculated that education increases knowledge and awareness by shaping thought patterns for the individual to seek information (Aguero & Bardway 2010: Karisen *et al.*, 2011)).

This notwithstanding, there is another school of thought that education may not guarantee higher levels of health utilization (Cutler and Lleras-Muney, 2010). The educated tend to choose self-medication. Some studies suggest that an increase in education for individuals particularly women contributes a lot to the care they receive during pregnancy. It has been

established that a lot of women who live in urban areas receive more professional care than those in rural areas (Hogan, 2010). In rural areas, most mothers give birth alone or with the help of a relative while those in the urban areas use health facilities. Even when facilities are available in rural areas, due to the cultural beliefs, some mothers prefer to deliver in the home because they consider the home as the natural place for delivery (Tej *et al.*, 2015).

Dumont *et al.*, (2013) established in Senegal's ten (10) regions that women lack basic information on signs and symptoms of obstetric complications and this is seen as a barrier which makes most women not to seek care. On the contrary, McCaw and Bell- Lewis (2009) found in Jamaica that women who were educated on the potential dangerous nature of childbirth, reported immediately they recognized the symptoms. Similarly, a study by Ogez, (2013) in Zimbabwe supported this assertion; that due to lack of education, 32% of women in the rural areas died through pregnancy and 28% in urban areas died during pregnancy, an indication that more women die because they deliver in the home or delay in getting to a facility for assistance and are only rushed to the facility when complications get worse.

2.5.5 The role of poverty in maternal healthcare seeking

Do women who are financially sound seek medical care than those who are not? Paruzzolo *et al.*, (2011) asserted that characteristics of health facilities serving the poor sometimes discourage them from using those facilities. It is clear that morbidity and mortality rates are higher among women with low economic status and this is partly due to unsafe abortion they perform. Sometimes this contributes to the poor quality care meted out to

women particularly from poor or indigenous settings by the formal health care system (Haddad & Nour, 2009).

A study in Ethiopia by Yaya., & Lindtjørn, (2012) indicated that lowest rates of pre-natal clinic attendance and the highest rates of home deliveries were found among women from the lowest economic status group. Data from Iraq showed that consultancy rates for all health facilities rose from 67 per 100 illness episodes for low income households to 103 for those in the high income bracket thus preventing most women from seeking medical care (Mohabad *et al.*, 2015).

The persistent enemy of good health which is poverty sends most pregnant women to their graves early. In most developing countries, apart from the government failing in its financial obligations, the natives are also a contributing factor. Most women do not use health facilities due to high facility-user fees and also households not being able to access money at the time of need especially in rural areas (Ronsman and Graham, 2006). Cost can be looked at in several ways and this includes, how much to spend before getting to the facility, cost of drugs, as well as facility user fees.

To buttress this point, a study in Bangladesh revealed that 51% of families did not have enough cash for normal delivery and 74% do not have cash for caesarean section and have to borrow money from friends or relatives (Goldie *et al.*, 2011). A lot of women are unemployed and therefore lack finances to even seek medical care when the need arises. Ronsmans *et al.*, (2006) asserted that in most developing countries women do not travel alone, they do so with the head of family or spouse as well as children left in their care. This causes an increase in the cost of transportation for all those following the women.

Again due to poverty, they are exposed to poor nutrition which leads to anaemia, the silent killer in pregnancy (Ronsmans, 2006).

Paruzzolo *et al.*, (2010) asserted that poverty contributed to high mortality among poor women. Poverty can prevent a woman from seeking care during pregnancy and after delivery. A case in point is the story of an old poor migrant housewife from the countryside in India who became pregnant and was advised to go for an abortion due to her age and history but could not raise sufficient funds for the abortion and had to deliver with complications (Nisar & Sohoo, 2010).

There is evidence that due to poverty even those women who use health facilities during pregnancy face exclusion. It is established that even for some of them what is offered may be untimely, ineffective, unresponsive or discriminatory. Being poor is often the reason for being discriminated against and may result in abuse, neglect, poor treatment and poorly explained reasons for procedures. In a busy urban maternity hospital in India, the nurses in the labour ward do not complete patient care notes for low-caste women. This deprived them of the quality safeguards given to other women (Barros *et al.*, 2012).

2.5.6 The influence of birth order and age of mother in healthcare utilisation

This deals with the number of deliveries a woman makes. Studies in Bangladesh, Bolivia, Ghana, Indonesia, Malawi and Philippines indicated that when women have more deliveries they usually do not use or seek skilled healthcare, this means that most women use health facilities during labour and delivery for their first and second pregnancies than those women who have had more than one or two pregnancies and do not experience any complication, (Vink *et al.*, 2013). This was expressed by a woman who was seven months

pregnant, “I have had no antenatal care and I don’t expect any for the rest of my pregnancies. I planned to give birth at home as I did with my other four children. According to de Vienne *et al.*, (2009), when women advance in age and become pregnant, during delivery complications sometimes set in.

2.5.7 Culture/Religion and maternal healthcare utilization

Culture, the way a particular group of people behave which includes eating, dressing, dialect, and so on, affect women or cause women not to seek maternal healthcare. Modern medical facilities have a culture of their own which clashes with the culture of potential users (Evans, 2013).

Culturally most women are not supposed to leave their homes to be confined in the health facilities during delivery and this leads to most of the women not using the facilities (Gwina, 2013).

Women’s morbidity is on the increase in certain areas because they need permission to travel. This permission must be granted by the spouse or the mother-in-law (Guerrier *et al.*, 2013). Beliefs associated with traditional birth practices act as barriers to women seeking medical care. In some parts of Africa, prolonged labour is looked at as evidence of a woman being unfaithful to the husband and therefore does not attract any sympathy to rush the victim to seek care (Garba *et al.*, 2011).

Obstructed labour is also interpreted as punishment for adultery and therefore not recognized as a medical problem, thus the woman is not sent to the health facility to be assisted. Culturally, some women from certain tribes are not to expose their genitals and

therefore this becomes a barrier to such women seeking healthcare at the hospitals (Wong *et al*, 2011). Sargent's study of the Bariba of Benin illustrates yet another way in which pregnancy and childbirth increase the status of women. According to the study, birth represents a rare opportunity for a woman to demonstrate courage and bring honour to herself and her family as well as her husband by stoic demeanor during labour and delivery. A woman who manages to deliver without calling for assistance until the child is born is regarded in high esteem (Sargent, 1989). Due to this, a woman may delay even when there is a complication to see if she can deliver all alone and this will cause her not to seek health care.

Pregnancy is seen as a normal condition and therefore during labour the pains, bleeding and everything that takes place is said to be normal and nothing pushes them to seek care when it is severe or serious (Gwiina, 2013). A study in Zaria's Ahmadu Bello University Teaching Hospital showed that obstetric admissions declined between 1983 and 1985 when government instituted fees for prenatal care and delivery (Anto, 2014), this is a purely cultural problem.

2.5.8 Adequacy of maternal healthcare received and subsequent utilisation of care

Maternal mortality continues to be one of the biggest challenges facing health services in developing countries, but with the implementation of life-saving interventions, the problem is gradually being overcome. When there are adequate drugs (that is, no drug stock-out), trained personnel, equipment and supplies, maternal mortality can be reduced. Prompt recognition of complications, proper diagnosis, good monitoring and prompt treatment of complications would all highlight adequacy of the services provided.

For these to be achieved, the PMM in collaboration with countries started a partnership programme since 1996, whereby adequate essential drugs and supplies for treating obstetric complications were packed into emergency boxes, which were readily accessible in the health facilities during emergency cases and adequate for the number of cases. Again, the PMM teams developed different pack systems for treatment of all the leading causes for maternal mortality, haemorrhage, obstructed labour, sepsis and eclampsia. They also developed packs of caesarean section kits, which contains supplies such as gauze, syringes, needles, anaesthesia agents, antibiotics, intravenous fluids and ergometrine, in abundance.

In Ghana, Nigeria and Sierra Leone, an establishment of a small revolving fund scheme, which ensured the availability of supplies, the creation of 24-hour pharmacy services and on-call room for staff are all portraying adequacy (Mills *et al.*, 2007). Basically the PMM had three mandates:

- i. Ensured that women and their families have accurate knowledge of pregnancy danger signs
- ii. Facilitating timely arrival of pregnant women at health centers for delivery of their babies.
- iii. Providing Emergency Obstetric Care (EMOC) , delivered by Skilled health practitioners.

To be able to say that all the above interventions are working perfectly well, there is the need for frequent monitoring and measurement. It is only through monitoring that the real situation at the health facilities would be brought out. It is through monitoring that one can establish whether adequate staff is at post 24 hours a day, enough or adequate drugs and

supplies are available and being used for the purpose. Activities for the PMM programme were curtailed for lack of funds since 2011 but governments can adapt some of the tried and tested innovations, measures, and systematically put them in place (Calvello *et al*, 2015).

A study in Malawi brought to light that after a new monitoring system was introduced by the safe motherhood project, it was realized that even with adequate availability of staff, drugs and supplies, availability of life-saving strategies was poor (Vink, 2013). Additionally, complications of pregnancy and childbirth are still the leading cause of death and disability among women of reproductive age in developing countries due to inadequate monitoring; thus with the necessary input no effective work is done (Ronsmans & Campbell 2006). According to the two, due to inadequate monitoring there were misdiagnosis, delay in taking action on cases, poor treatment leading sometimes to fatal consequences.

In Uganda, monitoring of pregnancy cases revealed problems of inadequacy, and when rectified, resulted in important gains (Coralie & R Short 2010). Providing adequate services is not expensive because it does not cost the health facility any huge amount. All it takes is to motivate personnel, pay closer attention to their problems and provide them with the support needed to meet emergencies (Langer, 2012).

A study in Tanzania revealed that adequate provision of services is not always expensive thus low-cost interventions resulted in a sharp decline, from twenty-eight in 1990 to eight in 2008 (Pembe *et al*, 2014). Maternal survival can be improved if women who develop complications during pregnancy are not kept waiting for time on end before being attended to by health providers. In India a lot of women were not using the health facility due to

high case fatality rates and long waiting time (Bussani *et al*, 2010). It is also found that very low number of complications reached the health facilities, which points to the need to address the issue of long waiting times. If prompt and adequate treatments are provided, the outcome will usually be satisfactory. This can sometimes be linked to a decrease in the time from admission to treatment.

Many people believe that adequate maternity services provided are key to achieving safe motherhood targets. With emergency health facilities immediately available, it is assumed that a complicated delivery is far less likely to result in maternal death. People more often assume that adequate drugs and staff mean less maternal mortality. These assumptions may not be valid because many women in Africa choose not to use available health facilities because they dislike the services provided since they consider services to be inadequate. However, under favorable conditions women would use health facilities to their advantage. A study in Ethiopia showed that with good diagnosis, prompt and good treatment, case fatality for maternal deaths decreased from 9.2% to 4.6%, showing a definite rate of improvement (Yifru *et al*, 2014).

Provision of adequate information cannot be left out when talking about adequacy as a variable in reducing maternal mortality. When providers obtain adequate information before or during delivery they introduce preventive measures that can reduce maternal mortality in the population. On the other hand when patients or clients also get adequate information on facilities and their functions with life-saving interventions, half of the battle would be won. Patients tend to make use of health facility when complications arise. A

study in Sokoto, Northern Nigeria, showed that when women make decisions to seek care and the necessary inputs were adequate, most deaths were prevented (Anto, 2014).

2.5.9 Acceptability of maternal healthcare

Health facilities with the requisite personnel, equipment and adequate supplies may be provided and accessible geographically and financially yet it may not translate into utilization if people do not accept to use them. All health facilities, goods and services must be respectful of the culture of individuals, minorities, people and communities and also sensitive to gender and life-cycle requirements as also agreed by Evans (2013). Interventions and strategies must be sensitive to the needs of pregnant women irrespective of their social and economic background. In certain parts of Africa conservative cultural norms do not allow women to travel unaccompanied. Thus during labour, when there are no relatives to accompany the women to a facility for delivery she cannot use the facility and this could lead to complications and in some instances deaths. Sometimes the gender mix of health staff may pose as an acceptability barrier as some women do not want male providers to attend to them and hence would not utilize the facility. Furthermore, Islamic dominated areas, and Non-Governmental Organizations considered un-Islamic are not allowed to assist women when in labour, Zuhra *et al*, (2015).

Attitude of health workers or health providers sometimes discourages women utilizing the facilities thus seeing the facilities as unacceptable. Again the family head or husband's acceptance of the facility or services provided affect the acceptability of the facility making women's decision making and power extremely limited in many parts of Africa particularly

in matters of reproduction and sexuality. Discriminating attitudes that prevent or discourage women from accessing the healthcare may include language barrier need can have serious health consequences in the case of women who speak little or no English in certain facility will make the women not to accept the services. Some women complain of long delay in the waiting room may be due to their status or race and therefore do not want to use those facilities. Women who are abused by family members especially the husbands sometimes do not use facilities. Sometimes expectations of women in the use of facilities make the facility unacceptable.

Mothers who are HIV positive sometimes do not want to utilize facilities due to stigmatization. Most women do not use facilities due to being shouted at in labour room, and having their privacy respected not being able to talk to the doctor alone. Women in labour getting to the hospital only to be told by the health providers, that you are in first stage of labour so go back and come back later to use the facility. Interventions and strategies must therefore be sensitive to the needs of pregnant women including those from rural or indigenous areas to make them accept the facility and services provided

2.5.10. Outcome of previous pregnancy, labour and delivery and subsequent use of care

According to Stufflebeam (2011) end product, outcome or end result of pregnancy, labour and delivery has much influence on subsequent use of services. During pregnancy, labour and delivery the end result is much considered to help both providers and clients in their future deliberations sometimes referred to as feedback. The enabling environment, services provided and factors that influence the care women receive during pregnancy, labour and delivery will all affect the outcome. All these are intertwined in such a way that each

affects the others to affect the outcome. There is a process indicating the outcome at a facility. At the first stage of the chart is the preconceptional care given to women, i.e. family planning so that pregnancy will be planned for families to have the number of children they can adequately cater for. In any case, if family planning fails, then there is the need for the person to either carry the pregnancy for nine months or go for a safe abortion which will be carried out by qualified personnel.

For those in the group who want to keep the pregnancy, it leads to attending antenatal care. After attending antenatal for the period of conception to delivery, the delivery can be complicated or uncomplicated. When there is complicated labour and delivery there should be timely referral for essential obstetric care. However, when there is uncomplicated labour and delivery, there should be clean and safe care.

Sometimes both types of complications will lead to postpartum care for mother and baby. This will also send us to safe maternal and neonatal health, which will lead to decreased risk for foetal mortality, decreased risk for neonatal mortality and all the above points to a good outcome.

According to Ijadunola *et al*, (2010) a study in Nigeria revealed that two-thirds of all Nigerian women deliver outside health facilities and without medically skilled attendant available, thereby affecting outcome negatively.

Some schools of thought suggest that deficient medical treatment mistaken or inadequate action by a medical personnel, lack of essential supplies and lack of prenatal care affects outcome. Again in an attempt to provide free medical treatment to mothers or pregnant women, policies are hurriedly carried out and sustaining it becomes problematic thus affecting outcome. (Karisen *et al*,2011)

Status of women, age, illiteracy and poverty also affect outcome. Late referrals to facilities during complications affect outcome. Some people felt that men should be educated on maternal mortality so that they can be active participants in the fight to reduce maternal mortality through improved pregnancy, labour and delivery outcomes.

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2.6 Knowledge gaps

Since the implementation of the safe motherhood initiatives, there is little systematic analysis and evaluation of the maternal healthcare delivery strategies and their effects on pregnancy, labour and delivery outcomes. The enabling environment and factors that influence care mothers receive during pregnancy, labour and after delivery have also not been well analysed. Empirical analysis of the effectiveness of life saving strategies for maternal health is needed to assess progress and challenges, in most districts in the Ashanti region of Ghana. The findings will inform implementation of maternal health and similar programmes towards the achievement of maternal related MDGs/SDGs. A focused case study using Sekyere East district of the Ashanti region was conducted to evaluate safemotherhood initiatives within the theoretical framework of Patton Focused-Utilization Evaluation and Andersen and Newman utilization models.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter presents the methods and procedures employed in the study. It presents the study design, study area and study population. Other sections include sampling, data collection techniques and tools, pre-testing, data handling and data analysis, ethical considerations and assumptions.

3.1 Study Design:

An exploratory focused-case descriptive study was employed in the study. The choice of the study was informed by the fact that information on the effectiveness of the strategies for reduction of maternal deaths and its contributory factors were not well-defined, hence the choice of an exploratory study design. The study thus adopted simultaneously use of different approaches; in this case, questionnaire administration, observation and focused-case studies. The use of focused-case study ensured in-depth contextual explanation and matching the strategies with what is practised per the safe motherhood protocols. In addition information was gathered from different sources while comparisons regarding different sources of information and different variables were made. The study sought to evaluate safe motherhood initiatives using structured questionnaire and observation checklist to observe pregnancy, labour and delivery processes, interspersed with interviewing of clients and health staff. This was preceded by desktop review of strategies for maternal health deliveries and theoretical basis for evaluation and utilization of

healthcare, dwelling on the percepts of Patton (1973) and Andersen and Newman's models (1973).

Evaluation process as per Patton's F-UE Model

The design of the evaluation followed the principles of Patton (1973). To start with, the study assessed the readiness of the Sekyere East District (through open contacts and informal discussions) after the research team had done its own self-assessment. A letter of introduction from the School of Public Health, KNUST, was handed to the District Health Administration. The research team having trained the research assistants, received clearance from the Institutional Review Board; Committee for Human Research Publication and Ethics of Kwame Nkrumah University of Science and Technology, and pretested the study protocols. The intended users of evaluation results at the local level; District Health Management Team, sub-district teams and the research team then discussed the study's rationale, objectives, procedures and limitations and agreed on the modalities of the study. The study began with a situational analysis mainly through desktop review of documents and reports on maternal health services.

To focus on intended findings users and intended process users as per Patton (1973), structured questionnaire and observation tools were developed based on the analysis of the desktop review. After the pretesting of the tools, the study team prioritized evaluation questions paying much attention to the intended users while ensuring that the fundamental issues of consenting and community entry protocols were duly observed. The research team in conjunction with the DHMT negotiated on the methods and time of the interviews.

To stimulate use of the research findings, the data gathered were analysed and presentation of preliminary findings made to the DHMT for inputs. This Thesis is the final report produced out of the evaluation. After the Viva Voce, the research team will follow up to facilitate the use of the findings to improve the current situation.

