Improving utilization of ANC, Delivery and PNC Services in Bong County, Liberia

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Liberia

50TH International Course in Health Development

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KIT (ROYAL TROPICAL INSTITUTE)

Development Policy & Practice/Vrije Universteit Amsterdam

Improving utilization of ANC, Delivery and PNC Services in Bong County, Liberia

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

By

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Declaration:
Where other people's work has been used (either from a printed source, internet or any other source) this has been carefully acknowledge and referenced in accordance with departmental requirements.
The thesis **Alphonso Wesseh Kofa** is my own work.

Signature

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Dedication

This thesis is dedicated to my Dear Parents Ms. Mary N.Karmoh and Mr. Harrison T.Kofa, may peace be to their memories; I wish you all were around today to reap the reward of the seed you planted many years ago, but God knows the reason why.

Also, this thesis is dedicated to my Beloved daughter, Ms. Rita Eleanor Kofa, who could not enjoy a year of fatherly love to allow me fulfill this task;I love you baby.

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List of abbreviations

ADB	African Development Bank
ANC	Antenatal Care
BCHT	Bong County Health Team
BCP	Bong County Plan
BEmONC	Basic Emergency Obstetrics and Neonatal Care
BMMCR	Bong Maternal Mortality Conference Report
BPHS	Basic Package of Health Services
CDA	County Development Agenda
CEmONC	Comprehensive Obstetrics and Neonatal Care
CHAI	Clinton Health Access Initiative
CHWs	Community Health Workers
C-Section	Caesarean Section
DFID	Department for foreign International Development
DHS	Demographic Health Surveys
DRC	Democratic Republic of Congo
EDF	European Development Funds
EPHS	Essential Package of Health Services
EPI	Expanded Program on Immunization
GDP	Gross Domestic Product
GFTAM	Global Fund for Tuberculosis, AIDS and Malaria

HF	High Frequency Radio
HIV	Human Immuno –deficiency Virus
HRHLM	Human Resource for Health Labour Market
INGOs	International Non- Governmental Organization
JFK	John Fitzgerald Kennedy Memorial Center
JICA	Japanese International Cooperation Agency
LDHS	Liberia Demographic Health Survey
LISGIS	Liberia Institute for –Geo Services and Information
MGDs	Millennium Development Goals
MOH&SW	Ministry of Health and Social Welfare
MY&S	Ministry of Youth and Sports
NCDs	Non Communicable Diseases
NHAS	National Health Accounts Survey
NTDs	Neglected Tropical Diseases
OOP	Out of Pocket Payment
PHC	Primary Health Care
PMTCT	Prevention of Mother to Child Transmission
PNC	Post Natal Care
PRA	Participatory Reflection Action

SRH	Sexual Reproductive health
SEM	Socio-Ecological Model
TA	Technical Assistant
TB	Tuberculosis
TBAs	Traditional Birth Attendants
UHC	Universal Health Coverage
UNFPA	United Nations Population Fund Agency
UNICEF	United Nations International Children Education Fund
USAID	United States Agency for International Development
USD	United States Dollars
WBR	World Bank Report

DEFINITION OF TERMS

Antenatal Care:'' Care given to a woman during pregnancy that provide the opportunity for discussion between a pregnant woman and a health care provider about health seeking behaviour during pregnancy, recognition of danger signs that might arise during the pregnancy ,and delivery plans that will meet the needs of the individual woman''(WHO,2012a).

Antenatal Coverage:'' Percentage of women age 15-49 with live birth in a given period who received ante natal care of four or more visits '' (WHO, 2012a).

''Child marriage is defined as marriage before age 18, in accordance With the definition of childhood in the Convention on the Rights of The Child'', (WHO, 2004).

Deliveries in health facilities: '' percentage of deliveries in public or private facilities, clinics, health centers, hospitals, irrespective of the outcome (live birth or dead fetal)'' (WHO, 2012a)

Distance in this thesis, refers to how far a place is, weather and roads conditions.

Maternal Death (ICD- 10 definition): "is the death of women while pregnant or within 42 days of termination of pregnancy irrespective from the duration and the site of the pregnancy from any causes related to or aggravated by pregnancy or its management but not from accidental or incidental causes" (WHO, 2012a).

Post Natal Care:'' is the care provided to the mother and her new born the first six weeks after delivery by skill birth attendants'' (WHO, 2012a).

Traditional Birth attendant (TBA): "traditional, independent (of the health system), none formally trained and community based providers of care during pregnancy, childbirth and the postpartum period. TBAs either trained or not, is excluded from the category of skilled health workers" (WHO,2012b).

Skilled health worker/ Skilled Birth Attendant (SBA): "is an accredited health professional such as midwife, doctor or nurse who has been educated and trained to proficiency in the skills needed to manage normal (uncomplicated) pregnancies, childbirth and the immediate postpartum period, and in the identification management and referral or complications in women and newborn" (WHO, 2008).

''Fast track'' 10 countries which include Bangladesh, Cambodia, Cuba, Egypt ,Ethiopia, Lao Peoples Democratic Republic ,Peru ,Rwanda and Vietnam that is making progress to achieve MDGs4(to reduce child mortality by two third and MGD5a(To reduce MMR by three quarter).

Maternal health services as refer to in this thesis means antenatal, delivery and post natal care services.

Abstract

Background

Low utilization of skilled delivery, ANC and PNC is contributing to high maternal mortality in Liberia.

The utilization of ANC, delivery and post natal care services influenced by community, individual and Intrapersonal, institutional or health system factors as well public policy factors. The manner in which these factors influence utilization of ANC, delivery and post natal care services needs to be understood to adapt a holistic approach or intervention that will work in the context of Liberia, especially Bong County.

Objective

To analyze factors that influence the utilization of health facilities for ANC, delivery and PNC services in Bong and propose strategies for improvement.

Method

The study is based on a literature review. The socio-ecological model of determinants of utilization of ANC, delivery and post natal care services was used.

Results

The most important barriers to improving the utilisation of maternal health services are health seeking behaviour influenced by traditional beliefs and practices, decision making in the family and community, lack of birth and complication preparedness, cost and transport, staff attitudes, staff availability, responsiveness, and coordination with TBAs.

Conclusion

Increase utilization of maternal health services requires improved access through community based programs, integrated outreach services to everyone and improved decision making. The thesis also suggested evidence base interventions that could be suitable in the context of Bong County to improve maternal health utilization.

Recommendations

The thesis recommends improvement in women's education, and behaviour change communication, improving quality of maternal health services, and ensuring health workers's capacity is built.

Key words: ANC, Delivery, PNC, Utilization, Bong County, Liberia

Word count: 13,142

Introduction

As a nurse, I have served as Director of Bong County Community Health Services with preventive primary care responsibilities to supervise all first line health facilities in the county. My work is primarily focused on supportive supervision at health facilities and community levels which involves ensuring that national clinical guidelines and standards are utilized by all staff to meet quality assurance evaluations. From experience, I have realized that most of the pregnant women in the communities do not utilize the health facilities for ANC visits, delivery and post natal care services; in spite of the services available at no cost to the user.

HMIS of Bong County suggests low ANC, delivery and post natal care service coverage has resulted in increased community-based maternal deaths. Therefore, I have decided to seek some answers by using my study to analyze factors influencing the utilization of ANC, delivery and post natal care services in Bong County and review evidence for effective interventions to increase uptake of delivery care.

The findings of the study will be used to make appropriate recommendations for strategic interventions to policy makers, program managers, health professionals and other stakeholders.

Chapter I: Country Background of Liberia

1.0 Introduction

Founded in 1822 and declared independence in 1847, Liberia enjoyed a semblance of peace until its horrific civil conflicts from 1990 to 2003 resulting in the loss of more than 200,000 lives. Following the cessation of the conflict, it had elections in 2005, electing Mrs. Ellen Johnson Sirleaf, Africa's first female president. Again in 2011, Mrs. Sirleaf was re-elected to oversee a country with post-conflict challenges and a long-term developmental agenda, including improved health care (Guanu, 2010).

See map of Liberia in Annex 1.

1.1 Geography

Bong County located in the North Central region of Liberia was created as an administrative subdivision on July 26, 1964. It is the third most populated county next to Montserrado and Nimba Counties, with a total population of approximately 400,000 people (BCHT, 2013). Bong is hilly, similar to the rest of the country, and has a climate comprising rainy season and dry seasons. During the rainy season, many roads become bad, making access to health services almost impossible.

1.2 Demography

The fertility rate of Bong County is 5.5 live births per 1,000 women per year as compared to the national level of 4.7. The current family planning prevalence rate of the county is 11% while the national rate is 16%. The dependency ratio of the county is 1.4 (MIA, 2008). Average life expectancy in Liberia is 59 years for men and 62 for women (WHO, 2014a). No life expectancy data is available by County including Bong.

1.3. Socio-cultural and Religious Status

Religion and culture influence the way individuals or societies consider childbirth practices and management (Lori, 2009). Islam and Christianity are the leading religious sects in Bong, with members of these religious groups living harmoniously. The prominent Christian churches are Catholic, Presbyterian, Lutheran, Episcopal, Seventh Day Adventist and the Church of the Lord Alladura (MIA, 2008).

The women of Bong have a secret society referred to as the "Sande society." In this group, young women of ages from 4-12 years are taught traditional roles and practices and undergo genital cutting of their clitoris. Young women in these groups are greatly influenced by the elderly female leaders of the group, who provide instructions about childbirth. Reports show that many of these elderly females serve as traditional midwives (Lori, 2009). The influence of these elderly women often affects younger women's decision towards delivery (Elis, 2009).

1.4 Socio-Economic Situation

Bong County is 200 km away from Monrovia, Liberia's capital. Its major industry is small-scale farming. One of the largest steel companies in Liberia, Mittal Steel, is located in Bong. This company provides $1.5 million each year to Bong County as a corporate social responsibility to boost economic development and growth and fill in budgetary gaps in sectors including health, education, and agriculture. As far as my observation goes, no proportion of this amount has been given to the health sector in Bong County. In Liberia vulnerable unemployment rate is at 78 %(MOL, 2010), primary education is at 44% while youth literacy rate is 44 %(ADB, 2013).

In Liberia also, 85% of household are headed by males while 15% are headed by females. This slightly varies in Bong with 87% of households headed by males and 13% headed by females (MIA, 2008).

1.5 Health System Profile

Liberia's health system was devastated by the civil conflict, but investments by the government and international donor community have led to the establishment of the Basic Package of Health Services in 2007 (BPHS), a minimum acceptable package of health care services that the government along with the donor community has committed to providing to its citizens(MOH,2007). As the country developed from its post-conflict phase, the Essential Package of Health Services (EPHS) was introduced in 2011, including expanded services related to maternal and newborn care, reproductive and adolescent health, child health, communicable disease control, mental health, emergency care services, neglected tropical diseases, non-communicable diseases, eye care, prison health, and dental care.

With the introduction of the EPHS, four operational levels of service delivery were defined: community, district, county and national. See the health system pyramid showing population at each level in Annex 2**.**

Bong follows the National Reproductive Health Policy of Liberia in the organization and delivery of services. Services are provided in three-tiered system, where community health workers conduct promotional activities such as encouraging women to attend ANC, delivery and PNC services, and advising women to reach clinics when danger signs are noticed during pregnancy (MOH, 2011a).

At the primary health care level, all clinics offer Basic Emergency Obstetric and Neonatal Care (BEmONC) services and secondary level facilities offer Comprehensive Emergency Obstetric and Neonatal Care (CEmONC) services. However, not all facilities in Bong offer BEmONC. Besides, most facilities that offer CEmONC services are concentrated in cities and 48% of the people in

Bong have access to BEMOC and CEmONC services (as measured by living within 5 km of health facilities) (BCHT, 2011a).

Because of the way health services are organized, women are discouraged from seeking health care. The long distances patients have to travel to get to health facilities, the unavalibity of services, personnel, drugs and equipment will be discussed later under organizational factors.

1.5.1Bong Health System

As in all counties, the County Health Team (CHT) is headed by a County Health Officer (a Medical Doctor) assisted by a team of supervisors who provide technical support in areas including supervision, monitoring and management of resources. The CHT is overseen by a Health and Social Welfare Board headed by the County Superintendent, who is the representative of the president (BCHT, 2011a). See Organogram in Annex 3.

