

**UTILIZATION OF INSTITUTIONAL DELIVERY SERVICES
AND SKILLED BIRTH ATTENDANTS BY RURAL WOMEN
IN BHUTAN**

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Utilization of institutional delivery services and skilled birth attendants by rural women in Bhutan

A thesis submitted in partial fulfillment of the requirement for the degree of Masters of Public Health/International Course in Health Development

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Abstract

Background: Bhutan is on track in achieving MDG of reducing maternal mortality ratio by two-third, with MMR of 120 per 100,000 live births in 2013, with 87% decline since 1990. The rate of skilled delivery increased rapidly reaching 74.6% in 2012, however, disparity still exists among districts and between urban-rural women in the utilization of skilled delivery services with 33.7% rural women still delivering at home.

Objective: To assess factors associated with the use of delivery services and SBA during childbirth by rural women and to identify and recommend evidence based interventions as learnt from other countries to improve utilization of delivery services.

Method: Literature review was conducted using peer reviewed and grey literature from SEA countries and Bhutan. To analyze the influencing factors, conceptual framework adapted from three delay model by Gabrysch and Campbell was used.

Results: Low education, poorer household, lower maternal age, rural residence, cultural beliefs and practices, and too far distance from health facility with inadequate transportation, poor perception of benefits of skilled delivery are common factors discouraging women to use delivery services in Bhutan. Poor quality of ANC services, unavailability of waiting home and food in BHUs, and inadequate capacity of health facility to render emergency obstetric care due to retention and shortage of HWs are health service factors deterring women from delivery service utilization. To improve utilization by rural women, interventions like maternity waiting home, demand side financing and community participation are found to be effective.

Conclusion and recommendations: To increase the use of delivery services by rural women, Bhutan should bring in policy changes to institute effective interventions and promising practices targeted to these areas and continue to improve access to EmOC services. Introduction of cash incentives, maternity gift, waiting room/home with cooking facilities/food provision, promoting deliveries in BHUs and expansion of community participation are proposed to bring about promising effect in delivery service utilization.

Keywords: Utilization, institutional delivery services, skilled birth, rural women, Bhutan

Word Count: 13,056 (excluding references (521), figures/graph's titles plus source (152), and text in table 1 (107))

Acronyms

ANC	Antenatal Care
BEmONC	Basic Emergency Obstetric and Neonatal Care
BHU	Basic Health Unit
BMIS	Bhutan Multiple Indicator Survey
BPP	Birth Preparedness Plan
CEmONC	Comprehensive Emergency Obstetric and Neonatal Care
CoC	Continuum of Care
CS	Caesarean Section
cRCT	cluster Randomized Control Trail
DHS	Demography and Health Survey
DSF	Demand Side Financing
FIGO	International Federation of Gynecology and Obstetrics
GNH	Gross National Happiness
HH	Household
HHC	Health Help Center
ICM	International Confederation of Midwives
ICPD	International Conference on Population and Development
ICT	Information, Communication and Technology
KAP	Knowledge, Attitude and Practice
LMIC	Low and Middle Income Country
MCH	Mother and Child Health
MDG	Millennium Development Goal
MMR	Maternal Mortality Ratio
MoH	Ministry of Health

MWH	Maternity Waiting Home
NFE	Non Formal Education
NHS	National Health Survey
NSB	National Statistic Bureau
ORC	Outreach Clinic
PHC	Primary Health Care
PNC	Postnatal Care
PPH	Post Partum Hemorrhage
RH	Reproductive Health
SA	South Asia
SBA	Skilled Birth Attendant
SDIP	Safe Delivery Incentive Program
SEA	South East Asia
SRH	Sexual and Reproductive Health
SSA	Sub Saharan Africa
VHW	Village Health Worker
VU	Vrije Universiteit
WHO	World Health Organization

Glossary

Skilled Birth Attendant is an accredited health professional such as a 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 post natal period and in the identification, management and referral of complication in women and child (WHO 2009).

Maternal Mortality: is the death of a woman during pregnant, labor or within 42 days of termination of pregnancy, regardless of gestational age and the site of the pregnancy, due to any complication related to or worsened by the pregnancy or its management, but not from accidental or incidental causes (WHO 2004).

Maternal mortality ratio (MMR): is the number of maternal deaths during a given time period per 100,000 live births during the same period (WHO, 2009).

Preventive Care seeking means seeking precautionary skilled delivery care services for anticipated normal delivery as the woman either awaits or goes into labor to prevent development of complication and/or timely management of complications (Gabrysch & Campbell, 2009)

Antenatal care: is the care provided during pregnancy by skilled birth attended attendant (WHO, 2004).

Postnatal care: is pre-eminently about the provision of a supportive environment in which a woman, her baby and the wider family can begin their new life together (WHO, 2004).

Emergency Obstetric and Neonatal care (EmONC) refers to care provided in health facilities to treat direct obstetric emergencies that cause the vast majority of maternal and neonatal deaths during pregnancy, at delivery and during the postpartum period.

Introduction

Around the world, 289,000 women died in 2013 during pregnancy and due to child birth related complications and after child birth. This could be prevented and managed if women have access to antenatal care during pregnancy, skilled care deliveries and care after delivery. In particular, all births need to be attended by skilled health professionals known as skilled birth attendant (SBA) for timely management of complications and treatment (WHO, 2014a). The role of SBAs is evident in reducing maternal and newborn mortality and morbidity. Increasing the access and use of skilled attendance during pregnancy, childbirth and immediate postnatal period is crucial to prevent maternal deaths and still births and to improve new born survival. Thus, proportion of births attended by SBAs is identified as an important indicator to measure the reduction of maternal mortality, the fifth Millennium Development Goal (MDG-5) (WHO, 2004)(Lawn et al., 2005). Globally, 70% of the deliveries were attended by skilled birth attendants since 2006 to 2013, however, South East Asia (SEA) and African regions have the lowest coverage. The SBA coverage in high middle-income countries is as high as 95% followed by lower middle- income countries with 64% and low-income countries with the lowest as 46% (WHO, 2015).

To improve maternal health and reduce maternal deaths, the Royal Government of Bhutan provides reproductive health services at all levels with some forms of obstetric services available in all health facilities. It provides continuous efforts to encourage mothers/pregnant women in the country to seek delivery care at the health facilities assisted by skilled health professionals like doctors, nurses, assistant clinical officer, health assistant and basic health workers in a hygienic condition which is known as institutional delivery. To improve maternal and newborn health outcome through providing prompt care and treatment, Emergency Obstetric Care (EmOC) services are made available in hospitals at strategic locations. Health workers in the Basic Health Unit (BHU) also make home visits and attend home delivery when need arises (MoH Bhutan, 2006).

Working as public health personnel (Program Officer) for the last eight years in the Department of Public Health, MoH in Bhutan, I have observed and experienced the continuous effort put by Reproductive Health Program to improve maternal and child health geared towards achieving MDG 5 and national targets. Although the country has given a high priority and

concerted effort on institutional delivery and SBA, there are many districts which are performing very low in these areas raising the concern to explore possible reasons for such low performance. Therefore, this study intends to investigate the factors influencing institutional delivery and use of skilled birth attendant by women in rural area using existing data/literature from Bhutan and literatures from other countries particularly from South Asia and South East Asia, and draw upon solutions to improve the situation.

Chapter 1

1. Background

This chapter provides key information on the country's geography, administrative structures, demographic profile, socio-economy, education and health system in Bhutan which have direct impact on health.

1.1 Country geography and administrative structures

Bhutan is one of the smallest countries in Asia situated in the eastern Himalaya landlocked between the two giants, China to the North and India to the East, West and South (NSB Bhutan, 2014b) (Figure 1). Bhutan has an area of 38,394 square km with 72% land covered by forest (NSB Bhutan 2012a) and only 3% of the land is cultivated (agriculture) while rest are meadows, pastures and barren or scrubland (NSB Bhutan, 2013). The country is administratively divided into 20 districts classified into eastern, western and central regions (Annex 1). Each district is headed by a governor appointed by government. Districts are further divided into 205 blocks.

Figure 1: Administrative map of Bhutan with 20 districts and international boundaries



Source: (Political Map of Bhutan [Internet], 2015)

1.2 Demographic Profile

Bhutan has a total population (projected) of 745,153 (NSB Bhutan, 2014a) with 1.8% population growth rate and general fertility rate of 79.4 births per 1000 women 15-49 years (NSB Bhutan, 2013). The overall sex ratio was 97 males per 100 females in 2012 and the country has relatively young

population with nearly half the population below 25 years of age and total dependency ratio of 56% (nonworking age to working age population). The number of persons living per square km is 18.8. 30% of the population lives in urban area and 70% lives in rural (NSB Bhutan, 2012b).

Majority of the Bhutanese populations are Buddhist followed by Hindu with three major ethnicities as Ngalong, Sharchop and Lhotsampa (NCWC Bhutan, 2008).

1.3 Socio-economy and poverty

Bhutan is an agrarian country and the main source of livelihood for the rural population is agriculture with livestock and farming (NSB Bhutan, 2012a). In 2013, the country's GDP per capita was USD 2440.41 which decreased by 2.3% from USD 2585 in 2012, however, the average economic growth was recorded 6.70% in the last five years (2009-2013). The three major contributors to the growth in 2013 were Hotels and Restaurant (17.11%), Electricity and Water Supply (10.74%) and Wholesale and Retail trade (7.8%) (NSB Bhutan, 2014c).

While the national level poverty has reduced significantly from 31.7% in 2003 to 12% in 2012, disparity still exists at local level between districts where some districts continue to face high level of poverty (GNHC Bhutan, 2013a). Poverty rate is as low as below 0.5% in some districts, while others have as high as 31.7 %. Districts like Lhuentse, Pemagatshel, Zhemgang, Dagana, Samtse and Samdrupjongkhar have high level of poverty rate. Poverty in rural area is higher with 16.7% than in urban area with 1.8% (NSB Bhutan, 2012c).

1.4 Literacy and education

The general literacy rate is 63% among the population above 6 years of age with higher literacy rate (79%) in urban areas compared to 56% in rural, and 72% among males and 55% females among all ages. Female literacy rate in urban area is 65.3% compared to 36.5% in rural. The literacy rate among youths (15 -24) is 86% and adults (15 years and above) have literacy rate of 55%. The primary school completion rate is estimated at 89% with little higher rate in females than in males and secondary school completion rate is 71%. Gender disparity in tertiary education exists although gender parity is achieved in primary and secondary education. To develop basic literacy skills, a Non Formal Education (NFE) system is also practiced in Bhutan for those adults and children who could never attend any formal school (NSB Bhutan, 2012b).

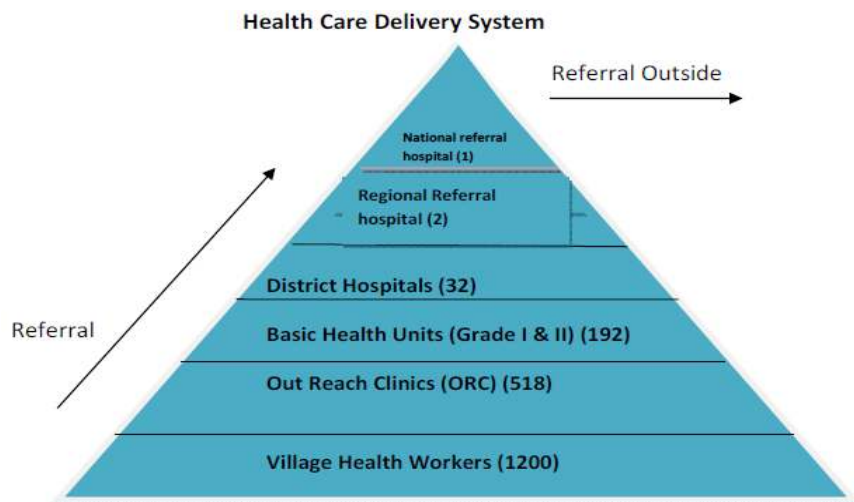
1.5 Health system

The Royal Government of Bhutan is committed to provide free and quality universal health care to its population guided by the national development

philosophy of Gross National Happiness (GNH) (MoH Bhutan, 2011a) which promotes “a balanced approach to human development by emphasizing the non-economic aspects of social well-being”(Sharma et al., 2014). To cater with basic minimum health care to the scattered population, the country continues to pursue the Primary Health Care (PHC) approach. Bhutanese health system is predominantly funded by government, contributing more than 80% of the total health expenditure while remaining comes from private insurance, fees for dental and cosmetic services, off-hour services and indirect cost in accessing health care (Sharma et al., 2014).

