SAFE DELIVERY INCENTIVE PROGRAM UNDER MATERNAL HEALTH FINANCING POLICY OF NEPAL: A CASE OF KAILALI DISTRICT IN NEPAL

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ABSTRACT

Around a half million women die every year due to pregnancy and childbearing related causes and millions of other suffer from lifelong complications. MMR is estimated to be 229 per 100,000 live births in Nepal (MoHP 2009). Lack of professional assistance at delivery is considered as an important factor that contributes to high maternal mortality and morbidity. According to Nepal Demographic and Health Survey 2011, an overwhelming majority (64.7 %) of births still take place in home (MoHP et al., 2012). The Government of Nepal initiated Safe Delivery Incentive Programme (SDIP) under maternal health financing policy on July 2005 as a cost sharing scheme to increase access of women to safe delivery services. The SDIP has evolved into the "Aama programme" which includes cash incentives to women and health worker, and free delivery services. This study aims to explore the implementation practice of SDIP at district and VDC level and to assess the factors associated with SDIP utilization. Andersen's framework of health services utilization is used as the theoretical framework for this study.

A cross sectional descriptive study was conducted in Dododhara VDC of Kailali district, using both qualitative and quantitative methods. The qualitative study was carried out to review the implementation practice of the SDIP through in-depth interviews with policy implementers (3 from district and 2 from VDC). Quantitative data was collected among 54 (27 delivered at health facility and 27 at home) women who delivered live birth within the last six months prior to survey in Dododhara VDC. Bivariate association between the population characteristics with the use of SDIP were assessed by t-test for continuous and chi-square test for categorical variable. The effect of the SDIP was further assessed by analyzing the trend of maternal health care utilization indicators in last ten years.

SDIP, in Kailali district, was introduced in 2005. The policy was revised and introduced as Aama Surakchhya Programme on 2007/08. Number of HFs providing delivery services is increasing in Kailali district but there is still lack of resources and equipments to provide quality services to meet the demand of people, and late approval of budget are creating problems in implementing the policy.

Among the predisposing factors measured in this study, household size; type of family; women's education and husband's occupation were associated with health facility delivery. Exposure to

media, knowledge about SDIP, ANC service utilization, months of pregnant at first ANC visit, husband presence at delivery, discussion with husband about own health during pregnancy, birth preparedness and distance to health facility were the enabling factors significantly associated with delivery at health facility. Trends analysis of maternal health service utilization shows that the proportion of deliveries taking place in a health facility, delivery assisted by HWs and SBAs increased after the implementation of SDIP and free delivery care. Geographical settings/disaster affected area, delay in fund release, joint signatories, insufficient resources and temporarily paced ANMs are major challenges faced by policy implementers at the community and district level.

Though there was some confusion at the initial phase of policy implementation, it is being implemented in a smooth manner by now. However, problems like geographical difficulties, delay in fund release, and insufficient resources need to be tackled for SDIP implementation. Household size, type of family, women's education, husband's occupation, knowledge about SDIP, media exposure, ANC visit made during pregnancy, husband's presence at ANC and delivery, birth preparedness and distance to health facility from home were found to be associated with SDIP utilization. Trend analysis of last 10 years data showed that there is some evidence to suggest that maternal health service utilization have increased due to the SDIP.

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ABBREVIATIONS

ANC	-	Antenatal Care
ANM	-	Auxiliary Nurse Midwifery
BIC	-	Birth In centre
BMHSU	-	Behavior model of health service use
BOC	-	Basic Obstetric Care
BPP	-	Birth Preparedness Programme
CBNCP	-	Community Based Newborn Care Programme
CCT	-	Conditional cash Transfer
COC	-	Comprehensive Obstetric Care
DoHS	-	Department of Health Services
DPHO	-	District Public Health office
EP	-	Expected Pregnancy
EOC	-	Emergency Obstetric Care
FCHV	-	Female Community Health Volunteer
FHD	-	Family Health Division
FIL	-	Father in Law
FWRA	-	Far Western Region
FY	-	Fiscal Year
GoN	-	Government of Nepal
HA	-	Health Assistant
HF	-	Health Facility
HFOMC	-	Health Facility Operational Management Committee
HMIS	-	health Management Information System
HP	-	Health Post
HW	-	Health Worker
IHP	-	International Health Partnership
I/NGO	-	International/Non Governmental Orgnaization
JSY	-	Janani Suraksha Yojana
MDG	-	Millennium Development Goal

MIL	-	Mother in Law
MIS	-	Maternity Incentive Scheme
MMM	-	Maternal Mortality and Morbidity
MMR	-	Maternal Mortality Rate
MNH	-	Maternal and Neonatal health
MoHP	-	Ministry of Health and Population
MWRA	-	Married Women of Reproductive Age
NDHS	-	Nepal Demography and Health Survey
PHCC	-	Primary health Care Centre
PHC ORC	-	Primary Health Care Outreach Clinic
PHN	-	Public Health Nurse
PNC	-	Post Natal Care
Rs.	-	Rupees
$	-	Dollar
SBA	-	Skilled Birth Attendant
SDI	-	Safe Delivery Incentive
SDIP	-	Safe Delivery Incentive Programme
SHP	-	Sub Health Post
SN	-	Staff Nurse
UN	-	United Nation
US	-	United States
VDC	-	Village Development Committee
WHO	-	World Health Organization

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CHAPTER 1: INTRODUCTION

1.1. Background

Globally each year, out of an estimated 120 million pregnancies more than half a million women die from the complications of pregnancy and childbirth and virtually all (99%) of these maternal deaths occur in low-income countries (Clarke, 2008, WHO, 2007). More than 50 million women suffer from a serious pregnancy-related illness or disability; around 1.2 million newborn infants die from complications during delivery. Fifth Millennium Development Goal (MDG) is improving maternal health aiming to reduce the maternal mortality ratio (MMR) by three quarters between 1990 and 2015 (UN 2008).In spite of a decline in the MMR of 2.5% globally from 1990 to 2005 and a slight drop in every region of the world, the achievement is still too little to reach up to the goal (Hill et al., 2007).

In Nepal MMR is estimated to be 229 per 100,000 live births (MoHP 2009), and the maternal health care utilization is low, as only 58 percent of mothers received antenatal care(ANC) at least once for the last live birth from a doctor or nurse/midwife for their most recent birth, only 36 percent of babies are delivered by a doctor or nurse/midwife, and 35 percent are delivered at a health facility indicating that Nepal has a long way to go to meet the Millennium Development Goal (MDG) target of 60 percent births attended by a skilled provider and 40% target delivered at HFs (NDHS, 2011). Overwhelmingly, vast majority 65% of Nepali women gives birth at home under unhygienic conditions, with untrained attendants (NDHS, 2011). Lacks of health service provision and under utilization of services are important contributing factors to the high maternal and neonatal mortality rates which beg for immediate attention.

There is wide recognition that the major factors contributing to high maternal mortality and morbidity is the low use of maternal health services during pregnancy, for delivery and at the post natal period. Health facility delivery ensure skilled care by Skilled Birth Attendants (SBAs) during childbirth as they immediately afterward can make a critical contribution to preventing maternal and newborn deaths and disabilities as they can manage normal childbirth, recognize complications and refer women in time if necessary. Although maternal health outcomes have been improving considerably in Nepal but low levels of Health facility (HF) delivery, delivery

attendant by skilled attendance and unequal access to safe emergency obstetric care is still high which is found as major barrier to achieve the MDG 5. The study by Borghi et al. (2006) found that the household cost of seeking care at childbirth was prohibitively high and the majority of expenditures were made outside of the health facility on transport. Borghi estimated the cost of normal delivery to be US$ 71 and a caesarean section US$ 152.

The Government of Nepal (GoN) has made changes to maternal health financing policy with a view to raising demand and supply for safe delivery care services. These changes have been implemented through two programmes. The first of these, the Safe Delivery Incentive Programme (SDIP) provides a cash payment to women who give birth in a public health facility with the aim of fostering the demand side to alleviate some of the transport costs of accessing care iii) a financial incentive to health workers for each delivery attended both at the health facility and at home encouraging health workers to attend home deliveries (GoN, 2005). It is a safe motherhood intervention initiated nationwide by Government of Nepal on July 2005 as a cost sharing scheme in response to help households to overcome financial barriers to increase the access of women to safe delivery services and to mobilize SBAs to provide home based delivery services.

The goal of the Safe Delivery Incentive Programme (formerly the Maternity Incentive Scheme) is to reduce maternal mortality and morbidity in line with the Government of Nepal's (GoN) commitment to the Millennium Development Goals (MDG). A key component of the GoN's effort to improve maternal health is to increase the coverage of women who deliver in the presence of a skilled health professional so that complications, should they arise, be recognised and managed. The SDIP is central to this strategy. The SDIP sought to change the behavior of both families and health workers through the package of financial incentives.The second policy reform has been to provide free delivery care (in addition to the cash incentive) in designated public and private not for profit health facilities across Nepal since January 2009.

1.2. Scope of the research

This study explores about the implementation of policy in district, factors associated with use of SDIP and analyzes maternal health outcomes after introduction of policy in bringing change on

service delivery. The experiences and views of both service providers and services seekers involved in the program is explored using both quantitative and qualitative methods. The findings from the study will benefit policy makers, researchers and policy implementer.

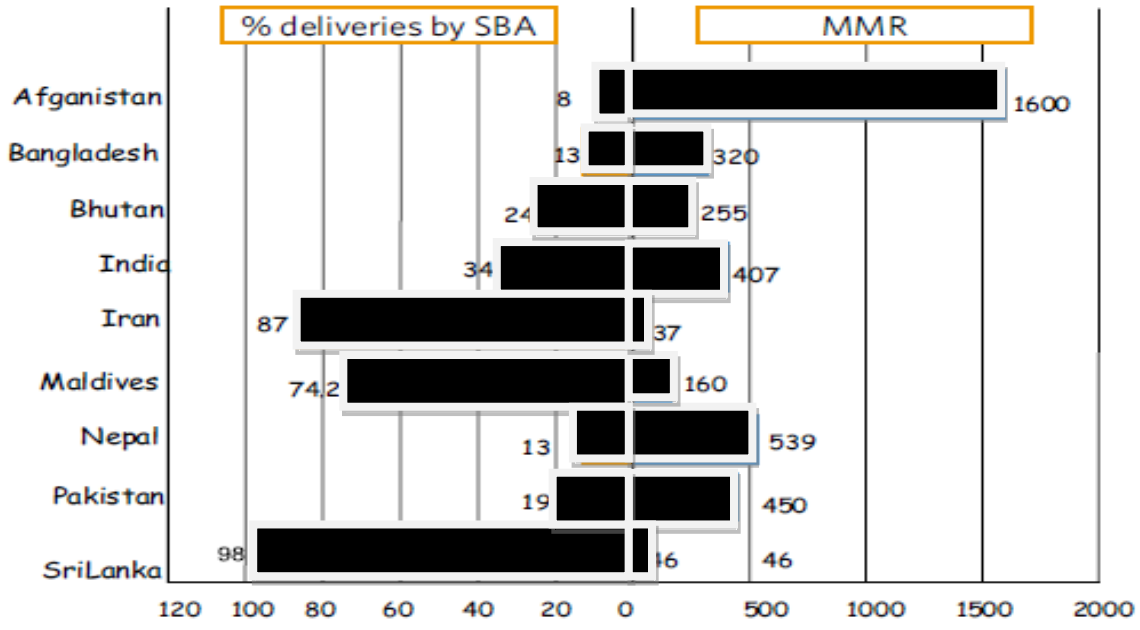
1.3. Statement of the problem

The International Health Partnership consensus is that skilled care at every birth is the key to making childbirth safer for women and their newborns. The proportion of births assisted by SBAs is an indicator of Millennium Development Goal which assesses progress towards maternal mortality reduction. As a signatory of Millennium Declaration, Government of Nepal (GoN) is committed to achieve it.

In Nepal, only 35% of birth takes place at HFs and 36% of births take place with the assistance of SBA (MoHP et al., 2012). The target of delivery assistance by SBAs and delivery at HF for the country are 60 and 40 percent respectively by the year 2015 (DoHS Nepal, 2011). Therefore a new policy and strategy must be in place to ensure delivery of mothers at HFs, availability of birthing centre and skilled attendants at HFs providing emergency obstetric services. The below graph proves that percentage of deliveries conducted by SBA is negatively associated with maternal mortality in all countries.

The single greatest contributing factor to the high maternal and neonatal mortality rates is that 65% of delivery at home and 64% of births have no skilled birth assistance (MoHP et al., 2012). It is widely asserted that financial cost as major barrier for inadequate access to services. A study undertaken by the National Planning Commission showed that transport cost for safe delivery could be as high as NRs 1000 (US $13.3), a delivery without complications NRs 400 (US $5.3) and with complications NRs 800 (US $10.7) and concluded that most women would only seek care on their own accord if services were free (National Planning Commission, 1998). It has been hypothesized that if incentive will be provided to mother for support in transportation and service will be free at HF then only she can be able to reach health facility. The incentive provided to HWs will also help to make active service providence side thereby increasing delivery attendant at HF and delivery by HWs which will decrease the maternal mortality.

Figure 1: Situation of skilled birth attendants and maternal mortality in South and West Asia



Source: Situation of maternal health status in Asia

1.4. Research Objective

The study aims to explore the implementation practice of SDIP at district and VDC level and assess the factors associated with SDIP utilization. More specifically, the objectives of the study are:

- To review the implementation practice of SDIP at district level and below.
- To assess the factors associated with the use of SDIP.
- To assess the effect of SDIP on maternal health outcomes

1.5. Research Question

- What is the implementation practice of SDIP and what are the factors associated with the utilization of SDIP?

1.6. Significance of the research

A Maternal Mortality and Morbidity (MMM) study (MoHP et al., 2009) which was carried out over the one-year period, 13 April 2008 to 13 April 2009, in eight districts of Nepal and it showed that the MMR per 100,000 live births is lowest in Baglung (120) and Okhaldhunga (138) and the highest is in Kailali (219) and Jumla (310). The SDIP has been in operation for over five years in Kailali. Study of the SDIP has been done in other districts of Nepal, but Kailali was not in included in the study. So, it is necessary to review the implementation process, factors associated with use of SDIP and its outcome in terms of increase in institutional deliveries, delivery by HWs and SBAs for further strengthening the scheme.

Furthermore, Kailali is one of the highly populated districts of the Far Western Region (FWR) of Nepal with population 7,84,757, expected pregnancies (EP) 22,117 and married women of reproductive age (MWRA) (15 to 49 years) is 13,850 (DoHS Nepal, 2011). Dododhara, the study VDC, has population of 18, 371, EP 528 and MWRA 3,613. There is an Ilaka HP, which is also a birthing centre, under which 4 HFs are running (DPHO Kailali, 2011).