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3.2 Study area

The study was conducted in the Sekyere East District with Effiduase as its district capital. It shares boundaries in the North-East with Sekyere Afram Plains, West with Sekyere South, South-East with Asante-Akim South and South-West with Ejisu-Juaben. The district now covers an estimated area of about 730.5 sq. km. due to the creation of the new Sekyere Afram Plains district out of it (Sekyere East DHMT Annual Report, 2016).

The estimated 2009 total population is 85,702 with 38 communities and 4 sub-districts (Effiduase, Asokore, Nyanfa and Nponua). Farming remains the dominant occupation in the district and the crops cultivated include cocoa, cassava, plantain and maize. Most women and young men are traders due to the district's proximity to the regional capital, Kumasi. (Sekyere East DHMT Annual Report, 2016).

The district has six (6) health facilities, three (3) are government owned but out of the three the one at Akokoaso is not functioning. There is one (1) Ahmadiyya Moslem hospital at Asokore, two (2) Catholic health centres and one (1) private clinic in the district capital. The doctor-patient ratio is 1:17140 and nurse-patient ratio is 1:1558. The World Vision, an NGO has been supporting the district to achieve healthy lifestyles as well as healthy environment. (Sekyere East DHMT Annual Report, 2016).

Obstetric Practice in Sekyere East District.

Doctors and midwives in the district provide pre-natal, delivery and post-natal services. There are 4 doctors, 10 physician assistants, 77 community health nurses, 40 midwives, and 3 anesthetists. Some midwives in the district attended workshop on resuscitation and care of the newborns. A refresher course was organized for some Traditional Birth Attendants (TBAs) on ante-natal care, labour, post-partum care and effective management of post-partum haemorrhage. TBAs, in principle, are expected to refer complicated cases to the nearest first point of contact with the formal health system. (Sekyere East DHMT Annual Report, 2016).

Intensive health education was carried out on the importance of attending ante-natal clinics (ANCs) as well as danger signs in pregnancy. Mothers who delivered in the health facilities and those who delivered in their homes were encouraged to attend post-natal clinics. Due to free maternal services provided, there was an increase in the attendance of ante-natal care.

In 2015, ANC coverage was 73.6%, getting to the latter part of 2016, there was an increase in the rate of family planning coverage. (Sekyere East DHMT Annual Report, 2016).

The sub-districts facilities refer major surgical obstetric and other serious complications to the district referral point, that is, Effiduasi Hospital. The obstetric complications normally referred to the district hospital included obstructed labour, prolonged labour, etc.

The district constructed three CHPS zones at Nkwankwanua, and provided training for all CBS volunteers on active surveillance. The health staff were trained on cold chain management. The DHMT block has been completed. Generally, Sekyere East is one of the

deprived districts in the Ashanti region and started implementation of safemotherhood initiatives in the early 2000. (Sekyere East DHMT Annual Report, 2016).

3.3 Study Population

Health staff, as well as pregnant women who delivered within twelve months of the study and had complications, were selected from the maternity ward of the Effiduase District Hospital and those who were referred from health centres in the sub-districts were involved in the study. Their sex, age, occupation and marital status, were assessed. In addition, 22 health providers made up of 3 core members of the District Health Management Team; 10 midwives; 1 Doctor; 1 Anesthetist; 1 Pharmacist; 1 Dispensary technologist; 1 Laboratory Assistant; 1 Revenue collector and 3 Orderly were interviewed. Women who delivered 12 months prior to the study and Traditional Birth Attendants were excluded.

3.4 Sampling

3.4.1 Sample Size Determination

For the questionnaire administration, the main outcome for the study was to measure the proportion of complicated maternal health cases that results into deaths. The sample size was estimated on the assumption that the maternal deaths resulting from cases are less than 30%. With a design effect of 2, the required sample size needed to detect an assumed 80% improvement in maternal health at 95% estimated confidence interval was estimated as follows:

$n = Z^2 p(1 - p) / d^2$, (Kirkwood and Sterne, 2003),

where n= sample size required,

$Z^2 =$ risk (0.05) (1.96),

P = proportion of event of interest 30%

d = design effect =2

$i^2 =$ precision of confidence interval (0.052)

$n = 1.96^2 * 0.05(1 - 0.30) * 2.0 / (0.05)^2$

n = 412

Four hundred and twelve (412) women who delivered within twelve (12) months of the study and had complications selected from the Maternity and the Sub-District Health Centres were interviewed on availability, adequacy, effectiveness and utilization of maternal health service.

3.4.2 Selection of participants

Systematic, simple random and purposive sampling techniques were employed in the selection of study respondents. Purposive sampling was used to select health providers who were directly involved in the provision of maternal healthcare as they are more knowledgeable in safe motherhood initiatives. In situations or facilities where more than one health provider was willing to participate in the study, simple random sampling technique was adopted to select one. In such situations, potential respondents were made to ballot and those who picked 'YES' were recruited.

For clients, the sample was distributed amongst the four sub-districts proportionate to the population size. A 4% women in their reproductive age (WIRA) was then estimated from the population of each sub-district, Table 1. In health facilities, the attendance list of the day was requested and used for the sampling. Systematic sampling technique was used after estimating the sampling interval, K^{th} (total attendants divided by the sample size). The first point of selection was arrived at through balloting after which every K^{th} member on the list was selected till the required sample size was arrived at.

Table 1: Sample distribution

Sub-district	Total population	4% of total population WIRA/WIFA	Total eligible sample	Number Sampled
Effiduase	26259	0.04*26259	1050	1050/2718*412 159
Asokore	18966	0.04*18966	759	759/2718*412 115
Nyanfa	16778	0.04*16778	671	671/2718*412 102
Mponua	10944	0,04*10944	238	238/2718*412 36
Total	72947	-	2718	412

Source: Author's own construct, 2012

3.5 Study Variables and Measurement

The main outcome variable was maternal healthcare delivery strategies. The independent variables included enabling factors, life-saving services and procedures, utilization, accessibility, adequacy and effectiveness. Enabling factors were defined by availability of drugs and supplies, trained personnel, procedures like CS, Vacuum Extraction, forceps

and other resources needed for delivery of maternal health services. Access to service was defined as the ability to get to the health facility during labour before things get out of hand and ability to pay if not on national health insurance scheme. Utilization was defined as the proportion of the target population who made contact with the defined service while adequacy was defined by the proportion of the target population who made contact with the health facility and received all the prescribed drugs and complete care defined for the condition presented (not referred). Effectiveness was defined by the target population who received adequate care at the facility and would want to use the facility when in need. Specifically, effectiveness is the combined effects of the enabling factors, strategies and factors influencing care in relation to the outcome. Thus, poor outcomes indicate ineffectiveness while good outcome connotes effectiveness. Maternal health delivery strategies were defined as all programmes aimed at improving the health of women. They include Primary Health Care (PHC), Maternal and Child Health (MCH) and Sexual and Reproductive Health (SRH), (Stanton et al 2012) and all those mentioned in Section 2.4, Chapter two.

3.6 Data Collection Techniques and Tools

Data were collected with the help of research assistants mostly graduates who were trained on basic research methods for five days (including pretesting of tools). To evaluate the strategies for the reduction of maternal mortality in the Sekyere East District, an evaluation study was conducted from 2007 to 2016. A facility-based survey was conducted to investigate whether the health facilities operated within the standards set by the Safe motherhood protocols by (WHO & UNICEF, 2013).

Inventories were looked at through a checklist to assess availability, condition and functionality of equipment at the maternity ward, laboratory, blood bank and operating theatre. Again the number of staff available was checked as well as their skill-mix. This included District Director of Health, Resource Director and Program Director at UNFPA. In addition, the staff were interviewed to identify the life-saving procedures performed. The study further assessed whether the health facilities had enabling factors which are conducive to work, whether staff were at post 24 hours to help when the need arises, the referral chain and how they were able to deal with complications when they occurred was also looked at. A community survey was conducted to assess the Phase 1 and 2 delays and what measures were put in place to address them and client satisfaction and expectations from the programme.

Secondary data were assessed through review of records from the District Health Management Team and health centre records. Out Patient Department (O.P.D.), laboratory, dispensary, stores, recovery wards, administration register for the pregnant women were also assessed to get the number of cases, type of delivery and the delivery outcomes.

Obstetric care providers and core DHMT members were also interviewed. Relevant data were collected from health providers and women who had delivered and had complications within the study period. This was to identify factors that may explain any problems or challenges associated with the programme and service utilisation.

Health records in all selected facilities and secondary data from DHMT were reviewed. A checklist was used to determine utilization and access factors that affect care women

receive during pregnancy, delivery and postnatal using structured questionnaires. Distances from residences to first call points were determined using the Ghana Private Road and Transport Union (GPRTU) mileage.

3.7 Pre-Testing

All data collection instruments were pre-tested for errors and consistencies. The interview guide was tested on a sample of twenty (20) pregnant women at the Ejisu Hospital. The questionnaire was pre-tested on five (5) health personnel for health staff while the checklist was used to assess the inventories. The necessary adjustments and corrections were made prior to the data collection.

3.8 Data handling

All questionnaires and administered checklist were thoroughly edited by the principal investigator. Data collected from interviews were recorded and transferred. Questionnaires were administered and checked for corrections, completeness and both were stored for analysis.

3.9 Data Analysis

The data were entered into Microsoft Excel and exported into SPSS for analysis. Data were cleaned and explored through charts and tables. Descriptive statistics based on means, proportions, frequencies, bar and pie charts in Statistical Package for the Social Sciences (SPSS) software was used. Case studies of labour and delivery of pregnant mothers were analysed using the safe motherhood protocols. Health staff practices and experiences were

also compared with the protocols to assess the effectiveness of strategies. The analysis was confined to first stage or univariate level. Thus no attempts were made to establish causes or risk factors for a problem, establishing causal relationships as the study design does not permit. These notwithstanding qualitative and semi-qualitative studies play key role in understanding the underlying contextual dynamics that influence the effectiveness of strategies in this case safe motherhood strategies in achieving health gains in the form of maternal deaths reduction.

3.10 Ethical Considerations

All the study protocols were submitted and cleared by the Committee for Human Research Publication and Ethics (CHRPE) of Kwame Nkrumah University of Science and Technology, Kumasi. Administrative clearance was sought from the District Health Directorate and Effiduasi District Hospital. The District Director introduced the research team to the district health providers at meetings and through letters to the health centres in the peripheries. All respondents were made to sign informed consent after the study had been explained to them, they asked questions and were fully satisfied about participation. They were informed that participation was voluntary and were assured that all responses would be kept confidential.

3.11 Limitations of the study

The study was constrained by the following:

- The fact that the study was health facility based made most respondents not to give out correct responses for fear of being maltreated by the health providers.

- In addition women who did not visit the health facilities at the time of the study were automatically excluded.
- The study did not explore cause-effect relationship due to the dictates of the study design

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3.12 Assumptions

The following assumptions were made while carrying out the project:

- The sample size was a fair representation of the study population.
- Responses from participants represent the true situation on the ground.
- With antenatal clinic coverage of over 70%, it was assumed that the findings from the study could represent over 70% of women in the study are

3.13 Delimitation

The study was conducted within the confines of safe motherhood and maternal health, where strategies were evaluated in terms of their influence on maternal health, deaths and geographically the study was limited to the District Hospital of sekyere East, Effiduase and it catchment areas.

CHAPTER FOUR

RESULTS

4.0 Introduction

Safe motherhood initiatives are established interventions to reduce maternal deaths across the world. Ghana started preparation for the implementation of these initiatives in the late 1990s and became fully operational in the 2000s. Since then maternal outcomes have been improving but at slow pace and there seems to be little or no evaluation to ascertain the effectiveness of safe motherhood initiatives in relation to maternal health outcomes. The study reviewed health facility records and also interviewed health staff and pregnant women who had delivered within twelve months of the study from the health centres in the sub-districts and the district hospitals. This chapter presents results of the study in the form of tables, percentages, bar and pie charts which were used in explaining the data organised in the order of the study objectives. The section presents the findings related to the stated specific objectives.

4.1 Demographic Characteristics of respondents

The demographic characteristics otherwise known as proximal factors of health staff and clients, Table 4.1a-4.1b, have much influence on the effectiveness of implementation and the utilization of life saving initiatives related to maternal health.

Table 4.1a: Distribution of Socio-demographic characteristics of clients and health care providers

Clients		Providers		
Age distribution				
Age group	Frequency, n=412	Percentage	Frequency, n=22	Percentage
Less than 25	147	35.68	4	18.18
25-29	121	29.37	12	54.55
30-34	76	18.45	1	4.55
35-39	44	10.68	1	4.55
40+	24	5.83	4	18.18
	Mean: 27.0/Std Dev:6.7		Mean: 32.5/Std Dev: 12.9/	
	/Range: 15-56		Range: 22-64	
Sex				
Male	-	-	2	9.10
Female	412	412	20	90.90
Educational Level				
No Formal Education	45	10.92	-	0.00
Primary	40	9.71	-	0.00
Middle/JHS	218	52.91	-	0.00
SHS/Secondary	62	15.05	2	9.09
Tertiary	35	8.50	17	27.27
Others	12	2.91	3	13.64

Source: Author's Field work, 2012

The age group was categorized into 5 with 64% falling between less than 25 years and 29 years with only about 6% above 39 years. The educational level attained by the clients ranged from no formal education to tertiary. Findings from the study showed that 10.92% had no formal education while 89.08% had formal education: 9.71 % up to primary level,

52.91% had middle school/JHS education, 15.05% attended S.H.S, and 8.5% had tertiary education with 2.91% attending other institutions aside the above mentioned.

Table 4.1b Distribution of Socio-demographic characteristics of Clients

Occupation	Frequency , n=412	Percentage
Trader	138	33.50
Seamstress	48	11.65
Farmer	29	7.04
Civil/Public	44	10.68
Business	82	19.90
Unemployed	2	0.49
Others (more than one job)	69	16.75
Place of Residence		
Effiduasi	150	36.40
Asokore	110	26.70
Nyanfa	100	24.30
Mponua	32	7.7
Other(Multiple places)	20	4.9
Parity		
0	47	11.4
1-4	135	32.8
5-8	135	32.8
6-12	60	14.6
13 and above	35	8.4
Marital Status		
Unmarried	148	36
Married	216	52.55
Student	48	11.68

SOURCE: Author's Fieldwork, 2012

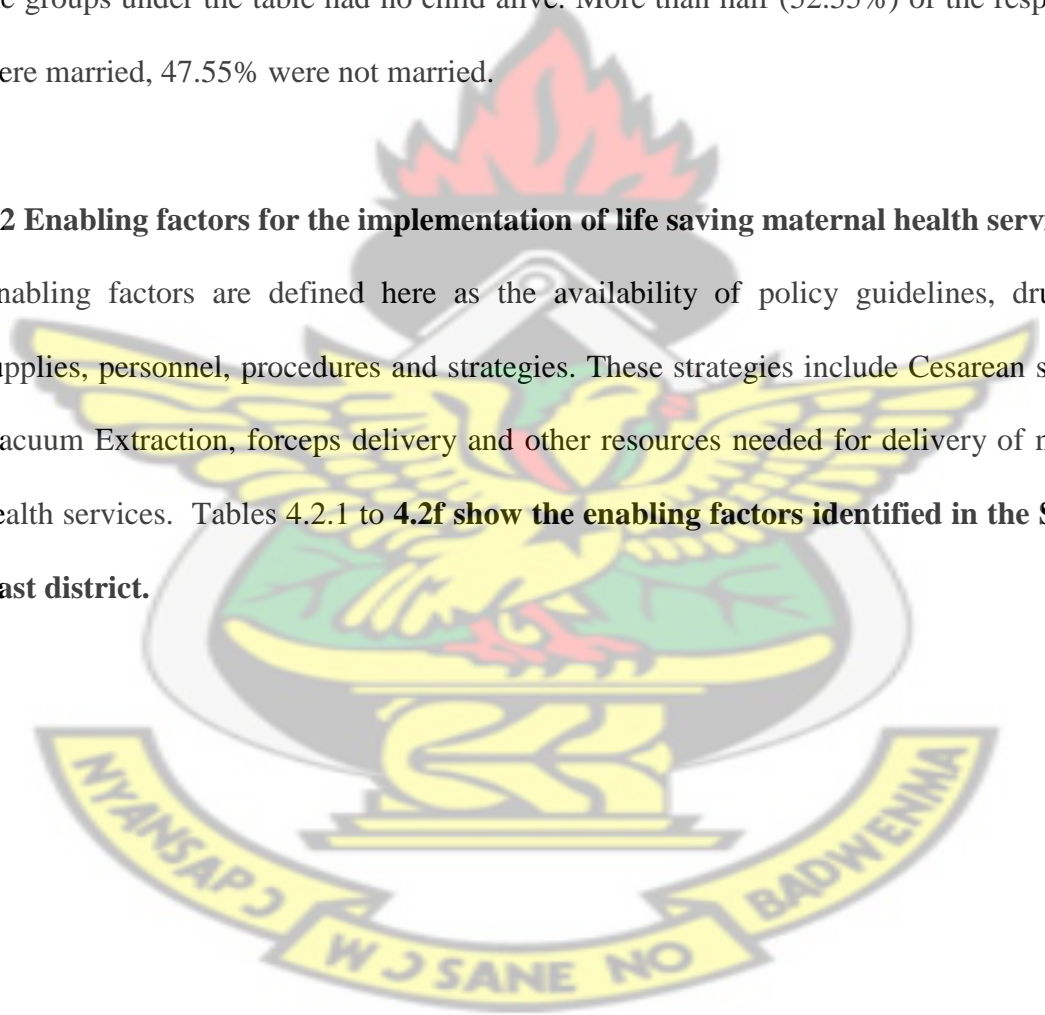
Out of 412 respondents, 33.50% were traders, 11.65% were seamstresses, 7.04% were farmers, 10.68% were civil/public servants, 19.90% were businesswomen and 0.49% were unemployed while 16.75% were doing more than one kind of job.

Among the 412 respondents interviewed, 36.40% resided in Effiduasi, 26.70% at Asokore, 24.30% from Nyanfa, 7.70% from Mponua and 2.90% were from other places like Ntumkumso, Boya, Motokorodua, Akuakrom, Apemso, Asukoko, Nkwankwanua and Ananaya.