Health care is delivered in an integrated three-tiered system with Basic Health Units (BHUs) extended with out-reach clinic (ORC) at the community level, district hospitals, regional referral hospitals and national referral hospital at the apex as shown in Figure 2 (NSB Bhutan, 2013). ORC provide community health care services which includes health promotion, immunization and maternal health services delivered by nurses and midwives or Basic Health Worker. In addition, there are more than 1000 Village Health Workers (VHWs) regarded as an integral part of health system that links between communities and health services (MoH Bhutan, 2012b). Indigenous medicine is provided as a complementary to the overall health services (NSB Bhutan, 2013). To improve access to professional health care services within an hour, Health Help Center (HHC) is established which provides Information and Communication Technology (ICT) enabled health care services like dispatching of ambulance for referral, medical advice and emergency services for 24 hours (MoH Bhutan, 2012a).

Figure 2: Three-tiered health care delivery system in Bhutan



Source: Adapted from AHB 2011

1.5.1 Sexual and reproductive health (SRH) care

Sexual and reproductive health care is provided through a network of health facilities starting from BHUs, district hospitals and referral hospitals including the Out Reach Clinics (ORCs) and mobile clinics. Village Health Workers are also involved in motivating and bringing women and children for Mother and Child Health (MCH) services, and also in providing awareness regarding their health needs during pregnancy, childbirth and the postpartum period. Antenatal and postnatal services including family planning and child care are provided at MCH clinic and through Out Reach Clinic (ORC) for population in remote area. BHUs are equipped to conduct normal deliveries. Ministry of Health has been placing a high priority in improving emergency obstetric care (EmOC) since its inception to improve the health of mothers and newborns, and currently there are 7 Comprehensive Emergency Obstetric and Neonatal Care (CEmONC) centers (3 referral hospitals and 4 district hospitals) with remaining district hospitals and BHU-I (grade one) functioning as Basic Emergency Obstetric and Neonatal Care (BEmONC) centers with all six basic signal functions and BHUs with three functions (MoH Bhutan, 2012b) (MoH Bhutan, 2006).

At country level, Bhutan has made a considerable progress in reproductive health including child health over the last couple of decades. For instance, infant mortality rate reduced from 102.8/1000 live births in 1984 to 30/1000 live births 2012 (MoH Bhutan, 2012b). Similarly, improvements have been made in other key SRH indicators also as shown in Annex 2. However, there still exists disparity in maternal and child health progress at district level. Infant and under-five mortality is seen 2-3 times higher in the poorest quintile compared to the richest. Most of the maternal deaths occur in remote villages and accessibility is a serious challenge in the event of obstetric complication due to difficult terrain (MoH Bhutan, 2011b).

Sexual and reproductive health services are guided by National RH Strategy 2012-2016 developed in accordance with national development health policies and programs. One of the key priority objectives among the large scope of services under SRH umbrella is to strengthen and expand maternal and newborn care interventions along the Continuum of Care (CoC) at all levels (MoH Bhutan, 2012b) as listed in Annex 3.

Chapter 2

2. Problem statement and Methodology

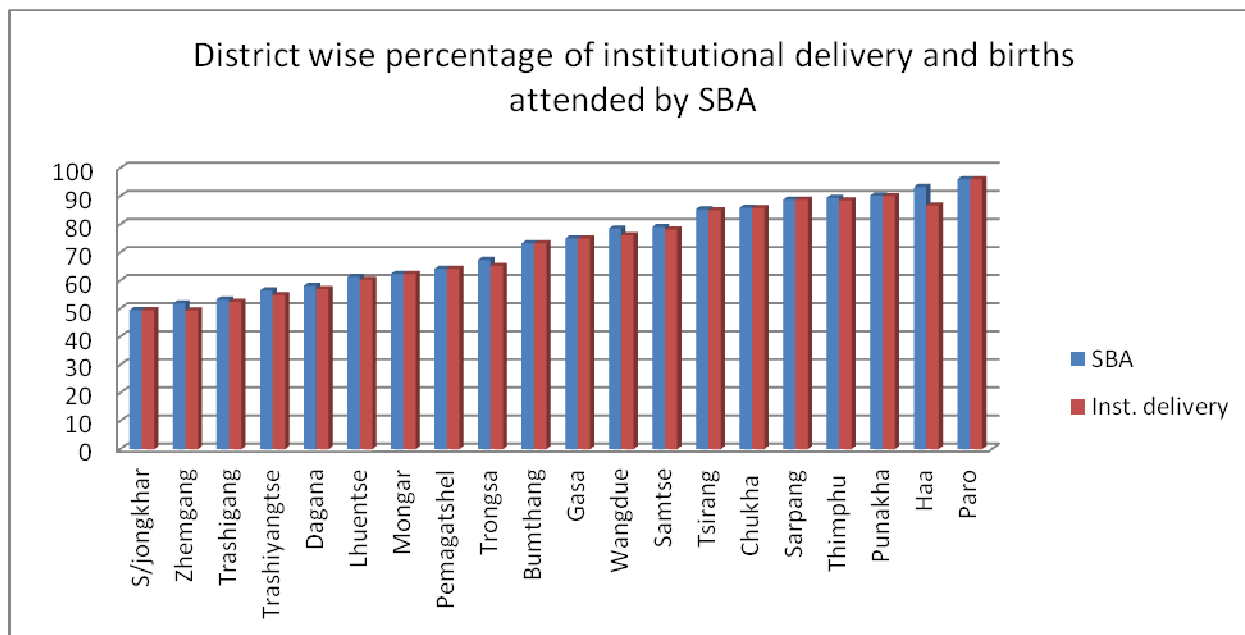
2.1 Problem statement and justification

The Royal Government of Bhutan accords a high priority to maternal health and has committed to fulfill various international initiatives like MDG and International Conference on Population and Development (ICPD) (MoH Bhutan, 2011b). The recent estimate of maternal mortality ratio (MMR) by WHO (joint) for Bhutan is 120 per 100,000 live births for 2013 with 87% decline from 1990 to 2013. This places Bhutan "on track" to achieve MDG 5 by 2015 (WHO, 2014b). However, maternal mortality could be underestimated due to the absence of proper death registry and under reporting (Bergstr, 2006). The national maternal death review report 2013 noted that majority of the deaths occurred in health facilities which gestures a suspicion that maternal deaths occurring at home may be unreported as many deliveries i.e 33.7% in rural area still take place at home in many parts of the country. On the other hand, this could also indicate a good referral system but questions the quality of care in terms of timely and appropriate care and treatment. The report noted that most women died in postpartum period, and post partum hemorrhage (PPH) is the leading cause of mothers' death in Bhutan.

In 1999, the joint statement of WHO/UNFPA/UNICEF/World Bank called for countries to ensure skilled attendant care for all women and newborns during pregnancy, child delivery and immediate postnatal period (WHO, 1999). As Bhutan is signatory to this statement, it places a high priority to institutional delivery and SBA to reduce health risk of both mother and child. Despite concerted and continuous effort from the government encouraging women on safe delivery through institution delivery and SBA, the country still lags behind in its national goal of 100% institutional delivery and SBA. It is worth noting that the proportions of institutional delivery and skilled attendance at birth have significantly increased since 2000 from 19.8% to 73.8% and from 23.6% to 74.6% in 2012 respectively. However, disparity exists among districts, between rich and poor, and urban-rural women as presented in Figure 3 and Figure 4. Among the districts, Zhemgang, Samdrupjongkhar, Trashigang, Trashiyangtse and Dagana have the lower coverage of both institutional and SBA deliveries with lowest as 49% which are categorized as low performing districts, while districts like Paro and Haa

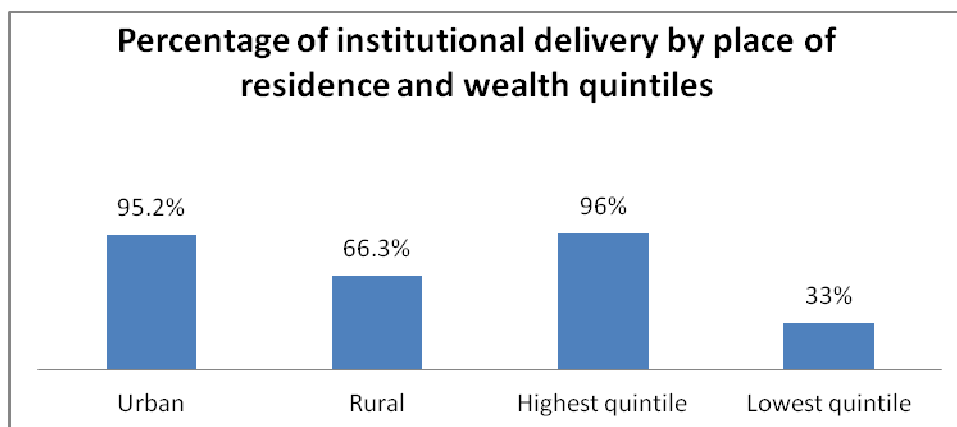
have as high as 96%. Besides, there is a huge difference in the use of health facility with hospitals (89%) and BHUs (11%) for delivery care (MoH Bhutan, 2012a).

Figure 3: District wise percentage of institutional delivery and births attended by SBA



Source: (MoH Bhutan, 2012a)

Figure 4: Percentage of institutional delivery by place of residence and wealth quintiles



Source: (MoH Bhutan, 2012a)(NSB Bhutan, 2010)

Although most maternal deaths occurred in health facility, substantial numbers of mothers died at home or en route which could have been prevented by encouraging all pregnant women to give birth in health institutions with standard care from SBA (MoH Bhutan, 2013). Although

government recognizes the importance of providing maternal health services at all levels possible, there are still challenges of placing complete set of services and facilities. Many health facilities still lack child delivery equipments, beds, in-patient food, SBA, and patient friendly area especially in BHUs in remote areas. As in many other developing countries, Bhutan still faces challenge of shortage of skilled (midwives & EmOC) professionals and retention of health workers in many parts of the country (MoH Bhutan, 2006)(Titaley et al., 2010). People particularly in the more remote area have poor accessibility to health facilities which is another huge challenge due to difficult terrain and scattered population (Tobgay et al., 2011), leading to distance barrier which is one of the major barriers in utilization of maternal services (Titaley et al., 2010)(Gage, 2007). This has a special implication in providing prompt referral for emergency obstetric services due to lack of transportation and inadequate access to road. Furthermore, these low performing districts are among the districts with high rate of poverty (NSB Bhutan, 2012c) impacting the financial capability of family to meet the indirect costs like transportation cost and consumable expenses incurred in having institutional delivery including opportunity cost. This is added with poor knowledge and practices of mothers regarding pregnancy and delivery complications coupled with insufficient quality of care.

Although Bhutan is on track in terms of achievement of MDG 5a maternal mortality ratio, continued commitment is necessary to sustain this achievement and strive to further reduce it with increased institutional deliveries and SBA use. Institutional delivery and SBA are used interchangeably in this study. Furthermore, disparities in utilization of skilled delivery services among districts, particularly in those low performing districts calls for health sector's attention to explore the possible factors to institute evidence based policy options and remedial measures. At the best of my knowledge, there is no study done to investigate the factors that hinder women in availing delivery services in Bhutan, therefore, this literature review study will be valuable.