Bong's health system has 42 health facilities in eight districts; of these, three are hospitals providing secondary care, while 39 are clinics providing primary care. Three of Bong's health care facilities are privately owned (BCHT, 2011a). See distribution of facilities in Bong per district and ownership in Annex 4.

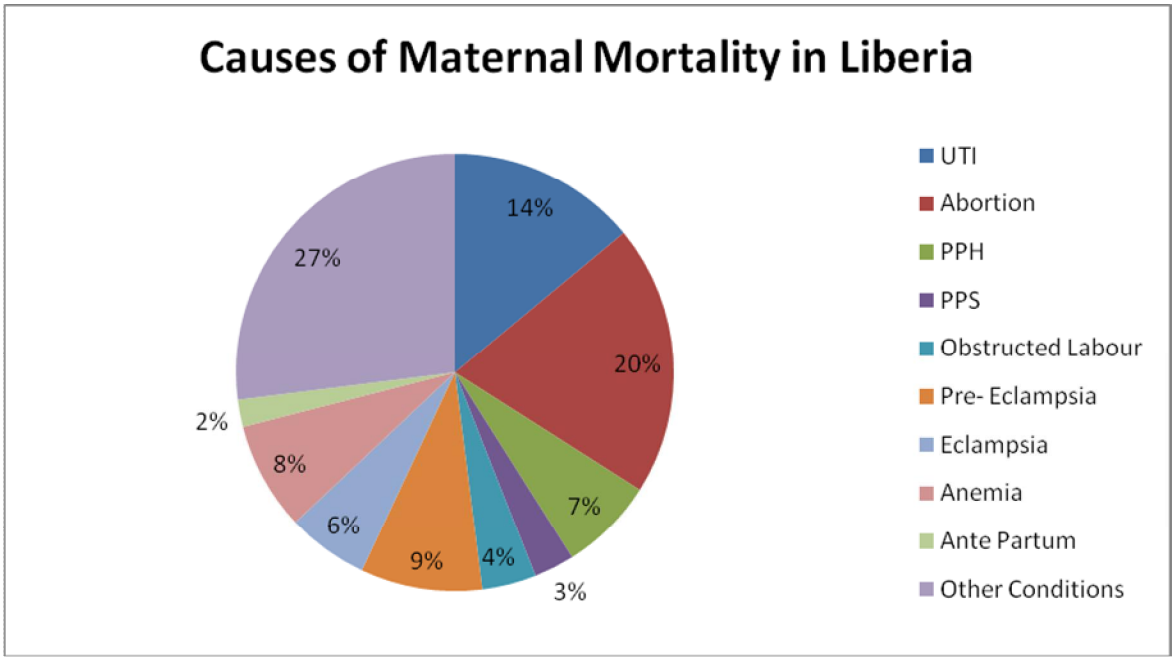
1.6. Causes of Maternal Mortality in Liberia

Maternal mortality at 640 deaths per 100,000 live births is very high. Direct causes of such includes unsafe abortion, Urinary Tract Infections, post partum haemorrhage, preeclampsia, anaemia, Post partum sepsis and ante haemorrhage, (MOH, 2012a).

Urinary tract infection and abortion are among the highest causes of maternal deaths, but from practical experience, the problem might be with

recording because it is unlikely for UTI to cause maternal death and PPH and abortion to be so high. But there are no aggregated data for Bong to substantiate.

Figure 1: Causes of maternal deaths in Liberia.



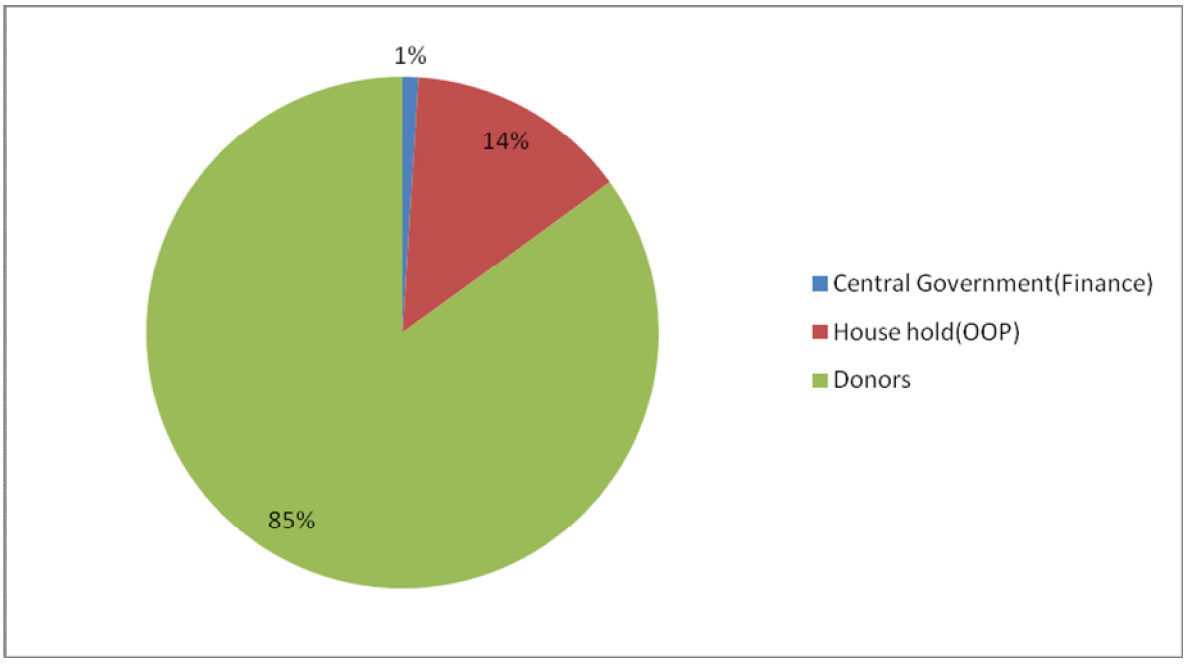
Source: MOH, 2012a

1.7. Reproductive Health Financing

Health financing in Liberia is a major challenge for implementing the EPHS. The health sector receives 34.6% from the donor community including United States Agency for International Development (USAID), the United Kingdom Department for International Development (DfID), the European Development Fund (EDF), the Global Fund for Tuberculosis, AIDS and

Malaria, the Japanese International Cooperation Agency (JICA), and the Clinton Health Access Initiative (CHAI). The health sector receives 70% of total health expenditure from the private sector while it receives 30% as public funding (WHO,2012b). However, analyses have shown that funding for maternal health is insufficient. Liberia's total expenditure on SRH is 6.47% which represents 1.01% of the GDP. Donor funding for SRH accounts for 85% and household out-of-pocket expenditure accounts for 14%, which translates into an absolute monetary value of 0.24 cents per person per year (Health system,2020 project,2009).

Figure 2: Reproductive Health Funding Sources of Liberia



Source: Health System, 2020 project, 2009

Chapter II: Problem Statement, Justification, Objectives and Study Methodology

2.1 Problem Statement

The aim of MDG5 is to improve maternal health and reduce maternal mortality (UN, 2000). According to the 2013 World Annual Report on Maternal Mortality, every day approximately 800 women from sub-Saharan Africa die from maternal death. Maternal deaths are higher among women living in rural communities than women living in urban communities (WHO, 2014b), with most deaths from preventable pregnancy and childbirth-related causes.

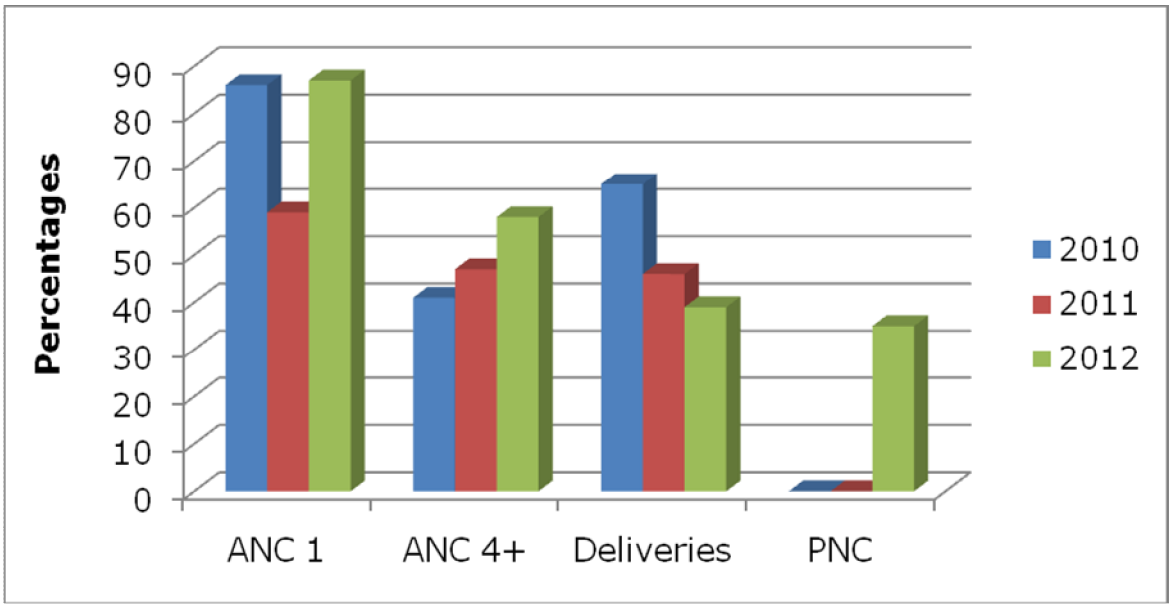
There has been a 50% decline in maternal mortality in every region of the world since 2010, but it is different in countries and regions because of challenges (Hong et al., 2010). Low utilization of ANC, delivery and postnatal care (PNC) services contribute to unacceptable levels of maternal mortality and morbidity (Bulataos & Ross, 2003; Prata et al., 2009). In West Africa, only 47% of deliveries take place in health facilities with skilled birth attendants. Seventy percent of those who deliver at home do not receive PNC for themselves or their newborns (Sing et al., 2012).

Given the dismal global rates, Liberia's situation is even worse, with an unacceptable high MMR of 640 per 100,000 live births per year (UNFPA, UNICEF, WBR and WHO, 2013). The graph below shows a report covering three years period for ANC, delivery and PNC.

In 2010, 2011 and 2012, the national level reported ANC 1 coverage of 86%, 59% and 87% and ANC 4^{th} visit and more had coverage of 41%, 47.3%, and 58%. The coverage of delivery were reported as 64.7%, 46.3%

and 39%, while PNC services was reported to be 35% in 2012 (MOH, 2012b).

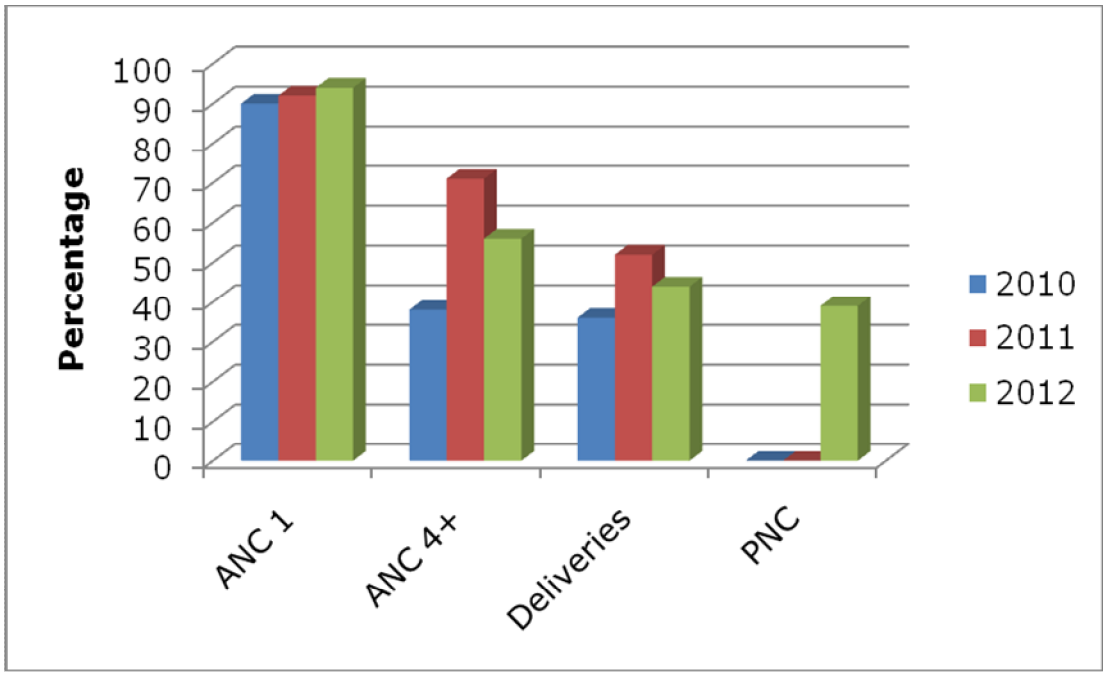
Figure 3 Maternal Health indicators at National Level



Source: MOH 2012b

The situation described above is similar to Bong County, first ANC visits shows 90%,92% and 94%: an increase in trend in 2010, 2011, and 2012, while fourth ANC and more visits shows 38%, 71% and 56% during the same time frame. The trend of deliveries in health facilities with skilled birth attendants was 36%, 52% and 44% while PNC coverage was at 39% in 2012, with no data available for 2010 and 2011 (MOH, 2012).