As many as 32.8% were parity 1-4, parity 5-8 were also 32.8%, 14.6% were parity 6-12 and 8.4% had parity 13 and above, 11.4% of the respondents who did not fall under any of the groups under the table had no child alive. More than half (52.55%) of the respondents were married, 47.55% were not married.

4.2 Enabling factors for the implementation of life saving maternal health services

Enabling factors are defined here as the availability of policy guidelines, drugs and supplies, personnel, procedures and strategies. These strategies include Cesarean sections, Vacuum Extraction, forceps delivery and other resources needed for delivery of maternal health services. Tables 4.2.1 to **4.2f show the enabling factors identified in the Sekyere East district.**



4.2.1 Availability of Human Resource

Table 4.2.1 Availability of Human Resource:

Number of Essential Trained Personnel at Post in Sekyere East district as against bench mark

Personnel	No. of Staff	Benchmark	Variance
Doctor –junior	2	2	0
Doctors- Senior Medical Officer	2	2	0
Midwives	40	40	0
Anesthetists	2	3	-1
Laboratory Technician	2	2	0
Pharmacist	1	3	-2
Dispensary Technician	4	3	-1
Dispensary Assistants	8	12	
Orderlies	30	15	15+
Total	91	82	-3

Source: Author's Fieldwork, 2012

The Sekyere East district had a total of ninety-one (91) essential trained personnel. There were four (4) doctors, two (2) anaesthetists, forty (40) midwives. The district had less number of Pharmacists, Anesthetists and technician than the required while the number of orderlies were in excess of 100% with cumulative variance of 15. In terms of availability of key emergency obstetric drugs, the district had all that it required as shown in Table 4.2.2.

4.2.2 Availability of Key Emergency Obstetric care drugs

Table 4.2.2 Availability of Key Emergency Obstetric care drugs

Key Emergency Obstetric Care Drugs at the Effiduasi Hospital	Yes	No
Drugs Required	X	-
Parenteral Oxytocics	X	-
Anti-convulsants	X	-
Gentamycine	X	-
IV Methoridazole	X	-
Crystalline	X	-
Xylocain	X	-
Halothane	X	-
Oxygen	X	-

Source: Author's Field work, 2012

The Sekyere East district hospital also had all the key drugs needed for the provision of Emergency maternal, obstetric and neonatal care (EmONC). There was a large quantity of key drugs in stock for supply to patients.

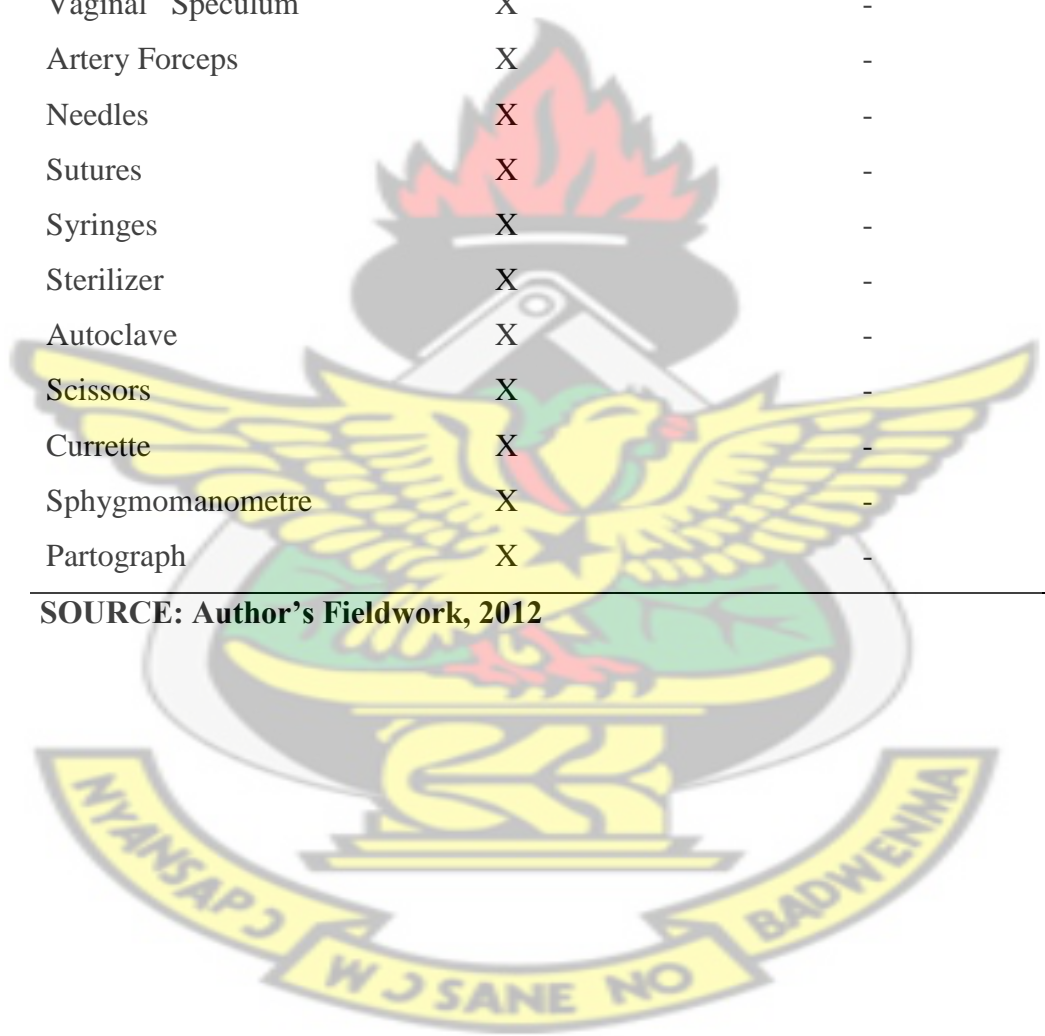
In addition, the Hospital had the capacity to manage common obstetric complications. Haemodynamic resuscitation is possible due to IV fluid sets available. There was adequate medication for eclampsia, that is, parenteral anti-convulsants. Due to the availability of appropriate equipment, comprehensive interventions for prolonged labour, vacuum assisted deliveries and caesarian sections were carried out. From the checklist, all the necessary equipment needed for reducing maternal mortality were available and functioning at the time of the study. They had refuse bins with lids, running water, sluice room and sharp disposal container for infection control (Table 4.2.3).

4.2.3 Available Essential Labour Room Equipment for EmNOC

Table 4.2.3: Available Essential Labour Room Equipment for EmNOC

Equipment Required	Yes	No
Vacuum extraction	X	-
IV Infusion set	X	-
IV Fluids	X	-
Ovum Forceps	X	-
Vaginal Speculum	X	-
Artery Forceps	X	-
Needles	X	-
Sutures	X	-
Syringes	X	-
Sterilizer	X	-
Autoclave	X	-
Scissors	X	-
Curette	X	-
Sphygmomanometre	X	-
Partograph	X	-

SOURCE: Author's Fieldwork, 2012



4.2.4 Laboratory equipment

Table 4.2.4: Available Laboratory Equipment

Equipment Type	Yes	No
Microscope	X	-
Test Tube	X	-
Slide	X	-
HIV Kits	X	-
Hepatitis B & C Kits	X	-
Equipment type at Blood Bank		
Blood Bags	X	-
Anti-Sera	X	-
Storage Facility	X	-
Equipment at Operating Theatre		
Caesarean Section Set	X	-
Laparotomy set	X	-

SOURCE: Author's Fieldwork, 2012

During the field observations, it was found generally that there were delivery and admission registers which were properly kept. The delivery register indicated obstetric complications, type of delivery, foetal outcome, discharges and maternal deaths as the main column headings. The staff at the facility had adequate knowledge of life-saving strategies as shown by the good management of cases reported. They did not refer cases out but rather attended to referred-in and non-referred cases. Supervision and Monitoring were done quarterly by the District Health Management Team (DHMT) and this was a mechanism put in place to ensure that skilled personnel continually assessed their own practice and obtained assistance in dealing with complicated cases where they felt they had reached the boundaries of their competencies.

4.2.5 Policy and Clinical Protocols or Guidelines

There were clear policy and clinical protocol guidelines, (Table 4.2.4). At the district hospital at Effiduase for instance, for Antenatal Care, all mothers were asked to go for necessary laboratory requirements during pregnancy, which included Ultrasound scan to see the baby's presentation if conducive for normal vaginal delivery, identify mothers at risk such as pregnancy induced hypertension (PIH). Mothers who are said to be post-dated were reviewed and the necessary interventions carried out. At the Labor Ward, the staff took action to arrest further haemorrhage to prevent maternal deaths. Monthly meetings were held at the maternity wards where all deliveries and challenges were reviewed and solutions found to identified problems and prevent their recurrence.

If there were any training workshops attended, those who attended were asked to give a report and if necessary added new strategies to the existing ones and considered- those that needed to be improved. There were strategies to help all babies to breath at birth so after delivery if a baby was not breathing, the necessary interventions were carried out to sustain the baby to reduce infant mortality.

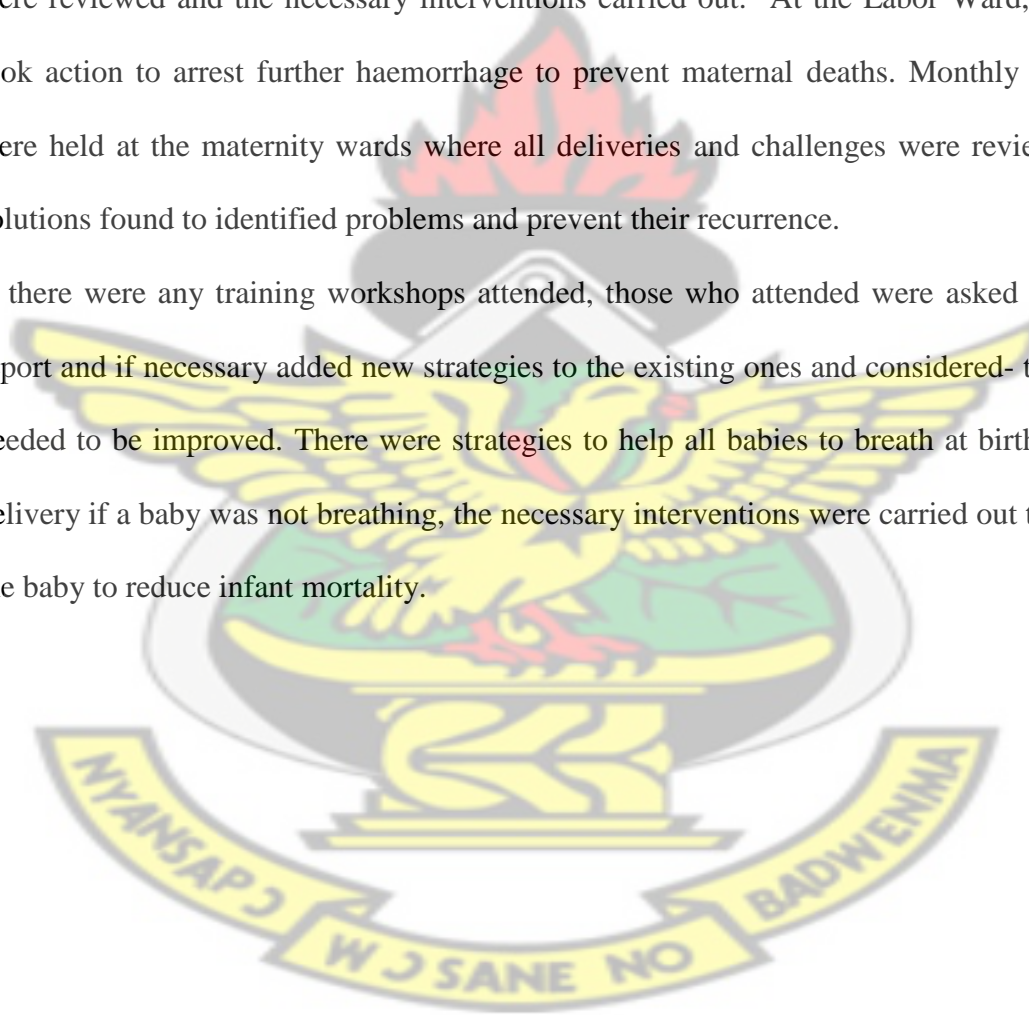


Table 4.2.5: Observed availability of guidelines and source of funds

Policies	Yes	No	Remarks
National policy available	X	-	
Policy mentions right of patients	X	-	Not always
EmNOC included in standard definitions	X	-	
Are all maternal health activities funded	-	X	CS, scan, blood transfusion not funded
Availability of funding from government(GoG)		X	Had not received any funds for the last 3 years
Government funding allocated to maternal health	X -	-	Forceps and vacuum delivery are charged to clients
NGOs and Philanthropies	X	-	World Vision & population council, UNICEF, Mariestopes
Cost recovery in place	X	-	
Has need assessment on obstetric services done	X	-	Through peer review and maternal audit
obstetric assessment by who and where	X	-	Anesthetics and medical practitioners
Does it include process indicators for EmNOC	X	-	
Strategies for the reduction of maternal mortalities	X	-	CS, forceps, manual vacuum
Facilities adequately staffed to reduce maternal mortality	X	-	There is no Gynaecologist
Prevalence of Obstetric fistula	-	X	Not provided here
Are buildings well-structured and maintained	X	-	
Are rooms inspected to ensure adequate functioning of equipment and supplies	X	-	
How is equipment repaired	-	-	
Source of spare parts	-	-	
Proper Storage of supplies	X	-	
Communication system in place between facilities and district	X	-	There are personal and unit phones, courier services,
Signal functions performed regularly	X	-	
Obstetric complications documented	X	-	
Clinical audit conducted	X	-	
Community perspective of health care accounted for	X	-	Outreach and follow ups
Does the community know the danger signs in labour	X	-	

SOURCE: Author's Fieldwork, 2012

4.3 Strategies and their effectiveness during pregnancy, labour and after delivery

4.3.1 Mode of Delivery

The study identified the strategies used during pregnancy, labour and delivery as surgical obstetric, anaesthesia, management of pregnancy related problems, medical treatment, monitoring labour, blood replacement, manual procedures and neo-natal special care. Providing all these services suggest that the district provides Comprehensive Emergency Obstetric Care. With these services available, more women would be helped. This could help the facility to prevent progression to more serious complications and the attendance toll of morbidity, thus preventing the 4th delay. It again addressed severe anaemia as a result of haemorrhage and uterine prolapsed from prolonged labour.

Table 4.3.1: Procedures in Delivery

Mode of delivery	Number	Percentage
Caesarean Section	273	66.3
Manual removal	57	13.9
Vacuum Extraction	70	17.0
Forceps extraction	12	8.5

SOURCE: Author's Fieldwork, 2012

Out of the 412 respondents, 66.3% claimed they were assisted (Caesarean), 13.9% Manual removal of retained products, 17.0% by Vacuum Extraction and 8.5% by forceps extraction. All ten (10) health providers interviewed claimed they could take history of clients. Out of the ten (10), 90% said they were able to identify complications and 10% could not. Again, 90% could perform vaginal examinations and 10% could not. All ten (10) were able to identify the onset of labour while 90% could monitor maternal and foetal

well-being using partograph. Seventy percent of the health providers interviewed could manage 3rd stage of labour while 30% could not.

4.3.2 Observation of the strategies and their effectiveness in maternal healthcare

delivery

Partograph

This is used to monitor labour, urine output, protein in urine and foetal heart rate. It comes in the form of a graph. The mother's blood pressure and the foetal heart rate are plotted on it. The sphygmomanometer is used to monitor the BP of the mother while the fetoscope is used to monitor the foetus heart rate. The mother's blood pressure is checked every four hours, and it should not be more than 150/100 and not less than 90/60. The mother's pulse should not go above 100 and also not drop below 50 the foetal heart rate should also not go above 160 an indication that it is in distress and not go below 120. Anything above the normal or below the normal is referred for attention. It is not used during twin delivery and also in augmented labour. The use of the Partograph was observed among staff. Generally staff knew how to use it in delivering maternal healthcare.

History taking and physical examination

This includes personal history, obstetric history, medical, surgical history and family history.

Physical examination is also conducted to check the mother's weight, height, blood pressure, pulse, temperature, appearance etc. General observation of the face, eye ball, palpation and breast to find out if there is any presence of lumps, the pelvic is examined,

the vulva is observed to check if there is any rash. It was generally observed that knowledge and effectiveness in history taking was highly acceptable.

Foetal wellbeing.

Foetoscope is used as well as sonicaid. The latter is an electronic device which can identify the minutest activity. Scan ultrasound can also be used. During labour when there is a change in the liquor, it is an indication that the baby is suffocating. Foetal wellbeing was integral in the delivery of maternal health in the study site. Staff followed the protocol to the latter.

Exclusive breast feeding

Health staff were seen educating mothers on exclusive breast feeding during antenatal clinic. Breast hygiene and position of child and relevance of the colostrum milk were stressed. They are advised to breastfeed babies 8 to 12 times in a day after delivery to prevent jaundice. Mothers were allowed to ask questions for clarification. Staff adhered to the required safe motherhood standards.

Caesarean section

It was further observed at the Ante natal clinic that some women described as showing danger signs 'highly risk mothers' such as mothers carrying foetus with big weight, those who want elective C/s, history of previous C/s, malpresentation, twin delivery - when leading twin is mal represented, and need emergency were given special attention as per the safe motherhood protocols.

Preparation for C/S

Mothers were educated on the need for the surgery and were made to sign the consent form both client and provider, the doctor (surgeon) also signed the consent form. Infusion drugs, analgesics, antibiotics and name tags are packed and sent to the theatre by the midwife.

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At the Theatre

Cross and aseptic anaesthesia are administered. There were aseptic preparation, which included anaesthetic fields whereby health providers sterilized themselves and midwife received baby after C/S. The mother and baby are monitored for 2 to 3 hours before being sent to the ward.

Preparations for normal deliveries

For normal deliveries, the labour room is cleaned especially the floor. The room is kept warm while ventilation areas are set up– for resuscitating baby. The surface must be firm dried and there must be good lighting. The environment was cleaned and safe for the baby, essential items identified were ventilation bag, mask, cord scissors and two sterile cot sheets, suction device, two surgical gloves, stethoscope, watch and cord clamp are also packed. For the baby head covering was among the items packed.

The following steps were identified:

- Cot sheets were sterilized
- Mother's stomach was washed
- Stomach covered and mother pushed for baby to come out
- Dried baby thoroughly for 2 to 3 minutes before cutting cord.