This study not only explores the trend of maternal health outcome but study the program from perspective of both service provider and services seeker who actually implement the policy at field level and who is benefitted directly from the program. The study will provide valuable information for evaluating the current implementation status of the scheme in Kailali to recommend for improving its effectiveness. With the impressive increase in demand for services, the issue of supply side matching the demand and the quality of services rendered becomes very crucial for the successful functioning of the scheme in future. The findings of this study will be utilized by the respective district to observe the status of program and at national level towards strengthening the implementation of the program, formulating an appropriate action plan to address specific gaps highlighted in this study and to act on the specific findings for improving the maternal health status in the country.

1.7. Operational Definition

- Health care system - This system includes safe delivery incentive program.
- Use of health services - Safe delivery incentive program utilization

- Evaluated health status - It includes HMIS indicators i.e. % of delivery conducted at HF, % of delivery by HWs and % of delivery by SBAs.
- Low education – It means no schooling, incomplete primary and complete primary education.
- High education - It means from lower secondary to high level study
- Lower caste - It represents untouchable and disadvantaged ethnic group.
- SDIP use - Those who received incentive after delivery at HFs

1.8. Limitation of the research

The limitations of the study are:

- The study is limited to Terai setting and hence does not present the situation of SDIP in hilly region of the district.
- Non-random sampling and small sample size are also the limitations of the study. Lack of random sampling and small number of sample makes it difficult to generalize the findings to entire population of Kailali. Further, due to small sample size also limited the statistical analysis could not be carried out for all variables of studied.

1.9. Structure of the report

This report describes the implementation practice of SDIP in Dododhara VDC and Kailali district of Nepal, association of factors with use of SDIP and effect of SDIP on maternal health outcome. This report is presented in six different chapters. First chapter begins with introduction of the study that includes background, scope of study, statement of problem, objectives and research questions, significance of the study, theoretical framework, operational definition, and limitation of the study. Second chapter presents findings from literatures reviewed related to the programme, study on effect of SDIP in maternal health outcome in other districts of Nepal and association of factors with place of delivery. Chapter three gives the overall process and methodology of the study. In chapter four, results of the study are described. Chapter five presents the discussions and conclusion of the study.

CHAPTER 2: LITERATURE REVIEW

This chapter presents the review of literature related to safe delivery incentive programs implemented in Nepal as well as in other countries. This chapter consists of three sections. First, review of policy documents related to SDIP in Nepal is presented briefly. In second section, results of other relevant studies conducted in Nepal are described. In third section, review of similar studies from around the world is presented. Both second and third section presents the review of literature in line with the factors (predisposing, enabling and need) influencing service utilization according to Andersen's model used in this study. Furthermore, the effect of delivery incentive on utilizing maternal health services, as described in other studies is presented.

2.1. Introduction of the Safe Delivery Incentive Program in Nepal

Maternal health is one of the important policy concerns in Nepal and the present interim plan focuses on improvement of women's health by reducing maternal mortality (National Planning Commission, 2007). Over the last decade Nepal has made substantial policy initiatives in maternal health. Nepal Safer Motherhood Project (1997–2004) commissioned a study on the financial implications of skilled attendance at delivery. The study showed high financial cost as a major barrier in seeking and utilizing delivery care (c.f. Ensor et al., 2009). A study by World Bank demonstrated that the cost of emergency obstetric care is a major barrier to access to services. Similarly cost was identified as one of five main barriers for inadequate access to services through participatory social analysis from seven years DFID funded project. These findings swiftly moved the area of policy interest and increasing policy concern was given to SBAs. A key component of the GoN's effort to improve maternal health is to increase the coverage of women who deliver in the presence of a skilled health professional so that complications, should they arise, be recognised and managed. In 2005, the Government of Nepal introduced the Safe Delivery Incentive Programme (it was given this name late in 2007, previously it was known the Maternity Incentives Scheme) with the overriding objective of increasing the use of professional care at childbirth (Government of Nepal, 2005).

Monetary incentives given to households, on the condition that they engage in certain health seeking behaviour, are known as conditional cash transfers (CCT). SDIP consists of a conditional cash transfer to women who deliver in a health facility; an incentive to health

workers for each delivery they attend; and free delivery care for eligible women. In 2007, the Government of Nepal made a number of changes. The eligibility criteria to receive the conditional cash transfer to women were removed, allowing all women to benefit. The programme was also expanded to include not-for-profit hospitals in order to address concerns about the availability of obstetric services (Powell-Jackson et al., 2009a). The second policy reform has been made to provide free delivery care (in addition to the cash incentive) in designated public and private not for profit health facilities across Nepal since January 2009. To reflect this change in policy, the SDIP has evolved into the "Aama programme" (Government of Nepal 2009) which is made up of three elements; cash incentives to women, incentive to health workers and free delivery care to women. The following table shows the financial benefits offered by the SDIP and eligibility criteria or the conditions applied.

Table 1: The financial benefits offered by the SIDP and eligibility criteria

SDIP components	Eligibility criteria
1. Conditional cash transfer to women • 500 NRs ($7.8) in plain districts • 1,000 NRs ($15.6) in hill districts • 1,500 NRs ($23.4) in mountain districts	• Woman delivered in a public health facility* • Woman had an obstetric complication or had no more than two living children**
2. Provider incentive • 300 NRs ($4.7) for each delivery attended at HP paid out of HF reimbursement • 200 NRs for each delivery attended at home paid out of HF reimbursement	• Doctor, nurse, midwife, health assistant, auxiliary health worker or maternal and child health worker attended at home or in a public health facility
3. Free delivery care to women and facility reimbursed • 1,000 NRs ($15.6) reimbursed to health facility If <25 beds, normal birth • 1,500 NRs reimbursed to health facility If >25 beds, normal birth • 3,000 NRs reimbursed to health facility If complicated case • 7,000 NRs reimbursed to health facility If caesarean case	• Woman is resident in a low human development district • Woman delivered in a public health facility • Woman had an obstetric complication or had no more than two living children**

* Since 2007 the programme has expanded to include non-profit and private health facilities.
** This condition has now been removed.

2.2. Study on implementation and effect of SDIP in Nepal

A study conducted by Powell-Jackson et al. (2008) reported that almost three-quarters of women were unaware of the financial benefits offered by the SDIP and a very few women giving birth in a public health facility received the cash incentive on discharge. Furthermore, awareness of the SDIP was skewed towards wealthier and more educated families. Conservative bureaucracy structure, delays in disbursement of funds, lack of clear communication of policy, and complexity of the program itself were some of the barriers that constrain the smooth implementation of the programs in Nepal (Powell-Jackson et al., 2009a). Though, the positive effects of the program are increasing. The program was found to reduce inequality in utilization of delivery services and women with knowledge of the SDIP were 17 percent more likely to deliver with a skilled birth attendant (Powell-Jackson and Hanson, 2010). A study conducted in Makwanpur district of Nepal showed that the SDIP had no impact on neonatal mortality (Powell-Jackson et al., 2009b). Bhusal and others (Bhusal et al., 2011) found that women only knew that there was a cash payment, but they did not know exactly for what specific purpose mothers were given such payments. They furthermore argued that SDIP has not adequately benefitted the hard to reach women groups who are living in remote areas.

2.3 Research on Incentive Programme in different countries of the World

Conditional cash payments induce households and individuals to behave differently than they would have had they been not given the cash payments. Conditional cash transfer (CCT) programs have the ability to influence behavior positively. CCT programs have been extensively used during the last decades to increase school enrollment (e.g. in Brazil, Bangladesh), to prevent nutritional problems (e.g. Brazil, Mexico, Tunisia, Bangladesh), to improve children's health (e.g. Mexico, Kenya) and to prevent malaria (E.g. Kenya) (Das et al., 2005).

Cash incentive program elsewhere in the world have successfully raised demand for health services. The Government of India also launched Janani Suraksha Yojana (JSY) in 2005, a conditional cash transfer scheme, to encourage women to give birth in the health facility with the aim of reducing the number of maternal and neonatal deaths (Government of India, 2005). The assessment of the JSY programs in India by Lim et al. (2010) found that the implementation of JSY varied by state; from less than 5% to 44% of women giving birth received cash payments

from JSY. The program had a significant effect on increasing antenatal care and delivery at health facility. Furthermore, the matching analysis showed that JSY payment was associated with a reduction of 3.7 prenatal deaths per 1000 pregnancies and 2.3 neonatal deaths per 1000 live births (Lim et al., 2010). Hence the findings showed that there is positive effect of the conditional cash transfer program in India.

A study undertook a public health program effectiveness trial in Honduras to assess the effect of monetary incentive on utilization of preventive health services in which about 5600 households were randomly allocated into four groups i.e. money to households; resources to local health teams combined with a community-based nutrition intervention; both packages and neither. After two years, evaluation suggested that the conditional payments to households increase the use and coverage of preventive health intervention like ANC, children's growth monitoring and immunization (Morris et al., 2004).

Most of the deliveries conducted in home are not without cost. A study by Borghi and others (2006) reported that households pay around 900 Nepalese Rupees (Rs) for a trained attendant at home however payment methods are flexible – as they can be made in kind and the amount depends upon the ability of household to pay. The same study reported that the delivery in a facility imposes additional cost burdens on households including transport to the facility and companion time of going with the woman. On average, transport cost represents 60% of the total cost associated with a normal delivery in hospital. In addition, opportunity cost of the companion (husbands in nearly 70% of cases), drug and medical supply cost, foods and washing materials, and other costs threaten poor households to decide going health facility during delivery. The total cost of delivery with a trained attendant at home is about half the costs of a normal delivery in a hospital.

Financial barrier is very important which make women not to deliver their children in a health facility before the implementation of SDIP, which is conditional cash transfer program in 2005 (Borghi et al., 2006). Household cost of seeking care at childbirth was prohibitively high and the majority of expenditures were made outside of the health facility on transport. The total amount expended in a normal delivery in health facility exceeded Rs. 5300 ($ 70) including opportunity and transport costs, and for a caesarean section the total household cost was more than 11 400 RS ($150). Economic inaccessibility was one of the single most important factors that prohibit

poor households from attending health facility during delivery. The study also recommended for financial support in public facilities to overcome both supply and demand-side barriers to care seeking.

2.4 Research about the association of factors with place of delivery

Stephen K. Ngigi, Department of Medicine, Moi University, Kenya did a thesis entitled as "Socio-demographic factors associated with skilled or unskilled delivery among parturient women in Bungoma East District, Western Kenya" on November, 2009.The study concluded that age less than or equal to 35 years and distance more than 5km are associated with unskilled delivery while distance less than or equal to 5km is associated with skilled delivery. Age, distance, marital status, parity, occupation, cost, transport and education level were independently significantly associated with place of delivery.

A case control study was done by Thomas "Factors associated with low institutional delivery" revealed that mothers education, husbands occupation, family monthly income, expose to media, distance from health facility and decision maker for place of delivery were significantly associated with low institutional delivery. A study was done on "Factors affecting home delivery in rural Tanzania". Issues of risk and vulnerability such as lack of money, lack of transport, sudden onset of labour, short labour, staff attitudes, lack of privacy, tradition and cultures and the pattern of decision-making power within the household were perceived as key determinants of the place of delivery. A cross sectional descriptive study on determinants of place of delivery explained that mothers' educational level, husbands' occupation and age at first pregnancy were the main determinants of place of deliver and there was no statistical significance between employment status of fathers and home delivery. A community based cross sectional study conducted on January 2007 explained that problem during labor, antenatal care follow up, knowledge about delivery services, ethnicity and decision making power of subjects were found to have a statistically significant association with preference of safe delivery place.

2.5. Millennium Development Goal (MDG)

As part of the world's commitment towards the right to development, peace and security, gender equality, eradication of multi-dimensional poverty and sustainable human development, the Government of Nepal (GoN) also endorsed the Millennium Declaration in September 2000. In

order to achieve the MDGs, the GoN has incorporated the MDGs into the strategic framework of the country's Tenth Plan/Poverty Reduction Strategy Paper (2002/03 - 2006/07) and three years interim plan (2007 - 2010). Out of the eight goals of MDGs, goal five is concerned with improving maternal health and reducing maternal mortality. An analysis of the demographic health survey data showed that Nepal has come a long way in meeting the targets of the MDG, especially in relation to gender equity in education, child mortality, child nutrition, contraceptive prevalence rate and knowledge of HIV/AIDS. However, although maternal care indicators have improved over the years, they still have a long way to go. The focus on antenatal, delivery, and newborn care is vital for improving maternal health indicators (Macro International Inc., 2007).

According to Nepal MDG Progress report (NPC and UNDP, 2010), Nepal is very close to achieving the target of reducing maternal mortality ratio. In 2009, the figure was 229 and the target by 2015 is 213. Major policy changes over the past decade that illustrate the level of leadership and political commitment include the legalization of abortion; a skilled birth attendant policy; a blood supply policy; the introduction of safe delivery incentive policy; and more recently, the introduction of free delivery care (Hulton et al., 2010). However, the proportion of birth attended by skilled birth attendants is still low (29 % in 2009) as compared to the target of MDG (60%) by 2015. Nepal has still a lot to do for achieving universal access to reproductive health.

CHAPTER 3: THEORETICAL/ANALYTICAL FRAMEWORK

3.1. Theoretical framework

Andersen's Behavioral Model of Health Services Use (1995) is used as the theoretical framework for this study. Andersen has developed framework to discover conditions that either facilitate or impede utilization. This framework provides behavioural model to understand and explain utilization of health services. The framework was first developed in the 1960s and has been revised and modified through four phases to ensure a comprehensive analysis. The framework below represents the fourth phase, developed in 90s (Andersen, 1995). The model can be modified by using different healthcare services, predisposing characteristics, enabling resources, healthcare need, or by other health outcomes or health status variables (Graves, 2009). The concept of Andersen's model are widely used as a framework for assessment of healthcare access, outcomes, and quality (Diala et al., 2000, Goodwin and Andersen, 2002, Ogbuanu et al., 2012, Tomiak et al., 2000, Lo and Fulda, 2008). A major goal of the model is also to provide measures of access to health care, which are important for health policy and health reforms.