2.2 Objectives

To assess factors influencing the use of delivery services and SBA by rural women and identify effective intervention in order to provide recommendations to RH Programs, MoH and relevant stakeholder to improve delivery service utilization.

2.2.1 Specific objectives

1. To identify socio-cultural and socio-economic factors associated with the use of delivery services including accessibility (economic and physical) of delivery services.

2. To determine perception of women and their families from rural community on the need and benefit of using delivery services.
3. To identify health service factors that determine use of delivery services (attitude and availability of health professional and services)
4. To explore promising practices and interventions from other countries with similar situation
5. To provide recommendation as per the findings from literature review to the RH Program, MoH and other relevant stakeholders.

2.3 Methodology:

This study is done through literature review using literature from Bhutan and countries in South East Asia (SEA) and South Asia regions based on conceptual framework described below.

2.3.1 Conceptual framework

The conceptual framework by Gabrysch and Campbell from literature review of determinants of delivery service use which was adapted from three delay framework of Thaddeus and Maine is used (Gabrysch & Campbell, 2009)(see Figure 5). The framework expands three delay framework to conceptually distinguish emergency care seeking and preventive care seeking as two broad phases/stages while seeking pregnancy related care.

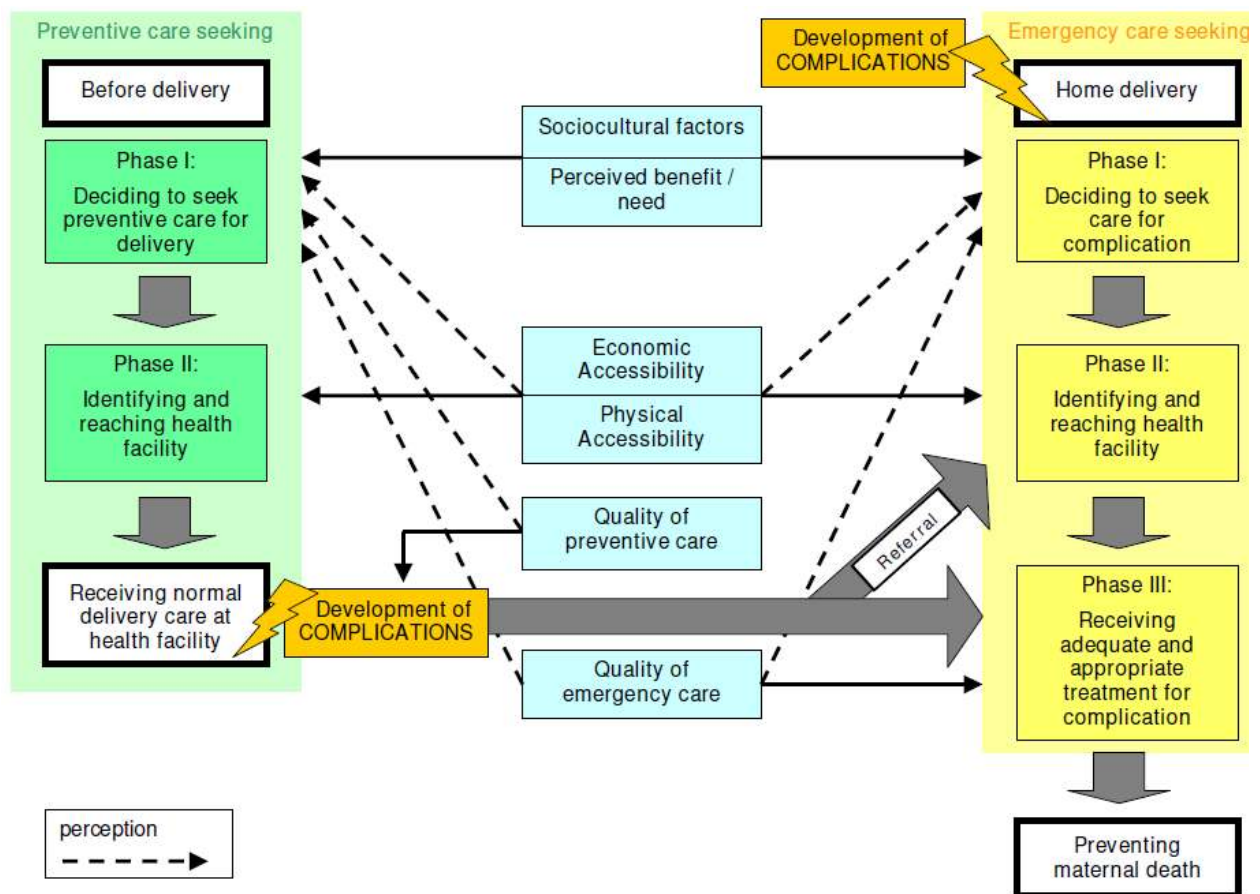
The framework is comprehensive and easier to understand as it is directly related to the utilization of delivery care services linked to three delays. The distinction between preventive care seeking and emergency care seeking makes it convenient to link to the determinants of use of delivery care services during both stages. Same determinants may be involved in both stages though its importance and effect may differ in different ways while seeking delivery care. Preventive care seeking here refers to precautionary seeking of skilled delivery care services for anticipated normal delivery as the woman either awaits or goes into labor to prevent development of complication and/or timely management of complications (Gabrysch & Campbell, 2009).

Gabrysch and Campbell came up with six major themes linked to three delay phases. The identified determinants in their review were categorized into four of these six themes: (1) socio-cultural factors, (2) perceived benefit/need of skilled attendance, (3) economic accessibility and (4) physical accessibility, but did not include quality of preventive care and emergency care. These two themes were thought to prevent complication and influence receiving adequate and appropriate care, which were considered not relevant in their review focused to investigate the

determinants of health facility utilization than maternal mortality (Gabrysch & Campbell, 2009).

However, in this study, quality of preventive care and emergency care are included in addition to the four themes as they have substantial influence in the use of delivery services for women as per the perception and experience in the preceding pregnancy which can further influence women in the whole community.

Figure 5: Conceptual framework- Delay phases and factors effecting use of delivery care and maternal mortality



Source: (Gabrysch & Campbell, 2009)

2.3.2 Literature Search

Literature search was performed through Google Scholar search engine using database like PubMed, and VU library. In addition, WHO websites and Ministry of Health websites were assessed and searched. Combination of key words related to maternal health services and use of delivery care services were used. The key words include: institutional delivery, utilization,

antenatal care, home delivery, determinants, influencing factors, barriers and facilitators, perception, accessibility, maternal health, quality of care, EmONC services, socio-economic, skilled birth attendant, interventions, DSF, SEA, Bhutan. A number of review articles on delivery service use in low or middle income countries including article from Thaddeus and Maine are referred. Referenced articles in these review articles as well as articles referencing these review articles are also used. Due to limited published literature from Bhutan on use of maternal and child health care services, ample use of grey literatures like unpublished reports and strategy documents were made including personal observations and experiences wherever necessary (Refer Table 1).

Peer reviewed studies and multi-country surveys using both qualitative and quantitative methods conducted in the last fifteen years in South Asia (SA) particularly the WHO SEA region and published in English are included. This is because there has been rapid development and improvement in the maternal health care services since 2000 which reduces the relevance of data from 1990s.

Table 1- Search strategy

Search strategy & source	Objective 1	Objective 2	Objective 3	Objective 4
	Key words			
Peer reviewed <ul style="list-style-type: none"> • VU library • Pubmed • Google Scholar 	Determinant , influencing factors, barriers and facilitators, institutional delivery, child birth, utilization, cultural factors, socio-economic, accessibility, SEA, Bhutan	Influencing factors, institutional delivery, antenatal care, perception, attitude, home delivery, child birth, South Asia, SEA, Bhutan	Determinant, quality of care, maternal health, EmONC services, skilled birth attendant, South Asia, SEA, Bhutan	Maternal health, interventions, DSF, MWH, LMIC
Grey literatures <ul style="list-style-type: none"> • Google scholar • Institutional sites like MoH, NSB, GNHC, NCWC, WHO • Directly from concerned institution 				
Others <ul style="list-style-type: none"> • Bibliography of review articles 				

2.4 Limitation of the study

1. Limited published as well as grey literatures on utilization of delivery services and maternal health as a whole from Bhutan, therefore, most literatures are used from neighboring countries (SEA) and South Asia regions which may not give a true situation of Bhutan.
2. The literatures were limited to articles published in English language only, due to which more relevant literature from Myanmar and Thailand which are considered to be similar to Bhutan in terms of religion, culture and even topography might have been missed out

Chapter 3

3. Results/findings

Although similar factors affect the three delays for both preventive care seeking and emergency care seeking for childbirth, their relative importance differ which may affect one stage differently than the other. However, this study focuses on investigating the factors that determine the use of institutional delivery care while seeking preventive care rather than seeking emergency care.

3.1 Socio cultural factors

Socio cultural factors can mainly affect the first delay in making decision to seek delivery care and identifying and reaching the health facilities. In many cultural settings, a woman's desire and preference are not enough to make decision to deliver in a health facility but depends on her education, autonomy and family composition like her husband and mother-in-law, and traditional beliefs.

3.1.1 Women's age

Giving birth in a health facility is influenced by health care seeking behavior depending on women's age (Guliani et al., 2012)(Gabrysch & Campbell, 2009). A study conducted using Demographic & Health Survey (DHS) data for South Asia and Sub-Saharan Africa (SSA) demonstrated that compared to younger women, older women are more likely to have institutional delivery (Tey & Lai, 2013). This corroborates with the findings from studies in India and Bangladesh where younger age women had significantly negative association with the use of skilled delivery care (Chowdhury et al., 2007). However, in all MDG regions, women aged 35 and above are less likely to use facility delivery care than women aged 20-34, and in SEA both youngest and oldest women were found to use low skilled care delivery than women aged 20-29 (Stanton et al., 2007).

Similar result was revealed from Bhutan Multiple Indicator Survey where 65.1% women aged 20 – 34 had institutional delivery compared to 57.2% women aged below 20 and 54.9% above 34 (NSB Bhutan, 2010). The mean age of first pregnancy is 20.2 years in Bhutan (MoH Bhutan, 2012a), therefore, these primiparas women aged 20 -34 may be more likely to seek delivery care as they may fear delivery complication with no delivery experience. Additionally, younger women (adolescents) may not have household decision making power or might be stigmatized by health providers about her pregnancy as teenager (below the legal age for marriage -18 years) could be limiting them from accessing the delivery care services.

3.1.2 Women's education, status, and autonomy

Level of education, culture and legal policy/practices in a given society determine women's status and autonomy which motivates and shapes women's access to health services. Education has strong positive effect on utilization of health services which is attributed to increased decision making power, greater control over resources, open relationship and communication with husband, higher self confidence and ability of accessing health information (Gabrysch & Campbell, 2009)(Thaddeus & Maine, 1994).

As revealed in many studies done in SA countries, women with higher level of education have higher use of skilled attendance and deliver in health facility after controlling for confounders (Choulagai et al., 2013)(Agha & Carton, 2011)(Jat et al., 2011)(Yanagisawa et al., 2006). Cambodian women with at least seven years of schooling were six times more likely to give birth in a health care institution than those with no education (Yanagisawa et al., 2006). Similarly in Bhutan, women with no education are 1.8 times less likely to have institutional delivery compared to women having secondary or higher education (NSB Bhutan, 2010). In addition, the low female literacy rate (36.5%) in rural area (NSB Bhutan, 2012b) could be one of the factors associated with the high prevalence (33.7%) of home delivery in rural area (MoH Bhutan, 2012a). Educated and literate mothers have more knowledge and better access to information. They are more confident and modern having better communication with husband and health care providers which can facilitate them the delivery service use.