- Covered baby with new cot sheet and head covering
- Prepared baby for skin to skin contact – placing baby on mother's stomach.
- Mother was taught breast feeding signs.
- Staff observed for any tear if none mother and baby were transferred to the lying room after one hour.
- Oxytocin was given to induce placenta.
- If it becomes difficult to remove placenta mother is sent to Theatre for manual removal.

Generally, health staff knew the instruments (their use, limitations and benefits) as well as the procedures involved and the cases they are meant for.

4.3.3 Focused case studies

Selected cases were observed to assess the extent to which health staff adhered to the Safemotherhood protocols.

Case I

The mother (A) was brought in for delivery. There was CPB – cervicopelvic disproportion. The head was bigger than the pelvic so there was no way the mother could push. Mother was quickly prepared for C/S. She signed the consent forms and the doctor also signed his portion. She was sent to the theatre with the infusion drugs, analgesics, antibiotic name tag and vitamin KI injection. The anaesthetists administered the anaesthesia and doctor started with surgery. The baby was removed and given to the midwife. The cut was sutured and both mother and baby kept for 1 to 2 hours for monitoring before sending them to the lying

ward. The midwife administered the vitamin K injection. The baby had asphyxia and was monitored (Pregnant mother, aged 30 years old, a farmer, Non-Participant Observation).

Case II

Mother (B) was brought in bleeding prior to delivery, the case was described as placenta previa type 4. The placenta was at the mouth of the cervix. The midwife said explained the situation might have arrived due to heavy show or the placenta wanted to come ahead of the baby. Mother was prepared for C/S and the procedure carried out for mother A was repeated. (Pregnant mother aged 25 years old, a trader, , Non-Participant Observation).

Case III

A mother (C) was rushed to the hospital with abruptio, ie. detached placenta from the normal position in the uterus. This was another emergency case, the mother was quickly arranged for C/S and the procedures carried out for A and B were carried out. (Pregnant mother aged 27 years old, a trader, , Non-Participant Observation).

Case IV

The pregnant woman (D) came earlier but could not deliver due to the fact that the foetus head descended into the vagina but part was still in the pelvic. Forceps was used to deliver the baby. The forcep was opened and positioned laterally to pull baby. Episiotomy was carried out on the woman. After pulling the baby it was sutured both mother and baby were monitored for 5 days before they were discharged because the baby was crying the

whole period. (Pregnant mother aged 45 years old, a housewife, Non-Participant Observation).

Case V

Pregnant woman (E) was brought with part of the head in the vagina while part was still in the pelvic. The vacuum extraction was used. Episiotomy was carried out and the extractor attached to the suction device. After this it was connected to the electric socket for air to fill the device which was used to pull the baby. After pulling the baby the mother was sutured and both sent to the lying room for monitoring. They were discharged after 3 days. (Pregnant mother aged 37 years old, a farmer, Non-Participant Observation).

Case VI

The mother (F) had reported for delivery the previous day. Twin delivery was expected but the leading twin was mal represented. Mother was quickly organized for surgery - C/S. The procedures for mother A and B were repeated. After delivery the babies were said to have jaundice. They had yellowish pigmentation on their eyes. The midwife used her fingers to press the hands of the babies and confirmed they had jaundice.

A doctor was brought in to do bilirubiim. The syringe was used to drain blood from the heels and checked the level of the jaundice. After this test, the twins were sent to a room where their eyes were covered with gauze and held firmly on the side with plaster. They were placed in a cot for phototherapy for seven days. The mother was asked to breastfeed them every 4 hours. This was done and the babies passed faeces to get rid of the jaundice

pigmentation from the body. After one week they were discharged with their mother. (Pregnant mother aged 38 years old, a teacher, Non-Participant Observation).

The application of the tools and procedures were in tandem with the Safemotherhood protocols and standards.

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4.3.4 Reasons why some respondents do not attend hospital

Reason	Frequency	Percentage
Staff attitude	30	27
Normal delivery	40	35
Cultural	6	5
Religion	15	13
Afraid of CS	10	9
Long waiting time	13	11

Out of the 144 respondents who do not attend hospital for their deliveries, 27% claimed they did not use the facility because of staff attitude, 35% said because they had normal deliveries, 5% said it was due to cultural beliefs and 13% said they did not use the hospital because of religious beliefs. 9% said they were afraid of CS and 11% attributed to long waiting time.

4.4 Factors that influence maternal healthcare seeking

A lot of people consider so many things before going in for health treatment. In this study factors considered were availability of resources and service, accessibility, affordability, and level of educational and knowledge of clients, Table 4.4.

4.4.1 Availability of staff and facilities for maternal services

In terms of availability, mothers were asked if they knew any available facilities that sought to address pregnancy, delivery or postnatal challenges.

Table 4.4.1: Distribution of factors that influence maternal healthcare seeking behaviour

Factors	Responses	
	No	Yes
Availability of Service	109 (26.5%)	303(73.6%)
Accessibility (Difficulty in getting to facility)	365 (88.6%)	47 (11.4%)
Affordability		
Ability to pay for transport to the facility	67 (22.3%)	290 (77.7%)
Registered with NHIS	108 (26.2%)	304 (73.8%)
If Registered with NHIS, did it cover all expenses?	55 (18.0%)	249 (82.0%)
Education and Knowledge		
Clients educated on changes that take place during pregnancy	107 (26.0%)	305 (74.0%)
Clients able to recognize complications during pregnancy	103 (25.0%)	309 (75.0%)
Had idea about safe motherhood	24(5.8%)	388(94.2%)
Safe motherhood facilities available	20(4.9%)	392(95.1%)
Are facilities user friendly	40(9.7%)	372(90.3%)
Culture/Religion (involved in decision-making)	165940%)	247(60%)
Husband decided		135(82%)
In- law decided		10(6%)
Family heads decided		20(12%)
Effectiveness	119 (29.0%)	293 (71.0%)
Adequacy (problem with collection of drugs)	325 (79.0%)	87 (21%)
Acceptability (clients who attended hospital for all deliveries)	114 (28.0%)	298 (72.0%)

SOURCE: Author's Fieldwork, 2012

Out of the four hundred and twelve respondents interviewed, 73.6% claimed that there were staff and facilities in the district that address pregnancy-related complications and 26.5% were not aware.

4.4.2 Accessibility of maternal healthcare

Accessibility in terms of difficulty in getting to the health facility showed that, out of the four hundred and twelve respondents, only 11.4% said it was difficult getting to the facility whereas 88.6% said they had transport (usually public), to seek care, Table 4.4.1 .

Table 4.4.2: Means of Transport and waiting time at facility

Type of Transport	Frequency	Percentage
Pub. Trans.	384	93.2
Private vehicles	18	4.4
Ambulance	10	2.4
Waiting time		
10 minutes	64	15.5
20 minutes	86	20.9
>20minutes	262	63.5

SOURCE: Author's Fieldwork, 2012

All the four hundred and twelve respondents said they had some means of transport to the health facility; 93.2% used public transport, 4.4% used their private vehicles and 2.4% used the hospital ambulance. A little over two-thirds, 63.5%, said they waited more than 20 minutes in front of consulting rooms before being seen by a health staff.

4.4.3 Affordability - Ability to pay for maternal healthcare

For ability to pay their transport fares, out of the 384 respondents who used public transport 77.7% were able to pay for transport to the facility and 22.3% were unable. About three hundred and four respondents, 304 or 73.8% were registered with the NHIS and 26.2% were not. Out of the 73.8% who had registered with NHIS, 82% said it covered all their expenses while 18% said it did not, Table 4.4.1. Fifty-five registered NHIS respondents said they paid for the services. A third, 33%, paid GHC85-169.00, 42.0% paid GHC170-254.00, 25% paid GHC255 or more.

Table 4.4.3 : Ability to pay for transport – Registered members

Ability to pay and amount paid	Yes (%) 384	No (%)
Ability to pay by public transport	298 (77.7)	86 (22.3)
Ability to pay - Registered but paid for drugs	47(85)	8(15)
Amount paid by registered NHIS policy holders, n=55		
85-169	18(33)	-
170-254	23(42)	-
>254	14(25)	-
Table 4.4.3 a : Ability to pay for transport – Non-Registered members		
Ability to pay – non registered NHI	85(78.9)	23(21.1)
Amount paid (GHC) –Non registered NHI members		
300-400	92(85)	-
>400	16(15)	-

SOURCE: Author's Fieldwork, 2012

In terms of ability to pay for the drugs, only 21.1% of the total respondents said that they had problems paying for the drugs, the remaining 78.9% claimed they had no problem. Generally, out of the 55 respondents who were members of the NHIS but had to pay, 85 % were able to pay but 15% were unable.

As expected the fees paid at health facilities by respondents who had not registered with the NHIS were relatively higher compared with the NHIS policy holders. For the non-registrants of NHIS, 108 respondents, 85.0% paid between GHC300 and GHC400 and 15% paid above GHC400.

For knowledge, out of the 412 respondents, 74% were educated on changes that take place during pregnancy and 26% were not while 75 were able to recognize complications during pregnancy as against 25% who could not.

The influence of culture, suggests that most mothers were not involved in decision making about the care they received from the health facility. Out of the 412 correspondents, 60% claimed they were not involved in decision-making and out of the 60% (135), 82% claimed their husbands decided for them while 6%(10) and 12%(20) said it was their in-laws and family heads respectively who decided for them.

4.4.4 Acceptability and utilisation of maternal healthcare

Service acceptability and utilization was high. About 7 in 10; 72.0% said they attended hospital for all their deliveries while 28.0% said they did not. Hypertensive disorder, bleeding and obstructed labour services were the most patronized by clients, Tables 4.4.1. and 4.4.4.

Table 4.4.4: Conditions, mostly reported to health facilities

Problem	Frequency	Percentage
Hypertensive disorders	151	37
Obstructed labour	65	16
Twin delivery	18	4
Bleeding	121	29
Retained products	57	14

SOURCE: Author's Fieldwork, 2012

Hypertensive disorders and bleeding were mostly reported. Out of the 412 respondents, 37% reported for hypertensive disorders, 29% for bleeding, 16% for obstructed labour, 4% for twin delivery, and 14% for retained products.

4.4.5 Adequacy of maternal healthcare women receive

Out of the 412 respondents, 21.0% claimed they had problems with the collection of drugs and 79.0% said they had no problems with the collection of drugs. The average daily bed occupancy at the Effiduasi Hospital for the period of study was twenty - five (25) and there were 30 beds for patients with pregnancy-related complications who had undergone surgeries.

Table 4.4.5: Responses related to adequacy of maternal health services

Adequacy of service	Frequency	Percentage
Problems with Collection of drugs		
Yes	87	21
No	325	79
Bed to yourself or slept on the floor		
Yes	412	100
No	0	-
Treated or referred		
Yes	412	100
No	0	-

SOURCE: Author's Fieldwork, 2012

4.4.6 Maternal Health Outcome of previous experience

This table contains findings of a review of health facility records

Maternal health outcomes, the main indicators of the effectiveness of the safemotherhood initiatives are presented, Table 4.4.6. These were normal and complicated deliveries, abortions, foetal outcome, and maternal deaths,

Table 4.4.6: Normal and complicated deliveries from January to December 2012

Month	Normal Delivery	Deliv- Complicated delivery	Total	% of complica- tion to Total	Abortion
January	146	18	164	10.97	60
February	132	16	148	10.81	44
March	138	20	158	12.65	26
April	146	13	159	8.17	26
May	165	24	189	12.69	36
June	159	28	187	14.97	48
July	150	17	167	10.17	57
August	149	25	174	14.36	43
September	183	13	196	6.63	48
October	193	32	225	14.22	62
November	152	23	175	13.14	62
December	170	17	187	9.09	59
Total	1883	246	2129	11.55	571

SOURCE: Author's Field work, Sekyere East DHMT, 2012

The table shows that from January to December 2012, there were a total of 2,700 women who used the facility, out of the number 1,883 had normal deliveries, 246 had complications and 571 were abortion cases.

4.4.7 Complicated cases maternal deaths

Table 4.4.7a: Yearly report of Complicated cases of maternal deaths from 2008 to 2015

Year	Complicated	Deaths	Case fatality rate (Deaths/Cases x100)
2008	157	1	0.63
2009	119	2	1.68
2010	133	1	0.75
2011	291	3	1.03
2012	246	2	0.81
2013	146	1	0.68
2014	144	1	0.69
2015	256	2	0.78
Total	1492	13	

SOURCE: Author's Fieldwork, Sekyere East, DHMT, 2012

From the year 2008 to 2015 a total of 1492 clients reported to the facility with complicated cases and there were 13 deaths giving a case fatality rate of less than 1%.

Table 4.4.7b: Complicated cases of maternal deaths from January December, 2012

Month	Complicated Cases	Maternal Deaths
Jan	18	0
Feb	16	0
March	20	0
April	13	1
May	24	0
June	28	1
July	17	0
Aug	25	0
Sept	13	0
Oct	32	0
Nov	23	0
Dec	17	0
Total	246	2

The case fatality rate for 2012 was 0.82%

SOURCE: Author;s field work, Sekyere East DHTM, 2012

From January to December 2012, there were 246 complicated cases and only two deaths giving a case fatality rate of 0.82%.

4.4.8 Foetal Outcome

In all 46 deaths were recorded from 2014 to 2016. The breakdown was as follows, 3 deaths, 43 still birth and 366 survived.

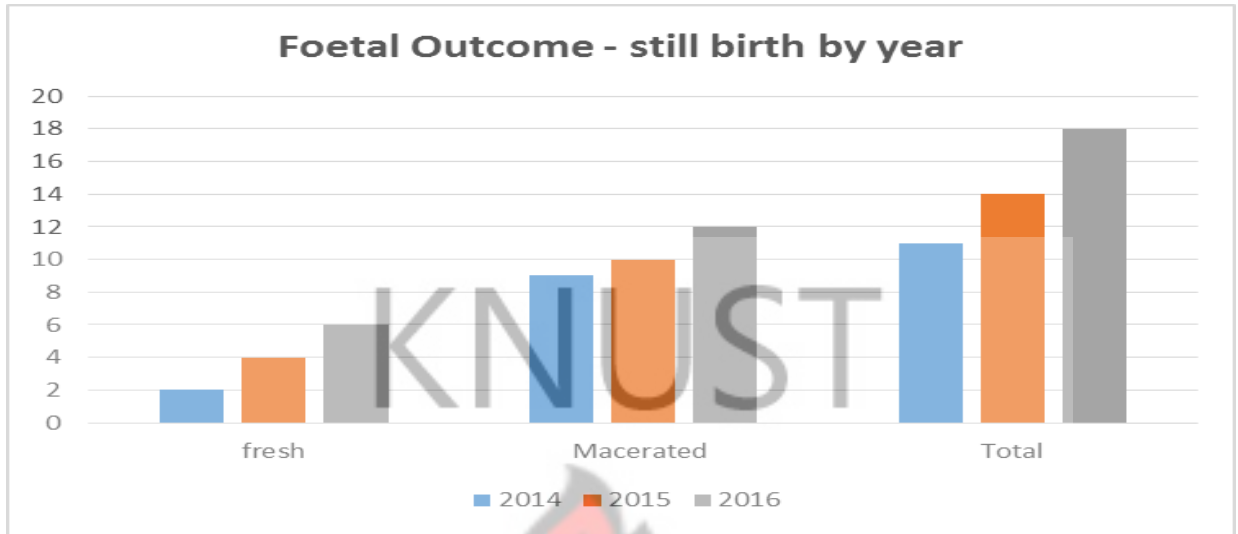
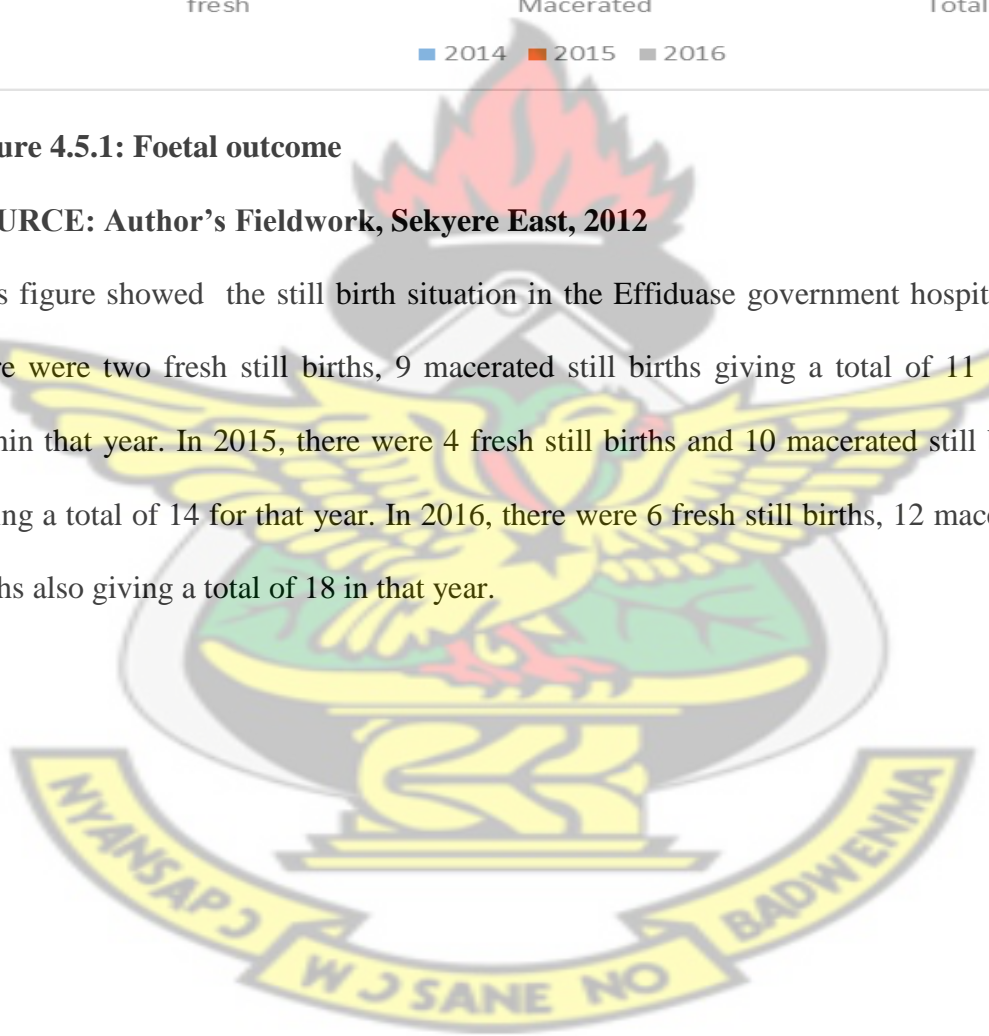


Figure 4.5.1: Foetal outcome

SOURCE: Author's Fieldwork, Sekyere East, 2012

This figure showed the still birth situation in the Effiduase government hospital in 2014 there were two fresh still births, 9 macerated still births giving a total of 11 still births within that year. In 2015, there were 4 fresh still births and 10 macerated still births also giving a total of 14 for that year. In 2016, there were 6 fresh still births, 12 macerated still births also giving a total of 18 in that year.