Figure 4: Maternal Health indicators in Bong County



Source: MOH, 2012b

There was no data available for 2010 and 2011 for PNC according to the report; it could probably be PNC was not reported by HMIS during those periods. These low percentages suggest either failure to follow up or delayed seeking maternal health services (MOH, 2012b).

Many factors including cultural practices and traditional beliefs, human resource challenges (especially shortage of midwives), staff attitudes toward patients, lack of essential drugs and medical supplies, cost of care, long distances, and lack of transportation have been identified as barriers to women utilizing health facilities for childbirth services, (MOH,2010).

The Liberian Ministry of Health and Social Welfare, and its international partners developed new policies and strategies that will address 'equitable access', 'technical standardization' of services and human resources for health to improve maternal and child health outcomes in 2009 (Lori, 2009).

In spite of these policy initiatives and strategies, there has been little progress in reducing MMR. Because of the little progress, this thesis will focus on the impact of low utilization of health facilities for ANC, delivery, and PNC services in Bong.

2.2 Justification

Achieving the MGD5 target of 145 maternal deaths per 100,000 live births by 2015 is unlikely in Liberia given current trend in the indicators mentioned above in the problem statement (MOH, 2013a). Study showed that maternal deaths have severe consequences on the society and the family unit; a woman's death due to pregnancy or childbirth-related factors can result in severe household disturbances (Paine, 2009).

For instance, children whose parents die from maternal deaths often drop out of school and commit themselves to domestic work, farming, rearing cattle, and selling water among others.

Also, some relatives of dead mothers have to support the dead woman's children and complete some of her unfinished work, thereby depriving them of income for their livelihood. The effects of maternal death are not taken into consideration by many policy makers and programmers in the fight to reduce MMR (Yamin et al., 2013)

Over the years, the MOH&SW has hailed Bong as the second best performing county in Liberia in terms of health services delivery. The county has scored highest nationally in annual accreditation and quality assurance assessments (MOH 2012b). In spite of these gains, utilization of ANC, delivery, and PNC services in health facilities are low. Little research has been done on factors influencing utilization of services and impact on maternal health in Liberia and Bong.

As such, Bong presents a case for the improvements needed in maternal health care elsewhere in Liberia. This thesis will explore the reasons and impacts of Bong's low maternal health service utilization rates and help to identify interventions and solutions for improving these rates and decreasing maternal mortality.

2.3. Objectives

General Objectives

To analyze factors that influence the utilization of health facilities for ANC, delivery and PNC services in Bong and propose strategies for improvement.

2.3.1. Specific Objectives

1. To describe and analyse community, interpersonal, and individual factors influencing people's decisions to utilize ANC, delivery and PNC services at health facilities in Bong.

2. To describe and analyse organizational and public policy factors that influence the utilization of ANC, delivery and PNC services in health facilities in Bong.

3. To explore, analyse and discuss effective evidence from other countries to improve ANC, delivery and PNC services in Bong.

4. To make recommendations for innovative strategies to improve the utilization of health facilities for ANC, delivery and PNC services as means of averting maternal complications and deaths in Bong.

2.4. Methodology and Materials

2.4.1. Methods

This study was conducted using literature review with guidance of the socio-ecological model frame work.

2.4.2 Search Strategy

Relevant literatures including peer reviewed articles, studies, reports, and policies were gathered using goggle scholar and Pub med. The Vrije University library data base was also searched. Websites of international organizations such as World Health Organization (WHO), United Nations Fund Population Agency (UNFPA), and United Nations International Children's Fund (UNICEF), DfID, the World Bank, the African Development Bank (ADB), and USAID were also searched.

Two-step search strategies were used with regional approach. The initial search focused on Sub-Saharan Africa identifying literature that explores factors influencing ANC, delivery and PNC services utilization. Then a secondary search was done combining search terms for literature in South East Asia with emphasis on factors influencing utilization of ANC, delivery, and PNC services in health facilities.

Inclusion criteria encompassed studies from Low and Middle Income Countries (LMICs) that consider utilization of ANC, delivery and PNC services in resource-constrained countries. Exclusion criteria applied to abstracts that did not have the full text published. Commentaries, narratives, and opinion pieces were excluded. The search considered literature from 2000-2014 in English. Systematic reviews from Cochrane were used to identify evidence-based interventions. Other reviews and individual studies were used during the research.

Key Words

The following key words were used to generate the key outcomes in combination: ANC, birth preparedness, cash transfer, community actions, contraceptive prevalence rate, distribution of facilities, emergency care, emergency obstetrics, facility-based delivery, family planning, gross domestic product, health education, health services, home delivery, interpersonal, interventions, institutional factors, intrapersonal, Liberia, maternal health, maternal morbidity, maternal mortality, opportunity cost, organization, participatory learning action, post-natal, public policy, referral, responsiveness, saving societies, skilled birth attendance, socio-ecological Sub Saharan Africa, South East Asia model, total health expenditure, uptake utilization and women groups.

2.4.3. Study Limitation

There are limited numbers of studies on maternal health conducted in Liberia. Many reports and surveys from the MOHS&W available were considered because they were found to be useful for the study. Also, studies from other countries with similar contexts to Liberia were searched and used.

Data quality was another possible limitation. Much of the data on community deliveries were reported by the communities themselves and not verified. Anecdotal evidence suggests that they may be under or over estimated.

Another limitation is that only literatures in English were considered for the study. Given the number of francophone countries in Africa, there could be literature in French that would have been useful in this study. The study also observed a limitation of literature from 2000-2014 to have up to date data

that will reflect MDGs progress and challenges that are related to the topic under discussion.

2.4.4 Conceptual Framework

Several frameworks could have been applied in this thesis, for example: Three Delay Model and the Andersen's framework for utilization of health services.

The Three Delay Model looks at reasons for delay in seeking care from pregnancy to labour, delivery and complications. The delays are identified in three categories: delays in making the decision to seek care at health facilities, delays in accessing health facilities and delays in receiving appropriate care upon arrival at the facility. This model was not chosen because it does not include Public policy factors but those causing delays in the absence of complications.

The Andersen behavioural model developed in the 1960s analyzed three components of utilizing health services: 1) understanding families' use of traditional and modern health services; 2) measuring equity in access to healthcare; and 3) guiding policy-makers in developing equitable health policies. Anderson later introduced the individual (rather than the family) as the preferred unit of analysis, due to differences of family members (Babitsch et al., 2012). Andersen further indicated that effective use of health services is a function of three factors: 1) predisposing characteristics; 2) enabling resources; and 3) perceived and evaluated needs. Andersen's model was also not chosen because it does not address ANC, delivery, PNC services and public policy on transportation, cost, and referral comprehensively.

For this thesis, the socio-ecological model (SEM) was chosen because practical factors of social networking and interactions, gender, decision-making and power distribution, and public policy related to transportation and cost, important in utilizing maternal health services, present in the SEM model were lacking in the Three Delays and Andersen models.

Also, the SEM was chosen because it considers factors such as family, husband, peer factors and responsiveness that have major influence on woman utilizing maternal health care services that were not considered by the other models.

SEM was developed in the mid-twentieth century to address issues of psychology and human development (McLeroy et al.,1988). During that time, the model focused on environmental factors influencing human behaviour. Later, the model broadened to include the interplay between individual, community, and friends within their environment. This perspective was applied to social and environmental factors that discouraged women seeking appropriate care during pregnancy or after delivery.

SEM takes into consideration a holistic public health approach in addressing ANC, delivery by skilled attendants, and PNC services.

Socio-Ecological Model comprises five levels that include: Community, Interpersonal, Intrapersonal/individual, Interpersonal, Organizational, and Public policy

1. Community: This level includes cultural beliefs, support system, gender norms and values related to ANC, delivery, and PNC services will be discussed.

2. Interpersonal: includes husband, peers and family, decision making process, and birth preparedness groups.

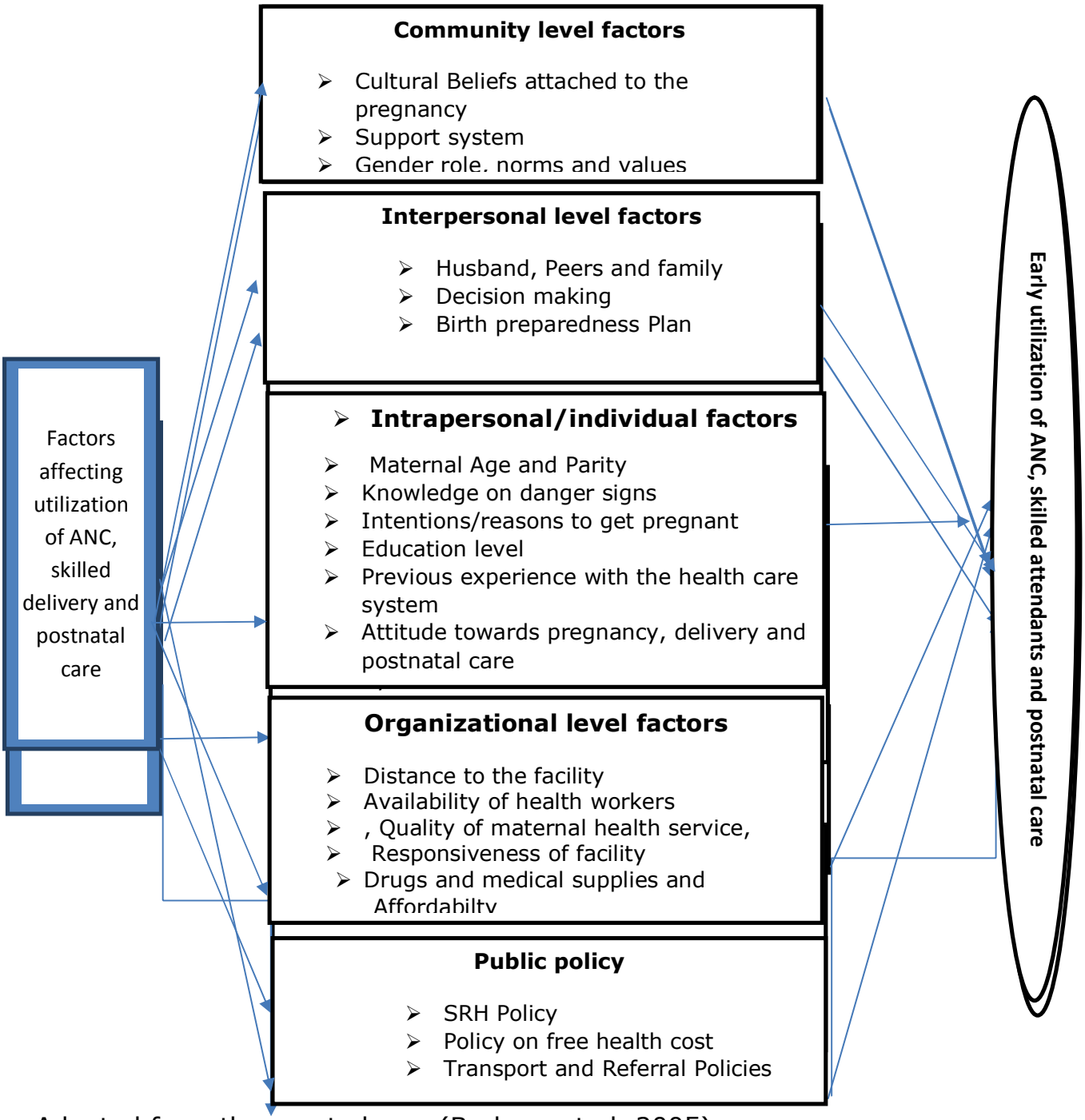
3. Intrapersonal/individual: past experience influencing women seeking ANC, delivery, and PNC. Under this level, maternal age and parity, knowledge of danger signs, intention to get pregnant, education level, previous experience with the health care system, attitude towards pregnancy, delivery and PNC, and beliefs that serve as barriers to seeking care are discussed.