Women with higher education and employed generally have higher status and autonomy. They can make their own choice and decision for their health including free movement, control over finance and better communication with her husband. Women's autonomy has as much influence in using health care as other known determinants like education attributing to free movement and decision making power (Bloom et al., 2001). A study in Nepal found positive effect of women's position in household on the use of skilled maternal care although the effect is small. In particularly, better communication and discussion with the husband about family planning was reported to have positive influence in using both ANC and delivery care services (Furuta & Salway, 2010).

In Bhutan, although women are culturally considered inferior than men and have societal expected roles for both the genders, women are given equal rights of inheritance and have equal decision making power in general. Decisions are usually taken jointly between wife and husband for the household activities (NCWC Bhutan, 2008), and women have the autonomy to decide for her or communicate with the husband. In a Knowledge,

Attitude and Practice (KAP) survey on maternal and child care, about 75% of the respondents reported that woman herself can decide on the place of delivery, although some women who did not attend ANC cited "husband or in-law opposed" as one reason (MoH Bhutan, 2010). However, dominance by male over female in decision making and inheritance prevail in some districts where women are subjected under the control of husband's family. This is more prevalent in Lhotshampa and Sharchop ethnicities with more stringent gender norms (NCWC Bhutan, 2008).

3.1.3 Husband's education and role

Educated husbands are more open and place less constrain to their wives, and they are more aware of the benefits of availing delivery care and may be able to demand appropriate care (Gabrysch & Campbell, 2009). A study in Southern India revealed that those women whose husbands attained at least high school were 4 times more likely to receive antenatal care compared to women whose husbands were illiterate (Navaneetham & Dharmalingam, 2002). In Bhutan, the Maternal Death Review 2013 shows that only 8% of the maternal deaths occurred in women whose husbands had tertiary level education compared to those with primary (15%) and no education (23%) (MoH Bhutan, 2013). This indicates that husbands with higher education know and support the importance of timely availing of appropriate delivery care in preventing maternal deaths.

A husband plays a critical role in facilitating and persuading his wife in seeking delivery care by accompanying her or arranging transportation and financial resources to visit health facility (Bohren et al., 2014). In rural Bangladesh, a study investigating husbands' involvement in delivery care utilization revealed that besides emotional support husbands arranged resources for transportation and delivery fee for wives who delivered in health facility. Similarly, for those who delivered at home the husbands helped in arranging birth attendants from the village. In the same study, some husbands were not at all involved in any aspects of child delivery (Story et al., 2012). On the other hand, husbands may become barrier by controlling their wife to deliver at home due to financial constraints or he may act neutral placing the decision on other members of the family (Bohren et al., 2014).

In Bhutan, a KAP survey revealed that 65.3% of the mothers indicated that they are accompanied by husbands during delivery, arranging transportation and financial resources for consumables during delivery (MoH Bhutan, 2010). Similarly, the survey during RH review reported that 96% of the respondents affirmed that husbands share household chores and take care of other children when women are pregnant (MoH Bhutan, 2011b). However, according to National Health Survey 2012, 55.4% of the Bhutanese women

reported that their husbands expect them to ask permission for seeking health care (MoH Bhutan, 2012a) and this may pose a barrier to seeking institutional delivery care as well in some parts of the country. This is further confirmed with the findings from a KAP survey that 24.7% of deliveries accounted to husband's decision on the choice of delivery location (MoH Bhutan, 2010). Hence, couple-friendly prenatal services are important as it enhances the knowledge and attitude of husbands on the importance of skilled attendance at birth and extend more supportive care during childbirth (Mullany, 2006).

3.1.4 Family composition and others influences

Mother-in-law and other family members like mother or grandmother have greatest influence and decision making power than the parturient women in seeking facility-based delivery care (Bohren et al., 2014). In Vietnam, women living in extended family with parent in-law had to follow the decision of her mother in-law in opting the delivery location, foregoing her own and husband's preference (Duong et al., 2004). Similarly a qualitative study in Nepal also noted a strong influence by mother-in-law and family members in deciding the uptake of skilled delivery (Baral et al. 2010). Nevertheless, women who do not live with mother-in-law have better decision making power (Bloom et al., 2001). Besides, other family members and friends who have connection with skilled providers and living near health facility can also influence the decision of delivery location (Bohren et al., 2014). In Bhutan, although there is no such study done on the influence of family members, it is seen that elderly family members and women in the community can influence the place of delivery besides health workers through ANC.

Women having young children and living in nuclear family face challenges in arranging child care while they deliver in a health facility (Gabrysch & Campbell, 2009). In addition, women need companion to escort and attend them in the health facility where either husband or a family member has to accompany them. This further deters women from having facility based delivery as there wouldn't be anyone to take care of young children and other household chores and farming activities (Duong et al., 2004). However, living with extended family can ease women in leaving home besides influencing the decision making power (Gabrysch & Campbell, 2009). As observed personally, this holds true for Bhutanese women in rural settings as household chores are their main domain including farming activities which leaves them with no choice than to deliver at home. However, there is no literature on this for Bhutan.

3.1.5 Religion, ethnicity and traditional belief

There is strong presence of cultural beliefs and taboos, myths and traditional norms and values embedded in the Bhutanese society in both religion and all ethnicities (NCWC Bhutan, 2008) that impede population from accessing and receiving reproductive health care (MoH Bhutan, 2011b). Similar finding was noted in the literature review by Gabrysh and Campbell highlighting that “ethnicity and religion are often considered as markers of cultural background and are thought to influence beliefs, norms and values in relation to childbirth and service use and women's status” (Gabrysch & Campbell, 2009). In rural Nepal, Mesko et al reported that concealment of pregnancy in the early stage and maternal seclusion after birth until eleven days were cultural norms among women (Mesko et al., 2003). As observed personally, such cultural beliefs and practices exist in Bhutan where women are expected not to disclose their pregnancy for at least first one-two months so that pregnancy remains safe from miscarriage. Similarly, women wait for an auspicious day (**Zakar**) before going to health facility for delivery to be safe from ill luck, and this often delays in receiving care. Likewise, a KAP survey in Bhutan reported that bathing a newborn, feeding butter and water immediately after birth, expressing and discarding colostrums are some cultural practices in Bhutan. It also reported that 47% respondents had beliefs that evil spirits can affect the baby inside while over 13% believed that traditional healers and monks can treat pregnancy-related illnesses better than health workers (MoH Bhutan, 2010). However, cultural beliefs and practices towards pregnancy and childbirth are not studied extensively.

3.2 Perceived benefits/needs

This section describes the perception of women and her family that influences the utilization of skilled delivery care and its perceived benefits and needs for mother and newborn care.

3.2.1 Health information availability and knowledge

Women’s knowledge on safe delivery, benefits of skilled delivery, delivery risks and availability of delivery services can be influenced by having access to these information. Seeking preventive care for delivery is influenced by having knowledge on delivery risks and benefits of skilled delivery while knowing danger signs and complications would lead to seek emergency care (Gabrysch & Campbell, 2009). The common sources of information on maternal health services are through media like TV, radio and prints media, and also through health workers (Navaneetham & Dharmalingam, 2002)(MoH Bhutan, 2010). In a KAP survey in Bhutan, 81% respondents

reported of receiving information from health workers irrespective of area of residence (MoH Bhutan, 2010). In Nepal, lack of knowledge on importance of delivery care and related risk is identified as factor affecting the utilization of delivery care in women (Dhakal et al., 2011). Women who didn't know a single danger sign of pregnancy and childbirth is 1.3 times less likely to use skilled delivery care than women who knew at least one danger sign in Nepal (Choulagai et al., 2013).

In Bhutan, one third of the respondents did not know about any danger signs of pregnancy and childbirth (MoH Bhutan, 2010) and less than half of the women received information on danger signs of pregnancy through ANC (MoH Bhutan, 2012a). This suggests Bhutanese women are deprived of knowledge on their susceptibility during pregnancy and childbirth questioning the quality of ANC and the need to scale up awareness program over radio, TV and ORC. However, no literature was found for Bhutan about the influence of information and knowledge on use of delivery services.

3.2.2 Parity/Birth Order

Various literatures have revealed that parity is an important predictor for child delivery in health care institution where women with high parity are less likely to have facility-based delivery than women with low parity (Tey & Lai, 2013)(Gabrysch & Campbell, 2009)(Guliani et al., 2012). In southern India, women with first birth are 30 to 60 percent more likely to deliver their babies in health facility than the women with two or more birth orders (Navaneetham & Dharmalingam, 2002). Similar findings were reported in a study in Pakistan where most women with first birth used health facilities and SBA for childbirth while only 28% of women with more than fifth births used skilled birth services (Agha & Carton, 2011). Low use of facility based delivery services by women with multiple parity is associated with the accumulated childbirth experiences and high confidence of normal delivery (Duong et al., 2004). This could be also due to constraints of time and resources faced by family with larger number of children (Navaneetham & Dharmalingam, 2002). Besides, perception of childbirth as normal process is linked to high prevalence of home-based delivery particularly for women who have already given birth (Duong et al., 2004).

Data on parity and utilization of delivery care could not be found for Bhutan, however, as seen personally in rural communities women having more than one child opt for home delivery because of having had normal previous deliveries and not perceiving risk in the consequent deliveries, coupled with the challenge of taking care of other children.

3.2.3 ANC visits and birth preparedness

ANC offers an important opportunity for pregnant women to interact with healthcare providers and familiarize with the health facility. It is also an occasion for health workers to educate them about planning for safe birth, inform women about the benefits of skilled delivery care, and educate them about risk of complications and emergencies during delivery to enable them to recognize early signs to seek care (Villar & Bergsjö, 2002). Women who have more ANC attendance are, therefore, considered to be more likely to receive skilled care during childbirth (Gabrysch & Campbell, 2009). A study in Cambodia described ANC attendance as a significant determinant of institutional delivery when the attendance was four times or more (Yanagisawa et al., 2006). Similarly in Nepal, after adjusting predisposing and enabling factors, women who had more than four antenatal care attendance were five times more likely to have institutional delivery than those who didn't have any ANC visit (Karkee et al., 2014).

In Bhutan, the uptake of ANC has increased substantially to 97.9% for at least one visit and 81.7% for four or more visits. Similarly, coverage of institutional delivery increased to 74.6% at the country level (MoH Bhutan, 2012a). This suggests that increased ANC attendance coverage could have possibly attributed to increased skilled births. Although increased use of ANC services is associated with likelihood of using skilled care during delivery, yet many women having ANC attendance do not use skilled care for delivery, reflecting missed opportunity to encourage women for institutional delivery (Stanton et al., 2007). This could suggest poor quality of ANC care in Bhutan as evident where more than half of the women were not provided information on the danger signs of pregnancy and childbirth (MoH Bhutan, 2012a) while one third of the respondents did not know the danger signs (MoH Bhutan, 2010). Nevertheless, increased ANC coverage could be attributed by outreach/mobile clinic reaching the services to women unlike delivery services which possibly demonstrates the difficulties women can experience in accessing delivery care.

One of the tasks during ANC visit is to educate women on planning for safe delivery and encouraging them to make a birth plan (Villar & Bergsjö, 2002) which helps women and family to plan for normal delivery as well as for emergencies during delivery through recognizing danger signs of pregnancy, advance arrangement of transportation and securing money for delivery (Hossain & Ross, 2006). In Kaski district in Nepal, a prospective study of pregnant women revealed that arrangement for birth preparation activities had high impact on the location for childbirth (Karkee et al., 2013) which is consistent with the findings in Bangladesh (Hossain & Ross, 2006). Another study using Nepal Demographic & Health Survey also demonstrated that

compared with women who had no birth preparation, preparing for at least two or more of the preparation activities tripled the likelihood of delivering in health facility (Karkee et al., 2014). In contrary, two pre and post studies to evaluate effectiveness of birth preparedness program in southern districts of Nepal did not find significant association between the increased preparedness level and increased facility delivery. This could be due to unrealistic and unmatched BPP messages with the availability of services, as well as low coverage of this intervention (McPherson et al., 2006). This could be the situation in Bhutan as well.