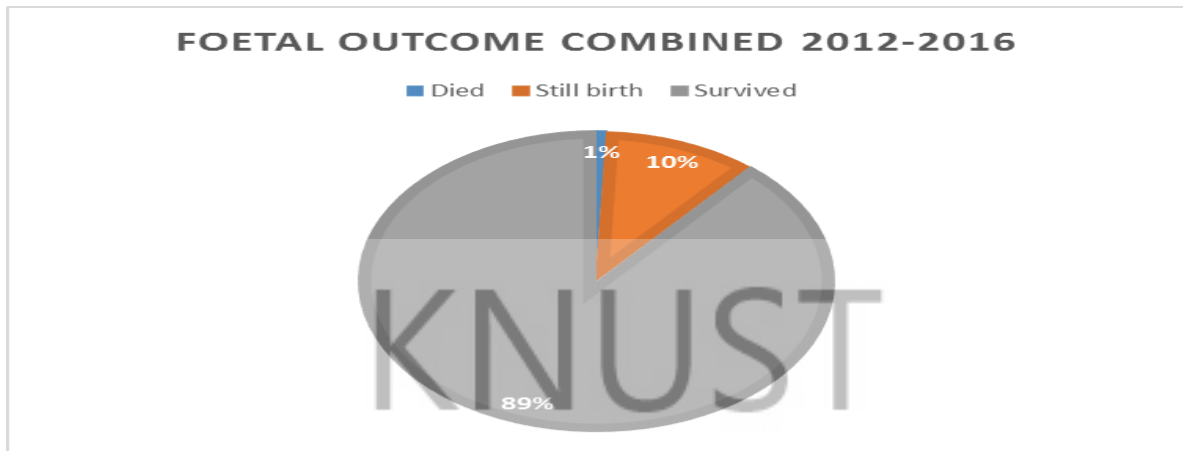


Figure 4.5.2: Total foetal outcome

SOURCE: Author’s Fieldwork, Sekyere East DHMT, 2012

This figure showed the foetal outcome from 2012-2016. There was 1% foetal death, 10% still births and 89% survived.

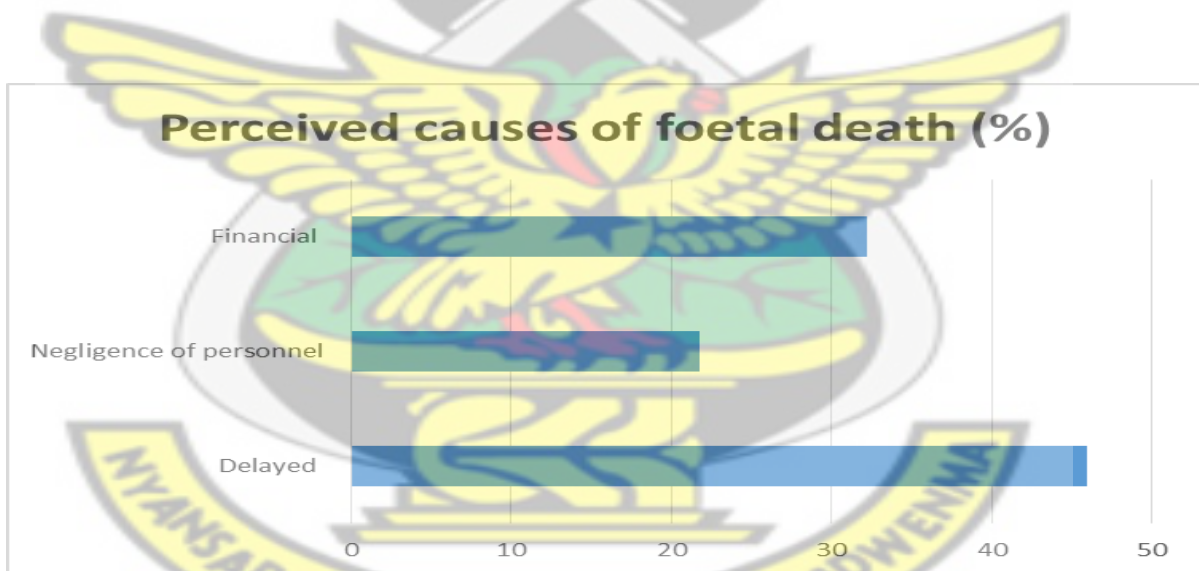


Figure 4.5.3: Perceived causes of foetal deaths

SOURCE: Author’s Fieldwork, Sekyere East, 2012

Out of the 87 who claimed their foetal died, 46.0% said it was because they delayed in getting to the facility, 21.8% said it was due to negligence of personnel and 32.2% said it was due to financial problems.

CHAPTER FIVE

DISCUSSIONS

5.0 Introduction

Despite efforts at reducing maternal deaths, maternal health related issues remain topical in the global agenda for universal access to health yet progress has been sluggish. It is established that 500,000 women in developing countries die annually from complications of pregnancy related and childbirth (WHO *et al*, 2014). WHO (2015), intimates that within two decades, 1990 to 2013 maternal deaths have declined from 45% to 33% yet 289000 women are still dying from pregnancy and childbirth conditions every hour while 110 women experience complications. Despite the availability of effective health interventions, progress towards the attainment of maternal health goals appear to be far-fetched as every year from approximately 500,000 maternal deaths, 98% are recorded in developing countries (Say *et al*, 2014: WHO 2015). This chapter presents an analysis of the implementation of life saving interventions for maternal health involving 412 clients and 22 health staff in a rural district, Sekyere East, in the Ashanti region of Ghana within the framework of Patton Focused-Utilization Model (1978) and Anderson and Newman's Healthcare Utilization model (1973).

5.1 Background Information

The study found that more than a third (36.00%) of women with pregnancy-related complications who visited the facility for treatment were below 24 years. This suggests that pregnancy and child bearing complications occur frequently among the young mothers. It is very likely that it occurs among the teenage mothers since this high

percentage of the respondents fell below the age brackets of 24 years and below. With close to half (47.45%) of the clients not married it is very likely that most of these young mothers who experienced complications during pregnancy and delivery are not married and would therefore find it difficult to access quality and skilled healthcare services. This is what has been described by Gwina (2013) as social exclusion from healthcare services. If at age 24 or less, mothers are having complications, there is a high likelihood that the mothers would not be able to give birth to healthy population, then it implies that the achievement of SDG3 (UNDP, 2016) would be a mirage.

Another disturbing finding was that more than a third of the respondents gave birth even after the age of 30 years, which may partly explain the greater number of complications. This confirms what de Vienne *et al*, (2010) asserted that pregnancy becomes more complicated with advancement in age. This also gives an indication that family planning is poorly patronized in the district. This is seen in the number of women who gave birth between the ages of 30 and above (35.00%). One would have expected that at that age there should be no more child bearing. The study further revealed that less than 8.5% of respondents had tertiary education meaning that becoming pregnant at the latter age, after 35 years in life was not due to high educational level or longer years in school among women but rather it may be due to other social factors. This is in line with what Stover and Ross (2010) found that when women are educated they are conscious of the number of children they have and that they would also be aware of such complications in relation to their age. In the study women who were self employed and unemployed constituted 44.3%

of women with complicated cases. Since they did not need to go for any maternity leave, a lot of them could become pregnant at early ages or without any proper family planning.

Less than a fifth (17.3%) of the women were not gainfully employed, except 11% who were salaried workers. Women who were employed (41.00%) were at subsistence level mainly petty trading. This might have contributed to their having so many children because most of them were self-employed and falsely believed they could cater for any number of children. No wonder it has been concluded that economic barriers remain important sets of access barriers to healthcare utilization among women (Haddad *et al.*, 2009). This is contrary to the situation in Sekyere East district where women could easily board vehicles to seek health care and pay later hence their ability to seek care. This was so because an arrangement to facilitate movement of mothers existed in the district between the health workers, community leaders and transport owners.

Also a lot of women bring forth without considering the number of children they already have. Women could give birth to as high as more than 13 children. For instance, women who were parity 1 to 4 and parity 5 to 8 were 33% each while those with parity 6 to 12 were 15% and those who were parity 13 and above were 8%. Increase in parity is associated with pregnancy related complications and deaths as de Vienne *et al.*, (2010) said that the more pregnancies, the more complications, hence the need for family planning services as well as adherence to EmNOC.

Distance did not prevent most women from seeking care because means of transportation were available to women with complications. This is in contrast to what Simoes and

Almeida, (2014), reported that inaccessible geographical situations are quoted as reasons for the delay in reaching EmNOC facilities.

Generally, as posited by Anderson and Newman (1973), proximal factors such as age, parity and education are important determinants of health care utilization. This was also confirmed by the findings of this study as explained earlier. Similarly, in the context of Patton's FUE model (1978), the potential users and users of healthcare need to be involved in the discussion of service utilization. In this case, it follows then that health providers and evaluators ought to involve clients in discussing the influence of their background characteristics such as age, parity and education on health care utilization.

5.2 Enabling factors for the implementation of life saving maternal health services

Enabling factors according to Say *et al.*, (2014) and Anderson and Newman (1973) mean a well-functioning health system which includes availability and functioning regulatory framework, standards, equipment supplies, infrastructure, transport, electrical, water and communication systems. They also include human resource, policies, supervision and management, clinical protocols and guidelines which are prerequisite for effective health service delivery and utilization.

Accordingly, for a health facility to reduce maternal mortality, there is the need for all the above mentioned to be available and in good condition. To start with, there should be trained health personnel to administer interventions and with the needed tools and logistics. These trained personnel must be able to diagnose and manage complications during pregnancy, labour, and after delivery. Implementation of interventions, in this case safe motherhood initiatives, should be done within a regulatory framework and standards

as supported by Johnson (2009) and Lydon *et al*, (2010) who asserted that the presence of skilled care attendants will cause a reduction in maternal mortality. There were trained and competent skilled health personnel at post in the Sekyere East district hospital. Though the number of doctors and pharmacist were as expected there was no gynaecologist posing limitation to the achievement of the safe motherhood goals. The results indicate that the staff strength is good, and the positive attitude and approach to work observed by the researcher and confirmed by the medical superintendent gives some hope for the achievement of the safe motherhood goals. With these, it is expected that complications and deaths related to maternal health be reduced and other outcomes improved. For instance, in 2014 one 1 death, 2015 2 deaths. From the case fatality results, mostly below 5%, which may suggest that, severely ill mothers may not be reaching health facilities probably due to socio-cultural factors such as family member or spousal consent as most respondents claimed they were not involved or independent in healthcare decision making.

Another relevant enabling factor is the drug situation as observed in Table 4.2.2, indicating that the essential drugs were available. This is a positive sign with respect to the success of the safemotherhood programme. Possibly it is as a result of Ghana being a member of the PMM network for which reason it might have benefited fully from the rich resources (packed system and emergency boxes) from the network. This development is contrary to assertion by WHO and Ghana Health Service that lack of essential drugs and drug stock-outs pose huge challenges in smooth implementation of safe motherhood programme (WHO, n.d, GHS, 2014). Easy access to essential drugs in Sekyere East district may have

contributed to the low maternal deaths and 1% foetal deaths in the period 2012-2016 as indicated by this study in Figure 4.5.2.

The relevance of availability and functioning equipment for reducing maternal mortality has been emphasized by Pembe *et al.*, 2014; Shiffman & Smith, 2007; Ziraba *et al.*, 2009). The implication with respect to the overall goal of safe motherhood initiative is that implementing districts should ensure that they have the full complements of the relevant equipment which are functioning. The current study found that all the essential equipment were available and functioning, Table 4.2.3, supporting the reduction of maternal deaths in the study district. This implies that the district is implementing the programme according to required protocols. In respect of drugs and equipment availability in the Ghana Health Service the statement by WHO and the Ghana Health Service itself (WHO, n.d, GHS 2014) a justifiable question is, how has Sekyere East performed differently from the rest of the districts in Ghana? The answer stems from prudent management practices such as frequent repairs and maintenance which was confirmed by management in the course of the research (Table 4.2.5).

The role of policies and guidelines in successful implementation of programmes have been re-echoed by Patton FUE model (1978) and Anderson and Newman model (1973). The latter explained that system factors such as policies and guidelines and staff attitude have influence on whether or not clients will use health services. The study found that clinical and policy guidelines were available and being used by staff in providing healthcare for pregnant mothers. Hence it is expected that utilisation of maternal health services be

higher, no wonder, as high as 72% of respondents used maternal services in the study district.

5.3 Strategies and their effectiveness during pregnancy, labour and after delivery

Maternal health service delivery strategies were defined as all activities such as the use of partograph, taking history, identifying complications, performing vaginal examination, and assessing the foetal well-being. Others include mode of delivery (defined in Table 4.3.1).

The findings showed that all the trained health providers claimed they could take history, identify complications, perform vaginal examinations, could use partographs to monitor maternal and foetal well-being. This was validated and found to be true. This is an indication that staff adhered to the protocols of safe motherhood as per WHO standards. On the basis of the assertion by Lavenda (2012) and Yifru and Asres (2014), that when there are good life saving procedures, women with pregnancy-related complications can be helped as well as mothers at delivery till they are discharged, the Sekyere East district has chalked some success in preparing the human resource to achieve positive outcomes in the safe motherhood initiative.

In addition to performing strategies or life-saving skills, the health staff initiate and establish exclusive breast feeding and again educate women and their families on how to prevent sexually transmitted infections including HIV. This practice could be related to integrated management of illness programme under the community integrated management of illnesses (IMI) in which health staff are advised to go beyond primary presentations to look for other possible conditions (BASIC II and CORE, 2001). This observation

highlights some level of integration in the health programmes being implemented in the district and this is a healthy development as is confirmed by Anderson and Newman (1973).

Health staff said that there was enough blood for transfusion and further explained that they could give blood transfusion to mothers who may need it to save their lives. This was found to be true during the study period. This is in support of what Illah *et al.*, (2013) advocated that facilities should ensure blood availability as difficulty in getting blood could contribute to loss of lives of pregnant women and women in labour. The study found blood and blood transfusion equipment readily available. For this reason, women who needed blood could be helped during pregnancy, delivery and after delivery to reduce maternal deaths.

Pregnant women who accessed health facilities were educated on how to prevent infectious diseases such as malaria and HIV/AIDS. This is in line with the assertion by Gorman (2013) that pregnant women can be educated on HIV/AIDS for them to be able to take good care of themselves and their unborn and born babies.

The study revealed that adherence to Safe motherhood protocols in the delivery of maternal healthcare was universally high. Staff could explain the essence, procedure and type of conditions they are used for. This is in line with findings by Moran (2012), Bhutta *et al.*, (2013), where health staff could use the strategies in carrying out major and minor maternal healthcare procedures such as caesarean section, general anesthesia and manual vacuum aspiration. It is important to note that staff were conscious of the presence of the research team and therefore the tendency of social desirability is high. That is, health staff

could have executed their tasks with utmost care and hence record of less errors. Future research could use participatory observation technique to validate this.

Effectiveness in this study was defined as the total effects of the enabling factors, strategies and factors that affect maternal health outcomes (foetal survival and still births) and thus, poor outcomes indicate strategies ineffectiveness while good outcome connotes that the strategies were effective. The results from the observations, cases 1-5, and the maternal mortality figures mentioned earlier confirm that the strategies carried out were effective. This suggests that the district was on track in terms of adherence to the guidelines of the safe motherhood initiative in reducing maternal mortality, thus achieving SDG 3.

Other proxy indicator for effectiveness used in this study was clients' satisfaction; with the exception of few clients, less than a third (28%), who did not access care due to poor staff attitude, religion and culture, generally, clients who accessed care were satisfied with maternal health service delivery claiming their expectations were met. Therefore, using clients' satisfaction as proxy for programme effectiveness, one may conclude that implementation of safe motherhood in the district was effective.

5.4 Factors That Influence Care Women Receive During Pregnancy, Labour and After Labour

5.4.1 National Commitment (funds release)

Apart from providing policy and necessary guidelines, the government shows commitment to the course of saving women's lives through provision of free maternal health care via the NHIS where women could deliver without any charges and allowed to attend free

antenatal care. This helps most mothers to attend to ANC for up to 5 times or more. This is in agreement with Ojerinde 2013 and Belgum *et al*, 2009 who said that African women attend antenatal clinic at least an average of four visits during their pregnancy. Free access to maternal health care has the potential to reduce maternal deaths, as cases and those found to be within the risk bracket are monitored to avert deaths. However, in the last three years prior to the study, money from the government, otherwise known as Government of Ghana had not been received and this hampered smooth healthcare delivery. Renewing government's commitment could facilitate the attainment of maternal health goals SDGs 3 (UNDP/WHO, 2015).

5.4.2 Utilization

The conditions mostly reported by respondents were hypertensive disorders, haemorrhage, obstructed labour, twin delivery and retained products. These have been confirmed by Hogan (2010) and Rosenfield (2015) who reviewed 181 countries to analyze the progress towards MDG 5 and found similar reported conditions. Pregnant women interviewed gave varying reasons for utilizing a particular health facility. Among the factors they considered before deciding on the utilization of the facility included quality of service provided and their accessibility, availability, affordability, facilities that address specific problems, cultural, religion, education and knowledge, adequacy, acceptability and outcome.

Most mothers would use a health facility or facilities if there are available skilled personnel, a functioning health facility with adequate equipment and supplies. Respondents who accessed care said there were facilities for service delivery. This was confirmed by the observation at the health facilities which revealed that staff had the

necessary basic inputs for maternal health delivery. This has also been found by Lizo (2013) who stated that when there are available facilities and skilled personnel, equipment and supplies, people with pregnancy-related complications would use the facility. Consistent utilization of health facility by pregnant mothers is likely to reduce maternal deaths due to prompt action against risk that may be found at the early stages of pregnancy.