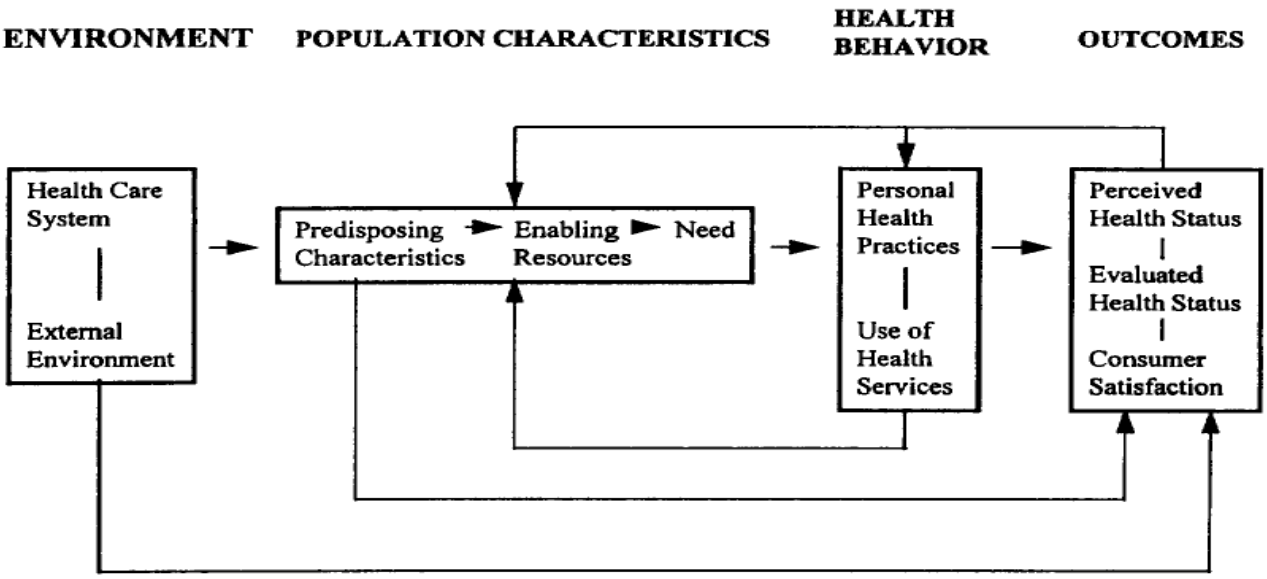


Figure 2: Behavioral model of health service use, an emerging model- phase 4 (Andersen, 1995)

The figure above exhibits a dynamic and recursive nature of health services' use. The model portrays multiple influences on health services' use and subsequently on health status. The framework presents that the environment and population characteristics are primary determinants

of health behavior, to influence health outcomes. The feedback loops, in turn, show that outcome affects subsequent health behavior and population characteristics. Each component of the health service utilization framework of Andersen is briefly described below.

Environment

The model shows that environment that comprises of health care system and external environment influences to use services. The **health care system** highlights the importance of health policies, resources and their organization in the health care system and acknowledges the **external environment** (including physical, political, and economic components) as an important input for understanding use of health services.

Population characteristics

Anderson mentions that people's use of health services is a function of their predisposition to use services, factors that enable or impede use, and their function for care.

Predisposing factors include demographic factors that represent biological imperative, social structure (like education, occupation, ethnicity, culture) and health beliefs (attitudes, values, and knowledge of people) that influence subsequent perceptions of need and use of health services.

Enabling resources: It describes that community and personal enabling resources must be present for use to take place. These would include health personnel and facilities, income, health insurance, a regular source of care, travel and waiting times, organizational factors and social relationships.

Need: It highlights the need to understand perceived need (how people perceive their own general health, functional state and experience about symptoms of illness and pain) and evaluated health needs (professional judgment about people's health status and need for medical care). He explained perceived need will better help to understand care-seeking.

Health behavior

The model explains use of health services measured in terms of type, site, purpose, and time interval. The model also recognizes personal health practices such as diet, exercise, and self care as interacting with the use of formal health services to influence health outcomes.

Outcome

Anderson mentions that health services are supposed to have something to do with maintaining and improving the health status of the population both as perceived by the population and evaluated by professionals. The model also includes consumer satisfaction as an outcome of health services that can be measured in terms of convenience, availability, financing, provider characteristics and quality.

Concept of access: - This model defines equitable and inequitable accesses. *Equitable access* occurs when demographic and need variables account for most of the variance in utilization. *Inequitable access* occurs when social structure (e.g. ethnicity), health beliefs, and enabling resources (e.g. income) determine who gets medical care. The model could be used to assess the outcome of service use as effective and efficient access. *Effective access* is established when utilization studies show that use improves health status or consumer satisfaction with services. *Efficient access* is shown when the level of health status or satisfaction increases relative to the amount of health care services consumed.

Concept of mutability: Anderson (1995) describes that concept of mutability in the behavioural model to promote equitable access. To be useful for promoting access, a variable must also be considered as mutable, or point to policy changes that might bring about behavioral change. He describes demographic variables as having low mutability, since they cannot be altered to change utilization. Enabling variables can be quite mutable, and they may be quite strongly associated with utilization. Need can also be mutable variable as people's perceived need for care may be increased or decreased, e.g. through health education programs, changing their financial incentives to seek services, etc.

3.2. Analytical Framework

As mentioned by Anderson, SDIP has tried to promote equitable access to women who could not afford to deliver at health institutions due to cost associated with the service utilization. Here, cost of service is the mutable factor that the policy aims to intervene. In this study, the BMHSU guided to establish an analytical framework and variables for analysis to review the implementation and effect of SDIP. The model also guides to develop the specific objectives of the study.

This study carries out process evaluation to describe implementation process of policy (both operation and management) in at the district level and the study VDC. The environment component of BMSHU, particularly the health care system, was reviewed to assess how the health system at district and below level has been organized to implement the policy to influence the health behavior. Association between the population characteristics (predisposing, enabling and need) with the delivery at home and health use and non- use of SDIP was analyzed to identify the factors associated with the use of SDIP. Here the use and non-use of SDIP correspondences to institutional and home delivery, respectively, institutional delivery as the use of health services. This study also describes status of SDIP components among those women delivered at HFs. The effect of the SDIP was assessed through trend analysis of maternal and child health (MCH) outcome indicators. The detail of the utility of BMHSU in the study is shown in the figure below and the variables used are listed below.

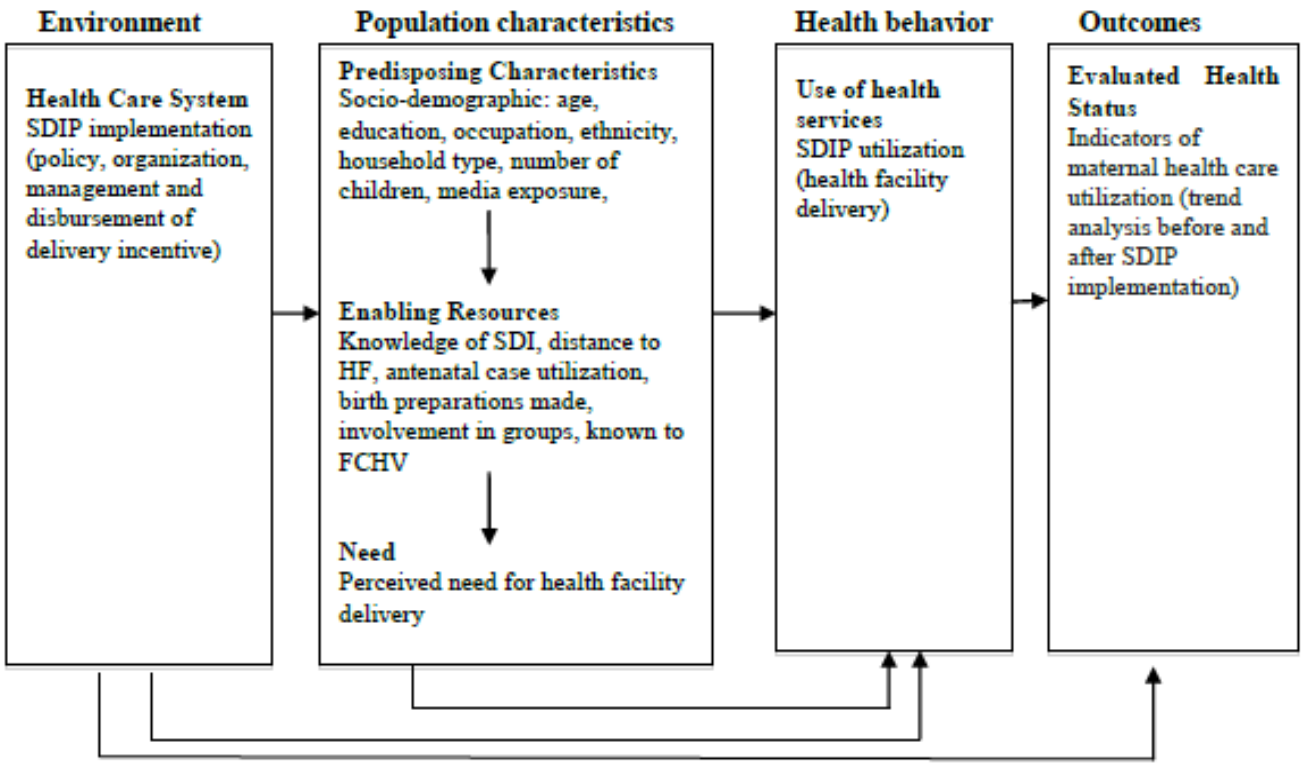


Figure 3: SDIP utilization model used in the study (adopted from Anderson, 1995)

Health care system: It includes descriptive review of process of implementation of policy (or operation and management) in at the district level and the study VDC based on the following variables.

- Initiation of SDIP (district and VDC)
- Dissemination of policy
  - Source of information
- Organization of resources
  - Availability of safe delivery services (24-hour delivery service, types of delivery service, medicine, equipment, private room for ANC/PNC, ambulance, and service charge)
  - Human resource (availability of trained HWs, training to HWs, receive of SDI)
  - Fund management
- Implementation of SDIP components
  - Knowledge on SDIP(when, source, purpose, who give SDI and sufficiency of SDI)
  - SDIP utilization (SDI received, when, where, by whom, difficulties faced)
  - SDI expenditure items
  - Satisfaction from services
  - Referral and decision power
  - Display of name list

Pre-disposing, enabling and need factors:

- ***Predisposing characteristics****:* It includes women's age, husband's age, women's age at marriage, age at first pregnancy, number of living children and HH size as demographic factors and ethnicity, type of marriage, type of family, education and occupation of mother and husband as social structure.
- ***Enabling factors:*** These factors includes media exposure, husband support, involvement in group, recognize FCHV, distance to reach HFs, ANC service utilization and BPP
- ***Need:*** This includes person assisting delivery, type of delivery (normal or complicated), free services among HF delivery.

Use of health services:

This refers to utilization of SDIP. In this study women's delivery of the most recent birth at health facility is considered as the use of SDIP, because all the women who delivered in health facility had received delivery incentive.

Evaluated health status:

This includes trend analysis of 10 years before and after the implementation of SDIP. The analyzed indicators are delivery at HFs, delivery by HWs and SBAs.

CHAPTER 4: STUDY METHODOLOGY

4.1. Study Design

The study was cross sectional descriptive using both qualitative and quantitative methods.

Process evaluation of SDIP was carried out to review the implementation practice of the SDIP at district and below level. The environment component of Andersen's model, particularly the health care system, was reviewed to assess how health system has been organized to implement the policy. It includes initiation and dissemination of policy, organization of resources (fund, manpower and equipments).The supplementary information was examined to identify components status on implementation of SDIP from service seekers.

Association between the population characteristics (predisposing, enabling and need) with the use and non-use of SDIP was analyzed to identify the factors associated with the use of SDIP. Here the use and non-use of SDIP correspondences to institutional and home delivery, respectively.

The effect of the SDIP was assessed through trend analysis of proxy indicators of maternal and child health outcomes like percentage of deliveries conducted by Health Workers, percentage of deliveries conducted at HFs and percentage of deliveries conducted by SBAs at district and national level.

4.2. Study site, population and sampling procedure

4.2.1. Study Area

The field work of this study was carried out in Dododhara VDC of Kailali district.

4.2.2. Study Population

The study population under this study includes:

- The quantitative data was collected from mothers of Dododhara VDC delivered from November 2011 to April 2012 (within six months before the study).
- The qualitative data was collected from public health nurse, statistician of district and health service provider (Sr.ANM) and HF In charge at VDC.

4.2.3. Sampling and Sample size

District and VDC were chosen purposively. The mothers of Dododhara, Kailali VDC who delivered a child (live birth) within six months before the study were selected for quantitative study while qualitative data was collected by in-depth interviews among service providers and program focal person at district. A complete list of the women delivering at home and HFs from November 2011 to April 2012 was obtained from respective FCHVs and HF and quota sampling was done to reach the respondents from the list and it includes six respondents of all wards i.e. 3 from delivered at HFs and 3 from home delivery in each ward (there are 9 wards per VDC). So, altogether 54 respondents (27 delivered at HF and 27 at home) were selected.

Table 2: Study sampling and sample size

S.N	Type of Respondent	Study sample	Survey methods	Sampling	Instruments
	District Program Focal Person/Statistician	2	In-depth interview	Purposive sampling	Guidelines , Secondary data/HMIS
	Service Providers, HF In-charge	2			
	Women who delivered (live birth) from November to April 2012	54	Survey	Quota sampling	Questionnaire

4.3. Study tools

In order to collect the right information, appropriate study instruments were developed and used for data collection. The study tools were designed keeping in view the objectives of the study. Altogether four tools were developed, which are as follows:

1. Interview with mothers delivered at health facility (Annex – 1)
2. Interview with mothers delivered at home (Annex – 2)
3. Key Informant Interview with district focal persons (Annex – 3)
4. Key Informant Interview with MNH service providers (Annex – 4)
5. HMIS data(Annex – 5)

Interview Questionnaire: A structured questionnaire with both closed and open-ended questions were used to get required information from the mothers.

Interview Guideline: Interview guidelines were developed for in-depth interview with service providers and district program focal person involved on program implementation.

Checklist: Checklist was used to collect the secondary data in consultation with respected HFs, and FCHVs to find out the number and detail description of delivered mothers of Dododhara VDC. HMIS was observed to analyze ten years trend of maternal health indicators.

4.4. Data collection procedure

Primary data was collected by interviewing the mothers who delivered (live birth) within six months before the study (from November 20122 to April 2012) using structured questionnaires. The questionnaire was at first developed in English and then translated into Nepali. Pretesting of the questionnaire was carried out in five women in Alapot VDC of Kathmandu district. Enumerators having educational background of ANMs and HAs with at least 2 years working experience on MNH area were recruited for interviewing mothers from the VDCs. They were oriented by researcher herself before the data collection. Qualitative information for the study were collected through, in-depth interviews checklist and guidelines from service providers of VDC and district.

