MATERNAL HEALTH AROUND SAFE DELIVERY IN NEPAL

ANUPAMA PAUDYAL
NEPAL

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MATERNAL HEALTH AROUND SAFE DELIVERY IN NEPAL

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

By:

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Nepal

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

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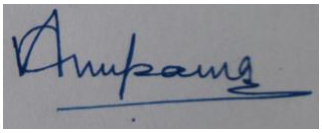
Signature:..  .....

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List of Abbreviations

ANC	Antenatal Care
ANM	Auxiliary Nurse Midwifery
BPP	Birth Preparedness Package
CBHI	Community Based Health Insurance
CDs	Communicable Diseases
CHE	Current Health Expenditure
COPD	Chronic Obstructive Pulmonary Diseases
CS	Cesarean Section
DFID	Department for International Fund
DTCO	District Treasury Office
EMOC	Emergency Obstetric Care
FCHV	Female Community Health Volunteer
FDC	Free Delivery Care
FWD	Family Welfare Division
FY	Fiscal Year
GDP	Gross Domestic Product
HF	Health Facility
HP	Health Post
HRH	Human Resources for Health
JSY	Janani Surakshya Yojana
LMICs	Low and Middle Income Countries
MDGs	Millennium Development Goals
MICS	Micro Indicator Cluster Survey

MIS	Maternity Incentive Scheme
MMR	Maternal Mortality Ratio
MNH	Maternal and Neonatal Health
MoF	Ministry of Finance
MoHP	Ministry of Health and Population
MPDSR	Maternal Perinatal Death Surveillance and Response
MWH	Maternity Waiting Home
NCDs	Non- Communicable Diseases
NDHS	National Demographic Health Survey
NGO	Non-Government Organization
NMR	Neo-Natal Mortality Ratio
NSMP	Nepal Safe Motherhood programme
OOP	Out of Pocket Expenditure
PHCC	Primary Health Care Centre
PNC	Postnatal Care
QoC	Quality of Care
SBA	Skilled Birth Attendant
SDG	Sustainable Development Goal
SDIP	Safe Delivery Incentive Programme
SSMP	Support to Safe Motherhood Programme
TBA	Traditional Birth Attendant
WHO	World Health Organization

Glossary

- **Institutional delivery** is a delivery of child at a well-equipped health facility under the supervision of trained and competent health staff in a well-equipped amenities that can manage the complications or can make timely referrals (15).

- **Maternal Health,** is the women's health during her pregnancy, delivery and postpartum period (14).

- **Gender** refers to the roles, responsibility and norms for men and women structured by the society (28).

- **Three Delays** refers to delays in making decision to seek care, delays in reaching facility, and delays in receiving adequate care after reaching the facility (22).

- **Safe motherhood** is a national program to improve the maternal and neonatal health, through preventive and promotive activities and addressing the factors of maternal deaths (78).

- **Emergency Referral Fund:** Fund to facilitate referral services for the disadvantaged women who need caesarean or complication management during pregnancy in Nepal (29)**.**

- **Service Readiness:** It refers to the overall capacity of health facilities such as basic amenities, basic equipment, medicines, to provide health services (99) **.**

Abstract

Introduction: Nepal has made significant progress in reducing maternal deaths per 100,000 live births from 850 in 1990 to 239 in 2016, but achieving the SDG target of reducing MMR below 70 per 100,000 live births is still a challenge. Skilled birth attendance stood at 57% in 2016, a figure hiding wide inequalities. The Nepal government has endorsed policies and strategies on safe motherhood to encourage safe delivery care, but important gaps in effective coverage remain.

Aim: To review demand and supply factors influencing skilled birth attendance, as well as policies to address these.

Methodology: Literature review using the three delay model of Sereen Thaddaeus and Deborah Maine as analytical framework.

Results: Socio-cultural norms and attitudes still limit women's decision making power. There are wide disparities across wealth and education. Existing supply side barriers are low quality of service, lack of proper infrastructure and access to emergency obstetric care. After the implementation of demand and supply side interventions in promoting safe delivery, progress has been remarkable. Poor monitoring and supervision of the program, and poor budget allocation are still important constraints leading to underutilization of quality services.

Conclusions: Utilization of delivery care can be further increased among women by involving the men and in-laws family and further addressing socio-cultural issues. Government needs to act on broader social determinants of health to reach neglected groups and supply side interventions should aim at further improving the quality of care and human resources imbalances.

Keywords: Maternal Health, Three Delays, Safe motherhood, Institutional Delivery, Emergency Obstetric Care, Nepal

Word Count: 12129

Introduction and organization of thesis

Access to Safe delivery in a health facility in the hands of Skilled Birth attendants (SBA) is one of the major maternal health challenges in Nepal. Having worked during the earthquake emergency response in Gorkha, I visited several health facilities in the affected villages. The roads connecting to the village level health posts and primary health care centers were very poorly maintained. Difficult terrain, narrow and highly bumpy road and rarely moving public bus with overloaded passenger compelled me to link the scenario when women have to travel to District hospital in case of emergency. The travelling time, transportation, the road structure all were nightmares.

During the recovery and reconstruction period in the aftermath of disaster earthquake, I got a chance to meet some mothers who delivered the baby in shelter home. After the health facility was destroyed by the earthquake, the services were provided to women from shelter home. Groups of women were lying down on the floor mat inside the tent. It was really a difficult moment for the expectant mothers. The health posts were in lapidated state. This incident was the turning point that triggered my interest to work with maternal and neonatal health and provide support to improve their health outcome.

This study will utilize the elements of a narrative literature review to explore the challenges and barriers responsible for under-utilization of

facility based care in maternal health, in different ecological regions of Nepal. It will critically analyse literature on the drivers, facilitators, manifestations, outcomes and impacts of poor service utilization and strategies to improving the safe delivery services in Nepal.

The thesis is organized in five Chapters:

- **Chapter I** provides background information about Nepal with regards to the country's state of health and its health system.
- **Chapter II** presents a description of the significance of the problem, objectives, the methodology and the conceptual framework used in the study.
- **Chapter III** analyses the findings with regards to barriers and facilitators of safe deliveries with focus on Demand and Supply side factors to access institutional deliveries.
- **Chapter IV** critically reviews the past interventions and reforms from Nepal government addressing the 3 delays and reviews the literature on best practises adopted in similar situation from Nepal.
- **Chapter V** discusses the findings, presents conclusions and provides recommendations to improve safe delivery in the health care system.

CHAPTER I: BACKGROUND OF NEPAL

This chapter provides detailed background information about Nepal, especially, the geography, social and demographic characteristics, the history, politics and the administrative system, the state of the health system and the health status of the people of Nepal. It also presents an overview of the safe delivery in Nepal.

1.1 Geography

The Federal Democratic Republic of Nepal is a landlocked country between China and India in South Asia (1). It borders China in the North and India in the East, West and South. It is located mainly in the Himalayas but also includes part of the Indo-Gangetic plain (1). Nepal has diverse topographic features. Seventy five percent of the land is covered by Himalayas and hills. Beyond the snow lined mountains and hills, exists the tropical region of Terai (2). The Nepal occupies an area of 147,181 square km. After the changes of the new constituent assembly in 2015, the nation has 7 provinces (3).

Figure 1: Map of Nepal; Source: Annual Report 2017/2018

1.2 Demography

The population of Nepal is 29 million in 2018 and 51.4% are female. The ratio of the population in hill and mountain is declining in compared to the Plain region. The population of Nepal is approaching the stage III of a demographic transition characterized by low fertility and low mortality. Currently birth rate is slightly higher than death rate (4).

1.3 Political and administrative structure

Nepal was declared as a Federal Democratic Republic in 2008. And later in 2015, new federal constitution was promulgated with new structure of three tiered government as Federal, provincial and local level (3). Local level governance has Rural and urban municipalities known as Nagarpalika and Gaonpalika (3). Currently, Nepal has 77 districts (previously 75), 7 provinces and 753 local government bodies state. At local level, there are 6 Metropolitan cities, 11 Sub– Metropolitan cities, 276 Municipalities and 460 Rural Municipalities. Parliamentary type government with two houses (Senate and National Assembly) is been established at the Federal level and a provincial assembly at the provincial level (3).

1.4 Socio-economic Situation

Nepal is a garden of 125 caste and ethnicities (5). Identity is mostly centered in religion, caste and ethnicity. Still there exists 4 castes or varnas that signify the degree of purity (5) and status in the society, though National code has criminalized act that shows discrimination against the people based on caste and religion (6). In Nepal, 123 languages are spoken with Nepali as the official language.

The overall literacy rate of the country is 65.9%. Male literacy stands at 75.1% which is higher than female staggering at 57.4% (7).

Nepal comes under the Least developed countries in the world and one fourth of Nepalese lives below poverty line (8). Nepal's economy is largely based on remittances which has been contributing to 30% of total Gross Domestic Product (GDP) of Nepal (8). Economically active people migration is increasing for abroad employment and because of this almost 50% of Nepalis are financially dependent on remittance money (8). In 2017, national GDP was US$24.88 billion with annual growth rate of 7.9%. Labour force survey showed that most employment was in low productive sectors. For instance, 73.9% of Nepalese were engaged in agriculture (8).

1.5 General Health Profile

The health status of the Nepalese people is marked with inequalities across the country. The burden of diseases study 2017, showed in Nepal, Neonatal disorder is the leading cause of the most death and disability combined, followed by Ischemic heart diseases, and chronic obstructive pulmonary diseases (COPD) respectively (9). The previous two decades are showing a gradual epidemiological transition from communicable diseases (CDs) to non-communicable diseases (NCDs) (10). At present, NCDs are the leading cause of death- two thirds of the deaths are due to NCDs with an additional 9% due to injuries (10). The remaining 25% are due to Communicable, maternal, neonatal and nutritional diseases (10).

The health sector has achieved remarkable progress and the nation is moving towards the achievement of the sustainable development goals. However, a lot of effort is still needed from policy makers as health services have not been able to reach to the citizens from all regions, classes and communities. Also to mention, State has not been able to prioritize urban health, geriatrics health, mental health, genetic diseases, environmental

health, occupational health, sexual and reproductive health, adolescent health and youth programs (11).

