

FACTORS INFLUENCING UTILIZATION OF SKILLED DELIVERY SERVICES IN THE NORTHERN REGION OF GHANA

**ESENAM COMFORT KAVI
GHANA**

**49th International Course in Health Development
September 19, 2012 – September 06, 2013**

**KIT (ROYAL TROPICAL INSTITUTE)
Development Policy and Practice/
Vrije Universiteit Amsterdam**

FACTORS INFLUENCING UTILIZATION OF SKILLED DELIVERY SERVICES IN THE NORTHERN REGION OF GHANA

A thesis submitted in partial fulfillment of the requirement for the degree of Master of Public Health

By

Esenam Comfort Kavi
Ghana

Declaration:

Where other people's work has been used (either from a printed source, internet or any other source) this has been carefully acknowledged and referenced in accordance with departmental requirements.

The thesis **Factors Influencing Utilization of Skilled Delivery Services in the Northern Region of Ghana** is my own work.



Signature

49th International Course in Health Development (ICHHD)
September 19-2012 – September 6, 2013
KIT (Royal Tropical Institute)/Vrije Universiteit Amsterdam
Amsterdam, The Netherlands

September 2013

Organized by:

KIT (Royal Tropical Institute), Development Policy & Practice
Amsterdam, The Netherlands

In co-operation with:

Vrije Universiteit Amsterdam/ Free University of Amsterdam (VU)
Amsterdam, The Netherlands

TABLE OF CONTENT

LIST OF FIGURES.....	vi
LIST OF TABLES.....	vi
ANNEXES	vi
ACKNOWLEDGEMENT.....	vii
ABSTRACT.....	viii
LIST OF ABBREVIATIONS	ix
GLOSSARY OF TERMS.....	x
INTRODUCTION.....	xii
CHAPTER ONE: BACKGROUND.....	1
1.1 Geographic and Demographic Profile of the Northern Region	1
1.2 Economic, Social and Cultural Characteristics of the Northern Region.....	1
1.3 Maternal and Child Health in Ghana.....	2
1.3.1 Child Health	2
1.3.2 Maternal Health.....	2
1.5 The Health System of Ghana.....	3
1.5.1 Leadership and Governance	3
1.5.2 Service Delivery	3
A. Community level	3
B. Sub-district Facilities	4
C. District Hospitals	4
D. Regional and Teaching Hospitals.....	4
1.5.3 Key Health Workforce	5
1.5.4 Healthcare Financing in Ghana.....	6
CHAPTER TWO: PROBLEM STATEMENT, JUSTIFICATION, OBJECTIVES AND METHODS	7
2.1 Problem Statement	7
2.2 Justification	8
2.3 Objectives of Study.....	8
2.3.1 General Objective	8
2.3.2 Specific Objective	8
2.4 Methods	9

2.4.1 Study Design	9
2.4.2 Search Strategy	9
2.5. Conceptual Framework	9
2.5.1 Components of the Model	10
2.6 Limitations of the study	12
CHAPTER THREE: REVIEW OF THE FACTORS INFLUENCING UTILIZATION OF SKILLED DELIVERY SERVICES	13
3.1 Socio-economic and Cultural Factors	13
A. Demographic Factors	13
3.1.1 Age and Parity	13
3.1.2 Marital status	13
B. Social Structure	13
3.1.3 Education	13
3.1.4 Employment and Income	14
3.1.5 Gender	14
3.1.6 Ethnicity, Cultural Beliefs and Practices	15
3.2 Health Service Related Factors	16
A. Enabling Resources	16
3.2.1 Geographical Access to Services	16
3.2.2 Cost of Services	17
3.2.3 Availability of Resources	17
3.2.4 Quality of Care	18
3.2.5 Free Maternal Health Care (FMHC) Policy	18
3.2.5 Background of the Free Maternal Health Care Policy	18
3.2.6 Benefit Package under FMHC Policy	19
3.2.7 Analysis of Key Issues and Options	19
3.3 Need Factor	21
3.3.1 Evaluated Need	21
3.3.2. Perceived need	21
CHAPTER FOUR: EVIDENCE OF EFFECTIVE INTERVENTIONS FROM OTHER DEVELOPING COUNTRIES	22
4.1 Community-based Strategies	22

4.2 Health System Strengthening Strategies	23
CHAPTER FIVE: DISCUSSION OF FINDINGS	25
5.1. Socio-economic and Cultural Factors.....	25
5.1.1 Age, Parity and Marital Status	25
5.1.2 Education and Employment	25
5.1.3 Gender	26
5.1.4 Ethnicity, Cultural Beliefs and Practices	26
5.2 Health System Factors.....	27
5.2.1 Geographical Accessibility	27
5.2.2 Cost of Services.....	28
5.2.3 Availability of Resources.....	28
5.2.4 Quality of Care	29
5.2 Need Factor	29
5.4 Interventions from other Developing Countries.....	30
5.4.1 Community-based Interventions.....	30
5.4.2 Health System Strengthening	31
5.5 Conceptual Framework	32
CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS.....	33
6.1 Conclusion	33
6.2 Recommendations	34
6.2.1 Policy-making Level	34
6.2.2 Programme management level	34
REFERENCES	36
ANNEXES	48

LIST OF FIGURES

Figure 1: Trend in Maternal Health Service Utilization in Northern Region 2009-2011.....	3
Figure 2: Types of Health Facilities in the Northern Region, 2012.....	5
Figure 3: Andersen's Model of Health Service Utilization.....	10

LIST OF TABLES

Table 1: Ghana Child Health Indicators	2
Table 2: Statistics of Key Health Workforce in Northern Region 2009-2011	5

ANNEXES

Annex I: Location of the Northern Region on the Map of Ghana	48
Annex II: Causes of Institutional Maternal Mortality in Northern, 2012	49
Annex III: Trend in Maternal Mortality in Northern Region, 2008-2012.....	50
Annex IV:Comparative Data on Utilization of Maternal Health Service	51
Annex V: Socioeconomic Inequities in Coverage of Maternal and Child Health Services in Ghana, 2008.....	52
Annex VI: Types and Ownership of Health Facilities in Northern Region, 2011	53

ACKNOWLEDGEMENT

My deepest gratitude goes to the Almighty God for His abundant grace and favour which has brought me this far.

I am grateful to the government of The Royal Netherlands for funding my studies. To the entire ICHD staff of the Royal Tropical Institute I say 'more grease to your elbow'.

I am equally grateful to my colleagues of the 49th ICHD Course for enriching me with their priceless experiences.

I appreciate the support and encouragement of my Advisor and Backstopper throughout the thesis writing period.

I am indebted to Mr. Tenii Mammah of UNFPA for providing me with the required regional level data for this thesis.

To my family and friends I say, I am indeed blessed to have you. I certainly could not have been through it without you, thank you.

Finally, I would like to extend my heartfelt gratitude to my Mentor Dr. Emmanuel Dormon for his counsel and encouragement over the years.

ABSTRACT

Background: Skilled birth attendance is crucial for reducing maternal mortality and morbidity as well as neonatal mortality yet majority of deliveries in the Northern region are attended by unskilled personnel.

Objective: To analyze the factors influencing the utilization of skilled delivery services in the Northern region of Ghana in order to make appropriate recommendations to improve utilization.

Methods: The study was conducted by reviewing and analyzing available literature on the subject using Andersen's Behavioural Model of Health Service Utilization as a guide.

Findings: High education, formal employment and high income were found to be positively associated with utilization of skilled delivery services. High parity, gender inequalities and some cultural beliefs and practices were found to be negatively related to utilization of skilled delivery services. Mixed results were found for age. Perceptions about need and quality of care were found to be predictive of use of skilled delivery services.

At the health system level, geographical inaccessibility, indirect cost of services, unavailability of resources - shortage of midwifery workforce, inequitable distribution of facilities, lack of equipment, unavailability of water and electricity negatively influence utilization of skilled delivery services. The Free Maternal Health Care Policy has improved access to services yet has been less effective in dealing with the weaknesses in the health system.

Interventions from - Nepal, Indonesia, India and Bangladesh demonstrate that combining strategies to influence both demand-side and supply-side results in significant impact.

Conclusion: Inadequate access to skilled birth attendance remains a challenge to utilization in the Northern region of Ghana.

Keyword: Factors, Skilled delivery services, Northern region, Ghana

Word Count: 12,980

LIST OF ABBREVIATIONS

ANC	Antenatal Care
BEmONC	Basic Emergency Obstetric and Newborn Care
CEmONC	Comprehensive Emergency Obstetric and Newborn Care
CHAG	Christian Health Association of Ghana
CHO	Community Health Officer
CHPS	Community-based Health Planning and Services
CHWs	Community Health Workers
DHS	Demographic and Health Survey
EmONC	Emergency Obstetric and Newborn Care
FGD	Focus Group Discussion
GHS	Ghana Health Service
HMIS	Health Management Information System
ICRW	International Centre for Research on Women
IMF	International Monetary Fund
IMMR	Institutional Maternal Mortality Ratio
ITDP	Institute for Transportation and Development Policy
MDG	Millennium Development Goal
MMR	Maternal Mortality Ratio
MOH	Ministry of Health
NHIA	National Health Insurance Authority
NHIS	National Health Insurance Scheme
Norad	Norwegian Agency for Development Cooperation
NR	Northern Region
PNC	Postnatal Care
RHD	Regional Health Directorate
SBA	Skilled delivery
TBA	Traditional Birth Attendant
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
WHO	World Health Organization

GLOSSARY OF TERMS

Basic Emergency Obstetric and Newborn Care facilities (BEmONC): “Peripheral health facilities with maternity services that regularly practice the seven basic signal functions: parenteral administration of antibiotics, anticonvulsants, oxytocics, manual removal of placenta, manual vacuum aspiration for retained products, assisted instrumental delivery by vacuum extractor, newborn resuscitation with mask. The functions also include stabilization of mothers and newborns with complications before and during transfer to hospital”(UNFPA 2011, p. 161).

Capitation refers to “provider payment mechanism in which providers are paid, typically in advance at pre-determined fixed rate to provide a defined set of services for each individual enrolled with the provider for a fixed period of time. The amount paid to the provider is irrespective of whether that person would seek care or not during the designated period” (National Health Insurance Authority (NHIA) 2013, p. 2).

Comprehensive Emergency Obstetric and Newborn Care facilities – Comprehensive (CEmONC): “Health facilities with maternity services that regularly practice the seven BEmONC signal functions listed above plus two additional signal functions: emergency surgery (caesarean section) and safe blood transfusion (can also include advanced newborn resuscitation)” (UNPA 2011, p. 161).

Concentration Index (CI) “provides a measure of socio-economic inequality in health care utilization. Its value varies from -1 to +1: a value close to zero indicates near equality, a value declining towards -1 indicates greater utilization among the poor (pro-poor) while a value increasing to +1 indicates greater utilization amongst wealthier group (pro-rich) . The rich-poor ratio is used to show inequality in health care utilization among the different socioeconomic groups in the population”(Quayyum et al., 2013, p. 6).

Contraceptive Prevalence Rate refers to the “percentage of women who are practicing, or whose sexual partners are practicing, any form of contraception. It is usually measured for married women ages 15-49 only”(ICF Macro.2010, p. 24).

Maternal mortality or maternal death refers to the “death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management” (UNFPA 2003, p. 6).

Maternal mortality ratio (MMR): “Number of maternal deaths during a given time period per 100,000 live births during the same time period” (WHO 2012a, p.1).

Midwifery workforce: The health professionals whose primary function includes health services provided to women during pregnancy, labour and birth, as well as postpartum care for mothers and newborns. The definition includes midwives and others competent in the practice of midwifery, such as nurse-midwives and doctors with relevant competence (and

in certain countries, auxiliary nurse midwives). These professionals are also referred to using the term skilled birth attendants (UNFPA 2011, p. 161).

Northern Ghana: Northern Ghana comprises of the three regions in the Guinea savanna zone of Ghana and these are Northern, Upper East and Upper West Regions.

Task shifting refers to “moving tasks from health workers with higher levels of training to health workers with lower levels of training. In this way, access to key health services can be increased in areas where there are currently shortages of health workers” (Norad 2012, p.1).

Skilled Attendant refers “exclusively to people with midwifery skills (for example, doctors, midwives, and nurses) who have been trained to proficiency in the skills necessary to manage normal deliveries and diagnose, manage, or refer obstetric complications” (UNFPA 2013, p. 1).

INTRODUCTION

While working with the Association of Church-based Development Non-Governmental Organizations (ACDEP) – an organization operating in the three regions (Upper East, Upper West and Northern regions) Northern Ghana, my responsibilities included public health needs identification in our catchment area. Two of the areas identified areas were maternal and adolescent reproductive health. Throughout the five-year period of my work, maternal health remained a priority on the organization’s agenda and an area of particular interest to me because of the high cases of maternal deaths, birth injuries, disabilities and newborn deaths recorded in the Northern region.

Heightening my interest in the subject was the fact that skilled birth attendance – a proven intervention to reducing the public problems stated above continued to be significantly low in the Northern region. It was against this background that I sought to understand the factors that influence the utilization of skilled delivery services in the Northern region (NR) of Ghana in order to make appropriate recommendations to policy makers and programme managers to improve utilization.

In 2010, the Maternal Mortality ratio in Ghana was estimated at 350/100,000 live births and most analyst remain skeptical about country’s ability to meet its Millennium Development Goal (MDG) 5 target of 150/100,000 live births by 2015 (Countdown 2013). Although available data on birth-related injuries and disabilities in the country may be scanty, evidence has shown that for each maternal death, there are twenty or more women who are injured or disabled (Hunt and Mesquita 2012). Notwithstanding the evidence that skilled attendance at all births is the single most critical intervention for maternal and neonatal survival (UNFPA 2013), as at the end 2011, only 52% of births in Ghana were attended by skilled attendants (Ghana Health Service(GHS) 2012a).

As the world countdown to twenty years after the International Conference on Population and Development (ICPD+20) in 2014 and look beyond the MDGs one question comes to mind and that is ‘how far have we gone in promoting reproductive health as a basic human right and what are the impediments and what is the way forward to achieving that?’

The content of this thesis is organized under six chapters. Chapter one provides background information on Northern region and Ghana. Chapter two contains the problem statement, justification, study objectives, methodology, conceptual framework and limitations of the study. Chapter three presents findings of the study on the factors influencing utilization of skilled delivery services. Chapter four reviews evidence of successful interventions from other developing countries. In Chapter five, study findings are discussed. In Chapter six, the conclusion and recommendations are presented.

CHAPTER ONE: BACKGROUND

This section provides general background information on the Northern region and Ghana.

1.1 Geographic and Demographic Profile of the Northern Region

The Northern region is the largest of the ten regions of Ghana in terms of land area. It occupies an estimated 70,384 square kilometres which accounts for 29% of the total land area of the country. There are approximately 2,500,000 people living in the Northern region accounting for 10% of Ghana's population. The population is mainly (70%) rural and growing at a rate of 2.9% per annum. The region is divided into twenty-six administrative districts (Regional Health Directorate (RHD) 2013) and has over 5,000 communities with populations of 200 - 500 inhabitants sparsely distributed across its geographical area. The region is boarded at the south by the Brong Ahafo and Volta regions, North by Upper East and Upper West regions, Republic of Togo to the East and Cote D'Ivoire to the West. Significant proportion of the population in 7 districts namely; Gushegu, Karaga, Tolon/Kumbungu, West Mamprusi, Nanumba North, East and West Gonja can only be reached during the dry season whilst some communities are completely surrounded by the Volta Lake (GHS 2006). See Annex I for map of Ghana indicating location of the Northern region. In most rural areas, the condition of the roads are bad and transport options are limited (International Transport and Development Policy 2005).

1.2 Economic, Social and Cultural Characteristics of the Northern Region

Twenty-eight percent (28.5%) of the population in Ghana live on less than \$2/day (Purchasing Power Parity) (World Bank 2013a). There is great economic disparity between the north and the south of Ghana which is made less visible by the aggregation of data at the national level. It is estimated that the number of people living below the poverty line in the North are almost twice those in the South of the country (Ghana Statistical Service (GSS) 2008, IMF 2012).

Illiteracy is high among the region's populace. Forty percent (40%) of men and 25% of women aged 15 years and above are literate. The people are predominantly (60%) Muslims, 21% are Christians and 16% are Traditionalists (GSS 2012). The people are predominantly smallholder farmers. The Northern region has a patriarchal system where women's rights are channeled through their husbands or male kinship. The extended family has a strong interest in the number of children a couple bear and this tends to influence continual childbearing even where couples prefer to have less (Bawah et al., 1999). Ghanaians in general place great value on children yet the people of the Northern region place great value on large family sizes.