5.4.3 Accessibility to maternal health care

Less than a fifth, 11%, out of 412 women with complications said they had access difficulty to health facilities meaning more women were able to access healthcare without difficulty. This may mean that women with complications may make it to health facilities. As high as 89% of respondents claimed they did not have any difficulty in getting to the health facility. Therefore, other factors being constant, it is expected that maternal healthcare utilization is high among pregnant women and reduction in maternal deaths should be realised.

It was again shown that as high as 92% of mothers who accessed maternal healthcare used public transport. This may suggest that the road network is fairly good or communities and health facilities are located along the trunk roads which facilitates transport availability and accessibility. This is contrary to findings from Guerrier *et al*, (2013) in a study conducted in Oyo State Nigeria, which identified accessibility as one of the problems that constrained women from seeking health care to eliminate the 2nd delay. High use of public transport may pose as danger to emergency and complicated cases as such cases need special care, preferably ambulatory which was only 5%. However, with the strong collaboration between health staff and community and transport owners, it is expected that regular

training regarding how to handle emergency and complicated cases could be conducted by health staff for drivers and transport operators.

Sixty-four percent of respondents were not happy about access to maternal healthcare describing waiting time as long as they spent more than 20 minutes before being seen by health staff. This is similar to a study in India by Bussani (2010) which revealed that when there is long waiting time, people do not see the services as accessible. As per Andersen and Newman utilisation model (1973) and Kroeger's 4As model (1973), improved accessibility leads to high service utilisation. As high as 7 in 10 women, were able to access healthcare indicating maternal health care was accessible in the study area.

5.4.4 Education, knowledge level and utilisation of maternal healthcare

The study revealed that women who had knowledge on pregnancy-related complications sought assistance. About 74% said they were educated on changes that take place during pregnancy while 75% could recognize complications. The results indicate that improved knowledge is related to utilization. In the study women who had knowledge, utilized maternal healthcare by seeking assistance from health facilities. This indicates that women who have access to information are well informed and so they seek care when complications set in. This is similar to the assertion by Stover & Ross (2010) that ignorance or lack of knowledge about pregnancy-related complications, prevent women from seeking care. Educating mothers empower them to identify and accept changes that occur during and after pregnancies. It also helps them recognize danger signs in order to seek prompt care, a prerequisite for reducing maternal deaths. Again this is supported by Karisen *et al*, (2011) that lack of education is a contributory factor to maternal mortality. It

is also said that adequate information helps women to seek care when the need arises. This was seen in the study, as a high percentage of the respondents, had information about life-saving strategies and were also aware that health facilities in the study area provide life-saving interventions. This further confirms what Antor (2014) reported that adequate information for both health providers and clients is a good asset for averting maternal deaths.

Even though some of the respondents delivered at home during their previous pregnancies, which did not create problems for them, the moment they saw a problem in sight during their subsequent pregnancies, they rushed to the health facility for assistance. This is due to the fact that they were aware of the consequences that were awaiting them.

5.4.5 Affordability of healthcare women receive

Close to 8 in 10 women said they were able to pay the transport fare to the health facility. Turan *et al*, (2011) identified several transportation related reasons for delay in receiving assistance, but this was not the case in the study area as only a handful said they could not pay. Affordability of transport to and from health facilities may not be the only hurdle, clients had to overcome. Less than a fifth of the clients who had NHIS cards said the NHIS did not cover all their expenses associated with care seeking since they had to pay some expenses from their own pockets.

This notwithstanding, in the study, it was observed that cost did not prevent women with pregnancy-related complications to seek care as was the case in Sierra Leone where funds were set aside by the P.M.M. team for purchasing vital drugs and supplies for reducing maternal mortality and also provided pharmacy services throughout the day (Rosenfield,

2015 and Lizo, 2013). In their cost recovery concept only 57% of cost could be recovered due to financial constraint as clients could not pay. The Sekyere East situation is in contrast to this as about 78% who were registered with the NHI could pay for all costs.

To minimize the proportion of mothers who made out-of-pocket payments, education about enrollment into the NHIS should be intensified as also proposed by Raine (2009) that education should be intensified to eliminate financial barrier by urging all clients to register with the health insurance scheme. It must be noted however that, mere education of clients may not translate into high enrollment due to poverty and other social factors such as religion and taboos. Due to poverty, most women may not be registered and even some may not be able to renew their registration with the NHIS when it expires. However, the NHIS provides financial protection for subscribers. This confirms the assertion by Morgan and Eastwood (2014), and Ronsman and Graham (2006) who prescribe the NHIS as the best option to overcome financial barriers in seeking healthcare.

5.4.6 Culture/Religion and utilisation of maternal healthcare

The study revealed that 60% of mothers were not involved in decision making for healthcare seeking due to cultural and religious beliefs. Husbands and family heads were mentioned as people who influenced health-seeking decision making. This corroborates Gwina (2013) and Evans (2013) who alluded to the fact that culture and religion are barriers to some women seeking care at hospitals. Culturally, most mothers have no power in deciding where and what type of healthcare to seek. They may thus be asked to seek care from places they may not like prejudicing their perceived quality and utilization.

Another implication could be that because mothers do not have economic power, husbands and family heads choose source of care based on what they think they can pay.

5.4.7 Outcome of pregnancy, delivery and postnatal and utilisation of maternal healthcare

Another important factor which influences care women receive is delivery outcome from previous pregnancies which could be abortion, still birth, death and normal delivery. It was realized that most women with complications patronized the health facilities. The outcome of delivery influences clients to use or not to use a facility. As high as 89% of total foetal outcome survived, while 10% were still births and 1% death, (Fig 4.2.3).

In the study, case fatality ratio of 0.82% was recorded, which is generally infinitesimal and expect to facilitate service utilization. According to Olejide *et al*, (2013), when there is an increase in the number of women with pregnancy-related complications using the facility, a lot of other women use the facility because it was said that the correct strategies or interventions were practiced. It must be cautioned though that most information that was used in this study was based on what respondents said. Since there were no records on what they said it was difficult to validate. Hence the study assumed that whatever respondents said was nothing but the truth but this could be otherwise. However, the study combined facility records with responses from respondents. This triangulation of sources of data validated the results for reliability.

5.4.8 Adequacy of maternal healthcare received and subsequent utilisation of care

All the 412 respondents who went to the health facility with complications were all treated and discharged without any one being referred and thus had adequate care. Respondents said they had adequate provision of drugs and equipment. In addition no patient was seen sleeping on the floor during the period of study.

Eighteen percent of 74% who had registered with the NHIS paid for their drugs as they were unable to get all drugs under the scheme. There was no stock-out and there were attendants at post every 24 hours. The facility has created an on-call room for the staff and therefore there were always health personnel at post. This is in line with what Mills *et al*, (2007) said that when there are on-call rooms for staff, they would be always around to assist during emergency cases.

5.4.9 Acceptability of maternal healthcare

The study revealed that 78% of pregnant mothers attended hospital for all their deliveries and 22% did not. Even when there are facilities with skilled attendants because some women do not accept the facility, they may not use it due to culture, religion, attitude of staff, quality or effectiveness. This indicates that people are satisfied with the services provided. This was in agreement with Bustreo *et al*, (2014) that when clients overcome affordability, accessibility and adequacy, effectiveness and outcome in their healthcare, there is high acceptability and utilization during decision making, and these lead to service utilisation.

5.4.10 Limitations of the study

Despite the interesting findings from the study, it must be noted that the study was limited by some few constraints. For instance, the study design did not permit causal-effects relationship and thus it was difficult to conclude that reduction in maternal deaths was solely due to the effectiveness of the safe motherhood strategies. Secondly, the study could not evaluate the factors that influence strategies effectiveness through the use of inferential statistics such as hierarchical basian analysis, regression analysis, factor analysis as in Andersen and Newman (1973). In addition it is possible some of the pregnant women felt the health providers would maltreat them after talking to the researcher and therefore may be afraid in giving their true responses to the questions asked. They may not have been honest in answering the questions.

Despite these limitations, the study provides baseline information and platform for further empirical research. The study within the tenets of the exploratory study design, described the characteristics of the situation in terms of the effectiveness of the strategies to reduce maternal deaths as per the safe motherhood protocols. The study further identifies the factors that influence care women receive during pregnancy, labour and after labour. Finally the study has shown that involving intended users, users and providers in research design enhances smooth implementation and possible utilisation of the study results.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

6.0 Introduction

This chapter presents the conclusions and the recommendations evolving from the study. The conclusions are organized as per the study objectives while recommendations are as per stakeholders and ends with concluding remarks.

6.1 Conclusions

The study aimed at evaluating strategies for the reduction of maternal mortality in the Sekyere East District within Michael Patton's Utilization-Focused and Andersen and Newman's Models. Based on the findings the following conclusions were drawn:

6.1.1 Background Characteristics

Majority of women did not have formal education and those who had formal education had up to basic level, JHS/Middle school. More than a third of women with pregnancy-related complications were aged below 24 years, engaged in subsistence employment mostly petty trading and married with high parity.

6.1.2 Enabling Factors

The health system functions efficiently despite the work load with number of complicated cases that are seen and the number of health personnel in the facility, work in the facility runs smoothly without any difficulties.

The enabling factors assessed indicate that most needed essential Emergency Obstetric Complication drugs and other pharmaceuticals were administered in the district suggesting conducive working environment. There were some skilled and competent health personnel which need to beef up. There were enough drugs, supplies and functioning equipment. Monitoring was done by the District Health Management Team (DHMT) quarterly in the year. Important policies and Clinical protocol guidelines available were followed. There were close monitoring during pregnancy, and supervision in labour and after delivery.

6.1.3 Strategies and their effectiveness

All life-saving strategies recommended by the WHO, which are carried out in any district facility that provides EmNOC to help women with obstetric complications in order to reduce maternal mortality, were provided at the Effiduasi Hospital. The strategies were very effective as indicated by the low foetal deaths, case fatality rate and maternal deaths

6.1.4 Factors that influence maternal healthcare utilisation

Maternal health service utilisation was very high with hypertensive disorders, haemorrhage, obstructed labour, twin delivery, bleeding and retained products being the most utilized services. The factors that were found to influence maternal healthcare utilisation were service availability, accessibility, adequacy, affordability, maternal education and knowledge levels, culture and religion, previous outcome of pregnancy, labour and delivery and perceived effectiveness of strategies employed.

6.1.5 Concluding Remarks

Strategies to implement safe motherhood initiatives are implementable and effective in reducing maternal deaths in a good enabling environment as observed in the Sekyere East district. Sustaining and improving the strategies and their effectiveness could facilitate the realization of maternal related SDGs.

6.2 Recommendations

The following are the recommendations being put forward to help reduce maternal mortality.

6.2.1 Women in their reproductive age

Women in their reproductive age should plan before becoming pregnant to prevent any mistimed pregnancy and its associated problems that may call for abortion. Women should try to have children before they reach the age of 30 years, as advancement in age is associated with pregnancy-related problems. The girl-child education should be encouraged so that their knowledge will be enhanced to make informed decisions.

6.2.2 Health Facilities

For the enabling factors, health facilities in collaboration with the Ministry of Health should work closely to maintain the standards and availability for smooth service delivery. In-service training programmes should be intensified to help health personnel update their skills and improve their relationship with clients. People who are interested to work in the health facility (especially those who want to become midwives, gynaecologists and

radiologists) should be supported by the district assembly during their training so that on completion they would serve the district. NGOs and other stakeholders should be encouraged to support the district and supplement the government's efforts in providing ambulance and/or any needed infrastructure

6.2.3 Household and Community

To minimize the effects of culture, religion and poverty on women's decision making, households should involve women during decision-making and reduce cultural practices to the barest minimum during pregnancy-related complications because life lost cannot be regained. People in the communities who can assist should help women start income generating activities and register with the National Health Insurance Scheme. Chiefs and opinion leaders should serve as watchdogs for women who develop complications during pregnancy and are kept at home in the name of religion and culture.

6.2.4 Areas for further research

It is being recommended that a large scale research should be conducted to evaluate the factors that affect implementation of safe motherhood initiatives as this study only described the situation and scale of the problem in one district, Sekyere East District in Ghana.

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APPENDICES

Appendix I: STRCUTURED QUESTIONNAIRES

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY/
SCHOOL OF MEDICAL SCIENCES/DEPARTMENT OF COMMUNITY
HEALTH**

THE EVALUATION OF STRATEGIES FOR THE REDUCTION OF MATERNAL MORTALITY IN THE SEKYERE EAST DISTRICT: A VIEW THROUGH MI- CHAEL PATTON'S UTILIZATION- FOCUSED MODEL

QUESTIONNAIRE FOR HEALTH PROVIDERS

INTRODUCTION

*Good morning/afternoon and thank you all for receiving us. We are with the Department of Community Health School of Medical Sciences, KNUST, Kumasi, Kumasi. My name is and these are my colleagues..... (let's them introduce themselves). We are talking to several people like you to ascertain your views about **'The Evaluation of Strategies for the Reduction of Maternal Mortality in the Sekyere East District: A View Through Michael Patton's Utilization- Focused Model'** The findings will be used as a PhD Thesis, papers for publications in peer reviewed journals and policy briefs. Your opinions are very important and they will help us to improve the kind of health care we provide. There is no right or wrong answers. Your contribution is valuable. Whatever you say will be confidential so feel at case to express your opinion. In this exercise, you will be required to respond to some questions about the subject matter at your own convenience. Be guided that your refusal to answer any of these questions will not affect your access to health in anyway. You are free to participate or not. But we encourage you to help us improve the health system to improve the health status of people living in Ghana. **THANK YOU.***

SECTION A: BACKGROUND INFORMATION

- 1. SEX: 1. Male 2. female
- 2. AGE(years):-----
- 3. Educational Background: SSS, Post SSS, Diploma, Degree, Others
- 4. Facility:
- 5. What is your professional status? (tick)

Midwife	
Nurse with midwifery skills	
Doctor with midwifery skills	
Doctor without midwifery skills	
Obstetrician	
Health Assistant	

- 6. Work Experience (in years):
- 7. Who is the operating Agency?
(a) Government (b) Private
- 8. Do pregnant women visit this facility?
1. Yes 2. No
- 9. What time do clients/ patients usually report at this facility?
(a) Onset of labour
(b) First stage of labour
(c) Second stage of labour
(d) After delivery

SECTION B: ENABLING ENVIRONMENT

10. In what condition are pregnant women sent?

- (a) Good
- (b) Critical
- (c) Worse

11. What do you do to them?

- (a) Treat and discharg
- (b) Treat and admit
- (c) Refer
- (d) Other (specific)

12. If (a) what type of treatment do you give to manage her condition?

13. Are you well paid?

- (a) Yes (b) no

14. If no how much do you want to be paid? A 10% higher, b. 20% higher c. 50% higher d

100+% e. Other (specify).....

1. Do you have the necessary working tools? (list key tools needed for maternal health Yes 2 . No

Tools: -----

15. Are there career advancement opportunities for you?

- 1. Yes 2. No

16. Are you able to communicate effectively with clients?

- 1. Yes 2. No

17. If no what are some of the communication related problems?

18. Can you take detailed history of clients?

1. Yes 2. No

19. Are you able to educate women and their families?

1. Yes 2. No

20. Can you identify illness and conditions that are detrimental to women during pregnancy?

1. Yes 2. No

21. Can you perform vaginal examination?

Yes/no

22. Are you able to identify the onset of labour?

Yes/ no

23. If yes are you able to monitor maternal and fetal well-being?

24. Can you record maternal and fetal well being using the partograph?

Yes/no

25. Can you manage normal vaginal delivery?

Yes/no

26. Can you manage the third stage of labour?

Yes/no

27. Are you able to identify life- threatening conditions?

Yes no

28. If no what do you do when it happens?

29. List the key drugs you give within the week.

30. Was there any drug that was prescribed but could not be given?

Yes No

31. If yes what was the reason?

32. How are patients transported to the facility?

(a) Private

(b) Public

(c) Ambulance

33. Do some patients deliver before transporting to the facility?

Yes No

34. If yes where did they deliver?

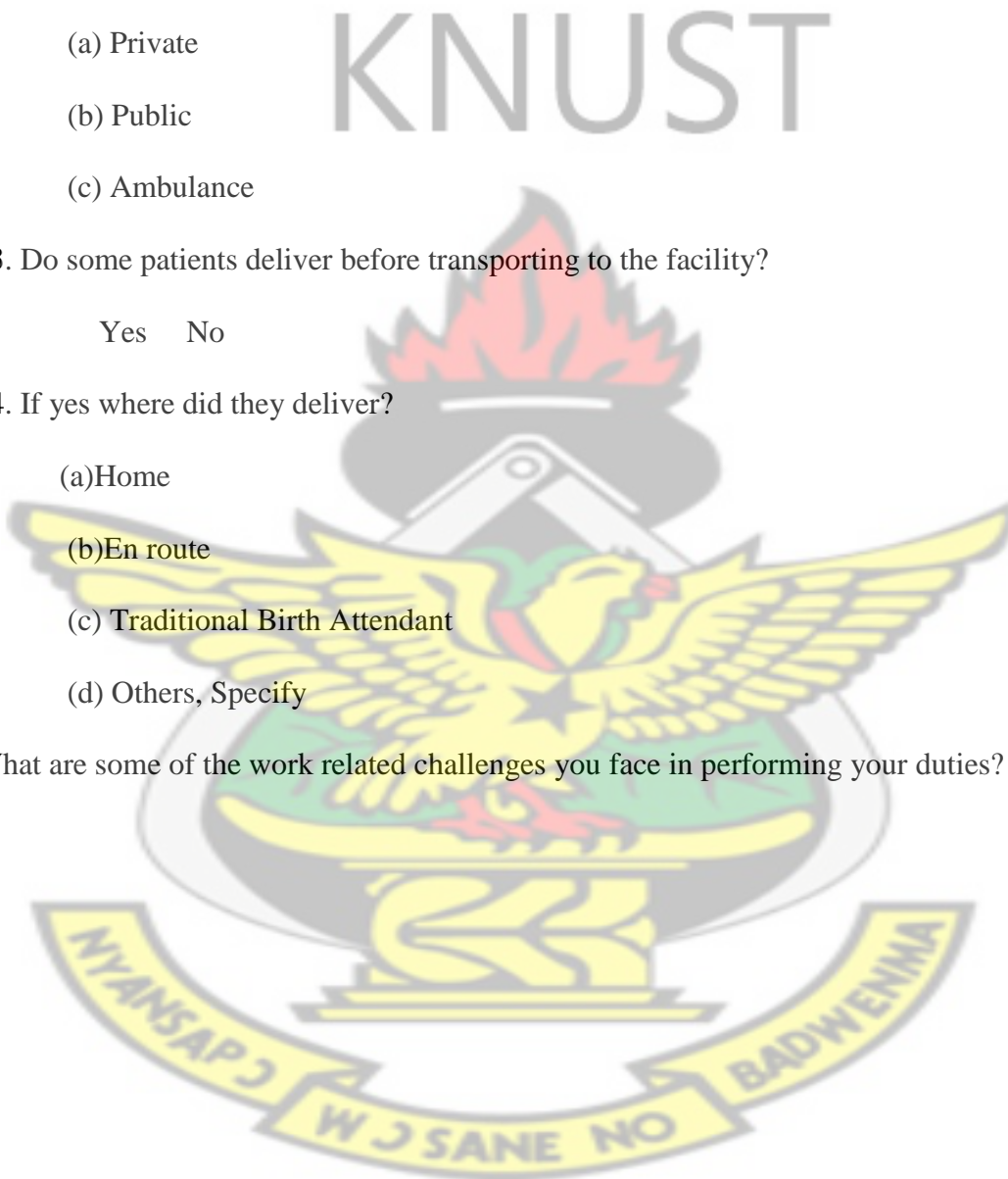
(a) Home

(b) En route

(c) Traditional Birth Attendant

(d) Others, Specify

What are some of the work related challenges you face in performing your duties?