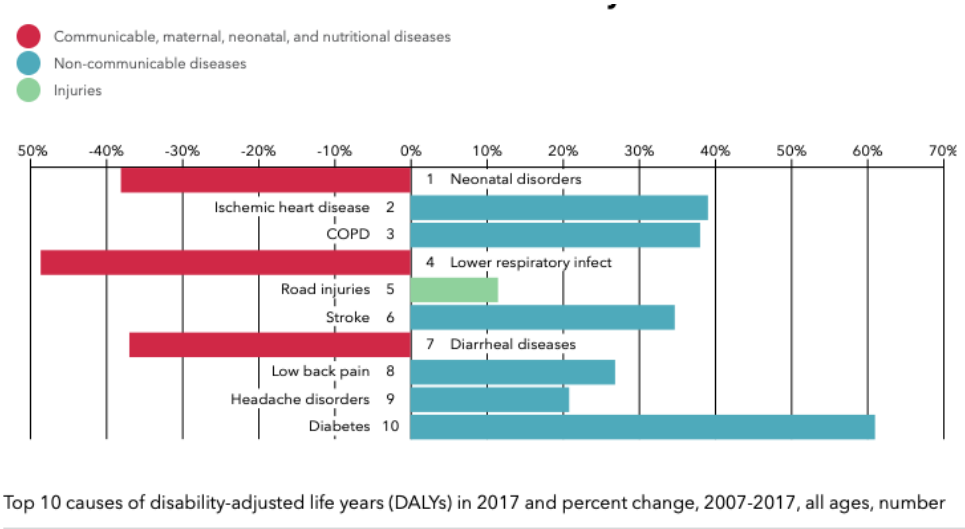

Figure 2: Cause of DALY Loss in Nepal 2017; Source: Global Burden of diseases

1.6 Overview of the Health System and Situation in Nepal

With the end of absolute monarchy and the start of constitutional democracy in 1990, the national health policy 1991 was formulated. This policy encouraged the participation of private sector in health services delivery. The interim constitution of Nepal for the first-time accepted Health as a fundamental human right. The new constitution of Nepal 2015 emphasized equitable access to health care services and right to basic health care services free of costs (7). The new national health policy 2014 shows a commitment towards universal health coverage.

In Nepal, the Ministry of Health and Population is the apex governing body of Health services delivery. Ministry of Health and Population (MoHP) has the responsibility of formulating policy, planning, organizing, coordinating, budgeting, monitoring and evaluation of the health sector in the best

interest of the Nepalese citizen (12). The Department of Health Service under MoHP delivers preventive, promotive, and curative health services throughout Nepal. Health post is the first contact point for basic health services, with each level above the HP ensuring the consecutive referral : Primary Health Care Centre (PHCC), District Hospital, Zonal Hospital, Regional Hospital and finally to Specialty tertiary care centers (13).

The Nepal national health accounts show that the current health expenditures (CHE) for providing the health care services to the Nepalis is 6.3% of the GDP (10). The Out of Pocket (OOP) expenditure for health was high around 55.4% of CHE in the year 2016. This shows that country health system heavily relies on direct OOP payment from households to finance the health care. OOP expenditure for health care are mostly made for the pharmaceuticals and for private providers (10).

CHAPTER II: PROBLEM STATEMENT, JUSTIFICATION, OBJECTIVES AND METHODOLOGY

This chapter first describes the problem associated with safe deliveries, its significance and subsequently study objectives are articulated. Thereafter, the methodology used to achieve the objectives is presented including a description of the conceptual framework used for the study. It further describes the limitations encountered during the study.

2.1 Problem Statement

During child births, women are at risk of several complications and suffering which are preventable with the availability of safe and skilled hands, functional facilities and quality of care (14). When delivery of a child is performed at well-equipped health facility with necessary amenities, under the supervision of trained and skilled health staff that can manage the complications or can make timely referral, this is termed as Institutional delivery (15). Institutional delivery is expected to improve maternal and neonatal outcomes through the intervention by Skilled Birth Attendants backed by essential infrastructure and strong referral services when needed (15).

Globally, everyday around 830 women die from pregnancy related and childbirth complications and majority (95%) of these deaths occurs in low and middle income countries. Of the total global maternal mortality, Sub-Saharan Africa and South Asia share the largest proportion (86%) (16). In 2017, an estimated 295,000 maternal deaths were recorded (16). Around

66% of these maternal deaths occurred in Sub-Sahara Africa alone and estimated 20% in South-Asia (14). The countries Afghanistan, Bangladesh, Cambodia, India, Indonesia, Myanmar, Pakistan including Nepal all have high maternal mortality ratio (MMR) of over 100 deaths per 100,000 population (17).

It is evident that maternal mortality is inversely related to institutional delivery. In Sub-Sahara Africa, just over half (57%) of all births were delivered in health facility. However in Europe, over 9 in 10 births occurred in health facility (15). In India, the state in Central region- Uttar Pradesh have only 25% of facility based delivery and MMR is 359 per 100,000 population (18). About 20% of the deaths due to intrapartum complications can be reduced due to facility based delivery assisted by skilled birth attendants (15).

In Nepal, the maternal health services are perilous , as illustrated by the following indicators; MMR is 239 per 100,000 live births (19) and neonatal death is 21 per 1,000 live births (19). About 41% of births occur at home in hands of unskilled birth attendants (19). Delivery at home means performing the delivery in unsafe environment and consequently constitutes high risk on neonate's health. Not having access to facility based delivery reduces the opportunity for women and neonates to get immediate postnatal care. The major causes that accounts for 75% of maternal deaths are severe bleeding after childbirth, infections, pre-eclampsia, eclampsia, and complications from delivery (14). Forty-three percentages of Nepalese women do not receive postnatal check within two days of delivery (19). The institute for Health Metrics and Evaluation shows, among the diseases burden rank, Maternal and Neonatal disorder is the 3rd most leading cause of death among females of 15-49 years in Nepal in year 2017 (9). Nepal maternal mortality and morbidity survey 2008/2009 reported that 41% of maternal deaths occurred at health facilities mostly public, 40% at home and 14% on the way to facility (20). Several factors as socio-cultural,

geographical structure and difficult road access, shortage of human resources, availability of services are the factors that cause the delays in making decisions to seek health, delays in reaching hospital and delays in receiving adequate care (21).

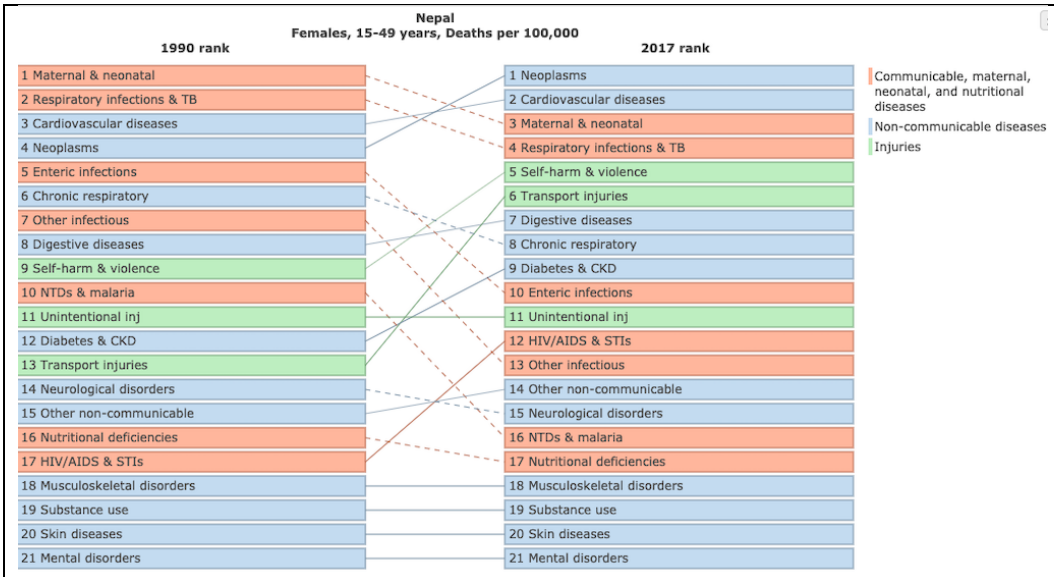

Figure 3: Disease burden rank 2017; Source: Global Burden of Diseases IHME

2.2. Justification

Maternal health is a basic human right and all pregnant women should deliver in the hands of a Skilled birth attendant (SBA) while having access to obstetric services. Acknowledging the numerous problems that imposes barriers in utilization of safe delivery care services in Nepal such as socio-economic factors, cultural factors, accessibility, shortage of Health work force, weak leadership/governance, and healthcare financing for maternal healthcare services delivery. This problem has a profound effect on low utilization of skilled birth delivery services.

Additionally, the recurrent waves of natural disasters has weakened health institutions. Tackling the problems affecting institutional deliveries, it requires a better understanding of the issues contributing to the low

utilization of safe delivery care services for the achievement of universal access to maternal health care services.

With this background, this thesis seeks to review the challenges affecting utilization of institutional deliveries and obstetric services in the healthcare services in Nepal.

2.3 Objectives

2.3.1 General Objective

To critically analyse the underlying factors, that influence the access to, and utilization of institutional delivery in Nepal, in order to recommend the policy makers to improve care delivery .

2.3.2 Specific Objective

i. To review existing data on maternal health indicators and coverage of maternal health services, including trends.
ii. To analyze the demand and supply side factors that affect women to utilize skilled birth attendance and Emergency Obstetric Care Services.
iii. To critically review the strategies of Nepal government to incentivize safe delivery.
iv. To review literature on best practices in similar situations as of Nepal.
v. To advise policy makers to address the safe delivery service's needs.

2.4 Methodology

2.4.1. Study approach

In order to accomplish this aim and objectives, a literature review was conducted.

2.4.2. Literature review

A narrative literature review was conducted in a systematic manner. Selection criteria, search strategy and sources for literature reviewed are described in details as below.

2.4.3. Selection Criteria

The focus was maternal health care such as Antenatal healthcare, Skilled birth attendance and postnatal care. The articles selected were the ones written after 2000.Selected articles were in English language.

2.4.4 Search Strategy

A web search was conducted using PubMed, Googles Scholar, and VU library using combination of keywords and phrases in English. Search terms used, either alone or in various combinations as describe in the table below. Additionally, a search was done on websites of Non-governmental organizations, UN agencies and institutions that are key stakeholders in the Nepalese health system.