1.3 Maternal and Child Health in Ghana

1.3.1 Child Health

Ghana has an MDG target of reducing its under-five mortality rate from 121/1000 live births in 1990 to 40/1000 live births by 2015 - a target the country is still far from reaching. Neonatal deaths which account for over one-third of deaths of children under-five years put the country at a crossroad. In 2011, 91% of children under-five received three doses of DTP, three doses Hib and measles vaccines (Countdown 2013). Undernutrition among children under-five years is prevalent with 28% stunted, 14% underweight and 9% wasted. The Northern region has the highest cases of child undernutrition in Ghana (GSS et al., 2009a).

Table 1: Ghana Child Health Indicators

Indicator		Year
Births (000)	776	2011
Total under-five Population (000)	3,592	2011
Total under-five deaths (000)	60	2011
Neonatal deaths: % of all under-five deaths	38	2011
Neonatal mortality rate (per 1000 live births)	30	2011
Infant mortality rate (per 1000 live births)	52	2011
Stillbirth rate (per 1000 total births)	22	2009
% of infants exclusively breastfed	63	2008*

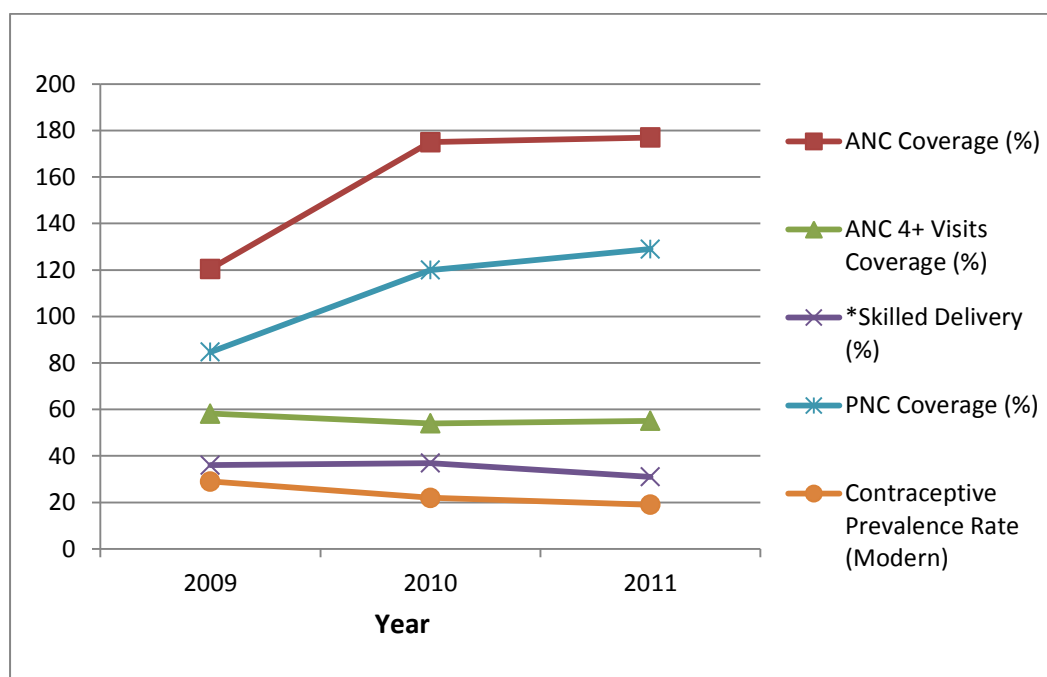
Source: Countdown 2013, *GSS et al., 2009a

1.3.2 Maternal Health

At the country level, between the periods of 1998 to 2008, the median age at which Ghanaian women began childbearing increased from 20 years to 21 years. Adolescent fertility (15-19 year) decreased remarkably from 23% to 13%. From 1998-2003 the contraceptive (modern) prevalence rate increased from 7%-19% however by 2008 it had declined to 17%. In 2008, the total fertility rate was 4 births per woman (ICF Macro 2010). The HIV prevalence rate is 1.5% among the population aged 15-49 years (UNAIDS 2013).

In the Northern region, 47% of the female population is in the reproductive age (15-49 years) and 23% of these women began childbearing between 15-19 years (GSS 2012). The total fertility rate of women aged 15-49 years is 7 births per woman, the highest in Ghana (ICF Macro 2010). Figure 1 shows the five year trend in utilization of maternal health services in the Northern region. While antenatal care (ANC) and postnatal (PNC) trends look encouraging, those of skilled deliveries (SBA) and contraceptive prevalence are significantly low.

Figure 1: Trend in Maternal Health Service Utilization in Northern Region 2009-2011



Source: *GHS 2012a, RHD-HMIS 2013

Remark: Over 100% coverage could be an indication of underestimation of target population. The proximity of the region's borders to the Republic of Togo and Cote d'Ivoire and the limited capacity of staff at the periphery facilities to appropriately manage data could be possible explanations.

1.5 The Health System of Ghana

1.5.1 Leadership and Governance

Ministry of Health (MOH) is the government body mandated to formulate health policies and strategies. The implementing agencies of the policies and strategies developed by the MOH are Ghana Health Service (GHS), Teaching Hospitals, Christian Health Association of Ghana (CHAG), Muslim mission, NGOs and Private facilities (MOH 2012). At the heart of Ghana's informal sector are traditional medicine practitioners including traditional birth attendance (TBAs).

1.5.2 Service Delivery

Ghana Health Service is the implementing arm of MOH and the largest healthcare provider in Ghana. Services are provided at four levels - regional, district, sub-district and community levels.

A. Community level

The community-based health planning and services (CHPS) concept was introduced nationwide in 2000 to bring health services closer to the doorsteps of the rural population. CHPS facilities provide community-based services by working with households and communities. The facilities have resident Community Health Officers (CHO) (GSS et al., 2009a). The CHO at the CHPS facilities belong to the professional cadre of Community Health Nurses, Community Health Nurse Midwives, Midwives or Enrolled Nurses. Most CHPS facilities however do not have midwives thus not qualified to provide basic emergency

obstetric care (BEmONC). The facilities serve a population of 3000-4000 people organized into zones (Apetorgbor 2009, Nyonator et al., 2005).

B. Sub-district Facilities

Health centres and clinics provide preventive and curative services as well as minor surgical procedures like incision and drainage. The facilities are expected to have midwives who will provide the seven BEmONC signal functions. A health center or clinic serves a population of approximately 20,000 people.

Polyclinics are health centres located in urban areas. They are expected to have midwives and medical doctors and offer more comprehensive range of services than the rural health centres. Comprehensive Emergency Obstetric and Newborn Care (CEmONC) may be provided at polyclinics.

C. District Hospitals

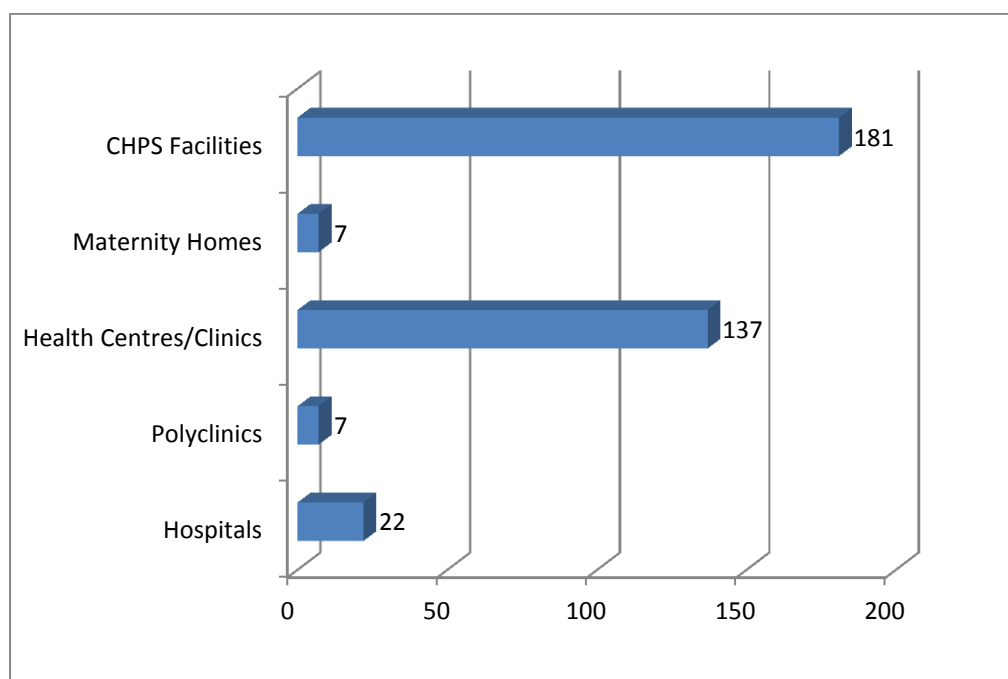
District hospitals serve as referral facilities for cases from the community and sub-district levels. Each district hospital serves a population of approximately 100,000-200,000 and has a bed capacity of 50-60. The district hospitals are expected to have physicians and midwives and provide CEmONC.

D. Regional and Teaching Hospitals

The highest level of care is the regional and teaching hospitals where specialist care is provided in addition to all the curative services provided at community, sub-district and district levels. In addition to these services, the teaching hospital serves as a training facility for health professionals (GHS 2012b).

Figure 2 below shows the types of health facilities - both public and private in the Northern region. Annex VI shows details of the ownership of the facilities.

Figure 2: Types of Health Facilities in the Northern Region



Source: RHD-HMIS 2013

1.5.3 Key Health Workforce

The health sector of Ghana faces shortage of critical workforce and the Northern, Upper East, Upper West and Volta regions are the hardest hit (MOH 2007). The population of doctors in the Northern region is concentrated in the Tamale Teaching Hospital. Table 1 gives a snapshot of the human resource situation in the Northern region in comparison with national figures.

Table 2: Statistics of Key Health Workforce in Northern Region 2009-2011

Year	2009	2010	2011
Doctor/Population Ratio			
Northern Region	1:50,751	1:18,257	1:21,751
National	1:11,929	1:10,423	1:10,034
Nurse/Population Ratio			
Northern Region	1:1,934	1:2,067	1:1,547
National	1:1,497	1:1,489	1:1,240
Midwife/*WIFA Ratio			
Northern Region	-	1:1,981	1:2,050
National	-	1:1,538	1:1,478

Source: GHS 2012a

* WIFA=Women in Fertile (Reproductive) Age

1.5.4 Healthcare Financing in Ghana

In 2004 the National Health Insurance Scheme (NHIS) was introduced under Act 650 to replace the user fee system popularly known as 'cash and carry'. NHIS is part of the nation's efforts to achieve universal health coverage (NHIA 2012). The scheme covers 95% of health conditions reported at health facilities in Ghana. Pregnant women, children under eighteen years, adults above seventy years and indigents are exempted from paying premiums (NHIA 2011). The National Health Insurance Authority (NHIA) is the governing body and responsible for the accreditation of health service providers. Management of the scheme is decentralized to the regional and district levels however some key functions are centrally controlled (NHIA 2012).

Provider Payment Systems

NHIS currently makes use of three types of payment mechanisms. The fee for service system which is used for outpatient fee payment is expected to be phased out by the end of 2013 and replaced by capitation. The Ghana Diagnostic Related Groupings (G-DRG) system is used for reimbursement of inpatient and specialized service fees and is expected to run side by side the capitation system (NHIA 2013).

CHAPTER TWO: PROBLEM STATEMENT, JUSTIFICATION, OBJECTIVES AND METHODS

This section presents the problem statement, justification, objectives, methodology and study limitations.

2.1 Problem Statement

In consonance with MDG 5, Ghana set a target to reduce its maternal mortality ratio (MMR) of 580/100,000 live births in 1990 by 75% by 2015. In 2010 the MMR of the country was estimated at 350/100,000 live births (WHO et al., 2010) whilst the lifetime risk of maternal mortality in the same year was 1 in 68 (Countdown 2013). Although Ghana is making progress in reducing its maternal mortality, it is unlikely to meet the MDG target with the current spate of progress. In spite of the progress great disparities exist within the ten regions of Ghana with the Northern region been one of the regions recording high maternal deaths in the country. From 2008-2012 the region recorded an MMR of 187/100,000 live births to 138/100,000 live births with a peak of 190/100,000 live births in 2011(RHD 2013). A study conducted at the Tamale Teaching Hospital from 2008-2010 showed that 85% of deaths occurred among women aged 20-39 years (Gumanga et al., 2011). In 2012, direct causes accounted for 59% of institutional maternal mortality in the Northern region. See Annex II for the distribution of the causes. Studies have shown that maternal mortality tends to be high in areas where utilization of maternal health services is low (UNFPA 2013).

As shown in Figure 1, in the Northern region from 2009-2011, while majority of women accessed postnatal care - though mostly for child care, the number completing four antenatal care visits was less than 60%. Modern contraceptive prevalence rate showed a downward trend of 22%-19%. On delivery, over 60% of births were attended by unskilled attendants (RHD-HMIS 2013) though the optimal coverage for achieving MDG 5 is 90% (UNFPA 2004).

A recent analysis by Rani and Lule (2004) reported that young women from poorest households in developing countries are more likely to marry early, have children at young age and are less likely to utilize maternal health services. Women's access to maternal health services are influenced by political, economic, social and cultural factors (Creanga et al., 2011, Hunt and Mesquita 2012). It has been reported that a woman's decision to use contraceptive has been found to be more related to the level of approval of family planning by her community rather than the perceived approval of the woman's partner (Stephenson et al., 2007).

The main question to which this study seeks answers is: Why are most births in the Northern region attended by unskilled personnel? Are there lessons from other developing countries that could be adopted to improve utilization of skilled delivery services?

2.2 Justification

According to United Nations Development Programme 2006 as cited in Hunt and Mesquita (2012), for every one maternal death, thirty more suffer infection, injuries and disability. It is estimated that about 15% of all pregnancies will result in complications and 5% of the complications would require caesarian section. Most of these complications occur in women who present no risk factors and cannot be predicted (UNFPA 2003). The management of complications requires the attendance of skilled personnel and an enabling environment to be managed effectively to avoid injury, disability or death. ***“Skilled attendance at all births is the single most critical intervention for safe motherhood”*** (UNFPA 2013, p1). The health of mother and newborn are related. It is estimated that up to two thirds of the deaths of newborns could be averted with effective skilled attendance at birth and during postnatal care in the first week of life (WHO 2012b). The impact of improving utilization of skilled delivery services thus goes beyond maternal health to impact on newborn survival. This study aims at exploring the factors that influence utilization of skilled delivery services to better inform health managers seeking to improve maternal health in the Northern region of Ghana. The role of family planning and the quality of care provided during antenatal and postnatal period to improving maternal health cannot be overemphasized. Nevertheless, these issues are beyond the scope of this study.

2.3 Objectives of Study

2.3.1 General Objective

The overall objective of this study is to analyze the factors influencing the utilization of skilled delivery services in the Northern region of Ghana in order to make appropriate recommendations to improve utilization.

2.3.2 Specific Objective

- To identify the socio-economic and cultural factors that influence utilization of skilled delivery services in the Northern region.
- To assess the health system-related factors influencing utilization of skilled delivery services in the Northern region.
- To review the evidence of effective interventions for improving the identified barriers to utilization of skilled delivery services from other developing countries.
- To make recommendations on possible strategies to address identified barriers for policy, practice and research.

2.4 Methods

2.4.1 Study Design

The study was conducted by reviewing and analyzing existing literature on the subject area. The information presented in this write up was drawn from published documents and grey literature.

2.4.2 Search Strategy

The search engines used were Cochrane Library, PubMed, ScienceDirect, Scopus, Google Scholar and Google. Official websites of selected organizations were also searched and these were: Ghana Health Service, Ghana Ministry of Health, Christian Health Association of Ghana, Ghana Statistical Service, Royal Tropical Institute, Countdown2015MNCH, WHO, UNFPA, UNICEF and The World Bank.