In Bhutan, although birth preparedness plan is an important focus of ANC package particularly for mothers who are hesitant to deliver in facility, it is not sufficiently promoted by health workers (MoH Bhutan, 2011b). A very low proportion of women (8.7%) reported to have planned for birth as revealed in a KAP survey (MoH Bhutan, 2010). While it is commendable that few midwives work closely with mothers in having an agreement and developing birth plan, many do not advocate its importance and encourage mothers to develop it., They are more concerned about the number of ANC visits than its important activities, although all health facilities use ANC guideline (MoH Bhutan, 2011b). The reasons are not known, however, it indicates the importance of monitoring and supervision to health facility.

3.2.4 Perception of facility delivery and previous birth experiences

Need factors like perceiving a condition severe or susceptible to illness is fundamental to seeking health care as per the Anderson's behavior model (Andersen, 1995). During pregnancy, woman and her family need to be aware that pregnancy and childbirth is an unpredictable event where life threatening complications may arise anytime (Thaddeus & Maine, 1994). In his literature review, Baral et al notes that pregnancy and child delivery is perceived as normal and natural event for women in Nepal and not necessary to seek delivery care (Baral et al., 2010), consistent with another study finding in Nepal (McPherson et al., 2006). A qualitative study in Indonesia reported that women and their family perceived that facility delivery and use of skilled attendant are required only for those who experience obstetric complications (Titaley et al., 2010). Women feared "undesirable birthing practices" like "unfamiliar position" and "unnecessary vaginal examination" while delivering in a health facility which is "uncomfortable and dehumanizing" (Bohren et al., 2014).

Similarly in Bhutan, KAP survey revealed that 16% of women perceived home delivery more convenient than delivering in a health facility due to household chores and responsibilities, no companion and relative around health facilities, and uncomfortable birthing practices. Women also consider delivery as easy and simple task which need no special care as they lack

awareness on delivery complications (MoH Bhutan, 2010). This reflects the importance of acceptability by women and also implies the essence of informing and motivating them and their families about the need of using skilled delivery care thereby improving perception of household on susceptibility of mother and child to life threatening situation during delivery.

3.2.5 Complication

Evidence from various literatures showed that complication in the previous delivery, adverse pregnancy outcome like stillbirth or loss of baby and caesarian section influence women and their families to seek for skilled care, as such experiences create awareness about the risk and benefit of institutional delivery (Paul & Rumsey, 2002)(Bohren et al., 2014)(Gabrysch & Campbell, 2009). In China, compared to women whose pregnancy resulted into still birth, women with live birth in previous delivery were three times less likely to seek institutional delivery care (Short & Zhang, 2004).

Complication during the attempted home delivery can also lead to seeking skilled care (Gabrysch & Campbell, 2009). In Cambodia, a population based survey revealed prolonged labor as a strong determinant as women who experienced prolonged labor were 6.5 times more likely to opt for institutional delivery than those who didn't (Yanagisawa et al., 2006). Facility delivery is viewed as last resort for emergencies and complication only, leading to low usage of SBA in Nepal (Karkee et al., 2013). Conversely, despite going through delivery complication some women/families in Nepal do not seek any facility delivery care due to issues of distance and transportation, and sometimes inability to recognize it as major problem (Dhakal et al., 2011). In Bhutan, it is often experienced that women do not seek delivery care until they develop complications (MoH Bhutan, 2012b) owing to lack of awareness about delivery complication, perceived long distance and no transportation including lack of proper delivery facility and in-patient diet (MoH Bhutan, 2010).

3.2.6 Perceived quality of care

Decision of location of delivery is also influenced by perception of quality of care from health care provider and health facility (Bohren et al., 2014). Many studies show that attitude, behavior and competence of health care providers feature prominently as major characteristics of perceived quality of care influencing the use of institutional delivery services (Gabrysch & Campbell, 2009) (Bohren et al., 2014). In qualitative studies undertaken in Bangladesh and Cambodia, rural women described health workers to have low competence of skills, impolite and arrogant with unfriendly and bossy attitude, and no emotional support. Furthermore, not attending or late response to poor, less care after delivery, absence of health staff, lack of

privacy and female health care provider, fear of referral to hospitals with poor quality care associated with high cost and inconvenience were other aspects of poor quality care perceived by women (Afsana & Rashid, 2001)(Matsuoka et al., 2010). Similarly, a study in Nepal reported poorly trained SBAs with incompetent skills and unwilling attitude to attend births at home contributed to low use of SBA (Karkee et al., 2013).

During RH review, key informants expressed that mothers perceive health facility not “mother friendly” for childbirth due to lack of space with no cooking facilities for family members (MoH Bhutan, 2011b). Of those Bhutanese aged 10-75 who visited health facility in the last one year, the NHS 2012 revealed that 92.1% indicated to be either very satisfied or satisfied with the services (MoH Bhutan, 2012a), which is consistent with the finding from GNH survey 2010 (GNH Bhutan, 2010). However, this could be due to biases like showing gratefulness through the interviewer to the government, especially when services are provided free. Among the dissatisfied, while “waiting time too long” is common reason in hospital, “frequent stock-out of drugs” and “incompetent/no faith in staff” were for BHU-II (MoH Bhutan, 2012a). However, there is no research or information available related to clients’ perception on barriers to availing maternal care including quality of care.

3.3 Economic accessibility

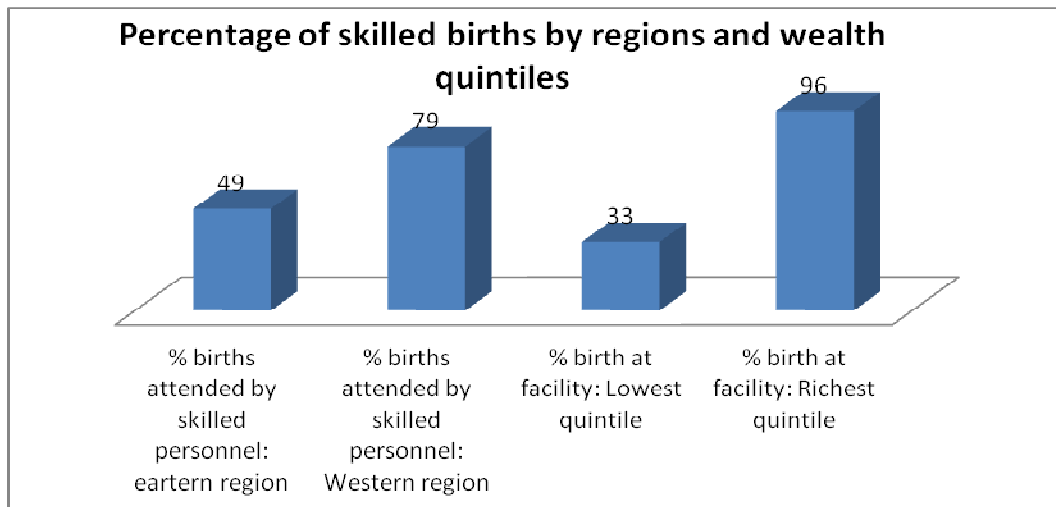
Economic accessibility refers to the capacity of women and their families to bear the expenses that may be incurred in availing institutional delivery.

3.3.1 Socio-economic status

Many studies show that wealth and use of maternal health care are significantly associated throughout the wealth hierarchy (Say & Raine, 2007)(Kunst & Houweling, 2001). In Afghanistan, the strength of association between wealth and use of skilled birth attendant increased with each wealth quintile, where women in lowest wealth quintile had lowest odds than women in the next higher quintiles after controlling other confounding factors (Mayhew et al., 2008). This finding corroborates with the results of a study in India where economic status was measured either by living standard or household assets (Navaneetham & Dharmalingam, 2002) and another study using DHS data from Asia, SSA and Latin America (Guliani et al., 2012). Similarly, a study in Bangladesh noted that women in highest wealth quintile were 2.5 times more likely to use SBA compared to women in the lowest quintile when other determinants were controlled (Anwar et al., 2008).

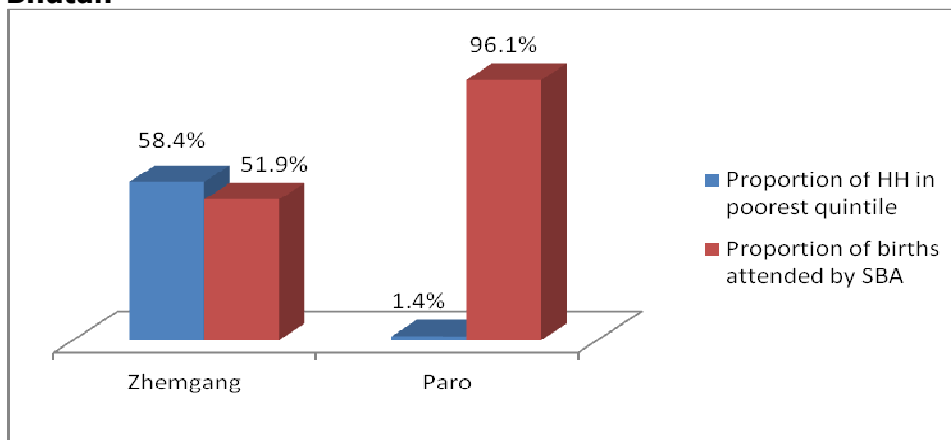
Likewise in Bhutan, association between socio-economic status and health care access is confirmed by the existing data. Wide variations of use of skilled delivery care between regions and wealth quintiles are reported in a population based survey (NSB Bhutan, 2010) shown in Figure 6. Similarly, such variations are noted in districts as well. For instance, Zhemgang district with lowest institutional/skilled delivery (51.9%) has the largest proportion (58.4%) of households in the poorest quintile while Paro has highest proportions of skilled delivery (96.1%) with a very low proportion (1.4%) of household in poorest quintile (MoH Bhutan, 2012a) (see Figure 7).

Figure 6: Skilled delivery care according to regions and wealth quintile in Bhutan



Source: (NSB Bhutan, 2010)

Figure 7: Proportion of skilled births between poorest and richest districts in Bhutan



Source: (MoH Bhutan, 2012a)

3.3.2 Mother's and husband's occupation

Working women earn money and are generally able to decide to spend on delivery care. However, not all women work for earning and have control over their earnings, and in many settings working might be poverty induced where earnings cannot be used for delivery care services (Gabrysch & Campbell, 2009). Tey and Lai argued that influence of mother's occupation on the choice of delivery is mixed as their study demonstrated different findings for different regions. While there is little effect of mother's employment in both regions combined, the effect was significantly negative in Asian region and significantly positive in Sub-Saharan Africa. For both working and non-working women, the odds of using delivery care were same in India, Pakistan and Bangladesh (Tey & Lai, 2013).

In Bhutan, maternal death review report 2013 showed that only 15% of maternal deaths occurred in women who were working as civil servants where 62% deaths occurred in women who were farmers and housewife (MoH Bhutan, 2013). This may reflect women's occupation attributed by higher level of education with better knowledge on pregnancy care and more autonomy with control of their earning in seeking delivery care.

Similarly, husband's occupation also influences the utilization of skilled care for childbirth. In Bangladesh, a study using DHS data revealed that women whose husbands are formally employed holding professional or managerial posts were most likely (45%) to avail care from skilled professionals for delivery complication (Chowdhury et al., 2007). For Bhutan, there is no study done to explore the women's or husband's occupation and use of delivery care. However, the proportion of maternal deaths whose husbands are farmers (23%) and civil servants (23%) do not differ which could be due to unavailable data about husband's occupation, as large proportion of deaths are reported in this category (MoH Bhutan, 2013).