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**THE EVALUATION OF STRATEGIES FOR THE REDUCTION OF MATERNAL
MORTALITY IN THE SEKYERE EAST DISTRICT: A VIEW THROUGH MI-
CHAEL PATTON'S UTILIZATION- FOCUSED MODEL**

QUESTIONNAIRE FOR DISTRICT HEALTH MANAGEMENT TEAM

INTRODUCTION

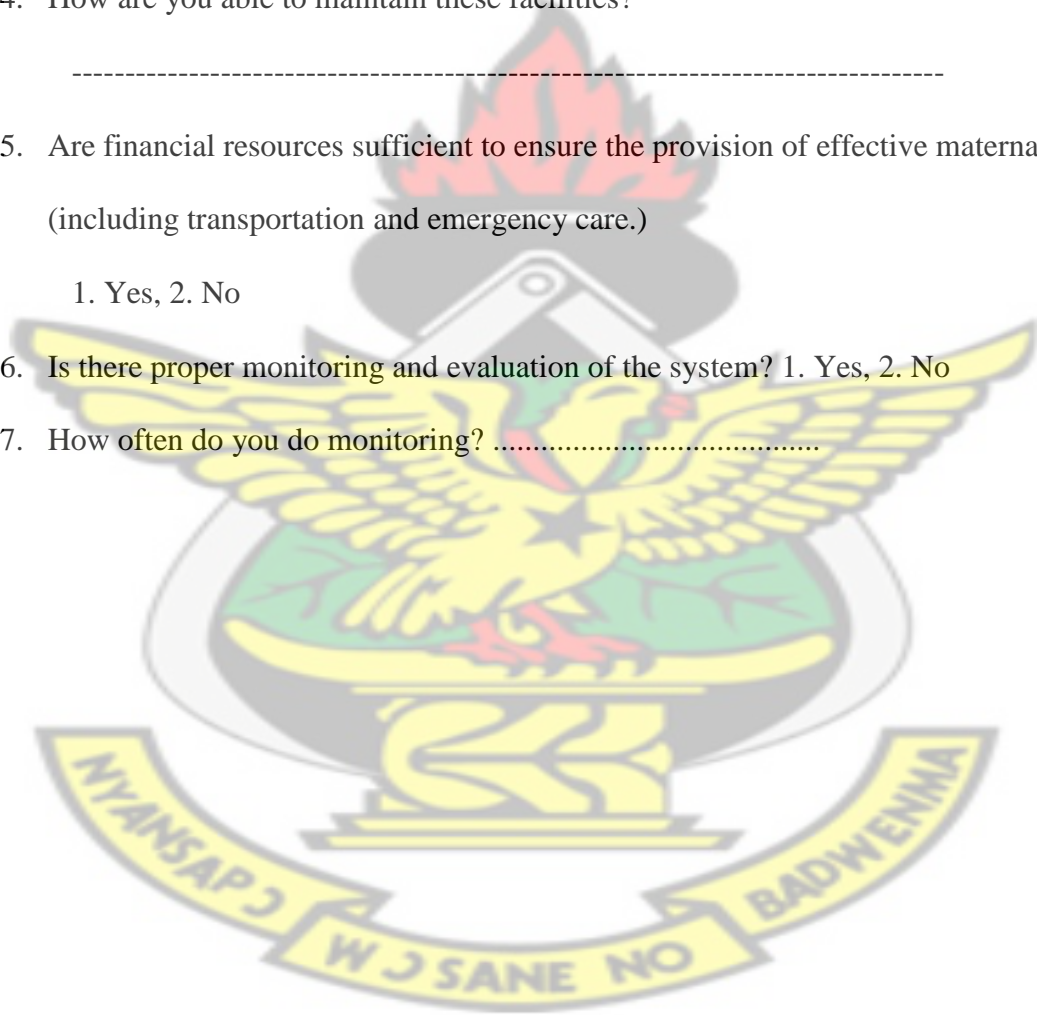
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SECTION A: BACKGROUND INFORMATION

SECTION B: ENABLING ENVIRONMENT

1. Are there any policies on maternal health 1. Yes, 2. No
2. Do all the functional areas have copies of the maternal health policy?
1. Yes, 2. No
3. Do you have adequate and functional facilities for maternal services?
1. Yes, 2. No
4. How are you able to maintain these facilities?

5. Are financial resources sufficient to ensure the provision of effective maternal care
(including transportation and emergency care.)
1. Yes, 2. No
6. Is there proper monitoring and evaluation of the system? 1. Yes, 2. No
7. How often do you do monitoring?



8. Are there linkages between the health services and the community?

Policies	Yes	No	Remarks
Are national policies in place to promote safe motherhood in general and EMoc?			
Do policies explicitly mention the rights of patients			
Is EMoc included in standard definitions and official discussions of maternal care and reproductive health?			
What maternal health activities are funded?			
How much government funding is allocated to maternal death reduction programmes?			
Are additional private (NGO, philanthropic organizations or the academic sector) or public funding sources available?			
Are cost recovery systems in place?			
Has a need assessment of obstetric services been done?			
If yes by whom and where?			
If yes does it include the process indicators for EMOC?			
Were human resource in the district assessed?			

SECTION C: STRATEGIES CARRIED OUT DURING PREGNANCY.

Strategies Carried Out During Pregnancy. (Please Tick)

Are there strategies for the reduction of maternal mortality?	Yes	No	Remarks
Are the facilities adequately staffed to perform strategies for reducing maternal mortality?			
What is the estimated prevalence of obstetric fistula?			
What is the estimated backlog of patients awaiting repair?			
If repairs of obstetric fistula are available, how many are performed each year?			
What is the average cost?			
Are buildings well structured and well maintained?			
. If no what renovation is needed before services are offered(e.g, painting, electrical systems, running water and sanitation, ventilation)			
Are rooms inspected to ensure that there are adequate and functioning equipment and supplies?			
How is equipment repaired?			
Where do spare parts come from?			
Are supplies properly stored?			
Are communication systems in place between facilities in the district?(radios/phones)			
Are signal functions performed regularly and assessed every three to six months?			
Are obstetric complications documented?			
Are clinical audits conducted?			
Have community perspective on health care been taken into account?			
Does the community know the danger signs in labour?			

SECTIUON D: FACTORS THAT INFLUENCE CARE

a. Systemic factors

7. Please report on the availability of services as follows:

Yes -100% availability in practice (24 hours/ 7 days in the week)

Partial – more than 50% availability but under 100% in practice

No- less than 50% availability in practice

Signal functions	Yes	No/	Partial	Remarks
Parenteral antibiotics				
Parenteral oxtocics				
Magnesium sulphate/parenteral sedatives/anticonvulsants				
Use of partograph				
Manual removal of products				
Removal of retained products				
Vacuum Extraction				
Blood transfusion				
Caesarean section				
Anaesthetic services				
Episiotomy				
Vaginal assisted delivery				
Forceps delivery				
Management of problem pregnancies				
Evacuation of incomplete miscarriages				
Provision of medical treatment (for shock,sepsis, anaemia,&hypertensive disorders of pregnancy.				
Evacuation of incomplete abortion				
Special care for neonates				
Maternal & child health programmes (Ante natal/post natal care, family planning)				
Staff availability :				
Gynae				
Nurse				
Midwives				

b. Trend of maternal Morbidity and Mortality Checklist

.Process indicators		2006	2007	2008	2009	2010
Number of obstetric admissions						
Number of caesarean sections						
.CS Rate (%)						
Maternal Deaths- Direct Causes						
.haemorrhage						
Obstructed/ prolonged labour						
Ruptured uterus						
.postpartum sepsis						
.pre-eclampsia/Eclampsia/PIH						
.induce/ septic abortion						
Ectopic pregnancy						
Others						
TOTAL						
Maternal death –direct						
Hepatitis						
Malaria						
Hiv/aids						
Anaemia						
Sickle cell disease						
Others						
TOTAL						

**C. Supervision Checklist for Sekyere East District
Equipment/Logistics availability**

KEY DRUGS	Yes	No	Remarks
Oxytocics			
IV Fluids			
Magnesium sulphate			
Calcium Gluconate			
Valium			
Procaine penicillin			
crystalline penicillin			
Gentamicin			
Metronidazole			
Amoxicillin			
Local anaesthetics			
General anaesthetics			
Oxygen			
LABOUR ROOM			
Vacuum Extractor			
Catheter			
IV Infusion sets			
Vaginal speculum			
Artery forceps			
Needles			
Sutures			
Syringes			
Sterilizer			
Scissors			Specify types
Emergency packs			
Sphygmomanometer			
Stethoscope			
Fetal stethoscope			
Weighing scale			
Gloves			
LABORATORY EQUIPMENT			
Microscope			
Test tubes			
Slides			
BLOOD BANK			
Blood bags			
Anti sera			
Storage capability			
OPERATING THEATRE			
Caesarean section set			
Laparotomy set			
MVA Kit			
Curette			

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QUESTIONNAIRE FOR PREGNANT WOMEN

Introduction

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SECTION A: BACKGROUND CHARACTERISTICS

1. Level of education.....

- (a)no education
- (b) Primary
- (c) Middle
- (d) JHS
- (e) Secondary/ SHS
- (f) Tertiary

2. Age.....

3. Occupation

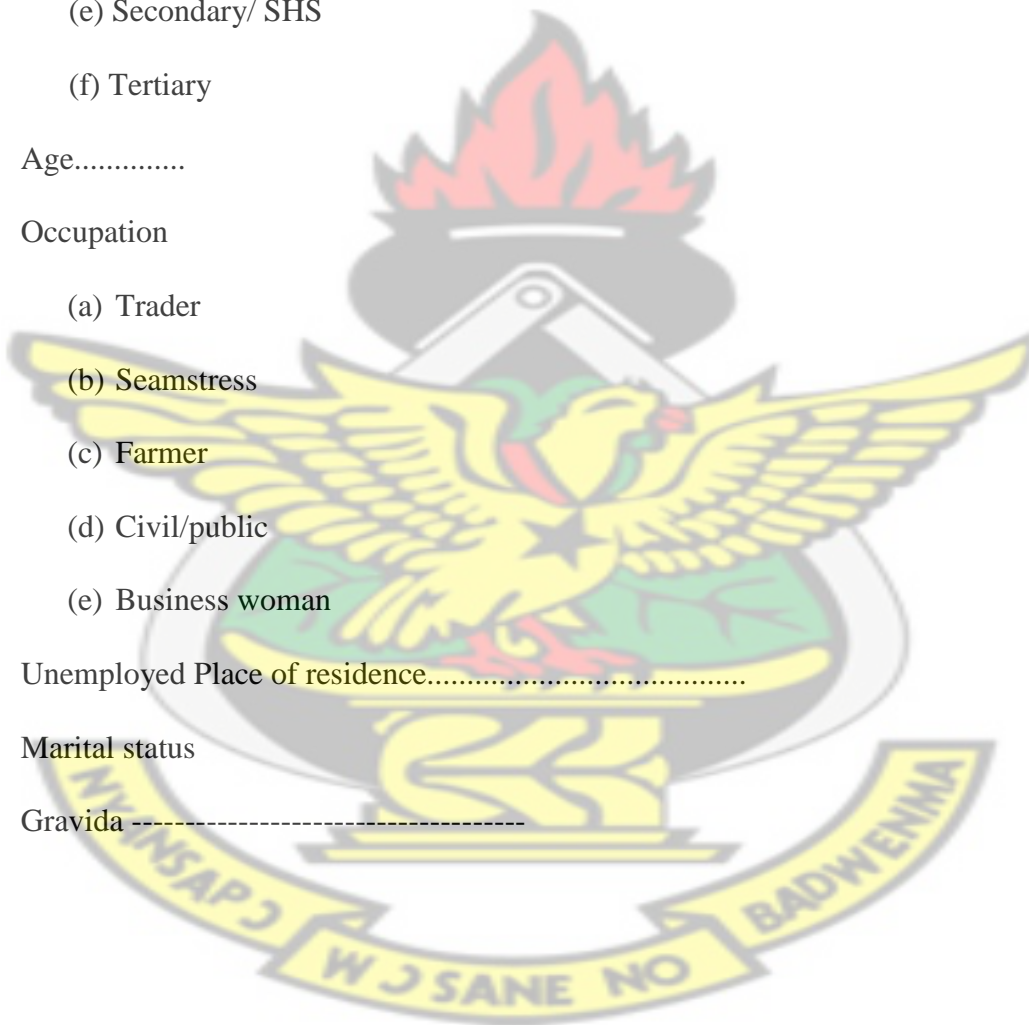
- (a) Trader
- (b) Seamstress
- (c) Farmer
- (d) Civil/public
- (e) Business woman

4. Unemployed Place of residence.....

5. Marital status

6. Gravida -----

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SECTION B: FACTORS THAT INFLUENCE CARE

SOCIAL FACTORS

7. Do you attend hospital for all your deliveries/ if this is your first do you wish to use the facility during the subsequent ones?