4. Institutional: These are health service-related factors that influence women's decision to attend ANC, delivery, or PNC. Under this level, distance to health facilities, availability of health workers, quality of maternal health services, responsiveness, drugs and medical supplies and affordability are discussed.

5. Public policy: This level includes policies related to Sexual reproductive health, free health care services, transportation and referral.

The Socio-ecological model can be adapted and modified in content, without changing its original structure to fit the purpose and nature of specific research questions intended to answer. It is against this background the research adopted SEM, from theory of glance by Bara et al., 2005 and modified its usefulness in the context of Bong.

Figure 5: Modified Socio-ecological model of ANC, delivery and postnatal care services.



Adapted from theory at glance (Barbara et al. 2005).

CHAPTER III: Study Results and Findings

This section provides analysis of the findings of the literature review. The findings are presented from the broad categories of the SEM.

3.1 Community Level Factors

Community factors that serve as barriers to women seeking ANC, delivery and PNC services in health facilities include cultural beliefs and practices about pregnancy, inadequate support systems, gender roles, norms and values.

3.1.1 Cultural Beliefs and practices around to pregnancy

Women's cultural beliefs can influence their behaviour towards seeking maternal health care (Dako et al., 2013).

A study in Sierra Leone revealed that prenatal problems such as neonatal death, miscarriage, prolonged labour, and retention of placenta are perceived to be caused by the infidelity of women rather than physiological causes. Because of this stigma, many women seek care outside health facilities, fearing public humiliation (Herschderfer et al., 2012).

A study in Bong revealed that women do not seek ANC or care for pregnancy in general, even with pregnancy related complications such as ruptured uterus, prolonged or obstructed labour, disposition of the child because they perceive pregnancy as normal phenomenon which only God has control of, instead, they confide in TBAs (Lori, 2009).

Another cultural belief observed about child birth issues shows that if a woman has eclampsia and convulsions then she has an evil spirit in her and will not seek the health facilities for maternal care but will visit a herbalist to remove the evil spirit (Lori, 2009).

3.1.2. Support System

The kind of support women receive influences their utilization of health facilities for ANC, delivery, or PNC services (Worku, 2012). A support system can be community-based groups such as TBAs, peer educators; mothers support groups or clubs, or families. In Liberia, some community groups often act in women's health care seeking decisions.

3.1.2.1. Maternal Susu group

In Liberia, especially Bong, women form groups known as "maternal susu." These groups are savings clubs in which women help each other financially to travel to health facilities for ANC, delivery, or PNC services. Currently, these groups have limited coverage, and sometimes the ability of members to contribute financially is limited (BCHT, 2011b); with these groups having influence on women's behaviour for maternal health care and facility-based deliveries.

3.1.2.2. Town or village chiefs

Because of Bong high maternal mortality rate, town chiefs have been given the responsibility in a stake holder meeting held by the MOH&SW and local government to ensure that women deliver at health facilities, a fine of one thousand Liberian dollars is imposed on violators while the TBAs who conducted the delivery are fined 2000.00 Liberian dollars. In the case where a TBA makes a referral, the women and her family reward the TBA in return (BCHT, 2011b).

But these initiatives did not work, the County Health System failed to follow up or support the initiatives (BOCT, 2011c).

3.1.2.3. Traditional Birth Attendants

Cochrane reviews showed that TBAs were not influencing maternal mortality because of policy options not to use TBAs; nevertheless, in many countries women have a preference for TBAs as alternative services (Sibley et al., 2009).

For instance, a study done in Indonesia showed that most women see TBAs as valuable assets for maternal health care because of low cost, proximity, accessibility, attention to privacy, positive attitudes towards patients, and lack of other health care professionals (Titaley et al.,2010).

In Liberia, many women prefer TBAS because of convenience of cost, easy to access, and maintenance of privacy when providing care. They are thought to provide "Country medicines" during the pregnancy that will protect the mother and child from any further sickness. Therefore, seeking health care at a health facility during pregnancy is perceived not to be useful (Lori, 2009).

3.1.3 Gender roles, norms and values

Women and men have socially described roles that influence their decision to utilize maternal health care services. Gender roles, norms and values play vital roles in determining utilization of maternal health services, (Iyer et al., 2008) A study done in Sierra Leone showed that men, as heads of households, provide resources, while elderly women make decisions men follow because men are thought to be ignorant about child birth and women's issues (Herschderfer et al., 2012).

The findings from Liberia regarding gender and decision making power in maternal care services utilization are slightly different from the findings from

Sierra Leone concerning child birth issues. Women often have minimal control over household finances, especially in rural settings in Liberia. Women are responsible for domestic activities including farm work, so their absence to seek health care must be approved by their husbands (LDHS, 2007). Both financial and time management are determined by men so women utilizing health facilities for ANC, delivery and PNC services in time must be earlier communicated for approval.

3.2. Interpersonal

3.2.1. Support from Husband, peers and family

Support from family, husbands, friends, and peers is an important factor that influences utilization of ANC, delivery and PNC services (Ohashi et al., 2014).

Literatures from Egypt, Nepal and Pakistan indicated that married couples move closer to the husbands' parents to support their continuum of care (Ohashi et al., 2014, Mumtaz and salway, 2003). In these countries, mothers-in-law's have absolute authority over their daughters-in-law's maternal health decision making.

In Liberia, especially Bong, experiences have shown that pregnant women's husbands are influential in women health care decisions because they provide resources; however, anything decisions without their husbands' input are considered disrespect (Lori,2009).

3.2.2 Decision Making

Decision making space for maternal health care is limited in Sub-Saharan Africa with men having the ultimate decision making power in women's health care (Kinney et al., 2009 and Friberg et al., 2010).

This was confirmed by literatures from other studies that the level of inequality in decision making between man and woman makes it difficult for women to seek ANC, deliver and post natal care services timely. The delay to seek approval for care at times leads to maternal complications (Kinney et.al, and Koblinsky et al., 2010).

In Liberia, men must be consulted before women seek care, which sometimes leads to unnecessary delay that predisposes women to complications as mentioned above (Clarke et al., 2009).

3.2.3 Birth Preparedness plan

Birth preparedness planning is one of the determinants for ANC, delivery and post natal care services (Botha et al., 2013).

The key messages in a birth preparedness plan are; identification of transportation, presence of skilled birth attendants at places of birth, preparation of clean delivery, cash on hand in case of emergency, identification of some groups that might assist in case of emergency, and an idea of where to seek care during emergency, recognition of danger signs and preparation of people identified to give blood (Gerein, 2003).

Studies in India, Nepal, and Burkina Faso showed that promoting birth preparedness through husbands' support of attending ANC, and providing resources for maternal health referrals influence utilization of ANC, delivery

and PNC services and reduce maternal mortality (Argaw et al., 2010). However, the percentage of reduction was not indicated in the study.

In Bong, there are no community groups for birth preparedness; the women are only encouraged to bring their husbands and the information will be provided, but more men don't attend as requested so women face a vacuum preparing for maternal health services (BCHT, 2011b).

3.3. Individual Level factors

3.3.1. Maternal age and Parity

Maternal age and parity are determinants for utilization of ANC, delivery, and PNC services, (Bhattacherjee et al., 2014 and, Ononokpono and Odimeguwu, 2014).

In Kenya and Nepal, women 35 years and above, having more than two children utilize facilities less for ANC, delivery and PNC services than younger women with low parity (Eijik et al., 2006) In Liberia, women with two or more children are not likely to visit a health care facility for ANC, delivery and PNC services (Katvita et al., 2011).

Also, literatures from Bong showed that some pregnant women attend health facilities to confirm their children's statuses and level of complication that may affect their babies, but do not follow up for delivery (Lori, 2009)

International literatures have shown that women who get marry before 18 year encounter problems which influence their reproductive health life (IWRC,2011), Some of the problems caused by early marriages are early child bearing, increased morbidity and mortality and lack of education, though percentages were not shown in the research (UNICEF, 2005, Save the children, 2004, Bott et al.,2003). The experience of these women makes

them feel stigmatized and discouraged them from seeking maternal health services.

Also in Liberia, 11% of girls get marry before age 18, because of pressure to prove their fertility influenced by their parents (LDHS, 2007). Accordingly, early marriages affect their education and chances of personal growth, which of course, influences their health seeking behaviour during pregnancy.

3.2.2. Knowledge of danger signs

Knowledge of danger signs during pregnancy, delivery and post-partum influences women's choices (JHPIEGO, 2004).

A study conducted in Malawi showed that only 26% of women were able to identify danger signs during pregnancy, 46% could not identify any danger sign correctly, while 26% wrongly identified or generalized body pain as danger signs (Botha et al., 2013). The situation in Liberia is confirmed by a study conducted in Bassa County in one of its districts closer to Bong where people from Bong County access care. The study on misoprostol showed that women had limited knowledge of danger signs during the post-partum period (Smith et al., 2013). This influences the utilization of maternal health services, specifically PNC services, because in that study, PPH was found to be high among women as many women considered bleeding after pregnancy to be normal menstruation.

Another study conducted in Bong showed that recognition of obstetrics complications by pregnant women, their family members and the community at large were not identified by 38% of the respondents. Because the women did not know the danger signs so they did not seek maternal health services during pregnancy (Lori and Stake, 2011).

3.3.3 Intentions or reasons for pregnancy

Women's reasons for pregnancy vary across continents, and influence their utilization of delivery care (Husley, et al., 2000). A study in Ethiopia examined the relationship between pregnancy intentions and maternal health services utilization and found out that 35% of the women had no intention of getting pregnant, 42% did not attend ANC, 12% delivered in health facilities, while 12% delivered without skilled attendants, and 45% of women who wanted children did not plan for their pregnancy. These women utilize health facilities for ANC, delivery and PNC (Wado et al.,2013).

In Liberia, 26% of adolescent pregnancy is not wanted, which negatively affects the health seeking behaviour by less utilizing health facilities for maternal health services (LDHS,2007).

Most girls are not emotionally prepared to bear the consequences of child bearing at that point. Since this is their first experience, they rely on elderly women for advice to seek care during pregnancy, delivery and PNC services (LDHS,2007).

3.3.4. Education

Both maternal and paternal educations are important. Studies have indicated that educated women make better decisions and do not rely on men for decisions to seek health care (Amed,2010).

A study in Sierra Leone showed that there is a link between women's education and autonomy; women who are more educated are likely to make their own decisions to seek care, rather than deferring it to their husbands (Herschderfer et al.,2012).

In Liberia, men and women have similar levels of primary and secondary school enrolment, but there is a disparity in male and female adult literacy levels.

LDHS see Table 1.

In Liberia, women are slowly catching up. Educated women and educated men in a family increase the tendency to utilize maternal health services. However, women still have some degree of dependency because they want their husbands to pay for maternal health services (BCHT, 2011b).

Table 1: Primary and Secondary education by sexes

Categories	Female	Male
Primary enrolment	37%	38%
Secondary Enrolment	14%	16%
Adult literacy(15+)	41%	69%

Source: LDHS, 2007

3.3.5. Previous experience with the health system

Previous experience with the health system is an influencing factor in utilizing facilities for ANC, delivery and PNC services (Lubbock and Stephen, 2008).