Table 1: Key Search for Objectives

Maternal health and maternal service coverage: Combining below search terms with "OR"	Factors influencing Combining below search terms with "OR"	Interventions / Policies Combining below search terms with "OR"	Geographical focus Combining below search terms with "OR"
Obj. 1, 2, 3 & 4	Obj. 2	Obj. 3 & 4	Obj. 1, 2, 3 & 4
Search terms across columns are combined with "AND"			
Maternal health Maternal mortality ratio Skilled birth attendance	Caste, culture Gender Education Rural/ urban Determinants	Policies Strategies National strategic plan	Nepal South Asia Afghanistan / Pakistan / India / Bangladesh

Safe delivery Emergency obstetric care Institutional delivery Antenatal care Postnatal care Cesarean section Quality of care Utilization of services	Human resources: skills, availability, retention Accessibility Availability Acceptability Affordability Barriers, facilitators Geographical access / mountains / hills Demand side / Supply side factors	Reproductive health strategy Incentives Conditional cash transfers Free care Safe motherhood Best practices Public Private partnership Contracting -out Clinical-Audit Community Engagement	LMIC

2.4.5. Sources of Literature.

There were about three different sources of literature consulted for the literature review. These sources are all online and are as listed below:

1. Key databases relevant for this study, i.e. PubMed library and Google Scholar search engine. This is where systematic literature search was performed.
2. Websites for development partners in Nepal (USAID, World Bank, DFID, WHO, UNICEF, UNFPA) and other UN –agencies.
3. Web site of the government of Nepal Ministry of Health, Nepal national bureau of statistics and Ministry of Finance,

All the first searches were conducted through two databases of PubMed library and Google Scholar search engine. All the documents found were checked for relevant information on Nepal along the different objectives of the study.

2.4.6 Conceptual Framework

The three-delay model will be used as a conceptual framework. This framework is an appropriate model to explore the factors that influence the utilization and underutilization of obstetric care in the health facility delivery that meets my study objectives. This framework presents the three phases of delay which identifies the obstacles to the provision and utilization of high quality, timely obstetric care.

In 1994, Sereen Thaddaeus and Deborah Maine linked causes of Maternal mortality to three delays; *delays in making decision to seek care*, *delays in arriving at health facility*, and *delays in receiving the adequate care*. When the decision to seek care is made on time, there are factors that impede the women to access to the services in health facility. In case of women do access the health facility, there may not be quality treatment and resources available that may lead to maternal death. So all the delays contribute to poor maternal health and institutional delivery and may increase the risk of maternal death.

The first phase of delay is the delay that is made by patients in making decision to go for the medical care. This can be termed as the demand side barriers. Factors like status of women and women empowerment, perceived (anticipated) Quality of care (QoC), perceived financial cost, and perceptions around pregnancy and child birth may influence the 1st delay. The delay that occurs due to environmental factors to reach to the hospital is the second delay. For example, time and distance to reach a hospital, transportation, road condition, availability, and accessibility to the health care facility etc.

The third phase of delay is the delay that occurs at the health system in providing quality care at adequate level. The factors include adequate referral system, shortages of supplies, equipment and trained personnel

and competence of available personnel. Thaddeus and Maine have developed the framework particularly for complications of delivery, but it can be applied both for accessing skilled birth attendance (often at health centre or birth facility) and also for emergency obstetric care (EMOC) usually at referral level. Access to SBA may in certain cases be available. In case of a complication, further delays (2nd and 3rd delays) may occur after referral from a birth clinic to a referral facility.

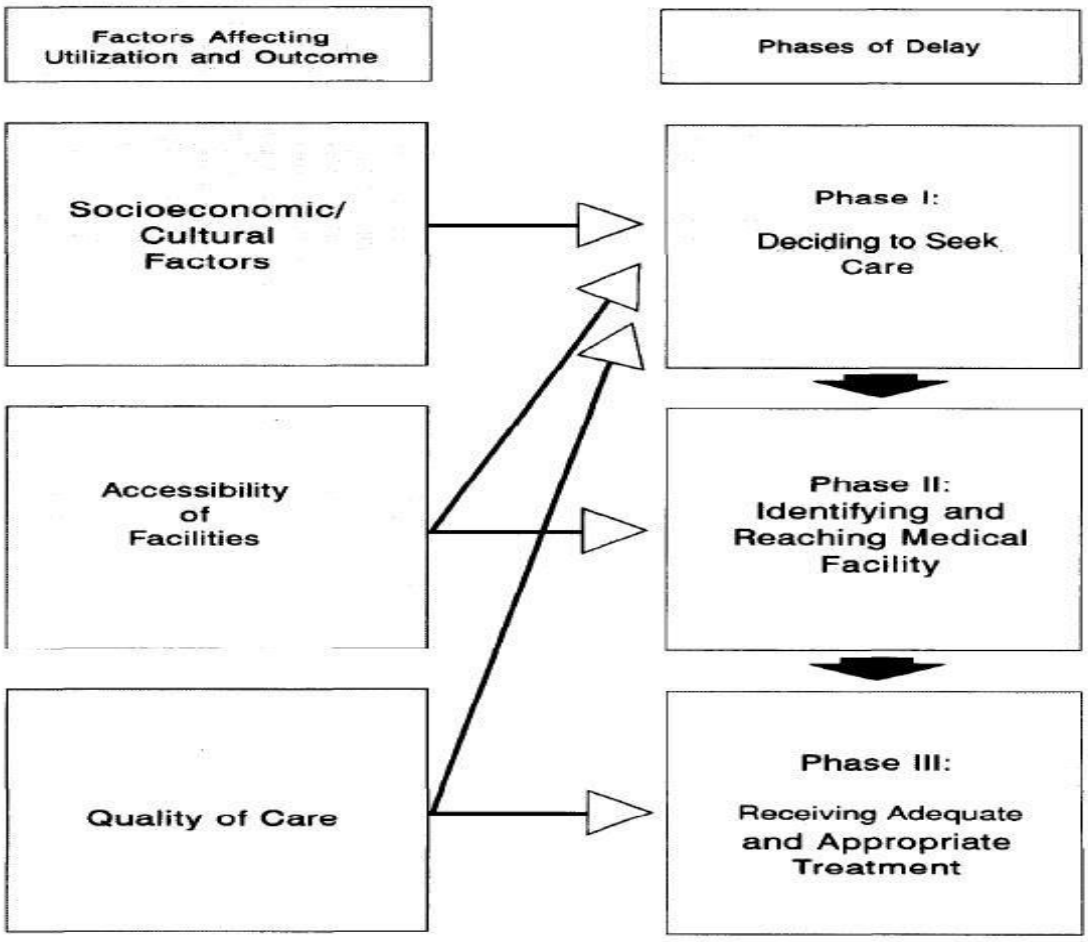

Figure 4: The "3 delay model of maternal mortality" by Thaddeus and Maine 1994 (22)

2.4.7 Relevancy of the Conceptual Framework

The framework developed by Sereen Thaddeus and Deborah Maine was relevant for reviewing the literature and organizing the findings on

utilization of safe delivery services (Emergency Obstetric Care and Skilled Birth Attendance). It has helped in exploring the obstacles that women and family come across to seek the facility based skilled care. The Thaddeus and Maine have developed the framework mainly to understand the barriers for delivery complications and here it is used for both accessing the skilled services from birth attendants and also for emergency obstetric care. While analysing the existing policy on safe motherhood, the framework was relevant too to understand how the policies are designed and implemented to address the demand and supply factors in context.

2.4.8 Study limitations

This study had encountered a number of limitations which are as listed below;

1. The study doesn't focus on a particular place, or districts of Nepal, and cultural and geographical realities vary quite a lot across Nepal. It is then difficult sometimes to evaluate the relative importance of certain factors for the overall situation of Nepal.
2. This paper only included literature published in English. So the chances of exclusion of some relevant study results cannot be denied.
3. The three delay framework was very helpful in analysing the study objectives, particularly concerning factors influencing health seeking behaviour. However, in analysing the interventions of Nepal government and best practises in LMIC, it was difficult to group under the 1st delay, 2nd delay and 3rd delay separately because the interventions were intertwined and would be overlapping. So, I adjusted by grouping the intervention under "***Demand Side Intervention*** " mainly addressing 1st and 2nd delay and "***Supply Side Intervention"*** mainly addressing 3rd delay.
4. Many interventions have been put in place concurrently, and besides, they have been implemented over a period with changing political and economic conditions. While considerable progress has been made in raising SBA and in lowering MMR, it remains difficult to attribute these

to specific policy successes or failures. Besides addressing cultural perceptions is an intrinsically slow process, and the question can be raised whether more could have been expected.

CHAPTER III: Utilization of Delivery Care services and influencing factors

This chapter begins with an overview of safe motherhood services and subsequently analyses the barriers and facilitating factors influence utilization and coverage of maternal services. The review will be guided by framework of Three delay model of Maternal mortality by Maine and Thaddeus (1994).

3.1. Overview of Safe motherhood services

The World Health Organisation (WHO) defines Maternal Health as a health of women during pregnancy, childbirth and postpartum period (14). The Antenatal care (ANC), Safe delivery care and postnatal care (PNC) are important interventions to reduce the risk of Maternal and neonatal deaths since most of the deaths occur during labour, delivery, and postpartum periods (23). The major direct causes of maternal deaths worldwide are obstetric haemorrhage (25%), infections (15%), unsafe abortions (13%), eclampsia (12%), and obstructed Labour (8%) (23). ANC offers pregnant

women an entry point to the health care system, providing mix of essential screening, treatment, information and counselling. WHO has recommended at least 4 ANC visit to avoid health risk during 4, 6, 8 and 9 months of pregnancy (24). The first week after the pregnancy is considered as high-risk period when mortality remains extremely high (25). This signifies the importance of postpartum care and access to skilled care even after birth (25).

Nepal had made good progress in reducing the maternal deaths during pregnancy and child births. However, the proportions of institutional deliveries, delivery attended by skilled persons, and access to emergency obstetric care are still low to achieve the SDG targets of reducing MMR to 70 per 100,000 live births by 2030 (26). The director of Family Welfare Division (FWD), Department of Health services mentioned, it requires to have at least 90% of the institutional deliveries at present context to achieve the MMR reduction target of SDG (27).

NDHS shows the deliveries at health facilities has increased from 35% in 2011 to 57 % in 2016. In regard to this, MMR has decreased from 415 deaths per 100,000 population to 239 deaths between 2001 to 2016. Delivery by caesarean section (CS) among the births in 5 years preceding the survey in 2016 was 9% (28). However, Annual report of department of health services reported the CS rate in 2018 had doubled at 17% which is a sharp increment in two years of time (29). The rising CS rate could be a sign of addressed need of EMOC in case of complicated deliveries (30). However it also reflects an international trend where many urban and higher educated people, more and more have a CS whereas there may not always be a true need (31). The prevalence of CS in Rural Nepal is 50% less than in urban which resembles the situation of " Too little too late" and "Too Much To soon" (32). Almost 91% of women took iron supplementary, and 41% were anaemic. Eighty four percent of women made their at least

once ANC however only 49% of women visited for ANC received counselling on institutional delivery, SBA, Postnatal check-up, and danger signs (33).