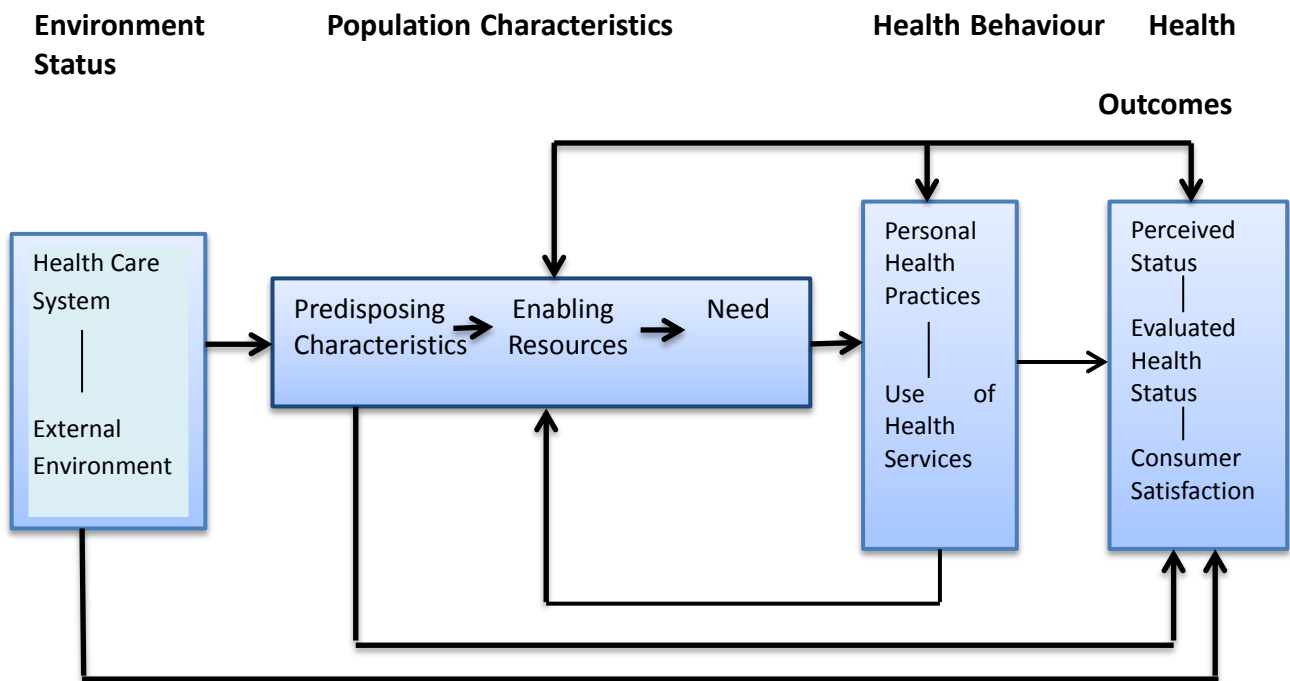
Keywords used were: Maternal Health Services, Maternal Health Care, Maternal Mortality, Skilled birth attendance, Skilled delivery services, Facility deliveries, Utilization, Access, Factors, Determinants, Health seeking behaviour, Perception, User fees, Exemption policy, Quality of care, Patient satisfaction, Community-based Health Planning and Services, Andersen's Model, Predisposing factors, Enabling factors, Need factors, Demand-side factors, supply-side factors, Gender, Health Insurance, Socioeconomic status, Interventions, Northern region, Ghana, Developing countries, Sub-Sahara Africa, Low income countries.

Delimiters: Searches were conducted using the search engines and databases from January-August 2013. The search strategy aimed at identifying documents containing combination of the keywords from the list above. Only English language documents published from 1994-2013 were used. Prioritized in the search were Northern region and Ghana reviews, studies, reports and systematic reviews of evidence of effective interventions in other developing countries. Where systematic reviews were not available relevant studies were reviewed.

2.5. Conceptual Framework

Andersen's Behavioural Model of Health Service Utilization of 1995 was used as a guide to review the literature, collate information and guide analysis. This framework was chosen because it aids the understanding of why people use or do not use health services which is also the objective of this study. The model is based on the principle that utilization of health services and personal health practices are function of three factors; predisposing factors, enhancing factors and need factors. Andersen's framework was developed in the 1960s and has gone through four phases of evolution. The framework used in this thesis is from the 4th Phase of the evolution process (Andersen 1995, Rebhan 2009).

Figure 3: Andersen's Behavioural Model of Health Service Utilization



Source: Andersen 1995

2.5.1 Components of the Model

The model depicts a linear relationship between three components: (1) Primary Determinants (Environment and Population Characteristics); (2) Health Behaviour; (3) Health Outcomes.

Environment: This covers the health care system and the external environment. Under the health care system policy, resources and service organization are discussed. The external environment deals with the influence of the physical, political and economic environment on utilization of health services. Political factors however would not be discussed in this thesis.

Population Characteristics: The population characteristics are sub-divided into predisposing factors, enabling resources and need factors.

Predisposing Characteristics: Andersen argues that people will make use of health services based on their demographic characteristics, social structure and health beliefs.

The social structure refers to the factors that determine the status of women in their communities and their ability to command resources to cope with problems. These are measured by the person's level of education, occupation, wealth, power relations and gender, culture and ethnicity.

Enabling Resources: This includes family and community resources that enable people to make use of health services. Place of residence and socioeconomic status are family resources considered under this component of the framework. Community resources are made up of health facilities and human resources. The cost of services and framework however does talk about the

Need Factors: The need factors are categorized as 'Perceived need' and 'Evaluated need' 'Perceived Need' is the way people view their own health and function. It also describes people's judgment of what is of significant importance and magnitude to seek professional help. Perceived need is closely linked to the health belief and social structure of people. Evaluated Need is the professional judgment about the health status of people and their health care needs.

Health Behaviour: Health behaviour is the immediate influence of the environment and population factors on health service utilization.

Health Outcomes: health outcomes are classified as Perceived Health Status, Evaluated Health Status and Consumer Satisfaction. Perceived health status is the individual's own judgment about his/her health outcome as a result of utilization of a health service. Evaluated health status is the professional judgment by the health personnel based on predetermined criteria. Consumer satisfaction is a function of the convenience of health service, quality, availability of services and provider characteristics (Adapted from Andersen 1995, Rebhan 2009).

In line with the objectives of this thesis, the predisposing factors in the framework would be reviewed under the major sub-heading of 'Socioeconomic and cultural factors' whilst the enabling resources are analyzed under 'Health system –related factors'. Cost of services and quality of care which fall under 'Consumer Satisfaction' in the framework would equally be discussed under 'Health system–related factors'. According to WHO (2006) there are six dimensions to quality of care and these are: accessibility, effectiveness, efficiency, equity, acceptability and safety. Discussions on Efficiency are beyond the scope of this thesis.

2.6 Limitations of the study

- The absolute differences reported by the DHS on skilled birth attendance among the various age groups may not be statistically significant but further analysis of the data is not within the scope of this study.
- Relationships between some variables reported in the write up could have been masked by probable confounders but it was difficult to crosscheck results of every study used in some systematic reviews.
- Findings from qualitative and cross-sectional studies are not generalizable however no meta-analysis from systematic reviews on perception about need and quality could be found.
- 'Efficiency' of services as a component of quality of care was not within the capacity of this study.

CHAPTER THREE: REVIEW OF THE FACTORS INFLUENCING UTILIZATION OF SKILLED DELIVERY SERVICES

This chapter presents the findings of the literature review and these are organized under the main sub-headings of socio-economic and cultural, health service-related and need factors.

3.1 Socio-economic and Cultural Factors

A. Demographic Factors

3.1.1 Age and Parity

Early childbearing and high total fertility rate are linked to higher risk of maternal mortality and morbidity (ICRW 2010). A strong association has been established between age and parity and in some circumstances these have been found to be associated with education (Gabrysch & Campbell 2009). In most countries, a negative relationship has been shown between mother's age, parity and use of skilled delivery services. In 9 out of 20 sub-Saharan African countries younger women (aged 20 years and below) were found to be more likely to have skilled attendants at birth than women above 20 years. In most of these countries – Kenya, Rwanda, Uganda, Zambia and Zimbabwe, the negative relationship was found to be higher than 10% between women aged 20-34 and 35-49 years. The study also showed that women with 4 or more children are less likely to have a skilled attendant at birth compared to women with birth order of 1 (Wang et al., 2011). Evidence from Ghana however shows mixed results; 52% of women aged 20 years and below, 61% of 20-34 years and 55% aged 35-45 years were delivered by skilled birth attendants. The percentage of births attended by skilled attendants was found to decrease with increasing birth order, depicting a similar pattern to the situation in other sub-Saharan African countries (GSS et al., 2009a).

3.1.2 Marital status

The evidence on the influence of marital status on the utilization of skilled delivery services is quite diverse. Several studies found no association between marital status and utilization of skilled delivery services (Gyimah et al., 2006, De Allegri et al., 2011, Mrisho et al., 2007). Another study found that women in monogamous marriages in Kenya and Ivory Coast are more likely to deliver in a health facility than single women and those in polygamous marriages. In Malawi polygamous and formally-married women are more likely to deliver in health facilities than other groups. However, no association was found between marital status and facility delivery in Burkina Faso, Ghana and Tanzania (Stephenson et al., (2006).

B. Social Structure

3.1.3 Education

Educational level of women has been found to associate positively with facility deliveries in Africa (Stephenson et al., 2006, Wang et al., 2011). Anwar et al., (2008) reported that in Bangladesh whilst 18% of women with no education used skilled delivery services, 74% of women who had ten years above of education used skilled delivery services. In Ghana, a positive relationship has been established between mothers' educational attainment and facility deliveries (GSS et al., 2009b). Gabrysch and Campbell (2009) established a positive relationship between higher education of husbands and utilization of skilled delivery

services but found that women's own education had a greater effect. Similarly, a recent study in Bangladesh showed a strong association between the use of skilled delivery services and the education of women and their husbands (Dalal et al., 2012). Ensor and Cooper (2004) reported that education and information were interlinked, thus basic literacy plays a crucial role in the assimilation of health information.

3.1.4 Employment and Income

There is evidence that the limited access of women to employment opportunities beyond unpaid agricultural labour on family farms adversely impact on their capacity to use health services (ICRW 2010). There is a strong association between economic status of a household and the use of skilled delivery services (Dalal et al., 2012). Improved income of women enhances their access to health services (Anwar et al., 2008, Peters et al., 2008). In Bangladesh the use of skilled delivery services was found to be strongly associated with socioeconomic development of women (Dalal et al., 2012).

Similarly, a study in Nepal showed a strong association between the proportions of women receiving skilled care during delivery among those whose husbands were skilled workers or professionals. In the same study they also found that the social status of households had a positive impact on access to skilled delivery as women (62%) from high-status households were more likely to use skilled delivery services than women (6–18%) in low-status households. In contrast however, they found that women's employment did not translate clearly into more use of maternal health care such as skilled delivery (Furuta and Salway 2006). Studies from Ghana and Nigeria found that women in occupations other than farming are more likely to make use of skilled delivery services (Gabrysch and Campbell 2009).

3.1.5 Gender

Gender inequalities reflect differences in power between different groups of people within households and in the society at large. These inequalities are perpetuated by social norms and culture (Iyer et al., 2008). The social and cultural norms in some societies limit the movement of women and prevent them from accessing and utilizing health services (Rottach et al., 2009). Also, marginalization of ethnic minority, poor women and indigenous women are said to result in low utilization of maternal health services by these groups (Hunt and Mesquita 2012). In Tanzania, Mrisho et al., (2007) reported that women in male-headed households were less likely to make use of skilled delivery services than those in female headed-households (RR 0.86, 95% CI 0.80-0.91). A study in north-east Ghana revealed a significant difference in the poverty levels of women within the same male-headed household. The correlation between the wealth of the man and the welfare of females within the same household was found to be weak (Baden et al., 1994). It was however not clear from the article if probable confounders such as educational level and occupation of the women were controlled for.

The role of women in decision making about their own health impact on the use of health services (ICRW 2010). A study from Nepal found that gender roles and relations such as restrictions on the movement of women during pregnancy, lack of decision making by young women in families and the fact that decision-making in relation to pregnancy is mostly vested in older women restrict women's access to healthcare during pregnancy and delivery (Furuta and Salway 2006). Evidence from Bangladesh showed that women who participated in decision-making on the spending of family income had higher proportion of deliveries attended by skilled attendants than those without any decision-making power on family finances (Dalal et al., 2012).

In Ghana a national survey found that while 44% of married women made decisions on daily house needs by themselves. Among employed married women in Ghana, women in the Northern region reported having one of the highest decision-making powers over their earning; 73% solely decided how their cash earnings were used. On women's health, 44% of married women said decision on their health was jointly taking by them and their husbands, 30% said decisions were made by their husbands and 25% made decisions on their health by themselves (GSS et al., 2009a).

3.1.6 Ethnicity, Cultural Beliefs and Practices

Ethnicity and religion are believed to influence the culture of people and impact on their values, norms and beliefs related to utilization of maternal health services (Gabrysch and Campbell 2009). On the contrary, a study conducted in Ghana in 2006 found no difference in the utilization of skilled delivery services among ethnic groups but reported that Christians were more likely to use these services than practitioners of traditional religion and Muslims (Gyimah et al., 2006).

Studies from other parts of Africa have shown that women from some cultures do not make use of health facilities for delivery due to cultural beliefs that labour and delivery is a test of women's strength and fidelity and health facility deliveries are considered assisted delivery which is a sign of weakness (Kyomuhendo 2003, Mrisho et al., 2007). In other contexts cultural beliefs related to delivery positions, placenta, newborn handling and warmth were found to be obstacles to accessing skilled delivery services. On the contrary according to Forster and Anderson (cited in Hardon et al., 2001), low utilization of healthcare services is usually not a result of traditional cultural beliefs or resistance to orthodox medicine but rather the unavailability and cost of the services. In a study conducted in Ghana 20% of women mentioned not wanting to go the health facility alone to deliver as a major challenge to utilizing skilled delivery services (GSS et al., 2009a).

3.2 Health Service Related Factors

Maternal health outcomes are shaped by health system factors that influence access, utilization and quality of health services (Aboagye and Agyemang 2013, Parkhurst et al., 2005).

A. Enabling Resources

3.2.1 Geographical Access to Services

Place of Residence

As reported by Say and Raine (2007), a positive relationship exists between physical access to health facilities and utilization of skilled delivery services. Residence in an urban area impacts positively on facility deliveries in developing countries. In Ethiopia, Mekonnen and Mekonnen (2002) reported that women in urban areas were 9 times more likely to have skilled personnel at birth than women in rural areas. They also found that women in Addis Ababa were 40 times more likely to have skilled personnel at birth than women in rural areas. In Ghana, women in urban areas who have a skilled attendant at birth were found to be over 2 times those in rural areas (GSS et al., 2009a).

Distance

The influence of distance on utilization of skilled delivery services is greater where there is poor transportation and road network (Gabrysch and Campbell 2009). Distance remained a major barrier to facility deliveries despite reduction of user fees as shown in Burkina Faso. (De Allegri et al., 2011). According to the 2008 DHS, 25% of women in Ghana considered distance and transportation to health facilities as a major obstacle to accessing care during pregnancy and delivery. While 51% of women in the lowest wealth quintile considered distance as a major obstacle to seeking healthcare, 15% of women in the highest wealth quintile mentioned transportation as a major obstacle (GSS et al., 2009a).

Ideally, a BEmONC facility should be within 2 hours reach of women and a CEmONC facility should not be more than 12 hours away from where women live (UNFPA 2004). In the Northern region, the well-endowed districts have less than 10% of the population living beyond 25km reach of a health centre and the least-endowed districts have 35%-45% of the population living beyond 25km reach (Modern Ghana n.d). In a study conducted in the Nalerigu sub-district of the Northern region, 62% of women who did not have their last child in a health facility stated distance and transportation problem as the main barrier. During a focus group discussion (FGD) with TBAs from one of the study community the problem was expressed as follows: ***“You may tell pregnant women to go to the health facility but because of the distance from my community to the hospital it is difficult. There are no vehicles on the road and the road is bad too - you have no option but to deliver them at home”*** (FGD, TBA, Yankazia) (Kavi 2011, p.70).

3.2.2 Cost of Services

The direct and indirect cost of accessing maternal health services on individuals and households influence utilization (Peters et al., 2008). The formal and informal service charges, cost of medication, cost of transportation and the opportunity costs of going to a health facility have been found to be barriers to service utilization (Ensor and Cooper 2004b, Ensor and Ronoh 2005, Gupta et al., 2010).

A study carried out in the Northern region found the indirect cost to be a major barrier to accessing skilled delivery services as illustrated in the following quote (Kavi 2011, p. 80): ***“Some of the women are not able to travel to Gambaga (District capital) for the NHIS registration because they have no money and their husbands do not have either. Since they cannot pay for the services at the hospital they deliver at home. As for us even if they do not have we attend to them”.*** (FGD TBA, Kolinvai).