3.3.3 Cost/ Ability to pay

Financial difficulty to pay for the costs incurred while seeking delivery care is one of the major constraints in Vietnam that deterred women from having institutional delivery as cost of delivering at home is considerably lower (Duong et al., 2004). Similarly, studies in Bangladesh and Nepal also showed cost as a major constraint for institutional delivery (Afsana & Rashid, 2001)(Shrestha et al., 2012).The costs include medicines and supplies, fee for delivery and health care providers (formal and informal), indirect costs, and opportunity cost due to absence from work and domestic responsibilities for parturient women, companion and care taker of their children (Thaddeus

& Maine, 1994)(Bohren et al., 2014). A household survey in Nepal indicated that more than the normal delivery fee, the associated costs for transportation, miscellaneous/food and opportunity costs have the catastrophic financial implication to the rural family (Borghi et al., 2006).

Although Bhutanese can avail free health services in Bhutan, there are indirect costs associated mainly in transportation and purchase of certain drugs where maximum cost is incurred in transportation (MoH Bhutan, 2012a). Rural households spend 3 times higher in transportation for health care than urban (MoH Bhutan, 2012a) depicting the financial implication for the rural poor in accessing health care as transportation cost is high in many rural districts due to its scarcity. Similarly, the focused group discussions during RH review pointed out that cost in procuring the prescribed utility items like baby blankets, diapers and other consumables deters women and their family to deliver in a facility (MoH Bhutan, 2011b). Besides this, there is opportunity cost associated in delivering in health facility for having to leave home and the need for companion as reported by key informants in a KAP survey (MoH Bhutan, 2010).

3.4 Physical Accessibility

Physical accessibility is related to distance to health facility and transportation. While it directly affects second delay for preventive care as well as when faced with pregnancy complications in an attempted home delivery, it also affects the first delay indirectly. Place of residence is also discussed under this as it is related to proximity to health facility including better transportation.

3.4.1 Proximity/Distance to health facilities

A woman's place of delivery is highly influenced by geographical distance to a health facility for both urban and rural women where health facility is not available in the community and need to travel a long distance coupled with limited transportation options (Bohren et al., 2014). It can deter women in taking decision to seek for institutional delivery care, in addition to delay in actually reaching the facility, especially when in labor at night with no means of transportation (Thaddeus & Maine, 1994). This may create dependency for women on home delivery as they perceive distance to health facility as too far during labor (Bohren et al., 2014). In Indonesia, rural women opt to delivery at home using traditional birth attendant as they are challenged in accessing institutional delivery care due to long distance (Titaley et al., 2010). Studies in Bangladesh and Nepal indicated statistically positive influence of health facility located within 5 km and 1 km respectively in the community on the use of skilled delivery care by rural women (Anwar et al., 2008)(Hotchkiss, 2001).

In Bhutan, a larger proportion (83%) of urban population lives within half an hour to the nearest facility while only 25% of rural households live within half an hour distance. Similarly, proportion of rural population living with a distance of more than 3 hours is six times higher than the urban households (MoH Bhutan, 2012a). This may demonstrate issues of distance to accessing skilled delivery care in rural communities as most home delivery (33.7%) took place in rural setting than in urban (4.3%) (MoH Bhutan, 2012a). Many women die in postpartum period (MoH Bhutan, 2013) as they fail to attend postnatal care due to long distance to health facility waiting until six weeks for child immunization (MoH Bhutan, 2006). Similarly, geographical constraint was also noted in focus group discussion during RH review as one reason to opt for home delivery in Bhutan (MoH Bhutan, 2011b). However, no study was done to explore association between distance to health facility and utilization of delivery care services in Bhutan.

3.4.2 Transportation

The challenge of too long distance to health facility is much higher when combined with poor roads and lack of adequate transportation playing a crucial role in the decision to deliver in a health facility and whether or not women can reach the facility on time (Thaddeus & Maine, 1994)(Bohren et al., 2014). In such situation, women in rural and mountainous area are faced with difficult mode of transportation. A cross sectional study in Nepal reported inadequate transportation and long distance as major constraints in the utilization of skilled care services where almost half of the women (46%) did not use delivery care services due to too far distance and 21% due to lack of transportation to health facility (Choulagai et al., 2013). This finding is congruent with the studies in Afghanistan and Cambodia where motorized transportation, adequate transportation, and better road condition positively influenced the utilization of skilled delivery care services (Mayhew et al., 2008)(Matsuoka et al., 2010).

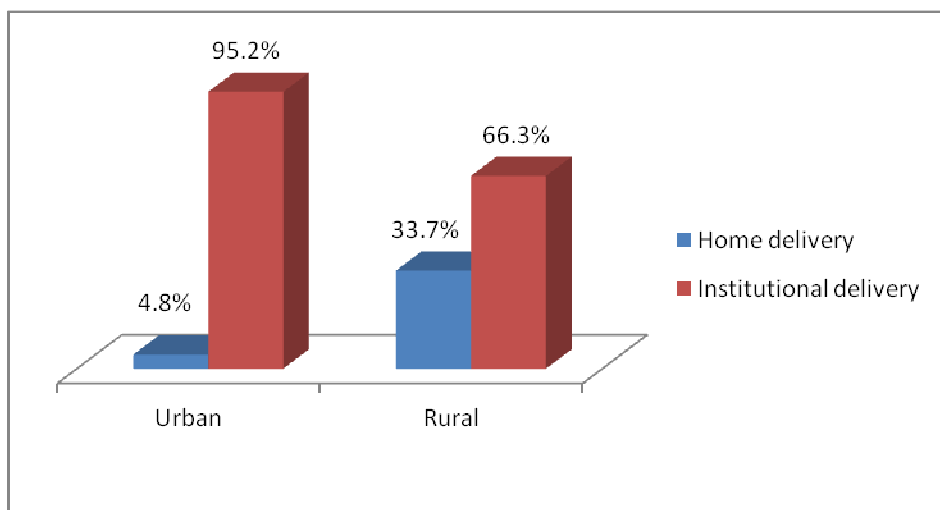
In Bhutan, although the road connectivity including highway, feeder road and farm road has improved (GNHC Bhutan, 2013b), there is wide variation in walking distance to the nearest health facilities. 39% of households in rural area have more than one hour of walking distance to health facilities while only 1.4% household in urban area have more than an hour walking distance (MoH Bhutan, 2012a). A majority of the rural population (66%) still walk to get to the nearest health facility (MoH Bhutan, 2012a) due to lack of transportation or poor road condition. Data from a facility survey during RH review showed that 74% of the women accessing RH care came by foot (MoH Bhutan, 2011b). Besides, referral facilities are completely cut off from some areas due to heavy snow in winter and landslides in rainy season, delaying the referral and emergency care (MoH Bhutan, 2012b). As

experienced, in cases with sudden labor pain at night, people often wait till morning as transporting the woman to road point is a challenging task.

3.4.3 Place of residence- urban/rural

The utilization of SBA for childbirth also varies by place of residence. Various systematic reviews and analytical studies conducted on utilization of facility delivery care in low and middle income countries (LMIC) identified disparities in utilizing skilled delivery services between women living in urban area and those residing in rural area (Say & Raine, 2007)(Tey & Lai, 2013)(Guliani et al., 2012). The gap between rural and urban setting is more prominent in the Asian region (Guliani et al., 2012). Similar finding was made in a study in India where women residing in urban setting had greater utilization of health facility for deliver compared to women from rural area. However, for use of ANC services there was no significant difference between urban and rural women (Navaneetham & Dharmalingam, 2002). Likewise in Bhutan, while there is marked variation in the use of health facility for childbirth between urban and rural women as shown in Figure 8, the NHS 2012 noted a very small difference of receiving ANC services (see Table 2) between them (MoH Bhutan, 2012a). This may be because ANC services are provided through ORC and mobile clinic reaching the communities in rural areas. Similarly, findings from Bhutan Multiple Indicator Survey (BMIS) showed a substantial difference in uptake of institutional delivery between eastern and western regions (NSB Bhutan, 2010).

Figure 8: Place of delivery by place of residence in Bhutan



Source: (MoH Bhutan, 2012a)

Table 2: Frequency of ANC visits by place of residence in Bhutan

Urban -rural	No. of ANC visits			
	1-3 times	4-7 times	>8 times	Not reported
Total	16.0	55.4	26.1	2.5
Urban	11.3	57.4	30.0	1.3
Rural	17.7	54.7	24.7	2.9

Source: (MoH Bhutan, 2012a)

3.5 Quality of preventive care

As universally known, quality of care is one of the important factors in utilization of maternal health care services. However, it is documented that maternal health services in many countries are of poor quality (Koblinsky et al., 2006). Having health facilities located conveniently do not ensure its utilization if their service quality is considered low (Gabrysch & Campbel, 2009).

3.5.1 Health provider's attitude

Those facilities with positive attitude and behavior of health workers made women feel more comfortable in seeking delivery care. However, commonly health facilities are viewed having health workers with poor attitude, discouraging women to opt health facility over home for childbirth (Bohren et al., 2014). In Vietnam, while health workers' positive interpersonal communication skills with patients/women and their conduct of providing care were highly valued, there were cases reporting rude and bossy behavior of health workers deterring women from choosing for institutional delivery (Duong et al., 2004).

In a qualitative study in Cambodia, Ith et al reported that poor women experienced disrespect and physical abuse from providers during childbirth. Many women delivered in private health facility despite the high cost of care as they received safer and supportive care with friendly attitude during delivery (Ith et al., 2013). Geographical and financial barrier wouldn't matter if women receive care with positive attitude (Bowser & Hill, 2010) and can travel further if they have more choice of facilities (Thaddeus & Maine, 1994).

In Bhutan, among the dissatisfied patients with the health services provided, one of the reasons reported was unfriendly staff attitude in hospitals and BHU-I (MoH Bhutan, 2012a), but no study was conducted to assess the staff attitude and its impact in delivery care utilization. However, from personal experience and observation it is apparent that such rude and disrespectful behavior exists during delivery which could be due to heavy workload especially in hospitals, resulting from absence of gate keeping mechanism combined with lack of monitoring and supervision. This is aggravated by uneven distribution and shortage of midwives and doctors as the country has low density of skilled health professionals (14.6) per 10,000 populations (MoH Bhutan, 2014) which is lower than the WHO recommended minimum requirement.

3.5.2 Availability of services, staff and equipments

Besides health worker's attitude, quality of health care services is determined by the availability of services manned by skilled care provider with adequate supplies and equipment including patient friendly environment. This includes availability of all services related to pregnancy and delivery, skilled staff, equipments, drugs, logistic facilities like waiting room and food.

High quality care received during delivery makes women more confident to avail the services in the subsequent childbirth. Women regard it as providing efficacious and respectful care (Bohren et al., 2014). In Vietnam, while the health worker's attitude was applauded, many women reported of lack of medical equipments and poor technical competence of health workers, leaving them skeptical of delivering at the Commune Health Center (CHC) (Duong et al., 2004). A literature review points out that another prominent reason of low utilization of delivery care services in Nepal, is poor quality care due to lack of skilled staff, unavailability of equipment and drugs, and poor referral system (Baral et al., 2010). In Bhutan, shortage of midwives/doctors and EmOC trained HWs and their retention in rural area is a big challenge (MoH Bhutan, 2006). There is an uneven distribution of health workers and health facilities between urban and rural areas, where 75% of the health workforce and all secondary and tertiary health facilities are concentrated in urban areas (MoH Bhutan, 2014), possibly causing variation in utilization of delivery care services among districts and regions.