In a study conducted in Ethiopia, limited access due to excessive waste of time, embarrassing physical examinations, frequent stock out of drugs, cost of transportation, and long distances influenced women's utilization of ANC, delivery and PNC services (Bhattcherjee et al., 2014). A study in Liberia indicated that women's first experience with the health system is a reason for not utilizing ANC, delivery and PNC services. The main thing was the fear

for C-Section upon referral and relayed news regarding poor services provided by health workers (Lori,2009).

3.3.6. Attitude towards pregnancy, delivery and PNC

Attitudes toward utilization of health facilities for ANC, delivery and PNC are major factors in maternal mortality and morbidity (Thapa et al., 2013).

A study in Burkina Faso found out that women who constantly attended ANC visits and perceive services to be good, usually utilize facilities for delivery and PNC services (De Allergri et al.,2011).

But other findings revealed that it is a general perception that women who visit facilities for the first time will do so to confirm the pregnancy, and when told they would have successful vaginal delivery, don't show up for delivery at health facilities but delivered at home (Magoma et al., 2010).

3.4. Organizational level Factors

Organizational level factors that influence maternal health services utilization are distances to health facilities, availability of skilled staff, quality of maternal health services provided and responsiveness of the health system, availability of drugs and medical supplies and affordability.

Organizational factors play major roles in influencing maternal health services in developing countries (Kruk et al., 2011).

3.4.1. Distances to health facilities

Distances women travel to access ANC, delivery and PNC in rural areas are barriers to utilizing health facilities (Onah et al., 2006). A study done in Tanzania showed that two thirds of women who live more than 5 km from

health facilities walk two to three hours to access ANC services will have no intention of delivering or seeking PNC at health facilities, but instead at home with TBAs (Simfukwe, 2011).

In rural settings such as Bong, the average distance from the community to the health facility is 8.5 km, with many people walking more than one hour to access maternal health services (UNICEF, 2012). Road conditions and weather, especially from April to September (rainy season) make accessing health care highly difficult. These natural and environmental situations cause women to turn to TBAs who are closer (BCHT, 2013).

3.4.2. Availability of Skilled Staff

There is increasing evidence that health workers ensure equitable access to health care and universal coverage. However, many countries experienced shortages of health workers, which served as barrier to women using health facilities for ANC, delivery and PNC services (UHC &HRHLM, 2012).

In Mali, women have reported that lack of competent staff discouraged them from using health facilities (Fombo et al., 2013).

Liberia is affected by shortages of staff. In 2010, the analysis for the shortage of staff showed that there were 8,768 health workers, 4,653 were clinicians representing 53% while the rest 47% were support staff who were not directly involved into clinical work.

The study also indicated that in 2010, Liberia had population of 3.518,437 which translated to 1.3 clinician per 1000 population (Varpilah et al.2011), which is far below the WHO standard of 2.3 health workers to 100,000 persons, making it difficult to ensure 80% births are attended per year(Dolea et al.,2009).The shortage of staff is due to difficulties in developing retention plan to retain health workers, low salary, lack of career prospects and recognition (Varpilah et al.,2011).

In comparison to the national level, Bong has severe shortages. The lack of birth attendant skills except the inadequate skills gained from their pre-service training is a challenge. Because of this shortage, 24-hour ANC, delivery, and PNC services are not available, discouraging women from attending health facilities (BCHT, 2011c).

3.4.3. Quality of maternal Health Services

Quality is defined from patients' perspective of system's response to needs and service providers' perception of services (WHO, 2006). This thesis will explore perceived quality and technical quality.

3.4.3.1. Perceived quality of maternal health services

In Liberia, perceived quality is the pregnant woman's perception of services provided, organization of services, and provider-patient relationship (LDHS, 2007). The study will discuss perceived quality in terms of health worker's attitude and waiting time

Health Worker's attitude

A study conducted in Tanzania pointed out that health workers' attitude was responsible for women's choice of delivery places. The study showed that health workers were harsh, abusive and unwilling to assist patients or to provide care (Choudry, 2011).

A study in Ghana showed that if health workers demonstrated professional attitudes, women would be encouraged to utilize health facilities for delivery care (Esena and Sappor, 2013).

In Bong County, a study showed that community women do not trust the health system because of health workers attitudes. During the study, women indicated that health workers do not respect them and don't know much

about pregnancy, therefore, they prefer not to utilize reproductive health services (Y-Care and YMCA,2012).

Waiting Time

Waiting time is a factor that influences use of ANC, delivery and PNC services (Osubor et al., 2005).

A study showed that long waiting time was mentioned by pregnant women during their regular ANC and PNC visits because health workers don't go to work on time or are absent during working days (Akum,2013).

From personal experience serving as a nurse and supervisor in the outpatient department of a referral hospital in Bong, the queues of women for ANC and PNC are sometimes long because nurses are polishing their nails, attending to phone calls or resting between patients. Many pregnant women get tired and then go home because of these attitudes.

Sometimes when women are in labour, no skilled staffs are present because staffs have taken break. All of these factors discourage pregnant women during their next pregnancy from using facility for ANC, delivery and PNC services.

3.4.3.2. Technical quality of maternal Health services from Provider perspective

Technical quality considers quality of maternal health services and supportive supervision.

Quality of maternal health services from provider's perspective

Low technical quality is a factor that influences women utilizing health facilities for ANC, delivery and PNC. Liberia's national accreditation report showed the following national levels of quality for maternal health services:

ANC 38%, normal labour and delivery 38%, PNC 35% and BEmONC and CEmONC 30%. These data are from the supplier perspective (MOH, 2013b).

From observation many of the nurses in Bong's health facilities are graduates of nursing schools in the county, serving their national service requirement. Because of their newness, the requisite skills to perform effective care for their patients are lacking, so women are hesitant to use their services over those of the TBAs.

Supportive Supervision

In Liberia, mainly in Bong, lack of supervision is a major challenge faced in the health system. The Central Ministry of health is required to conduct supervision of health facilities at least every year (but it sometimes does not due to logistical problems of vehicles, fuel, vehicle maintenance, etc. (MOH, 2012b). The Bong County health system also has similar responsibilities but is highly inconsistent. This inconsistent supervision leads to poor implementation of organizational standards, guidelines and poor quality services which influence maternal mortality (MOH, 2013b).

3.4.4. Responsiveness of health System

Responsiveness refers to health workers' ability to meet clients' expectations beyond technical medical issues (Hsu, et al., 2006).

Literatures from two studies in China and South Africa indicated that responsiveness of health system influences maternal health utilization (Luo and Lu,2013, and Peltzer, 2009).

For instance, there are cultures in which throwing the placenta away is not responsive to clients' wishes. In Bong, it is against tradition norms because burying the placenta with a ceremony is an important tradition. Medically, health facility staff feels that there is a need to throw it away so that it

cannot be exposed to public view. This makes women feel that the health care system is unresponsive to their traditional beliefs, and discourages them from using facilities (Lori , 2009).

3.4.5. Drugs, Medical Supplies and Equipment

A strong supply chain is essential in service delivery, particularly maternal health care services (Yeager et al., 2012).

A study conducted in Uganda indicated that persistent lack of drugs and Shortages of medical supplies are major reasons for women not utilizing health facilities for ANC, delivery and PNC (Kyomuhendo, 2003). In Liberia's 2013 National Accreditation Report, the entire country scored 55% in drug availability, while supplies and medical equipment scored 46%, indicating that facilities visited in the country had stock outs of essential drugs during the accreditation process (MOH, 2013b).

Bong's accreditation report for 2013 showed scores of 51% for drug availability and 42% for equipment and other medical supplies (MOH, 2013b).

A report from a national health sector review showed that lack of adequate warehousing, low investment in drugs and medical supplies are major challenges to services delivery. Women affected by stock out at health facilities often felt discouraged from attending health facilities for ANC, delivery, and PNC (MOH, 2013b).

3.4.6. Affordability at health facilities

Cost in this thesis is viewed from two perspectives; experience after referral and out of pocket expenditure.

Cost of maternal health services is one of the major determinants of maternal health utilization (Mrishol et al.,2008).

3.4.6.1. Cost of maternal health services after referral

A study conducted in Gambia by Champ et al., 2005, is similar to the situation in Liberia. In Gambia a woman died in labour due to out of pocket cost (as narrated by her husband):

> *"When we reached the hospital, they [the doctor] told us to find two bottles of blood for her [the patient]. We went to the lab, and the guy there said no blood. I donated one and we bought one. We went back to the lab and the guy said we needed two more. I had to pay him 300 dalais [equivalent to 12.00 USD] before getting additional two bottles."champ(2005,p.5 0f 8).*

A study in Liberia showed the cost for referral paid by the husband is 41.3%, relatives 29.4% and patient themselves 20%. This causes delay to seek care as cited in the study (MOH & UNFPA, 2006).

3.4.6.2. Out of pocket expenditure for maternal health services

Out of pocket expenditures cover supportive care (such as food, bath soap, sanitary pads, toothpaste, tooth brush, and towels for bathing, etc.), wages lost due to time spent in the hospital, and transportation prior to referral and after discharge, including transportation of family members and friends visiting during admission. Women most often rely on families and friends to take care of their children while they seek delivery services; sometimes, this will include provision of foodstuff for the household, taking care of their children. Given these unexpected costs, most women do not bother going to health facilities for ANC, delivery and PNC services but utilize the services of TBAs (Lori,2009).

In Bong, professional staffs often pressurize women for money in exchange for preference for higher quality care. This practice prevents patients from utilizing ANC, delivery and PNC services instead negotiate and even access services on credit or in exchange for goods such as rice, oil, goats, or sheep from TBAs (BCHT, 2011b).

3.5. Public Policy Level Factors

3.5.1. Sexual Reproductive Health (SRH) Policy

Sexual reproductive health policy with elements that addresses both providers and users needs influences maternal health services utilization

Liberia's reproductive health policy is based on the Maputo Plan of Action, which commits the country to addressing the reproductive health needs of its citizens and reaching the MGD5 goals (MOH, 2010). The policy stipulates that government offers maternal health services of antenatal care (ANC), delivery, post-abortion care, family planning, and sexual and gender based violence (SGBV) care. The policy recommends standards in the areas of at least four ANC visits, health facility-based deliveries, availability of quality post-natal care. In particular, the policy outlines new roles for Traditional Birth Attendants (TBAs), as agents of change and referral, instead of conducting deliveries in homes (MOH, 2010). Despite their new roles, TBAs still conduct deliveries in homes, thereby causing maternal deaths due to untimely management of complications.

A study in Sierra Leone stated that the government of Sierra Leone envisage a maternal health policy that aimed at providing reproductive health services regarding family planning, teen age pregnancy, child marriages and essential emergency obstetrics care which include ANC, delivery and PNC services. Up to date of the study, adolescent and comprehensive sexual reproductive

health were still not been implemented, which influence maternal health utilization by not utilizing health facilities, (Herschderfer, 2012).

3.5.2. Policy on Cost of Maternal Health services

Policy on cost of maternal health services influences the choice a woman makes in seeking maternal health services (African Progress Panel Report,2010).

Rwanda has adopted a free health services package to improve maternal health utilization. In spite of this, there were challenges of cost where under the table payment, cost of referral payments by patients by patients were common. Along with free health services, government in Rwanda has embarked performance based financing, but there were challenges around data issues and consistent supervision to monitor health workers, due to these challenges, program didn't influence women maternal health seeking behaviour (Lusa et al.,2002).

In Liberia, health services of medicines and lab fees are free of charge at the primary and secondary levels, but the pro-poor protection policy that exists at the tertiary level is discretional and no criteria exist to determine (MOH,2011b) .

Liberia has adopted performance- based financing approach through policy on contracting out to NGOs, and has been piloted in Bong, but it was done differently where the finances for demand are given to the community and not to the pregnant women for utilizing maternal health services (Pverger et al.,2008).

The way this approach is carried out does not benefit women during child birth period, so they stay away from the health facilities and don't seek maternal health care (Bong, 2013).

3.5.3. Transportation Policy

Transportation Policy

Transportation plays a crucial role in accessing delivery services (Choulagi et al., 2013).

Though this study did not establish whether Kenya has transportation policy or not, but to show a picture of how referral influences maternal health services utilization a study conducted in Kenya found out that the cost of transportation to hospitals was equivalent to the money women spent on daily meal (Fotso, et al., 2009).