3.2.3 Availability of Resources

A. Facilities and Equipment

For optimal coverage of emergency obstetric services, there should be a minimum of 4 BEmONC facilities and 1 CEmONC facility for every 500,000 population (UNFPA 2004). In the Northern region, there are 144 BEmONC facilities and 29 CEmONC facilities serving a population of 2,500,000 people. Five (5) out of the 26 districts in the region do not have district hospitals where CEmONC is expected to be provided (RHD-HMIS 2013). An assessment conducted by Aboagye (as cited in MOH 2008) revealed that majority of district hospitals in the Northern region had no theatres and functional blood banks. Facilities lacked adequate water and electricity supply.

B. Human Resource

A major challenge to meeting the health-related MDGs is the critical shortage of the health workforce coupled with the inadequate mix of skills and the inequitable distribution of the available workforce (WHO 2013). In developing countries, shortage of skilled personnel to provide emergency obstetric care is a common phenomenon in government health facilities (World Bank 2013b). Skilled birth attendance coverage has been found to be positively related to the availability of skilled personnel (Gupta et al., 2011). The minimum requirement of doctors, nurses and midwives for 80% coverage of skilled birth attendance is 23/10,000 population. In 2010, the density of doctors, nurses and midwives in Ghana was reported to be 11/10,000 population (WHO 2013). The Northern region is the worse hit by the shortage of midwifery workforce in Ghana and the distribution is skewed towards the urban areas. The statistics for 2009-2011 is presented in Table 2 above (GHS 2012a).

C. Emergency Obstetric Care

The 2012 report of Countdownto2015 revealed that the availability of emergency obstetric care services as a percentage of the recommended minimum in Ghana was 37% (Countdown 2013). The minimum WHO recommendation of caesarian section (CS) rate is 5% (Countdown 2012, Gibbons et al., 2010). Results of the 2008 DHS showed a national CS rate of 7% in Ghana – 1% among the lowest wealth quintile and 15% among the highest wealth quintile. In the Northern region the CS rate was found to be 3% (GSS et al., 2009a). See Annex IV for trend.

3.2.4 Quality of Care

Research has shown that work overload on health staff in the Northern region coupled with low salaries and delayed promotions impact negatively on quality of care provided (SEND-Ghana 2010). According to the MOH, availability of 24hour emergency obstetric care in the region is limited (MOH 2008). From 2008-2011, over 80% of maternal deaths in the region occurred in health facilities. See Annex III for trend (RHD-HMIS 2013).

User's perceptions about quality of care depend to a large extent on women's personal expectation and previous exposure (Gabrysch and Campbell 2009) and this influence the willingness of women to use skilled care (Family Care International 2012). D'Ambruso et al., (2005) found that women who received inhumane treatment from health staff during previous childbirth changed their places of delivery subsequently and discouraged others from using those facilities. Evidence from the Greater Accra and Central regions of Ghana showed that communication, information about diagnosis and treatment, availability of human resources, equipment, supplies and infrastructure at health facilities shape women's perception about the quality of care received (Tunçalp et al., 2012, Turkson 2009). At the national level, 8% of women stated inconvenient opening hours of facilities as an obstacle to utilization. While 5% of women in Ghana cited better service at home as reason for not delivering in a health facility, less than 1% of women in the Northern region mentioned quality as a reason for not delivering in a health facility (GSS et al., 2009b).

3.2.5 Free Maternal Health Care (FMHC) Policy

3.2.5 Background of the Free Maternal Health Care Policy

In September 2003, the Ministry of Health introduced the delivery fee exemption policy in four of the poorest regions; Northern, Upper East, Upper West and Central regions. The policy was expanded nation-wide in April 2005 (Dzakpasu et al., 2012, Witter et al., 2009). The aim of the policy is to reduce maternal mortality by removing the financial barrier to skilled birth attendance (Bosu et al., 2007). Implementation was initially financed under the Highly Indebted Poor Countries (HIPC) initiative fund until 2008 when the funding mechanism phased out. Since then the policy has being implemented under the NHIS (NHIA 2011).

3.2.6 Benefit Package under FMHC Policy

The policy exempts all women from paying fees for antenatal, delivery and postnatal care. For deliveries, benefit package covers normal and assisted deliveries including caesarean section. Complications (medical and surgical) arising out of deliveries including vesico–vaginal and recto–vaginal fistula are also managed covered (Ofori-Adjei 2007). It also covers all drugs on the NHIS medicines list (Blanchet & Fink 2012). Fees for delivery services offered by public, private and faith-based health facilities are reimbursed by the NHIS based on an agreed tariff (Witter et al., 2007). The package however does not include transportation to health facilities.

3.2.7 Analysis of Key Issues and Options

The policy has been found to be a cost effective intervention that has improved access to skilled birth attendance and benefits the poor (Penfold et al., 2007, Witter et al., 2009). Mills et al., (2008) reported that at the initial stage of the implementation of the free maternal health care policy that women in Northern Ghana who were aware of the free maternal health care policy are 4.6 more likely to make use of skilled delivery services than those who are not aware of the policy . An evaluation of the user fee exemption policy conducted by Initiative for Maternal Mortality Programme however showed that rich households benefit more from the implementation of the policy than poor households - while delivery payments for rich households fell by 22% that of the poor fell by 13% (Fikree et al., 2007). This could be explained by the fact that although the policy has improved financial access to skilled delivery by reducing the financial burden associated with facility deliveries and complications management, other major barriers such as long distances, bad roads, unimproved infrastructure and equipment continue to persist (Bosu et al., 2007, Dzakpasu et al., 2012, Witter et al., 2007) especially in poor rural areas.

Secondly, the introduction of the policy had serious implication on the workload of staff. Bosu et al., (2007) in their study revealed that in order to deal with the extra workload, midwives spent extra 8-17 hours per week at work. The increased workload in the midst of the human resource crisis, low salaries, delayed promotions and the perceived neglect by policy makers have had a toll on staff motivation and quality of care provided (Fikree et al., 2007, SEND-Ghana 2010).

The option for dealing with the inequality in utilization is to strengthen the health system through improvement in quantity, quality and distribution of human resources, infrastructure, equipment, supply of drugs and other medical commodities (Kayongo et al., 2006). This medium-long term however requires political and resource commitment. In the short term, the NHIA could consider the possibility of introducing a performance-based incentive package for the midwifery workforce to motivate them.

Thirdly, at the onset of the implementation of the policy, all women both insured and non-insured women were covered. Under the new NHIS implementation guideline of 2010, pregnant women are required to register with the scheme prior to delivery in order to benefit from the package (NHIA 2011). The guideline which is intended to reduce the abuse

of the scheme by providers could be a barrier to access. This is because pregnant women in rural areas would have to undertake a number of trips to their district offices to obtain registration cards since cards are not issued immediately (Witter et al., 2013).

The option for improving the registration system and reducing the indirect costs to the poor is to introduce a biometric registration system whereby identification cards could be issued immediately. Contracting out registration of clients in hard-to-reach rural areas has the potential to increase the NHIS enrolment.

Fourthly, delay in reimbursement of service fees to providers has been a major implementation challenge. The situation has negatively impacted on providers' capacity to acquire the needed medicines and equipment to provide the needed care resulting in less quality care sometimes (SEND-Ghana 2010). Also in some cases clients have to pay for part of the services and drugs out-of pocket which could have implication for the poor. Double billing –client and NHIS have also been reported as a result of delays in payment (Witter et al., 2013). The situation has been blamed on the manual processing of NHIS claims and inadequate capacities at both the provider and purchaser end (Sodzi-Tettey et al., 2012).

Computerization of claims processing is the way to go to ensure timely reimbursement of service fees. This would however require investment in equipment and capacity building of both providers and the purchaser (Sodzi-Tettey et al., 2012).

3.3 Need Factor

3.3.1 Evaluated Need

According to available evidence, 15% of all pregnancies in a population will result in complications and 5% of the complications would require caesarian section. Most complications occur in women who present no risk factors hence cannot be predicted (UNFPA 2003). In addition, majority of maternal and perinatal deaths happens around the period of labour and delivery with most of them dying within the one day after birth (WHO 2012a). The evaluated need for SBA is the basis for the thesis thus was discussed earlier under justification.

3.3.2. Perceived need

A woman's perception about the need for skilled care is shaped by a number factors which include knowledge about dangers of childbirth and intervention, previous experience with pregnancy, delivery, perceived quality of care at health facilities and risk assessment of pregnancy (Gabrysch and Campbell 2009). Perception is directly influenced by the individual's environment (WHO 2001). Evidence from Ethiopia has shown that women who had antenatal care from a skilled provider were more likely (OR = 1.7, 95% CI; 1.1-2.7) to use skilled delivery services during obstetric complications than women who did not receive antenatal care from a skilled provider (Worku et al., 2013). Contrary to that, in Ghana, Kenya, Tanzania and Uganda a weak association was established between antenatal attendance and use of skilled delivery services (Adjiwanou and LeGrand 2013, Cotter et al., 2006, van Eijk et al., 2006). Another study in Ghana reported that over 30% of women who had four or more ANC visits did not deliver in a health facility because they did not consider it unnecessary (GSS et al, 2009a; 2009b). A similar result was found in a study conducted in the Northern region, 21% of women who had antenatal care said they did not deliver in a health facility because previous births were successfully attended by TBAs (Kavi 2011). Mills and Bertrand (cited in Sappor and Esena 2013) in their study in the Upper East region of Ghana found that decision on place of delivery were mostly made at the onset of labour.

Another factor that influences women's perception about need for delivery services is wantedness of the pregnancy. In Bolivia, Philippines, Thailand and Brazil no association was found between wantedness of pregnancy and skilled delivery care whilst in South Africa and Kenya women using skilled delivery services were found to be 3 to 4 times more when pregnancy was wanted (Gabrysch and Campbell 2009).

CHAPTER FOUR: EVIDENCE OF EFFECTIVE INTERVENTIONS FROM OTHER DEVELOPING COUNTRIES

In this section evidence of interventions from other developing countries that have been successful at addressing the major barriers identified earlier in this report are presented. Interventions from randomized controlled trials and quasi experimental studies that showed evidence of significant results were selected. The MMR in the selected countries prior to implementation of the interventions were also taken into account – countries with MMR close to the situation in Ghana were prioritized.

4.1 Community-based Strategies

Current evidence from systematic reviews have shown that community-based strategies that focus on participation and empowerment are effective in improving maternal health outcomes especially where majority of births are assisted by unskilled personnel (Canavan 2009, Marston et al., 2013).

A. Women's Groups

A systematic review and meta-analysis by Prost et al., (2013) established that participatory learning and action by women's groups in rural poor settings are cost-effective interventions that lead to significant reductions in maternal and neonatal mortality. In Bangladesh, local women facilitators of women's groups were given one week training in participatory approaches, communication, maternal and neonatal health issues. From every tenth household facilitators invited married women to join the group. Women of reproductive age were initially targeted but upon the request of the group members other women including mothers-in-law and adolescents became part of the groups. The groups' learning and action cycle involved problem identification, priority setting, action plan formulation, planning, implementation and monitoring. Results showed that more women in the intervention area had antenatal care, institutional delivery, improved home-care practices, exclusive breastfeeding, reduced neonatal and maternal morbidity and mortality (Azad et al., 2010). In Nepal where similar intervention was implemented, literate women were trained as facilitators and provided with manuals (Manandhar et al., 2004) whilst in India learning and action cycles were facilitated by using cards, games, stories and picture cards (Tripathy et al., 2010).

B. Emergency Fund and Transport

In Nepal community emergency funds were established from which people borrowed during obstetric complications to cover transportation cost and facility fees. This was part of the strategies for the Safe Motherhood Programme (Rath et al., 2007). Evaluation of the scheme revealed that loans were mostly not accessible to the poor who were less creditworthy. To bridge the equity gap in access to the fund and improve utilization of skilled delivery service by the poor, the cost of accessing skilled care by the poor were refunded based on established criteria. The transport systems provided for referrals made use of local innovations such as bicycle ambulances and "dokas" (large baskets carried on the back of a porter) in hilly areas (Barker et al., 2007).

C. Community Dialogue/Action Plans

The Skilled Care Initiative in Burkina Faso was implemented as a combination intervention employing strategies that influenced both supply and demand sides. Demand side activities were built around prominent community leaders with whom reflections on the community taboos, values and norms that were barriers to utilization of skilled delivery services were facilitated. Strategies like negotiation, persuasions, lobbying, advocacy, were employed. Participatory approaches were used to develop action plans, set indicators, monitor and provide feedback to communities. Evaluation of the project showed 30% increase in facility deliveries in the intervention districts whilst facility deliveries in comparison district increased by 10%. Perinatal mortality rates decreased significantly in the intervention districts (OR=0.75, CI 0.70-0.80) (Hounton et al, 2009).

4.2 Health System Strengthening Strategies

A. Human Resource

Training and Deployment

The Indonesian village-based midwife programme trained and deployed over 54,000 midwives to 96% of villages in Indonesia. With at least 6 midwives/10,000 population, the odds of having a skilled personnel attend a delivery in a village with midwife was 3 times the odds of having skilled personnel attend a delivery in a village without midwife. Socioeconomic inequality in the access to skilled birth attendance was reduced significantly. CS rate in the village with midwife was 4 times that of a village without a midwife (Achadi et al., 2007). Conversely, while CS rate among the poor remained at 1%, there was a rise from 1% to 10% among the rich (Hatt et al., 2007).

Task Shifting

Task shifting is a strategic approach to strengthening and expanding the capacity of the existing health workforce (WHO 2008, 2012c). At the periphery of Nepal's health care sector were sub-health posts which were the closest health facilities to women and children in rural areas. These facilities were manned by Mother and Child Health Workers - cadre of staff not qualified as skilled birth attendants as defined by WHO. To improve the availability of skilled birth attendants, staff who had the required qualification were retrained as auxiliary nurse-midwives. In facilities where Anaesthetics were not available, nurses and auxiliary nurse-midwives were trained as Anaesthetic Assistants. The intervention resulted in the reduction of MMR from 539/100,000 live births in 1997 to 281/100,000 live births in 2006. Utilization of maternal health services increased significantly; ANC 39%-72%, SBA 9%-19%, Institutional delivery 8%-18% and Caesarian section from 1%-2.7% (Barker et al., 2007).

Recent systematic review by Hundley et al., (2013) established that in resource poor settings, the administration of oral misoprostol to pregnant women by frontline health staff could significantly reduce the incidence of postpartum haemorrhage (PPH) (RR 0.58, 95% CI 0.38–0.87) and referral for PPH (RR 0.49, 95% CI 0.37–0.66).

B. Equity in Service Utilization

In Bangladesh community health workers (CHWs) were trained in basic management of maternal, newborn and child health problems and referrals. The CHWs provided home-based services to pregnant and lactating women, newborns and children under-5years and referred were necessary. Poor women were fully or partly reimbursed transportation and services fees during referral. Utilization of ANC increased in both the intervention and control areas. However, whilst ANC provided by skilled attendants had become more accessible to the rich in the control area (Concentration Index (CI): 0.18 - CI: 0.22), services in the intervention area provided by CHWs became accessible to the poor (CI: 0.30 - 0.04). Home deliveries by skilled attendants increased significantly and became pro-poor (CI: 0.37 - CI: 0.14). PNC utilization increased significantly among the poor than skilled delivery in the intervention areas (Quayyum et al., 2013).

C. Availability of Service and Quality of Care

CARE International's intervention in Rwanda improved the availability of EmONC services by refurbishing existing infrastructure and providing equipment. Doctors and midwives were given a 12-module competency-based training on the management of major obstetric complications. From 2001-2004 case fatality continued decreased from 2.2%-1.2%. From 2001-2002, the number of normal deliveries and complications attended by skilled attendants increased by 25% each and CS rate increased by 63% (Kayongo et al., 2006).

In Peru, utilization of skilled delivery services increased significantly by improving quality of care. The strategies employed included drawing of curtains to provide privacy to women during delivery and provision of ropes to which women could hold on to and deliver in either squatting or upright position depending on their preference (Amnesty International 2006).

CHAPTER FIVE: DISCUSSION OF FINDINGS

In this section, the study findings presented in chapters three and four are discussed along the lines of the study objectives

5.1. Socio-economic and Cultural Factors

5.1.1 Age, Parity and Marital Status

From the research findings women aged 20-34 years are more likely to make use of skilled delivery services than women below 20 years and above 34 years (GSS et al., 2009a). Although most studies found no association between marital status and utilization of skilled delivery services (Gyimah et al., 2006, De Allegri et al., 2011, Stephenson et al., 2006) for unmarried adolescents in Northern region who get pregnant, this could be an important determinant. This is because adolescent marriage is common and widely acceptable thus getting pregnant without being married comes with stigma which could be a hindrance to health services utilization - although adolescent pregnancies are high risk pregnancies that require attendance by skilled personnel. Likewise, adolescents could also be less educated, most likely unemployed and have limited decision making powers.