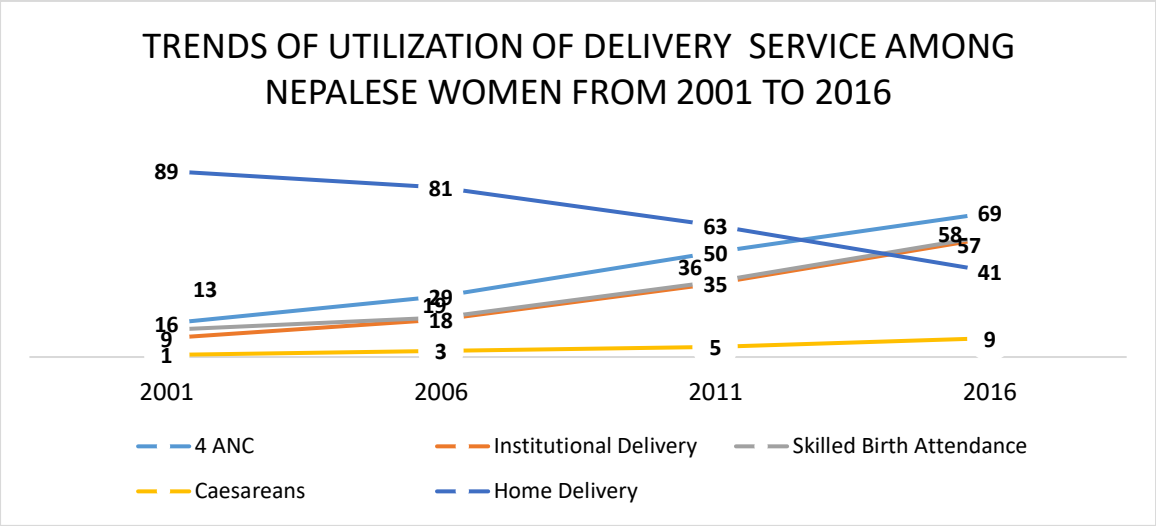

Figure 5: Trends of utilization of delivery service among Nepalese women

Figure 6:Maternal mortality ratio of Nepal

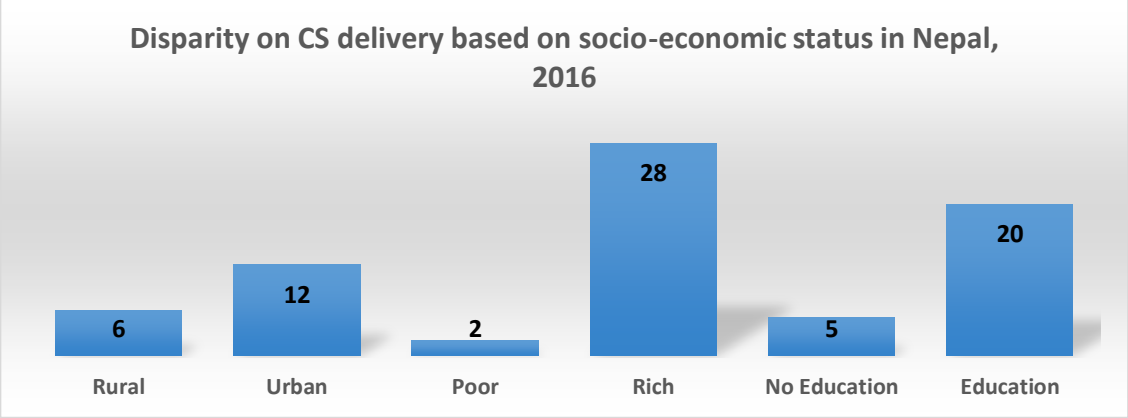

Figure 7: Disparity on CS delivery in Nepal

3.2 First Delay factors

The first delay occurs when women's decision making process in seeking health care is concerned. The factors that affects her decision whether or not to seek skilled care are:

- Illness Factors
- Socio Cultural and Economic factors
- Perceived Accessibility including perceived costs
- Perceived Quality of Care

3.2.1 Illness Factors

Health seeking behaviour is influenced by the characteristics of illness as perceived by individuals (22). A study from Sarlahi district, in plain region of Nepal showed different perceptions on severity and obstetric complications (34). Among the eclampsia cases, signs of headache, vomiting, and swelling of the body were not recognized as severe signs but rather it was believed to be haunted by evil spirit and witchcraft. Prolonged labour was considered as a result of weakness resulting the delay in care seeking (34). Some perceived that bleeding during pregnancy is due to heat inside the body and is normal. People perceive that more bleeding is necessary to clear out the bad blood from the body after delivery (35). Local responses to the illness was "wait and see" approach which delayed in seeking decision. In a study done in Mugu district, remote mountains with low HDI, among 275 mothers, 97 had an institutional delivery . Among the women who had a delivery at home, 21 % reported no need to visit facility considering pregnancy and delivery a normal event (36). Delay due to illness factor is because of lack of knowledge and awareness on danger signs and where to seek medical help in case of obstetric complications. About 51% of women in Nepal didn't received counselling on all

components of ANC during their visit while Postnatal check component was least discussed (33).

3.2.2 Socio Cultural / Economical factors

Culture and belief influence society to associate the pregnancy, and childbirth practices differently from the modern medicine(24)(25)(26). A study done in Jumla, rural mountainous district, it was found that women has preferences to deliver in Cow-shed as a "generational", and " spiritual " practises (37). Such belief can impose high risk of infection on Mother and neonatal health. Pregnant women are called "Two-bodied" (***Duijeu***) and ritually recognized after 5 months of pregnancy (35). This barred the women to attend in religious ceremonies and temples (35). With such traditions, women were restricted to pass through the road which meets the temple on the way to health facility (37) or cross the river that pass through. Such culture discourages women to seek ANC visits , or seek delivery care from the hospitals or health centres and prefer to utilize the services from local attendants " ***Sudeni***" or relatives or family members (38). At present 25% of deliveries are attended by relatives including traditional birth attendants in Nepal. In case of any health problems occurred or complications arising , for instance maternal uterine infection, child gets sick, it is considered as the result of displeasing the deities(38)(39)(40). Some families didn't allow mothers to visit health facility with a fear of being haunted by the evil spirit or witchcraft on the way that may bring negative outcome to foetus (40). Some has the tradition that first baby should be delivered at home (39). Many women heard from their mothers-in-law that they delivered their babies while on the way to fodder collection or during farm work showing that delivering on own is matter of pride and being confident(41)(37). Such factors and beliefs impose barriers in making decision to seek facility based health care services.

Child marriage is highly prevalent; 40% are married before 18 years of old and 7% are married before they reach their 15 years (42). With the early marriage, women bear children at young age and such young mothers have inferior position in their new homes, are very shy, and follow the decision made by family members (43). The analytical study of NDHS data 2016 showed that women married as children were 26% less likely to utilize antenatal care, and decrease the likelihood of skilled attendance at birth and facility based delivery by 35% (44). The low economic status and financial dependence prevents her to seek care independently. It was reported that some mothers did not have the courage to talk about the institutional delivery with their family members (41) (37). They open up only after having severe complications. Many women considered being women, bearing childbirth are the routine task and it doesn't require extra attention and care unless heavy bleeding, or prolonged labour (37) (41). Women in rural area are much engaged in household chores, farmland work and taking care of their children due to these busy schedules they consider their work more important than health and this contributes to delays too (45).

Women in Nepal are highly affected by gender-based violence. NDHS 2016 reported , 66% of women who had experienced physical or sexual violence did not sought the help nor shared their experiences (33). Study has showed that women having good communication and pleasant relationship with the partner influence the utilization of facility based delivery (46). In contrast, women suffering violence and abuse from the husband and in-laws family lose the ability to act on the demand of maternal health care. This finding is similar to study from Nigeria (47).

Economic status and the poverty creates the delay in taking decision to seek facility based delivery care. Perceived economic cost makes women and families to count the opportunity cost and actual cost (48). The utilization of facility based delivery and Skilled birth attendance are

influenced by education and wealth. The figure below shows the effects of wealth and education among women for maternal care services (33). Increased educational status of mother also influence the utilization of 4 ANC services (24).

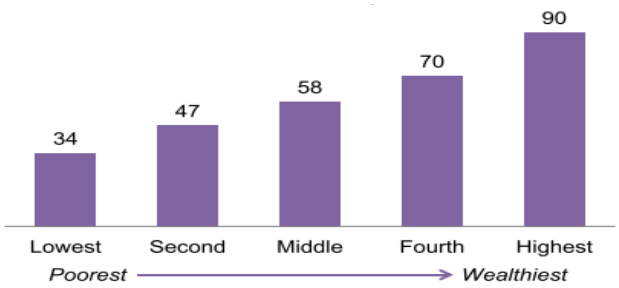

Figure 8: Institutional deliveries(%) by wealth quintile in Nepal 2016 (33)

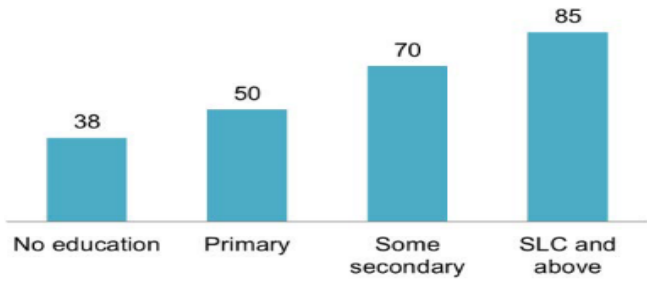

Figure 9: Skilled assistance deliveries (%) by education level in Nepal, 2016 (33)

Women among lower caste group were seen to have lower utilization of the safe delivery services. A cross-sectional study done in Eastern Terai Nepal showed that out of the study population, 21% of the mothers were not visited by the Female community health volunteers (FCHVs) while 27% of the women faced the discriminatory attitude of the health staffs while receiving the services (49). Among the study population, only 30% delivered the baby in hospital while rest of 70% had a home delivery (49). Education, social class, age, all these factors can act as confounders of one another.

3.2.3 Perceived Accessibility, Cost and affordability

The perceived accessibility in terms of distance, mode of transportation and costs have huge influence in taking decision to seek delivery care from SBA at institution or to take emergency obstetric care.

Perceiving the distance of hospital is far and facility is located in hard to reach areas discourage women to visit and indirectly but adversely affects the decision to seek care (48).

A cross-sectional study in Jajarkot showed 22% of the people due to the distance to hospital, were not seeking health care services (50). Anticipating high cost puts the women at disincentive position to make timely decision in seeking care (40). Women count for opportunity cost and actual cost that will need for seeking medical services, transportation, medicines, lodging etc. before making decision to seek care. It was reported that women with fear of additional cost if in case of referral to higher level thinking that hospital will be very expensive, they delayed in decision making (51).

3.2.4 Perceived Quality of Care

Perception about the quality of care can influence the health seeking behaviour during pregnancy, delivery and postpartum period.