In Liberia, and especially Bong, there is no transportation policy on maternal health, given this situation, there is a challenge in providing ANC, delivery and post natal care services because bad roads conditions and lack of transportation make travelling to the facilities difficult especially with limited number of ambulances for referral or transportation (BCHT, 2011b).

3.5.4. Referral Policy

A functional referral system is essential in the provision of quality maternal health services. With the development of prompt referral system responsive to citizens' needs, some gains can be made in the reduction of maternal mortality (Hussen et al., 2012).

The absence of referral policy doesn't demand government to be accountable to their people in terms of rehabilitating the roads and providing ambulances. These conditions are barriers to women seeking maternal health care at health facilities (Murray and Pearson, 2006).

A study conducted in Gambia, showed that there is no referral policy, guidelines or even a referral registry, but there were different means by which the communities could refer to health facilities, such as hammock,

ambulances and commercial vehicles. The absence of a clear referral policy and guidelines serves as a challenge for women to seek maternal health utilization (Sundby,2007).

Up to date in Liberia, there is no stand alone referral policy but referral path way is described in the essential package of health services. Bong County health system has been trying to establish hammock group to support maternal health services, but with difficulty due to failure of the health system to follow up. A study conducted in 2006 confirmed the mode of referral during emergency in four counties including Bong (MOH &UNFPA, 2006). The data showed that walking account for 35% of the respondents while hammock group support accounts for the lowest 2.4%

Table 2: Mode of referral for during emergency

Types	Percentages
Hammock	2.4%
Motorcycle	23.5%
Taxi/Private	23.5%
Wheelbarrow	13.4%
Walking	35%
Total	100%

Source: MOH &UNFPA, 2006

CHAPTER FOUR: Interventions and lessons from other countries

Evidence-based systematic reviews are the best sources of interventions to address issues of inequality and health outcomes (Welch et al., 2012) .The evidence will be discussed in relation to community, interpersonal and individual, organizational or institutional and public policy level factors. Though all factors presented in this study are important, much of the evidence can address many of the factors presented in the findings.

4.1. Community, Interpersonal and Individual Level Factors

4.1.1. Evidence for Improving Community Level factors

4.1.1.1. Community participation and support

Literatures from systematic reviews have highlighted dialogue approach to information and education as evidence-based interventions that effectively increased usage of health facilities for maternal health care at the community level (Prost,2014).

4.1.1.2. Dialogue –generational approach

A systematic review by Prost Dialogue-generational approach, meaning that community discussions were conducted with mentor groups, youth groups on reproductive health issues, and literacy and livelihood training for women. There facilitators from the community gathered practical views from stakeholders in the community on norms and values; the second stage was a focus group discussion where important discussions on birth preparedness plan, consequences of early marriage and sexual debut were discussed. After which a plan of action was developed and presented to build consensus on its implementation (Prost, 2013). This approach was used in Ethiopia, where school enrolment for girls between 10 and 14 years increased from 71% to 96%, and helped to increase contraceptive prevalence rate (CPR),

family planning and reproductive health knowledge, but with no mention of increase in maternal health utilization (Byrne et al., 2013).

4.1.1.3. Participatory action learning

Participatory learning action is a community approach involving women to increase ANC, delivery and post natal care services according to a systematic review and meta analyses of 12 countries (Prost et al.,2013), this approach reflects on change of norms and value as its main focus. Community groups made sure girls reach 18 years before marriage or getting pregnant because of physical reasons, right to education, and future employment. In this approach, current practices and issues of norms useful in transforming the lives of people regarding child birth were undertaken but percentages were not provided.

In addition to the participatory approach, birth preparedness education is a component of the PRA (Prost,2013).

Both approaches according to prost are based on initiating critical reflections on practices of norms and values but the difference is that the dialogue approach has a communication component that is not in the PRA.

4.1.2. Improving Interpersonal factor (Decision Making)

There are promising approaches that have worked in improving decision making by men and women (Thapa and Niehof, 2013)

4.1.2.1. Women's empowerment

Other reviews have shown that empowering women through education, adult literacy programs, improved agency, claiming freedom of movement and

negotiating resources control, were done in other countries, and proven to increase maternal care utilization, but the proportion of this improvement was not stated in the study (Bhatta,2013).

In Liberia, especially Bong, women's empowerment programs through initiation of adult literacy programs are ongoing, but not on a full scale; only in one of the districts, but in a private institutional where women have to pay fees for entry. The implication is that many women lack access to such because they have no means to pay, and might not have the opportunity to learn and empower themselves (Phebe hospital Report, 2012). From observation, adult literacy programs share knowledge and experiences relating to child birth, issues around rights agency, and control over their own resources.

4.1.2.1. Male involvement

Male involvement in reproductive health has influenced maternal health utilization of their partners to seek care (Ahmed, 2010).

Reviews in developing countries have shown that males were involved in designing health education messages that were used to encourage women to seek ANC, delivery and post natal care services (Byrne et al., 2014).

Other literatures show that interventions involving males in maternal health education enhances communication between partners and promotes health seeking behaviour (Mullany et.al, 2007).

Male involvement in reproductive health services especially ANC, in Bong has been practiced focusing antenatal care approach where the woman together with her partner attends the health facility for ANC visits The reality from experience working as a clinician in the outpatient department is that many

of the males don't accompany their women to the health facility. The failure of male to attend ANC visits has influenced woman's health seeking behaviour; since women have to wait for their male counterparts to provide resources and accompany them causes delays.

4.1.3. Improving evidence of individual level factors

4.1.3.1. Maternal Education

Maternal health education for out of school girls has shown to be successful intervention influencing maternal health care utilization (Frost and Prat, 2014).

In "Fast track" country like Bangladesh, a conditional cash transfer called female school project was adopted. Conditional cash transfers were provided to young women who were in elementary and junior high school to attend school. These girls were taught the consequences of early marriages and the impact on maternal health utilization. This increased school enrolment and reduced early marriages between 10-17 years old children. Besides, it has led to reduction in fertility rate which influences maternal mortality (Frost and Prat,2014)[1].

From observation, currently there is no school enrolment program of such in Liberia, that addresses conditional cash transfer, but instead, Liberia's approach for increasing school enrolment in general will be discussed further in the thesis.

[1] 'Fast track'' 10 countries which include Bangladesh, Cambodia, Cuba, Egypt ,Ethiopia, Lao Peoples Democratic Republic ,Peru ,Rwanda and Vietnam that is making progress to achieve MDGs4(to reduce child mortality by two third and MGD5a(To reduce MMR by three quarter),(Frost,2014).

Considering interventions for child marriages, the international centre for women research evaluated 23 child marriage programs and published those that were successful (IWRC,2011), given that unsuccessful ones were not published, Liberia especially Bong County can still learn from the programs that were successful.

The evaluation showed that some interventions were successful to change social norms of community, vocational school, integration of sexual reproductive health into formal schools' curriculums (IWRC, 2011).

In Liberia, there are two vocational schools for skills learning but students in these institutions have to pay fees, besides, sex education is not taught in those schools (MOY&S,2009).

4.2. Improving Organizational level Factors

This section will discuss the evidence-based interventions that have been effective in some of the fast track countries which include distance to health facility, availability of health workers, quality maternal health services, responsiveness, and drugs and medical supplies and affordability.

4.2.1. Evidence for improving addressing distance

Distance was mentioned in the thesis as a factor to use ANC, delivery and PNC services has demonstrated that multifaceted combination of approaches such as maternal waiting, community action through the local ambulance system and a community engagement fund to support women in terms of transportation and task shifting can be helpful(Hussein,2012 and WHO,2012b). As for maternal waiting homes, as a means of solving problem relating to distance, women are brought nearer to health facilities so that if complications arise they can seek care quickly but all of the evidence showed that sustainability is a challenge (Van et al.,2012).

More evidence from Sierra Leone showed that income generation in which community establish a loan scheme and sets up committees to manage funds and provide resources for transportation during maternal health services utilization was a promising intervention (Herscheder et al.,2012)

In Bong currently, during the maternal mortality conference in 2011, community maternal Susu groups were set up to establish income generation of transportation for women who may want to seek care and have no funding. The challenge was no follow up plan and the health system gave little attention so it fell apart (BCHT,2011b).

Another important intervention of reaching services to people that live in hard to reach areas can be done through shifting tasks to CHWs by: ‘’promotion of appropriate care-seeking, antenatal care during pregnancy, promotion of companionship during labour, promotion of birth preparedness, promotion of skilled care for childbirth, promotion of postpartum care, promotion of kangaroo mother care for low birth weight infants, promotion of basic newborn care and care of low birth weight infants, administration of misoprostol to prevent postpartum hemmorageh, provision of continuous support for the woman during and after labour in the presence of skilled birth attendants. This has worked in many low and middle income countries (WHO, 2012c)’’.

The task shifting approach is also taking place in Liberia but with little support from the health system.

In this approach, TBAs are selected and trained to conduct promotional services like encouraging women to attend ANC visits and supporting the development of birth preparedness plans by extending services to people in

hard to reach areas. From experience this approach, however, has had resistance from TBAs, who are not paid and are not incorporated into the formal health system.

For instance a community misoprostol pilot is ongoing in Bassa which shares catchment areas with Bong. So far, this has not shown any side effects or adverse reaction because clear messages have been provided that women should not take this before delivering a baby.

4.2.2. Improving availability of human resources

Availability of health workers is paramount to decreasing MMR and improving ANC, delivery care and PNC (Frost and Prat, 2014). For instance, Egypt invested in improving maternal health through training, on-the-job mentoring of health workers, and infrastructure by renovating and equipping 25 hospitals to create an enabling environment for the workers; while Mongolia, strengthened human resources training institutions and helped to ensure a sustainable supply of health workers (Hill et al., 2006 and Amouzou et al., 2012). This was successful and increased ANC, delivery and post natal care services as well as quality.

In Liberia, the government has invested in medical education to train mid-level cadres, which includes midwives, physician assistants, and nurses by opening three midwifery schools and one nursing school in the northwest and southeast of the country (Varpilah et al., 2012). The essence is to control the balance between rural and urban areas. Most health workers after two years of national service migrate into private settings to seek better jobs after serving. The implication is that the system continues its brain drain despite training a lot of people, so to retain these staffs requires

a collective effort of government in providing the necessary amenities and retention plan.

4.2.3 Improving quality of maternal health services

There has been successful evidence in quality of services in some developing countries. Perceived quality has been pinpointed as having influence on utilization for ANC, delivery and PNC services. Evidence showed that in Kyrgyzstan and Tajikistan, health workers were coached by their supervisors using effective communication and sensitive care to motivate and improve organization of services to suit patients' needs. This in turn improved quality, patient satisfaction and referral rates (De Haan et al.,2010).
Other evidence showed that quality of care is improved when respectful care is incorporated into training programs.

Reviews showed that in Tamil Nadul in India, technical quality was addressed by interventions such as training, provision of job aides, and on- and off-site supervisory visits that improved the skills of health workers. This in turn increased utilization because people trusted the health system more and were attending ANC, delivery and PNC services (Padmanaba et al., 2009).

Currently in Bong, the approach of supportive supervision from the county level to the peripheral clinics is ongoing but not consistent due to logistical problems. This implies that clinicians are not follow up to ensure whether job aides are effectively used and services providers are friendly (BCHT,2012).

4.2.4. Drugs medical supplies and Equipment

As for drugs and medical supplies, evidence from Zambia showed that to improve frequent stock outs, the government took the lead and invested in drugs, medical supplies and equipment and ensured commodity security by involving frontline health workers in the planning process, staffing, coordination, and forecasting. Appropriate equipment, priority, training on usage, relevance, maintenance and safety were considered. Today, it has been proven to be a successful intervention in maternal health services utilization in Zambia (Druce et al., 2006).

In Bong County the issue of stock out is not yet controlled. Medical supplies, equipment and drugs are purchased and distributed to health facilities by NGOs. The implication for this is that there is high level of delay and result into frequent stock out, because the NGOs order internationally which takes six months due to bureaucratic procedures (BCHT, 2011c).

4.3. Evidence for improving Public Policy level factors

In this thesis, international literatures have shown that public policy influences maternal health, especially ANC, delivery and PNC services. Evidence-based interventions concerning public policy are discussed in three categories: Free service, transportation and referral policies

4.3.1. Evidence for addressing indirect cost of services

The establishment of a domestic financing mechanism has been cited as a cardinal intervention to eliminate financial barriers for women seeking care. Cash transfers, voucher payments, and universal coverage through health insurance are interventions (Frost and Prat, 2014).