Women above 34 years are less likely to use skilled care delivery services because they are more likely to have high parity and be less educated (Gabrysch & Campbell 2009) as in the context of the Northern region. Although these women have a high risk of developing obstetric complications, they may not see the need for skilled delivery since they could have had successful unskilled deliveries in the past. In addition, considering the high illiteracy level in the Northern, older women are less likely to be educated compared to younger.

5.1.2 Education and Employment

The influence of women's education on utilization of skilled delivery services could be explained from various angles. Firstly, women who are educated could have access to better employment and income. With high socioeconomic position, women could be more assertive and have greater autonomy over decisions regarding their health. Secondly, educated women have access to information on the benefits of having a skilled attendant at birth and could be more willing to change based on the information they have. Thirdly, most educated women live and work in urban areas where health facilities are close by. Fourthly, by virtue of their knowledge, educated women could be able to demand for and receive quality care. It could be deduced that education impacts on the beliefs and practices of women and shape their perceptions about need and quality thus their health seeking behaviour.

Women's access to employment beyond unpaid agricultural labour could impact positively on health service utilization (ICRW 2010) and findings of Gabrysch and Campbell (2009) from Ghana and Nigeria confirms this. In the Northern region most rural women work on family farms but do not control the income from the proceeds. Besides where they do, expenses on healthcare may be considered the man's responsibility. This increases their dependency on their husbands whose resources are sometimes inequitably distributed

within the household. This dependency could result in less autonomy over decisions concerning health service utilization. Women who have access to paid employment (could also be own farm) could use skilled delivery services more where travel and other cost could have been an obstacle. Women or husbands in formal employment which has a strong association with educational levels may use skilled delivery services more for similar reasons as in the case of women with paid employment.

5.1.3 Gender

The study results show that in Ghana, whilst most women have control over decisions making on basic household commodities, most of them do not have the power - partly depend on their husband (44%) or absolutely on their husband (30%) to make decisions on their health care issues (GSS et al., 2009a). The findings could be partly explained by the societal norm where women are expected to be taken care of by men whilst women are expected to keep the home. In the Northern region however, where most women solely decided how their cash earnings were used (GSS et al., 2009a), it is not uncommon to have men take decisions on women's health because they are expected to pay for their wives' healthcare and most women do not like to spend on their own healthcare. Women who take control of decisions concerning their own health without husbands' approval could be regarded as disrespectful wives.

In a society like the Northern region where great value is placed on children, the power exerted by a woman may not only be dependent on her socioeconomic position but also age, number and sex of children she has. Therefore in polygamous marriages (which is common on religious grounds), it is not surprising that Baden et al., (1994) found significant difference in women's poverty level within the same household male-headed household. The inequalities perpetuated by societal norms and values disempower women and impact negatively on access to skilled delivery services.

5.1.4 Ethnicity, Cultural Beliefs and Practices

Ethnicity and culture determine to a great extent the gender norms, practices and behaviours discussed earlier. Cultural beliefs and perceptions about pregnancy and childbirth have a strong influence on the perceived need and quality of health services thus the health-seeking behaviour of women.

In the Northern region as in other African countries, labour is believed to be a test of a woman's strength and proof of fidelity hence opting for skilled delivery could be considered an act of weakness and having something to hide which most women would not like to be associated with. Although study results showed a national picture of 20% of women stating having to go to the health facility alone to deliver as an obstacle to utilization (GSS et al., 2009a), the situation is very much applicable to the Northern region. The practice of having trusted ones around during home deliveries is mostly non-existent in public facilities which do not provide enough privacy. In most instances there is only one room with a number of delivery beds which could be used depending on the number of clients available. Even in less busy rural facilities where it could have been practiced, relatives are not allowed into the delivery rooms. Cultural beliefs and practices about burial of placenta and travel

immediately after delivery could also prevent women from accessing skilled delivery services where they have to travel far from their communities to seek care.

TBAs are highly respected in rural communities and continue to play significant roles in maternal and child health especially where skilled personnel are not available. In these communities after delivery TBAs care for mother and baby by providing postnatal care, nutritional advice and emotional support for up to three months in most cases - an aspect of care rural women value but miss when they deliver in health facilities as TBAs do not consider women they did not deliver their responsibility.

Most cultural beliefs and practices relating to pregnancy and childbirth tend to be similar among the various ethnic groups in Ghana. The findings of Gyimah et al., (2006) therefore ties in with the situation in the Northern region. The difference found in utilization based on religion could have been masked by socioeconomic such as education, occupation and income as Christian women in Ghana are more likely to be educated thus be engaged in formal employment, have access to information and be more receptive to the information received than Muslims and Traditionalist.

Health seeking behavior is a complex weighing of factors. Local beliefs may limit the demand for services that are accessible and delay seeking care, at the same time high costs and distance and lack of skilled staff may coincide with these local beliefs. Nonetheless these factors are not fixed but are subject to change overtime.

5.2 Health System Factors

5.2.1 Geographical Accessibility

Physical access to health facilities has direct influence on the decision to seek skilled delivery service and on getting to the health facility. Place of resident could be related to women's level of education, occupation and wealth. These could invariably impact on women's access to information on available services and their ability to take decisions regarding their own health. All of these factors interact to positively impact on skilled birth attendance and could be a probable explanation for the difference in the number of births attended by skilled personnel in urban and rural areas.

In the Northern region where 70% of the population lives in dispersed rural settlements, distances between communities, BEmONC facilities and CEmONC facilities are relatively far yet within 2 hour and 12 hour reach respectively under optimal conditions. The obstacle of distance in the rural parts of the region could have been perpetuated by the poor state of the roads and limited transport options as suggested by Gabrych and Campbell (2009). To get to the health facilities, most often women have to walk, be carried on bicycles or at best on motorcycles on rough roads which makes the seemingly short distances long. The condition of the roads worsens during the raining season and some communities are completely cut-off during this period. Geographical access also makes it possible for women to make choices between facilities based on quality of services offered. The influence of

distance could be greater on the poor than the rich due to the cost that comes with it. Consequently, the finding that 51% of women in the lowest wealth quintile considered distance as a major obstacle to seeking healthcare whilst 15% of women in the highest wealth quintile mentioned transportation as a major obstacle (GSS et al., 2009a) was expected.

5.2.2 Cost of Services

The cost of accessing skilled delivery services could be direct or indirect. The direct costs could be formal and informal. Formal charges such as user fees (out of pocket payment or health insurance premiums) are barriers and an active facilitator of the inequalities in service utilization between the poor and rich. The Free Maternal Health Care policy is Ghana's response to dealing with the direct cost though the desired impact of the scheme is yet to be achieved due to the bottlenecks discussed earlier. The culture of informal payments in the form of gifts to midwives particularly in rural areas could be an obstacle to utilization for the poor.

The indirect cost of service utilization such as cost of travel, waiting hours, opportunity cost of traveling to access the service, accommodation and feeding of accompanying relatives could also be a major obstacle and the impact of these could be greater for the poor than the rich.

5.2.3 Availability of Resources

Utilization of skilled delivery services could be supply induced and this is dependent on a number of factors which includes the availability of human resource, equipment, drugs and other commodities, volume and type of services available. Low utilization of skilled delivery services among the rural poor could be attributed to the fact that in most cases emergency obstetric services are not available where women live - the periphery of the healthcare delivery system in the Northern region and Ghana as a whole.

From the study it could be deduced that in terms of numbers, the health facilities in the Northern region should have been able to cater for the population. The challenge to access and utilization in relation to infrastructure could be related to the inequitable distribution of facilities within the region with concentration in urban areas. This notwithstanding the low density (35.5/sq.km) of the population coupled with the dispersed nature of settlements and the nature of the land area requires a different standard for the distribution of facilities in order to ensure equity. In as much as the type, quantity and distribution of available facilities is critical to the discussion on availability of services, the functionality of the facilities - ability to provide the services they are designated to provide is critical to ensuring access and utilization of services.

There is a critical shortage of health workforce in Ghana as identified in the study and the statistics implies that the country needs to double its workforce be able to achieve 80% coverage of skilled birth attendance. The human resource situation of the Northern region is really critical due to the fact that most qualified personnel refuse posting to the region due to its deprived nature and retention has been a challenge. The situation is further

aggravated by the inequitable distribution of the midwifery workforce in the region. In 2011, the MOH introduced a new programme which allows direct-entry into midwifery training institutions nationally. Though an important step to dealing with the workforce shortage, comprehensive strategies need to be put in place to attract, motivate and retain staff in rural areas to close the urban-rural inequality gap in the region.

The region's CS rate of below 5% is an indication of a fragile health system as well as lack of access to emergency obstetric care (Countdown 2012). The inability of the health system to respond to the need of women especially in rural areas maintains the inequality between the rich and the poor. Improvement in the midwifery situation needs to be complemented with the provision of appropriate infrastructure, equipment, medicines and other commodities. In addition, regular supply of water and electricity has to be ensured to make quality services availability.

5.2.4 Quality of Care

Majority of maternal deaths in the Northern region occur in health facilities as revealed by the study. In spite of the fact that most of women could be arriving at health facilities late due to the socioeconomic and cultural factors discussed earlier, the results also calls to question the safety and effectiveness of care provided at the facilities. Though the situation could be blamed on the other health system factors discussed earlier, the competence, work overload and motivation of the existing staff need not be overlooked as these could be related to the high institutional deaths. To improve the confidence of the public in the health system, urgent steps need to be taken to reduce the institutional maternal deaths drastically.

Women's perception about quality of care could be dependent on the perceived need, cultural beliefs and practices, past experiences at health facilities and knowledge of what needs to be done. As revealed by the study, women in the Northern region may not see quality as an obstacle to utilization because of the greater obstacle posed by distance, cost, unavailability of services and other factors discussed earlier. Nonetheless issues such as birth positions in health facilities which require women to lay down instead of squatting (traditional position) and having a trusted relative in the delivery room as discussed earlier could be an important consideration especially for women who may have had previous deliveries at home. Moreover, ineffective communication with women and the unavailability of hot water for bathing after delivery in health facilities could shape women's perception of quality of care and subsequent decision on utilization.

5.2 Need Factor

As reported earlier, if 15% of all pregnancies will result in complications and majority of the women who develop complications may not present any risk factor (UNFPA 2003), then it is imperative that all women have access to skilled birth attendants. Handling the complications arising from childbirth require specific competencies and an enabling environment which traditional birth attendants do not have. These complications put the

lives of both mother and baby at risk and if not handled optimally could result in death or injury.

The findings of the study imply that sociocultural factors interact with health system related factors to shape women's perception about the need for skilled delivery services. Additionally, Gabrysch and Campbell (2009) results regarding the relationship between wantedness of pregnancy and place delivery could be explained that if the pregnancy is unwanted, then a woman may not be motivated to bear the direct and indirect cost of delivering in a health facility. However, the relationship found between wantedness of pregnancy and skilled birth attendance could have been confounded by marital status, economic status and parity which were not controlled for. The association between ANC attendance and use of skilled delivery services as reported by GSS et al., (2009b) could be related to the reasoning that ANC services are provided through both static and outreach clinics which brings skilled services to the doorsteps of pregnant women whilst skilled delivery services are only provided at static facilities. Besides, women who attend ANC clinics perceive themselves as having minimal risk of developing complications as a result of the skilled care received during the antenatal period – an indication of a gap in women's knowledge.

5.4 Interventions from other Developing Countries

5.4.1 Community-based Interventions

A. Women's Groups

The strategy of using women groups to deal with health issues in rural communities as in the cases of Bangladesh, India and Nepal is not new to the Northern region. Women's groups popularly known as 'mother to mother support clubs' were used to promote nutrition particularly optimal young child feeding practices. These clubs were facilitated by TBAs, volunteers and women opinion leaders called '*Magazias*' and linked to nearby health facilities. Reintroduction of the concept for promotion of maternal and newborn care is highly feasible. In order for the programme to succeed, managers would have to explore innovative ways of providing incentives to the facilitators. Key lesson from the above interventions that should be taking into account is the inclusion of mothers-in law - who possess decision making power regarding pregnancy and childbirth and adolescents in the groups. Right at the design phase of the intervention supportive supervision of facilitators should be planned. Women's groups could also be effective tools for changing the negative cultural beliefs and practices that impact on women and children's health.

B. Emergency Fund and Transport

In the event of obstetric emergencies or referrals, husbands are expected to arrange for transportation. Obstacles to reaching health facilities include cost of transportation and limited transport options. It is in times like this that community emergency funds and local transportation arrangements like the ones used in Nepal come in handy. Community emergency funds are applicable in the Northern region. Expectant couple or even entire

community could save especially during the harvesting season to cater for travel cost for facility delivery. Where entire communities rather than couples contribute to the fund there could be greater equity in access to skilled attendance. Bicycle or motorcycle (common form of transport) ambulances could also be established and managed by communities. Men possess a lot of power over decisions on women's health and until they are actively engaged in MCH intervention activities through dialogue and community actions, most interventions in the Northern region may have minimal impact.

C. Community Dialogue/Action Plans

Community dialogue as a health promotion strategy recognizes communities, groups and individuals as key partners to change and not just beneficiaries of interventions. Communities are capable of taken actions that impact positively on their health. Engaging community leaders actively in dialogue could ensure that the issues from communities' and health workers' perspective are understood by both parties and the project take off with adequate support of community leaders. This however needs to be taking further by developing community action plans and following the process through using participatory techniques. Working with influential community leaders could bring about lasting changes in the norms and practices of communities though slowly. The application of the strategy is feasible in the Northern region because community leaders are well respected and the health sector has experience on working with opinion leaders as champions of various courses.

5.4.2 Health System Strengthening

A. Training and Deployment

The high CS rate recorded in the Indonesia Village Midwife Programme could be explained by the fact that with the presence of midwives in the villages, obstetric complications were quickly identified and promptly referred. Alternatively, the results could be the result of provider-induced demand since user fees were paid at the hospitals.

As a long term strategy to meeting the human resource need of the country, Ghana could introduce one midwife per CHPs facility policy and work towards it. This would however require great investment and political will and must go with the expansion of the capacity (infrastructure, funding and human resource) of training institutions to cater for the increase intake. The CHPs facilities would also have to be upgraded to BEmONC facilities and strategies would have to be developed to retain midwives in rural.

B. Task Shifting

The interventions reviewed shows that if trained and supervised lay health workers could contribute significantly to maternal and newborn health and improve equity in the utilization of services. As an interim measure in the Northern region, it is important to train and equip TBAs in hard-to-reach areas to be able to provide safe services and identify danger signs for prompt referral. Midwives could work with TBAs by assigning pregnant

women to them for follow-ups within communities. This strategy could have a positive impact on the continuum of care. TBAs could also be assigned to administer oral misoprostol to pregnant women in rural communities to reduce the incidence of PPH, the major cause maternal mortality in the Northern region.

C. Availability of Services and Quality of Care

CARE International's experience demonstrates that by improving the capacity of existing facilities and staff maternal mortality could be reduced significantly. It is feasible to implement a similar intervention in the Northern region provided the government prioritizes and provides funding for capacity building and refurbishment of existing facilities. This intervention could improve the availability and quality of services provided at the district hospitals and health centers. Considering the fact that the traditional position for delivery which is squatting is unavailable in health facilities, applying the Peru experience in Northern region could improve facility deliveries.

5.5 Conceptual Framework

The Andersen's Behavioural Model of Health Service Utilization was useful in guiding the review of literature and analyzing the problem. The components of the framework tied in well with the objectives of the study and the interaction between the components provided an understanding of the factors influencing the health seeking behaviour of women in the Northern region.

CHAPTER SIX: CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

To conclude, the health system, socioeconomic and cultural factors interact in a complex way to influence utilization of skilled delivery services. With less than thousand days to the 2015 deadline for the MDGs, inadequate access to skilled birth attendance remains a challenge to utilization in the Northern region of Ghana.

On Socioeconomic and cultural factors, the study revealed that in the Northern region high educational attainment, high income and formal employment enhance utilization of skilled delivery services. On the other hand, high parity, gender inequalities and some cultural beliefs and practices were found to be negatively related to utilization of skilled delivery services. Mixed results were found for the influence of age in Ghana. These factors influence utilization through decision-making, perception about need, access to information and services.

Health service factors influencing utilization of skilled delivery services operate at the level of health system. At the service delivery level findings show that the geographical inaccessibility perpetuated by distance between communities and health facilities, limited transport options and poor roads hinders utilization. The indirect cost of services - transportation and opportunity costs and informal payments also inhibit utilization. Also, the availability of emergency obstetric care is limited and inequitably distributed. Nonetheless the CHPS facilities present an opportunity for improving women's access and utilization of skilled delivery services in the future.