4.5. Data processing, analysis and interpretation

Qualitative data

Descriptive study was conducted to understand how SDIP was implemented from both service providers and service seekers. Health facility in charge and midwife from the study VDC and district supervisors from DPHO Kailali were interviewed using semi-structured interview guidelines. The information collected from in-depth interviews was systematically analyzed to explore the implementation practice and opinion of service providers about the scheme. At first the recordings were transcribed and all the transcripts were read several times by the researcher. All the data were collected in Nepali language and the English translations were also made by researcher herself. As the guideline for qualitative data collection was developed focusing on the different topic lists, data was also coded into respective topic lists by top-down coding to reduce the data making clustering into major themes. The main themes/topics included on

implementation practice: initiation of policy, dissemination of policy, organization of resources (human resources, fund management, equipments availability). The description of findings on these topic lists with key illustrative narratives is presented in this report.

Quantitative data

The second phase of the study consisted of questionnaire survey among women who delivered live births within the period of six months prior to the survey association between the population characteristics (predisposing, enabling and need) with the use and non-use of SDIP was analyzed to identify the factors associated with the use of SDIP. Another part of secondary data collection consisted of the review of maternal health service utilization coverage in Kailali district. Quantitative data was taken from secondary sources i.e. HMIS for trend analysis of maternal heath indicators of last 10 years (Five years before and 5 years after the implementation of SDIP) to see effect of program on indicators. Similarly quantitative data was taken from study sample i.e. mothers delivered at HF to explain components of SDIP to give picture of the implementation status from service seeker. Date was edited, entered, coded for processing in the computer using SPSS package. Tables are used to summarize the data for general reading. After giving, the necessary statistical treatment results were derived.

For continuous study variables, means and standard deviations were calculated and for categorical study variables, proportions were computed. Bivariate association between predisposing, enabling and need characteristics and outcome variables of interest were assessed by t-test for continuous and chi-square test for categorical variables. The findings were compared among women who delivered in health facility and who delivered in home to identify the factors which influenced place of delivery and thereby utilization of SDIP.

4.6. Reliability and validity

The questionnaire was translated into the local language (Nepali) and pretested for refinements. Enumerators were well oriented about the data collection procedure. The filled-in questionnaire were checked and edited each day by the researcher. The researcher herself was involved in the data collection and analysis procedure and data editing was done each day of data collection to minimize the error. Expert opinions were taken from time to time as per need of the research process.

4.7. Ethical consideration

Ethical considerations were maintained by getting approval from District Public Health Office (DPHO), Kailali. Verbal informed consent was established with the participants before each interview and objectives of the research were clarified to them. The participants were not forced to answer all the questions and assured that their privacy and confidentiality would be highly respected.

CHAPTER 5: RESULTS

The results are presented according to the objectives of the study in three different sections following the Andersen's BMHSU framework. In the first section, operation and management of SDIP in Kailali and Dododhara VDC are presented. Analysis of the association of factors with the use of SDIP is presented in second section and 10-years trends of maternal health service utilization indicators of Kailali district are presented in the third section to assess the effect of SDIP on maternal health.

5.1. Operation and management of SDIP

Health care system variables or service provider's perspectives were reviewed to review the operation and management of SDIP in the district and VDC. Such variables included initiation of SDIP in the district and VDC, dissemination of policy, organization of resources for implementing the policy, and disbursement of fund at district and below levels. In-depth interviews were carried out with a district supervisor and an ANM of the health facility. The findings were, further, supplemented and triangulated with consumers' perspectives or the information collected from mothers delivering at HF through questionnaires. The information collected from the mothers included their knowledge about SDIP, process of receiving SDIP, purpose for using SDIP, referral and decision making in the use of SDI, and satisfaction with the service provided.

Service provider's perspective

5.1.1. Initiation of SDIP

SDIP has been implemented in Kailali district since 2005, the same year the MoHP/GoN had brought the policy in the country. Initially, the policy was known as Maternal Incentive Scheme (MIS). During the initial phase, peripheral HFs under DPHO provided financial incentives only to women undergoing institutional delivery and incentive to HWs. In 2008/09 the policy was revised as Aama Surakchhya Program and incentives are being provided to women delivering at health institutions. Additionally, certain amount to health facilities are also being provided which covers cost of all required drugs, supplies, instruments together with incentives to health workers The policy has supported in increasing the demand for the services. So, birthing centers are also

being established and numbers of SBAs is also increasing in the district to meet the increasing demand.

5.1.2. Dissemination of policy

Family Health Division (FHD) sent a letter to the DPHO to flow the message about the policy along with the guideline. The DPHO in turn circulated the message about the policy and guidelines to the peripheral HFs. HF conduct FCHVs meeting regularly in every month and they were oriented about the program on monthly meeting held. The message about the policy in communities were disseminated through FCHVs in mothers' group meetings, hoarding boards with messages, and airing the message through local FMs. Every year awareness program is included in plan and as per that plan message is aired through local FM and published in newspaper.

5.1.3. Organization of resources

Human resource, infrastructure and equipment

Out of 44 public HFs in the district, 30 are currently registered as birthing centers and are providing 24-hour delivery services. This includes 5 Primary Health Care Centers (PHCC), 7 Health Posts (HPs), 18 Sub-health Posts (SHPs) and 2 private institutions. There is a plan to upgrade 2 SHP into birthing centers this year, the process for which is already started. HP and PHC provides delivery, ANC and PNC services but SHP provides ANC and PNC but no delivery services as there is no posting of ANM, not sufficient infrastructure and equipments and no provision of safe delivery incentives to mothers and amount to HF under SDIP. Altogether 32 private and government institutions are registered as birthing centers in Kailali

Through a collaborative and combined efforts of DPHO, VDC and international/non-governmental organizations (I/NGOs) SHPs are being upgraded into birthing centers in the district. VDC has been providing the financial support in recruiting (including their salary) Auxiliary Nurse Midwives (ANMs) in SHPs to upgrade into birthing centers. HFOMC decides this agenda and took it to VDC council meeting and is finalized from VDC planning in every year. Their contract is renewed annually. DPHO has been coordinating with different I/NGOs to manage infrastructure and equipment support for the establishment birthing centers and DPHO provides on work coaching, guidance and training to staffs for their capacity enhancement.

There is a Comprehensive Obstetric Care (COC) at the Regional Hospital in the headquarters of Kailali district as a referral site providing caesarian services. The BOC and EOC are being managed by SBA-trained HWs (both SN and ANMs). SBAs are providing services for complicated cases like post-partum hemorrhage (PPH) management, retained placenta, use of magnesium sulphate, (MBA), shoulder dystorsiya, breech delivery, and vacuum delivery from the HFs.

Twenty-hour delivery service is available at Dododhara HP. There are 3 ANMs in the HP (1 - permanent government staff, 1 – temporarily hired by government and 1 – supported by the VDC). The VDC is also planning to support 1 additional ANM in the coming year. However, only one ANM is SBA-trained and she is residing in room provided by HF within HF area. Therefore HF is providing 24 hour services for managing the complicated delivery cases. All ANMs have recently taken birth preparedness (BPP) and community-based newborn care program (CB-NCP) trainings. BPP includes changed schedule for ANC check up and about the preparedness of women during pregnancy. CB-NCP enhances the skill of HWs on management of hypothermia, low birth weight (LBW), asphyxia and infection. The HP is equipped with instruments for managing complicated delivery services with support from government and INGO (CARE Nepal). Room facility is also available in the HP for ANMs for night duties.

Fund Management

The revised policy includes incentives to mothers (delivering at HF) and amount to HFs. HF provides incentive to HWs (anyone it doesn't count SBA or not if at home 200 rs and if HF 300 rs). In terai region, HF has provision to provide NRs. 500 to mothers delivering at HF with additional NRs. 400 for 4 times ANC taken at right (defined) times. HWs get NRs. 255 and support staff NRs. 50 for each delivery conducted at the HF. Health Facility Operation Management Committee (HFOMC) of Dododhara HP has decided to provide NRs. 100 to FCHVs to take mothers to HF for delivery as a motivational factor.

FHD manages the budget for SDIP at central level. FHD directly sends the budget to DPHO. DPHO disperses the four-monthly amount as advance to HFs based on the record on the number of delivery services provided by the HF, money is send quarterly but settlement in every month.

PHN is the person responsible for managing the fund at the district level. The money is deposited into a joint bank account controlled by HF In-charge and VDC Secretary. They provide advance to permanent government staff - ANM of the HF who provide incentives to the mothers.

The ANM files monthly report to DPHO with information on number of women benefited, total amount disbursed, and outcome of delivery. At the end of every month or every quarter, HF In-charge submits the report to the PHN, and their advance is settled accordingly.To promote transparency, all HFs are expected to list and display publicly the names of the beneficiaries and the amount disbursed on a board.

The HFs under DPHO hadn't received the advance fund in time for the first fiscal quarter because of late approval of national budget by interim. Health facility operation management committee (HFOMC) of Dododhara HP has lack of fund to lend money to HF so it can provide money to make payments to women who came for institutional delivery during the end of the fiscal month (after accounts are freeze). Due to the unavailability of funds at the end of the financial month and beginning of the first quarter women who delivered during the period hadn't received their incentive in time. The money provided to HFs for delivery is distributed to HW who attended the delivery, to support staffs, FCHVs and remaining is balanced in HF account.

Consumers' perspective

5.1.4. Knowledge about SDIP

The quantitative survey done in Dododhara VDC explains that three-fourth (64.8%) of mothers had heard about SDIP and more than half (54.3%) of the women who heard about SDIP reported that they have knowledge before pregnancy and 8.6% during pregnancy. Most of the women told that they heard about SDIP from FCHVs, and friends and/or relatives Majority of women (85.7%) could tell the amount of incentive correctly. Only more than half of women could tell the purpose of the incentive. All of the women reported that they received the SDI amount from health facility and 62.9% of women told that SDI is provided by ANM. Only 11.4% of the women told that the incentive was sufficient, while about 50% of women told that it was okay (neither sufficient nor insufficient).

Table 3: Knowledge about SDIP

Study variables	n	%
Heard about SDI (N = 54)		
Yes	35	64.8
No	19	35.2
When did you hear about SDI? (N = 35)		
Before pregnancy	19	54.3
During pregnancy	3	8.6
After delivery	5	14.3
Don't know	8	22.9
Source of information about SDI (multiple response) (N = 35)		
FCHV	18	66.7
Friends/relatives	15	55.6
Health worker	7	25.9
Radio/Television	7	25.9
Mothers' group	9	33.3
Women who could rightly tell the amount of SDI (N = 35)	30	85.7
Women who could rightly tell the purpose of SDI (N = 35)	18	51.4
Women who knew other women receiving SDI (N = 35)	35	64.8
Who give SDI amount? (N = 35)		
ANM	22	62.9
Health worker	13	37.1
Is the amount provided sufficient? (N = 35)		
Yes	4	11.4
No	4	11.4
OK	17	48.6
Don't know	10	28.6

Figure 4 shows the multiple responses of women for home delivery and not going health institutions for delivery. Some of the major reasons are: HF being far and no transportation facility to reach to HF, no felt for such service, no preparation beforehand, no permission from family and no such practice in the community.

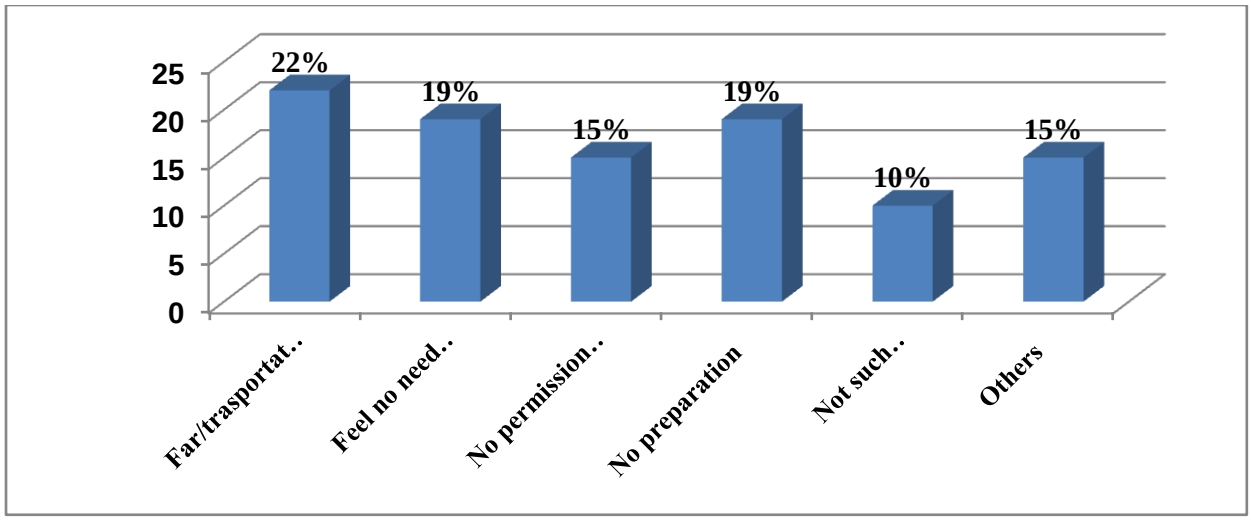


Figure 4: Reason of not undertaking institutional delivery

5.1.5. Process of receiving SDIP

Table 4 shows that only 7.4% women received incentive on the same day of delivery. Majority of the women (92.6%) received the incentive after one month of the delivery.

Table 4: Process of receiving SDI (N = 27)

Study variables	n	%
When did you receive incentive?		
While returning from HF (on the same day of delivery)	2	7.4
Later (after 1 month of delivery)	25	92.6
Where did you receive incentive?		
At health facility	24	88.9
Village/Home/PHC ORC	3	11.1
Who gave the incentive?		
ANM	23	85.2
Other health worker	4	14.9
Any difficulties in receiving incentive?		
Yes	7	25.9
No	20	74.1

Almost all said that they receive full amount of incentive, i.e. 500 rs and charge is not deducted from that amount. Majority of women (88.9%) received the incentive at health facility, while 11.1% of them received at village, home or PHC/ORC. Similarly, majority of women (85.2%) received the incentive from ANMs while remaining from other HWs. All respondent said that they didn't need to wait for delivery services at HF and got services soon after reaching there. One-fourth of the women reported some difficulties in receiving the incentive.

5.1.6. Purpose of SDIP expenditure

Below figure (5) shows that majority of women (30%) said that the SDI was spent to buy medicines for herself and baby after delivery. Twenty-two percent said they spent the incentive to buy family goods, while 18% of women said their husband took the money. Only 4% of the women said they used the money for transportation (to pay debt of money borrowed at the time of delivery).