A community based cross-sectional study showed that women who perceive that health staffs are usually present, they were three times more likely to deliver their baby in the health facility than those women who perceive the staffs are not available (52). Similarly when women perceive the facilities are able to provide adequate services having proper infrastructure, medicines, equipment's, cleanliness then women build trust on the facility and feel safe to deliver. For the decision to seek care, this perception of quality may be based on former experience or on "hear-say' experiences of

other women who tell each other (52). In a study it was reported that considering the unavailability of warms beds and clothes and lack of heating facility in the birthing Centre, women prefer to deliver at home (41). Women bypass the nearest birthing centers because of the perceived low quality of services provided and improper referral links (53).

3.3 Second Delay

This is the delay that occurs while in order to reach the facility. Even if the decisions are made on time ,there comes many factors that challenges women to reach facility. The factors that makes second delays are:
Lack of transport facilities
Distance of health facility
Lack of money

3.3.1 Poor transport structure

Poor transport system is a major cause for delays in reaching the hospital. The transport system is further worsened by poor road conditions in rural and difficult hilly mountainous zone (54). Nepal is predominantly a rural society with 81% of people living in a rural area (54). The geographical terrain of Nepal is a serious challenge in access of transportation and road. Eastern Terai region, Mid-western Terai region of Nepal every year are engulphed with the monsoon floods and hills and mountains roads are blocked by the landslides and particularly, during rainy season, the roads are not passable (54). About 35% of people living in hills have to walk more than ***four hours*** to reach a facility and in mountains it is more difficult still (33). The physical accessibility indirectly affects the first delay and directly affects the second delay. Various studies have found a large advantage in terms of accessibility for urban women compared to rural area due to availability of means of transportation, ambulance and easy passable roads (55). The distance exceeding an hour to reach the health facility and

hospital have negative effect on service utilization (56). A wide variation on institutional delivery on the basis of residence is seen. For instance only 13% of rural adolescents seek institutional delivery compared to the 70% of urban adolescent women (57). Shortages of ambulance have adverse impact on referral mechanism and proved to be a key barrier for healthcare providers to refer patients and delays has been witnessed to reach EMOC facility (58).

3.3.2 Distance from health facility

When the health facility are located far away from where people live, the delay occurs in reaching there due to long distance to travel (58). The maternal mortality and morbidity study showed maternal mortality ratio highest in mountainous region compared to those in hills and Terai (59). A study done in mountainous region showed that mothers living farther distance from birthing centre were less likely to deliver in health facility (36). In a Mugu district, 49% of women did not go to hospital for delivery instead delivered at home due to the distance and unavailability of transportation (36). An analysis of hospital deaths showed, more than 80% of deaths of women in hospital were due to late arrival and emergency admissions. Of the total emergency admissions, 18% died within 4 hours, 39% within 12 hours and 53% within 24 hours (20). Mother living in close proximity to the facility can reach facility in time during obstetric complication (60). In Eastern Terai Siraha district, it was reported most women have to travel 4-8 hours to reach to government hospital that provides CEMOC services (61).

3.3.3 Cost

Poverty or lack of money can impact on second delay too. Having no cash to pay for the transport delays in reaching the facility. Based on my experience, in rural context, Nepalese women are financially dependent on

their husband, and their economy are agro-based which hardly make the income to have bread and butter. In such scenario women can' t afford the transportation cost (58). In Nepal, government is providing the reimbursement of transport through "Aama and New Born care program" but still among the poorest it can be huge challenge to manage the upfront cash, and is not enough to cover the transportation cost of mother herself and the family members accompanying the mother (62). During 2013 and 2014, around 45% of women in Nepal, 63% in Bangladesh, and 21% in India, had practiced home based delivery and study's findings revealed the reason for low institutional delivery was cost (63). Study from Eastern Nepal showed that to seek formal care, people were keeping farms and lands for collateral (54).

3.4 Third Delay factors

These are the delays that occur at health facilities either due to inability to treat the problem at the facility or in referring facility. This inability to treat the women can be due to lack of skilled staffs, unavailability of medicines, equipment's and poor quality of care.

3.4.1 Skilled and Trained human resources for health

Human resources in health sector in terms of numbers of skilled workers, their spatial distribution, their attitudes towards the patients determines the acceptance, access to and quality of services. WHO report shows that Nepal has a shortage of health cadres. The doctor to patient ratio in Nepal is 1:1724 (64), however the standard ratio set by WHO is 1:1000 (65).
There is a serious disparity in urban verses rural Nepal in skilled health workers to patients ratio. In Kathmandu capital city, it stands at 1:850 while in rural area it is one doctor for 150,000 individuals (65). This gloomy scenario reflect quality of health services in difficult to reach areas of Nepal. Each year, around 45% of doctors after graduation migrate abroad (66). It

was estimated that 16% of registered doctors and 15% of registered nurses migrated in year between 2013 and 2015 (67). Only one third of positions for doctors and nurses are filled (67). Less experienced health personnel are posted in rural areas. Hence the issue of brain drain, brain wastes, poor performance in terms of availability, competency, and quality exists (68) resulting in poor quality of care.

A survey conducted in 2013 to track the services, reported a high absenteeism rate of the health workers even in the tertiary level hospitals. The study showed only 50% of the health cadres were available in the PHCCs while 69% of medical doctors in hospital at district levels. In 23 district, another study reported the presence of health workers were 85% and for the doctor it stands at fifty six percent only (69).

Community people in a study done in Far and Mid-Western Nepal, expressed their concerns that it is difficult to get delivery care from the SBA with the presence of only one ANMs in the health facility. In the same study , from *Dailekh*, service provider mentioned that despite of availability of staffs, the work load is not divided properly and this was leading to high work load in one person (40)(70). A study to understand the quality of care in Banke district, Nepal showed that attitude of auxiliary midwifes nurses were negative. Study of Safe motherhood Program also showed similar attitudes "them and us" between provider and receiver (71). Women having quite bad experience of care in past from the health staffs, making women reluctant to visit health facilities for any kind of services.

3.4.2 Emergency obstetric care (EMOC), Medical supplies and infrastructure

To reduce maternal mortality, WHO has recommended at least 4 basic emergency obstetric (BEMOC) and one comprehensive emergency obstetric care (CEMOC) services for 500,000 population (56). Increasing EMOC services leads to increase the delivery at facility. A pre-post intervention

cohort study on the impact of CEMOC expansion carried out in Achham showed the significant increment of facility based delivery after CEMOC implementation from 30% (CI 21-41%) to 77% (CI 69-83%) as in figure below (72).

A cross sectional study in Dailekh, hilly districts in Western Nepal reported there lies a huge lack of proper infrastructure and basic amenities having an adverse effect in providing quality of delivery care (40). Issue of water, sanitation and hygiene, no continuous power supply, leaking roofs during monsoon, insufficient rooms and waiting area were common conditions of health facility. Also for the delivery, it lacks delivery tables medicines, lab in delivering quality care for the mothers In a study, a health service provider mentioned that baby delivery were performed in open ground borrowing furniture from the local schools (40).

Birthing centers are lowest health units where facility based deliveries are available in Nepalis context (59). It has at least one auxiliary nurse-midwife (ANM) who is trained on SBA package (59). Particularly in rural area, the birthing centre function was found to be poor because of the shortages of skilled birth attendants and medical supplies, medicines and equipment's, and poor infection prevention method. (48) (56). However, at the tertiary level hospital, overflow of patients making the centers overcrowded while imposing a great challenges in providing quality maternal and neonatal health (48). Nepal household survey 2012 showed that 50% district hospitals were unable to offer full CEONC service while 33% of health posts had the stock of outdated medicines (73).

A prospective cohort study done in Kaski district, a hilly region showed that despite of presence of the Obstetric care in the health centre, 70% of the women didn't use the local facility and opted for the city hospitals though it was expensive and time taking (53). The reason was that 75% of the health facilities were not fully functional and 61% of them didn't have

medical supplies and equipment's (53). There exists poor management of complications. Intrapartum care was not delivered properly (53).

A study in 2016 in Mugu, a mountainous district showed that 38% of the women had long waiting due to late opening hours, 18% reported health staffs were not present during opening hours, 12% of mothers were not comfortable with male health staffs, and 11% of the mothers faced unfriendly and discriminatory attitude (36).

Figure 10: Birthing center(left) & labor room(Right) in Rukum district, 2014 (59).

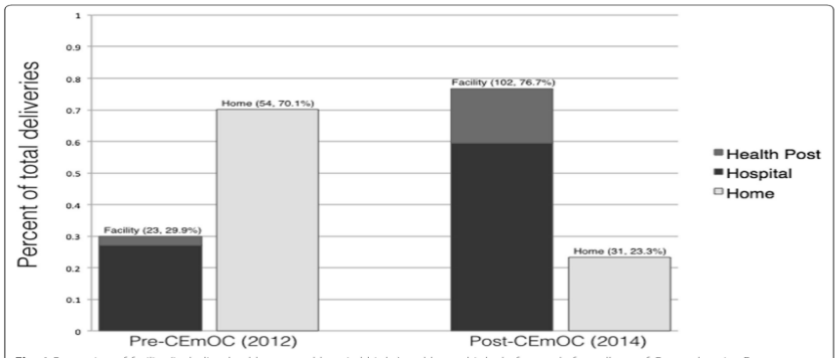

Figure 11: Institutional delivery: Impact of roll out of CEMOC at Bayalpata hospital in Achham district (72).

CHAPTER IV: Strategies to Incentivize Safe Delivery Care in Nepal and other Low and Middle Income Countries.

This chapter presents a review of strategies and interventions made to increase safe delivery care in Nepal. The final section presents a review of reforms and evidence-informed intervention in Low and Middle income countries (LMICs).

4.1 Analysis of Government Intervention on Safe Motherhood in Nepal

Nepal made remarkable progress in reducing maternal mortality since 1990 till 2016 with an eight fold increased rate in institutional delivery. Nepal's political and programmatic actions have underlined the country's prioritization of Maternal and neonatal health.