At the workforce level, there is critical shortage of midwifery workforce - inadequate to achieve at least 80% coverage of skilled delivery services. The situation is an emergency that requires appropriate strategies to produce, deploy, motivate and retain staff especially in rural areas to close the urban-rural inequality gap in the region.

Improvement in midwifery situation needs to be complemented with the provision of appropriate infrastructure, equipment and supply of water and electricity which are currently inadequate to ensure the availability of quality services.

At the level of financing, Ghana's Free Maternal Health Care Policy was found to be effective in making skilled delivery services affordable to women but been less effective in dealing with the weaknesses in the health system which existed before its inceptions. The impact of the policy on access and quality of skilled delivery services is being challenged by implementation issues such as registration requirements, late reimbursement of funds and increased workload and its negative impact on quality of care.

Quality of services – perceived and evaluated influence women's decision to use skilled delivery services. The high institutional maternal mortality recorded in the region however calls to question the quality of care provided; a possible area for future research.

Interventions from other developing countries - Nepal, Indonesia, India Burkina Faso and Bangladesh demonstrate that combining strategies to influence both demand-side and supply-side are results in significant impact. On the supply-side, the main strategies employed were infrastructure improvement, equipment provision, production and deployment of human resources equitably, task shifting and quality improvement. On the demand-side, community-based strategies such as women's groups, emergency funds and transport system and community dialogue were effective in reducing the inequality in utilization of skilled delivery service among the rich and the poor.

Efforts aimed at improving maternal and newborn survival through utilization of skilled delivery services need to tackle the socio-economic and cultural barriers and be supported by a properly functioning health system.

6.2 Recommendations

6.2.1 Policy-making Level

- As a long-term strategy MOH should introduce one midwife per CHPS facility policy. The policy should have a comprehensive strategy for training, attracting, motivating and retaining qualified staff in rural areas of the Northern region.
- MOH and Regional Health Directorate should improve the availability of EmONC services by prioritizing infrastructure improvement and provision of equipment, supply of electricity and water. These could be achieved through partnerships with NGOs and other development partners.

6.2.2 Programme management level

- Health workers should work with TBAs by assigning pregnant women to them for follow up at community level. This would ensure the continuum of care. At the end of the year, an award ceremony could be organized and the TBAs with the highest number of skilled deliveries rewarded at a community durbar. The health managers should explore innovative approaches to providing incentives to TBAs. eg through NHIS registration by paying the initial premium.
- Programme managers should engage influential community leaders through participatory approaches like community dialogue, learning and action cycles that reflect on cultural practices and norms that impact negatively on maternal and neonatal health. Men should particularly be involved.
- Health workers should advocate for the establishment of community-owned and managed ambulance system using bicycles or motorcycles with carriers.
- Health managers should liaise with district assemblies to explore the possibility of setting up subsidized ambulance services in hard-to-reach areas for referral where the running, maintenance and staffing cost could be borne by the district assembly with communities contributing a minimal amount.

- Health workers should advocate for the establishment of a community credit/savings scheme in which communities could save towards transport cost during the harvesting season - when families are more likely to have some income.
- Women should be engaged in learning and action cycle activities through groups. The groups should be encouraged to reflect on the negative cultural practices that promote gender inequalities and impact negatively on women and develop actions for change.
- Programme managers should take into account women's preferences like squatting positions and having trusted ones around during labour and delivery in the provision of services.

REFERENCES

- Aboagye E & Agyemang OS 2013, 'Maternal Health-Seeking Behavior: The Role of Financing and Organization of Health Services in Ghana', *Global Journal of Health Science*, vol. 5, no. 5, pp. 67–79, viewed 27 June 2013, <http://www.ccsenet.org/journal/index.php/gjhs/article/view/26928>
- Achadi E, Scott S, Pambudi ES, Makowiecka K, Marshall T, Adisasmita A, Deviany PE & Ronsmans C 2007, 'Midwifery provision and uptake of maternity care in Indonesia.', *Tropical medicine & international health : TM & IH*, vol. 12, no. 12, pp. 1490–7, viewed 30 June 2013, <http://www.ncbi.nlm.nih.gov/pubmed/18076557>
- Adjiwanou V & LeGrand T 2013, 'Does Antenatal Care Matter in the Use of Skilled Birth Attendance in Rural Africa: A Multi-country Analysis', viewed 8 June 2013, http://www.healthynewbornnetwork.org/sites/default/files/resources/Adjiwanou_2013_Antenatal%20Care.pdf
- Amnesty International 2006, *Peru Poor and excluded women - Denial of the right to maternal and child health*, viewed 25 July 2013, <http://www.thereport.amnesty.org/en/library/asset/AMR46/004/2006/en/08347fa7-d460-11dd-8743-d305bea2b2c7/amr460042006en.pdf>
- Andersen MR 1995, 'Revisiting the Behavioral Model and Access to Medical Care: Does it Matter?' *Journal of Health and Social Behavior*, vol. 36, pp. 1-10, viewed 20 May 20, 2013. http://globalhealth.stanford.edu/resources/Revisiting_Behavioral_Model_and_Access.pdf
- Anwar I, Sami M, Akhtar A, Chowdhury ME, Salma U, Rahmanc M & Koblinskya M 2008, 'Inequity in maternal health-care services: evidence from home-based skilled-birth-attendant programmes in Bangladesh', *Bulletin of the World Health Organization*, vol. 86, no. 4, pp. 252–259, viewed 13 April 2013, <http://www.who.int/bulletin/volumes/86/4/07-042754.pdf>
- Apetorgbor VEA 2009, 'Review of the Implementation Process of Community-based Health Planning and Services (CHPS) Programme in Ghana', MPH Thesis, Royal Tropical Institute, Amsterdam
- Azad K, Barnett S, Banerjee B, Shaha S, Khan K, Rego AR, Barua S, Flatman D, Pagel C, Prost A, Ellis M & Costello A 2010, 'Effect of scaling up women's groups on birth outcomes in three rural districts in Bangladesh: a cluster-randomized controlled trial', *Lancet*, vol. 375, no. 9721, pp. 1193–202, viewed 11 June 2013, <http://www.ncbi.nlm.nih.gov/pubmed/20207412>

Baden S, Green C, Otoo-Oyortey N & Peasgood T 1994, *Background paper on gender issues in Ghana: Report prepared for the West and North Africa Department*, Department for Overseas Development (DFID), UK, viewed 31 May 2013, <http://www.bridge.ids.ac.uk/Reports/re19c.pdf>

Barker CE, Bird CE, Pradhan A & Shakya G 2007, 'Support to the Safe Motherhood Programme in Nepal: An Integrated Approach', *Reproductive Health Matters*, Vol. 15, Issue 30, pp. 81-90, viewed 30 June 2013, [http://www.rhm-elsevier.com/article/S0968-8080\(07\)30331-5/fulltext](http://www.rhm-elsevier.com/article/S0968-8080(07)30331-5/fulltext)

Bawah AA, Akweongo P, Simmons R, & Phillips JF 1999, 'Women's Fears and Men's Anxieties: The Impact of Family Planning on Gender Relations in Northern Ghana' *Studies in Family Planning*, Vol. 30, Issue1, Pages 54–66, viewed 16, June, 2013, <http://www.nestragel.net/pdfs/councilarticles/sfp/SFP301Bawah.pdf>

Blanchet NJ & Fink G 2012, 'The Effect Of Ghana 's National Health Insurance Scheme on Health Care Utilization', *Ghana Medical Journal*, Vol. 46, No. 2, viewed 26 June 2013, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3426378/pdf/GMJ4602-0076.pdf>

Bosu WK, Bell JS, Armar-klemesu M & Tornui JA 2007, 'Effect of Delivery Care User Fee Exemption Policy on Institutional Maternal Deaths in the Central', *Ghana Medical Journal*, Vol. 41, Number 3, pp. 118–124, viewed 26 June 2013, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2279091/>

Canavan A, 2009, *Review of global literature on maternal health interventions and outcomes related to skilled birth attendance* KIT Working Papers Series H3, Amsterdam: KIT, viewed 29 June 2013, http://www.kit.nl/net/KIT_Publicaties_output/ShowFile2.aspx?e=1552

Cotter K, Hawken M & Temmerman M 2006, 'Low use of skilled attendants' delivery services in rural Kenya.', *Journal of health, population, and nutrition*, vol. 24, no. 4, pp. 467–71, viewed 8 June 2013, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3001150/>

Countdown 2012, *The 2012 Report: Building a Future for Women and Children*, WHO, Geneva Switzerland, viewed 29 June 2013, <http://www.countdown2015mnch.org/documents/2012Report/2012-complete-no-profiles.pdf>

Countdown 2013, *Accountability Report 2013: Ghana Accountability Data*, viewed 29 June 2013, <http://countdown2015mnch.org/documents/2012Report/2012Acct/Acct-Ghana.pdf>

Creanga AA, Gillespie, D, Karklins, S & Tsui, AO 2011, 'Low use of contraception among poor women in Africa: an equity issue', *Bulletin of the World Health Organization*, vol.

- 89, no. 4, pp. 258–66, viewed 18 May 2013,
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3066524/pdf/BLT.10.083329.pdf>
- D’Ambruoso L, Abbey M & Hussein J 2005, ‘Please Understand When I Cry out in Pain: Women’s Accounts of Maternity Services during Labour and Delivery in Ghana’, *BMC public health*, vol. 5, p. 140, viewed 24 May 2013,
<http://www.biomedcentral.com/content/pdf/1471-2458-5-140.pdf>
- Dalal K, Shabnam J, Andrews-Chavez J, Mårtensson LB & Timpka T 2012, ‘Economic Empowerment of Women and Utilization of Maternal Delivery Care in Bangladesh’, *International Journal of Preventive Medicine*, 3(9): 628-636, viewed 1 June 2013,
<http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3445279/>
- De Allegri M, Ridde V, Louis VR, Sarker M, Tiendrebéogo J, Yé M, Müller O & Jahn A 2011, ‘Determinants of utilization of maternal care services after the reduction of user fees: a case study from rural Burkina Faso’, *Health Policy*, vol. 99, no. 3, pp. 210–8, viewed 3 June 2013, <http://www.ncbi.nlm.nih.gov/pubmed/21056505>
- Dzakpasu S, Soremekun S, Manu A, ten Asbroek G, Tawiah C, Hurt L, Fenty J, Owusu-Agyei S, Campbell OMR & Kirkwood BR 2012, ‘Impact of Free Delivery Care on Health Facility Delivery and Insurance Coverage in Ghana’s Brong Ahafo Region’, *PLoS ONE* Vol. 7, Issue11, viewed 26 June 2013,
<http://www.plosone.org/article/info:doi/10.1371/journal.pone.0049430>
- Ensor T & Cooper S 2004, ‘Overcoming barriers to health service access and influencing the demand side through purchasing’, *Health, Nutrition and Population Discussion Paper*, The World Bank, Washington DC, USA, viewed 18 May 2013,
http://www.policyproject.com/pubs/MNPI/Ghana_MNPI.pdf
- Ensor T, & Ronoh J 2005, ‘Effective financing of maternal health services: A review of the Literature’, *Health Policy*, vol. 75, Issue 1, pp. 49-58, viewed 27 May 2013,
<http://heapol.oxfordjournals.org/content/75/1/49.full.pdf+html>
- Family Care International 2012, *Resource C: Caring Behaviours—Research findings and Other Information*, viewed 8 June 2013,
http://www.familycareintl.org/UserFiles/File/pdfs/sci_cb_rc.pdf
- Fikree FF, Worley H, & Sines E 2007, *Delivering Safer Motherhood: Sharing the Evidence*, Policy Brief, viewed 23 June 2013,
http://homepages.abdn.ac.uk/wdu016/uploads/files/Impact_Policy%20Brief_Delivering%20Safer%20Motherhood.pdf
- Furuta M & Salway S 2006, ‘Women’s Position within the Household as a Determinant of Maternal Health Care Use in Nepal’ *International Family Planning Perspectives*, viewed 18 May 2013, <http://www.guttmacher.org/pubs/journals/3201706.html>

Gabrysch S & Campbell OMR 2009, 'Still too far to walk: literature review of the determinants of delivery service use', *BMC pregnancy and childbirth*, vol. 9, p. 34, viewed 22 May 2013,

<http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=2744662&tool=pmcentrez>

Ghana Health Service 2006, *Northern Region Profile*, GHS, Accra Ghana, viewed 16 February 2013, <http://www.ghanahealthservice.org/>

Ghana Health Service 2011, *Annual Progress Report 2010*, GHS, Accra Ghana, viewed 30 April 2013, <http://www.ghanahealthservice.org/>

Ghana Health Service 2012(a), *Annual Progress Report 2011*, GHS, Accra Ghana, viewed 30 April 2013, <http://www.ghanahealthservice.org/>

Ghana Health Service 2012(b), *Organizational Structure*, viewed 12 February, 2013, <http://www.ghanahealthservice.org/>

Ghana Statistical Service 2008, *Ghana Living Standards Survey Report of the Fifth Round*, GSS Accra Ghana, viewed 18 February 2013, http://www.statsghana.gov.gh/docfiles/glss5_report.pdf.

Ghana Statistical Service, Ghana Health Service and ICF Macro 2009(a), *Ghana Demographic and Health Survey Report: 2009, Ghana Demographic and Health Survey 2008*, Accra, Ghana: GSS, GHS AND ICF Macro.

Ghana Statistical Service, Ghana Health Service , and Macro International 2009(b), *Ghana Maternal Health Survey 2007*, Calverton, Maryland, USA: GSS, GHS, Macro international

Ghana Statistical Service 2012, *Population and housing census 2010*, Ghana Statistical Service, Accra Ghana, viewed 12 February 2013, http://www.statsghana.gov.gh/docfiles/2010phc/Census2010_Summary_report_of_final_results.pdf

Gibbons L, Belizán JM, Lauer JA, Betrán AP, Merialdi M & Althabe F 2010, 'The Global Numbers and Costs of Additionally Needed and Unnecessary Caesarean Sections Performed per Year: Overuse as a Barrier to Universal Coverage', *World Health Report Background Paper 2010*, 30, viewed 5 July 2013, <http://www.who.int/healthsystems/topics/financing/healthreport/30C-sectioncosts.pdf>

Gumanga SK, Kolbila, DZ, Gandau BBN, Munkaila A, Malechi H & Kyei-Aboagye K 2011, 'Trends in maternal mortality in Tamale Teaching Hospital, Ghana.', *Ghana Medical Journal*, vol. 45, no. 3, pp. 105–110, viewed 18 May 2013, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3266149/pdf/GMJ4503-0105.pdf>

Gupta I, Joe W & Rudra S, 2010, 'Demand Side Financing in Health: How far can it address the issue of low utilization in developing countries?' *Background Paper Number 27*, WHO, Geneva Switzerland, viewed 27 May 2013, <http://www.who.int/healthsystems/topics/financing/healthreport/27DSF.pdf>

Gupta N, Maliqi B, França A, Nyonator F, Pate MA, Sanders D, Belhadj H and Bernadette Daelmans B 2011, 'Human Resources for Maternal, Newborn and Child Health: from Measurement and Planning to Performance for Improved Health Outcomes' *Human Resources for Health*, Vol. 9, Issue 16, Viewed 23 June 2013, <http://www.human-resources-health.com/content/9/1/16>

Gyimah SO, Takyi BK, Addai I 2006, 'Challenges to the reproductive-health needs of African women: on religion and maternal health utilization in Ghana', *Social Sciences and Medicine*, Vol.62, Issue 12, Page 2930–2944, viewed 3 June 2013, Doi: 10.1177/146642409411400304.