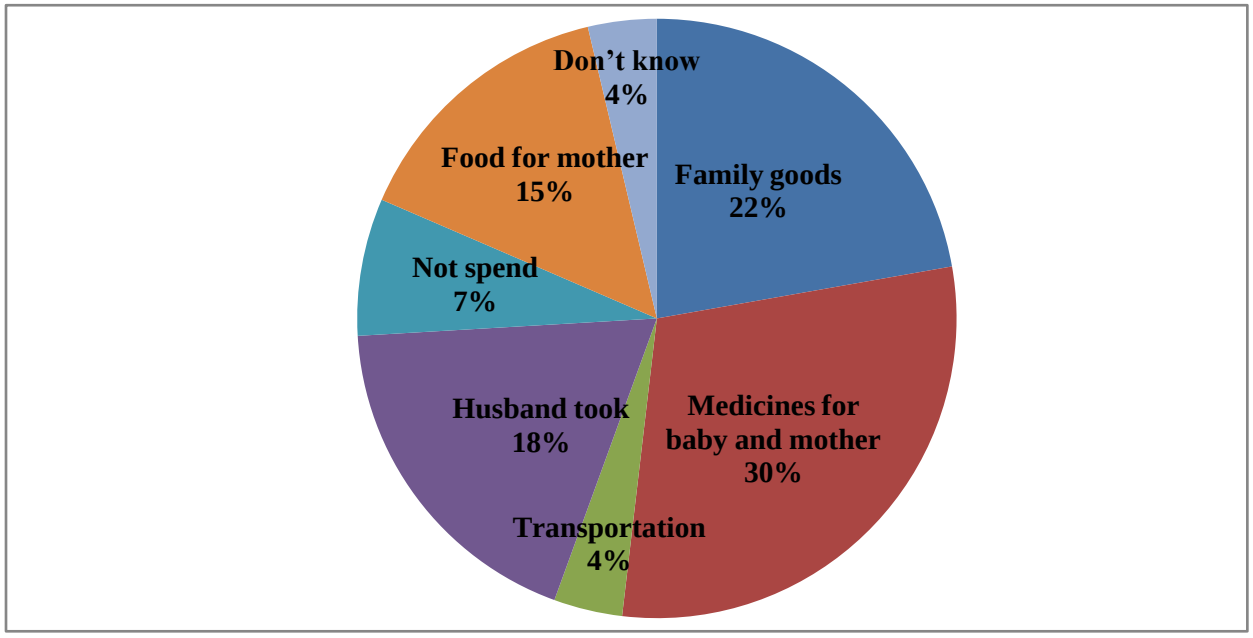


Figure 5: SDIP expenditure items

5.1.7. Satisfaction from services

Below table (5) shows that only 7.4% of women were fully satisfied with the services they received and behaviors of HWs at time of their delivery. Majority (88.9 %,) of mothers mentioned that the service and behaviour of service providers was fine.

Table 5: Satisfaction from services (N = 27)

Satisfaction with services and behavior of HW	n	%
Fully satisfied	2	7.4
Fine	24	88.9
Not satisfied	1	3.7

5.1.8. Referral and decision-making

Table 6 shows that while more than half (55.6%) the women were referred to HF by FCHV, 44% were not referred. For about 60% of the women, the final decision to go to HF for delivery was made by MIL/FIL and husband, while 18.5% women made the decision jointly with their husband. Only 14.8% said that she made the decision independently.

Table 6: Referral and decision-making (N = 27)

Study variable	N	%
Referral		
FCHV	15	55.6
Sub HP	1	3.7
Not referred	11	40.7
Final decision for HF delivery		
Respondent/mother	4	14.8
Respondent with husband	5	18.5
FIL/MIL/Husband	16	59.3
FCHV	2	7.4

Table 7 shows that 66.7% of women knew HF delivery would yield good health for mother and baby, which motivated them for the HF delivery. About 30% of the women delivered at HF due to advice from FCHVs.

Table 7: Motivating factor for HF delivery (N = 27)

Motivating factors for HF delivery	N	%
FCHV advice	8	29.6
For mother and baby good health	18	66.7
Previous safe delivery in HF	1	3.7

5.1.9. Display of the name list

While women who received SDI (N=27) were asked if they had seen the list of women provided with the incentive, none of them said they have seen the list displayed in HF.

5.2. Factors affecting use of SDIP

The analysis of association of the population related characteristics (predisposing, enabling and need factors) with the utilization of SDI was done through bi-variate analysis among mothers using and not using SDI to identify factors associated with SDI use. As mentioned in methodology section of this report, we sampled 27 women who delivered their most recent birth in health facility and another 27 women who delivered their recent birth in home. In this study, all women delivering at HF (N=27) had received SDI. So, SDIP use corresponds to the women delivering at HF.

5.2.1 Pre-disposing factors

This section presents the results of analysis of association of predisposing characteristics with SDI use. Chi-square ($\chi 2$) tests were done for categorical variables and t-tests for continuous variables.

Demographic characteristics

The analysis of association of demographic variables with the use of SDI was done through t-tests and the finding shows that significant association was found with household size (p=0.05). The average household size for women delivering at HF was higher than women delivering at home (9.4 against 7.7). Association was not found for other variables (age of women, age of husbands, women's age at marriage, women's age at first pregnancy and number of surviving children).

Table 8: Demographic characteristics

Characteristics	Total sample (N=54)			HF delivery (N=27)		Home delivery (N=27)		p (2-tailed t-test)
	Mean	SD	Range	Mean	SD	Mean	SD	
Age of women	23.9	3.5	17 - 34	23.2	3.4	24.6	3.5	n.s.
Age of husbands	26.4	3.9	20 - 35	26.1	3.8	26.6	4.1	n.s.
Women's age at marriage	18.6	1.8	15 - 24	18.4	2.3	18.7	1.1	n.s.
Women's age at first pregnancy	19.6	1.8	16 - 24	19.3	2.2	19.9	1.4	n.s.
Household size	8.6	3.2	4 to 18	9.4	2.9	7.7	3.3	0.05
Number of surviving children	2.0	1.0	1 to 4	1.8	1.0	2.1	1.1	n.s.

Social characteristics

Almost all the women in the study were Hindu. Table 9 shows the analysis of association of social characteristics with the SDI use. Women's education was significantly associated with the SDI use (p=0.035). Majority of women (85.2%) who delivered at home had lower education. Similarly, majority of women (85.2%) delivering at HF had joint family and it was also associated with the SDI use (p=0.066). No associations were found with variables like ethnicity, type of marriage, husband's education and women's occupation with the SDI use.

As shown in Table 9, HF delivered women (59 %, n = 19) were from lower caste and home delivered women (64 %, n = 14) are from upper caste groups. More than half (60%, n = 15) HF delivered women reported their marriage type as arrange marriage Most of the women (91%) were housewives and/or engaged in agriculture. Majority of the husbands worked as agriculture/labor (57.0%, n = 31), followed by business/services (43%, n = 23).

Table 9: Social characteristics

Characteristics	Total sample		HF delivery		Home delivery		p=(χ2 sig. at)
	n	%	n	%	n	%	
Ethnicity (caste)							0.166
Lower caste	32	59	19	70.4	13	48.2	
Upper caste groups	22	41	8	29.6	14	51.8	
Type of marriage							0.275
Love marriage	29	53.7	12	44.4	17	63.0	
Arrange marriage	25	46.3	15	55.6	10	37.0	
Type of family							0.066
Nuclear Family	15	27.8	4	14.8	11	40.7	
Joint Family	39	72.2	23	85.2	16	59.3	
Women's education							0.035
Low education	38	70	15	55.6	23	85.2	
High education	16	30	12	44.4	4	14.8	
Husband's education							0.412
Low education	24	44.4	10	37.0	14	51.8	
High education	30	55.6	17	63.0	13	48.2	
Husband's occupation							0.097
Agriculture/Labor	31	57	12	44.4	19	70.0	
Business/Service	23	43	15	55.6	8	30.0	
Women’s occupation							0.351
Housewife/Agriculture	49	91	23	85.2	26	96.3	
Business	5	9	4	14.8	1	3.7	

5.2.2 Enabling factors

This section gives the result of analysis of association of enabling characteristics with the SDI use. Chi-square (χ2) tests were done for categorical variables, while t-test was done for mean duration to reach HF, which is a continuous variable.

Table 8 shows significant associations were found with enabling variables like heard about SDIP ($p<0.001$), media exposure ($p=0.027$), ANC service utilization ($p=0.05$), number of months pregnant at first ANC visit ($p<0.001$), husband’s presence at delivery ($p<0.001$), and mean duration to reach nearest HF (on foot) ($p=0.016$) were significantly associated with SDI use among variables studied.

Almost all women delivering at HF (96.3%) had heard about SDIP, while only 33.3% of women delivering at home had heard about SDIP. About 90% of women who had delivered at HF had exposure to any kind of media (newspaper, magazine, television or radio) compared to about 60% of women who had delivered at home. The radio was the most popular among followed by television.

Almost all women delivering at HF had utilized ANC service (96.3%), while about 75% of women delivering at home had used the service. Majority of women delivering at HF (84.6%) had made first ANC visit earlier, i.e. before 4 months of pregnancy, while majority of women delivering at home (85%) made the visit after 4 months of pregnancy.

For about 70% of women delivering at HF, husbands were present during delivery. While, for about 80% of women delivering at home husbands were not present during delivery. Husbands didn't accompany to 42% women who delivered at HF and about 85% women who delivered at home. Husband's presence at ANC is also associated with SDI use. About 60% of women delivering at HF and 30% of women delivering at home discussed about health with their husband. This variable was also significant with SDI use (p=0.054).

Table 10: Enabling characteristics

Characteristics	Total sample		HF delivery		Home delivery		p=(χ2 sig. at)
	n	%	n	%	n	%	
Heard about SDIP							<0.001
Yes	35	64.8	26	96.3	9	33.3	
No	19	35.2	1	3.7	18	66.7	
Media exposure (at least one)							0.027
Yes	40	74.1	24	88.9	16	59.3	
No	14	25.9	3	11.1	11	40.7	
ANC service utilization							0.050
Yes	46	85.2	26	96.3	20	74.1	
No	8	14.8	1	3.7	7	25.9	
Number of ANC visit (n=46)							n.s.
1 to 3	22	47.8	13	50.0	9	45.0	
4 or more	24	52.2	13	50.0	11	55.0	
Number of months pregnant at first ANC visit (n=46)							<0.001
Less than 4 months	25	54.3	22	84.6	3	15.0	
4 months or more	21	45.7	4	15.4	17	85.0	
Husband present at ANC (n=46)							0.059
Yes	14	30.4	11	42.3	3	15.0	
No	32	69.6	15	56.7	17	85.0	
Husband presence at delivery							<0.001
Yes	25	46.3	19	70.4	6	22.2	
No	29	53.7	8	29.6	21	77.8	
Discussion about health with husband during pregnancy							0.054
Yes	24	44.4	16	59.3	8	30.0	
No	30	55.6	11	40.7	19	70.0	
Birth preparedness (at least one)							0.056
Yes	26	48.1	17	63.0	9	33.3	
No	28	51.2	10	37.0	18	66.7	
Know FCHV							n.s.
Yes	48	88.9	26	96.3	21	77.8	
No	6	11.1	1	3.7	6	22.2	
Engaged in group[b]							n.s.
Income group	6	11.1	5	18.5	1	3.7	
Agriculture	15	27.8	12	44.4	3	15.0	
Mother group	46	85.2	25	92.6	21	77.8	
Mean duration to reach HF (BIC) on foot (minutes)		34.4 (sd=12.9)		30.2 (sd=12.0)		38.5 (sd=12.5)	0.016[b]

[a]multiple response. [b]p-value calculated from two-tailed t-test.

Sixty-three percent of women delivering at HF had prepared for birth (blood, money or birth attendant) while only 33% of women delivering at home had prepared for birth. The BPP was associated with SDI use (p=0.056) but association was not found with women's engagement in any kind of groups (income, agriculture or mother's group).

Significant association was found between mean duration to reach nearest HF on foot and SDI use. The mean duration to reach nearest HF for women delivering at HF was 38 minutes and for women delivering at home was 30 minutes.

5.2.3 Need factors

Variables like type of delivery, person assisting during delivery, and cost associated with delivery service (or need for expenditure or free delivery service) were included in the study, as need factors. Analysis for association could not be done for need factors as one of the categories under HF delivery and home delivery for all variables studied are '0'. So, descriptive analysis has been done for need factors.

Table 11: Need factors

Characteristics	**HF delivery (N=27)**		**Home delivery (N=27)**	
Type of delivery				
Normal	21	80.7	27	100.0
Complicated (vacuum)	5	19.3	0	0.0
Person assisting in delivery				
Health Worker (skilled)	27	100.0	0	0.00
Doctor		7.0	-	-
ANM		93.0	-	-
Other	0	0.00	27	100.0
TBA	-	-		59.0
MIL, SIL	-	-		41.0
Cost associated with delivery service				
Free delivery service	22	81.5		
Buying medicine at HF	1	3.7		
Expenditure outside HF	3	11.1		
Don't know	1	3.7		

Table 9 shows that all home deliveries were normal, while 19.3% of the deliveries at HF were complicated. All HF deliveries were assisted with skilled HWs (93% by ANM and 7% by

doctor). None of the home deliveries were assisted by HWs. Fifty-nine percent of home deliveries was assisted by TBAs and 41% by MIL and/or SIL.

Free delivery service

Majority of mothers did not expend but some expended on medicines, clothes, food and transportation (is it among HF delivery or home delivery). Rs. 600/- is maximum amount the mother expended and Rs. 300/- is minimum (is it among HF delivery or home delivery).Most of respondent said they use bull cart for transportation (n=19) followed by motorcycle (n=5) and cycle (n=2). There is no facility of ambulance service from HP.