Nepal Safe Motherhood project (NSMP) was launched in 9 districts in 1997 (74) with the objective to provide quality of care in emergency obstetric care (EMOC), at hospitals and primary health care centers (PHCCS) (74). The project was very comprehensive having focus on physical infrastructure, equipment's, skilled human resources, behaviour change communication (74). NSMP mobilized local NGOs, established community based emergency transport, and supported nurses to provide safe basic emergency care. As it was focused only in 9 districts, the impact was limited. But lesson learned from the project were a base for the later development of policy and programme (74). NSMP provides the foundation for the DFID funded Support to Safer Motherhood Program (SSMP) initiated

in 2005. The national Safe motherhood and new-born long term plan 2002-2017 shifted the focus from subnational projects to national system strengthening approach (74). One of its intervention was Birth Preparedness Package (BPP), which encouraged the women and their families to plan for the pregnancy, delivery and postnatal period and enabling them to deal with an emergency effectively (29). BPP relied on key messages and behaviour change through Female Community health volunteer (FCHV) in order to address 3 delays (75). During a field trial , with BPP, there was 14% increment in uptake of PNC care but it did not showed any association with utilization of SBA and EMOC services (75). With this finding it was concluded to integrate with National Safe motherhood program. In 2009, Government rolled out the BPP in all districts and in 2010, community based distribution of Misoprostol was also integrated with BPP (75). Community based distribution of misoprostol "Mothers Safety Pills" through FCHV was found to be successful and government expanded its services in remote areas with low rate of institutional delivery (29). Following up on the findings, that cost was a barrier for women to go to a health facility- reaching health facility (HF) took 67% of the institutional delivery costs (76), government came with demand side financing scheme (22) covering cost of transportation to visit the health facility, opportunity cost while being away from home, families or work, and doctor's fee (77).

Maternity Incentive Scheme

In year 2005, Nepal government started the "Maternity incentive Scheme" (MIS), the first (78) " Free Delivery Care" (FDC) policy to increase the facility based delivery. The scheme provided transportation cost of NRs.1500, NRs.1000 and NRs.500 for women coming to public health facility from Mountains, Hills and Plain region respectively (76) The Weakness of the scheme was that it partially defray the transport cost but

didn't fully cover all expenses for the hidden costs including treatment and medicines which would not address the need of poorest of the poor.

Safe Delivery Incentive Program:

After one year of MIS, in 2006, the scheme was given a new name-" Safe Delivery Incentive program" (SDIP) and implemented in 25 district with lowest HDI. The SDIP would reimburse facility for their services irrespective of the complications of the delivery case. The scheme had the provision of "Pay for Performance", a separate incentives to the health workers for performing the delivery (79)(80).

Table 2: Summary of SDIP Incentives, Nepal

Financial incentives offered by the SDIP.

Financial incentive	Eligibility criteria
1. Cash payment to women • 500 NRS ($7.8) in plains districts • 1000 NRS ($15.6) in hill districts • 1500 NRS ($23.4) in mountain districts	Woman delivered in a public health facility and had no more than two living children or an obstetric complication (as diagnosed by the health provider)
2. Provider incentive • 300 NRS ($4.7) for each delivery attended	Doctor, nurse, midwife, health assistant, auxiliary health worker or maternal and child health worker attended a delivery at the woman's home or in a public health facility
3. Free delivery care to women and facility reimbursed • 1000 NRS ($15.6) reimbursed to health facility	Woman comes from one of the 25 least developed districts and meets the eligibility criteria required for the financial incentive

Weakness of the scheme: The scheme was limited to the women having less than two children (76). Study showed that seeking delivery care by women was negatively associated with increasing parity. Such scheme would not address the women living in poverty with multi parity pregnancy. This scheme included all the mountains and some hills (76) but was unable to address the needs of women in Terai.

Aama and New Born Care Program:

In 2009, the SDIP program further progressed into Aama(Nepali word for mother) with free delivery care across the country for every mother attending the child delivery at health facility or hospital (81). The 4 ANC incentive scheme was merged later in 2012 with this Aama program. Under the scheme, after completion of recommended visits at 4,6,8 and 9 months of pregnancy, women were provided cash incentives of NRs.400. Based on the complications, modes of delivery and capacity of facility, certain amount of reimbursement was set (81)(76). This reimbursement was to support the facility to cover the expenses incurred in delivery and to enable them to provide quality service. The scheme is now providing free new-born care since 2016 under Aama and New-born care program *(73).*

Table 3: Payment to health facility for the delivery service (73)

Condition	Amount
Normal delivery <25 beds	NPR 1,000 (£7.40)
Normal delivery >25 beds	NPR 1,500 (£11.10)
Complicated delivery	NPR 3,000 (£22.20)
Rh Anti-D	NPR 5,000 (£37)
CS delivery	NPR 7,000 (£51.80)

The payment to health facility for delivery care services as a reimbursement were same for private and non-government organization (NGO). Government facility was on better side since they received the reimbursement on top of their budget however for the NGOs, it was unfair scheme. This could have negative impact on the quality of care at point of delivery.

The policy on Skilled Birth Attendant (2006), National Blood Transfusion policy, expansion of 24 hours emergency obstetric care services, Safe abortion policy and integration with safe motherhood program are the milestones in reducing maternal mortality in Nepal. Both supply and

demand side interventions have played important role in improving maternal and new-born health throughout the country.

4.2 Policy and Practice implications, Challenges and Issues:

The Nepal health sector strategy had the target to reduce MMR to 148 per 100,000 live births by 2017 but the current MMR (239 per hundred thousand live births) is far behind the target (82). A huge gap among the populations in wealth quintiles: only 34% of women in lowest wealth quintiles versus 90% of women in highest quintiles made delivery at institutions. Though this is the reduced equity gap from 63% in 2014 to 56% in 2016. Similar variations among the ecological regions was seen: facility based delivery in Mountains was 42%, in hills 61% and in Terai 57% (82). Nearly 50% of health facility provide normal vaginal delivery services. Vaginal delivery service is lowest in province 2 (23%) and highest in province 6 (83%) .

Demand side financing scheme has been successful to increase utilization of safe delivery care services but as mentioned above, there exists an unacceptable gaps in equity. The major challenge is the quality issue . Lack of diagnostic service tests, essential medicines, service readiness, skilled mix health cadres has impacts on the quality of care. The study on Quality of care and Client satisfaction in Nepal reported women faces long waiting hours, lack of counselling during ANC visits and inadequate explanation on the problems of pregnancy . Such weakness in delivery of services might have contributed to the low percentage of facility delivery. Employee retention in health sector has been another challenge in increasing the facility based delivery. High prevalence of absenteeism of skilled health care providers due to leave or performing dual service. In Comprehensive

emergency obstetric centres, there are sparseness of skilled health cadres in remote areas (82). Human resources are demotivated to be located at remote areas. It was found that only 1% of total health facilities in Nepal meets the minimum standards of quality of care while delivering the service. The data showed the satisfaction among the client is in decreasing trend from 61% in 2011 and 56% in 2016 (83). Decreasing satisfaction among the service receiver highlights the weakness of supply system. In health system, there exists a low exercise of analysing the collected data to measure quality of care and utilizing it for improvement (82) Nepal government has already implemented Maternal and Perinatal death surveillance and response (MPDSR) at community level, but oversight structures have lack of resources, poor coordination mechanisms, high turnover of health staffs, limited capacity and poor monitoring system is imposing a challenge in implementation. The Family Welfare division (FWD) is a responsible body for the implementation and supervision of MPDSR, but there is no stewardship to the MPDSR (83) Already existing geographical barriers in mountain's and hills further challenges the access to health care facilities.

In the implementation of Aama program, there are seen various challenges. Delay in release of conditional grants to the local governance due to the absence of clear policy directive from the Ministry of Finance (MoF) (82). Also due to recent federal system, fund flows from district treasury (DTCO) to municipality. It was seen DTCO not issuing health budget to Palikas on time. Majority of service providers (74%) were implementing the Aama Program without the orientation and trainings (84). Many of health facility and Palika's didn't have "Aama Program Guidelines". This guidelines is a key document for managing the program and guiding for the provision of policy. Only 56% of health facility and 21% of Palikas were following the guidelines (84). It was seen in many places budget provided to local governance was not enough for distribution for 4 ANC and transport incentives. One of the reason for this is because the allocation of conditional

grant was not determined by considering the flow of patients and burden of cases in some birthing centres. Allocation was based on geographical boundaries and population. Reimbursement for CS from Aama fund was inadequate and health facility were managing the incentives from their internal fund. Low awareness of the scheme among poor women, delayed or incomplete payment are the existing barriers. Reimbursement for transport on the arrival at health facility may not always encourage the women because poor women always may not have access to cash to pay and reach the facility and women may not trust the facility will reimburse the cost (60). The rapid assessment of Aama Program conducted in 2016 showed that lots of deliveries performed at home were not reported in health care and M& E system (84). Many of the mother performing delivery at hospital either normal case, complicated or CS, were paying for the services. Around 24% of women were paying at hospital, 22% at primary health care centre, and 18% at the health posts for the services received (84). The program lacks proper supervision and monitoring . Strengthening of supply side remains important. It was seen some palikas (the local governing body) having no birthing centres also were receiving the "Aama fund", some of the health facility having surplus fund while other having shortage of fund. Due to lack of system or directives to transfer the fund and having no policy of inter-governmental transfer at the local level, the program gets affected. It was seen some palikas provided additional incentives to mothers that were beyond the scope of Aama Policy guidelines. Another challenge in implementation in remote areas were due to lack of bank account, telephone services and other basic infrastructures. Lack of such infrastructures constitutes major obstacles in channelling the fund.

Based on the evidence to achieve Universal Health Coverage, government should spend at least 5% of the GDP on public health expenditures which means approximately USD 86 (NPR 630) per capita spending (85). But in case of Nepal, the expenses is beneath the recommended amount. The

data shows Health sector budget is in decreasing trend: 6.1% during fiscal year (FY) 2014/2015 has fallen to 5% of the total national budget in FY 2018/2019 (82). This could be due to the government priority on restructuring of the federal system and establishing new functions in the devolved context. This analysis also suggests that current investment in health is not sufficient to achieve SDG by 2030

4.3 Best Practises and Interventions in low and middle income countries.

Understanding the best practices and interventions associated with the progress in countries that have reduced maternal mortality in similar context of Nepal can provide an opportunity to understand the what is going on and have the lessons learned . The framework used for the study are grouped into 3 main delays mainly caused by Demand side factors and supply side factors. Hence the interventions and strategies are grouped into two headings as the Demand Side intervention mainly addressing 1st and 2nd delays; and Supply Side intervention mainly addressing 3rd delay to incentivize and improve safe delivery.