Furthermore, patient friendly environment and facilities can also play an equally important role for women to decide to deliver in health facility. In Cambodia, women were hesitant to deliver in health facility as they were not allowed to take rest after delivery since the facility did not have attached inpatient waiting room (Matsuoka et al., 2010). A survey in Bhutan revealed that a high proportion of respondents (84%) in rural area said that they

would go to health facility if it has facilities like waiting room, lodging, kitchen or food availability (MoH Bhutan, 2010). Similarly, during RH review, the health care providers and clients reported lack of space and cooking facilities for not opting institutional delivery (MoH Bhutan, 2011b). Many BHUs do not have these services (MoH Bhutan, 2006) but are available in district hospitals, yet they are too far to reach with no option but to resort to home delivery. However, many women who intend and afford to deliver in a hospital bypass BHUs as they perceive district or referral hospitals having better quality services with competent health workforce and better equipments than in BHUs (MoH Bhutan, 2012b) contributing to low (11%) utilization of BHUs for childbirth (MoH Bhutan, 2012a).

Titaley et al reports limited availability of health care providers due to their frequent travel out of the village, when there is only one health worker, encouraged women for home delivery with assistant from TBA in Indonesia (Titaley et al., 2010). In Bhutan as well, continuous staffing of BHUs with midwives is a challenge as they are constantly in move for training and outreach work which is aggravated by shortage of midwives/nurses (MoH Bhutan, 2012b). In addition, need for female health worker to increase institutional delivery coverage was apparent as 90% of the respondents mentioned the need of female health workers (MoH Bhutan, 2010). It was found out that 8% of the health facility surveyed during RH review did not have female health workers while 52% had only one (MoH Bhutan, 2011b).

3.6 Quality of emergency care

Besides demand side barriers, the low utilization of institutional delivery services by women in rural/poor settings may reflect supply-side barriers like scarcity of facilities and skilled health providers including poor obstetric care services (Guliani et al., 2012). As evident from literatures, women experiencing pregnancy and delivery complications including adverse birth outcome mostly seek delivery care. Therefore, equipping health facilities with emergency obstetric care services and health workforce is vital, more so, when government is promoting for 100% institutional delivery to avert adverse health outcome for mothers and newborn. In Bhutan, inadequate access to emergency obstetric care is one of the challenges in providing life saving services to pregnant women and newborn (MoH Bhutan, 2013). Although the existing 7 CEmONC in the country meets WHO's minimum requirement of CEmONC for every 500,000 population, it cannot adequately cater to all high risk pregnant mothers owing to difficult geographical terrain and scattered populations. This reflects the need to expand few more (2-3) CEmONC in districts which are too far to be catered by the existing CEmONC.

In addition, there are challenges of maintaining quality of emergency obstetric services at all levels due to various reasons. This is confirmed by data from maternal death review 2013 where maximum (54%) deaths occurred in health facility compared to 31% at home and 15% en route, and most deaths (46%) were caused by post partum hemorrhage. The facility survey during RH review found out that, BHUs could perform only 3 basic signal functions at its best i.e (1) management of PPH with IV resuscitation and uterotonics, (ii) management of sepsis with antibiotics, (iii) neonatal resuscitation. Similarly not all hospitals could perform all six functions of BEmONC. Very few health facilities could carry out some basic signal function like removal of placenta due to low number of women using rural health facilities hampering in retaining the obstetric skills of staff. As high as 29% of facilities did not use partogram properly (as per Safe Motherhood protocol) and only very few facilities (32%) used parenteral MgSO₄ or performed manual removal of placenta. In addition, although a majority of health institutions were well equipped, modality of using vacuum extraction for vaginal assisted delivery was underutilized in BHUs and hospitals owing to obsolete and inefficient extraction equipment (MoH Bhutan, 2011b).

Furthermore, the additional two functions of Comprehensive EmONC i.e caesarean section (CS) and blood transfusion were available only in referral hospitals and to limited extent in other four district hospitals identified as CEmONC centers. Only 49% of the facility surveyed had an arrangement for blood transfusion (MoH Bhutan, 2011b). CS was done only in 10 district hospitals and mainly in the referral hospitals in 2009 (MoH Bhutan, 2009). CS rate has increased 7.2% of all births in 2004 to 12.4% in 2012 and it is reported to increase with wealth (7.3% and 20.4% in poorest and richest quintiles respectively) and education (NSB Bhutan, 2010). This could suggest that CS is influenced by access and not by need and standard protocol. Besides, there are challenges of frequent turnover of CEmONC trained doctors or health workers leading to non-functioning of already established CEmONC units in many hospitals (MoH Bhutan, 2013).

Chapter 4

4. Evidence based interventions to increase utilization of institutional delivery services

This chapter discusses evidence on interventions which are known to improve maternal and child health outcomes through increased use of SBA as practiced in other LMICs. However, not all countries experienced positive outcome due to various local challenges which Bhutan can learn from and adapt with. These are chosen based on the strength of evidence showing promising or effective impact in the use of maternal health care and thought to be viable in Bhutan. These interventions are only those ones which are not currently initiated in Bhutan, as other interventions like increasing SBA and female midwife, in-service training programs (midwifery & EmOC), upgrading and strengthening of EmOC services, maternal deaths auditing are already ongoing presently.

4.1 Maternity waiting home (MWH)

Maternity waiting home is a place located near a health facility where parturient women from remote area can stay awaiting labor for easy access to skilled birth attendant and emergency obstetric care from the health facility (Wild et al., 2012)(WHO, 2004). MWH has gained its increasing popularity as a strategy of safe motherhood program in many developing countries supported by UN agencies and donors, mainly in Asia and Sub-Saharan Africa (Wild et al., 2012) although it has various challenges.

A systematic review to assess the effect of MWH reported that in Zimbabwe 97% women attended ANC at least once in their last pregnancy and 66% had facility delivery. The likelihood of hospital delivery was increased by nearly six-folds with the use of MWH. However, complains like too crowded, shortage of water and firewood were raised (Van Lonkhuijzen et al., 2009). In Malawi, satisfaction of using MWH was shown by 55% of the women who used it and agreed that it facilitates easy access to SBA for delivery, ANC services, better companionship with midwives/nurses and familiarization of delivery facilities. However, challenges like poor attitude and supervision by midwives during delivery was noted (Van Lonkhuijzen et al., 2009) which could be due to increase in workload. Similarly, Cuba has a long history of introduction of MWH since 1962 to improve maternal and childbirth care. Since then, proportion of institutional delivery and maternal deaths due to hemorrhage drastically improved from 63% to 99% and 32 per 100,000 live births to 2 per 100,000 live births respectively by 1984 (Cardoso, 1986).

In Lao PDR, an assessment was conducted for introducing MWH targeting minority ethnic women from remote rural community which was welcomed

by women and their families. However, they expressed the need for cultural adaptation like birthing position, smoking of baby and mother, provision to bring in family member and respect from health providers (Eckermann & Deodato, 2008). In Timor Leste, MWH was introduced in two remote districts but it didn't show improvement in accessing facility delivery care by women residing far away (Wild et al., 2012). It was mostly used by women living within 5Km than by women in remote area (Wild, 2009). This indicates that women in the remote area might be still facing socio-cultural and economic barriers, constraints with distance and transportation, and the opportunity cost while waiting.

4.2 Demand side financing (DSF) and in-kind incentives

Demand side financing is a scheme targeted to improve access and utilization of "under-used services among the needy and under-served population" by providing financial support directly to the recipient (Gupta et al., 2010). DSF is expected to overcome financial barrier in using the services including transportation and other in-direct costs (Gupta et al., 2010) for low-income and high-risk individuals (Bellows et al. 2011). A systematic review on effects of DSF reported DSF schemes can increase the utilization of maternal care, however, supply side conditions and challenges of implementation should be taken care (Murray et al., 2014).

In Bangladesh, vouchers covering free ANC, delivery care including obstetric complication and PNC services are distributed to pregnant women. Women also receive cash for routine and emergency transportation costs, a gift box and also financial incentives for delivering in the health facility (Nguyen et al., 2012). It was reported that in the intervention group, delivery using SBA increased by 100% relative to the comparison group and the institutional delivery increased by two-folds. This scheme also had greater effect for the poor quintile group for most outcomes than other population. However, operational challenges like delay in fund disbursement, enforcing criteria of poverty and parity, and assuring quality of care like long waiting line and poor provider attitude were encountered (Nguyen et al., 2012).

Likewise, Nepal introduced Safe Delivery Incentive Program (SDIP) nationwide to increase the utilization of skilled delivery care by providing cash incentives to women who deliver in health facilities and also to health care providers for attending delivery either at home or facility. The cash incentive covered cost of transportation also while the maternity services were provided free for all child births (Powell-Jackson et al., 2009). However, minimal improvement was noted in the uptake of skilled delivery care (home delivery reduced by 4.2%, facility delivery and skilled attendance increased by 2.6% and 2.3% respectively) (Jehan et al., 2012). This could be due to low awareness and operational challenges of the

scheme. SDIP policy was disseminated well only in those places with women's groups showing substantial improvement compared to areas with no women's groups. Other challenges were bureaucratic delay in disbursement of fund, complex program design and difficulty disseminating to implementers. Besides, inequality in the use of this scheme between wealthier and poor groups was also seen (Powell-Jackson et al., 2009).

4.3 Community participation and awareness

Community mobilization is "a capacity-building process through which community individuals, groups, or organizations plan, carry out, and evaluate activities on a participatory and sustained basis to improve their health and other needs, either on their own initiative or stimulated by others" (Howard-Grabman & Snetro, 2003). Many countries have embraced this strategy in bringing improvements in mother's and child's health through promoting community participation and empowerment (Rosato et al., 2008).

In Nepal, community participation using women's group proved to be effective and successful in improving health of mother and child (Rosato et al., 2008). A cluster-randomized controlled trial (cRCT) of this intervention in reducing neonatal mortality was undertaken in Makwanpur district, a rural mountainous area using women facilitators locally recruited who worked with women's group in the hospital ward and communities (Manandhar et al., 2004). The woman facilitators were trained, provided with manual and supervised during group meeting conducted monthly where various issues like pregnancy, child birth and care practices including beliefs in the communities were discussed through participatory learning. Accordingly they developed, implemented and assessed their strategies in consultation with local leaders, men and health workers. Community based fund raising for mother and infants care, development and distribution of delivery kit, visiting newly pregnant women, and awareness through documentary leading to its discussion among them, were some of the strategies the group came up with (Morrison et al., 2005). The cRCT result showed that neonatal mortality rate was 26.2 per 1000 live births in intervention cluster while 36.9 per 100,000 live births in controls. Similarly, maternal mortality ratio was 69 per 100,000 live births in intervention cluster and 341 per 100,000 live births in controls (Manandhar et al., 2004).

This intervention brought in better birth outcomes in poor population which was cost-effective and potentially sustainable. Involvement of local person in facilitating women's group was locally acceptable and sustainable, which also led to interaction outside the group, increasing awareness. The group could identify their own problem and needs, and developed strategies accordingly. However, engaging the beneficiaries i.e women and enabling them to adopt

health seeking behavior, lack of facilitators' confidence and ability to manage chaos and respond to unpredictable situation in the group were some of the challenges encountered (Manandhar et al., 2004).

Similar community participation intervention with involvement of women's group was implemented in poor rural population to improve maternal and newborn health outcome in Maharashtra, India (Rosato et al., 2008). Cluster RCT of this intervention conducted for three years demonstrated 32% reduction in neonatal mortality rate in the intervention cluster. It also helped in improving early care seeking behavior addressing first delay, delivery hygiene and care practices reducing maternal mortality from 682 to 522 per 100,000 live births (Tripathy et al., 2010).

Chapter 5

5. Discussion

In this chapter, the findings and identified interventions will be discussed, based upon the objectives of this study.