In DRC performance based financing was used to improve the quality of care. In this approach providers were paid for the number of patients they saw for ANC, delivery, and PNC so they were eager to follow up with pregnant women and encourage them to attend maternal health services (WBR, 2007).

For instance in India, the government had policy to provide cash transfers to women who accessed public facilities for ANC, delivery and PNC after delivery. This improved deliveries in facilities, but the proportion by which it improved was not cited in the study (Devadasan et al., 2008).

In Cambodia, community engagement funding policy was introduced as a means of eliminating user fees. This intervention targeted the entire population with a preference for maternal health services. This increased utilization of ANC, delivery by skilled staff in facilities, and PNC (Lijesttrand et al., 2012).

The Liberian approach in terms of intervention for improving cost has been free services at no cost in a public facility, but the implication is that quality at the public facility is compromised as indicated in the findings under quality. In spite of the free services, government needs to improve quality. Another implication is that there are indirect costs such as under the table payments, transportation, and prescription drugs purchases. And the performance base financing mechanism in Bong is experiencing challenges because of how it is done.

4.3.2. Evidence for addressing transportation Level factor

Transportation and referral influences utilization of ANC, delivery and PNC services in Bong. There are many promising interventions from other

countries that have helped to improve transportation and referral systems. For instance, in Gambia, Nigeria, Kenya, and Nepal a variety of transport options, such a pickups, taxis, buses, bicycles, and motorcycle ambulances were used to decrease transportation costs. In Kenya, Nigeria, and Nepal home-made stretchers were successful because they decreased delays and promoted prompt referral (Thomas et al.,2007).

In 2009, Bong established a maternal income generation group in few towns, but this did not work because it was not backed by any policy or regulation that compelled people to contribute (BCHT,2011b).

4.3.3. Evidence for improving Referral level factors

In other low and middle income countries such as, Sri Lanka, Malaysia, and Cuba, governments invested in ambulances, developed referral protocols for transportation and receiving patients, provided 24-hour referral services, and provided pro-poor protection against the cost for emergency referral, and provided policy support at the national level for referral (Murray et al., 2006).

In Bong to support the referral level factor, the local government and the Bong County health system established hammock groups to transport women to health facility inaccessible during child birth period. The implication is that most of the males are not in the towns, some have to find income for their families. Moreover, there were no policy or law compelling male to take up such task as member of the hammock group and no follow ups were made by the county health team, this initiative did not work (BCHT,2011b).

In Uganda, the Rural Extended Services & Care for Emergency Relief Rescue program provided communication tools to CHWs to call health workers and ambulances for referral of patients living in hard-to-reach areas (Musoke and Maria, 2002).

Also for communication, In Bong, 16 facilities have HF radios for communication incase of referral, but all these radios have broken down and the cost of maintenance is high. Another approach is by giving individual scratch cards for mobile phones but this also is not working due to sustainability. (BCHT, 2013)

Chapter V: Discussion and Conclusions

5.0 Discussion

In this section, evidence from other countries will be discussed in relation to the feasibility, cost-effectiveness and relevance in the context of Bong to identify factors influencing utilization of ANC, delivery and PNC. There are short and long-terms community, organization, institutional and public policy interventions that could be feasible in the context of Liberia.

As indicated in the studies, cultural factors prevent women from using health facilities for any of the three services. Lack of skilled staff, equipment, poor provider-client interactions, limited supervision, high unnecessary costs, distances, frequent stock outs, lack of education and limited knowledge also discouraged women from using health facilities for ANC, delivery and PNC services in Bong

5.1 Community, individual and intrapersonal level factors.

Community Participation

Given traditional norms in Liberia where men are the head of the home and stand to provide support in terms of ANC, PNC and delivery care services, women depend on their husbands for financial support and decision making on where to seek health care. Liberia can adopt the generational dialogue and PRA approach by bringing relevant stakeholders together to discuss the importance of making decisions regarding ANC, delivery and post natal care services, without taking away powers from the men. This requires capacity building of community groups to carry on generational dialogue and PRA. The dialogue process stimulate to shift norms and values by initiating reflection and improving communication between men and women about how norms and values hinder improvements in maternal health, and decide on actions to change these. The feasibility of this depends on political commitment, building consensus with the communities' network.

Therefore working with generational dialogue and PRA in men and women groups, youth group and mentors requires substantial capacity building to enable facilitators acquire the necessary skills to ask critical questions and stimulate the development of birth and complication preparedness plans with the entire communities.

Women's education

The lack of education among women influences their early marriages and childbirth, which in turn takes them away from school, reduces their powers as indicated in the study.

Evidence has shown that there is a strong correlation between women's education and their prospect for employment, which in turn makes them take the lead in their health seeking behaviour.

Liberia has introduced compulsory free primary education for girls in all public schools; however, continuation to secondary or university level is left with the girl or her parents to pay, this become a challenge because a challenge because many of the parents are unable to pay for the next level. The feasibility of this compulsory free primary education is to subsidize the entire educational system at all levels so as to avoid girls dropping out after completion of primary school.

To address early marriage which influences maternal mortality, Bong County health system can advocate the scale up of vocational programs in the county as a means of giving girls skills for job prospects. Also these programmes could be collaborated with education and other sectors to include sex education and reproductive health rights in the vocational training the challenge for this strategy is that in Bong, women's roles in farming and in homes might prevent them from attending vocational schools. There might be leadership crisis between the Ministry of Health,

Ministry of Youth and Sports, Ministry of Gender for Development and Ministry of Education to lead such program. Also, there might be financial implications to expand such a program given the current budget shortfalls in government for the last two years. The success and feasibility of this require an inter-sector approach, proper coordination and government commitment in providing funding.

5.2. Institutional or Organizational level factors

The study has identified health system factors like distances to health facilities, availability of health workers, , the quality of maternal health services, responsiveness of health facilities, and drugs and medical supplies and provided evidence, and implication of adapting them to the context of Liberia.

The current task shifting practice in Liberia could be strengthened to improve distance by regular training and supportive supervision of CHWs by clinic staff to ensure CHWs give supportive care such as promotional messages for birth preparedness plan, encouraging pregnant women to attend ANC, delivery and post natal care services, but the challenge around this is government commitment to providing incentives for them and also incorporating them into the formal system.

Investment in any health care initiative requires adequate human resources to perform the duties to ensure improved maternal health outcomes as indicated by the evidence. Bong County health system could adopt promising long term and short term interventions, the long term interventions in addressing human resources issues, could be designing a retention package which include retention providing attractive income, career advancement and recognition for skill birth attendants ,as well as improving infrastructure ; while the short term interventions includes on the

job training, mentoring and creating an enabling environment for skill birth attendants to work efficiently.

The challenge around retention package is that government might probably not be committed to increasing health workers' salaries, improving their living conditions, creating career opportunities, or recognizing high performing workers.

Drugs, medical supplies and equipment for maternal health

Frequent stock out of essential drugs and supplies related to EmONC is one of the reasons for women not utilizing health facilities. To address this, the Liberia government can apply the same measures used in Zambia, such as investing and leading the drug procurement process by ensuring commodity security and involving the front line health workers in the planning process for drug management and ensuring that drugs and medical supplies for BEmONC and CEmONC are available in all health facilities as indicated in the National Drugs Policy and Essential Drugs and Medical Supplies listing of Liberia.

Currently in Bong, efforts to contract agencies to provide services to seven facilities as a means of providing services by purchasing drugs in country without waiting for NGOs drugs that will take six months to arrive are being encouraged (BCHT,2013)

Quality and Responsiveness of maternal health services

Issues around perceived and technical quality were identified as influencing factors for women not utilizing health facilities. There are short-term opportunities that can be put into place as addressed by the evidence.

Liberia could adopt short-term approach by improving quality of care by addressing health workers' attitudes, availability of drugs and medical supplies, introduction of user-friendly services through setting up a quality control team that will ensure that necessary materials are in place and standards are adhere to. In addition, Liberia especially Bong County health system could adopt another approach by improving skills of health workers during pre-services clinical rotations, improving nurses' and midwives' skills in user friendly services techniques on-site and emphasizing the need for professionalism even under tough working conditions and ensuring job aides , guidelines and protocols are available.

While long term interventions of quality issues and client-patient relationship services are placed into training institutions' curricula.

5.3. Public Policy Level factors

Cost Policy on maternal health services

The need for reducing financial barriers and improving accountability at all levels is important.

Bong could reduce costs incurred by pregnant women by revisiting policy on performance-based financing that are ongoing but done differently by the implementing NGOs. For instance, Provider-side performance-based financing, where staff is given financial bonuses when a facility meets certain maternal health target indicators, is practiced in only 16 of Bong's 42

facilities, de-motivating staff who are not part of the scheme. For this approach to be successful in Bong, scale-up to all facilities is necessary, but finance and sustainability could be a challenge, because the process is currently driven by NGOs.

Again, the feasibility of this intervention depends on multifaceted approach where commitment of all stakeholders including government of Liberia will investment into to the PBF mechanism to ensure ownership and sustainability; while civil society and community leaders will hold the Bong health system accountable to provide the needed services to its people Another critical consideration is performance based financing which requires monitoring mechanism in the case of Bong to ensure accountability and avoid corrupt practices such as under-the-table payment. The feasibility of this intervention requires coordinated efforts by civil society action groups, supervisors and managers of health care programs, so that those found in such act will be punished.

Discussion on factors and intervention for Transportation and referral Policy

Referral stands out as one of the factors influencing utilization of ANC, delivery and PNC services in Bong, and some promising evidence that could be adopted includes improvement of infrastructure in terms of ambulances and communication in all of the districts.

Cash transfers policy could be feasible in the context of Bong, where women who visit the health facility for ANC, delivery and PNC services are refunded for the transportation cost they incurred, but the feasibility of this depends on the government to invest more resources in the health system.

Another important situation in Bong could be reactivating community groups like maternal susu and hammock group as a way of addressing issues of referral. As for groups, the feasibility depends on the community commitment, given that most of the men are busy and bread winners of their families, and might not have the time to commit to the referral process. Also, the issue of the maternal Susu might be met with challenges because people's commitment to contribute finances to the process is not easy, besides, management of such funding is marked by flaws from experience, ensuring this work needs a concerted effort of all stakeholders.

The feasibility of waiting homes is questionable with women having no means to sustain themselves; therefore, sustainability and feasibility depend on government putting in mechanisms to address these needs.

Also, policy on investment in communications and ambulances is necessary to improve referral services. The government's investment in this sector is currently poor. To improve road conditions, purchase ambulances and build on the synergy between the Ministry of Internal Affairs and the health sector to motivate women to utilize ANC, delivery, and PNC services. Since the superintendent is the chairman of the board, his or her influence can contribute to the health sector. But political will of the local government to purchase ambulances could be a challenge.

The conceptual framework that guided the process was able to address most of the factors that influence maternal health utilization in the context of Bong, but there were some important determinants that were missing like, religious influences on maternal health utilization inclusive protection for women and men with disability in maternal health care utilization, and pro – poor protection and its implication on maternal health.

The frame work can be modified the next time considering modification to some of these missing components as stated above.

Chapter VI: Conclusions and Recommendations

6.1. Conclusions

Cultural beliefs, norms, values, decision making, past experience and education are among other factors that influence utilization of ANC, PNC services in Bong County. Therefore, one can surmise that improved health education is important.

Another important aspect in the thesis was institutional or health system factors like availability of needed health workforce coupled with lack of skills to operate equipment, no guidelines and job aid, even those that were present were not used appropriately because of limited number of supportive supervision to utilize them as mentioned are barriers for women utilizing services.

Also, under this heading distances were too far from health facilities based on how the services were organized, BEMONC AND EMONC were also far for most of the population making it impossible to utilize ANC, delivery and PNC services in Bong.

Lastly, cost, transportation, and referral policies brought additional incidental cost as mentioned in the study. Ambulances were inadequate for the districts. The four available were not strategically located.