Hardon A, Boonmongkon P, Streefland P, Tan ML, Hongvivatana T, Van der Geest S, Van Staa A, Varkevisser C, Chowdhury M, Bhuiya A, Sringeriyuang L, Van Dongen E & Gerrits T 2001, 'Health Seeking Behaviour and Utilization of Health Services' *Applied Health Research Manual: Anthropology of Health and Health Care*, 3rd Edition, Het Spinhuis Publishers, Amsterdam The Netherlands, Page 35

Hatt, L 2007, 'Did the strategy of skilled attendance at birth reach the poor in Indonesia?', *Bulletin of the World Health Organization*, vol. 85, no. 10, pp. 774–782, viewed 30 June 2013, <http://www.who.int/bulletin/volumes/85/10/06-033472.pdf>

Hounton S, Byass P, & Brahim B 2009, 'Towards reduction of maternal and perinatal mortality in rural Burkina Faso: communities are not empty vessels', *Global Health Action*, vol. 2, viewed 11 August 2013, <http://www.globalhealthaction.net/index.php/gha/article/view/1947/2259>

Hundley VA, Avan BI, Sullivan CJ & Graham WJ 2013, 'Should oral misoprostol be used to prevent postpartum haemorrhage in home-birth settings in low-resource countries? A systematic review of the evidence.', *BJOG: An international journal of obstetrics and gynaecology*, vol. 120, no. 3, pp. 277–85; discussion 86–7, viewed 27 May 2013, <http://www.ncbi.nlm.nih.gov/pubmed/23190345>

Hunt P & Mesquita JBD 2012, *Reducing Maternal Mortality: The contribution of the Right to the Highest Attainable Standard of Health*, viewed 18 May 18, 2013. http://www.unfpa.org/webdav/site/global/shared/documents/publications/reducing_m.pdf

ICF Macro 2010, *Trends in Demographic, Family Planning and Health Indicators in Ghana, 1960-2008: Trend Analysis of Demographic and Health Surveys Data*. ICF Macro., Calverton, Maryland, USA. Page 16-31

International Centre for Research on Women 2010, 'Targeting Poverty and Gender Inequality to improve Maternal Health', *Women Deliver Conference June 2010*, ICRW, viewed 27 May, 2013. http://www.womendeliver.org/assets/ICRW-Women_Deliver_FINAL.pdf

International Monetary Fund 2012, viewed 18 February 2013, <http://www.imf.org/external/pubs/ft/scr/2012/cr12203.pdf>

Institute for Transportation and Development Policy 2005, *Report on current situation in the health sector of Ghana and possible roles for appropriate transport technology and transport related communication interventions*, viewed 30 July 2013, <http://www.itdp.org/documents/ITDP%20Transport%20and%20Health%20Care%20-%20Ghana.pdf>

Iyer A, Sen G, and Ostlin P 2008, 'The intersections of gender and class in health status and health care', *Global Public Health*, vol. 3, Supplement 1, pp. 13-24, viewed 27 May 2013, <http://www.ncbi.nlm.nih.gov/pubmed/19288340>.

Kavi EC 2011, 'Promoting Skilled Attendance at Birth, Global Mandates and Local Realities: A Case Study of Nalerigu Sub-District in Northern Region Ghana', MSc Thesis, University of London, London.

Kayongo M, Butera J, Mboninyibuka D, Nyiransabimana B, Ntezimana A & Mukangamuje V 2006, 'Improving availability of EmOC services in Rwanda--CARE's experiences and lessons learned at Kabgayi Referral Hospital.', *International journal of gynaecology and obstetrics: the official organ of the International Federation of Gynaecology and Obstetrics*, vol. 92, no. 3, pp. 291-8, viewed 22 May 2013, <http://www.ncbi.nlm.nih.gov/pubmed/16442112>

Kyomuhendo GB 2003, Low use of rural maternity services in Uganda: impact of women's status, traditional beliefs and limited resources, *Reproductive Health Matters*. vol.11, Page 16-26, viewed 3 June 2013, DOI: 10.1016/S0968-8080(03)02176-1

Manandhar DS, Osrin D, Shrestha BP, Mesko N, Morrison J, Tambahangphe KM, Tamang S, Thapa S, Shrestha D, Thapa B, Shrestha JR, Wade A, Borghi J, Standing H, Manandhar M & Costello, AMDL 2004, 'Effect of a participatory intervention with women's groups on birth outcomes in Nepal: cluster-randomised controlled trial.', *Lancet*, vol. 364, no. 9438, pp. 970-9, viewed 8 July 2013, [http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(04\)17021-9/fulltext?_eventId=login](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(04)17021-9/fulltext?_eventId=login)

Marston C, Renedo A, McGowan CR, Portela A 2013 'Effects of Community Participation on Improving Uptake of Skilled Care for Maternal and Newborn Health: A Systematic Review', *PLoS ONE* 8(2): e55012, viewed 23 July 2013, <http://www.plosone.org/article/info:doi/10.1371/journal.pone.0055012>

Mekonnen Y & Mekonnen A 2002, *Utilization of Maternal Health Care Services in Ethiopia*, ICF Macro. Calverton, Maryland- USA, viewed 3 June 2013, <http://www.measuredhs.com/pubs/pdf/FA38/01-mekonnen.pdf>

Mills S, Willams JE, Adjuik M & Hodgson A 2008, 'Use of Health Professionals for Delivery Following the Availability of Free Obstetric Care in Northern Ghana', *Maternal and Child Health Journal*, Volume 12, Issue 4, Page 509-518, viewed 23 June 2013, DOI:10.1007/s10995-007-0288-y

Ministry of Health 2007, *Human Resource Policies and Strategies for the Health Sector, MOH/HRH Development 2006-2011*, Accra Ghana, viewed 15 May 2013. <http://www.moh-ghana.org/>

Ministry of Health 2008, *National Consultative Meeting on the reduction of Maternal Mortality in Ghana: Partnership for Action - A Synthesis Report*, MOH Accra, viewed 7 August 2013, <http://www.mohghana.org/UploadFiles/Publications/Synthesis%20Report%20-%20MDG5120427093223.pdf>

Ministry of Health 2012, viewed 19 February 2013, <http://www.moh-ghana.org/>

Modern Ghana n.d., *Physical Features of the Northern Region*, viewed 16 June 2013, http://www.modernghana.com/ghanahome/regions/northern.asp?menu_id=6&sub_menu_id=14&gender

Mrisho M, Schellenberg JA, Mushi AK, Obrist B, Mshinda H, Tanner, M & Schellenberg, D 2007, 'Factors affecting home delivery in rural Tanzania.', *Tropical medicine & international health : TM & IH*, Vol. 12, No. 7, pp. 862–72, viewed 3 June 2013, <http://www.ncbi.nlm.nih.gov/pubmed/17596254>

NHIA 2011, *Annual Report 2010*, Accra-Ghana, viewed 26 June 2013, [http://www.nhis.gov.gh/Uploads/dbsAttachedFiles/8\(1\).pdf](http://www.nhis.gov.gh/Uploads/dbsAttachedFiles/8(1).pdf)

NHIA 2012, *Annual Report 2011*, Accra-Ghana, viewed 27 June 2013, <http://www.nhis.gov.gh/>

NHIA 2013, viewed 15 May 2013, <http://www.nhis.gov.gh/>

Norad 2012, *New WHO recommendations: Optimizing health worker roles through task shifting*, viewed 18 May 2013, <http://www.norad.no/en/about-norad/news/new-who-recommendations-optimizing-health-worker-roles-through-task-shifting>

Nyonator FK, Awoonor-Williams JK, Phillips JF, Jones TC & Miller RA 2005, 'The Ghana community-based health planning and services initiative for scaling up service delivery

innovation.', *Health policy and planning*, vol. 20, no. 1, pp. 25–34, viewed 28 June 2013, <http://www.ncbi.nlm.nih.gov/pubmed/15689427>

Ofori-Adjei D 2007, 'Ghana's Free Delivery Care Policy', *Ghana Medical Journal*, Vol. 41, , No. 3, viewed 8 June 2013, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2279087/pdf/GMJ4103-0094.pdf>

Parkhurst JO, Penn-Kekana L, Blaauw D, Balabanova D, Danishevski K, Rahman S A, Onama V, & Sengooba F 2005, Health Systems Factors influencing Maternal Health Services: A Four-Country Comparison. *Health Policy*, Vol. 73, Issue 2, pp. 139-150, viewed 27 June 2013, [http://www.healthpolicyjrn.com/article/S0168-8510\(04\)00240-4/fulltext](http://www.healthpolicyjrn.com/article/S0168-8510(04)00240-4/fulltext)

Penfold S, Harrison E, Bell J & Fitzmaurice A 2007, 'Evaluation of the Delivery Fee Exemption Policy in Ghana : Population Estimates of Changes in Delivery', *Ghana Medical Journal*, vol. 41, no. 3, pp. 100–109, Viewed 27 June 2013, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2279083/pdf/GMJ4103-0100.pdf>

Peters DH, Garg A, Bloom, G, Walker DG, Brieger WR & Rahman, MH 2008, 'Poverty and access to health care in developing countries.', *Annals of the New York Academy of Sciences*, vol. 1136, pp. 161–71, viewed 18 March 2013, <http://www.ncbi.nlm.nih.gov/pubmed/17954679>

Prost A, Colbourn T, Seward N, Azad K, Coomarasamy A, Copas A, Houweling T A J, Fottrell E, Kuddus A, Lewycka S, MacArthur C, Manandhar D, Morrison J, Mwansambo C, Nair N, Nambiar B, Osrin D, Pagel C, Phiri T, Pulkki-Brännström A-M, Rosato M, Skordis-Worrall J, Saville N, More NS, Shrestha B, Tripathy P, Wilson A & Costello A 2013, 'Women's groups practising participatory learning and action to improve maternal and newborn health in low-resource settings: a systematic review and meta-analysis', *Lancet*, vol. 381, no. 9879, pp. 1736–46, viewed 22 May 2013, <http://www.ncbi.nlm.nih.gov/pubmed/23683640>

Quayyum Z, Khan MNU, Quayyum T, Nasreen HE, Chowdhury M & Ensor, T 2013, 'Can community level interventions have an impact on equity and utilization of maternal health care" - evidence from rural Bangladesh.', *International Journal for Equity in Health*, *International journal for equity in health*, vol. 12, no. 1, p. 22, viewed 27 May 2013, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3620556/>

Rani M and Lule E, 2004, 'Exploring the Socioeconomic Dimension of Adolescent Reproductive Health: A Multicounty Analysis', *International Family Planning Perspectives* ,vol. 30, Number 3, viewed 18 May 2013, <http://www.guttmacher.org/pubs/journals/3011004.html>

Rath AD, Basnett I, Cole M, Subedi HN, Thomas D, Murray SF 2007, 'Improving Emergency Obstetric Care in a Context of Very High Maternal Mortality: The Nepal Safer Motherhood Project 1997–2004', *Reproductive Health Matters*, Vol. 15, Issue 30, pp. 72-80 , Viewed 30 June 2013, [http://www.rhm-elsevier.com/article/S0968-8080\(07\)30329-7/fulltext#section2](http://www.rhm-elsevier.com/article/S0968-8080(07)30329-7/fulltext#section2)

Rebhan DP 2009, *Health Care Utilization: Understanding and Applying Theories and Models of Health Care Seeking Behavior*, viewed 20 May 2013, <http://www.cwru.edu/med/epidbio/mphp439/healthcareutil.pdf>

Regional Health Directorate 2013, *Annual Performance Review Meeting*, February 26 – 28, 2013, GHS, Northern Region, Tamale

Regional Health Directorate-Health Management Information System 2013, GHS, Northern Region, Tamale

Rottach E, Schuler SR, and Hardee K. 2009, *Gender Perspectives Improve Reproductive Health Outcomes: New Evidence*, Washington, DC: Population Reference Bureau, viewed 28 May 2013, http://www.igwg.org/igwg_media/genderperspectives.pdf

Sappor M & Esena RK 2013, 'Utilization of Skilled Delivery Services In Ghana : Quality Improvement Issues of Maternal Health' *International Journal of Innovative Research and Studies*, Vol.2, Issue 5, Page 354-367, viewed 8 June 2013, http://www.ijirs.com/vol2_issue-5/28.pdf

Say L & Raine R 2007, 'A systematic review of inequalities in the use of maternal health care in developing countries: examining the scale of the problem and the importance of context', *Bulletin of World Health Organization*, Vol. 85, No.10, Page 812-819, viewed 5 June 2013, <http://www.who.int/bulletin/volumes/85/10/06-035659.pdf>

SEND-Ghana 2010, *Balancing Access with Quality Health Care: An Assessment of the NHIS in Ghana (2004-2008)*, viewed 9 July 2013, http://sendwestafrica.org/downloads/research-reports/nhis_report%20%20balancing%20access%20with%20quality%20health%20care.pdf

Sodzi-Tettey S, Aikins M, Awoonor-Williams JK & Agyepong IA 2012, 'Challenges In Provider Payment Under the Ghana National Health Insurance Scheme : A Case Study of Claims', *Ghana Medical Journal* vol. 46, no. 4, pp. 189–199, viewed 1 August, 2013, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3645172/>

Stephenson R, Baschieri, A, Clements, S, Hennink, M & Madise, N 2006, 'Contextual influences on the use of health facilities for childbirth in Africa.', *American journal of public health*, Vol. 96, No. 1, Page 84–93, viewed 21 May 2013, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1470452/pdf/0960084.pdf>

Stephenson R, Baschieri A, Clements S, Hennink M & Madise, N 2007, 'Contextual influences on modern contraceptive use in sub-Saharan Africa.', *American journal of public health*, vol. 97, no. 7, pp. 1233–40, viewed 18 May 2013, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1913073/pdf/0971233.pdf>

Tripathy P, Nair N, Barnett S, Mahapatra R, Borghi, J, Rath Shiband, Rath Suchitra, Gope R, Mahto D, Sinha R, Lakshminarayana R, Patel V, Pagel C, Prost A & Costello A 2010, 'Effect of a participatory intervention with women's groups on birth outcomes and maternal depression in Jharkhand and Orissa, India: a cluster-randomized controlled trial', *Lancet*, vol. 375, no. 9721, pp. 1182–92, viewed 11 June 2013, <http://www.ncbi.nlm.nih.gov/pubmed/20207411>

Tunçalp Ö, Hindin MJ, Adu-Bonsaffoh K, Adanu R 2012, 'Listening to Women's Voices: The Quality of Care of Women Experiencing Severe Maternal Morbidity in Accra, Ghana', *PLoS ONE*, Vol. 7, Issue 8, Page e44536, Viewed 16 June 2013, <http://www.plosone.org/article/info:doi/10.1371/journal.pone.0044536>

Turkson PK 2009, 'Perceived Quality of Healthcare Delivery in a Rural District of Ghana', *Ghana Medical Journal*, Vol. 43, Issue 2, Page 65-70, viewed 17 June 2013, <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3039236/#R7>

UNAIDS 2013, *Ghana Profile*, viewed 16 June 2013, <https://www.unaids.org/en/regionscountries/countries/ghana/>

UNFPA 2003, *Maternal Mortality Update 2002: A focus on Emergency Obstetric Care*, viewed 26 May, 2013. http://unfpa.org/webdav/site/global/shared/documents/publications/2003/mmupdate-2002_eng.pdf

UNFPA 2004, *Programme Manager's Planning Monitoring & Evaluation Toolkit: Tool Number 6 Programme Indicators*, viewed 7 August 2013, http://www.unfpa.org/monitoring/toolkit/Tool6_2.pdf

UNFPA 2011, *State of the World Midwifery Report 2011: Delivering Health, Saving Lives*, viewed February 12, 2013. https://www.unfpa.org/webdav/site/global/shared/documents/publications/2012/en_SOWMR_Full.pdf

UNFPA 2013, *Skilled Attendance at Birth*, viewed 18 May 2013 <http://www.unfpa.org/public/mothers/pid/4383>

van Eijk AM, Bles HM, Odhiambo F, Ayisi JG, Blokland IE, Rosen DH, Adazu K, Slutsker L & Kim A Lindblade KA 2006, 'Use of antenatal services and delivery care among women in rural western Kenya: a community based survey' *Reproductive Health*, Vol.3, Page 2, viewed 8 June 2013, <http://www.reproductive-health-journal.com/content/3/1/2>

Wang W, Alva S, Wang S & Fort A 2011, *Levels and Trends in the Use of Maternal Health Services in Developing Countries*. DHS Comparative Reports No. 26. Calverton, Maryland, USA: ICF Macro., viewed 21 July 2013,

<http://www.measuredhs.com/pubs/pdf/CR26/CR26.pdf>

WHO 2001, '*Background paper for the Technical Consultation on Effective Coverage of Health Systems*', 27-29 August 2001, Rio de Janeiro, Brazil, WHO, Geneva Switzerland

WHO 2008, *Task Shifting: Global Recommendations and Guidelines*, WHO Geneva, Switzerland, viewed 29 June,

http://www.who.int/workforcealliance/knowledge/resources/taskshifting_globalrecommendations/en/index.html

WHO 2006, *Quality of Care: A process for making strategic choices in health systems*, WHO Geneva Switzerland, viewed 30 July 2013,

http://www.who.int/management/quality/assurance/QualityCare_B.Def.pdf

WHO 2012a, *Maternal Mortality*, viewed 2 July, 2013,

<http://www.who.int/mediacentre/factsheets/fs348/en/>

WHO 2012b, *Newborns: Reducing Mortality, May 2012 Fact Sheet*, viewed 22 May, 2013. <http://www.who.int/mediacentre/factsheets/fs333/en/>