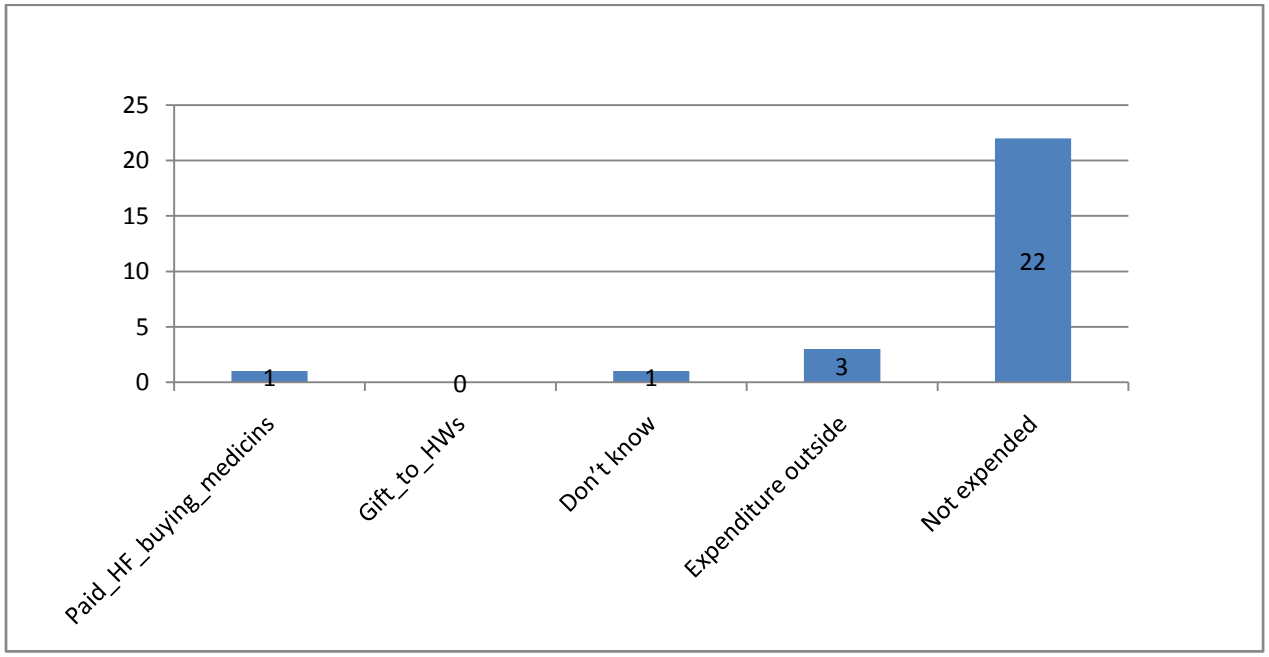


Fig 6: Expenditure during delivery

5.3 Effect on maternal health outcome

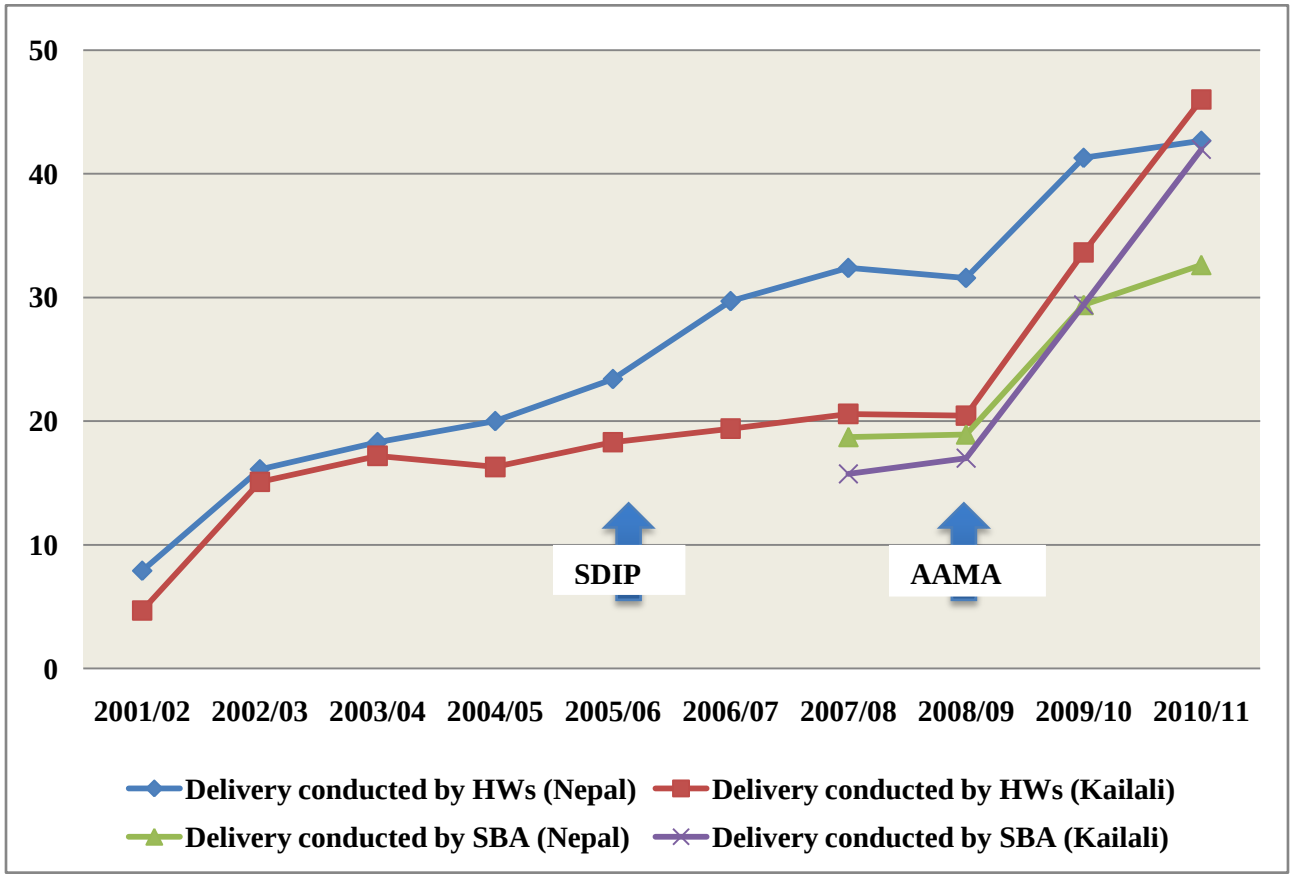
The effect of SDIP was assessed analyzing 10-year trend of maternal health service utilization indicator of Nepal and Kailali district. The trend shows data for 5 years before and 5 years after the implementation of SDIP. The reported data from HMIS was used to analyze the trends.

5.3.1. Delivery conducted by HWs and SBAs

Figure 7 shows that over the past five years, there has been a substantial increase in the proportion of women giving birth under the assistance of HWs and SBAs. The trend shows delivery by HWs increases from 18% in 2005/6 to 46% in 2010/11 and delivery by SBAs increases from 15% in 2007/8 to 31% in 2010/11. The data for delivery by SBAs is not available before 2007/2008. It shows positive impact of SDIP on delivery by HWs and SBAs.

Figure 7: Trend of delivery conducted by HWs and SBAs during last 10 years

(As % of expected pregnancy)



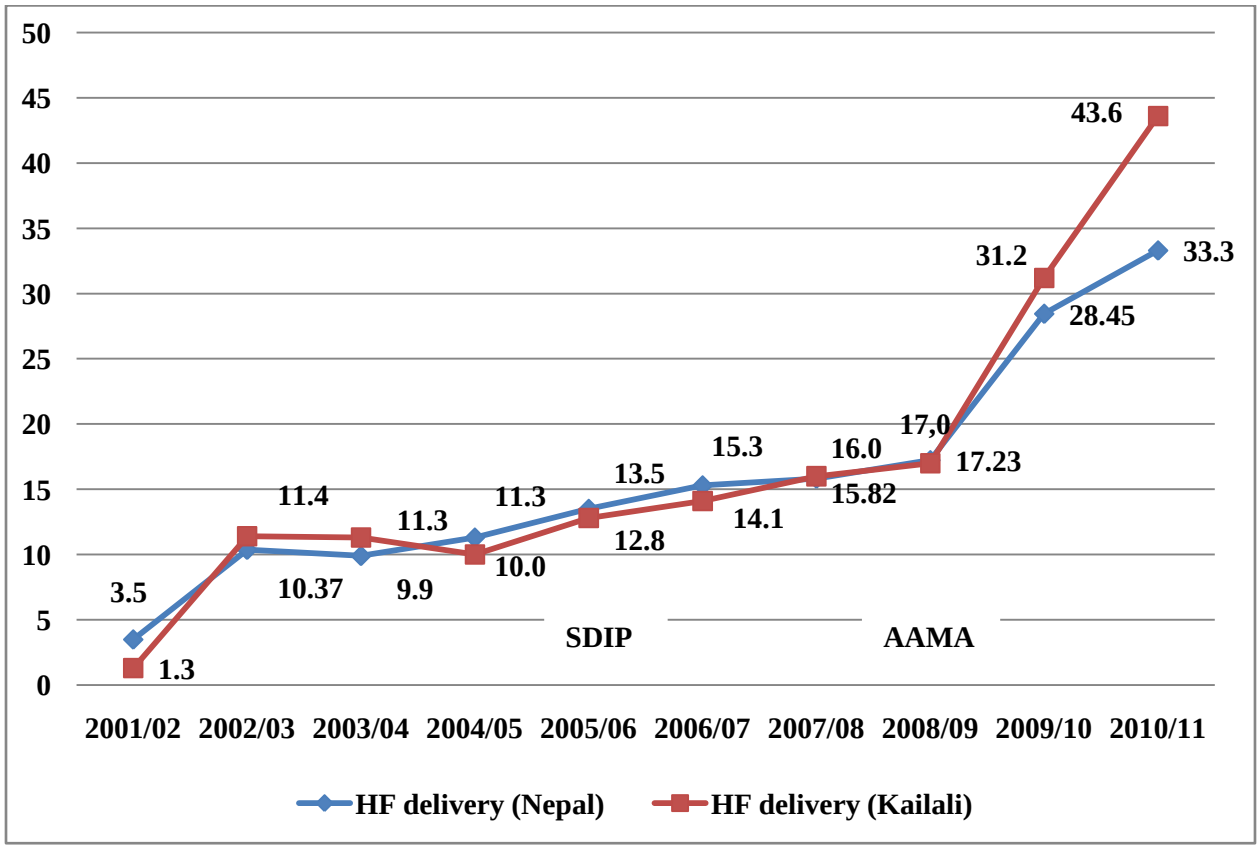
5.3.2. Place of Delivery

The SDIP has had a positive impact on use of government delivery services and use of SBAs (doctors, nurses and auxiliary nursing midwife) at delivery both at national and district levels. The SDIP has reduced the probability of a woman delivering at home. Figure 8 shows that in Kailali, institutional delivery has been increased from 13% in 2001 to 43.6% in 2010/11.

Public health nurse (PHN), in her interview, said that it is 49% in FY 2011/12 and it is in increasing trend. Trends in the proportion of deliveries taking place at HFs over time show a clear upward shift in the level at around the time SDIP and free delivery care was introduced into the study district.

PHN in interview mentioned that maternal death was 43 from MMR study done by FHD and New Era on 2008/2009. The reported death cases decreased to 26 on 2009/2010 and to 18 on 2010/11. This year up to month May the reported death number is only 3. (Interview with PHN on basis of HMIS, Kailali district)

Figure 8: Trend of HF delivery during last 10 years (As % of expected pregnancy)



CHAPTER 6: DISCUSSIONS AND CONCLUSION

The discussion part is divided into four sections. At first, findings of the study are discussed based on the framework used in this study and efforts are made to compare the findings with other similar studies. Second section of the discussion consists of challenges faced while implementing the policy at district and VDC level. The final section of the discussion includes some of the policy and methodological implication of the study.

6.1. Discussion on findings

SDIP implementation

The policy was started from 2005 in district and VDC, in the same year brought by GoN nationally. The policy has supported in increasing the maternal service so SHP are upgrading into birthing centers and numbers of SBAs is also increasing. A letter was sent to DPHO to flow the message about the policy along with guideline and DPHO in turn circulated the message to the peripheral HFs. There was no orientation or training about the policy which created problems in understanding on initial period to implement it effectively.

There are 32 government and private institutions registered as birthing centers in Kailali district. The district initiated joint effort for upgrading SHPs into birthing centre's because SHPs can't provide delivery services and not benefitted by SDIP policy until and unless it is approved as birthing centre. DPHO(in coordination with DDC) conducted orientation to all VDC secretaries on SDIP package which includes familiarization and orientation on policy, importance, policy components and how mothers of community will benefit which creates favorable environment in getting VDC support for ANM salary. DPHO coordinated with I/NGOs in getting support on equipments and DPHO self is providing training to staff, infrastructure support, and supervision/monitoring and taking initiation to get approval as birthing centre from regional and central. Birthing centers having SBAs are providing services for six different complicated cases from VDC level HFs. There is still need of upgrading SHBs into birthing centers and requirement of ANMs and SBAs to meet the public demand for quality services in Kailali.

Budget is managed by FHD which directly send to DPHO and district send advance to HF account having joint signatories of HFI and VDC secretary quarterly. Tax is deducted from HWs incentives but not from the incentives to mothers. Support staff is also given with certain amount for cleaning and hygiene maintenance of delivery room. FCHVs are playing a great role to increase institutional delivery and improve health status of mothers and children in community therefore they are also awarded by100 rs per case to refer the case to HF for delivery. HFOMC should decide before expending the SDIP amount. If money remain from each delivery, that is balanced in HF bank account and used for management of any need for delivery services like medicines, equipments, manpower for delivery. District received fund lately in first quarter of the fiscal year because of late approval of national budget by the interim. This created tension to pay beneficiaries at the time of discharge.

Social auditing was done and display of name of delivered mothers in HF, VDC and sending one copy to district on every month with clear maintaining of complicated or normal delivery. This helps for transparency and false reporting. From quantitative survey, all mothers answered that they didn't see displayed names of the women who received incentive in HF during their visit.

FCHVs are playing as a major source of information to community; motivating mothers and her family and referring mothers to HFs for delivery. Women want privacy for maternal services. HF has female HWs for services and availability of separate room for delivery which add plus point for HF delivery. Mothers are complaining of facing difficulties in receiving the amount in time. The policy mentioned providing of amount at the time of discharge for transportation but because of fund unavailability it is not in process. Health workers behaviour on providing service is another key factor for service utilization and all service receiver women were not fully satisfied from with the services provided in health facility and with the behavior of service providers. So concern should be given on behavior of HWs to increase the services utilized by mothers. FCHV and relatives/ friends were found to be important source of knowledge about SDIP as they are very close to women and trustful so women share any health related problem without hesitation. Furthermore, very few of the women could rightly tell that the incentive was given for covering transportation cost and women are unaware about incentives to HWs for attending delivery.

Referral and decision power also play a great role for institutional delivery. In most cases referral was done by FCHVs and they have a key role on raising awareness about SDIP at community. As women reported that they had known their friends and relatives getting incentives from HF delivery, it shows people discussed about the SDIP in the community. The incentive is given for transport at the time of discharge of mothers but a number of women are receiving the amount after one month of delivery and even late. The incentive was of great financial help for mothers as they are using to buy nutritious food, pay the debt they have taken for accessing delivery service, or for the treatment of their newborn child but in some cases the money was misused and taken by her husband and family members.