4.3.1 Demand Side Intervention: Addressing delay 1 and 2

Financial incentives , is a common strategy to address the demand side barriers and encourage the utilization of safe motherhood services. Conditional cash transfer (CCT), voucher scheme, Community based insurance scheme (CBHI) are the approaches or the recent innovations in the field of maternal health used by many countries (86). Most of the conditional cash transfer programme have been implemented in Latin America. Countries like Mexico, Columbia, had focus on child health while Brazil had focus on Maternal health. Their success story strongly illustrates the effectiveness of CCT . Such schemes provides the purchasing power to poor households and increase access to health services (86). India

launched CCT program" Janani Surakshya Yojana (JSY)" with the objective to promote institutional delivery in 2005. A cross-sectional study among women giving birth in 30 villages in Ujjain District, showed majority of deliveries(318/418) took place within JSY program. 81% of all mothers below poverty line delivered in the program (87). Similarly, in Egypt, an evaluation of the first conditional program" Takaful and Karama program (TKP)" showed the households were using the cash transfer to cover the medical expenses (88). ***Voucher scheme***, a demand side funding scheme is also proved to be effective in improving maternal health. In India, Chiranjeevi scheme focusing on increasing the institutional delivery specifically emergency obstetric care (EMoC) for the poor was proved to be successful program. In Kenya, to assess the impact of voucher scheme, study among the woman before and after the intervention, which showed facility based delivery remain unchanged before the onset of scheme however it increased significantly after the onset of the voucher scheme (89).

Community based health insurance scheme (CBHIS) aims to prevent catastrophic health expenditure among the lowest wealth quintile. A studies in Rwanda showed the stronger evidence of better utilization of health care facilities and income protection due to CBHIS (90). There was improved delivery and utilization of maternal health services after the introduction of CBHI in Anbara state in Nigera. (90)

Enhancing patient transfer could overcome difficulties of physically accessing available services. ***Transportation intervention*** can reduce second phase of delay. For example in Kenya, maternal and new-born improvement project used transport voucher to assist poor pregnant women in reaching hospital (91). In Nigeria, communities established and managed emergency fund for the emergency case. Similar interventions were carried out in India, Bangladesh and Pakistan. The studies shows the evidence that community transport funds can play role in mobilizing pregnant women to attend antenatal care and increase institutional delivery

(86). ***Maternity waiting home*** (MWH) provides a place to stay and await labour for high-risk pregnant woman who lives far away during the final weeks of pregnancy. The findings from the assessment of MWH in countries like Zimbabwe Cuba, and Srilanka were positive. The role of MWHs may increase institutional delivery and improve access to EMOC, but may also provide information on immunization, breastfeeding, nutrition, and family planning for waiting mothers. In Zambia, Maternity Waiting homecare are integrated into national health system and services are free. In Peru, MWHs were built similar to indigenous home to make it culturally appropriate (60) In Columbia, community and political leaders were mobilized to increase the awareness, acceptance and develop ownership about the program. A feasibility study of MWHs carried out in Nepal reported the lack of awareness and knowledge about the existence of waiting home led to poor implementation (60).

4.3.2 The Supply side interventions

To improve the quality of care, capacity building of health care provider, knowledge level, adherence to clinical protocols, and changes in clinical practice behaviour were adopted as a proven ***Quality improvement (QI) approaches*** to improve the quality of MNH services.

A common approach in managing the human resource is ***task shifting***, the delegation of duties from more skilled medical personnel to non-physician or intermediate cadres of health workers (92). Another innovative approach based on the recommendation of WHO, using a ***checklist for safe delivery service***. A research conducted by WHO to see the result of pilot implementation, a large majority 72% felt that using the checklist significantly improved maternal and new-born care (93). ***Clinical audits*** and feedback, a continuous quality improvement tool QI tool has been proved to improve the clinical performance, service utilization and patient satisfaction. In rural Tanzania, clinical audit proved to be a very successful approach in generating the evidence based information to base

interventions (94). ***Pay for performance*** is a continuous approach to motivate health professional for quality service delivery. The performance based payment for Accredited Social Health Activist (ASHA) in India led to an increase in both facility based deliveries and breastfeeding practices, as well as decline in neonatal mortality of up to 70% (96). ASHA are voluntary community health workers in India (95). To encourage institutional delivery, in Pakistan, all the staffs from medical officers to drivers and even security staffs working in the evening and nights shifts were incentivized. The incentive kicks in when night delivery occurred (96). ***Mobile Message*** system for real time monitoring and reporting of pregnancy, delivery and referral case including community awareness on maternal and neonatal health care in Pakistan was proven to be cost effective and sustainable model (96). Similar innovative approach was designed in Rwanda too and for the success of this mobile messaging system was backed by the existing community health programme, and performance based financing (96).

Community engagement focusing on mother's education in birth preparedness , ANC visits, recognition of danger signs, and new-born care can contribute to reduce both first and second delay (97). Regular visits by trained mid-wives to the community for counselling which increased the uptake of contraceptive in Pakistan as in Nepal. The evaluation of community based intervention packages (CBIP) in Pakistan and Malawi, provided high quality of evidence on reducing neonatal death. The CBIP consists of interventions on health promotion, diseases prevention through health education. It is carried out by community health workers, women's group at home or in community during pregnancy, delivery and postnatal period (92). In India, provision of education and new born care through community participation reduced the neonatal deaths about 50% (92). The community mobilization through facilitated ***participatory learning and action (PLA)*** cycles with women's group is recommended by WHO to improve maternal and new-born health especially in remote area. PLA groups discuss the needs of pregnant women, the barriers to receive care,

and increase support to pregnant women. The PLA approach reported large reductions in MMR in Nepal and India. However in Bangladesh, the strategy didn't showed significant effect (97). Socio-cultural and Gender related barriers may influence the participation of community people.

Contracting out has been used effectively in reaching the economically deprived populations. Evidence from Cambodia suggested contracting out can be a feasible policy to address the equity issue in terms of accessibility and financing (98). Contracting with private sectors or civil society organization can fill the gaps in governmental capacity in terms of human resources, equipment's, technical skills (98). Nepal also has adopted this approach and has been hiring the CEMOC team contracted through CEMOC funds. There are challenges in optimal utilization of the contracted staffs. The hiring cost also remains relatively higher and in remote mountains, it is challenging to retain them (99).

CHAPTER V: Discussion, Conclusions, and Recommendations

This chapter presents a discussion of the major key findings that emerged from the literature analysis categorized into factors underlying low use of skilled delivery care; it's consequences; and interventions that have been implemented to address these challenges. This is followed by a summary of the findings and concludes with recommendations based on the findings.

5.1 Factors underlying the challenges from demand and supply side in accessing safe delivery care

Different studies indicate that sociocultural barriers are one of the major factors constraining women in Nepal to seek safe and skilled delivery care. Involvement and high influence of husband and in-law's family in making decision about the health of women is key and without their support women cannot decide independently to seek medical care. Some indigenous practices are not helpful, like giving birth at cow-shed, belief that first baby should be delivered at home, pregnant women should not pass along the temples on the way to hospital, or cross rivers. Similarly in Zambia, some communities believed that burying the placenta in home will always return the off-spring (100). Study also showed that women did not seek pre-natal care and visit only at last moment when complications appear. Women in remote and mountainous regions consider bearing a child as normal life event which doesn't require extra care. Local culture discourages women to go to health facility for care. it is also considered a social taboo for women to get health care services from a male attendant at birth centre and felt un-comfortable to expose their body parts to male service providers. In many situations, homes are considered safer, being family around, availability of hot food, warm bed and oil massage for baby resulting into many women preferring home-based delivery. In case of any

adversity, it is blamed on evil spirit, or Gods will or their destiny. Girls are taught by mothers to be a good sub-ordinate at husband home, resulting into transferring of decision-making power to husband and his family. It is therefore important to develop culturally appropriate environments for women to deliver at health facility.

The caste based system has negative implications on access and utilization of health care services among lower caste, *Dalit community.* The NDHS 2011 showed MMR at national level was 229 per 100,000 live births however among the Dalit it was higher at 273 per 100,000 live births(49). The culture of discrimination based on caste and class is deeply rooted in Nepal society which still prohibits the disadvantaged groups in many ways including access to health services. Besides discrimination, perceived needs of attending the facility, cost, transportation, poverty, and the status in the society discourage communities from lower caste to opt for to facility-based delivery.

It was seen greater distance to facility was one of the reason to discourage women to go for facility based delivery. Lack of proper transportation, poor road infrastructure and networks and high transportation cost in remote areas translated into seriously difficulties for having timely access to services during pregnancy. Though government is providing transport incentives for ANC visits and delivery, still for poorest family this money is not enough as women are not supposed to visit alone but to be accompanied by family members which have additional cost implications. Furthermore, recurring natural disasters have worsened the road condition every year. Availability of health services at close distance may encourage the women to seek services.

Supply side barriers in terms of lack of human resources, unavailability of basic amenities in the facility, access to EMOC services, quality of service at health facilities has negatively influences the uptake of delivery care. Skilled mix of health cadres, medicine supplies, infrastructure addressing

privacy and confidentiality, basic amenities like available of water resources, infection control mechanism, cleanliness all are very essential to ensure the quality of care. Women experiencing shortages of these create negative perceptions. This perceived quality is a factor for first delay. Evidence shows that access to CEMOC is still a challenge in rural and hard to reach areas of Nepal. Many of the CEMOC are not functional due to shortages of health workforce. Delays in contracting out and recruitment process, and lack of motivation among the health professionals to serve in rural areas further challenges service provision. Human resources are not in adequate number and available skilled human resources frequently lack opportunities to update their knowledge, and skills since the locals bypass the birthing centres in their locality. The rate of increase in deliveries at private facilities underlines the quality of care provided in public facilities. Similarly C-sections are concentrated in urban areas among women in high wealth quintiles and high education status. It requires to strengthening of the health system to guarantee equitable utilization of services among women in low wealth quintile, and education.

5.2. Analysis of Nepal Government interventions on improving safe delivery care services.

Nepal government started prioritizing maternal health back in 1990. Later in 1997, MoHP came up with the Safe motherhood program encompassing increasing EMOC coverage, equipped birthing centres, build-up human resources and strengthening the referral mechanism.

The government's initiatives of cash incentives to reduce the burden of cost through MIS scheme, provision of free delivery service, ANC visit incentives have proved effective strategies in increasing the utilization of safe delivery and reducing maternal mortality. The incentive project has a provision to give NPR 1500 to a mother in high mountains, 1000 for mid hills and 500 for plain Terai region. However, it was observed that the amount was not enough for the mothers and family members from low wealth quintiles. It

was seen that in many cases health centres did not provide the incentives to women after delivery and asked to visit later to collect the incentive which could be a demotivating factor. Similarly, delays in release of fund to local level, had negative implications and led to system in-efficiency. Findings revealed that guidelines were not followed in many cases and so cash ended up in the hands of husband or relatives. It has been shown that education and awareness is a critical factor in utilization of maternal services and underlie disparities in health seeking behaviour among women having secondary education and no education. On top of that, the program is still unable to reach out to the more disadvantaged groups creating a further equity gap.