WHO 2012c, *WHO recommendations: Optimizing health worker roles to improve access to key maternal and newborn health interventions through task shifting*, WHO Geneva Switzerland, viewed 29 June 2013,

http://apps.who.int/iris/bitstream/10665/77764/1/9789241504843_eng.pdf

WHO 2013, *Strengthening Health Workforce to Strengthen Health Systems*, viewed 2 July 2013, http://www.who.int/hrh/fig_density.pdf

WHO, UNICEF, UNFPA & World Bank 2010, *Trends in Maternal Mortality: 1990 to 2010 WHO, UNICEF, UNFPA and World Bank Estimates*, WHO, Geneva Switzerland, Viewed 18 May 2013, http://whqlibdoc.who.int/publications/2012/9789241503631_eng.pdf

Witter S, Arhinful DK, Kusi A & Zakariah-Akoto 2007, 'The Experience of Ghana in Implementing a User Fee Exemption Policy to Provide Free Delivery Care', *Reproductive Health Matters*, Volume 15, Issue 30, Pages 61-71, Viewed 8 June 2013,

[http://www.rhm-elsevier.com/article/S0968-8080\(07\)30325-X/fulltext](http://www.rhm-elsevier.com/article/S0968-8080(07)30325-X/fulltext)

Witter S, Adjei S, Armar-Klemesu M & Graham, W 2009, 'Providing free maternal health care: ten lessons from an evaluation of the national delivery exemption policy in Ghana', *Global Health Action*, Vol. 2, pp. 1-5, viewed 23 June 2013,

<http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=2779941&tool=pmcentrez&rendertype=abstract>

Witter S, Garshong B & Ridde V 2013, 'An exploratory study of the policy process and early implementation of the free NHIS coverage for pregnant women in Ghana.', *International journal for equity in health*, vol. 12, p. 16, viewed 18 June 2013, <http://www.equityhealthj.com/content/12/1/16>

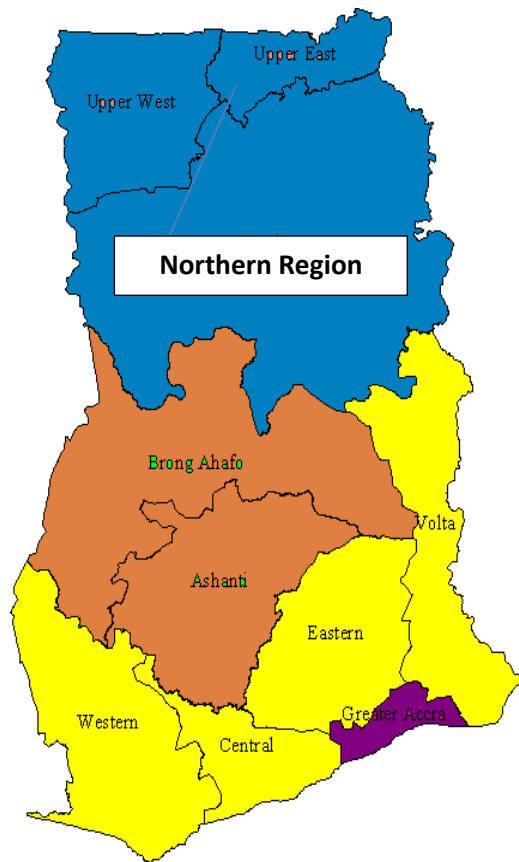
Worku AG, Yalew AW & Afework MF 2013, 'Maternal Complications and Women's Behavior in Seeking Care from Skilled Providers in North Gondar, Ethiopia', *PLoS One*, Vol. 8, Issue 3, viewed 8 June 2013, <http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0060171>

World Bank 2013a, *Data-Ghana*, viewed 8 June 2013, <http://data.worldbank.org/country/ghana>

World Bank 2013b, *How do we improve Maternal Health Outcomes*, Viewed 23 June 2013, <http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTHEALTHNUTRITIONANDPOPULATION/EXTPRH/0,,contentMDK:20201059~menuPK:548465~pagePK:148956~piPK:216618~theSitePK:376855,00.html>

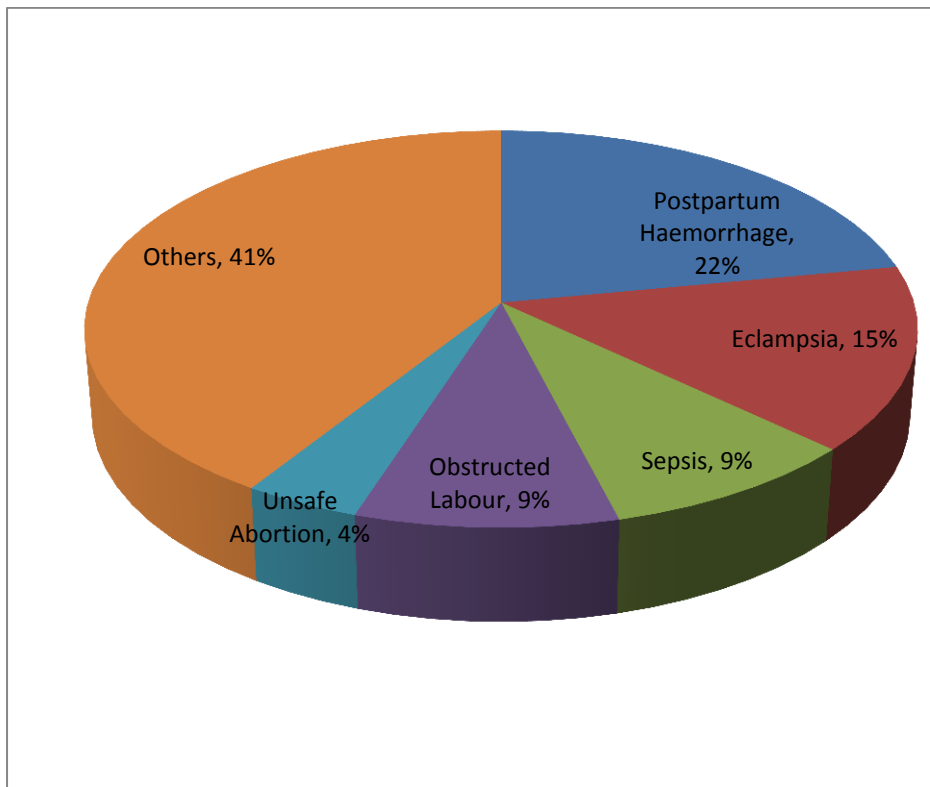
ANNEXES

Annex I: Location of the Northern Region on the Map of Ghana



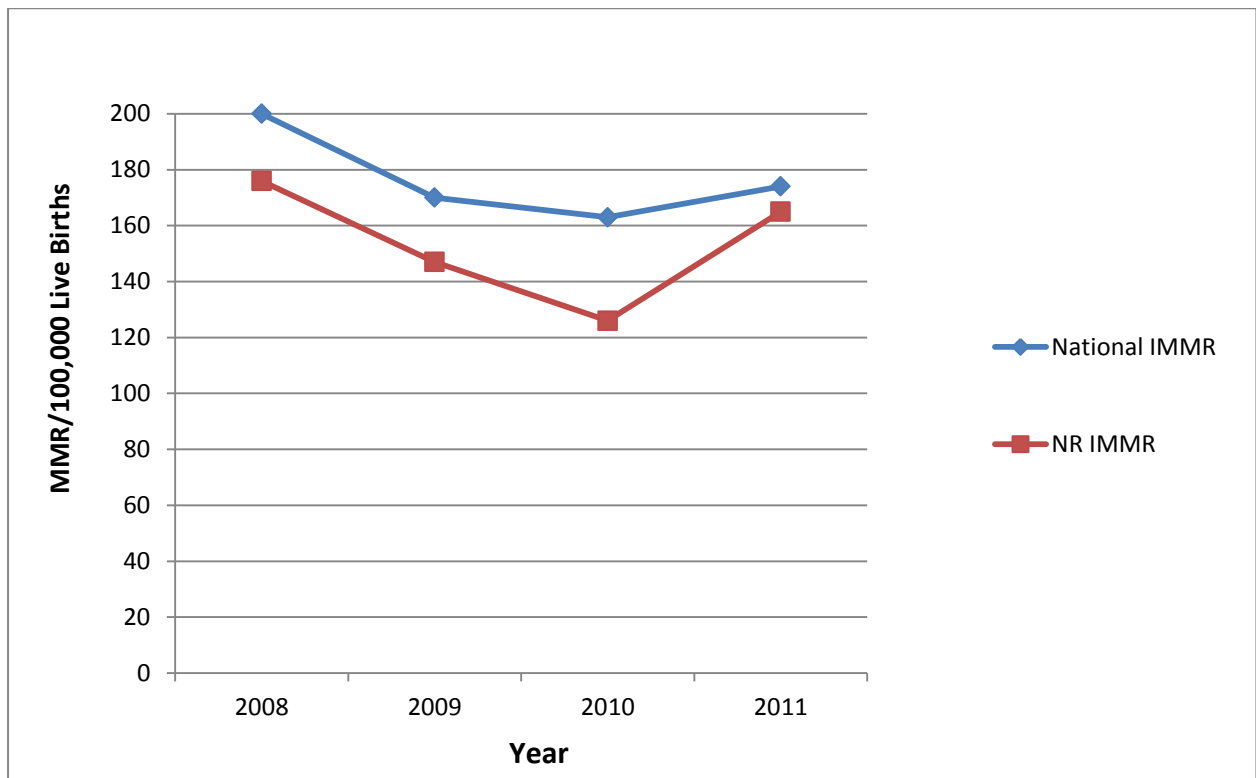
Source: MOH 2008

Annex II: Causes of Institutional Maternal Mortality in Northern, 2012



Source: RHD-HMIS, 2013

Annex III: Trend in Maternal Mortality in Northern Region, 2008-2012



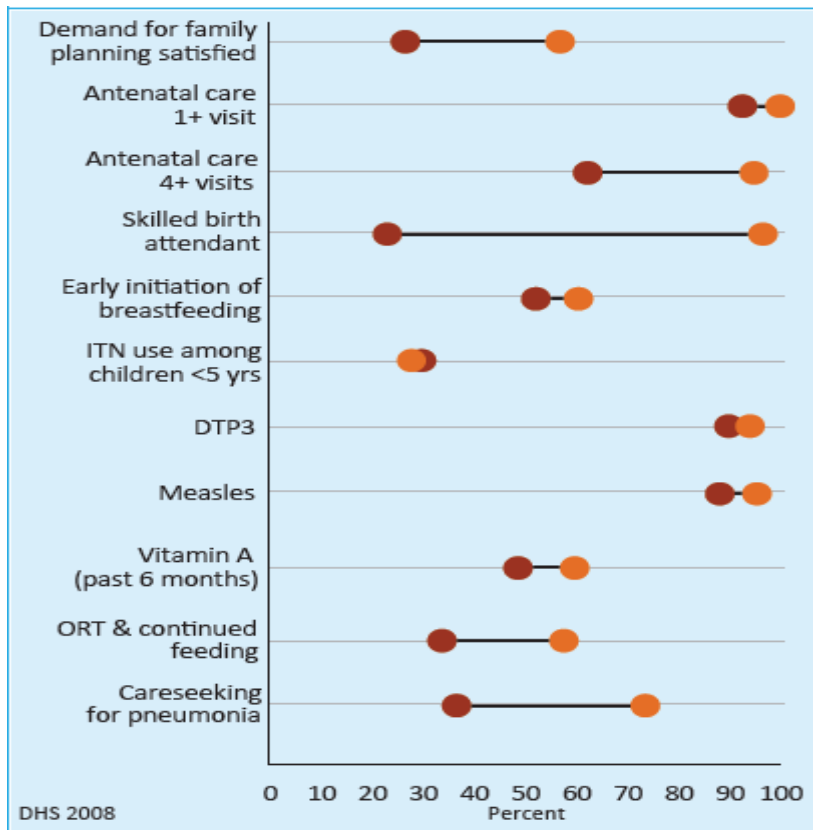
Source: GHS 2011 & 2012, RHD-HMIS 2013

Annex IV: Comparative Data on Utilization of Maternal Health Service

Indicator	2008		2009		2010		2011	
	National	NR	National	NR	National	NR	National	NR
Institutional MMR/100,000 Live Births	200	176	170	147	163	126	174	165
MMR/100,000 Live Births	-	187	-	166	-	151	-	190
% ANC Coverage	97	128	92	121	93	126	91	126
% 4+ ANC Visits	-	-	-	-	-	54	-	55
% Skilled Delivery	44	30	46	35	50	37	52	43
% PNC Coverage	58	81	56	85	62	86	65	91
Contraceptive Prevalence rate (%)	34	26	31	29	25	24	27	21
C/S Rate (%)	-	3.3	-	2.7	-	2.9	-	3.8

NR=Northern Region Source: GHS 2011 & GHS 2012

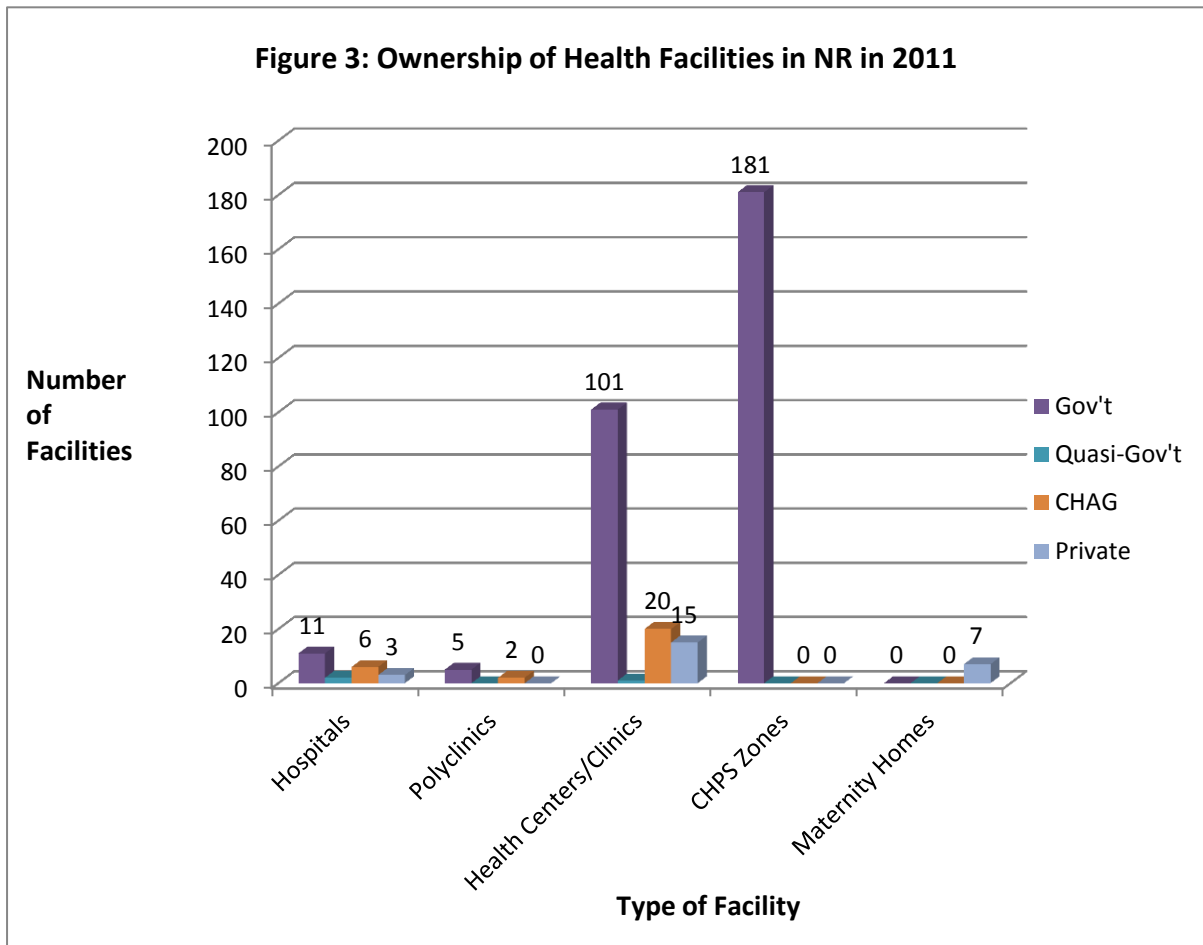
Annex V: Socioeconomic Inequities in Coverage of Maternal and Child Health Services in Ghana, 2008



Note: The red circle represents the poorest 20% and the orange circle represents the richest 20%. The wider the length between the two circles on an indicator, the greater the inequity.

Source: Countdown 2013

Annex VI: Types and Ownership of Health Facilities in Northern Region



Source: RHD-HMIS, 2013