A woman who has never heard of programme is less likely to give birth in a health facility. The reasons behind home delivery are HF locating far from home, lack of transportation/ ambulance facility, no preparation made for HF delivery before, no permission from family and no such practice in their community. These findings suggest for increased need of awareness program about SDIP not only to mothers but should target to husbands and MIL/FIL too.

Factors associated with health facility delivery

Among the predisposing factors measured in this study, household size, type of family, women's education and husband's occupation were associated with health facility delivery. Mean household size was higher among women who delivered in health facility which meant that women residing in a joint family were more likely to delivery at health facility, as compared to nuclear family. This is against the generally held belief that women's decision making power is curtailed when she resides in joint family. Final decision for HF delivery is given by FIL/MIL and husbands of family rather than independent decision of mother.

Educated women are more likely to visit health facility. Those educated women could inform their in laws about SDIP and hence decision to visit HF is taken collectively by the family. So the policy should focus on information dissemination among FIL/MIL and husbands to increases chances of women having delivery at HF as most of households are headed by them in Nepal. Women involved in any occupation get exposure to outer worlds and be in regular contact with relatives/friends during their work and got time to share things. So they get source of information to be familiar with different things happening in their community. This was found to be true for husbands' occupation also. This finding is not matched with study done in Sabuwar Unguwa on

June 2003 which concluded no statistical significance between employment status of fathers and home delivery.

A number of enabling factors measured in this study including exposure to media, knowledge about SDIP, ANC service utilization, months of pregnant at first ANC visit, husband presence during ANC and at the time of delivery, discussion with husband about own health during pregnancy, birth preparedness and distance to health facility measured in terms of duration to reach health facility by foot were significantly associated with higher proportion of women's delivery in health facility. Exposure to media empowers and increase access to information so mothers may have increased knowledge about SDIP. Discussion on health issues with husband at the time of pregnancy may develop a sense of responsibility so increase husband's presence at the time ANC and delivery which are found to be associated with HF delivery. Women who had made ANC visit might have better knowledge about SDIP, thereby influencing health facility delivery.

Furthermore, the distance to health facility from the home was also positively associated with health facility delivery. Home delivered women reported that distance to health facility and lack of availability of transportation facility as the reason for not delivering in health facility. There is no facility of ambulance service in HP. Majority of mothers who had made preparations for birth were found to be delivered at HF. Almost all HF delivered mothers knew FCHVs of their community and they are engaged in income generation and agriculture group also. These findings are in line with result of study "Factors associated with low institutional delivery" by Thomas in Manipur, India on December 2010 in which univariate logistic regression analysis revealed that mothers education, husbands occupation, not exposed to media, distance from health facility and decision maker for place of deliver were significantly associated with low institutional delivery.

Women who experienced danger signs and complications during pregnancy and at delivery influenced them to visit health facility for delivery. In this study women who delivered in health facility were assisted by skilled birth attendant (SBA), and home deliveries were handled by TBA and no case of home delivery were found assisted by HWs.

Effect on maternal health outcome

Maternal health indicators were analyzed from HMIS data of last 10 years which shows clear upward shift in the level at around the time SDIP and free delivery care was introduced into the study district. The SDIP has a positive effect on use of health facility delivery services and use of professional care at delivery.

6.2 Challenges faced on policy implementation

Qualitative findings from service providers explore some challenges faced by HWs during implementation of SDIP.

Geographical difficulties

Kailali has six hilly VDCs and geographical difficulties are there to reach HFs. Kailali is a disaster affected district and in some VDCs during rainy season, there is problem for mothers to visit HF and receive ANC and delivery services from HFs. As well there is difficult to organize PHC/ORC because there is no bridge in rivers.

Delay in fund release

Most of the time, government releases budget lately and because of delay in arrival of fund for incentive to districts, mothers do not receive cash incentive at the time of discharge. The policy may be more effective if the budget is timely released (at the start of each fiscal year). The district also had no advance fund for the first quarter of the fiscal year when there is no chance of releasing budget. HFOMC of Dododhara HP has lack of sufficient fund to give money to make payments to women who came for institutional delivery during the end of the fiscal quarter (after accounts are freeze). Due to the unavailability of funds at the end of the financial month and beginning of the first quarter women who delivered during these two months have not received their incentive in time.

Joint signatories

The money is kept into a joint bank account that is controlled by the HFI and the VDC secretary. Most of time VDC secretary is busy with their other tasks and is out of the VDC, which make difficult to receive and provide amount to service seekers as per the policy.

Insufficient resources

Patient flow is increasing day by day so there is need of trained manpower in HF and SBA training to ANMs to serve quality services. There is lack of certain equipments for MNH services like newborn resuscitation, warmer, oxygen cylinder in the district.

Temporarily paced ANMs

Contract based ANMs are recruited and posted in periphery HFs for the fiscal year. But due to delay in budget release, they are recruited generally at the end of first quarter and only able to provide services for 8 to 10 months. Every year same process is being repeated and the contract cannot be extended for the whole year.

6.3. Methodological implication

All women delivered in HF received the incentive so the outcome variable of this studies i.e. SDIP utilization was measured as place of delivery. The study population for quantitative survey was only women who had live birth within six months prior to the survey to minimize the recall bias. Non-random sampling and small sample size were important limitations of this study. Lack of random sampling and small number of sample made it difficult to generalize the findings and also limited the statistical methods of analysis. Association of different factors and SDIP utilization was analyzed by bivariate chi-square analysis (t-test in some cases). Because the small sample size makes difficult to identify the association, this study considered the level of significance at 10% ($p<0.1$). Consideration of multiple sources of data (women, service provider, district supervisors) and combination of both quantitative and qualitative method were strengths of the study.

6.4. Policy implication

A significant number of women had not heard about SDIP and a very few women could tell the right purpose of delivery incentive, awareness program about SDIP should be carried out. Motivation and capacity building of FCHVs and strengthening mother groups might be an important part to increase institutional delivery. Furthermore, other members of family including FILs, MILs and husbands should also be targeted for raising awareness. The bivariate analysis suggested that there was a relatively lower utilization of health facility delivery services, especially among women from lower mean household size, nuclear family, women with low

education, and working in agriculture and housewife. Similarly, women who have less exposure to media, women who did not made ANC visit, women whose husbands were not present at ANC, delivery and who did not discussed about health with husband during pregnancy were less likely to deliver at health facility. These findings imply that providing health education and information on SDIP and maternal health care is essential to women from these groups. Health workers and FCHVs should emphasize to motivate women of these categories for utilization of maternal health care services. Moreover, as women with less exposure to mass media were less likely to deliver at health facility, mass media campaigns promoting SDIP should be intensified. Furthermore, women who live far from health facility were less likely to deliver at health facility and hence did not receive delivery incentives. So, those households should be specifically targeted for implementing the policy.

6.5 Conclusion

High maternal mortality is one of the major concerns in developing countries and many countries have developed different strategies to address it. Many countries have successfully implemented cash assistance schemes to increase the utilization of maternal health care. SDIP is such an attempt by the Government of Nepal, to increase the access to obstetric care for poor women and to promote institutional deliveries. Though there was some confusion at the initial phase of policy implementation, it is being implemented in a smooth manner by now. However, problems like geographical difficulties, delay in fund release, and insufficient resources need to be tackled for SDIP implementation. Household size, type of family, women's education, husband's occupation, knowledge about SDIP, media exposure, ANC visit made during pregnancy, husband's presence at ANC and delivery, birth preparedness and distance to health facility from home were found to be associated with SDIP utilization. Trend analysis of last 10 years data showed that there is some evidence to suggest that maternal health service utilization have increased due to the SDIP.

Application of Andersen's Behavioral Model of Health Service Use provided an opportunity to evaluate the specific relationship between different factors and utilization of SDIP. However, lack of availability of more detailed information on the subjective perception and objective evaluation of need for health facility delivery also limit the utility of the analysis as per Andersen's framework. More studies are necessary to describe the perceived need and provision

of delivery services. More research of predisposing characteristics and enabling factors for SDIP utilization in randomly selected samples with sufficient sample size is needed to identify the factors associated with SDIP utilization.

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ANNEXES

Annex 1: Questionnaire to mothers delivered at HF

Introduction

Form No. | | | |

Date: -…….. day/month/year

Interviewer name: -

VDC: - Ward No.:- Tole:

A. General Information

1. Interview name:-……. 2. Age (completed year):-
3. Caste: - 4. Religion:-

QN	*Questions*	*QN*	*Questions*	*QN*	*Questions*
5	Age at marriage	6	Age at first pregnancy	7	Age of husband
8	Family type 1.Nuclear 2. Joint	9	Type of marriage 1. Love 2. Arrange	10	Total family members No…

QN	*Question*	*Coding*	*M*	*H*	*QN*		*Coding*	*M*	*H*
11	Education	1.Illiterate 2.Literate 3.Primary class 4.Lower secondary 5.Secondary 6.Higher secondary			12	Occupation	1.Housewive 2.GOV Job 3.I/NGO 4.Business 5.Labor 6.Agriculture 7.Others		

QN	*Question*	*Newspaper*	*Television*	*Radio*
13.	Do you read, see and listen the following types of media at least once a week?	1. Read 2. Do not read	1.See 2.No	1. Listen 2. No

QN	*Question*	*Coding*	*Answer*	*Move to*
14	How many children do you have?	Total number:- Daughter…Son…	…..No.	
15	Last baby information	Age:-……in month Sex:- M……..F		

About SDIP

16	Have you heard about SDIP?	1.Yes 0.No		**If no go to QN 25**
17	Incentive amount to mother?	……		
18	For what purpose incentive is given to mother?			
19	From where incentive amount is given to mother?	1.HF 2.VDC 3. Home 4. PHC/ORC		
20	Who is responsible to give incentive?	1.ANM 2. HW 8. Others		
21	IS that incentive enough?	1.Enough 0. Not enough 3. OK 9. Don't know		
22	What have you heard about SDIP?	1.To increase institutional delivery 2.for benefit of mothers 3.To get incentive 4.Free delivery with transportation cost for poor 5.For poor 8.others		
23	From who have you heard about SDIP at first?	1.Friends/Relatives 2.FCHV 3.Other HW 4.TV 5.Radio 6.Magazine/newspaper 7.Mother group 8.others 9.Don't know 10.TBA 11.Poster/pamphlet		
24	When have you heard about SDIP?	1.Before pregnancy 2.After delivery 3.During pregnancy 4.Don't know		
25	Do you know any friend/relatives who have received SDI?	1.Yes 0.No		
26	What type of HF is nearby your home?	1.SHP 2.HP/PHC 3.District hospital 4.Zonal hospital 9.Don't know		

27	Time taken to reach that HF?	Time by walking…….. In vehicle…….		
28	Tike taken to reach district hospital/Zonal hospital from your home?	Time by walking…….. In vehicle……		

About delivery

29	Where did you give birth to your last baby?	1.PHC/HP 2.SHP 3.Private clinic 8.Others		
30	Who did help you during birth of your last baby?	1.Doctor 2.Nurse/ANM 3.HA 4.MCHW 5.VHW 6.TBA 7.FCHV 8.Others		
31	Did there presence of your husband?	1.Yes 0.No		
32	Who went with you in HF during your last baby birth?	…….		
33	Who referred your to deliver in HF?	1.FCHV 2.PHC/HP 3.SHP 4.private clinics 5.Not referred		
34	What motivated you for HF delivery?	1.Incentive amount 2.FCHV advice 3.Safe delivery 4.HW advice 5.previous baby born at HF and easy 6.Health complications		
35	Who gave final decision for HF delivery?	1.Self 2.Husband 3.MIL 4.FIL 5.Relatives/friends 6.FCHV 7.HW		
36	How many times after did you started to move for HF?	1.After labor pain…. 2.Before pain 9.Don't know		
37	Time taken to reach HF?	1.minute…… 8.Don't know		
38	Did you wait for HW to get service at HF?	1.Yes ……minute 0.No		
39	Type of delivery	1.Normal 2.Vacuum/complication 3.casearian 8.Don't know		

40	How many hours did you stay at HF after delivery?	Hour…….		
41	Did you receive incentive amount after delivery at HF?	1.Yes 0.No		
42	Did they deduct amount from SDI?	1.Total deducted 2.Some portion 3.No deduction 8.don't know		
43	Amount received as incentive?	1.Yes ……rupees 0.No 9. Don't know		
44	When did you receive the incentive after delivery?	1.At the time of discharge 2. Later after returning to home		
45	Where did you get the incentive amount?	1.HF 2.Home 3.PHCORC 4.Within village		
46	Who gave you incentive amount?	1.ANM 2. Other HW 8. Others		
47	Does that amount sufficient?	1. Sufficient 0. Not sufficient 2.OK 9. Don't know		
48	For what purpose did you spend?	1.Requirement for family 2.medicines to baby and mother 3.Paid to HF 4.Transportation 5.Husband took 6.Not expended 7.Food during postnatal period 8.Others 9.Don't know		
49	Did you face difficulties in receiving incentive?	1.Yes 0.No		
50	If yes then describe what sorts of difficulties			
50	Did you get help from HW in getting incentives?	1.Yes 0.No		
51	Did you paid to HF for lab cost, medicines, service cost, blood test etc?	1.Yes…….(amount) 0.No 9.Don't know		
52	Have you gifted to service provider for health services? If yes then how much that was cost?	1.Yes…….(amount) 0.No 9.Don't know		

53	Did you buy medicines and other things outside of HF? How much did you spend?	1.Yes…….(amount) 0.No 9.Don't know		
54	Which means of transportation did you use for transportation?	…….		
55	Total amount expended for transportation from to reach HF from home and back to home?	1.Yes…….(amount) 0.No 9.Don't know		
56	Total amount spent at delivery	……		
57	Items of expenditure	1.Delivery charge 2.Bed charge 3.Medicine cost 4.Food cost 5.Lab cost 6.Newborn care 8. others		
58	Are you satisfied from behave and service provided by service provider?	1.Yes 0. No		
59	Have you seen the name of HF delivered mothers displayed at HF?	1.Yes 0.No 9.Don't know		
60	Did anyone give advice for HF delivery?	1.Yes 0.No		
61	If yes then who?	1.FCHV 2.Health Worker 3.Family members 4.Neighbour/friends 8.others		
62	What are the benefits of health facility delivery?			

Maternal health care

63	Did you see anyone for ANC (antenatal care) while you were pregnant last time?	1.Yes 0. No		***If no then QN 69***
64	Whom did you see? **(Only one answer** **Probe for most qualified person)**	1. Doctor 2. ANM/Nurse 3. MCHW 4. Relatives 5.TBA 8.Other……..		
65	Write the following information from the card Number of ANC visit TT vaccination times	No. of ANC: …… No. of TT vaccination: ……..		