(a) yes

(b) No

8. If no why?

9. Are you involved in decision making in the family?

(a) Yes

(b) No

10. If no who decides on your behalf?

(a) Husband

(b) Family head

(c) Mother/father in-law

11. Why are you not consulted on matters in the home?

(a)cultural beliefs

(b) Religious beliefs

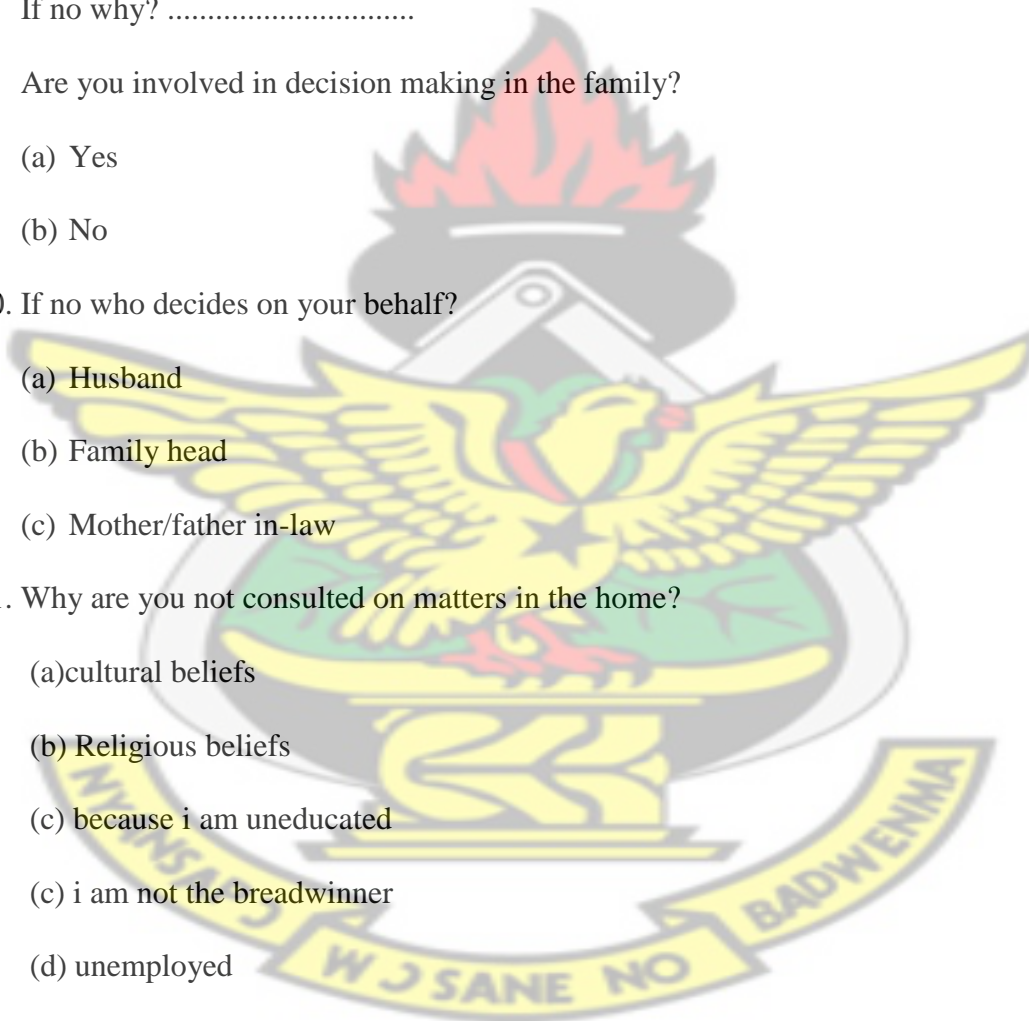
(c) because i am uneducated

(c) i am not the breadwinner

(d) unemployed

(e) have no money

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KNOWLEDGE

12. Do you have any idea on safe motherhood?

(a) Yes

(b) No

13. Are there facilities in the district that address safe motherhood programmes?

(a) Yes

(b) No

14. Are you educated on the changes that take place during pregnancy?

(a) Yes

(b) No

15. Can you recognise complications / illness during pregnancy?

(a) Yes

(b) No

16. If no why?

17. Are the facilities that provide care during pregnancy user- friendly?

(a) Yes

(b) No

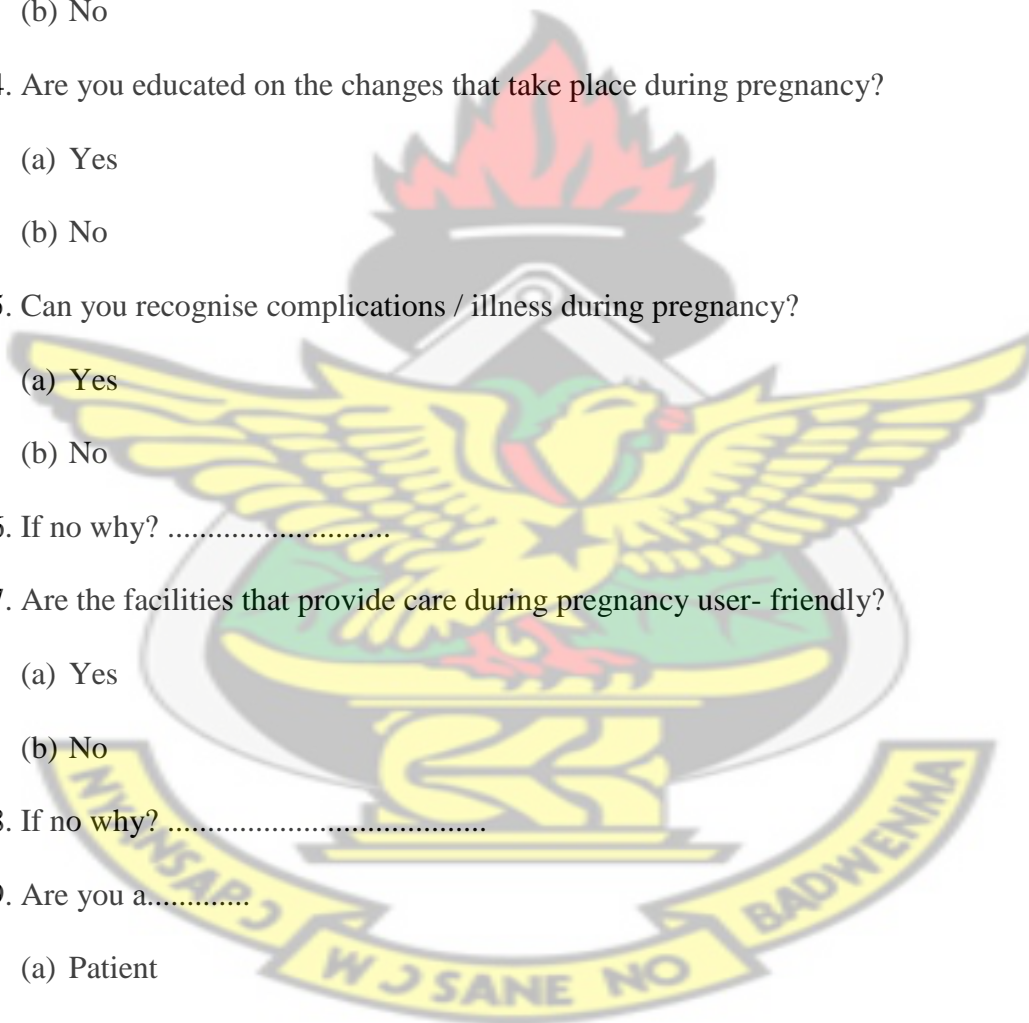
18. If no why?

19. Are you a.....

(a) Patient

(b) Relative

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20. If a relative how are you related to the patient?

- (a) Mother
- (b) Sister
- (c) Husband

AT HEALTH FACILITY

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21. Name the facility/facilities.....

22. Where did you deliver your last child?

- (a) Home
- (b) TBA
- (c) Health post/centre
- (d) Maternity
- (e) Hospital

23. Why did you deliver at that place?

24. Did you or any of your relations develop any complication during your/your relation's last pregnancy?

- (a) Yes
- (b) No

25. If yes what type of complications

- (a) Hypertensive disorders
- (b) Bleeding
- (c) Complications during delivery
- (d) Fistula

- (e) Twin delivery
- (f) Others

26. Why were you brought to this facility?

- (a) Hypertensive disorders
- (b) Obstructed labour
- (c) Twin delivery
- (d) Ectopic pregnancy
- (e) Abortion
- (f) Retained products
- (g) Bleeding

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ACCESSIBILITY

27. Was it difficult for you to get to the facility?

- (a) Yes
- (b) No

28. How were you transported to this facility?

- (a) Public transport
- (b) Private
- (c) Ambulance

29. How long (mins) did you wait before you were attended to?-----

10 mins 20 mins > 20 mins 30. How much (GHC) did it cost you if a patient from home to

this facility? -----

30. Were you able to pay?

(a) Yes

(b) No

31. If no, what happened?

32. If delivered in this facility were you assisted?

(a) Yes

(b) No

(c) OUTCOME

33. State the type of delivery.....

34. What was your foetal outcome?

(a) Died

(b) Survived

(c) Still birth

35. If (a) what was the cause?

(a) Negligence of personnel

(b) Delayed

(c) Financial

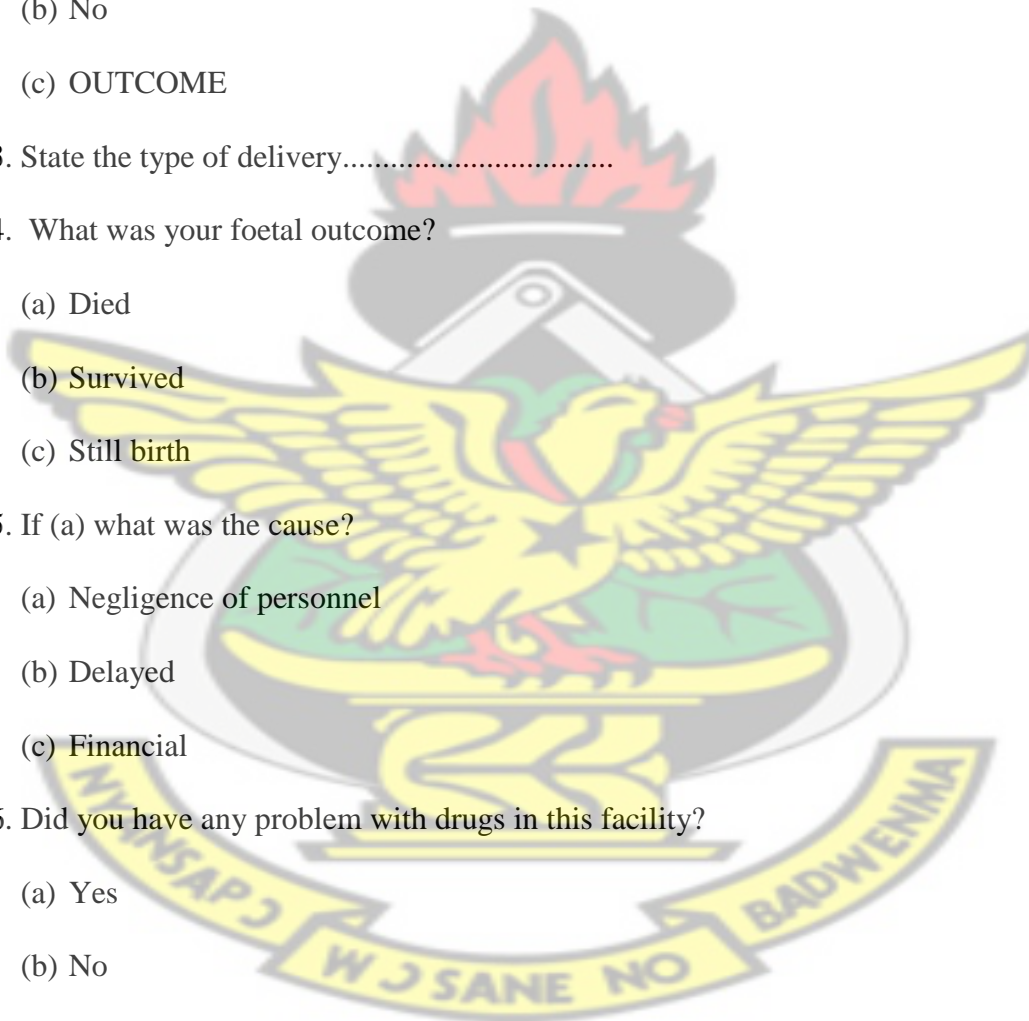
36. Did you have any problem with drugs in this facility?

(a) Yes

(b) No

37. Explain what you mean by yes/no.....

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38. Are you registered with the National Health Insurance Scheme?

(a) Yes

(b) No

39. If yes did it cover all your expenses?

a. Yes

b. No

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40. If no which expenses did it not cover?

41. If you are not a member of the NHIS how much did you pay?-----

42. Were you able to pay?

(a) Yes

(b) No

43. If b what happened?

44. Was the cost of the services provided affordable?

(a) Yes

(b) No

45. If you are to seek care during pregnancy is there any reason why you cannot seek care in the district?

(a) Yes

(b) no

46. If yes what may be the reason?

47. Are you recognized in the community?

(a) Yes

(b) No

48. How do people relate to you in the community?

- (a) Positive
- (b) Negative

49. Why do they relate to you like that?

50. How were you received in this facility?

- (a) Unsatisfactory
- (b) Rude
- (c) Satisfactory

51. What is your opinion on the quality of care?

52. Are you satisfied with the services provided?

- (a) Yes
- (b) no

53. Why?

- (a) Staff attitude
- (b) Afraid of CS
- (c) Normal delivery .
- (d) Long waiting time Cultural
- (e) Religion ADEQUACY

54. Were you able to get all your drugs at the facility ?

- A(yes b) no

55. Did you get a bed to yourself or you slept on the floor?

- a. yes a bed to myself
- b) slept on the floor.

56. Were you treated at the facility or referred from the facility?

i. treated and discharged

ii. was referred

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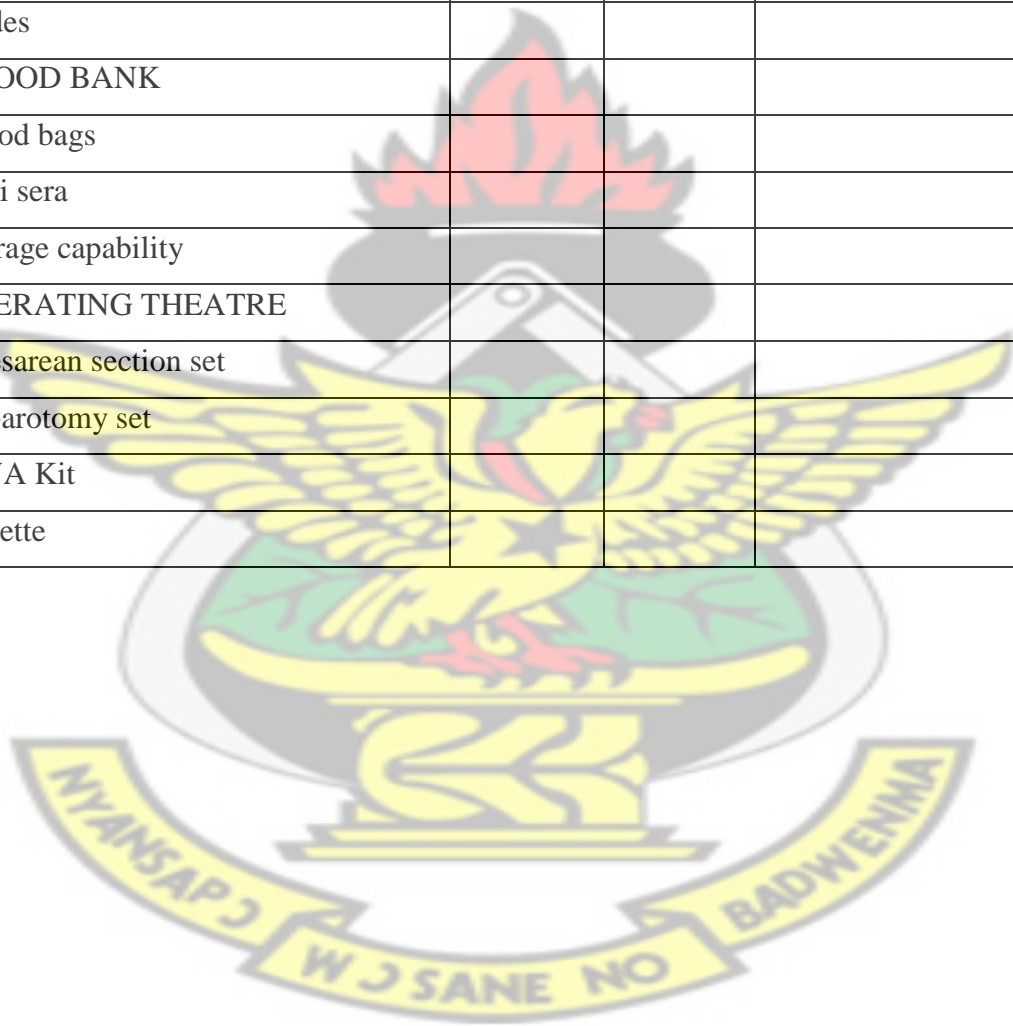
Appendix II: OBSERVATION CHECKLIST

C. Supervision Checklist for Sekyere East District

Equipment/Logistics availability

KEY DRUGS	Yes	No	Remarks
Oxytocics			
IV Fluids			
Magnesium sulphate			
Calcium Gluconate			
Valium			
Procaine penicillin			
crystalline penicillin			
Gentamicin			
Metronidazole			
Amoxicillin			
Local anaesthetics			
General anaesthetics			
Oxygen			
LABOUR ROOM			
Vacuum Extractor			
Catheter			
IV Infusion sets			
Vaginal speculum			
Artery forceps			
Needles			
Sutures			
Syringes			
Sterilizer			
Scissors			Specify types
Emergency packs			

Sphygmomanometer			
Stethoscope			
Fetal stethoscope			
Weighing scale			
Gloves			
LABORATORY EQUIPMENT			
Microscope			
Test tubes			
Slides			
BLOOD BANK			
Blood bags			
Anti sera			
Storage capability			
OPERATING THEATRE			
Caesarean section set			
Laparotomy set			
MVA Kit			
Curette			



Appendix III: MAP OF SEKEYERE EAST DISTRICT

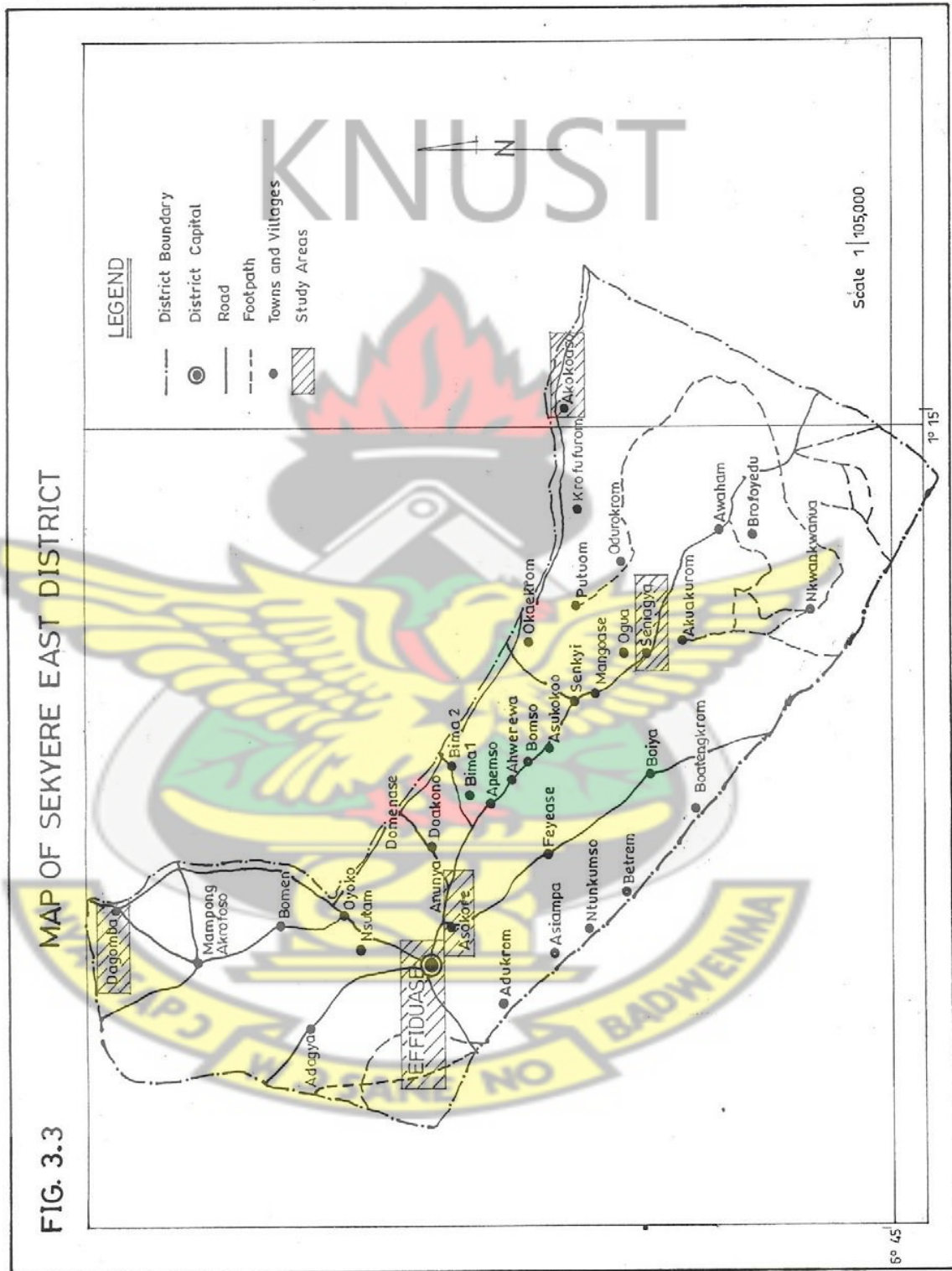


FIG. 3.3

SOURCE : Sekyere East District Assembly