Studies show a gradual increase in use of private facilities for delivery- 19 % in 2016, 22% in 2017 and 23% in 2018 respectively (10). This caused to overcrowding situation in tertiary level hospitals. These trends are also indicative of the quality issue in the government managed health post and PHCCs in the outlying areas. Women are not using the services at birthing centre at local level and prefer to go to Tertiary level hospital. Poor quality of ANC counselling and no dissemination of basic information on danger signs, may result into low utilization of institutional delivery.

"Health in all Policy" approach to uplift income and overall status of rural people may ultimately influence the various delays, both financial and sociocultural. It requires that interventions and strategies targeting the poorest, uneducated should be reviewed. Also, the balance in skill mix of human resources, human resources strategy and policy need to be reviewed.

5.3 Best practises in low and middle income countries to improve safe delivery care

The overall findings revealed mixed evidence across approaches around the world. Demand and supply side interventions in LMICs had varying level

of success. Financial incentive schemes have been proven to be successful by encouraging women to seek health care services. Evidence shows that conditional cash transfer was highly successful in Latin America. Significant progress has been seen in LMICs on increasing the demand for safe delivery care, however there are range of challenges in implementation of such approaches. For example, in Nepal, due to delay in budget release, low quality of services, lack of implementing guidelines, the progress is slow. Illiteracy, lack of knowledge and awareness are the major barriers among women to seek maternal health care. The bottom up Community-based interventions are proved to have influence on health outcomes . Clinical audits and strong feedback and complaint mechanisms help to improve the quality of care provided to women. Score cards method can be used to assess the attitude of staff and cleanliness etc in health centres. Establishment of emergency fund to manage transportations for obstetric emergencies, can reduce the delays. The findings showed that CBHI was an effective initiative to increase the demand for facility-based delivery by ensuring some financial protection. But there are challenges in enrolling the people from the poorest quintiles as CBHI is voluntary.

Maternity waiting homes play key role in promoting facility-based delivery for the women especially from remote and mountainous region. Despite positive effects, there are still some challenges in utilization of MWH- Like quality of the waiting home, cleanliness, crowding situation, cultural issues, lack of privacy, and being away from the family. Above all to deliver quality care skilled human resources are pivotal to give best outcome. Therefore, supervision, performance audit , maternity and new-born deaths audit can make great contributions in reducing maternal mortality and improving the safe delivery practices.

5.4. Conclusions

Socio-cultural beliefs, discriminatory caste system, women's autonomy and her decision-making power, are the main factors that lead to denying women to look for appropriate health seeking behaviour and accessing maternal care from the formal health system. Adherence to non-scientific practices and superstitious beliefs put women at high risk of obstetric complications. Also, women's perception of the cost and quality boil down to barriers to use health-based delivery. Accessibility in terms of distance, time, and transportation is critical to reaching facilities in time, especially in difficult to reach mountain areas. As it lacks proper roads or means of transportation, and high cost of transportation is seen as major obstacle where women have to walk for hours to reach health facility. During emergency obstetric complications, walking for women and carrying the women on stretcher, or using porters all are risky modes of transportation. Women may fall and die. Costs have further worsened the scenario of accessibility. Costs for the transportation to reach the birthing centre in obstetric complication, added costs for reaching referral hospitals, medicine and others supplies, all these put burden on family members while opting for facility-based delivery. Moreover, the infrastructure, human resources and quality of the care all influence negatively for women to have delivery at facility. In nutshell, availability of skilled health workers, health facility structure, equipment, availability of emergency obstetric services, attitude of health staff, quality of service delivery all have significant association in increasing the institutional based delivery.

At the policy level, Nepal government is making progress with the regular revision of policies to take stock of emerging needs and issues. Despite the continuous improvements some gaps were observed in policies governing Aama and new born health program: Delays in fund disbursement to the health posts in turn delay release of incentive to women. Fund was also not enough when the women have to make travel from long distance, or for women coming from low socio-economic groups. Health cadres were not adequate to serve the demands. Though all the favourable policies are in

place but to provide quality services, the quality assurance mechanism needs to be strengthened. To increase the availability and coverage of essential interventions, existing challenges around demand, supply and quality of health care should be addressed. Nepal government recently has entered into federal structure with devolved sub-national provincial and local government system entails for conducive environment for proper division of roles and responsibility and delegation of authorities with proper guidelines at all tiers of governance structures .

5.5 Recommendations

The recommendations for programmatic actions to improve skilled birth deliveries in the healthcare system in Nepal are made based on the issues identified. Main aim is to improve the utilization of birthing centers, health posts and primary health care centers in order to reduce maternal mortality rate so as to reach the SDG targets. The recommendations are categorised according to the various stakeholders involved in safe motherhood programmes.

5.5.1 Monitoring and Supervision of Aama Program

The Ministry of Finance should develop guidelines to guide the planning and budgeting process of Aama and other health program for the provincial and local governance. Aama program requires continuous monitoring at the implementation level to track the challenges and adapt accordingly. Government should allocate higher percentage of budget in research activities to improve the quality of services. A mechanism to track the budget allocation and expenses for health at each levels of government should be established too.

5.5.2 Establishment of Maternity waiting Homes:

To improve accessibility, the government needs to replicate the model of maternity waiting homes in the periphery of health facilities in rural setting. In mountains and hills, the distance to reach hospital takes lots of time and money. Maternity waiting home (MWH) can accommodate accompanying family members, save time, reduce the delay in reaching facility and reduce the burden of costs on family members. Various factors such as free services, transport support, availability of meals, income generation program to support for loss of income are found to increase the use of MWH. During implementation, care of children and livestock also should be considered.

5.5.3 Focus on Quality of Care

Poor quality of care is seen as one of the major barriers to reduce mortality and morbidity at the time of child birth. The Safe Childbirth checklist(SCBC) was endorsed by WHO after the success of WHO Safe Surgical Checklist. The SCBC contains a list of essential evidence based practises extracted from WHO guidelines. The application of WHO SCBC at all levels of health facility, will help in providing quality of care by ensuring all activities of the delivery care are well performed. Further, to improve the quality of care, a legal framework for the regulation of the drugs and laboratory services need to be developed. The surveillance of Maternal and Perinatal death (MPDSR) should be conducted in every health facility having birthing centre and government bodies at local level need to be equipped with the skills to conduct the surveillance, monitoring and follow-up. This surveillance will strengthen the accountability process and helps to take responsive action for further improvement.

5.5.4 Strengthen the system of Human Resources Management

To strengthen the human resource system in health, nation requires to develop human resources retention strategy . Deployment strategy for the doctors graduated from the government scholarship should be designed as

a special case to avert brain drain. Develop the procedure for task shifting Allocate a proper skill mix of cadres in an equitable way. Timely initiation of the recruitment process should be carried out. The government should invest in technical competency of rural health providers with special incentives for the health staff working in hard to reach areas.

5.5.5 Scaling up communication and awareness program

There is great need to build awareness about the necessity of safe delivery care for the better health of Mother and Child. Public awareness needs to be increased with more focus on ***Male Involvement.*** As recommended by WHO, this intervention can help in developing proper care practices during pregnancy, child birth and postnatal period. Being a patriarchal society, care should be taken to avoid limiting the autonomy of women.
Communication and message dissemination should address- the danger signs, care-seeking and postnatal visit with special priority on adolescents girls, pregnant women and young couples.

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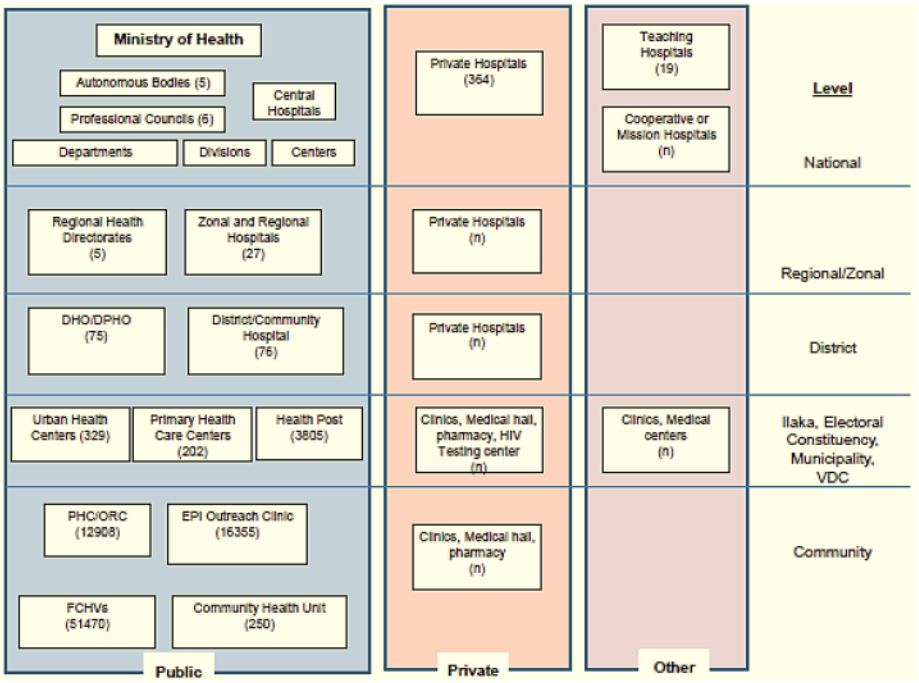
Annexes:

Annex 1: Health Delivery channel in Nepal

Table 4: Health delivery care in Nepal (101)



Annex 2

Table 5: Historical development of plan and policy on maternal health

Year	Plan/ Policy	Main Focus
1975-1990	Long term health plan	Integration of Maternal anc Child Health and Family planning
1991	National Health Policy	Focus on Primary Health Care and decentralized distrists
1993	Safe Motherhood Policy and action plan (1994-1997)	
1993	National Blood Policy	
1997	Second long term health plan (1975-1990)	
1998	Safe Motherhood Policy 1998	
2002	National SafeMotherhood Program (2002-2017)	Focus on basic and comprehensive emergency obstetric care, birthing centres.
2003	National Safe Abortion Policy 2003	
2005	Maternal Incentive Scheme	Encouraging institutional delivery defraying the transportaion cost
2006	Safe motherhood and neonatal health long term plan (2006-2017)	Revised with concerns over neonatal health. Focus on equity and Skilled birth attendants.
2006	National Policy on Skilled Birth Attendants	Increase availability of Skille birth attendants
2006	Safe delivery Incentive Program	Transport Incentive and free delivery in 25 selected low HDI districts
2009	Aama Program	Transport Incentive and free delivery all over the nation.
2010	Nepal health sector program implementation plan 2010-2015	
2012	Aama Program	Transport incentive+ Free delivery+ 4 ANC incentive
2014	National Health Policy 2014	Focus on reducing Maternal mortality
2016	Aama and new-born programme	Transport incentive+ Free delivery+ 4 ANC incentive + new born care