66	At which month of pregnancy, have you gone for first ANC care?	……. months		
67	Do you have BPP card?	1. Yes 0. No		
68	Was your husband present with you/to accompany you during any of your ANC visit?	1.Yes 0. No		
69	Have you discussed about your health with your husband during the most recent pregnancy?	1.Yes 0. No		
70	During pregnancy did you consume iron /folic acid tablets?	1.Yes 0.No 9.Don't know		***If no then QN 67***
71	For how long did you consume iron tablets/folic acid?	During Pregnancy: ____days After delivery: ____days		
72	Did you take TT vaccination during pregnancy? (ask the injection that you take in your arm)	1.Yes 0.No 9.Don't know		
73	How many times did you take TT vaccination?	1. 1 2. 2 3. More than 2 9. Don't know		
74	Did you take Vitamin A capsule after the birth of your child?	1.Yes 0.No 9.Don't know		
75	During pregnancy did you receive anti-helminthic treatment?	1.Yes 0.No 9.Don't know		***If no then QN 69***
76	If yes, at what time of pregnancy did you take anti-helminthic drugs?	……. Months of pregnancy		
77	What are the things that you and your husband have prepared during pregnancy (birth preparedness)? ***(Multiple answer possible)***	O. Don't know A. Arrangement of money for normal and special circumstances B. Preparation for people who can donate blood during emergency C. Birth attendant D. Transportation X. Others (specify) ……..		
78	During pregnancy, did you consume as usual, more or less foods?	1. As usual 2. More 3. Less 8. Others…….		
79	Did somebody examine your health after delivery?	1.Yes 0. No		

80	If yes who checked your health?	1. Doctor 2. ANM/Nurse (midwife) 3. MCHW 8. Other (specify)…….		
81	At which day of delivery did you check your health?	1. Within 3 days 2. 4 to 7 days 3. After 7 days 9. Don't know		
82	How many times did you check your health after delivery?	0. No Post natal care 1. 1 time 2. 2 times 3. 3 or more		
83	Was your baby also examined at that time?	1.Yes 0. No		

Other Information

84	Do you know FCHV of your community?	1.Yes 0. No		
85	Are you involved with any group?	1.Yes 0. No		
86	If yes then in what sorts of group is she involved?	A. Health related B. Income generating C. Forest/Agriculture X. Others		

Thank you!

Annex 2: Questionnaire to mothers delivered at Home

Introduction

Form No. | | | |

Interview Date: -…….. day/month/year

Interviewer name: -

VDC:- Ward No.:- Tole:

A. **General Information**

2. Interview name:-…….	2. Age (completed year):-
4. Caste: -	4. Religion:-

QN	*Questions*	*QN*	*Questions*	*QN*	*Questions*
5	Age at marriage	6	Age at first pregnancy	7	Age of husband
8	Family type 1. Nuclear 2. Joint	9	Type of marriage 1. Love 2. Arrange	10	Total family members No…

QN	*Question*	*Coding*	*M*	*H*	*QN*		*Coding*	*M*	*H*
11	Education	1.Illiterate 2.Literate 3.Primary class 4.Lower secondary 5.Secondary 6.Higher secondary			12	Occupation	1.Housewive 2.GOV Job 3.I/NGO 4.Business 5.Labor 6.Agriculture 7.Others		

QN	*Question*	*Newspaper*	*Television*	*Radio*
13.	Do you read, see and listen the following types of media at least once a week?	1.Read 0.Do not read	1.See 0.No	1.Listen 0.No

QN	*Question*	*Coding*	*Answer*	*Move to*
14	How many children do you have?	Total number:- Daughter…Son…	 …..No.	
15	Last baby information	 Age:-……in month Sex:- M……..F		

About SDIP

16	Have you heard about SDIP?	1.Yes 0.No		**If no go to QN 25**
17	Incentive amount to mother?	……		
18	For what purpose incentive is given to mother?	……		
19	From where incentive amount is given to mother?	1.HF 2.VDC 3. Home 4. PHC/ORC		
20	Who is responsible to give incentive?	1. ANM 2. HW 8. Others		
21	IS that incentive enough?	1. Enough 0. Not enough 3. OK 9. Don't know		
22	What have you heard about SDIP?	1.To increase institutional delivery 2.for benefit of mothers 3.To get incentive 4.Free delivery with transportation cost for poor 5.For poor 8.Others		
23	From whom have you heard about SDIP at first?	1.Friends/Relatives 2.FCHV 3.Other HW 4.TV 5.Radio 6.Magazine/newspaper 7.Mother group 8.others 9.Don't know 10.TBA 11.Poster/pamphlet		
24	When have you heard about SDIP?	1.Before pregnancy 2.After delivery 3.During pregnancy 4.Don't know		
25	Do you know any friend/relatives who have received SDI?	1.Yes 0.No		
26	What type of HF is nearby your home?	1.SHP 2.HP/PHC 3.District hospital 4.Zonal hospital 9.Don't know		

27	Time taken to reach that HF?	Time by walking…….. In vehicle…….		
28	Tike taken to reach district hospital/Zonal hospital from your home?	Time by walking…….. In vehicle…….		

Delivery Information

29	Where did you give birth to your last baby?	1.PHC/HP 2.SHP 3.Privateclinic 8.Others		
30	Who did help you during birth of your last baby?	1.Doctor 2.Nurse/ANM 3.HA 4.MCHW 5.VHW 6.TBA 7.FCHV 8.Others		
31	Did there presence of your husband?	1.Yes 0.No		
	Did you use safe delivery kit?	1.Yes 0.No		
32	Who gave you advice to call HW?	1.FCHV 2.Family member 3.Neighbour/friends 8.others		
33	Who gave the final decision to call fro HW?	1.Self 2.Husband 3.MIL 4.FIL 5.Relatives/friends 6.FCHV 7.HW		
34	How did you call to HW?	1.By phone 2.Sent person to call 8.others		
35	Time take by HW to reach?	……..minute		
36	Have you paid or gifted to service provider for health services? If yes then how much that was cost?	1.Yes…….(amount) 0.No 9.Don't know		
37	Did you buy medicines and other things? How much did you spend?	1.Yes…….(amount) 0.No 9.Don't know		
38	Total amount spent at delivery			
39	Are you satisfied from behave and service provided by service provider?	1.Yes 0. No		
40	Did anyone give advice for HF delivery?	1.Yes 0.No		
41	If yes then who?	1.FCHV 2.Health Worker 3.Family members 4.Neighbour/friends 8.others		

42	Why didn't you give birth at HF?	1.Need money 2.HF was closed 3.Far from home/no transportation 3.No trustfully/No quality 5.No female HW 6.Family didn't permitted 7. Not feel safe 10. Fell no need 11 Not such practice 12.No preparation 8. others		
43	Type of delivery	1.Normal 2.Vacuum/complication 3.casearian 8.Don't know		

Maternal health

44	Did you see anyone for ANC (antenatal care) while you were pregnant last time?	1.Yes 0. No		***If no then QN 69***
45	Whom did you see? **(Only one answer** **Probe for most qualified person)**	1. Doctor 2. ANM/Nurse 3. MCHW 4. Relatives 1. TBA 8. Other……..		
46	Write the following information from the card Number of ANC visit TT vaccination times	 No. of ANC: …… No. of TT vaccination: ……..		
47	At which month of pregnancy, have you gone for first ANC care?	……. months		
48	Do you have BPP card?	1. Yes 0. No		
49	Was your husband present with you/to accompany you during any of your ANC visit?	1.Yes 0. No		
50	Have you discussed about your health with your husband during the most recent pregnancy?	1.Yes 0.No		
51	During pregnancy did you consume iron /folic acid tablets?	1.Yes 0.No 9.Don't know		***If no then QN 67***
52	For how long did you consume iron tablets/folic acid?	During Pregnancy: ____days After delivery: ____days		
53	Did you take TT vaccination during pregnancy?	1.Yes 0.No 9.Don't know		

54	How many times did you take TT vaccination?	1.1 2.2 3.More than 2 9.Don't know		
55	Did you take Vitamin A capsule after the birth of your child?	1.Yes 0.No 9.Don't know		
56	During pregnancy did you receive anti-helminthic treatment?	1.Yes 0.No 9.Don't know		***If no then QN 69***
57	If yes, at what time of pregnancy did you take anti-helminthic drugs?	……. Months of pregnancy		
58	What are the things that you and your husband have prepared during pregnancy (birth preparedness)? ***(Multiple answer possible)***	O. Don't know A. Arrangement of money for normal and special circumstances B. Preparation for people who can donate blood during emergency C. Birth attendant D. Transportation X. Others (specify) ……..		
59	During pregnancy, did you consume as usual, more or less foods?	1.As usual 2.More 3.Less 8.Others…….		
60	Did somebody examine your health after delivery?	1. Yes 0. No		
61	If yes who checked your health?	1. Doctor 2. ANM/Nurse (midwife) 3. MCHW 8. Other (specify)…….		
62	At which day of delivery did you check your health?	1.Within 3 days 2. 4 to 7 days 3. After 7 days 9. Don't know		
63	How many times did you check your health after delivery?	1.No Post natal care 2.1time 3.2 times 4.3 or more		
64	Was your baby also examined at that time?	1.Yes 0. No		

Other Information

65	Do you know FCHV of your community?	1.Yes 0. No		
66	Are you involved with any group?	1.Yes 0. No		
67	If yes then in what sorts of group is she involved?	A.Health related B.Income generating C.Forest/Agriculture X.Others		

Thank you!!

Annex 3: Questionnaire for district level program focal person

Interview Date: -……..day/month/year | District:-

Interviewee name: - | Sex:-

Designation: - | Working duration:-

1. When was SDIP program started in this district?
2. How did you get information about SDIP in district? Was there any orientation program if yes then who conducted?
3. How did the peripheral level health facilities of district public health office get information about the program form DPHO?
4. How many health personals are providing delivery services in the district? Are they enough?
    - Supported by VDC
    - Permanent government staff
    - Temporarily placed
5. What sort of trainings for safe delivery services have you taken from district? Do you feel need of any more training
6. What types of delivery services are provided by health facilities under DPHO? Normal Complicated caesarian others.
7. How do district manage fund of SDIP on which incentives are given to health workers, mothers and certain amount to health facility as well for each delivery? How do district receive the amount from upper level and how does DPHO manage to health facilities under it?
8. Is there any difficulties that you are facing for fund management if yes then what sorts of difficulties? Can you explain them?
9. Does SDIP provide incentives to health workers for attaining each delivery? Does that incentive motivate HWs?
10. Does health facility receiving money for each delivery if yes then for what purpose money is expended and who give final decision to expend?
11. As a program focal person do u feel this program is supporting to increase institutional delivery if yes then how?
12. What should we do more to make SDIP more effective? Any suggestion if you have.
13. What sorts of challenges have you faced or have you seen on implementation of SDIP? What are your steps to solve them?
14. Have you conducted awareness program on SDIP for community if yes them what sorts of program? Is there any other organizations supporting on this?
15. In last 6 months was there any supervision from region and central to district? If yes what they did? Do you feel supervision is necessary? Why?
16. How VDC are supporting in the program to increase institutional delivery?

Annex 4: Questionnaire for MNH Service Provider

Introduction

Interview Date: -……day/month/year

VDC: -……. HF type: -……

A. General Information

1. Name of Service provider: - ……	2. Sex:-……..
3. Designation:-……..	4. Work duration (completed year):-….

5	Do you know about SDIP?	1.Yes 0.No		
6	When did the program started?			
7	How are you informed about thep rogram?			
8	Was there any orientation program? If yes then who had conducted?			
9	Can you mention incentive amount to mother, health worker and amount to health facility in each delivery under SDIP?			
10	For what purpose incentive is given to mother?	……		
11	How many health workers are in your HF providing delivery services? Are they enough?	…… 1. Enough 0. Not enough		
12	What types of delivery services are provided by this HF?	1.Normal 2.Complicated 3. Casearian 4. Others		
13	How many training have you got related to safe delivery? Do you feel need of any more to provide safe delivery services?			
14	Are you getting incentives after each delivery services?	In HF…… In Home……		
15	Is there any deduction on incentive amount?	1. Yes 0. No		
16	Is that money enough?	1.Enough 0. Not enough 3.OK		
17	Is there practice of display of names of HF	1. Yes 0. No		

	delivered mothers in HF?? If yes then observe			
18	In last 6 months, who monitored and supervised in your HF realting to SDIP?	1. RHD 2. DPHO 3. PHC 4. Others		
19	What did they do in supervision? Do you feel that supervision as importance?			
20	How VDC is supporting to increase institutional delivery?			

Services

Does that HF providing home delivery services also by sending services providers to home for delivery?	1. Yes	0. No
In your HF to provide delivery services do you have?		
Medicines	1. Enough	0. Not enough
Equipments	2. In use	0. Not in use
24 hours delivery services	1. Yes	0. No
Save abortion services	1. Yes	0. No
Availability of ambulance	1. Yes	0. No
Separate room for ANC/PNC	1. Yes	0. No
MNH related poster/pamphlet and communication methods	1. Yes	0. No
Information materials in HF mentioning SDIP	1. Yes	0. No
Expenditure management of SDIP	1. Yes	0. No
Timely reporting	1. Yes	0. No

1. How do you receive SDIP fund from district?
2. Are you facing any difficulties on getting fund and to manage the fund if yes then what sorts of?
3. Does SDIP provide incentives to health workers for attaining each delivery? Does that incentive motivate HWs?
4. How does HF receive the amount that HF get on each delivery?
5. Is there any difficulties to get the incentive amount from district if yes then what sorts of difficulties? Can you explain them?
6. Does health facility receiving money for each delivery if yes then for what purpose money is expended and who give final decision to expend?
7. Is there system to provide incentive amount to mother at the time of discharge? To whom you give the incentives amount?
8. From where and how you receive fund for incentives? Are you facing difficulties to mange fund to provide incentives to mother? If yes then mention.
9. Does the program play a role to increase institutional delivery? If yes then how?
10. What should be added to make the program more effective?
11. Does HF is taking money from women delivered at HF for any purpose?
12. What sort of challenges are you facing during implementation of SDIP?
13. What sorts of awareness program are you launching in community? Is any organization playing role on that?

Annex 5: HMIS Data

In percentage	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11
Delivery by HWs (Nepal)										
Delivery by HWs (Kailali)										
Delivery by SBA(Nepal)										
Delivery by SBA(Kailali)										
Delivery at HFs(Nepal)										
Delivery at HFs(Kailali)										