The study also discussed interventions and feasibility in the context of Bong County health system

6.2 Recommendations

The recommendations are based on the objectives, framework, findings, evidence and discussions in the context specific to the MOHSW of Liberia the Bong County Health System, NGOs, community members, and local government officials to improve utilization of facilities for ANC, delivery, and PNC.

1. Recommendations for Community factors

- Bong County health system in collaboration with UNFPA, and UNICEF should initiate a discussion with stakeholders, such as Ministry of health Central level, Gender, Internal affairs, local government in Bong, women groups, men groups ,chiefs, youth groups , religious leaders and TBAS about the importance of utilizing ANC, delivery and PNC services in health facilities, barriers to utilization and plans to initiate and support action to overcome these barriers by using generational and PRA approach.
  - The generational dialogue and PRA approach should be piloted by UNICEF and UNPFA as a support to Bong County health system in few selected communities and then scaled up later to other communities because it requires substantial capacity building.
- The issues of early marriage should be addressed by the government of Liberia by coordinating activities through line ministries and institutions such as Health, Gender, youth and sports ,Justice ministries , community leaders ,chiefs ,elder, women groups ,men groups, and religious leaders; while UNFPA , UNICEF and Bong County health system and implementing partners will take the lead to convene a stakeholder meeting to develop an action plan.

- Consensus to have supportive laws and girls' empowerment programs should be initiated to improve women's autonomy and increase husbands' involvement in maternal health care utilization

- Awareness through mass media ccould be raised about the consequences of child marriages and the impact on maternal health utilization.

2. Recommendations for distance, availability of skill staff, quality and drugs and medical supplies

- Bong County Health System should advocate to the central ministry of health to retain health workers by attracting staff in rural areas, improving living conditions, offering prospect for career development after government compulsory service,
- Bong County Health System should conduct regular in service training to enhance their skills and the training should be focused on providing respectful care to patient. There should be regular quality control checks by supervisors who will ensure that respectful care is provided to patients and standard and guidelines are adhere to by clinical staff
- Bong County health system should strengthen the existing task to approach byproviding stipend to CHWs serve as motivation for the TBAs to conduct promotional messages on the importance of ANC, delivery and PNC services.
- The government of Liberia should invest in the supply chain sector by planning with front line health workers about drug management, conducting proper forecasting for drugs and medical supplies as well put in place a monitoring frame work to avoid stock outs. Bong County health Team should use the approach of public private partnership by engaging the steel company to provide support for drugs and medical supplies.

3. Recommendations for Cost, Transport and Referral Policy

- The Bong County Health system should advocate to the local government through presentation of maternal health data in the County steering committee technical meeting for some of the social development funding to be given to the health system. Where women who access ANC, delivery and PNC will be given a voucher for any costs they incur during visits.

- Bong County health system should scale up the PBF to all health facilities and provide bonuses to staff who reach their ANC, delivery and PNC services target. There should be a strong monitoring and verification system to ensure transparency of data reported.

- The Bong County health system should reactivate the hammock boys for supportive emergency referral system where there are not maternal waiting homes.

- Bong County health Team should convene a stake holder meeting with its partners especially UNFPA an UNICEF and WHO by providing data relating to increased maternal and Neonatal deaths as a tool for advocating for ambulances.

- Bong health system should negotiate a private-public mix for all communications relating to referral Calls to be free of charge between communities and providers.

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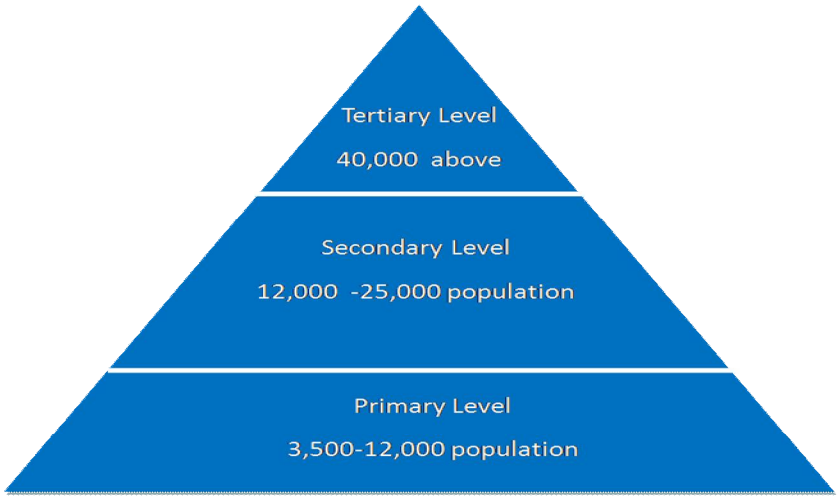
ANNEXES

Annex 1: Map of Liberia

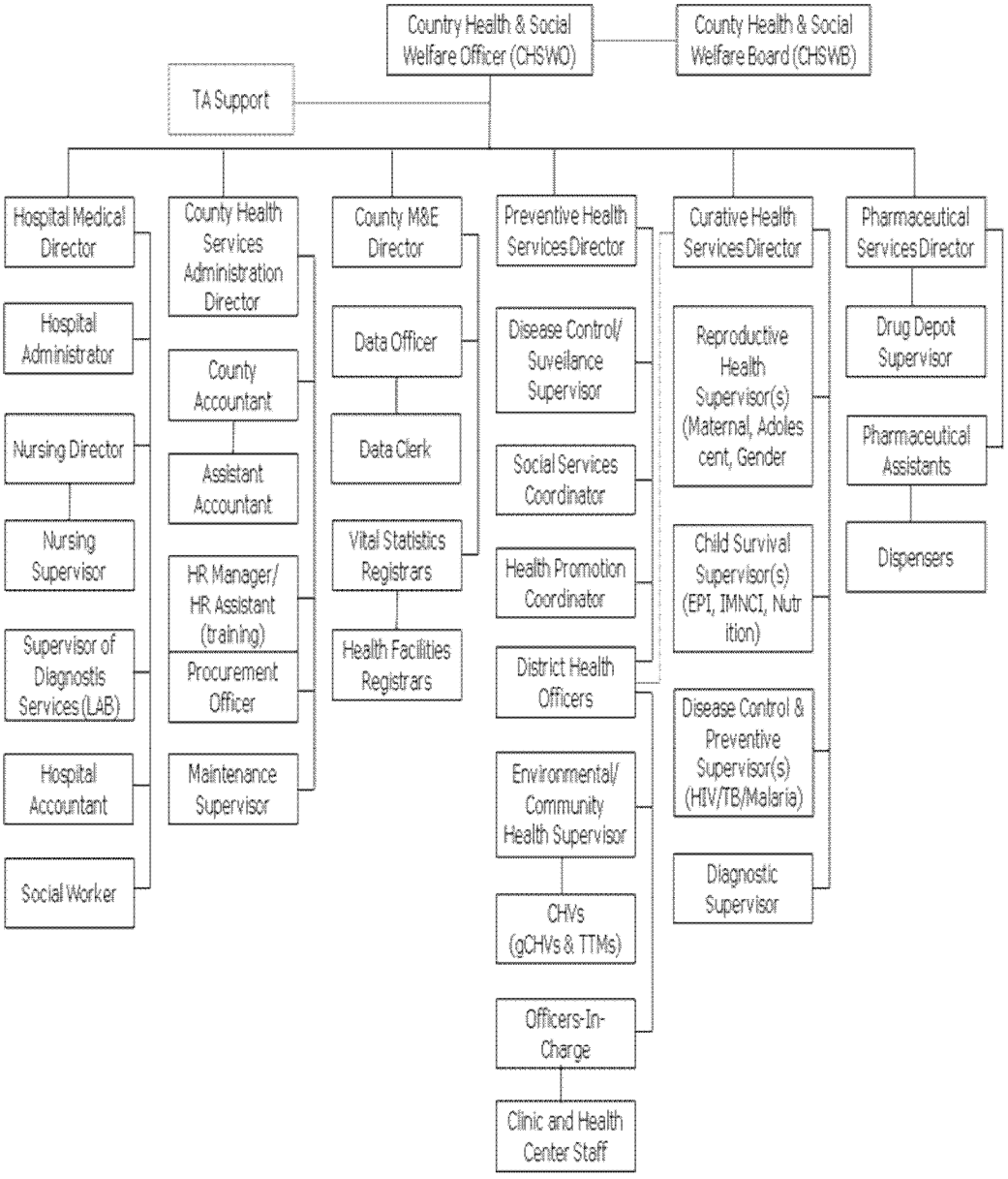
Source: LIGIS,2011

Annex 2: Health system Pyramid of Liberia and Bong



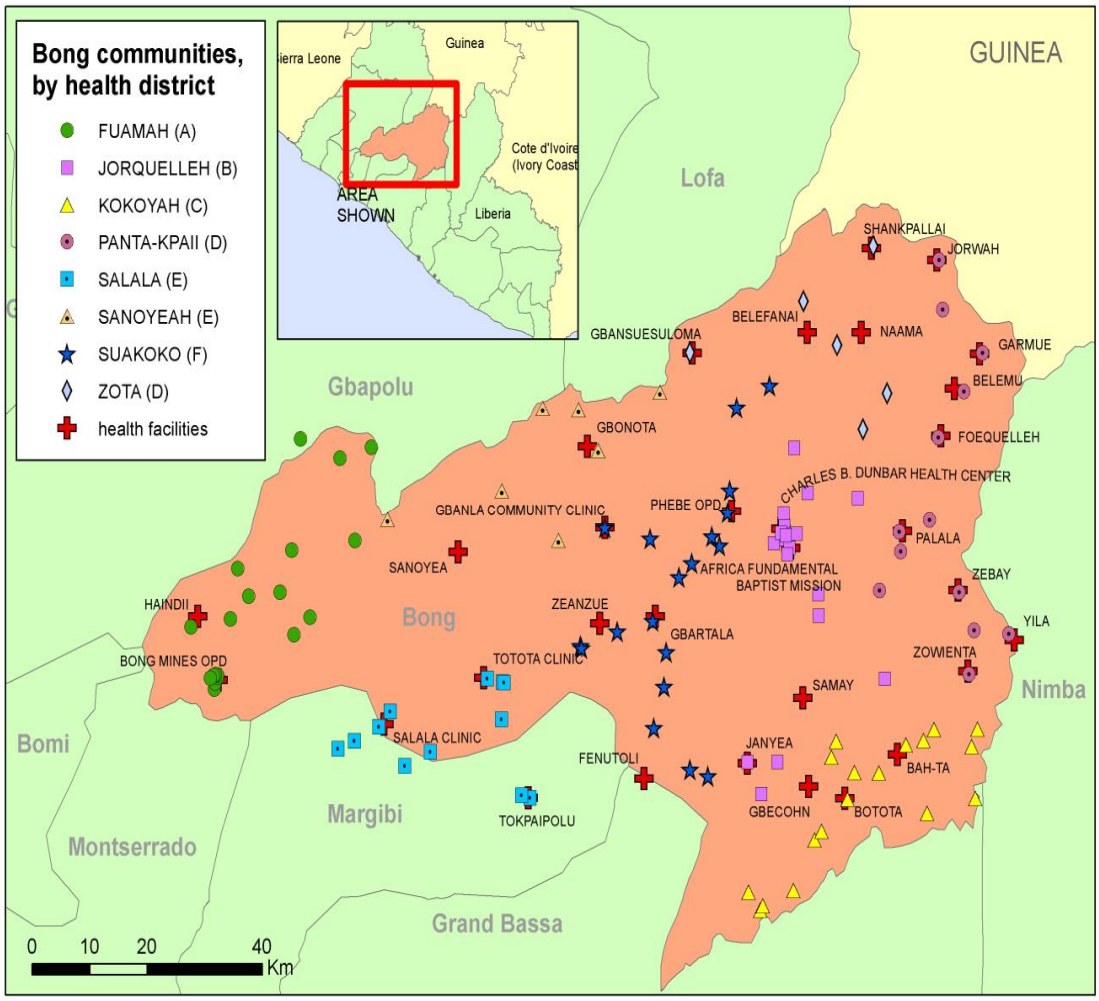
Source: EPHS, 2012

Annex3: Organogram of Bong Health System



Source**:** BCHT,2011a

Annex 4: Distribution of health facilities in Bong County



Source: Measure Evaluation, 2012

Annex 5: Original Socio-Ecological Model

Source:Babara et al.,2005