Socio-cultural factors like maternal age, parity/birth order, education, status and autonomy of mother, traditional and cultural beliefs consistently appeared in determining the location of childbirth. Among all, mother's education featured prominently in positively and incrementally influencing the use of skilled delivery services as they have more access to information and are modern with better communication with husband and health workers. This implies the importance of educating women. Although female literacy rate is picking up in Bhutan (NSB Bhutan, 2012b), it is still low in rural area which could have contributed to low use of delivery care.

Like in many South Asian countries, younger aged and oldest aged (>35) mothers, and women with higher parity are less likely to seek skilled delivery care in Bhutan. Similarly, cultural beliefs and practices towards pregnancy are prevalent that delay and hinder the uptake of delivery services. Exploring and identifying these cultural practices to recognize and build on the good practices and correct harmful practices would be vital. To mitigate these issues, government can harness the existing VHWs to improve community participation through establishing and working with women's group in the community, adapting the best practices from Nepal and India. Having knowledge and right understanding of community practices and being already involved in health promotion and preventive care in the community, VHWs can be affluent facilitators for the group. Issues relating to risk of pregnancy and delivery, child care, traditional beliefs and practices, and social support can be discussed with women's group through constant meetings. Accordingly appropriate strategies can be initiated and implemented further involving men and community leaders. However, this needs continuous technical and financial support in strengthening and empowering the VHWs and the women's groups to improve their participation.

Husband and family members also have influential role in deciding the location of childbirth, suggesting the importance of their involvement, particularly husbands while seeking prenatal care. Hence, couple-friendly prenatal services are imperative as it enhances the knowledge and attitude of husbands on the importance of skilled attendance at birth and extend more supportive care during childbirth (Mullany, 2006). Women can be encouraged to bring along husbands during ANC visits or reach them through ORC services by adapting to the timing of their availability.

Women and their families do not perceive the need and benefit of availing skilled delivery as it is considered normal event and do not perceive it as having risk unless they experience complications. Furthermore, women are not well informed on the risks of pregnancy and childbirth or they do not have access to such information raising concern on quality of ANC services. ANC serves as a window of opportunity to educate women on the pregnancy related risks and to promote skilled delivery, yet many women having ANC attendance do not use skilled attendance at birth reflecting the missed opportunity. Intensive counseling and convincing women on the benefits of skilled delivery through ANC are key to increase the intention of using SBA and even prevent maternal mortality through identifying obstetric complications. Health workers are the main source of information for rural women in Bhutan, therefore, their proactive interaction in providing necessary information, familiarizing them on the delivery services and motivating them on its use during ANC including development of birth plan would be an advantage. This can be supported by regular supervision from districts and central program to monitor ANC service and render support in improving its quality.

Providing free health care services alone does not ensure its utilization. Women, especially in rural area and from poorer household are faced with constraints in the utilization of institutional delivery services due to lack of transportation, indirect costs and distance to health facility in addition to unavailability of mother friendly environment. This encourages women to resort to home delivery as it incurs less expense. To ease these challenges, particularly physical and financial barrier, interventions like MWH and DSF would be useful as described in chapter four. Bhutan can adapt these interventions for the benefit of women from remote communities and poorest wealth quintile in those districts having low skilled birth coverage. However, it needs careful planning and local assessment for feasibility and contextualization, taking into account the barriers like indirect costs, quality of care in both health facility and MWH, and improving road and transportation. In addition, political will and commitment is necessary in mobilizing required resources for introducing these interventions as it incurs substantial financial investment.

Establishing MWH with basic logistic facilities and providing financial incentives covering transportation cost and "maternity pack" with minimum essential baby stuffs can encourage women to deliver in a health facility. However, this should be supported by stringent registration system of pregnant women in the local health facility so that only those who give birth in a facility they are registered to, can be eligible for the incentives. This can lower the burden of normal deliveries in district and referral hospitals and also improve to retain clinical/obstetric skills of BHU staff with more deliveries to supervise. This needs to be backed up with better quality of

care in local health facility with competent and patient friendly health workers with provision of basic emergency obstetric care.

Shortage of skilled (midwives and obstetric) health workers, retention in rural area, retaining their clinical skills, and placing female health workers are challenges in maintaining the quality of care for institutional delivery in Bhutan. Upgrading the program of Basic Health Workers to Health Assistant with midwifery skills and in-service training on EmOC in referral hospitals need to continue to address HWs shortage. Health workers do not stay longer in rural area beyond the compulsory one year term to serve remote area as criteria for pursuing further studies, especially doctors. Also due to spouse transfer, children's education, loss of opportunity like training, and perception of better urban life, retention is difficult.

Women's bypassing BHUs for delivery in district or referral hospitals not only effect retaining of skills but also impact the credibility and efficiency of the facility. Most BHUs and some hospitals are not able to carry out basic signal functions of emergency obstetric care either due to low competency of HWs or absence of EmOC trained HWs, and inadequate equipments. A high number of maternal deaths occurring in health facility and most deaths caused by PPH can imply inadequate capacity of health facilities and midwives or obstetric professionals including late referral or delay in care seeking. Strengthening of existing maternal deaths auditing through timely and stringent but comprehensive investigation of each death is fundamental to identify real issues and practices for improvement of quality of care at all levels.

Chapter 6

6. Conclusion and recommendation

6.1 Conclusion

It is remarkable that Bhutan has made rapid progress in increasing the institutional delivery coverage in the last one decade and has achieved the MDG of reducing maternal mortality ratio by 75%. While this achievement is commendable, inequity exists in the utilization of institutional delivery services among districts, rich and poor, and between urban and rural women owing to various challenges which requires heightened attention and focused interventions from the government. Women from rural settings are still influenced by socio-cultural factors and practices in seeking delivery care, added with the challenges of accessibility in terms of physical and financial barriers delaying them in seeking timely care. Although the health care services are provided free, women and their families are faced with the brunt of in-direct costs and opportunity costs in giving birth in health facility. In addition, women have low knowledge and attitude on the importance of safe delivery mainly due to poor quality of ANC services and inadequate awareness program, leading to low use of skilled delivery services.

Bypassing of local health facility, mainly the BHUs for delivery in district and referral hospitals has been a common phenomenon owing to absence of proper waiting room including food provision, and perception of better quality care in hospitals. As a result, efficiency and credibility of local facilities are affected including the skill retention. In light of these findings, a shift in policy to introduce free maternity waiting home/room with basic facilities and DSF are found to bring about promising effects for mothers in using delivery services. However, having these policies alone does not solve these problems if health provider side aspects like quality of care and availability of obstetric services are not taken care of. Thus, greater availability of EmONC services together with continuous staffing by competent and skilled midwives/nurses, and equipping them with necessary supplies and equipments can not only increase the utilization of delivery services but also ensures better access to life saving care to mothers and babies.

6.2 Recommendation

6.2.1 For future research

- Study using mixed method (qualitative and quantitative) to investigate and explore the determinants of utilization of

maternal health services in rural communities would be useful at this point in those districts with low coverage of skilled delivery to institute evidence based interventions. Besides complementing the findings of this thesis, such study would provide real situation and in depth information giving more evidence to accordingly initiate or adapt strategies and overcome the barriers.

- A study to assess quality of maternal health care in districts with low institutional delivery rate and districts with higher rate of institutional delivery would be useful to improve the provider side factors.

6.2.2 Policy level

- Introduce cash incentives and baby pack or maternity gift for mothers to cover transportation and non-medical consumable costs during facility delivery in those districts with low institutional delivery coverage having poor road and inadequate transportation. Besides easing the financial constraint, this would encourage mothers to deliver in a health facility. However, a detailed study or assessment needs to be conducted in these areas to investigate the true needs and benefits of such incentives. This policy can be started as pilot project in selective communities in few districts and can be expanded as per the result from an evaluation study.
- Designate or refurbish BHU (if need be) for a waiting room/ward with provision of in-patient food or cooking facilities in remote rural BHUs where parturient mother and her companion can wait until at least 24 hours after delivery or even until 3 days for postnatal care. This can also be piloted in the low performing districts.

6.2.3 Health facility level

- MoH together with districts and health facilities should intensively promote to increase delivery in BHUs through:
 - To reduce the burden of bypassing BHUs, encourage registration of pregnant women in BHU and hospital within the catchment area using client held pregnancy record book. This can be linked to DSF scheme. Women delivering in their registered facility can be one criterion for DSF scheme entitlement except for referral cases.
 - Emphasize and support in developing birth preparedness plan which can empower women to better communicate with her

husband and her family, and familiarize them with birthing services to build confidence in them

- Encourage to engage husbands during prenatal care, mainly in attending ANC so that it gives an opportunity for them to know about the susceptibility of mothers and newborn during delivery which can help them in deciding the place of delivery
- Improve quality of ANC by close supervision from district hospital and district health office, identify the issues of ANC quality (lack of training, inadequate manpower etc) and render support accordingly
- Visit from district hospital to supervise HAs in conducting delivery in BHU to retain their clinical skills and build their confidence and competency
- Provide at least one female midwife to each BHU for better acceptance of delivery services by women

6.2.4 Community level

- MoH, district health sector and health facilities should encourage and expand community participation through engaging VHW in forming and working with women's group or even men's group and community leaders as discussed in the interventions section (chapter 4). Also encourage and support VHWs through providing training for identifying and bringing in pregnant women for perinatal care.

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8. Annexure
Annex 1

Annex 1: Districts classified into three regions

Regions	Districts
Western Region	<ul style="list-style-type: none">• Thimphu• Paro• Haa• Samtse• Chukha• Wangdi• Punakha• Gasa
Central Region	<ul style="list-style-type: none">• Bumthang• Dagana• Sarpang• Tsirang• Trongsa• Zhemgang
Eastern Region	<ul style="list-style-type: none">• Lhuentse• Mongar• Pemagatshel• Samdropjongkhar• Trashiyangtse• Trashigang

Source: (NSB Bhutan, 2005)

Annex 2

Annex 2: Key SRH indicators in Bhutan

Indicators	Year					Unit of measure	Source
	1984	1994	2000	2005	2013		
Sex ratio of population	97.5	91.0	94.7	-	96.0	Male per 100 female	NHS (1984, 94, 2000, 2012)
Maternal Mortality Ratio	777	380	255	-	86.0 120 (Estimate)	Death per 100,000 live births	NHS (1984, 1994, 2000, 2012); WHO 2013 estimate of MMR trend
Infant mortality rate	102.8	70.7	60.5	40.1	30.0	Deaths per 1000 births	NHS (1984, 1994, 2000)), PHCB 2010, NHS 2012
Under-five mortality rate	162.4	97.0	84.0	61.5	37.3	Deaths per 1000 births	NHS (1984, 1994, 2000), PHCB 2010, NHS 2012
Total fertility rate	-	5.6	4.7	3.6	2.3	Children per woman	NHS (1994, 2000), PHCB 2005, NHS 2012
Adolescent fertility rate	-	120	61.7	-	28.4	Birth per 1000 adolescent 15-19 years	NHS (1994, 2000), NHS 2012
Institutional delivery	-	-	19.8	-	73.7	Percent	NHS (1994, 2012)
Proportion birth	-	10.9	23.7	49.1	74.6	Percent	NHS (1994, 2000),

attended by SBA							PHCB 2005, NHS 2012
At least one ANC visit	-	-	51		97.9	Percent	NHS (2000, 2012)

Annex 3

Annex 3: Key interventions to improve maternal and newborn health along the CoC

Key interventions to improve maternal and newborn health along the CoC

1. Improvement of health facilities (Upgrade district hospitals to provide BEmOC)
2. Focus on quality of antenatal care (ANC visits, content and birth plan)
3. Enhance access to EmONC
4. Improvement of Neonatal Care
5. Improvement of postpartum and post natal care
6. Strengthen referral and mentoring mechanism
7. Staffing and training
8. Supervision
9. Update protocols and guideline for maternal and newborn care
10. Tracking every mother and new born child

Source: (MoH Bhutan, 2012b)